

## Memorandum

**Date:** April 7, 2025  
**To:** Kevin Peterburs & Nick Bryan, Union Pacific Railroad  
**Copies:** Bart Seitz and Molly Cagle, Baker Botts LLP  
**From:** Cathy Crea, Lisa D’Agostino, and Michelle Cho; Geosyntec Consultants, Inc.  
**Subject:** **Background Reference Area Study – Statistical Evaluation and Calculation of Background Threshold Values**

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### INTRODUCTION

This report was prepared by Geosyntec Consultants, Inc. (Geosyntec) at the request of Baker Botts LLP to document the findings of a statistical evaluation conducted to develop background threshold values (BTVs) for dioxins/furans, semi-volatile organic compounds (SVOCs) and volatile organic compounds (VOCs) measured in the surface and shallow soil samples collected from twenty background reference area (BRA) locations around the Houston Wood Preserving Works (HWPW) Site. The evaluation was conducted as described in the *Removal Site Evaluation Work Plan – Surface and Shallow Soil Assessment* (RSE; Geosyntec, 2024a), *Field Sampling Plan – Surface and Shallow Soils, On Site and Background Reference Areas* (FSP; Geosyntec, 2024b) and the *Soil Quality Assurance Project Plan* (QAPP; Geosyntec, 2024c).

The laboratory results discussed in this report have been validated.

### BACKGROUND

The objective of this background study was to identify soils that reflect anthropogenic activities (“anthropogenic background”) in an urban environment and that are not expected to have been impacted by the HWPW Site. The selection of BRA locations followed the EPA policy presented in the Guidance for Comparing Background and Chemical Concentrations in Soil for CERCLA Sites (EPA, 2002) such that the locations are not influenced by releases from the HWPW Site and described as naturally occurring or anthropogenic background. As described in the FSP (Geosyntec, 2024b), twenty BRA locations around the HWPW Site were selected in consultation with and approved by EPA (see next section for more details on field sampling methods).

The analytical data associated with samples collected at the BRA locations are being used to characterize the nature and extent of background concentrations of dioxin/furans, SVOCs, and VOCs in the area, to inform risk characterization, and to support risk management decisions. The data collected at the BRAs will also be used to support off-site soil forensic source attribution analysis completed by Union Pacific Railroad. To establish background threshold values for dioxins/furans, SVOCs and VOCs in the surface and shallow soil samples, concentrations from the samples collected at the BRA locations were used to calculate a 95% confidence limit on the

95<sup>th</sup> percentile. This is also known as the 95%-95% Upper Tolerance Limit (95-95 UTL) and is designed to represent the concentration value below which 95% of the population concentration values are expected to fall with 95% confidence.

During the selection of the BRA locations, EPA requested that the twenty locations be split into two categories as follows:

1. BRA locations with “A” suffix (BRA1A, BRA2A, ..., BRA10A) - ten locations that are not heavily influenced by vehicle traffic, including parks or similar parcels that are not medians, bus stops or located on a block adjacent to a major highway (i.e., “low vehicle traffic areas”).
2. BRA locations with “B” suffix (BRA1B, BRA2B, ..., BRA10B) - ten locations that are potentially heavily influenced by vehicle traffic, including road median, bus stop, and/or parcel located on a block adjacent to a major highway (i.e., “high vehicle traffic areas”).

At the request of EPA, a statistical evaluation will be conducted to determine if there is a significant difference in analyte concentrations between the two “A” and “B” BRA location categories. For each analyte, if no statistical difference is found between categories (e.g., it is determined that there is no statistically significant difference in the soil concentrations between the soil samples from high vehicle traffic areas vs. lower vehicle traffic areas), the analyte soil concentration data for samples collected at all 20 BRAs will be combined into one background data set and a single BTV will be computed for that analyte. If there is a statistically significant difference in soil concentrations for an analyte between the two datasets, then EPA and UPRR will have follow-up discussions to determine if it is appropriate to combine the datasets into a single background dataset for the computation of BTVs (Geosyntec, 2024a).

This report provides the findings of this statistical evaluation, the recommended methods for calculating the BTVs, and the resulting analyte-specific BTVs.

## SCOPE AND METHODS

### Field Sampling Scope and Methods

Geosyntec collected soil samples from each of the twenty BRAs identified in **Figure 1**. Eighteen of the BRAs cover an approximate 500 square meter (5,400 square foot) area for a five-point composite sample, with the remaining two BRAs being smaller due to the limited available sample area. Additional information on each BRA and the sample locations are provided in the *Field Sampling Plan – Surface and Shallow Soils, On-Site and BRA Field Sampling Plan* (Geosyntec, 2024b).

The table below provides a summary of the 160 BRA soil samples by depth and analyte used in the statistical evaluation of concentrations in samples collected at the “A” and “B” BRA locations and for calculating BTVs. At each BRA, a five-point composite soil sample was collected at three

depth intervals for dioxins/furans and SVOCs; surface soils were collected at the 0-2 inch below ground surface (in bgs) interval, and shallow soils were collected from the 2-6 in bgs and 6-12 in bgs intervals. For VOCs, a discrete soil sample was collected from the mid-point of the two shallow soil depth intervals (i.e., 2-6 in bgs and 6-12 in bgs). For dioxins/furans, soil samples were sieved in the laboratory prior to analysis as directed by EPA in an email dated August 1, 2024. Details of the sieving process by the laboratory are provided in the Soil Quality Assurance Project Plan (Soil QAPP; Geosyntec, 2024c).

### Soil Samples Collected from BRA Locations for BTV Evaluation

Sample Depth (inches below ground surface)	Dioxins/Furans <sup>1,2</sup>	SVOCs <sup>1</sup>	VOCs <sup>3</sup>	Total Samples
0 - 2	20	20	0	40
2 - 6	20	20	20	60
6 - 12	20	20	20	60
Total Samples	60	60	40	160

#### Notes

- 1 – Soil samples collected for dioxins/furans and SVOCs analyses represent a 5-point composite (i.e., 5 discrete samples composited together).
- 2 – Soil samples for dioxins/furans analysis were sieved in the laboratory prior to analysis.
- 3 – Soil samples collected for VOCs analysis represent discrete samples, collected at the mid-point of the target depth interval.

### Statistical Evaluation Methods

The 160 samples collected at the BRA locations were used to conduct the statistical evaluation of dioxins/furans, SVOCs and VOCs concentrations in samples collected at the “A” and “B” BRA locations and for calculating BTVs. BTVs for each analyte group were calculated using the following:

- Dioxins/furans – 60 composite sieved soil samples. The dioxin/furan BTVs were calculated using total toxic equivalency (TEQ) concentrations. The TEQs were calculated using the 17 dioxin and furan congeners reported under EPA method 1613. For congeners that were non-detect, the full method detection limit was substituted for the calculation of TEQs.
- SVOCs - 60 composite non-sieved soil samples, and
- VOCs - 40 discrete non-sieved soil samples.

When a sample had two or more results (i.e., from both a primary and field duplicate sample and/or from two analytical methods 8270 and 8270 SIM), the maximum concentration between the two or more results was used for the evaluation. Data handling and statistical methods used in this evaluation are consistent with USEPA soil guidance (USEPA, 2002). R Project for Statistical Computing (R Core Team, 2014) and ProUCL Version 5.2 (USEPA, 2022) were used to conduct

the statistical evaluations. Statistical tests were conducted at the 5% level of significance, except for goodness-of-fit tests conducted in ProUCL for BTV calculations. In ProUCL, the normal distribution is tested at a 1% level of significance and the lognormal distribution is tested at a 10% level of significance.

The following steps were taken to conduct the statistical evaluation and calculate the BTVs for each analyte:

1. Plot side-by-side dot plots by BRA location category and depth group and calculate summary statistics (e.g., minimum, maximum, median, and mean). Determine which data sets had sufficient data to be evaluated statistically (based on percentage of detected concentrations in a data set) and to select the appropriate BTV calculation method. The following detection frequency rules were used:
  - a. Statistical tests described in Steps 2 through 4: greater than or equal to 50%.
  - b. BTV calculations:
    - i. 0% detection frequency – mode RL.
    - ii. Greater than 0% to 15% detection frequency – maximum detected concentration.
    - iii. Greater than 15% to less than 50% detection frequency – non-parametric methods.
    - iv. 50% to 100% detection frequency – non-parametric or parametric methods based on data distribution, where non-detects can be accommodated by these methods and were included at the detection limit. If more than one BTV is provided for a parametric method (e.g., Kaplan-Meier [KM] and regression on order statistics [ROS]), then the estimator that results in the minimum BTV was selected.
2. For data sets that have sufficient data for statistical evaluation, evaluate the concentration distributions using the Shapiro-Wilk goodness-of-fit test to determine if the data sets are approximately normally distributed.
3. Based on results from Step 2, use of a parametric ANOVA or a non-parametric Kruskal-Wallis test to compare analyte concentration distributions among the BRA location categories and soil depths. Note for each dioxin/furan and SVOC analyte there are six groupings to be evaluated: BRA locations with “A” suffix at the three depth intervals (0-2 in bgs, 2-6 in bgs and 6-12 in bgs) and BRA locations with “B” suffix at the three depth intervals. For each VOC analyte there are four groupings to be evaluated: BRA locations with “A” suffix at the three depth intervals (2-6 in bgs and 6-12 in bgs) and BRA locations with “B” suffix at the two depth intervals. If there are overall concentration differences among these four or six or four groupings, respectively, then pairwise parametric t-tests or

pairwise non-parametric Dunn's tests will be conducted to determine among which groupings the concentration differences lie. BTVs will be calculated separately for groupings that show statistically significant concentration differences.

4. Based on results from Step 3, identify potential outliers in the data set using statistical plots (boxplots and QQ plots) and test for potential outliers using the Rosner's outlier test.
5. Calculate the BTV with and without potential outliers, where applicable, using the most appropriate calculation method given detection frequencies and data distributions.

Based on the results of this statistical evaluation and BTV calculations, Geosyntec will make recommendations that will facilitate follow-up discussions between EPA and UPRR to determine the approach that should be used in determining if and which data sets should be combined in the calculation of the analyte-specific BTVs.

## RESULTS

The validated analytical results for the 160 soil samples collected at the BRAs used in this statistical evaluation for dioxins/furans, SVOCs and VOCs and other supplemental tables (additional summary statistics, tables with results of statistical tests, etc.) are provided in **Table Attachment A**. Statistical plots are presented in **Attachment B**, and ProUCL input and output files are presented in **Attachment C**. Below presents the results of each step taken in the statistical evaluation and BTV calculation.

### Step 1 – Plot the Data and Calculate Summary Statistics

Summary statistics per analyte among the three analyte groups (dioxins/furans, SVOCs, and VOCs) are provided in **Table 1**. The following observations can be made for each analyte group:

- **Dioxins/Furans** – the 60 sieved composite samples were analyzed for 17 dioxins/furans
  - All samples had detected TEQ concentrations that ranged from 0.91 nanograms per kilogram (ng/kg) to 33 ng/kg and no samples exceeded the risk-based site-specific screening level (SSL) of 48 ng/kg.
  - A statistical evaluation on the difference between BRA location categories and depths could be conducted on this data set because detection frequency for TEQ was 100%.
  - Accordingly, BTVs were calculated using appropriate parametric or non-parametric methods.
- **SVOCs** – the 60 non-sieved composite samples were analyzed for 58 SVOCs
  - 15 were potential contaminants of concern (PCOCs), where

- 12/15 analytes were detected in at least two soil samples with detection frequencies ranging from 3% to 97%,
- 3/15 analytes were not detected in any soil sample, and
- 1/15 analyte (benzo(a)pyrene) had at least one soil sample that exceeded its EPA Regional Screening Level (RSL) for residential soil exposures<sup>1</sup>.
- 43 were non-PCOCs, where
  - 10/43 analytes were detected in at least three soil samples with detection frequencies ranging from 5% to 98%,
  - 33/43 analytes were not detected in any soil sample, and
  - 2/43 analytes (benzo(b)fluoranthene and dibenz(a,h)anthracene) had at least one soil sample that exceeded its respective RSL for residential soil exposures.
- Due to low detection frequencies, the statistical evaluation on the difference between BRA location categories and depths could only be conducted on 12 out of the 58 SVOC data sets. These 12 SVOCs are anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, indeno(1,2,3-c,d)pyrene, phenanthrene, and pyrene.
- BTVs for each SVOC were calculated using the mode detection limit for data sets with detection frequencies of 0%, the maximum detected concentration for data sets with detection frequencies greater than 0% and less than 15%, non-parametric methods for data sets with greater than 15% to less than 50% detection frequency, and a nonparametric or parametric method for data sets with detection frequencies of 50% to 100%.
- **VOCs** – the 40 non-sieved discrete samples were analyzed for 64 VOCs<sup>2</sup>

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<sup>1</sup> The BRA locations included public parks and byways owned by city, county or state, and did not include any current residential areas or areas planned for future residential development (Geosyntec, 2024a). Comparing analyte soil concentrations from the BRA location samples to EPA's residential soil RSLs was included here at the direction of EPA Region 6. However, since no one lives or is reasonably anticipated to live on the BRA sample locations, BRA soil samples with analyte concentrations that exceed EPA's residential soil RSLs do not necessarily indicate a potential health hazard is present at the sampled BRA location. A more apt set of health-based soil screening levels for the current BRA soil samples would be based on recreator and/or passersby exposure assumptions and would thus be considerably higher than the EPA residential soil RSLs (e.g., reduced exposure events, frequencies and durations assumed at parks and public byways when compared with assumed soil exposures from living on residential properties).

<sup>2</sup> Five VOCs (1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, and hexachlorobutadiene) were analyzed via method 8260 for discrete soil samples. These same five VOCs were analyzed via method 8270 and reported as SVOCs for composite soil samples. Therefore, these five analytes are reported twice in the final BTV table.



- 1 was a PCOC (benzene) and it was not detected in any soil sample.
- 63 were non-PCOCs, where
  - 13/63 analytes were detected in at least one soil sample with detection frequencies ranging from 3% to 13%,
  - 50/63 analytes were not detected in any sample, and
  - No samples exceeded their respective RSLs for residential soil exposures.
- Due to low detection frequencies, the statistical evaluation on the difference between BRA location categories and depths could not be conducted on these data sets.
- BTVs for each VOC were calculated using the mode detection limit for data sets with detection frequencies of 0% or the maximum detected concentration for data sets with detection frequencies greater than 0% and less than 15%. Note there were no VOCs that had greater than 15% detection frequencies.

Side-by-side dot plots by BRA location category and depth group for analytes with detected concentrations are provided in **Attachment B**.

## Step 2 – Perform Goodness-of-Fit Tests

Goodness-of-fit tests were conducted to evaluate the 13 data sets (TEQ and 12 SVOCs) against a normal distribution to determine whether a parametric or non-parametric test would be used to evaluate concentration differences among the six BRA groupings: BRA locations with “A” or “B” suffix at the three depth intervals (0-2 in bgs, 2-6 in bgs and 6-12 in bgs). The Shapiro-Wilk Test was used at a significance level of 5%. Based on the results of the Shapiro-Wilk tests, only five of the distributions were normally distributed (p-values less than 5%; detailed results of these statistical tests are provided **Table A2** of **Attachment A**); therefore, a non-parametric test was used to evaluate differences in median concentrations among the six BRA groupings.

## Step 3 – Compare Concentration Distributions Among BRA Location Categories and Depth Intervals

To evaluate concentration differences among the six BRA groupings, the non-parametric Kruskal-Wallis test was conducted on the 13 data sets (TEQ and 12 SVOCs). The results of the Kruskal-Wallis tests are presented in the **Table 2** and can be summarized as follows:

- There were no statistically significant differences in median concentrations among the six groups for four analytes: TEQ, anthracene, benzo(a)anthracene, and phenanthrene. Therefore, soil samples across BRA location groups and depths were combined and a single BTV was calculated for these four analytes.

- There were statistically significant differences in median concentrations among the six groups for the remaining nine analytes: benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, indeno(1,2,3-c,d)pyrene, and pyrene. Therefore, these data sets were further evaluated statistically using pairwise Dunn's tests. In general, the differences were due to the BRA locations with the "B" suffix in the 0-2 in bgs depth being different from the other BRA groups.
  - Accordingly, three BTVs were calculated: the combined data set and separately for the BRA locations with the "A" and "B" suffixes for these nine analytes.

**Attachment B** contains side-by-side boxplots by BRA location category and depth group for data sets that could be evaluated statistically.

#### Step 4 – Perform Outlier Analysis

The combined or separate BRA location group data sets were evaluated for potential outliers using statistical plots (boxplots and QQ plots) and the Rosner's test (for data sets with greater than or equal to 50% detection frequency). Statistical plots (boxplots and QQ plots) are provided in **Attachment B** and results of the Rosner's test are provided in **Table A4 (Attachment A)**. Based on the results of the outlier tests, two analytes (fluoranthene and phenanthrene) had a potential outlier, which were confirmed by visual inspection of the boxplots and QQ plots (**Attachment B**). Accordingly, BTVs were calculated with and without these potential outliers.

#### Step 5 – Calculate BTVs

BTVs were calculated using ProUCL version 5.2. ProUCL input and output files are provided in **Attachment C**. The calculated BTVs for each analyte and the type of BTV (normal, lognormal, gamma, non-parametric, etc.) are provided in **Table 3**. The following summarizes the approach used to calculate BTVs for each analyte:

- Dioxins/furans – combined data were used to calculate a single BTV for TEQ. TEQ concentrations did not have any potential outliers and did not follow a discernible probability distribution, so a non-parametric BTV was calculated.
- SVOCs
  - Among the 12 SVOCs that could be evaluated statistically for differences in BRA location and depth groupings:
    - Three SVOCs (anthracene, benzo(a)anthracene, and phenanthrene) that showed no statistical differences based on Step 3 have a single BTV from the combined data set using parametric or non-parametric methods.



- The remaining 9 SVOCs that did show statistically significant differences based on Step 3 have a single and separate BTVs for the BRA location categories. These distributions were further evaluated using side-by-side boxplots and overlaid and combined QQ plots (**Attachment B**). Although the medians are statistically different (boxplot), when the data are combined the distributions do not show any distinct pattern with respect to BRA location categories and resemble one underlying background population (QQ plot). BTVs were calculated using parametric or non-parametric methods.
- The remaining 46 SVOCs could not be evaluated statistically; therefore, a single BTV was calculated using the mode detection limit for data sets with detection frequencies of 0%, the maximum detected concentration for data sets with detection frequencies greater than 0% and less than 15%, non-parametric methods for data sets with greater than 15% to less than 50% detection frequency, and a nonparametric or parametric method for data sets with detection frequencies greater than or equal to 50% to 100%. In total, two SVOCs had potential outliers and so BTVs were calculated with and without outliers for these SVOCs.
- VOCs – VOCs could not be evaluated statistically and a single BTV was calculated per analyte using the mode detection limit for data sets with detection frequencies of 0% or the maximum detected concentration for data sets with detection frequencies greater than 0% and less than 15%.

## CONCLUSIONS AND RECOMMENDATIONS

The objective of this background study was to identify soils that reflect anthropogenic activities (“anthropogenic background”) in an urban environment and that are not expected to have been impacted by the HWPW Site. As described in the FSP (Geosyntec, 2024b), twenty BRA locations around the HWPW Site were selected in consultation with and approved by EPA. The analytical data associated with samples collected at the BRA locations were used to characterize the nature and extent of background concentrations of dioxin/furans, SVOCs, and VOCs in the area around the HWPW Site. Soil samples collected at the BRA locations were evaluated statistically and used to calculate BTVs that will be used to inform risk characterization, and to support risk management.

A total of 123 analytes were evaluated, only 13 analytes had sufficient detection frequencies to conduct a statistical evaluation to determine if there was a statistically significant difference in analyte concentrations between the two BRA location categories: “A” (lower vehicle traffic areas) and “B” (high vehicle traffic areas). This evaluation was used to determine whether a single or two separate BTVs would be calculated per analyte. Based upon a review of the data sets and the results of the statistical evaluation, Geosyntec concludes and recommends that the following

approach be used to select the final BTVs (Table 3; last two columns of the table highlighted in green):

- Thirteen analytes could be evaluated statistically:
  - Nine of the analytes (all SVOCs) showed statistical differences in analyte concentrations between the two BRA location groups. Therefore, Geosyntec calculated three BTVs, one each for the A and B location group data sets and a single BTV for the combined data sets for these analytes. An additional evaluation on the combined data sets suggested that these distributions do not show any distinct pattern with respect to BRA location categories and resemble one underlying background population. Therefore, Geosyntec recommends that the single BTVs calculated using the combined data sets and the specified statistical methods be used for these analytes.
  - Four of the analytes (TEQ and three SVOCs) showed no statistical differences in analyte concentrations between the two BRA location groups. Therefore, Geosyntec recommends that the single BTVs calculated using the combined data sets and the specified statistical methods be used for these analytes.
  - For data sets that had potential outliers, BTVs were calculated with and without outliers. Geosyntec recommends that the BTVs calculated with outliers be used for these analytes. This is because these samples were collected at a reasonable reference area (approved by EPA) and the concentrations in these samples are not the result of a problem in collecting or analyzing the sample. Also, background locations are not necessarily pristine areas, particularly in an urban area like Houston, Texas. Therefore, as recommended in USEPA guidance, “a data point should not be eliminated from the background data set simply because it is the highest value that was observed” (USPEA, 2002).
- 110 of the analytes could not be evaluated statistically because the detection frequencies were so low. Geosyntec recommends that the combined data sets be used to calculate a single BTV using mode reporting limit or maximum detected concentration, or a non-parametric method for these analytes.

UPRR, Geosyntec and EPA discussed Geosyntec’s recommendations on March 13, 2025 via teleconference. This meeting discussed EPA’s comments to Geosyntec’s recommendations for calculating BTVs and agreed that this is an acceptable approach to support the risk assessment.

## REFERENCES

Geosyntec, 2024a. Removal Site Evaluation Work Plan – Surface and Shallow Soil Assessment, April 12, 2024 (Updated June 2024).

Geosyntec, 2024b. Field Sampling Plan – Surface and Shallow Soils, Off-Site Areas, Former Houston Wood Preserving Works Site (HWPW Site), March 21, 2024 (Updated June 2024).

Geosyntec, 2024c. Soil Quality Assurance Project Plan, Former Houston Wood Preserving Works Site (HWPW Site), July 2023, (Updated October 13, 2023, November 10, 2023, and January 12, 2024).

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USEPA, 2022. Statistical Software ProUCL 5.2.00 for Environmental Applications for Data Sets with and without Non-detect Observations.

Encl.

Attachment A – Supplemental Tables

Attachment B – Statistical Plots

Attachment C – ProUCL Input and Output Files

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## Tables

TABLE 1  
SUMMARY STATISTICS OF DIOXINS/FURANS, SVOCS AND VOCS  
Former Houston Wood Preserving Works, Houston, Texas

Analyte Group	Sample Type	Sieved?	Analyte	Units	PCOC	Total Samples	Total Detects	Detection Frequency	Sufficient Data for Statistical Evaluation <sup>1</sup>	Minimum Detection Limit for Nondetect	Maximum Detection Limit for Nondetect	Minimum Detect	Median Detect	Mean Detect	Maximum Detect	SSL/RSL	Exceeds SSL/RSL
Dioxins/Furans	Composite	Yes	2,3,7,8-TCDD TEQ	ng/kg	Yes	60	60	100%	Yes	NA	NA	0.91	5.1	7.4	33	48	No
SVOC	Composite	No	1,2,4-Trichlorobenzene	mg/kg	No	60	0	0%	No	0.0112	0.0616	NA	NA	NA	NA	5.8	No
SVOC	Composite	No	1,2-Dichlorobenzene	mg/kg	No	60	0	0%	No	0.0106	0.0586	NA	NA	NA	NA	180	No
SVOC	Composite	No	1,3-Dichlorobenzene	mg/kg	No	60	0	0%	No	0.0108	0.0599	NA	NA	NA	NA	--	--
SVOC	Composite	No	1,4-Dichlorobenzene	mg/kg	No	60	0	0%	No	0.0106	0.0588	NA	NA	NA	NA	2.6	No
SVOC	Composite	No	1-Methylnaphthalene	mg/kg	No	60	10	17%	No	0.00488	0.00596	0.00598	0.011645	0.031116	0.147	18	No
SVOC	Composite	No	2,4,6-Trichlorophenol	mg/kg	No	60	0	0%	No	0.0115	0.0634	NA	NA	NA	NA	6.3	No
SVOC	Composite	No	2,4-Dichlorophenol	mg/kg	No	60	0	0%	No	0.0104	0.0575	NA	NA	NA	NA	19	No
SVOC	Composite	No	2,4-Dimethylphenol	mg/kg	Yes	60	0	0%	No	0.00933	0.0516	NA	NA	NA	NA	130	No
SVOC	Composite	No	2,4-Dinitrophenol	mg/kg	No	59	0	0%	No	0.0836	0.461	NA	NA	NA	NA	13	No
SVOC	Composite	No	2,4-Dinitrotoluene	mg/kg	Yes	60	0	0%	No	0.0102	0.0567	NA	NA	NA	NA	1.7	No
SVOC	Composite	No	2,6-Dinitrotoluene	mg/kg	No	60	0	0%	No	0.0117	0.0646	NA	NA	NA	NA	0.36	No
SVOC	Composite	No	2-Chloronaphthalene	mg/kg	No	60	0	0%	No	0.005	0.00618	NA	NA	NA	NA	480	No
SVOC	Composite	No	2-Chlorophenol	mg/kg	No	60	0	0%	No	0.0118	0.0652	NA	NA	NA	NA	39	No
SVOC	Composite	No	2-Methylnaphthalene	mg/kg	Yes	60	12	20%	No	0.00464	0.00567	0.00514	0.01162	0.057775	0.448	24	No
SVOC	Composite	No	2-Nitrophenol	mg/kg	No	60	0	0%	No	0.0128	0.0705	NA	NA	NA	NA	--	--
SVOC	Composite	No	3,3'-Dichlorobenzidine	mg/kg	No	60	0	0%	No	0.0132	0.0729	NA	NA	NA	NA	1.2	No
SVOC	Composite	No	4,6-Dinitro-2-methylphenol	mg/kg	No	60	0	0%	No	0.081	0.448	NA	NA	NA	NA	0.51	No
SVOC	Composite	No	4-Bromophenyl phenyl ether	mg/kg	No	60	0	0%	No	0.0126	0.0693	NA	NA	NA	NA	--	--
SVOC	Composite	No	4-Chloro-3-methylphenol	mg/kg	No	60	0	0%	No	0.0116	0.064	NA	NA	NA	NA	630	No
SVOC	Composite	No	4-Chlorophenyl phenyl ether	mg/kg	No	60	0	0%	No	0.0124	0.0688	NA	NA	NA	NA	--	--
SVOC	Composite	No	4-Nitrophenol	mg/kg	No	60	0	0%	No	0.0112	0.0616	NA	NA	NA	NA	--	--
SVOC	Composite	No	Acenaphthene	mg/kg	Yes	60	19	32%	No	0.00224	0.00606	0.00244	0.0047	0.008816316	0.0662	360	No
SVOC	Composite	No	Acenaphthylene	mg/kg	No	60	31	52%	No <sup>2</sup>	0.00232	0.00287	0.00245	0.00727	0.017296774	0.236	--	--
SVOC	Composite	No	Anthracene	mg/kg	Yes	60	43	72%	Yes	0.0025	0.00305	0.00314	0.0106	0.01905	0.1	1800	No
SVOC	Composite	No	Benzdine	mg/kg	No	56	0	0%	No	0.0672	0.371	NA	NA	NA	NA	0.00053	No
SVOC	Composite	No	Benzo(a)anthracene	mg/kg	Yes	60	58	97%	Yes	0.00197	0.00208	0.00234	0.03615	0.077673966	1.01	1.1	No
SVOC	Composite	No	Benzo(a)pyrene	mg/kg	Yes	60	58	97%	Yes	0.00204	0.00215	0.00305	0.0482	0.078064483	0.752	0.11	Yes
SVOC	Composite	No	Benzo(b)fluoranthene	mg/kg	No	60	59	98%	Yes	0.00174	0.00174	0.00261	0.0782	0.121588814	1.26	1.1	Yes
SVOC	Composite	No	Benzo(g,h,i)perylene	mg/kg	No	60	58	97%	Yes	0.00201	0.00213	0.00328	0.0419	0.060830517	0.462	--	--
SVOC	Composite	No	Benzo(k)fluoranthene	mg/kg	No	60	55	92%	Yes	0.00244	0.00264	0.00317	0.0244	0.043271636	0.484	11	No
SVOC	Composite	No	Benzyl butyl phthalate	mg/kg	No	60	13	22%	No	0.0113	0.0598	0.0135	0.0207	1.162976923	14.8	290	No
SVOC	Composite	No	Bis(2-Chloroethoxy) methane	mg/kg	No	60	0	0%	No	0.0107	0.0593	NA	NA	NA	NA	19	No
SVOC	Composite	No	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	mg/kg	No	60	0	0%	No	0.0118	0.0652	NA	NA	NA	NA	0.23	No
SVOC	Composite	No	Bis(2-Chloroisopropyl) ether	mg/kg	No	59	0	0%	No	0.0154	0.0854	NA	NA	NA	NA	310	No
SVOC	Composite	No	Bis(2-Ethylhexyl) phthalate	mg/kg	No	60	23	38%	No	0.0453	0.243	0.0477	0.0832	0.115017391	0.389	39	No
SVOC	Composite	No	Chrysene	mg/kg	Yes	60	58	97%	Yes	0.00264	0.00279	0.00318	0.04015	0.085247759	1.17	110	No
SVOC	Composite	No	Dibenz(a,h)anthracene	mg/kg	No	60	51	85%	Yes	0.00193	0.0022	0.00228	0.00916	0.016031176	0.143	0.11	Yes
SVOC	Composite	No	Diethyl phthalate	mg/kg	No	60	0	0%	No	0.0118	0.0652	NA	NA	NA	NA	5100	No
SVOC	Composite	No	Dimethyl phthalate	mg/kg	No	60	0	0%	No	0.0757	0.418	NA	NA	NA	NA	--	--
SVOC	Composite	No	Fluoranthene	mg/kg	Yes	60	58	97%	Yes	0.00258	0.00273	0.00558	0.0663	0.155405345	2.94	240	No
SVOC	Composite	No	Fluorene	mg/kg	Yes	60	16	27%	No	0.0022	0.00272	0.00271	0.005115	0.0125125	0.0517	240	No
SVOC	Composite	No	Hexachlorobenzene	mg/kg	No	60	0	0%	No	0.0127	0.0699	NA	NA	NA	NA	0.078	No
SVOC	Composite	No	Hexachlorobutadiene	mg/kg	No	60	0	0%	No	0.012	0.0664	NA	NA	NA	NA	1.2	No
SVOC	Composite	No	Hexachlorocyclopentadiene	mg/kg	No	56	0	0%	No	0.0188	0.104	NA	NA	NA	NA	0.18	No
SVOC	Composite	No	Hexachloroethane	mg/kg	No	60	0	0%	No	0.0141	0.0776	NA	NA	NA	NA	1.8	No
SVOC	Composite	No	Indeno(1,2,3-c,d)pyrene	mg/kg	No	60	57	95%	Yes	0.00206	0.00221	0.00261	0.0392	0.064850351	0.57	1.1	No



TABLE 1  
SUMMARY STATISTICS OF DIOXINS/FURANS, SVOCS AND VOCS  
Former Houston Wood Preserving Works, Houston, Texas

Analyte Group	Sample Type	Sieved?	Analyte	Units	PCOC	Total Samples	Total Detects	Detection Frequency	Sufficient Data for Statistical Evaluation <sup>1</sup>	Minimum Detection Limit for Nondetect	Maximum Detection Limit for Nondetect	Minimum Detect	Median Detect	Mean Detect	Maximum Detect	SSL/RSL	Exceeds SSL/RSL
SVOC	Composite	No	Isophorone	mg/kg	No	60	0	0%	No	0.0109	0.0605	NA	NA	NA	NA	570	No
SVOC	Composite	No	N-Nitrosodi-n-propylamine	mg/kg	No	60	0	0%	No	0.0119	0.0658	NA	NA	NA	NA	0.078	No
SVOC	Composite	No	N-Nitrosodimethylamine	mg/kg	No	60	0	0%	No	0.053	0.293	NA	NA	NA	NA	0.002	No
SVOC	Composite	No	N-Nitrosodiphenylamine	mg/kg	No	60	0	0%	No	0.027	0.149	NA	NA	NA	NA	110	No
SVOC	Composite	No	Naphthalene	mg/kg	Yes	60	12	20%	No	0.00444	0.00541	0.00482	0.02375	0.094309167	0.754	2	No
SVOC	Composite	No	Nitrobenzene	mg/kg	No	60	0	0%	No	0.0124	0.0688	NA	NA	NA	NA	5.1	No
SVOC	Composite	No	Pentachlorophenol	mg/kg	Yes	60	2	3%	No	0.00961	0.0531	0.0734	0.074	0.074	0.0746	1	No
SVOC	Composite	No	Phenanthrene	mg/kg	Yes	60	54	90%	Yes	0.00262	0.00282	0.00381	0.02615	0.076799259	1.49	--	--
SVOC	Composite	No	Phenol	mg/kg	Yes	60	0	0%	No	0.0144	0.0794	NA	NA	NA	NA	1900	No
SVOC	Composite	No	Pyrene	mg/kg	Yes	60	58	97%	Yes	0.00227	0.0024	0.00472	0.05835	0.121816034	1.89	180	No
SVOC	Composite	No	di-n-Butyl phthalate	mg/kg	No	60	3	5%	No	0.0122	0.0655	0.0395	0.0787	0.067333333	0.0838	630	No
SVOC	Composite	No	di-n-Octylphthalate	mg/kg	No	59	0	0%	No	0.0241	0.134	NA	NA	NA	NA	63	No
VOC	Discrete	No	1,1,1,2-Tetrachloroethane	mg/kg	No	40	0	0%	No	0.00113	0.00151	NA	NA	NA	NA	2	No
VOC	Discrete	No	1,1,1-Trichloroethane (TCA)	mg/kg	No	40	0	0%	No	0.0011	0.00147	NA	NA	NA	NA	810	No
VOC	Discrete	No	1,1,2,2-Tetrachloroethane	mg/kg	No	40	0	0%	No	8.26E-04	0.00111	NA	NA	NA	NA	0.6	No
VOC	Discrete	No	1,1,2-Trichloroethane	mg/kg	No	40	0	0%	No	7.10E-04	9.53E-04	NA	NA	NA	NA	0.15	No
VOC	Discrete	No	1,1-Dichloroethane	mg/kg	No	40	0	0%	No	5.84E-04	7.84E-04	NA	NA	NA	NA	3.6	No
VOC	Discrete	No	1,1-Dichloroethene	mg/kg	No	40	0	0%	No	7.21E-04	9.68E-04	NA	NA	NA	NA	23	No
VOC	Discrete	No	1,1-Dichloropropene	mg/kg	No	40	0	0%	No	9.62E-04	0.00129	NA	NA	NA	NA	--	--
VOC	Discrete	No	1,2,3-Trichlorobenzene	mg/kg	No	40	0	0%	No	0.00872	0.0117	NA	NA	NA	NA	6.3	No
VOC	Discrete	No	1,2,3-Trichloropropane	mg/kg	No	40	0	0%	No	0.00193	0.00259	NA	NA	NA	NA	0.0051	No
VOC	Discrete	No	1,2,3-Trimethylbenzene	mg/kg	No	40	2	5%	No	0.00188	0.00252	0.00261	0.017105	0.017105	0.0316	34	No
VOC	Discrete	No	1,2,4-Trichlorobenzene	mg/kg	No	40	0	0%	No	0.00523	0.00703	NA	NA	NA	NA	5.8	No
VOC	Discrete	No	1,2,4-Trimethylbenzene	mg/kg	No	40	1	3%	No	0.00188	0.00252	0.00398	0.00398	0.00398	0.00398	30	No
VOC	Discrete	No	1,2-Dibromo-3-chloropropane	mg/kg	No	40	0	0%	No	0.00464	0.00623	NA	NA	NA	NA	0.0053	No
VOC	Discrete	No	1,2-Dibromoethane (Ethylene Dibromide)	mg/kg	No	40	0	0%	No	7.71E-04	0.00103	NA	NA	NA	NA	0.036	No
VOC	Discrete	No	1,2-Dichlorobenzene	mg/kg	No	40	0	0%	No	5.05E-04	6.79E-04	NA	NA	NA	NA	180	No
VOC	Discrete	No	1,2-Dichloroethane	mg/kg	No	40	0	0%	No	7.72E-04	0.00104	NA	NA	NA	NA	0.46	No
VOC	Discrete	No	1,2-Dichloropropane	mg/kg	No	40	0	0%	No	0.00169	0.00227	NA	NA	NA	NA	1.6	No
VOC	Discrete	No	1,3,5-Trimethylbenzene (Mesitylene)	mg/kg	No	40	0	0%	No	0.00238	0.00319	NA	NA	NA	NA	27	No
VOC	Discrete	No	1,3-Dichlorobenzene	mg/kg	No	40	0	0%	No	7.13E-04	9.58E-04	NA	NA	NA	NA	--	--
VOC	Discrete	No	1,3-Dichloropropane	mg/kg	No	40	0	0%	No	5.96E-04	8.00E-04	NA	NA	NA	NA	160	No
VOC	Discrete	No	1,4-Dichlorobenzene	mg/kg	No	40	0	0%	No	8.32E-04	0.00112	NA	NA	NA	NA	2.6	No
VOC	Discrete	No	2,2-Dichloropropane	mg/kg	No	40	0	0%	No	0.00164	0.0022	NA	NA	NA	NA	--	--
VOC	Discrete	No	2-Chlorotoluene	mg/kg	No	40	0	0%	No	0.00103	0.00138	NA	NA	NA	NA	160	No
VOC	Discrete	No	4-Chlorotoluene	mg/kg	No	40	0	0%	No	5.35E-04	7.18E-04	NA	NA	NA	NA	160	No
VOC	Discrete	No	Acetone	mg/kg	No	40	0	0%	No	0.0434	0.0583	NA	NA	NA	NA	7000	No
VOC	Discrete	No	Acrylonitrile	mg/kg	No	40	0	0%	No	0.00429	0.00576	NA	NA	NA	NA	0.25	No

TABLE 1  
SUMMARY STATISTICS OF DIOXINS/FURANS, SVOCS AND VOCS  
Former Houston Wood Preserving Works, Houston, Texas

Analyte Group	Sample Type	Sieved?	Analyte	Units	PCOC	Total Samples	Total Detects	Detection Frequency	Sufficient Data for Statistical Evaluation <sup>1</sup>	Minimum Detection Limit for Nondetect	Maximum Detection Limit for Nondetect	Minimum Detect	Median Detect	Mean Detect	Maximum Detect	SSL/RSL	Exceeds SSL/RSL
VOC	Discrete	No	Benzene	mg/kg	Yes	40	0	0%	No	5.55E-04	7.46E-04	NA	NA	NA	NA	1.2	No
VOC	Discrete	No	Bromobenzene	mg/kg	No	40	0	0%	No	0.00107	0.00144	NA	NA	NA	NA	29	No
VOC	Discrete	No	Bromodichloromethane	mg/kg	No	40	0	0%	No	8.62E-04	0.00116	NA	NA	NA	NA	0.29	No
VOC	Discrete	No	Bromoform	mg/kg	No	40	0	0%	No	0.00139	0.00187	NA	NA	NA	NA	19	No
VOC	Discrete	No	Bromomethane	mg/kg	No	40	0	0%	No	0.00234	0.00315	NA	NA	NA	NA	0.68	No
VOC	Discrete	No	Carbon Tetrachloride	mg/kg	No	40	0	0%	No	0.00107	0.00143	NA	NA	NA	NA	0.65	No
VOC	Discrete	No	Chlorobenzene	mg/kg	No	40	0	0%	No	2.50E-04	3.35E-04	NA	NA	NA	NA	28	No
VOC	Discrete	No	Chloroethane	mg/kg	No	40	0	0%	No	0.00202	0.00271	NA	NA	NA	NA	540	No
VOC	Discrete	No	Chloroform	mg/kg	No	40	2	5%	No	0.00122	0.00164	0.0104	0.01205	0.01205	0.0137	0.32	No
VOC	Discrete	No	Chloromethane	mg/kg	No	40	0	0%	No	0.00517	0.00695	NA	NA	NA	NA	11	No
VOC	Discrete	No	Cymene	mg/kg	No	40	1	3%	No	0.00303	0.00407	0.00542	0.00542	0.00542	0.00542	--	--
VOC	Discrete	No	Dibromochloromethane	mg/kg	No	40	0	0%	No	7.28E-04	9.77E-04	NA	NA	NA	NA	8.3	No
VOC	Discrete	No	Dibromomethane	mg/kg	No	40	0	0%	No	8.92E-04	0.0012	NA	NA	NA	NA	2.4	No
VOC	Discrete	No	Dichlorodifluoromethane	mg/kg	No	40	0	0%	No	0.00191	0.00257	NA	NA	NA	NA	8.7	No
VOC	Discrete	No	Ethylbenzene	mg/kg	No	40	2	5%	No	8.76E-04	0.00118	0.00184	0.002115	0.002115	0.00239	5.8	No
VOC	Discrete	No	Hexachlorobutadiene	mg/kg	No	40	2	5%	No	0.00713	0.00958	0.0262	0.0377	0.0377	0.0492	1.2	No
VOC	Discrete	No	Isopropyl Ether	mg/kg	No	40	1	3%	No	4.88E-04	6.55E-04	0.0017	0.0017	0.0017	0.0017	220	No
VOC	Discrete	No	Isopropylbenzene (Cumene)	mg/kg	No	40	0	0%	No	5.05E-04	6.79E-04	NA	NA	NA	NA	190	No
VOC	Discrete	No	Methyl Ethyl Ketone (2-Butanone)	mg/kg	No	40	0	0%	No	0.0755	0.101	NA	NA	NA	NA	2700	No
VOC	Discrete	No	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	mg/kg	No	40	1	3%	No	0.00271	0.00364	0.396	0.396	0.396	0.396	3300	No
VOC	Discrete	No	Methylene chloride	mg/kg	No	40	0	0%	No	0.0079	0.0106	NA	NA	NA	NA	35	No
VOC	Discrete	No	Styrene	mg/kg	No	40	1	3%	No	2.72E-04	3.66E-04	0.00174	0.00174	0.00174	0.00174	600	No
VOC	Discrete	No	Tetrachloroethylene (PCE)	mg/kg	No	40	1	3%	No	0.00107	0.00143	0.00268	0.00268	0.00268	0.00268	8.1	No
VOC	Discrete	No	Toluene	mg/kg	No	40	2	5%	No	0.00155	0.00208	0.00216	0.00248	0.00248	0.0028	490	No
VOC	Discrete	No	Trichloroethylene (TCE)	mg/kg	No	40	0	0%	No	6.94E-04	9.32E-04	NA	NA	NA	NA	0.41	No
VOC	Discrete	No	Trichlorofluoromethane	mg/kg	No	40	0	0%	No	9.83E-04	0.00132	NA	NA	NA	NA	2300	No
VOC	Discrete	No	Vinyl chloride	mg/kg	No	40	0	0%	No	0.00138	0.00185	NA	NA	NA	NA	0.059	No
VOC	Discrete	No	Xylenes, total	mg/kg	No	40	5	13%	No	0.00105	0.00141	0.00142	0.00206	0.006618	0.0212	58	No
VOC	Discrete	No	cis-1,2-Dichloroethylene	mg/kg	No	40	0	0%	No	8.73E-04	0.00117	NA	NA	NA	NA	6.3	No
VOC	Discrete	No	cis-1,3-Dichloropropene	mg/kg	No	40	0	0%	No	9.00E-04	0.00121	NA	NA	NA	NA	1.8	No
VOC	Discrete	No	n-Butylbenzene	mg/kg	No	40	0	0%	No	0.00624	0.00838	NA	NA	NA	NA	390	No
VOC	Discrete	No	n-Propylbenzene	mg/kg	No	40	1	3%	No	0.00113	0.00152	0.00144	0.00144	0.00144	0.00144	380	No
VOC	Discrete	No	sec-Butylbenzene	mg/kg	No	40	0	0%	No	0.00342	0.0046	NA	NA	NA	NA	780	No
VOC	Discrete	No	t-Butylbenzene	mg/kg	No	40	0	0%	No	0.00232	0.00311	NA	NA	NA	NA	780	No
VOC	Discrete	No	tert-Butyl methyl ether	mg/kg	No	40	0	0%	No	4.16E-04	5.59E-04	NA	NA	NA	NA	47	No
VOC	Discrete	No	trans-1,2-Dichloroethene	mg/kg	No	40	0	0%	No	0.00124	0.00166	NA	NA	NA	NA	7	No
VOC	Discrete	No	trans-1,3-Dichloropropene	mg/kg	No	40	0	0%	No	0.00136	0.00182	NA	NA	NA	NA	1.8	No

Notes:

- 1 - Data set was determined to have sufficient data for statistical evaluation if the detection frequency is greater than or equal to 50%.  
2 - Acenaphthylene data did not have a detection frequency greater than or equal to 50% for all six groups to be tested with the Kruskal-Wallis test.

mg/kg - milligrams per kilogram  
NA - not applicable  
ng/kg - nanograms per kilogram  
PCOC - potential contaminant of concern  
RSL - EPA regional screening level for SVOCs and VOCs  
SSL - risk-based site-specific screening level for TEQ

SVOC - semi-volatile organic compound  
2,3,7,8-TCDD TEQ - 2,3,7,8-tetrachlorodibenzo-p-dioxin toxic equivalency (WHO 2005, ND = MDL)  
Toxic equivalency using 2005 World Health Organization toxic equivalency factor for 2,3,7,8-tetrachlorodibenzo-p-dioxin  
MDL - method detection limit  
ND - non-detect  
VOC - volatile organic compound

TABLE 2  
KRUSKAL-WALLIS TEST RESULTS FOR SELECT DIOXINS/FURANS AND SVOCs  
Former Houston Wood Preserving Works, Houston, Texas

Analyte Group	Sample Type	Sieved	Analyte	PCOC	Degrees of Freedom	Chi-Square Test Statistic <sup>1</sup>	p-value	Statistically Significant Difference Among 6 BRA Groups? <sup>2</sup>	If differences exists, which groups show a difference? <sup>3</sup>
Dioxins/Furans	Composite	Yes	2,3,7,8-TCDD TEQ	Yes	5	4.81	0.439	No	
SVOC	Composite	No	Anthracene	Yes	5	3.89	0.566	No	
SVOC	Composite	No	Benzo(a)anthracene	Yes	5	10.65	0.059	No	
SVOC	Composite	No	Benzo(a)pyrene	Yes	5	11.76	0.038	Yes	Differences are between B 0 to 2 and A 2 to 6 and 6 to 12 and B 6 to 12.
SVOC	Composite	No	Benzo(b)fluoranthene	No	5	12.26	0.031	Yes	Differences are between B 0 to 2 and A 2 to 6 and 6 to 12 and B 6 to 12.
SVOC	Composite	No	Benzo(g,h,i)perylene	No	5	12.52	0.028	Yes	Differences are between B 0 to 2 and all A depths and B 6 to 12.
SVOC	Composite	No	Benzo(k)fluoranthene	No	5	12.12	0.033	Yes	Differences are between B 0 to 2 and all A depths and B 6 to 12.
SVOC	Composite	No	Chrysene	Yes	5	14.21	0.014	Yes	Differences are between B 0 to 2 and all A depths and B 6 to 12.
SVOC	Composite	No	Dibenz(a,h)anthracene	No	5	11.55	0.042	Yes	Differences are between B 0 to 2 and all A depths and B 6 to 12.
SVOC	Composite	No	Fluoranthene	Yes	5	11.91	0.036	Yes	Differences are between B 0 to 2 and A 2 to 6 and 6 to 12 and B 6 to 12.
SVOC	Composite	No	Indeno(1,2,3-c,d)pyrene	No	5	11.39	0.044	Yes	Differences are between B 0 to 2 and A 2 to 6 and 6 to 12 and B 6 to 12.
SVOC	Composite	No	Phenanthrene	Yes	5	9.12	0.104	No	
SVOC	Composite	No	Pyrene	Yes	5	12.67	0.027	Yes	Differences are between B 0 to 2 and A 2 to 6 and 6 to 12 and B 6 to 12.

Notes:

- 1 - Chi-square test statistic associated with the Kruskal-Wallis test
- 2 - Statistically significant differences determined based on a significance level of 5% or 0.05. If the p-value was less than 0.05, then it can be concluded that there are statistically significant differences in median concentrations among the six BRA groups.
- 3 - These differences were determined by pairwise Dunn's tests conducted at the 5% level of significance. The results of these tests are presented in Table A3 in Attachment A.

BRA - background reference area

df - degrees of freedom of the Kruskal-Wallis Test, i.e., number of groups being compared minus one (6-1=5).

SVOC - semi-volatile organic compound

2,3,7,8-TCDD TEQ - 2,3,7,8-tetrachlorodibenzo-p-dioxin toxic equivalency (WHO 2005, ND = MDL)

Toxic equivalency using 2005 World Health Organization toxic equivalency factor for 2,3,7,8-tetrachlorodibenzo-p-dioxin

MDL - method detection limit

ND - non-detect

TABLE 3  
CALCULATED BACKGROUND THRESHOLD VALUES FOR DIOXINS/FURANS, SVOCs AND VOCs  
Former Houston Wood Preserving Works, Houston, Texas

Analyte Group	Sample Type	Sieved?	Analyte	Units	PCOC	BRA Group	Total Samples	Total Detects	Detection Frequency <sup>1</sup>	Minimum Detect	Maximum Detect	SSL/RSL	BTV	Type of BTV	BTV without Outlier	Type of BTV without Outlier	Selected BTV	Type of Selected BTV
Dioxins/Furans	Composite	Yes	2,3,7,8-TCDD TEQ	ng/kg	Yes	Both BRA A and B	60	60	100%	0.91	33	48	33	Nonparametric 95-95 UTL	--	--	33	Nonparametric 95-95 UTL
SVOC	Composite	No	1,2,4-Trichlorobenzene	mg/kg	No	Both BRA A and B	60	0	0%	NA	NA	5.8	0.0117	DL Mode	--	--	0.0117	DL Mode
SVOC	Composite	No	1,2-Dichlorobenzene	mg/kg	No	Both BRA A and B	60	0	0%	NA	NA	180	0.0111	DL Mode	--	--	0.0111	DL Mode
SVOC	Composite	No	1,3-Dichlorobenzene	mg/kg	No	Both BRA A and B	60	0	0%	NA	NA	--	0.0114	DL Mode	--	--	0.0114	DL Mode
SVOC	Composite	No	1,4-Dichlorobenzene	mg/kg	No	Both BRA A and B	60	0	0%	NA	NA	2.6	0.0112	DL Mode	--	--	0.0112	DL Mode
SVOC	Composite	No	1-Methylnaphthalene	mg/kg	No	Both BRA A and B	60	10	17%	0.00598	0.147	18	0.147	Nonparametric 95-95 UTL	--	--	0.147	Nonparametric 95-95 UTL
SVOC	Composite	No	2,4,6-Trichlorophenol	mg/kg	No	Both BRA A and B	60	0	0%	NA	NA	6.3	0.0121	DL Mode	--	--	0.0121	DL Mode
SVOC	Composite	No	2,4-Dichlorophenol	mg/kg	No	Both BRA A and B	60	0	0%	NA	NA	19	0.0109	DL Mode	--	--	0.0109	DL Mode
SVOC	Composite	No	2,4-Dimethylphenol	mg/kg	Yes	Both BRA A and B	60	0	0%	NA	NA	130	0.01	DL Mode	--	--	0.01	DL Mode
SVOC	Composite	No	2,4-Dinitrophenol	mg/kg	No	Both BRA A and B	59	0	0%	NA	NA	13	0.0879	DL Mode	--	--	0.0879	DL Mode
SVOC	Composite	No	2,4-Dinitrotoluene	mg/kg	Yes	Both BRA A and B	60	0	0%	NA	NA	1.7	0.0108	DL Mode	--	--	0.0108	DL Mode
SVOC	Composite	No	2,6-Dinitrotoluene	mg/kg	No	Both BRA A and B	60	0	0%	NA	NA	0.36	0.0123	DL Mode	--	--	0.0123	DL Mode
SVOC	Composite	No	2-Chloronaphthalene	mg/kg	No	Both BRA A and B	60	0	0%	NA	NA	480	0.00536	DL Mode	--	--	0.00536	DL Mode
SVOC	Composite	No	2-Chlorophenol	mg/kg	No	Both BRA A and B	60	0	0%	NA	NA	39	0.0124	DL Mode	--	--	0.0124	DL Mode
SVOC	Composite	No	2-Methylnaphthalene	mg/kg	Yes	Both BRA A and B	60	12	20%	0.00514	0.448	24	0.448	Nonparametric 95-95 UTL	--	--	0.448	Nonparametric 95-95 UTL
SVOC	Composite	No	2-Nitrophenol	mg/kg	No	Both BRA A and B	60	0	0%	NA	NA	--	0.0134	DL Mode	--	--	0.0134	DL Mode
SVOC	Composite	No	3,3'-Dichlorobenzidine	mg/kg	No	Both BRA A and B	60	0	0%	NA	NA	1.2	0.0139	DL Mode	--	--	0.0139	DL Mode
SVOC	Composite	No	4,6-Dinitro-2-methylphenol	mg/kg	No	Both BRA A and B	60	0	0%	NA	NA	0.51	0.0868	DL Mode	--	--	0.0868	DL Mode
SVOC	Composite	No	4-Bromophenyl phenyl ether	mg/kg	No	Both BRA A and B	60	0	0%	NA	NA	--	0.0132	DL Mode	--	--	0.0132	DL Mode
SVOC	Composite	No	4-Chloro-3-methylphenol	mg/kg	No	Both BRA A and B	60	0	0%	NA	NA	630	0.0122	DL Mode	--	--	0.0122	DL Mode
SVOC	Composite	No	4-Chlorophenyl phenyl ether	mg/kg	No	Both BRA A and B	60	0	0%	NA	NA	--	0.0131	DL Mode	--	--	0.0131	DL Mode
SVOC	Composite	No	4-Nitrophenol	mg/kg	No	Both BRA A and B	60	0	0%	NA	NA	--	0.0117	DL Mode	--	--	0.0117	DL Mode
SVOC	Composite	No	Acenaphthene	mg/kg	Yes	Both BRA A and B	60	19	32%	0.00244	0.0662	360	0.0662	Nonparametric 95-95 UTL	--	--	0.0662	Nonparametric 95-95 UTL
SVOC	Composite	No	Acenaphthylene	mg/kg	No	Both BRA A and B	60	31	52%	0.00245	0.236	--	0.0303	Lognormal 95-95 UTL (KM)	--	--	0.0303	Lognormal 95-95 UTL (KM)
SVOC	Composite	No	Anthracene	mg/kg	Yes	Both BRA A and B	60	43	72%	0.00314	0.1	1800	0.0626	Lognormal 95-95 UTL (KM)	--	--	0.0626	Lognormal 95-95 UTL (KM)
SVOC	Composite	No	Benzdine	mg/kg	No	Both BRA A and B	56	0	0%	NA	NA	0.00053	0.0706	DL Mode	--	--	0.0706	DL Mode
SVOC	Composite	No	Benzo(a)anthracene	mg/kg	Yes	Both BRA A and B	60	58	97%	0.00234	1.01	1.1	0.434	Lognormal 95-95 UTL (KM)	--	--	0.434	Lognormal 95-95 UTL (KM)
SVOC	Composite	No	Benzo(a)pyrene	mg/kg	Yes	Both BRA A and B	60	58	97%	0.00305	0.752	0.11	0.433	Lognormal 95-95 UTL (ROS)	--	--	0.433	Lognormal 95-95 UTL (ROS)
SVOC	Composite	No	Benzo(a)pyrene	mg/kg	Yes	A	30	29	97%	0.00305	0.263	0.11	0.201	Gamma 95-95 UTL (ROS)	--	--		
SVOC	Composite	No	Benzo(a)pyrene	mg/kg	Yes	B	30	29	97%	0.00832	0.752	0.11	0.679	Lognormal 95-95 UTL (ROS)	--	--		
SVOC	Composite	No	Benzo(b)fluoranthene	mg/kg	No	Both BRA A and B	60	59	98%	0.00261	1.26	1.1	0.458	Gamma 95-95 UTL (KM)	--	--	0.458	Gamma 95-95 UTL (KM)
SVOC	Composite	No	Benzo(b)fluoranthene	mg/kg	No	A	30	29	97%	0.00525	0.371	1.1	0.32	Gamma 95-95 UTL (ROS)	--	--		
SVOC	Composite	No	Benzo(b)fluoranthene	mg/kg	No	B	30	30	100%	0.00261	1.26	1.1	0.719	Gamma 95-95 UTL (ROS)	--	--		
SVOC	Composite	No	Benzo(g,h,i)perylene	mg/kg	No	Both BRA A and B	60	58	97%	0.00328	0.462	--	0.208	Gamma 95-95 UTL (ROS)	--	--	0.208	Gamma 95-95 UTL (ROS)
SVOC	Composite	No	Benzo(g,h,i)perylene	mg/kg	No	A	30	29	97%	0.00328	0.178	--	0.116	Normal 95-95 UTL (KM)	--	--		
SVOC	Composite	No	Benzo(g,h,i)perylene	mg/kg	No	B	30	29	97%	0.00799	0.462	--	0.311	Gamma 95-95 UTL (ROS)	--	--		
SVOC	Composite	No	Benzo(k)fluoranthene	mg/kg	No	Both BRA A and B	60	55	92%	0.00317	0.484	11	0.206	Lognormal 95-95 UTL (KM)	--	--	0.206	Lognormal 95-95 UTL (KM)
SVOC	Composite	No	Benzo(k)fluoranthene	mg/kg	No	A	30	27	90%	0.00317	0.126	11	0.0966	Gamma 95-95 UTL (ROS)	--	--		
SVOC	Composite	No	Benzo(k)fluoranthene	mg/kg	No	B	30	28	93%	0.00456	0.484	11	0.358	Lognormal 95-95 UTL (KM)	--	--		
SVOC	Composite	No	Benzyl butyl phthalate	mg/kg	No	Both BRA A and B	60	13	22%	0.0135	14.8	290	14.8	Nonparametric 95-95 UTL	--	--	14.8	Nonparametric 95-95 UTL
SVOC	Composite	No	Bis(2-Chloroethoxy) methane	mg/kg	No	Both BRA A and B	60	0	0%	NA	NA	19	0.0113	DL Mode	--	--	0.0113	DL Mode
SVOC	Composite	No	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	mg/kg	No	Both BRA A and B	60	0	0%	NA	NA	0.23	0.0124	DL Mode	--	--	0.0124	DL Mode
SVOC	Composite	No	Bis(2-Chloroisopropyl) ether	mg/kg	No	Both BRA A and B	59	0	0%	NA	NA	310	0.0162	DL Mode	--	--	0.0162	DL Mode
SVOC	Composite	No	Bis(2-Ethylhexyl) phthalate	mg/kg	No	Both BRA A and B	60	23	38%	0.0477	0.389	39	0.389	Nonparametric 95-95 UTL	--	--	0.389	Nonparametric 95-95 UTL
SVOC	Composite	No	Chrysene	mg/kg	Yes	Both BRA A and B	60	58	97%	0.00318	1.17	110	0.454	Lognormal 95-95 UTL (KM)	--	--	0.454	Lognormal 95-95 UTL (KM)
SVOC	Composite	No	Chrysene	mg/kg	Yes	A	30	29	97%	0.00318	0.266	110	0.202	Gamma 95-95 UTL (KM)	--	--		
SVOC	Composite	No	Chrysene	mg/kg	Yes	B	30	29	97%	0.00817	1.17	110	0.793	Lognormal 95-95 UTL (KM)	--	--		
SVOC	Composite	No	Dibenz(a,h)anthracene	mg/kg	No	Both BRA A and B	60	51	85%	0.00228	0.143	0.11	0.0582	Lognormal 95-95 UTL (KM)	--	--	0.0582	Lognormal 95-95 UTL (KM)
SVOC	Composite	No	Dibenz(a,h)anthracene	mg/kg	No	A	30	24	80%	0.00228	0.0465	0.11	0.03	Gamma 95-95 UTL (KM)	--	--		
SVOC	Composite	No	Dibenz(a,h)anthracene	mg/kg	No	B	30	27	90%	0.00323	0.143	0.11	0.104	Lognormal 95-95 UTL (KM)	--	--		
SVOC	Composite	No	Diethyl phthalate	mg/kg	No	Both BRA A and B	60	0	0%	NA	NA	5100	0.0124	DL Mode	--	--	0.0124	DL Mode
SVOC	Composite	No	Dimethyl phthalate	mg/kg	No	Both BRA A and B	60	0	0%	NA	NA	--	0.0797	DL Mode	--	--	0.0797	DL Mode

TABLE 3  
CALCULATED BACKGROUND THRESHOLD VALUES FOR DIOXINS/FURANS, SVOCs AND VOCs  
Former Houston Wood Preserving Works, Houston, Texas

Analyte Group	Sample Type	Sieved?	Analyte	Units	PCOC	BRA Group	Total Samples	Total Detects	Detection Frequency <sup>1</sup>	Minimum Detect	Maximum Detect	SSL/RSL	BTV	Type of BTV	BTV without Outlier	Type of BTV without Outlier	Selected BTV	Type of Selected BTV
SVOC	Composite	No	Fluoranthene	mg/kg	Yes	Both BRA A and B	60	58	97%	0.00558	2.94	240	0.769	Lognormal 95-95 UTL (ROS)	0.377	Gamma 95-95 UTL (ROS)	0.769	Lognormal 95-95 UTL (ROS)
SVOC	Composite	No	Fluoranthene	mg/kg	Yes	A	30	29	97%	0.00558	0.78	240	0.755	Lognormal 95-95 UTL (KM)	--	--		
SVOC	Composite	No	Fluoranthene	mg/kg	Yes	B	30	29	97%	0.0127	2.94	240	1.117	Lognormal 95-95 UTL (ROS)	0.312	Normal 95-95 UTL (KM)		
SVOC	Composite	No	Fluorene	mg/kg	Yes	Both BRA A and B	60	16	27%	0.00271	0.0517	240	0.0517	Nonparametric 95-95 UTL	--	--	0.0517	Nonparametric 95-95 UTL
SVOC	Composite	No	Hexachlorobenzene	mg/kg	No	Both BRA A and B	60	0	0%	NA	NA	0.078	0.0133	DL Mode	--	--	0.0133	DL Mode
SVOC	Composite	No	Hexachlorobutadiene	mg/kg	No	Both BRA A and B	60	0	0%	NA	NA	1.2	0.0126	DL Mode	--	--	0.0126	DL Mode
SVOC	Composite	No	Hexachlorocyclopentadiene	mg/kg	No	Both BRA A and B	56	0	0%	NA	NA	0.18	0.0197	DL Mode	--	--	0.0197	DL Mode
SVOC	Composite	No	Hexachloroethane	mg/kg	No	Both BRA A and B	60	0	0%	NA	NA	1.8	0.0148	DL Mode	--	--	0.0148	DL Mode
SVOC	Composite	No	Indeno(1,2,3-c,d)pyrene	mg/kg	No	Both BRA A and B	60	57	95%	0.00261	0.57	1.1	0.355	Lognormal 95-95 UTL (ROS)	--	--	0.355	Lognormal 95-95 UTL (ROS)
SVOC	Composite	No	Indeno(1,2,3-c,d)pyrene	mg/kg	No	A	30	29	97%	0.00261	0.222	1.1	0.155	Gamma 95-95 UTL (ROS)	--	--		
SVOC	Composite	No	Indeno(1,2,3-c,d)pyrene	mg/kg	No	B	30	28	93%	0.00752	0.57	1.1	0.554	Lognormal 95-95 UTL (ROS)	--	--		
SVOC	Composite	No	Isophorone	mg/kg	No	Both BRA A and B	60	0	0%	NA	NA	570	0.0115	DL Mode	--	--	0.0115	DL Mode
SVOC	Composite	No	N-Nitrosodi-n-propylamine	mg/kg	No	Both BRA A and B	60	0	0%	NA	NA	0.078	0.0125	DL Mode	--	--	0.0125	DL Mode
SVOC	Composite	No	N-Nitrosodimethylamine	mg/kg	No	Both BRA A and B	60	0	0%	NA	NA	0.002	0.0561	DL Mode	--	--	0.0561	DL Mode
SVOC	Composite	No	N-Nitrosodiphenylamine	mg/kg	No	Both BRA A and B	60	0	0%	NA	NA	110	0.0284	DL Mode	--	--	0.0284	DL Mode
SVOC	Composite	No	Naphthalene	mg/kg	Yes	Both BRA A and B	60	12	20%	0.00482	0.754	2	0.754	Nonparametric 95-95 UTL	--	--	0.754	Nonparametric 95-95 UTL
SVOC	Composite	No	Nitrobenzene	mg/kg	No	Both BRA A and B	60	0	0%	NA	NA	5.1	0.0131	DL Mode	--	--	0.0131	DL Mode
SVOC	Composite	No	Pentachlorophenol	mg/kg	Yes	Both BRA A and B	60	2	3%	0.0734	0.0746	1	0.0746	Maximum Detect	--	--	0.0746	Maximum Detect
SVOC	Composite	No	Phenanthrene	mg/kg	Yes	Both BRA A and B	60	54	90%	0.00381	1.49	--	0.328	Lognormal 95-95 UTL (KM)	0.247	Lognormal 95-95 UTL (KM)	0.328	Lognormal 95-95 UTL (KM)
SVOC	Composite	No	Phenol	mg/kg	Yes	Both BRA A and B	60	0	0%	NA	NA	1900	0.0151	DL Mode	--	--	0.0151	DL Mode
SVOC	Composite	No	Pyrene	mg/kg	Yes	Both BRA A and B	60	58	97%	0.00472	1.89	180	0.634	Lognormal 95-95 UTL (ROS)	--	--	0.634	Lognormal 95-95 UTL (ROS)
SVOC	Composite	No	Pyrene	mg/kg	Yes	A	30	29	97%	0.00472	0.607	180	0.371	Gamma 95-95 UTL (KM)	--	--		
SVOC	Composite	No	Pyrene	mg/kg	Yes	B	30	29	97%	0.0117	1.89	180	0.875	Lognormal 95-95 UTL (ROS)	0.269	Normal 95-95 UTL (KM)		
SVOC	Composite	No	di-n-Butyl phthalate	mg/kg	No	Both BRA A and B	60	3	5%	0.0395	0.0838	630	0.0838	Maximum Detect	--	--	0.0838	Maximum Detect
SVOC	Composite	No	di-n-Octylphthalate	mg/kg	No	Both BRA A and B	59	0	0%	NA	NA	63	0.0254	DL Mode	--	--	0.0254	DL Mode
VOC	Discrete	No	1,1,1,2-Tetrachloroethane	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	2	0.00124	DL Mode	--	--	0.00124	DL Mode
VOC	Discrete	No	1,1,1-Trichloroethane (TCA)	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	810	0.00121	DL Mode	--	--	0.00121	DL Mode
VOC	Discrete	No	1,1,2,2-Tetrachloroethane	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	0.6	0.000908	DL Mode	--	--	0.000908	DL Mode
VOC	Discrete	No	1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	670	0.00105	DL Mode	--	--	0.00105	DL Mode
VOC	Discrete	No	1,1,2-Trichloroethane	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	0.15	0.00078	DL Mode	--	--	0.00078	DL Mode
VOC	Discrete	No	1,1-Dichloroethane	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	3.6	0.000642	DL Mode	--	--	0.000642	DL Mode
VOC	Discrete	No	1,1-Dichloroethene	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	23	0.000792	DL Mode	--	--	0.000792	DL Mode
VOC	Discrete	No	1,1-Dichloropropene	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	--	0.00106	DL Mode	--	--	0.00106	DL Mode
VOC	Discrete	No	1,2,3-Trichlorobenzene	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	6.3	0.0102	DL Mode	--	--	0.0102	DL Mode
VOC	Discrete	No	1,2,3-Trichloropropane	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	0.0051	0.00212	DL Mode	--	--	0.00212	DL Mode
VOC	Discrete	No	1,2,3-Trimethylbenzene	mg/kg	No	Both BRA A and B	40	2	5%	0.00261	0.0316	34	0.0316	Maximum Detect	--	--	0.0316	Maximum Detect
VOC	Discrete	No	1,2,4-Trichlorobenzene	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	5.8	0.0117	DL Mode	--	--	0.0117	DL Mode
VOC	Discrete	No	1,2,4-Trimethylbenzene	mg/kg	No	Both BRA A and B	40	1	3%	0.00398	0.00398	30	0.00398	Maximum Detect	--	--	0.00398	Maximum Detect
VOC	Discrete	No	1,2-Dibromo-3-chloropropane	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	0.0053	0.0051	DL Mode	--	--	0.0051	DL Mode
VOC	Discrete	No	1,2-Dibromoethane (Ethylene Dibromide)	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	0.036	0.000847	DL Mode	--	--	0.000847	DL Mode
VOC	Discrete	No	1,2-Dichlorobenzene	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	180	0.0111	DL Mode	--	--	0.0111	DL Mode
VOC	Discrete	No	1,2-Dichloroethane	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	0.46	0.000848	DL Mode	--	--	0.000848	DL Mode
VOC	Discrete	No	1,2-Dichloropropane	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	1.6	0.00186	DL Mode	--	--	0.00186	DL Mode
VOC	Discrete	No	1,3,5-Trimethylbenzene (Mesitylene)	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	27	0.00261	DL Mode	--	--	0.00261	DL Mode
VOC	Discrete	No	1,3-Dichlorobenzene	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	--	0.0114	DL Mode	--	--	0.0114	DL Mode
VOC	Discrete	No	1,3-Dichloropropane	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	160	0.000655	DL Mode	--	--	0.000655	DL Mode
VOC	Discrete	No	1,4-Dichlorobenzene	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	2.6	0.0112	DL Mode	--	--	0.0112	DL Mode
VOC	Discrete	No	2,2-Dichloropropane	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	--	0.0018	DL Mode	--	--	0.0018	DL Mode
VOC	Discrete	No	2-Chlorotoluene	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	160	0.00113	DL Mode	--	--	0.00113	DL Mode
VOC	Discrete	No	4-Chlorotoluene	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	160	0.000588	DL Mode	--	--	0.000588	DL Mode
VOC	Discrete	No	Acetone	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	7000	0.0477	DL Mode	--	--	0.0477	DL Mode
VOC	Discrete	No	Acrylonitrile	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	0.25	0.00472	DL Mode	--	--	0.00472	DL Mode
VOC	Discrete	No	Benzene	mg/kg	Yes	Both BRA A and B	40	0	0%	NA	NA	1.2	0.00061	DL Mode	--	--	0.00061	DL Mode
VOC	Discrete	No	Bromobenzene	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	29	0.00118	DL Mode	--	--	0.00118	DL Mode
VOC	Discrete	No	Bromodichloromethane	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	0.29	0.00101	DL Mode	--	--	0.00101	DL Mode



TABLE 3  
CALCULATED BACKGROUND THRESHOLD VALUES FOR DIOXINS/FURANS, SVOCs AND VOCs  
Former Houston Wood Preserving Works, Houston, Texas

Analyte Group	Sample Type	Sieved?	Analyte	Units	PCOC	BRA Group	Total Samples	Total Detects	Detection Frequency <sup>1</sup>	Minimum Detect	Maximum Detect	SSL/RSL	BTV	Type of BTV	BTV without Outlier	Type of BTV without Outlier	Selected BTV	Type of Selected BTV
VOC	Discrete	No	Bromoform	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	19	0.00153	DL Mode	--	--	0.00153	DL Mode
VOC	Discrete	No	Bromomethane	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	0.68	0.00257	DL Mode	--	--	0.00257	DL Mode
VOC	Discrete	No	Carbon Tetrachloride	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	0.65	0.00117	DL Mode	--	--	0.00117	DL Mode
VOC	Discrete	No	Chlorobenzene	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	28	0.000274	DL Mode	--	--	0.000274	DL Mode
VOC	Discrete	No	Chloroethane	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	540	0.00222	DL Mode	--	--	0.00222	DL Mode
VOC	Discrete	No	Chloroform	mg/kg	No	Both BRA A and B	40	2	5%	0.0104	0.0137	0.32	0.0137	Maximum Detect	--	--	0.0137	Maximum Detect
VOC	Discrete	No	Chloromethane	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	11	0.00568	DL Mode	--	--	0.00568	DL Mode
VOC	Discrete	No	Cymene	mg/kg	No	Both BRA A and B	40	1	3%	0.00542	0.00542	--	0.00542	Maximum Detect	--	--	0.00542	Maximum Detect
VOC	Discrete	No	Dibromochloromethane	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	8.3	0.0008	DL Mode	--	--	0.0008	DL Mode
VOC	Discrete	No	Dibromomethane	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	2.4	0.00102	DL Mode	--	--	0.00102	DL Mode
VOC	Discrete	No	Dichlorodifluoromethane	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	8.7	0.0021	DL Mode	--	--	0.0021	DL Mode
VOC	Discrete	No	Ethylbenzene	mg/kg	No	Both BRA A and B	40	2	5%	0.00184	0.00239	5.8	0.00239	Maximum Detect	--	--	0.00239	Maximum Detect
VOC	Discrete	No	Hexachlorobutadiene	mg/kg	No	Both BRA A and B	40	2	5%	0.0262	0.0492	1.2	0.0492	Maximum Detect	--	--	0.0492	Maximum Detect
VOC	Discrete	No	Isopropyl Ether	mg/kg	No	Both BRA A and B	40	1	3%	0.0017	0.0017	220	0.0017	Maximum Detect	--	--	0.0017	Maximum Detect
VOC	Discrete	No	Isopropylbenzene (Cumene)	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	190	0.000555	DL Mode	--	--	0.000555	DL Mode
VOC	Discrete	No	Methyl Ethyl Ketone (2-Butanone)	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	2700	0.083	DL Mode	--	--	0.083	DL Mode
VOC	Discrete	No	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	mg/kg	No	Both BRA A and B	40	1	3%	0.396	0.396	3300	0.396	Maximum Detect	--	--	0.396	Maximum Detect
VOC	Discrete	No	Methylene chloride	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	35	0.00868	DL Mode	--	--	0.00868	DL Mode
VOC	Discrete	No	Styrene	mg/kg	No	Both BRA A and B	40	1	3%	0.00174	0.00174	600	0.00174	Maximum Detect	--	--	0.00174	Maximum Detect
VOC	Discrete	No	Tetrachloroethylene (PCE)	mg/kg	No	Both BRA A and B	40	1	3%	0.00268	0.00268	8.1	0.00268	Maximum Detect	--	--	0.00268	Maximum Detect
VOC	Discrete	No	Toluene	mg/kg	No	Both BRA A and B	40	2	5%	0.00216	0.0028	490	0.0028	Maximum Detect	--	--	0.0028	Maximum Detect
VOC	Discrete	No	Trichloroethylene (TCE)	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	0.41	0.000763	DL Mode	--	--	0.000763	DL Mode
VOC	Discrete	No	Trichlorofluoromethane	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	2300	0.00108	DL Mode	--	--	0.00108	DL Mode
VOC	Discrete	No	Vinyl chloride	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	0.059	0.00152	DL Mode	--	--	0.00152	DL Mode
VOC	Discrete	No	Xylenes, total	mg/kg	No	Both BRA A and B	40	5	13%	0.00142	0.0212	58	0.0212	Maximum Detect	--	--	0.0212	Maximum Detect
VOC	Discrete	No	cis-1,2-Dichloroethylene	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	6.3	0.00102	DL Mode	--	--	0.00102	DL Mode
VOC	Discrete	No	cis-1,3-Dichloropropene	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	1.8	0.00103	DL Mode	--	--	0.00103	DL Mode
VOC	Discrete	No	n-Butylbenzene	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	390	0.00686	DL Mode	--	--	0.00686	DL Mode
VOC	Discrete	No	n-Propylbenzene	mg/kg	No	Both BRA A and B	40	1	3%	0.00144	0.00144	380	0.00144	Maximum Detect	--	--	0.00144	Maximum Detect
VOC	Discrete	No	sec-Butylbenzene	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	780	0.00376	DL Mode	--	--	0.00376	DL Mode
VOC	Discrete	No	t-Butylbenzene	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	780	0.00255	DL Mode	--	--	0.00255	DL Mode
VOC	Discrete	No	tert-Butyl methyl ether	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	47	0.000457	DL Mode	--	--	0.000457	DL Mode
VOC	Discrete	No	trans-1,2-Dichloroethene	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	7	0.00136	DL Mode	--	--	0.00136	DL Mode
VOC	Discrete	No	trans-1,3-Dichloropropene	mg/kg	No	Both BRA A and B	40	0	0%	NA	NA	1.8	0.00149	DL Mode	--	--	0.00149	DL Mode

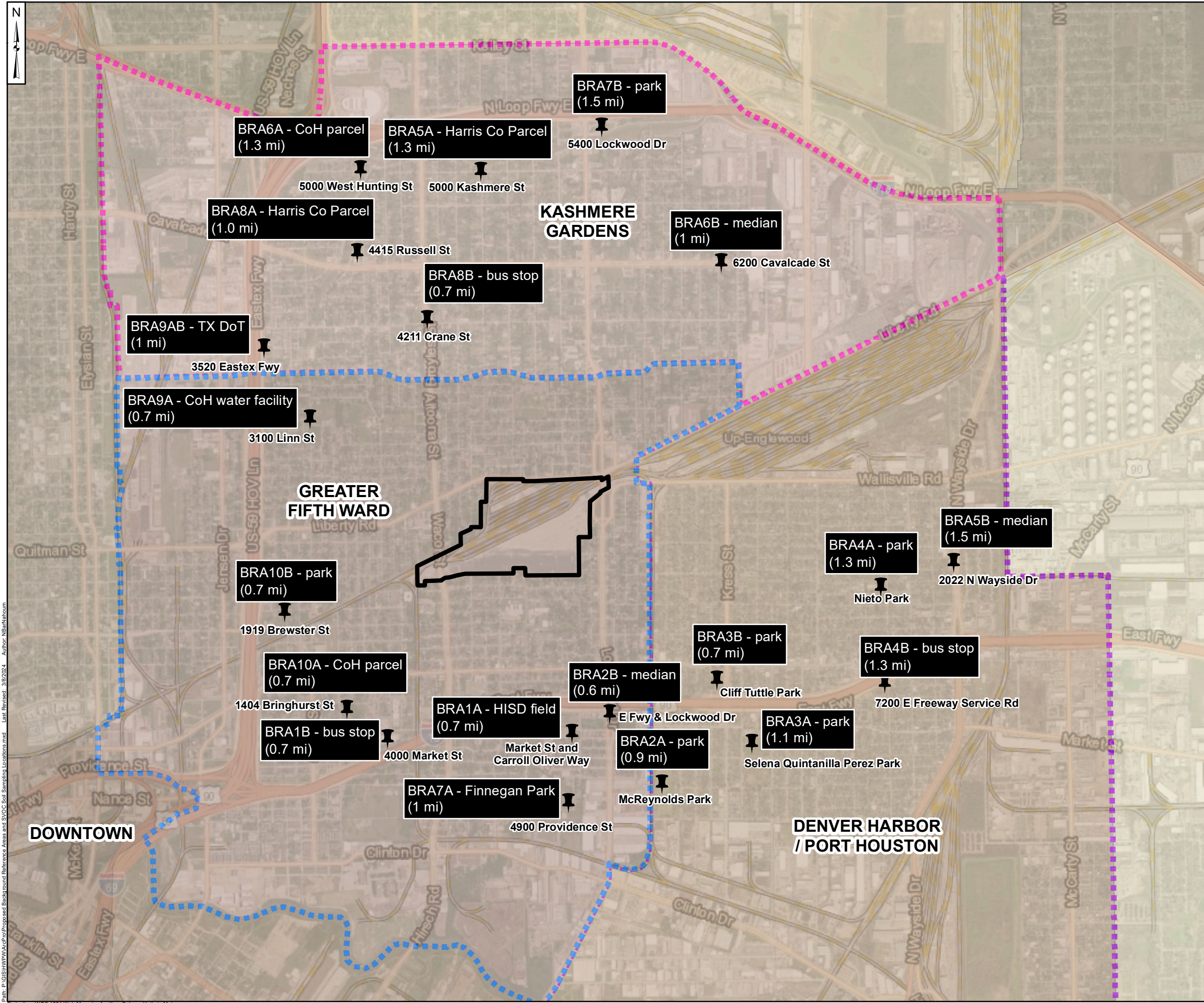
- Notes:**
- 1 - The following detection frequency rules were used for BTV calculations:
- a. 0% detection frequency - mode RL
  - b. Greater than 0% to 15% detection frequency – maximum detected concentration
  - c. Greater than 15% to 100% detection frequency – non-parametric or parametric methods based on data distribution

BRA - background reference area	RSL - EPA regional screening level for SVOCs and VOCs
BTV - background threshold value	SSL - risk-based site-specific screening level for TEQ
DL - detection limit	SVOC - semi-volatile organic compound
KM - Kaplan-Meier	2,3,7,8-TCDD TEQ - 2,3,7,8-tetrachlorodibenzo-p-dioxin toxic equivalency (WHO 2005, ND = MDL)
mg/kg - milligrams per kilogram	Toxic equivalency using 2005 World Health Organization toxic equivalency factor for 2,3,7,8-tetrachlorodibenzo-p-dioxin
NA - not applicable	MDL - method detection limit
ng/kg - nanograms per kilogram	ND - non-detect
PCOC - potential contaminant of concern	UTL - upper tolerance limit
ROS - regression on order statistics	VOC - volatile organic compound



## Figures





Legend

- PROPOSED BACKGROUND REFERENCE AREAS
- Approximate UPRR Property Boundary as defined in Appendix B of ASAOC For Removal Action Site Evaluation
- DENVER HARBOR / PORT HOUSTON
- DOWNTOWN
- EASTEX - JENSEN AREA
- EL DORADO / OATES PRAIRIE
- GREATER FIFTH WARD
- KASHMERE GARDENS
- NEAR NORTHSIDE
- PLEASANTVILLE AREA
- SECOND WARD
- SETTEGAST
- TRINITY / HOUSTON GARDENS



Notes:

\*TCEQ Houston Kirkpatrick CAMS 0404 monitor annual average 2020-2021, arrow displays prevailing wind direction.

- All proposed addresses are approximate
- The selection of background reference area (BRA) locations followed the EPA policy presented in the Guidance for Comparing Background and Chemical Concentrations in Soil for CERCLA Sites (EPA, 2002).
- Basemap Aerial Imagery: Esri, HERE, Garmin, (c) OpenStreetMap contributors

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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0.5 0.25 0 0.5 Kilometers

**Proposed Background Reference Areas for Soil Sampling**

Union Pacific Railroad  
Former Houston Wood Preserving Works, Houston, Texas

**Geosyntec**  
consultants

Figure  
**1**

Guelph December 2024



**Attachment A**  
**Supplemental Tables**

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
Dioxins/Furans	Composite	A	BRA01A	0 to 2	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	12	1	ng/kg
Dioxins/Furans	Composite	A	BRA01A	2 to 6	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	7.7	1	ng/kg
Dioxins/Furans	Composite	A	BRA01A	6 to 12	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	10	1	ng/kg
Dioxins/Furans	Composite	A	BRA02A	0 to 2	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	2.5	1	ng/kg
Dioxins/Furans	Composite	A	BRA02A	2 to 6	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	2.7	1	ng/kg
Dioxins/Furans	Composite	A	BRA02A	6 to 12	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	1.8	1	ng/kg
Dioxins/Furans	Composite	A	BRA03A	0 to 2	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	3	1	ng/kg
Dioxins/Furans	Composite	A	BRA03A	2 to 6	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	1.5	1	ng/kg
Dioxins/Furans	Composite	A	BRA03A	6 to 12	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	2.2	1	ng/kg
Dioxins/Furans	Composite	A	BRA04A	0 to 2	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	1.8	1	ng/kg
Dioxins/Furans	Composite	A	BRA04A	2 to 6	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	1.7	1	ng/kg
Dioxins/Furans	Composite	A	BRA04A	6 to 12	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	1.3	1	ng/kg
Dioxins/Furans	Composite	A	BRA05A	0 to 2	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	13	1	ng/kg
Dioxins/Furans	Composite	A	BRA05A	2 to 6	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	16	1	ng/kg
Dioxins/Furans	Composite	A	BRA05A	6 to 12	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	11	1	ng/kg
Dioxins/Furans	Composite	A	BRA06A	0 to 2	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	8.5	1	ng/kg
Dioxins/Furans	Composite	A	BRA06A	2 to 6	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	9.5	1	ng/kg
Dioxins/Furans	Composite	A	BRA06A	6 to 12	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	1.8	1	ng/kg
Dioxins/Furans	Composite	A	BRA07A	0 to 2	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	1.8	1	ng/kg
Dioxins/Furans	Composite	A	BRA07A	2 to 6	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	2.1	1	ng/kg
Dioxins/Furans	Composite	A	BRA07A	6 to 12	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	1.7	1	ng/kg
Dioxins/Furans	Composite	A	BRA08A	0 to 2	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	8.4	1	ng/kg
Dioxins/Furans	Composite	A	BRA08A	2 to 6	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	16	1	ng/kg
Dioxins/Furans	Composite	A	BRA08A	6 to 12	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	19	1	ng/kg
Dioxins/Furans	Composite	A	BRA09A	0 to 2	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	1.1	1	ng/kg
Dioxins/Furans	Composite	A	BRA09A	2 to 6	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	1.2	1	ng/kg
Dioxins/Furans	Composite	A	BRA09A	6 to 12	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	1.2	1	ng/kg
Dioxins/Furans	Composite	A	BRA10A	0 to 2	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	13	1	ng/kg
Dioxins/Furans	Composite	A	BRA10A	2 to 6	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	9.4	1	ng/kg
Dioxins/Furans	Composite	A	BRA10A	6 to 12	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	3.9	1	ng/kg
Dioxins/Furans	Composite	B	BRA01B	0 to 2	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	22	1	ng/kg
Dioxins/Furans	Composite	B	BRA01B	2 to 6	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	15	1	ng/kg
Dioxins/Furans	Composite	B	BRA01B	6 to 12	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	15	1	ng/kg
Dioxins/Furans	Composite	B	BRA02B	0 to 2	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	17	1	ng/kg
Dioxins/Furans	Composite	B	BRA02B	2 to 6	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	33	1	ng/kg
Dioxins/Furans	Composite	B	BRA02B	6 to 12	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	13	1	ng/kg
Dioxins/Furans	Composite	B	BRA03B	0 to 2	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	3.8	1	ng/kg
Dioxins/Furans	Composite	B	BRA03B	2 to 6	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	1.8	1	ng/kg
Dioxins/Furans	Composite	B	BRA03B	6 to 12	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	0.91	1	ng/kg
Dioxins/Furans	Composite	B	BRA04B	0 to 2	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	7	1	ng/kg
Dioxins/Furans	Composite	B	BRA04B	2 to 6	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	5.6	1	ng/kg
Dioxins/Furans	Composite	B	BRA04B	6 to 12	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	6.3	1	ng/kg
Dioxins/Furans	Composite	B	BRA05B	0 to 2	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	7.3	1	ng/kg
Dioxins/Furans	Composite	B	BRA05B	2 to 6	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	6.9	1	ng/kg
Dioxins/Furans	Composite	B	BRA05B	6 to 12	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	3.9	1	ng/kg
Dioxins/Furans	Composite	B	BRA06B	0 to 2	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	2.8	1	ng/kg
Dioxins/Furans	Composite	B	BRA06B	2 to 6	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	2.3	1	ng/kg
Dioxins/Furans	Composite	B	BRA06B	6 to 12	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	1.6	1	ng/kg
Dioxins/Furans	Composite	B	BRA07B	0 to 2	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	10	1	ng/kg
Dioxins/Furans	Composite	B	BRA07B	2 to 6	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	11	1	ng/kg
Dioxins/Furans	Composite	B	BRA07B	6 to 12	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	15	1	ng/kg
Dioxins/Furans	Composite	B	BRA08B	0 to 2	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	21	1	ng/kg
Dioxins/Furans	Composite	B	BRA08B	2 to 6	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	3.3	1	ng/kg
Dioxins/Furans	Composite	B	BRA08B	6 to 12	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	1.5	1	ng/kg
Dioxins/Furans	Composite	B	BRA09B	0 to 2	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	2.9	1	ng/kg
Dioxins/Furans	Composite	B	BRA09B	2 to 6	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	3.7	1	ng/kg
Dioxins/Furans	Composite	B	BRA09B	6 to 12	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	3.1	1	ng/kg
Dioxins/Furans	Composite	B	BRA10B	0 to 2	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	4.6	1	ng/kg
Dioxins/Furans	Composite	B	BRA10B	2 to 6	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	11	1	ng/kg
Dioxins/Furans	Composite	B	BRA10B	6 to 12	Yes	DFTEQ2005_ND1	2,3,7,8-TCDD TEQ	6.5	1	ng/kg
SVOC	Composite	A	BRA01A	0 to 2	No	120-82-1	1,2,4-Trichlorobenzene	0.0129	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	95-50-1	1,2-Dichlorobenzene	0.0122	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	541-73-1	1,3-Dichlorobenzene	0.0125	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	106-46-7	1,4-Dichlorobenzene	0.0123	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	90-12-0	1-Methylnaphthalene	0.00556	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	88-06-2	2,4,6-Trichlorophenol	0.0133	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	120-83-2	2,4-Dichlorophenol	0.012	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	105-67-9	2,4-Dimethylphenol	0.0108	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	51-28-5	2,4-Dinitrophenol	0.0965	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	121-14-2	2,4-Dinitrotoluene	0.0118	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	606-20-2	2,6-Dinitrotoluene	0.0135	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	91-58-7	2-Chloronaphthalene	0.00577	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	95-57-8	2-Chlorophenol	0.0136	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	91-57-6	2-Methylnaphthalene	0.00529	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	88-75-5	2-Nitrophenol	0.0147	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	91-94-1	3,3'-Dichlorobenzidine	0.0152	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0935	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	101-55-3	4-Bromophenyl phenyl ether	0.0145	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	59-50-7	4-Chloro-3-methylphenol	0.0134	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0144	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	100-02-7	4-Nitrophenol	0.0129	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	83-32-9	Acenaphthene	0.00306	1	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	208-96-8	Acenaphthylene	0.00268	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	120-12-7	Anthracene	0.00556	1	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	92-87-5	Benzidine	0.0775	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	56-55-3	Benzo(a)anthracene	0.0276	1	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	50-32-8	Benzo(a)pyrene	0.0313	1	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	205-99-2	Benzo(b)fluoranthene	0.0486	1	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	191-24-2	Benzo(g,h,i)perylene	0.0204	1	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	207-08-9	Benzo(k)fluoranthene	0.0167	1	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	A	BRA01A	0 to 2	No	85-68-7	Benzyl butyl phthalate	0.0129	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0124	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0136	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0178	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0523	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	218-01-9	Chrysene	0.0318	1	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	53-70-3	Dibenz(a,h)anthracene	0.00508	1	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	84-66-2	Diethyl phthalate	0.0136	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	131-11-3	Dimethyl phthalate	0.0874	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	84-74-2	di-n-Butyl phthalate	0.0141	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	117-84-0	di-n-Octylphthalate	0.0279	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	206-44-0	Fluoranthene	0.0534	1	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	86-73-7	Fluorene	0.00254	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	118-74-1	Hexachlorobenzene	0.0146	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	87-68-3	Hexachlorobutadiene	0.0139	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	77-47-4	Hexachlorocyclopentadiene	0.0217	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	67-72-1	Hexachloroethane	0.0162	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0234	1	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	78-59-1	Isophorone	0.0126	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	91-20-3	Naphthalene	0.00505	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	98-95-3	Nitrobenzene	0.0144	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	62-75-9	N-Nitrosodimethylamine	0.0612	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	621-64-7	N-Nitrosodi-n-propylamine	0.0137	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	86-30-6	N-Nitrosodiphenylamine	0.0312	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	87-86-5	Pentachlorophenol	0.0111	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	85-01-8	Phenanthrene	0.0259	1	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	108-95-2	Phenol	0.0166	0	mg/kg
SVOC	Composite	A	BRA01A	0 to 2	No	129-00-0	Pyrene	0.0452	1	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.0122	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.0116	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.0119	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.0116	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	90-12-0	1-Methylnaphthalene	0.00527	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	88-06-2	2,4,6-Trichlorophenol	0.0126	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	120-83-2	2,4-Dichlorophenol	0.0114	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	105-67-9	2,4-Dimethylphenol	0.0102	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	51-28-5	2,4-Dinitrophenol	0.0914	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	121-14-2	2,4-Dinitrotoluene	0.0112	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	606-20-2	2,6-Dinitrotoluene	0.0128	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	91-58-7	2-Chloronaphthalene	0.00547	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	95-57-8	2-Chlorophenol	0.0129	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	91-57-6	2-Methylnaphthalene	0.00501	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	88-75-5	2-Nitrophenol	0.014	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	91-94-1	3,3'-Dichlorobenzidine	0.0144	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0886	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	101-55-3	4-Bromophenyl phenyl ether	0.0137	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	59-50-7	4-Chloro-3-methylphenol	0.0127	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0136	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	100-02-7	4-Nitrophenol	0.0122	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	83-32-9	Acenaphthene	0.00245	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	208-96-8	Acenaphthylene	0.00253	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	120-12-7	Anthracene	0.00727	1	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	92-87-5	Benzdine	0.0735	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	56-55-3	Benzo(a)anthracene	0.018	1	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	50-32-8	Benzo(a)pyrene	0.0233	1	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	205-99-2	Benzo(b)fluoranthene	0.0436	1	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	191-24-2	Benzo(g,h,i)perylene	0.019	1	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	207-08-9	Benzo(k)fluoranthene	0.0141	1	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	85-68-7	Benzyl butyl phthalate	0.0122	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0117	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0129	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0169	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0495	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	218-01-9	Chrysene	0.0209	1	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	53-70-3	Dibenz(a,h)anthracene	0.0042	1	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	84-66-2	Diethyl phthalate	0.0129	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	131-11-3	Dimethyl phthalate	0.0828	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	84-74-2	di-n-Butyl phthalate	0.0787	1	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	117-84-0	di-n-Octylphthalate	0.0264	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	206-44-0	Fluoranthene	0.0276	1	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	86-73-7	Fluorene	0.00241	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	118-74-1	Hexachlorobenzene	0.0138	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	87-68-3	Hexachlorobutadiene	0.0131	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	77-47-4	Hexachlorocyclopentadiene	0.0205	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	67-72-1	Hexachloroethane	0.0154	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0187	1	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	78-59-1	Isophorone	0.012	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	91-20-3	Naphthalene	0.00479	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	98-95-3	Nitrobenzene	0.0136	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	62-75-9	N-Nitrosodimethylamine	0.058	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	621-64-7	N-Nitrosodi-n-propylamine	0.013	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	86-30-6	N-Nitrosodiphenylamine	0.0296	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	87-86-5	Pentachlorophenol	0.0105	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	85-01-8	Phenanthrene	0.00941	1	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	108-95-2	Phenol	0.0157	0	mg/kg
SVOC	Composite	A	BRA01A	2 to 6	No	129-00-0	Pyrene	0.0276	1	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00127	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00124	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00093	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00101	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
VOC	Discrete	A	BRA01A	2 to 6	No	79-00-5	1,1,2-Trichloroethane	0.0008	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	75-34-3	1,1-Dichloroethane	0.00066	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	75-35-4	1,1-Dichloroethene	0.00081	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	563-58-6	1,1-Dichloropropene	0.00108	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	87-61-6	1,2,3-Trichlorobenzene	0.00983	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	96-18-4	1,2,3-Trichloropropane	0.00217	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	526-73-8	1,2,3-Trimethylbenzene	0.00212	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.0059	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	95-63-6	1,2,4-Trimethylbenzene	0.00212	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00523	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00087	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.00057	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	107-06-2	1,2-Dichloroethane	0.00087	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	78-87-5	1,2-Dichloropropane	0.0019	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00268	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.00081	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	142-28-9	1,3-Dichloropropane	0.00067	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.00094	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	594-20-7	2,2-Dichloropropane	0.00185	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	95-49-8	2-Chlorotoluene	0.00116	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	106-43-4	4-Chlorotoluene	0.0006	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	67-64-1	Acetone	0.0489	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	107-13-1	Acrylonitrile	0.00484	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	71-43-2	Benzene	0.00063	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	108-86-1	Bromobenzene	0.00121	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	75-27-4	Bromodichloromethane	0.00097	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	75-25-2	Bromoform	0.00157	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	74-83-9	Bromomethane	0.00264	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	56-23-5	Carbon Tetrachloride	0.0012	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	108-90-7	Chlorobenzene	0.00028	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	75-00-3	Chloroethane	0.00228	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	67-66-3	Chloroform	0.00138	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	74-87-3	Chloromethane	0.00583	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	156-59-2	cis-1,2-Dichloroethylene	0.00098	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	10061-01-5	cis-1,3-Dichloropropene	0.00102	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	99-87-6	Cymene	0.00342	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	124-48-1	Dibromochloromethane	0.00082	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	74-95-3	Dibromomethane	0.00101	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	75-71-8	Dichlorodifluoromethane	0.00216	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	100-41-4	Ethylbenzene	0.00099	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	87-68-3	Hexachlorobutadiene	0.00805	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	108-20-3	Isopropyl Ether	0.00055	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	98-82-8	Isopropylbenzene (Cumene)	0.00057	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0852	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00306	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	75-09-2	Methylene chloride	0.0089	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	104-51-8	n-Butylbenzene	0.00704	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	103-65-1	n-Propylbenzene	0.00127	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	135-98-8	sec-Butylbenzene	0.00386	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	100-42-5	Styrene	0.00031	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	98-06-6	t-Butylbenzene	0.00262	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	1634-04-4	tert-Butyl methyl ether	0.00047	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	127-18-4	Tetrachloroethylene (PCE)	0.0012	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	108-88-3	Toluene	0.00174	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	156-60-5	trans-1,2-Dichloroethene	0.00139	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	10061-02-6	trans-1,3-Dichloropropene	0.00153	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	79-01-6	Trichloroethylene (TCE)	0.00078	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	75-69-4	Trichlorofluoromethane	0.00111	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	75-01-4	Vinyl chloride	0.00156	0	mg/kg
VOC	Discrete	A	BRA01A	2 to 6	No	1330-20-7	Xylenes, total	0.00118	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.0125	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.0119	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.0122	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.0119	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	90-12-0	1-Methylnaphthalene	0.00541	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	88-06-2	2,4,6-Trichlorophenol	0.0129	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	120-83-2	2,4-Dichlorophenol	0.0117	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	105-67-9	2,4-Dimethylphenol	0.0105	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	51-28-5	2,4-Dinitrophenol	0.0939	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	121-14-2	2,4-Dinitrotoluene	0.0115	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	606-20-2	2,6-Dinitrotoluene	0.0131	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	91-58-7	2-Chloronaphthalene	0.00562	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	95-57-8	2-Chlorophenol	0.0133	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	91-57-6	2-Methylnaphthalene	0.00515	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	88-75-5	2-Nitrophenol	0.0143	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	91-94-1	3,3'-Dichlorobenzidine	0.0148	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	534-52-1	4,6-Dinitro-2-methylphenol	0.091	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	101-55-3	4-Bromophenyl phenyl ether	0.0141	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	59-50-7	4-Chloro-3-methylphenol	0.013	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	7005-72-3	4-Chlorophenyl phenyl ether	0.014	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	100-02-7	4-Nitrophenol	0.0125	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	83-32-9	Acenaphthene	0.00252	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	208-96-8	Acenaphthylene	0.0026	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	120-12-7	Anthracene	0.00363	1	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	92-87-5	Benzdine	0.0755	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	56-55-3	Benzo(a)anthracene	0.0105	1	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	50-32-8	Benzo(a)pyrene	0.0107	1	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	205-99-2	Benzo(b)fluoranthene	0.0209	1	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	191-24-2	Benzo(g,h,i)perylene	0.00783	1	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	207-08-9	Benzo(k)fluoranthene	0.00667	1	mg/kg



TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	A	BRA01A	6 to 12	No	85-68-7	Benzyl butyl phthalate	0.0125	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0121	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0133	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0174	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0509	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	218-01-9	Chrysene	0.00883	1	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	53-70-3	Dibenz(a,h)anthracene	0.00228	1	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	84-66-2	Diethyl phthalate	0.0133	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	131-11-3	Dimethyl phthalate	0.0851	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	84-74-2	di-n-Butyl phthalate	0.0137	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	117-84-0	di-n-Octylphthalate	0.0271	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	206-44-0	Fluoranthene	0.0145	1	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	86-73-7	Fluorene	0.00247	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	118-74-1	Hexachlorobenzene	0.0142	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	87-68-3	Hexachlorobutadiene	0.0135	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	77-47-4	Hexachlorocyclopentadiene	0.0211	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	67-72-1	Hexachloroethane	0.0158	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.00807	1	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	78-59-1	Isophorone	0.0123	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	91-20-3	Naphthalene	0.00492	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	98-95-3	Nitrobenzene	0.014	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	62-75-9	N-Nitrosodimethylamine	0.0596	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	621-64-7	N-Nitrosodi-n-propylamine	0.0134	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	86-30-6	N-Nitrosodiphenylamine	0.0304	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	87-86-5	Pentachlorophenol	0.0108	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	85-01-8	Phenanthrene	0.00279	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	108-95-2	Phenol	0.0162	0	mg/kg
SVOC	Composite	A	BRA01A	6 to 12	No	129-00-0	Pyrene	0.0127	1	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00148	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00144	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00108	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00118	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	79-00-5	1,1,2-Trichloroethane	0.00093	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	75-34-3	1,1-Dichloroethane	0.00077	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	75-35-4	1,1-Dichloroethene	0.00094	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	563-58-6	1,1-Dichloropropene	0.00126	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	87-61-6	1,2,3-Trichlorobenzene	0.0114	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	96-18-4	1,2,3-Trichloropropane	0.00252	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	526-73-8	1,2,3-Trimethylbenzene	0.00246	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.00686	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	95-63-6	1,2,4-Trimethylbenzene	0.00246	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00608	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00101	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.00066	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	107-06-2	1,2-Dichloroethane	0.00101	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	78-87-5	1,2-Dichloropropane	0.00221	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00312	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.00094	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	142-28-9	1,3-Dichloropropane	0.00078	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.00109	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	594-20-7	2,2-Dichloropropane	0.00215	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	95-49-8	2-Chlorotoluene	0.00135	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	106-43-4	4-Chlorotoluene	0.0007	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	67-64-1	Acetone	0.0569	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	107-13-1	Acrylonitrile	0.00563	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	71-43-2	Benzene	0.00073	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	108-86-1	Bromobenzene	0.0014	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	75-27-4	Bromodichloromethane	0.00113	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	75-25-2	Bromoform	0.00182	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	74-83-9	Bromomethane	0.00307	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	56-23-5	Carbon Tetrachloride	0.0014	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	108-90-7	Chlorobenzene	0.00033	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	75-00-3	Chloroethane	0.00265	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	67-66-3	Chloroform	0.00161	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	74-87-3	Chloromethane	0.00678	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	156-59-2	cis-1,2-Dichloroethylene	0.00114	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	10061-01-5	cis-1,3-Dichloropropene	0.00118	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	99-87-6	Cymene	0.00397	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	124-48-1	Dibromochloromethane	0.00095	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	74-95-3	Dibromomethane	0.00117	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	75-71-8	Dichlorodifluoromethane	0.00251	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	100-41-4	Ethylbenzene	0.00115	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	87-68-3	Hexachlorobutadiene	0.00935	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	108-20-3	Isopropyl Ether	0.00064	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	98-82-8	Isopropylbenzene (Cumene)	0.00066	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.099	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00355	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	75-09-2	Methylene chloride	0.0103	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	104-51-8	n-Butylbenzene	0.00818	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	103-65-1	n-Propylbenzene	0.00148	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	135-98-8	sec-Butylbenzene	0.00449	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	100-42-5	Styrene	0.00036	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	98-06-6	t-Butylbenzene	0.00304	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	1634-04-4	tert-Butyl methyl ether	0.00055	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	127-18-4	Tetrachloroethylene (PCE)	0.0014	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	108-88-3	Toluene	0.00203	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	156-60-5	trans-1,2-Dichloroethene	0.00162	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	10061-02-6	trans-1,3-Dichloropropene	0.00178	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	79-01-6	Trichloroethylene (TCE)	0.00091	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	75-69-4	Trichlorofluoromethane	0.00129	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCs AND VOCs

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
VOC	Discrete	A	BRA01A	6 to 12	No	75-01-4	Vinyl chloride	0.00181	0	mg/kg
VOC	Discrete	A	BRA01A	6 to 12	No	1330-20-7	Xylenes, total	0.00137	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	120-82-1	1,2,4-Trichlorobenzene	0.0113	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	95-50-1	1,2-Dichlorobenzene	0.0107	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	541-73-1	1,3-Dichlorobenzene	0.011	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	106-46-7	1,4-Dichlorobenzene	0.0108	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	90-12-0	1-Methylnaphthalene	0.00488	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	88-06-2	2,4,6-Trichlorophenol	0.0116	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	120-83-2	2,4-Dichlorophenol	0.0106	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	105-67-9	2,4-Dimethylphenol	0.00946	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	51-28-5	2,4-Dinitrophenol	0.0847	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	121-14-2	2,4-Dinitrotoluene	0.0104	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	606-20-2	2,6-Dinitrotoluene	0.0119	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	91-58-7	2-Chloronaphthalene	0.00507	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	95-57-8	2-Chlorophenol	0.012	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	91-57-6	2-Methylnaphthalene	0.00465	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	88-75-5	2-Nitrophenol	0.0129	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	91-94-1	3,3'-Dichlorobenzidine	0.0134	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0821	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	101-55-3	4-Bromophenyl phenyl ether	0.0127	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	59-50-7	4-Chloro-3-methylphenol	0.0117	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0126	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	100-02-7	4-Nitrophenol	0.0113	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	83-32-9	Acenaphthene	0.00227	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	208-96-8	Acenaphthylene	0.00245	1	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	120-12-7	Anthracene	0.0025	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	92-87-5	Benzdine	0.0681	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	56-55-3	Benzo(a)anthracene	0.0109	1	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	50-32-8	Benzo(a)pyrene	0.0145	1	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	205-99-2	Benzo(b)fluoranthene	0.0215	1	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	191-24-2	Benzo(g,h,i)perylene	0.0148	1	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	207-08-9	Benzo(k)fluoranthene	0.00757	1	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	85-68-7	Benzyl butyl phthalate	0.0113	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0109	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.012	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0157	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0459	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	218-01-9	Chrysene	0.0137	1	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	53-70-3	Dibenz(a,h)anthracene	0.00288	1	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	84-66-2	Diethyl phthalate	0.012	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	131-11-3	Dimethyl phthalate	0.0768	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	84-74-2	di-n-Butyl phthalate	0.0124	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	117-84-0	di-n-Octylphthalate	0.0245	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	206-44-0	Fluoranthene	0.0219	1	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	86-73-7	Fluorene	0.00223	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	118-74-1	Hexachlorobenzene	0.0128	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	87-68-3	Hexachlorobutadiene	0.0122	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	77-47-4	Hexachlorocyclopentadiene	0.019	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	67-72-1	Hexachloroethane	0.0143	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.012	1	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	78-59-1	Isophorone	0.0111	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	91-20-3	Naphthalene	0.00444	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	98-95-3	Nitrobenzene	0.0126	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	62-75-9	N-Nitrosodimethylamine	0.0537	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	621-64-7	N-Nitrosodi-n-propylamine	0.0121	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	86-30-6	N-Nitrosodiphenylamine	0.0274	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	87-86-5	Pentachlorophenol	0.00975	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	85-01-8	Phenanthrene	0.00721	1	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	108-95-2	Phenol	0.0146	0	mg/kg
SVOC	Composite	A	BRA02A	0 to 2	No	129-00-0	Pyrene	0.0189	1	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.0117	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.0111	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.0114	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.0112	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	90-12-0	1-Methylnaphthalene	0.00505	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	88-06-2	2,4,6-Trichlorophenol	0.012	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	120-83-2	2,4-Dichlorophenol	0.0109	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	105-67-9	2,4-Dimethylphenol	0.00979	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	51-28-5	2,4-Dinitrophenol	0.0877	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	121-14-2	2,4-Dinitrotoluene	0.0107	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	606-20-2	2,6-Dinitrotoluene	0.0123	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	91-58-7	2-Chloronaphthalene	0.00525	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	95-57-8	2-Chlorophenol	0.0124	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	91-57-6	2-Methylnaphthalene	0.00481	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	88-75-5	2-Nitrophenol	0.0134	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	91-94-1	3,3'-Dichlorobenzidine	0.0138	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	534-52-1	4,6-Dinitro-2-methylphenol	0.085	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	101-55-3	4-Bromophenyl phenyl ether	0.0132	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	59-50-7	4-Chloro-3-methylphenol	0.0122	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0131	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	100-02-7	4-Nitrophenol	0.0117	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	83-32-9	Acenaphthene	0.00235	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	208-96-8	Acenaphthylene	0.00243	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	120-12-7	Anthracene	0.00259	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	92-87-5	Benzdine	0.0705	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	56-55-3	Benzo(a)anthracene	0.019	1	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	50-32-8	Benzo(a)pyrene	0.0223	1	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	205-99-2	Benzo(b)fluoranthene	0.0285	1	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	191-24-2	Benzo(g,h,i)perylene	0.0158	1	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	207-08-9	Benzo(k)fluoranthene	0.0111	1	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	A	BRA02A	2 to 6	No	85-68-7	Benzyl butyl phthalate	0.0117	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0113	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0124	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0162	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0475	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	218-01-9	Chrysene	0.0186	1	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	53-70-3	Dibenz(a,h)anthracene	0.00228	1	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	84-66-2	Diethyl phthalate	0.0124	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	131-11-3	Dimethyl phthalate	0.0795	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	84-74-2	di-n-Butyl phthalate	0.0128	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	117-84-0	di-n-Octylphthalate	0.0253	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	206-44-0	Fluoranthene	0.036	1	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	86-73-7	Fluorene	0.00231	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	118-74-1	Hexachlorobenzene	0.0133	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	87-68-3	Hexachlorobutadiene	0.0126	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	77-47-4	Hexachlorocyclopentadiene	0.0197	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	67-72-1	Hexachloroethane	0.0147	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0165	1	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	78-59-1	Isophorone	0.0115	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	91-20-3	Naphthalene	0.00459	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	98-95-3	Nitrobenzene	0.0131	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	62-75-9	N-Nitrosodimethylamine	0.0556	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	621-64-7	N-Nitrosodi-n-propylamine	0.0125	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	86-30-6	N-Nitrosodiphenylamine	0.0284	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	87-86-5	Pentachlorophenol	0.0101	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	85-01-8	Phenanthrene	0.016	1	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	108-95-2	Phenol	0.0151	0	mg/kg
SVOC	Composite	A	BRA02A	2 to 6	No	129-00-0	Pyrene	0.0339	1	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	630-20-6	1,1,1,2-Tetrachloroethane	0.0015	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00147	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	79-34-5	1,1,2,2-Tetrachloroethane	0.0011	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.0012	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	79-00-5	1,1,2-Trichloroethane	0.00095	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	75-34-3	1,1-Dichloroethane	0.00078	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	75-35-4	1,1-Dichloroethene	0.00096	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	563-58-6	1,1-Dichloropropene	0.00128	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	87-61-6	1,2,3-Trichlorobenzene	0.0116	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	96-18-4	1,2,3-Trichloropropane	0.00257	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	526-73-8	1,2,3-Trimethylbenzene	0.00251	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.00699	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	95-63-6	1,2,4-Trimethylbenzene	0.00251	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00619	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00103	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.00068	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	107-06-2	1,2-Dichloroethane	0.00103	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	78-87-5	1,2-Dichloropropane	0.00225	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00318	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.00095	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	142-28-9	1,3-Dichloropropane	0.0008	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.00111	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	594-20-7	2,2-Dichloropropane	0.00219	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	95-49-8	2-Chlorotoluene	0.00137	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	106-43-4	4-Chlorotoluene	0.00071	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	67-64-1	Acetone	0.0579	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	107-13-1	Acrylonitrile	0.00573	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	71-43-2	Benzene	0.00074	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	108-86-1	Bromobenzene	0.00143	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	75-27-4	Bromodichloromethane	0.00115	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	75-25-2	Bromoform	0.00186	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	74-83-9	Bromomethane	0.00313	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	56-23-5	Carbon Tetrachloride	0.00143	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	108-90-7	Chlorobenzene	0.00033	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	75-00-3	Chloroethane	0.0027	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	67-66-3	Chloroform	0.00164	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	74-87-3	Chloromethane	0.00691	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	156-59-2	cis-1,2-Dichloroethylene	0.00117	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	10061-01-5	cis-1,3-Dichloropropene	0.0012	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	99-87-6	Cymene	0.00405	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	124-48-1	Dibromochloromethane	0.00097	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	74-95-3	Dibromomethane	0.00119	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	75-71-8	Dichlorodifluoromethane	0.00256	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	100-41-4	Ethylbenzene	0.00117	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	87-68-3	Hexachlorobutadiene	0.00953	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	108-20-3	Isopropyl Ether	0.00065	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	98-82-8	Isopropylbenzene (Cumene)	0.00068	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.101	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00362	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	75-09-2	Methylene chloride	0.0105	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	104-51-8	n-Butylbenzene	0.00833	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	103-65-1	n-Propylbenzene	0.00151	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	135-98-8	sec-Butylbenzene	0.00457	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	100-42-5	Styrene	0.00036	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	98-06-6	t-Butylbenzene	0.0031	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	1634-04-4	tert-Butyl methyl ether	0.00056	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	127-18-4	Tetrachloroethylene (PCE)	0.00142	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	108-88-3	Toluene	0.00206	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	156-60-5	trans-1,2-Dichloroethene	0.00165	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	10061-02-6	trans-1,3-Dichloropropene	0.00181	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	79-01-6	Trichloroethylene (TCE)	0.00093	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	75-69-4	Trichlorofluoromethane	0.00131	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
VOC	Discrete	A	BRA02A	2 to 6	No	75-01-4	Vinyl chloride	0.00184	0	mg/kg
VOC	Discrete	A	BRA02A	2 to 6	No	1330-20-7	Xylenes, total	0.0014	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.0121	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.0115	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.0118	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.0116	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	90-12-0	1-Methylnaphthalene	0.00525	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	88-06-2	2,4,6-Trichlorophenol	0.0125	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	120-83-2	2,4-Dichlorophenol	0.0113	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	105-67-9	2,4-Dimethylphenol	0.0102	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	51-28-5	2,4-Dinitrophenol	0.091	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	121-14-2	2,4-Dinitrotoluene	0.0112	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	606-20-2	2,6-Dinitrotoluene	0.0127	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	91-58-7	2-Chloronaphthalene	0.00544	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	95-57-8	2-Chlorophenol	0.0129	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	91-57-6	2-Methylnaphthalene	0.00647	1	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	88-75-5	2-Nitrophenol	0.0139	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	91-94-1	3,3'-Dichlorobenzidine	0.0144	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0882	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	101-55-3	4-Bromophenyl phenyl ether	0.0137	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	59-50-7	4-Chloro-3-methylphenol	0.0126	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0136	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	100-02-7	4-Nitrophenol	0.0121	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	83-32-9	Acenaphthene	0.00244	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	208-96-8	Acenaphthylene	0.00252	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	120-12-7	Anthracene	0.00269	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	92-87-5	Benzidine	0.0731	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	56-55-3	Benzo(a)anthracene	0.00618	1	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	50-32-8	Benzo(a)pyrene	0.00687	1	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	205-99-2	Benzo(b)fluoranthene	0.00994	1	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	191-24-2	Benzo(g,h,i)perylene	0.00546	1	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	207-08-9	Benzo(k)fluoranthene	0.00317	1	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	85-68-7	Benzyl butyl phthalate	0.0121	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0117	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0129	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0168	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0493	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	218-01-9	Chrysene	0.00799	1	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	53-70-3	Dibenz(a,h)anthracene	0.00201	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	84-66-2	Diethyl phthalate	0.0129	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	131-11-3	Dimethyl phthalate	0.0825	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	84-74-2	di-n-Butyl phthalate	0.0133	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	117-84-0	di-n-Octylphthalate	0.0263	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	206-44-0	Fluoranthene	0.00992	1	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	86-73-7	Fluorene	0.00239	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	118-74-1	Hexachlorobenzene	0.0138	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	87-68-3	Hexachlorobutadiene	0.0131	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	77-47-4	Hexachlorocyclopentadiene	0.0204	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	67-72-1	Hexachloroethane	0.0153	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.00514	1	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	78-59-1	Isophorone	0.0119	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	91-20-3	Naphthalene	0.007	1	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	98-95-3	Nitrobenzene	0.0136	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	62-75-9	N-Nitrosodimethylamine	0.0577	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	621-64-7	N-Nitrosodi-n-propylamine	0.013	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	86-30-6	N-Nitrosodiphenylamine	0.0294	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	87-86-5	Pentachlorophenol	0.0105	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	85-01-8	Phenanthrene	0.00381	1	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	108-95-2	Phenol	0.0157	0	mg/kg
SVOC	Composite	A	BRA02A	6 to 12	No	129-00-0	Pyrene	0.00901	1	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00144	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.0014	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00105	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00114	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	79-00-5	1,1,2-Trichloroethane	0.0009	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	75-34-3	1,1-Dichloroethane	0.00074	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	75-35-4	1,1-Dichloroethene	0.00092	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	563-58-6	1,1-Dichloropropene	0.00122	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	87-61-6	1,2,3-Trichlorobenzene	0.0111	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	96-18-4	1,2,3-Trichloropropane	0.00245	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	526-73-8	1,2,3-Trimethylbenzene	0.00239	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.00666	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	95-63-6	1,2,4-Trimethylbenzene	0.00239	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	96-12-8	1,2-Dibromo-3-chloropropane	0.0059	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00098	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.00064	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	107-06-2	1,2-Dichloroethane	0.00098	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	78-87-5	1,2-Dichloropropane	0.00215	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00303	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.00091	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	142-28-9	1,3-Dichloropropane	0.00076	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.00106	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	594-20-7	2,2-Dichloropropane	0.00209	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	95-49-8	2-Chlorotoluene	0.00131	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	106-43-4	4-Chlorotoluene	0.00068	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	67-64-1	Acetone	0.0553	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	107-13-1	Acrylonitrile	0.00546	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	71-43-2	Benzene	0.00071	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	108-86-1	Bromobenzene	0.00136	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	75-27-4	Bromodichloromethane	0.0011	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
VOC	Discrete	A	BRA02A	6 to 12	No	75-25-2	Bromoform	0.00177	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	74-83-9	Bromomethane	0.00298	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	56-23-5	Carbon Tetrachloride	0.00136	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	108-90-7	Chlorobenzene	0.00032	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	75-00-3	Chloroethane	0.00257	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	67-66-3	Chloroform	0.00156	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	74-87-3	Chloromethane	0.00658	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	156-59-2	cis-1,2-Dichloroethylene	0.00111	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	10061-01-5	cis-1,3-Dichloropropene	0.00115	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	99-87-6	Cymene	0.00386	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	124-48-1	Dibromochloromethane	0.00093	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	74-95-3	Dibromomethane	0.00114	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	75-71-8	Dichlorodifluoromethane	0.00244	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	100-41-4	Ethylbenzene	0.00112	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	87-68-3	Hexachlorobutadiene	0.00908	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	108-20-3	Isopropyl Ether	0.00062	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	98-82-8	Isopropylbenzene (Cumene)	0.00064	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0961	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00345	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	75-09-2	Methylene chloride	0.0101	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	104-51-8	n-Butylbenzene	0.00795	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	103-65-1	n-Propylbenzene	0.00144	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	135-98-8	sec-Butylbenzene	0.00436	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	100-42-5	Styrene	0.00035	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	98-06-6	t-Butylbenzene	0.00295	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	1634-04-4	tert-Butyl methyl ether	0.00053	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	127-18-4	Tetrachloroethylene (PCE)	0.00136	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	108-88-3	Toluene	0.00197	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	156-60-5	trans-1,2-Dichloroethene	0.00157	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	10061-02-6	trans-1,3-Dichloropropene	0.00173	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	79-01-6	Trichloroethylene (TCE)	0.00088	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	75-69-4	Trichlorofluoromethane	0.00125	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	75-01-4	Vinyl chloride	0.00176	0	mg/kg
VOC	Discrete	A	BRA02A	6 to 12	No	1330-20-7	Xylenes, total	0.00133	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	120-82-1	1,2,4-Trichlorobenzene	0.0123	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	95-50-1	1,2-Dichlorobenzene	0.0116	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	541-73-1	1,3-Dichlorobenzene	0.0119	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	106-46-7	1,4-Dichlorobenzene	0.0117	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	90-12-0	1-Methylnaphthalene	0.00529	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	88-06-2	2,4,6-Trichlorophenol	0.0126	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	120-83-2	2,4-Dichlorophenol	0.0114	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	105-67-9	2,4-Dimethylphenol	0.0102	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	51-28-5	2,4-Dinitrophenol	0.0918	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	121-14-2	2,4-Dinitrotoluene	0.0112	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	606-20-2	2,6-Dinitrotoluene	0.0128	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	91-58-7	2-Chloronaphthalene	0.00549	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	95-57-8	2-Chlorophenol	0.013	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	91-57-6	2-Methylnaphthalene	0.00503	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	88-75-5	2-Nitrophenol	0.014	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	91-94-1	3,3'-Dichlorobenzidine	0.0145	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0889	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	101-55-3	4-Bromophenyl phenyl ether	0.0138	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	59-50-7	4-Chloro-3-methylphenol	0.0127	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0137	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	100-02-7	4-Nitrophenol	0.0123	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	83-32-9	Acenaphthene	0.00246	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	208-96-8	Acenaphthylene	0.00254	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	120-12-7	Anthracene	0.00271	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	92-87-5	Benzidine	0.0737	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	56-55-3	Benzo(a)anthracene	0.0125	1	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	50-32-8	Benzo(a)pyrene	0.0172	1	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	205-99-2	Benzo(b)fluoranthene	0.0294	1	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	191-24-2	Benzo(g,h,i)perylene	0.0184	1	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	207-08-9	Benzo(k)fluoranthene	0.0102	1	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	85-68-7	Benzyl butyl phthalate	0.0123	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0118	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.013	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.017	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0524	1	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	218-01-9	Chrysene	0.0144	1	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	53-70-3	Dibenz(a,h)anthracene	0.00362	1	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	84-66-2	Diethyl phthalate	0.013	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	131-11-3	Dimethyl phthalate	0.0832	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	84-74-2	di-n-Butyl phthalate	0.0134	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	117-84-0	di-n-Octylphthalate	0.0265	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	206-44-0	Fluoranthene	0.0241	1	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	86-73-7	Fluorene	0.00241	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	118-74-1	Hexachlorobenzene	0.0139	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	87-68-3	Hexachlorobutadiene	0.0132	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	77-47-4	Hexachlorocyclopentadiene	0.0206	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	67-72-1	Hexachloroethane	0.0154	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0161	1	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	78-59-1	Isophorone	0.012	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	91-20-3	Naphthalene	0.00481	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	98-95-3	Nitrobenzene	0.0137	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	62-75-9	N-Nitrosodimethylamine	0.0582	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	621-64-7	N-Nitrosodi-n-propylamine	0.0131	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	86-30-6	N-Nitrosodiphenylamine	0.0297	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	87-86-5	Pentachlorophenol	0.0106	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	85-01-8	Phenanthrene	0.00492	1	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	A	BRA03A	0 to 2	No	108-95-2	Phenol	0.0158	0	mg/kg
SVOC	Composite	A	BRA03A	0 to 2	No	129-00-0	Pyrene	0.0207	1	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.0118	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.0112	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.0115	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.0112	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	90-12-0	1-Methylnaphthalene	0.0051	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	88-06-2	2,4,6-Trichlorophenol	0.0121	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	120-83-2	2,4-Dichlorophenol	0.011	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	105-67-9	2,4-Dimethylphenol	0.00987	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	51-28-5	2,4-Dinitrophenol	0.0884	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	121-14-2	2,4-Dinitrotoluene	0.0108	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	606-20-2	2,6-Dinitrotoluene	0.0124	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	91-58-7	2-Chloronaphthalene	0.00529	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	95-57-8	2-Chlorophenol	0.0125	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	91-57-6	2-Methylnaphthalene	0.00485	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	88-75-5	2-Nitrophenol	0.0135	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	91-94-1	3,3'-Dichlorobenzidine	0.014	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0857	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	101-55-3	4-Bromophenyl phenyl ether	0.0133	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	59-50-7	4-Chloro-3-methylphenol	0.0123	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0132	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	100-02-7	4-Nitrophenol	0.0118	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	83-32-9	Acenaphthene	0.00237	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	208-96-8	Acenaphthylene	0.00245	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	120-12-7	Anthracene	0.00261	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	92-87-5	Benzidine	0.071	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	56-55-3	Benzo(a)anthracene	0.00234	1	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	50-32-8	Benzo(a)pyrene	0.00305	1	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	205-99-2	Benzo(b)fluoranthene	0.00531	1	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	191-24-2	Benzo(g,h,i)perylene	0.00328	1	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	207-08-9	Benzo(k)fluoranthene	0.00244	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	85-68-7	Benzyl butyl phthalate	0.0118	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0113	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0125	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0163	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0479	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	218-01-9	Chrysene	0.00322	1	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	53-70-3	Dibenz(a,h)anthracene	0.00195	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	84-66-2	Diethyl phthalate	0.0125	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	131-11-3	Dimethyl phthalate	0.0801	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	84-74-2	di-n-Butyl phthalate	0.0129	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	117-84-0	di-n-Octylphthalate	0.0255	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	206-44-0	Fluoranthene	0.00558	1	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	86-73-7	Fluorene	0.00233	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	118-74-1	Hexachlorobenzene	0.0134	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	87-68-3	Hexachlorobutadiene	0.0127	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	77-47-4	Hexachlorocyclopentadiene	0.0199	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	67-72-1	Hexachloroethane	0.0149	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.00261	1	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	78-59-1	Isophorone	0.0116	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	91-20-3	Naphthalene	0.00463	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	98-95-3	Nitrobenzene	0.0132	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	62-75-9	N-Nitrosodimethylamine	0.0561	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	621-64-7	N-Nitrosodi-n-propylamine	0.0126	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	86-30-6	N-Nitrosodiphenylamine	0.0286	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	87-86-5	Pentachlorophenol	0.0102	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	85-01-8	Phenanthrene	0.00262	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	108-95-2	Phenol	0.0152	0	mg/kg
SVOC	Composite	A	BRA03A	2 to 6	No	129-00-0	Pyrene	0.00472	1	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00124	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00121	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00091	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00099	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	79-00-5	1,1,2-Trichloroethane	0.00078	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	75-34-3	1,1-Dichloroethane	0.00064	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	75-35-4	1,1-Dichloroethene	0.00079	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	563-58-6	1,1-Dichloropropene	0.00106	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	87-61-6	1,2,3-Trichlorobenzene	0.00958	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	96-18-4	1,2,3-Trichloropropane	0.00212	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	526-73-8	1,2,3-Trimethylbenzene	0.00206	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.00575	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	95-63-6	1,2,4-Trimethylbenzene	0.00206	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	96-12-8	1,2-Dibromo-3-chloropropane	0.0051	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00085	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.00056	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	107-06-2	1,2-Dichloroethane	0.00085	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	78-87-5	1,2-Dichloropropane	0.00186	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00261	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.00078	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	142-28-9	1,3-Dichloropropane	0.00066	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.00092	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	594-20-7	2,2-Dichloropropane	0.0018	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	95-49-8	2-Chlorotoluene	0.00113	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	106-43-4	4-Chlorotoluene	0.00059	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	67-64-1	Acetone	0.0477	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	107-13-1	Acrylonitrile	0.00472	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	71-43-2	Benzene	0.00061	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	108-86-1	Bromobenzene	0.00118	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	75-27-4	Bromodichloromethane	0.00095	0	mg/kg



TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
VOC	Discrete	A	BRA03A	2 to 6	No	75-25-2	Bromoform	0.00153	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	74-83-9	Bromomethane	0.00257	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	56-23-5	Carbon Tetrachloride	0.00117	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	108-90-7	Chlorobenzene	0.00027	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	75-00-3	Chloroethane	0.00222	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	67-66-3	Chloroform	0.00135	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	74-87-3	Chloromethane	0.00568	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	156-59-2	cis-1,2-Dichloroethylene	0.00096	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	10061-01-5	cis-1,3-Dichloropropene	0.00099	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	99-87-6	Cymene	0.00333	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	124-48-1	Dibromochloromethane	0.0008	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	74-95-3	Dibromomethane	0.00098	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	75-71-8	Dichlorodifluoromethane	0.0021	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	100-41-4	Ethylbenzene	0.00239	1	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	87-68-3	Hexachlorobutadiene	0.00784	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	108-20-3	Isopropyl Ether	0.00054	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	98-82-8	Isopropylbenzene (Cumene)	0.00056	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.083	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00298	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	75-09-2	Methylene chloride	0.00868	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	104-51-8	n-Butylbenzene	0.00686	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	103-65-1	n-Propylbenzene	0.00144	1	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	135-98-8	sec-Butylbenzene	0.00376	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	100-42-5	Styrene	0.0003	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	98-06-6	t-Butylbenzene	0.00255	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	1634-04-4	tert-Butyl methyl ether	0.00046	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	127-18-4	Tetrachloroethylene (PCE)	0.00117	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	108-88-3	Toluene	0.0017	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	156-60-5	trans-1,2-Dichloroethene	0.00136	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	10061-02-6	trans-1,3-Dichloropropene	0.00149	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	79-01-6	Trichloroethylene (TCE)	0.00076	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	75-69-4	Trichlorofluoromethane	0.00108	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	75-01-4	Vinyl chloride	0.00152	0	mg/kg
VOC	Discrete	A	BRA03A	2 to 6	No	1330-20-7	Xylenes, total	0.0066	1	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.0118	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.0112	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.0115	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.0113	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	90-12-0	1-Methylnaphthalene	0.0051	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	88-06-2	2,4,6-Trichlorophenol	0.0122	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	120-83-2	2,4-Dichlorophenol	0.011	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	105-67-9	2,4-Dimethylphenol	0.00989	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	51-28-5	2,4-Dinitrophenol	0.0886	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	121-14-2	2,4-Dinitrotoluene	0.0109	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	606-20-2	2,6-Dinitrotoluene	0.0124	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	91-58-7	2-Chloronaphthalene	0.0053	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	95-57-8	2-Chlorophenol	0.0125	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	91-57-6	2-Methylnaphthalene	0.00485	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	88-75-5	2-Nitrophenol	0.0135	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	91-94-1	3,3'-Dichlorobenzidine	0.014	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0858	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	101-55-3	4-Bromophenyl phenyl ether	0.0133	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	59-50-7	4-Chloro-3-methylphenol	0.0123	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0132	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	100-02-7	4-Nitrophenol	0.0118	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	83-32-9	Acenaphthene	0.00238	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	208-96-8	Acenaphthylene	0.00246	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	120-12-7	Anthracene	0.00261	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	92-87-5	Benzidine	0.0712	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	56-55-3	Benzo(a)anthracene	0.00197	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	50-32-8	Benzo(a)pyrene	0.00204	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	205-99-2	Benzo(b)fluoranthene	0.00174	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	191-24-2	Benzo(g,h,i)perylene	0.00201	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	207-08-9	Benzo(k)fluoranthene	0.00244	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	85-68-7	Benzyl butyl phthalate	0.0118	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0114	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0125	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0164	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.048	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	218-01-9	Chrysene	0.00264	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	53-70-3	Dibenz(a,h)anthracene	0.00196	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	84-66-2	Diethyl phthalate	0.0125	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	131-11-3	Dimethyl phthalate	0.0803	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	84-74-2	di-n-Butyl phthalate	0.013	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	117-84-0	di-n-Octylphthalate	0.0256	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	206-44-0	Fluoranthene	0.00258	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	86-73-7	Fluorene	0.00233	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	118-74-1	Hexachlorobenzene	0.0134	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	87-68-3	Hexachlorobutadiene	0.0127	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	77-47-4	Hexachlorocyclopentadiene	0.0199	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	67-72-1	Hexachloroethane	0.0149	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.00206	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	78-59-1	Isophorone	0.0116	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	91-20-3	Naphthalene	0.00464	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	98-95-3	Nitrobenzene	0.0132	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	62-75-9	N-Nitrosodimethylamine	0.0562	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	621-64-7	N-Nitrosodi-n-propylamine	0.0126	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	86-30-6	N-Nitrosodiphenylamine	0.0286	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	87-86-5	Pentachlorophenol	0.0102	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	85-01-8	Phenanthrene	0.00263	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	A	BRA03A	6 to 12	No	108-95-2	Phenol	0.0152	0	mg/kg
SVOC	Composite	A	BRA03A	6 to 12	No	129-00-0	Pyrene	0.00227	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00124	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00121	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00091	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00099	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	79-00-5	1,1,2-Trichloroethane	0.00078	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	75-34-3	1,1-Dichloroethane	0.00064	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	75-35-4	1,1-Dichloroethene	0.00079	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	563-58-6	1,1-Dichloropropene	0.00106	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	87-61-6	1,2,3-Trichlorobenzene	0.00958	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	96-18-4	1,2,3-Trichloropropane	0.00212	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	526-73-8	1,2,3-Trimethylbenzene	0.00206	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.00575	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	95-63-6	1,2,4-Trimethylbenzene	0.00206	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	96-12-8	1,2-Dibromo-3-chloropropane	0.0051	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00085	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.00056	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	107-06-2	1,2-Dichloroethane	0.00085	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	78-87-5	1,2-Dichloropropane	0.00186	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00261	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.00078	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	142-28-9	1,3-Dichloropropane	0.00066	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.00092	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	594-20-7	2,2-Dichloropropane	0.0018	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	95-49-8	2-Chlorotoluene	0.00113	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	106-43-4	4-Chlorotoluene	0.00059	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	67-64-1	Acetone	0.0477	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	107-13-1	Acrylonitrile	0.00472	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	71-43-2	Benzene	0.00061	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	108-86-1	Bromobenzene	0.00118	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	75-27-4	Bromodichloromethane	0.00095	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	75-25-2	Bromoform	0.00153	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	74-83-9	Bromomethane	0.00257	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	56-23-5	Carbon Tetrachloride	0.00117	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	108-90-7	Chlorobenzene	0.00027	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	75-00-3	Chloroethane	0.00222	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	67-66-3	Chloroform	0.00135	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	74-87-3	Chloromethane	0.00568	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	156-59-2	cis-1,2-Dichloroethylene	0.00096	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	10061-01-5	cis-1,3-Dichloropropene	0.00099	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	99-87-6	Cymene	0.00333	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	124-48-1	Dibromochloromethane	0.0008	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	74-95-3	Dibromomethane	0.00098	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	75-71-8	Dichlorodifluoromethane	0.0021	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	100-41-4	Ethylbenzene	0.00096	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	87-68-3	Hexachlorobutadiene	0.00784	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	108-20-3	Isopropyl Ether	0.00054	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	98-82-8	Isopropylbenzene (Cumene)	0.00056	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.083	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00298	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	75-09-2	Methylene chloride	0.00868	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	104-51-8	n-Butylbenzene	0.00686	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	103-65-1	n-Propylbenzene	0.00124	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	135-98-8	sec-Butylbenzene	0.00376	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	100-42-5	Styrene	0.0003	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	98-06-6	t-Butylbenzene	0.00255	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	1634-04-4	tert-Butyl methyl ether	0.00046	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	127-18-4	Tetrachloroethylene (PCE)	0.00117	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	108-88-3	Toluene	0.0017	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	156-60-5	trans-1,2-Dichloroethene	0.00136	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	10061-02-6	trans-1,3-Dichloropropene	0.00149	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	79-01-6	Trichloroethylene (TCE)	0.00076	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	75-69-4	Trichlorofluoromethane	0.00108	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	75-01-4	Vinyl chloride	0.00152	0	mg/kg
VOC	Discrete	A	BRA03A	6 to 12	No	1330-20-7	Xylenes, total	0.00115	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	120-82-1	1,2,4-Trichlorobenzene	0.012	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	95-50-1	1,2-Dichlorobenzene	0.0113	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	541-73-1	1,3-Dichlorobenzene	0.0116	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	106-46-7	1,4-Dichlorobenzene	0.0114	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	90-12-0	1-Methylnaphthalene	0.00516	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	88-06-2	2,4,6-Trichlorophenol	0.0123	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	120-83-2	2,4-Dichlorophenol	0.0112	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	105-67-9	2,4-Dimethylphenol	0.01	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	51-28-5	2,4-Dinitrophenol	0.0896	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	121-14-2	2,4-Dinitrotoluene	0.011	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	606-20-2	2,6-Dinitrotoluene	0.0125	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	91-58-7	2-Chloronaphthalene	0.00536	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	95-57-8	2-Chlorophenol	0.0126	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	91-57-6	2-Methylnaphthalene	0.00491	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	88-75-5	2-Nitrophenol	0.0137	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	91-94-1	3,3'-Dichlorobenzidine	0.0141	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0868	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	101-55-3	4-Bromophenyl phenyl ether	0.0135	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	59-50-7	4-Chloro-3-methylphenol	0.0124	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0133	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	100-02-7	4-Nitrophenol	0.012	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	83-32-9	Acenaphthene	0.0024	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	208-96-8	Acenaphthylene	0.00248	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	120-12-7	Anthracene	0.0135	1	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	A	BRA04A	0 to 2	No	92-87-5	Benzidine	0.072	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	56-55-3	Benzo(a)anthracene	0.0494	1	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	50-32-8	Benzo(a)pyrene	0.0484	1	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	205-99-2	Benzo(b)fluoranthene	0.0714	1	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	191-24-2	Benzo(g,h,i)perylene	0.0328	1	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	207-08-9	Benzo(k)fluoranthene	0.0244	1	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	85-68-7	Benzyl butyl phthalate	0.0135	1	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0115	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0126	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0166	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.163	1	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	218-01-9	Chrysene	0.0477	1	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	53-70-3	Dibenz(a,h)anthracene	0.00461	1	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	84-66-2	Diethyl phthalate	0.0126	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	131-11-3	Dimethyl phthalate	0.0812	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	84-74-2	di-n-Butyl phthalate	0.0131	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	117-84-0	di-n-Octylphthalate	0.0259	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	206-44-0	Fluoranthene	0.104	1	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	86-73-7	Fluorene	0.00628	1	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	118-74-1	Hexachlorobenzene	0.0136	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	87-68-3	Hexachlorobutadiene	0.0129	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	77-47-4	Hexachlorocyclopentadiene	0.0201	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	67-72-1	Hexachloroethane	0.0151	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0352	1	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	78-59-1	Isophorone	0.0117	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	91-20-3	Naphthalene	0.00469	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	98-95-3	Nitrobenzene	0.0133	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	62-75-9	N-Nitrosodimethylamine	0.0568	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	621-64-7	N-Nitrosodi-n-propylamine	0.0128	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	86-30-6	N-Nitrosodiphenylamine	0.029	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	87-86-5	Pentachlorophenol	0.0103	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	85-01-8	Phenanthrene	0.0676	1	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	108-95-2	Phenol	0.0154	0	mg/kg
SVOC	Composite	A	BRA04A	0 to 2	No	129-00-0	Pyrene	0.0854	1	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.012	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.0113	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.0116	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.0114	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	90-12-0	1-Methylnaphthalene	0.00516	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	88-06-2	2,4,6-Trichlorophenol	0.0123	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	120-83-2	2,4-Dichlorophenol	0.0111	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	105-67-9	2,4-Dimethylphenol	0.01	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	51-28-5	2,4-Dinitrophenol	0.0895	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	121-14-2	2,4-Dinitrotoluene	0.011	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	606-20-2	2,6-Dinitrotoluene	0.0125	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	91-58-7	2-Chloronaphthalene	0.00536	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	95-57-8	2-Chlorophenol	0.0126	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	91-57-6	2-Methylnaphthalene	0.00491	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	88-75-5	2-Nitrophenol	0.0137	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	91-94-1	3,3'-Dichlorobenzidine	0.0141	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0868	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	101-55-3	4-Bromophenyl phenyl ether	0.0134	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	59-50-7	4-Chloro-3-methylphenol	0.0124	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0133	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	100-02-7	4-Nitrophenol	0.012	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	83-32-9	Acenaphthene	0.0662	1	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	208-96-8	Acenaphthylene	0.00248	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	120-12-7	Anthracene	0.0974	1	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	92-87-5	Benzidine	0.0719	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	56-55-3	Benzo(a)anthracene	0.332	1	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	50-32-8	Benzo(a)pyrene	0.263	1	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	205-99-2	Benzo(b)fluoranthene	0.371	1	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	191-24-2	Benzo(g,h,i)perylene	0.178	1	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	207-08-9	Benzo(k)fluoranthene	0.126	1	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	85-68-7	Benzyl butyl phthalate	0.012	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0115	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0126	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0166	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0485	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	218-01-9	Chrysene	0.266	1	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	53-70-3	Dibenz(a,h)anthracene	0.0465	1	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	84-66-2	Diethyl phthalate	0.0126	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	131-11-3	Dimethyl phthalate	0.0811	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	84-74-2	di-n-Butyl phthalate	0.0131	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	117-84-0	di-n-Octylphthalate	0.0259	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	206-44-0	Fluoranthene	0.78	1	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	86-73-7	Fluorene	0.0461	1	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	118-74-1	Hexachlorobenzene	0.0136	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	87-68-3	Hexachlorobutadiene	0.0129	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	77-47-4	Hexachlorocyclopentadiene	0.0201	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	67-72-1	Hexachloroethane	0.0151	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.222	1	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	78-59-1	Isophorone	0.0117	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	91-20-3	Naphthalene	0.0339	1	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	98-95-3	Nitrobenzene	0.0133	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	62-75-9	N-Nitrosodimethylamine	0.0568	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	621-64-7	N-Nitrosodi-n-propylamine	0.0128	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	86-30-6	N-Nitrosodiphenylamine	0.029	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	87-86-5	Pentachlorophenol	0.0103	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	85-01-8	Phenanthrene	0.59	1	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	A	BRA04A	2 to 6	No	108-95-2	Phenol	0.0154	0	mg/kg
SVOC	Composite	A	BRA04A	2 to 6	No	129-00-0	Pyrene	0.607	1	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00127	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00123	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00093	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00101	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	79-00-5	1,1,2-Trichloroethane	0.0008	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	75-34-3	1,1-Dichloroethane	0.00066	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	75-35-4	1,1-Dichloroethene	0.00081	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	563-58-6	1,1-Dichloropropene	0.00108	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	87-61-6	1,2,3-Trichlorobenzene	0.00979	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	96-18-4	1,2,3-Trichloropropane	0.00216	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	526-73-8	1,2,3-Trimethylbenzene	0.00211	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.00588	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	95-63-6	1,2,4-Trimethylbenzene	0.00211	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00521	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00087	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.00057	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	107-06-2	1,2-Dichloroethane	0.00087	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	78-87-5	1,2-Dichloropropane	0.0019	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00267	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.0008	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	142-28-9	1,3-Dichloropropane	0.00067	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.00094	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	594-20-7	2,2-Dichloropropane	0.00184	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	95-49-8	2-Chlorotoluene	0.00116	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	106-43-4	4-Chlorotoluene	0.0006	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	67-64-1	Acetone	0.0488	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	107-13-1	Acrylonitrile	0.00482	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	71-43-2	Benzene	0.00062	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	108-86-1	Bromobenzene	0.0012	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	75-27-4	Bromodichloromethane	0.00097	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	75-25-2	Bromoform	0.00156	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	74-83-9	Bromomethane	0.00263	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	56-23-5	Carbon Tetrachloride	0.0012	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	108-90-7	Chlorobenzene	0.00028	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	75-00-3	Chloroethane	0.00227	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	67-66-3	Chloroform	0.00138	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	74-87-3	Chloromethane	0.00581	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	156-59-2	cis-1,2-Dichloroethylene	0.00098	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	10061-01-5	cis-1,3-Dichloropropene	0.00101	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	99-87-6	Cymene	0.00341	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	124-48-1	Dibromochloromethane	0.00082	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	74-95-3	Dibromomethane	0.001	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	75-71-8	Dichlorodifluoromethane	0.00215	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	100-41-4	Ethylbenzene	0.00098	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	87-68-3	Hexachlorobutadiene	0.00801	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	108-20-3	Isopropyl Ether	0.00055	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	98-82-8	Isopropylbenzene (Cumene)	0.00057	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0848	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00305	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	75-09-2	Methylene chloride	0.00887	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	104-51-8	n-Butylbenzene	0.00701	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	103-65-1	n-Propylbenzene	0.00127	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	135-98-8	sec-Butylbenzene	0.00385	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	100-42-5	Styrene	0.00031	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	98-06-6	t-Butylbenzene	0.0026	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	1634-04-4	tert-Butyl methyl ether	0.00047	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	127-18-4	Tetrachloroethylene (PCE)	0.0012	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	108-88-3	Toluene	0.00174	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	156-60-5	trans-1,2-Dichloroethene	0.00139	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	10061-02-6	trans-1,3-Dichloropropene	0.00152	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	79-01-6	Trichloroethylene (TCE)	0.00078	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	75-69-4	Trichlorofluoromethane	0.0011	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	75-01-4	Vinyl chloride	0.00155	0	mg/kg
VOC	Discrete	A	BRA04A	2 to 6	No	1330-20-7	Xylenes, total	0.00118	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.012	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.0113	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.0116	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.0114	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	90-12-0	1-Methylnaphthalene	0.00516	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	88-06-2	2,4,6-Trichlorophenol	0.0123	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	120-83-2	2,4-Dichlorophenol	0.0112	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	105-67-9	2,4-Dimethylphenol	0.01	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	51-28-5	2,4-Dinitrophenol	0.0895	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	121-14-2	2,4-Dinitrotoluene	0.011	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	606-20-2	2,6-Dinitrotoluene	0.0125	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	91-58-7	2-Chloronaphthalene	0.00536	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	95-57-8	2-Chlorophenol	0.0126	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	91-57-6	2-Methylnaphthalene	0.00491	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	88-75-5	2-Nitrophenol	0.0137	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	91-94-1	3,3'-Dichlorobenzidine	0.0141	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0868	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	101-55-3	4-Bromophenyl phenyl ether	0.0134	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	59-50-7	4-Chloro-3-methylphenol	0.0124	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0133	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	100-02-7	4-Nitrophenol	0.012	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	83-32-9	Acenaphthene	0.0024	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	208-96-8	Acenaphthylene	0.00248	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	120-12-7	Anthracene	0.00264	0	mg/kg

TABLE A1

Geosyntec Consultants

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	A	BRA04A	6 to 12	No	92-87-5	Benzidine	0.072	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	56-55-3	Benzo(a)anthracene	0.00675	1	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	50-32-8	Benzo(a)pyrene	0.00503	1	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	205-99-2	Benzo(b)fluoranthene	0.00933	1	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	191-24-2	Benzo(g,h,i)perylene	0.00538	1	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	207-08-9	Benzo(k)fluoranthene	0.00328	1	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	85-68-7	Benzyl butyl phthalate	0.012	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0115	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0126	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0166	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0485	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	218-01-9	Chrysene	0.00491	1	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	53-70-3	Dibenz(a,h)anthracene	0.00198	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	84-66-2	Diethyl phthalate	0.0126	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	131-11-3	Dimethyl phthalate	0.0812	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	84-74-2	di-n-Butyl phthalate	0.0131	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	117-84-0	di-n-Octylphthalate	0.0259	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	206-44-0	Fluoranthene	0.0101	1	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	86-73-7	Fluorene	0.00236	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	118-74-1	Hexachlorobenzene	0.0136	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	87-68-3	Hexachlorobutadiene	0.0129	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	77-47-4	Hexachlorocyclopentadiene	0.0201	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	67-72-1	Hexachloroethane	0.0151	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.00459	1	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	78-59-1	Isophorone	0.0117	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	91-20-3	Naphthalene	0.00469	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	98-95-3	Nitrobenzene	0.0133	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	62-75-9	N-Nitrosodimethylamine	0.0568	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	621-64-7	N-Nitrosodi-n-propylamine	0.0128	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	86-30-6	N-Nitrosodiphenylamine	0.029	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	87-86-5	Pentachlorophenol	0.0103	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	85-01-8	Phenanthrene	0.00266	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	108-95-2	Phenol	0.0154	0	mg/kg
SVOC	Composite	A	BRA04A	6 to 12	No	129-00-0	Pyrene	0.00904	1	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00129	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00126	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00095	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00103	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	79-00-5	1,1,2-Trichloroethane	0.00081	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	75-34-3	1,1-Dichloroethane	0.00067	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	75-35-4	1,1-Dichloroethene	0.00083	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	563-58-6	1,1-Dichloropropene	0.0011	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	87-61-6	1,2,3-Trichlorobenzene	0.00998	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	96-18-4	1,2,3-Trichloropropane	0.00221	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	526-73-8	1,2,3-Trimethylbenzene	0.00215	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.00599	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	95-63-6	1,2,4-Trimethylbenzene	0.00215	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00531	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00088	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.00058	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	107-06-2	1,2-Dichloroethane	0.00088	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	78-87-5	1,2-Dichloropropane	0.00193	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00272	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.00082	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	142-28-9	1,3-Dichloropropane	0.00068	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.00095	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	594-20-7	2,2-Dichloropropane	0.00188	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	95-49-8	2-Chlorotoluene	0.00118	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	106-43-4	4-Chlorotoluene	0.00061	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	67-64-1	Acetone	0.0497	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	107-13-1	Acrylonitrile	0.00492	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	71-43-2	Benzene	0.00064	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	108-86-1	Bromobenzene	0.00123	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	75-27-4	Bromodichloromethane	0.00099	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	75-25-2	Bromoform	0.00159	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	74-83-9	Bromomethane	0.00268	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	56-23-5	Carbon Tetrachloride	0.00122	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	108-90-7	Chlorobenzene	0.00029	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	75-00-3	Chloroethane	0.00232	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	67-66-3	Chloroform	0.0014	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	74-87-3	Chloromethane	0.00592	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	156-59-2	cis-1,2-Dichloroethylene	0.001	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	10061-01-5	cis-1,3-Dichloropropene	0.00103	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	99-87-6	Cymene	0.00347	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	124-48-1	Dibromochloromethane	0.00083	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	74-95-3	Dibromomethane	0.00102	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	75-71-8	Dichlorodifluoromethane	0.00219	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	100-41-4	Ethylbenzene	0.001	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	87-68-3	Hexachlorobutadiene	0.00817	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	108-20-3	Isopropyl Ether	0.00056	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	98-82-8	Isopropylbenzene (Cumene)	0.00058	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0865	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00311	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	75-09-2	Methylene chloride	0.00904	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	104-51-8	n-Butylbenzene	0.00715	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	103-65-1	n-Propylbenzene	0.00129	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	135-98-8	sec-Butylbenzene	0.00392	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	100-42-5	Styrene	0.00031	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	98-06-6	t-Butylbenzene	0.00266	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	1634-04-4	tert-Butyl methyl ether	0.00048	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
VOC	Discrete	A	BRA04A	6 to 12	No	127-18-4	Tetrachloroethylene (PCE)	0.00122	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	108-88-3	Toluene	0.00177	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	156-60-5	trans-1,2-Dichloroethene	0.00142	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	10061-02-6	trans-1,3-Dichloropropene	0.00155	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	79-01-6	Trichloroethylene (TCE)	0.0008	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	75-69-4	Trichlorofluoromethane	0.00113	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	75-01-4	Vinyl chloride	0.00158	0	mg/kg
VOC	Discrete	A	BRA04A	6 to 12	No	1330-20-7	Xylenes, total	0.0012	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	120-82-1	1,2,4-Trichlorobenzene	0.0118	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	95-50-1	1,2-Dichlorobenzene	0.0112	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	541-73-1	1,3-Dichlorobenzene	0.0115	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	106-46-7	1,4-Dichlorobenzene	0.0113	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	90-12-0	1-Methylnaphthalene	0.0051	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	88-06-2	2,4,6-Trichlorophenol	0.0122	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	120-83-2	2,4-Dichlorophenol	0.011	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	105-67-9	2,4-Dimethylphenol	0.00988	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	51-28-5	2,4-Dinitrophenol	0.0885	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	121-14-2	2,4-Dinitrotoluene	0.0108	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	606-20-2	2,6-Dinitrotoluene	0.0124	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	91-58-7	2-Chloronaphthalene	0.00529	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	95-57-8	2-Chlorophenol	0.0125	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	91-57-6	2-Methylnaphthalene	0.00485	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	88-75-5	2-Nitrophenol	0.0135	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	91-94-1	3,3'-Dichlorobenzidine	0.014	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0858	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	101-55-3	4-Bromophenyl phenyl ether	0.0133	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	59-50-7	4-Chloro-3-methylphenol	0.0123	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0132	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	100-02-7	4-Nitrophenol	0.0118	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	83-32-9	Acenaphthene	0.00237	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	208-96-8	Acenaphthylene	0.0148	1	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	120-12-7	Anthracene	0.0276	1	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	92-87-5	Benzidine	0.0711	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	56-55-3	Benzo(a)anthracene	0.0436	1	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	50-32-8	Benzo(a)pyrene	0.0554	1	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	205-99-2	Benzo(b)fluoranthene	0.0968	1	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	191-24-2	Benzo(g,h,i)perylene	0.0528	1	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	207-08-9	Benzo(k)fluoranthene	0.0329	1	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	85-68-7	Benzyl butyl phthalate	0.0428	1	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0114	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0125	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0164	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.082	1	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	218-01-9	Chrysene	0.0395	1	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	53-70-3	Dibenz(a,h)anthracene	0.00863	1	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	84-66-2	Diethyl phthalate	0.0125	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	131-11-3	Dimethyl phthalate	0.0802	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	84-74-2	di-n-Butyl phthalate	0.0129	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	117-84-0	di-n-Octylphthalate	0.0256	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	206-44-0	Fluoranthene	0.0741	1	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	86-73-7	Fluorene	0.00233	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	118-74-1	Hexachlorobenzene	0.0134	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	87-68-3	Hexachlorobutadiene	0.0127	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	77-47-4	Hexachlorocyclopentadiene	0.0199	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	67-72-1	Hexachloroethane	0.0149	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0468	1	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	78-59-1	Isophorone	0.0116	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	91-20-3	Naphthalene	0.00463	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	98-95-3	Nitrobenzene	0.0132	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	62-75-9	N-Nitrosodimethylamine	0.0561	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	621-64-7	N-Nitrosodi-n-propylamine	0.0126	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	86-30-6	N-Nitrosodiphenylamine	0.0286	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	87-86-5	Pentachlorophenol	0.0102	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	85-01-8	Phenanthrene	0.0323	1	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	108-95-2	Phenol	0.0152	0	mg/kg
SVOC	Composite	A	BRA05A	0 to 2	No	129-00-0	Pyrene	0.0778	1	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.0115	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.0109	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.0111	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.0109	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	90-12-0	1-Methylnaphthalene	0.00496	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	88-06-2	2,4,6-Trichlorophenol	0.0118	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	120-83-2	2,4-Dichlorophenol	0.0107	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	105-67-9	2,4-Dimethylphenol	0.0096	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	51-28-5	2,4-Dinitrophenol	0.086	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	121-14-2	2,4-Dinitrotoluene	0.0105	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	606-20-2	2,6-Dinitrotoluene	0.012	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	91-58-7	2-Chloronaphthalene	0.00514	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	95-57-8	2-Chlorophenol	0.0121	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	91-57-6	2-Methylnaphthalene	0.00471	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	88-75-5	2-Nitrophenol	0.0131	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	91-94-1	3,3'-Dichlorobenzidine	0.0136	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0833	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	101-55-3	4-Bromophenyl phenyl ether	0.0129	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	59-50-7	4-Chloro-3-methylphenol	0.0119	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0128	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	100-02-7	4-Nitrophenol	0.0115	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	83-32-9	Acenaphthene	0.00231	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	208-96-8	Acenaphthylene	0.0237	1	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	120-12-7	Anthracene	0.1	1	mg/kg



TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	A	BRA05A	2 to 6	No	92-87-5	Benzidine	0.0691	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	56-55-3	Benzo(a)anthracene	0.0355	1	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	50-32-8	Benzo(a)pyrene	0.0503	1	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	205-99-2	Benzo(b)fluoranthene	0.0829	1	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	191-24-2	Benzo(g,h,i)perylene	0.0584	1	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	207-08-9	Benzo(k)fluoranthene	0.0215	1	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	85-68-7	Benzyl butyl phthalate	0.0115	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	111-91-1	Bis(2-Chloroethoxy) methane	0.011	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0121	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0159	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0606	1	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	218-01-9	Chrysene	0.0269	1	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	53-70-3	Dibenz(a,h)anthracene	0.0102	1	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	84-66-2	Diethyl phthalate	0.0121	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	131-11-3	Dimethyl phthalate	0.0779	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	84-74-2	di-n-Butyl phthalate	0.0126	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	117-84-0	di-n-Octylphthalate	0.0248	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	206-44-0	Fluoranthene	0.0539	1	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	86-73-7	Fluorene	0.00226	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	118-74-1	Hexachlorobenzene	0.013	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	87-68-3	Hexachlorobutadiene	0.0124	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	77-47-4	Hexachlorocyclopentadiene	0.0193	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	67-72-1	Hexachloroethane	0.0145	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0594	1	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	78-59-1	Isophorone	0.0113	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	91-20-3	Naphthalene	0.0045	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	98-95-3	Nitrobenzene	0.0128	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	62-75-9	N-Nitrosodimethylamine	0.0545	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	621-64-7	N-Nitrosodi-n-propylamine	0.0123	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	86-30-6	N-Nitrosodiphenylamine	0.0278	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	87-86-5	Pentachlorophenol	0.0734	1	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	85-01-8	Phenanthrene	0.0219	1	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	108-95-2	Phenol	0.0148	0	mg/kg
SVOC	Composite	A	BRA05A	2 to 6	No	129-00-0	Pyrene	0.0542	1	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00116	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00113	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00085	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00092	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	79-00-5	1,1,2-Trichloroethane	0.00073	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	75-34-3	1,1-Dichloroethane	0.0006	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	75-35-4	1,1-Dichloroethene	0.00074	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	563-58-6	1,1-Dichloropropene	0.00099	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	87-61-6	1,2,3-Trichlorobenzene	0.00899	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	96-18-4	1,2,3-Trichloropropane	0.00199	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	526-73-8	1,2,3-Trimethylbenzene	0.00194	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.00539	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	95-63-6	1,2,4-Trimethylbenzene	0.00194	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00478	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.0008	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.00052	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	107-06-2	1,2-Dichloroethane	0.0008	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	78-87-5	1,2-Dichloropropane	0.00174	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00245	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.00074	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	142-28-9	1,3-Dichloropropane	0.00061	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.00086	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	594-20-7	2,2-Dichloropropane	0.00169	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	95-49-8	2-Chlorotoluene	0.00106	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	106-43-4	4-Chlorotoluene	0.00055	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	67-64-1	Acetone	0.0448	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	107-13-1	Acrylonitrile	0.00443	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	71-43-2	Benzene	0.00057	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	108-86-1	Bromobenzene	0.0011	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	75-27-4	Bromodichloromethane	0.00089	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	75-25-2	Bromoform	0.00143	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	74-83-9	Bromomethane	0.00242	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	56-23-5	Carbon Tetrachloride	0.0011	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	108-90-7	Chlorobenzene	0.00026	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	75-00-3	Chloroethane	0.00208	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	67-66-3	Chloroform	0.00126	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	74-87-3	Chloromethane	0.00533	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	156-59-2	cis-1,2-Dichloroethylene	0.0009	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	10061-01-5	cis-1,3-Dichloropropene	0.00093	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	99-87-6	Cymene	0.00313	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	124-48-1	Dibromochloromethane	0.00075	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	74-95-3	Dibromomethane	0.00092	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	75-71-8	Dichlorodifluoromethane	0.00197	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	100-41-4	Ethylbenzene	0.0009	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	87-68-3	Hexachlorobutadiene	0.00736	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	108-20-3	Isopropyl Ether	0.0017	1	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	98-82-8	Isopropylbenzene (Cumene)	0.00052	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0779	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.0028	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	75-09-2	Methylene chloride	0.00814	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	104-51-8	n-Butylbenzene	0.00644	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	103-65-1	n-Propylbenzene	0.00116	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	135-98-8	sec-Butylbenzene	0.00353	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	100-42-5	Styrene	0.00028	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	98-06-6	t-Butylbenzene	0.00239	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	1634-04-4	tert-Butyl methyl ether	0.00043	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
VOC	Discrete	A	BRA05A	2 to 6	No	127-18-4	Tetrachloroethylene (PCE)	0.0011	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	108-88-3	Toluene	0.00159	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	156-60-5	trans-1,2-Dichloroethene	0.00128	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	10061-02-6	trans-1,3-Dichloropropene	0.0014	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	79-01-6	Trichloroethylene (TCE)	0.00072	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	75-69-4	Trichlorofluoromethane	0.00101	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	75-01-4	Vinyl chloride	0.00142	0	mg/kg
VOC	Discrete	A	BRA05A	2 to 6	No	1330-20-7	Xylenes, total	0.00108	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.0117	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.0111	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.0113	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.0111	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	90-12-0	1-Methylnaphthalene	0.00503	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	88-06-2	2,4,6-Trichlorophenol	0.012	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	120-83-2	2,4-Dichlorophenol	0.0109	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	105-67-9	2,4-Dimethylphenol	0.00976	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	51-28-5	2,4-Dinitrophenol	0.0874	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	121-14-2	2,4-Dinitrotoluene	0.0107	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	606-20-2	2,6-Dinitrotoluene	0.0122	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	91-58-7	2-Chloronaphthalene	0.00523	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	95-57-8	2-Chlorophenol	0.0123	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	91-57-6	2-Methylnaphthalene	0.00479	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	88-75-5	2-Nitrophenol	0.0133	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	91-94-1	3,3'-Dichlorobenzidine	0.0138	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0847	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	101-55-3	4-Bromophenyl phenyl ether	0.0131	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	59-50-7	4-Chloro-3-methylphenol	0.0121	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	7005-72-3	4-Chlorophenyl phenyl ether	0.013	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	100-02-7	4-Nitrophenol	0.0117	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	83-32-9	Acenaphthene	0.00729	1	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	208-96-8	Acenaphthylene	0.0182	1	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	120-12-7	Anthracene	0.0616	1	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	92-87-5	Benzdine	0.0702	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	56-55-3	Benzo(a)anthracene	0.0904	1	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	50-32-8	Benzo(a)pyrene	0.0953	1	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	205-99-2	Benzo(b)fluoranthene	0.158	1	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	191-24-2	Benzo(g,h,i)perylene	0.0764	1	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	207-08-9	Benzo(k)fluoranthene	0.0453	1	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	85-68-7	Benzyl butyl phthalate	0.0728	1	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0112	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0123	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0161	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0473	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	218-01-9	Chrysene	0.0754	1	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	53-70-3	Dibenz(a,h)anthracene	0.0163	1	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	84-66-2	Diethyl phthalate	0.0123	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	131-11-3	Dimethyl phthalate	0.0792	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	84-74-2	di-n-Butyl phthalate	0.0128	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	117-84-0	di-n-Octylphthalate	0.0252	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	206-44-0	Fluoranthene	0.17	1	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	86-73-7	Fluorene	0.0061	1	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	118-74-1	Hexachlorobenzene	0.0132	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	87-68-3	Hexachlorobutadiene	0.0126	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	77-47-4	Hexachlorocyclopentadiene	0.0196	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	67-72-1	Hexachloroethane	0.0147	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0858	1	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	78-59-1	Isophorone	0.0114	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	91-20-3	Naphthalene	0.00458	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	98-95-3	Nitrobenzene	0.013	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	62-75-9	N-Nitrosodimethylamine	0.0554	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	621-64-7	N-Nitrosodi-n-propylamine	0.0124	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	86-30-6	N-Nitrosodiphenylamine	0.0283	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	87-86-5	Pentachlorophenol	0.0746	1	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	85-01-8	Phenanthrene	0.0888	1	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	108-95-2	Phenol	0.015	0	mg/kg
SVOC	Composite	A	BRA05A	6 to 12	No	129-00-0	Pyrene	0.167	1	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00118	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00115	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00086	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00094	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	79-00-5	1,1,2-Trichloroethane	0.00074	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	75-34-3	1,1-Dichloroethane	0.00061	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	75-35-4	1,1-Dichloroethene	0.00075	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	563-58-6	1,1-Dichloropropene	0.00101	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	87-61-6	1,2,3-Trichlorobenzene	0.00911	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	96-18-4	1,2,3-Trichloropropane	0.00201	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	526-73-8	1,2,3-Trimethylbenzene	0.00196	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.00547	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	95-63-6	1,2,4-Trimethylbenzene	0.00196	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00485	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00081	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.00053	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	107-06-2	1,2-Dichloroethane	0.00081	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	78-87-5	1,2-Dichloropropane	0.00177	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00249	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.00075	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	142-28-9	1,3-Dichloropropane	0.00062	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.00087	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	594-20-7	2,2-Dichloropropane	0.00172	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	95-49-8	2-Chlorotoluene	0.00108	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
VOC	Discrete	A	BRA05A	6 to 12	No	106-43-4	4-Chlorotoluene	0.00056	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	67-64-1	Acetone	0.0454	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	107-13-1	Acrylonitrile	0.00449	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	71-43-2	Benzene	0.00058	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	108-86-1	Bromobenzene	0.00112	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	75-27-4	Bromodichloromethane	0.0009	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	75-25-2	Bromoform	0.00145	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	74-83-9	Bromomethane	0.00245	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	56-23-5	Carbon Tetrachloride	0.00112	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	108-90-7	Chlorobenzene	0.00026	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	75-00-3	Chloroethane	0.00211	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	67-66-3	Chloroform	0.00128	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	74-87-3	Chloromethane	0.00541	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	156-59-2	cis-1,2-Dichloroethylene	0.00091	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	10061-01-5	cis-1,3-Dichloropropene	0.00094	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	99-87-6	Cymene	0.00542	1	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	124-48-1	Dibromochloromethane	0.00076	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	74-95-3	Dibromomethane	0.00093	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	75-71-8	Dichlorodifluoromethane	0.002	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	100-41-4	Ethylbenzene	0.00092	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	87-68-3	Hexachlorobutadiene	0.00746	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	108-20-3	Isopropyl Ether	0.00051	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	98-82-8	Isopropylbenzene (Cumene)	0.00053	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0789	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00283	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	75-09-2	Methylene chloride	0.00826	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	104-51-8	n-Butylbenzene	0.00653	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	103-65-1	n-Propylbenzene	0.00118	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	135-98-8	sec-Butylbenzene	0.00358	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	100-42-5	Styrene	0.00029	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	98-06-6	t-Butylbenzene	0.00242	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	1634-04-4	tert-Butyl methyl ether	0.00044	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	127-18-4	Tetrachloroethylene (PCE)	0.00111	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	108-88-3	Toluene	0.00162	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	156-60-5	trans-1,2-Dichloroethene	0.00129	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	10061-02-6	trans-1,3-Dichloropropene	0.00142	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	79-01-6	Trichloroethylene (TCE)	0.00073	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	75-69-4	Trichlorofluoromethane	0.00103	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	75-01-4	Vinyl chloride	0.00144	0	mg/kg
VOC	Discrete	A	BRA05A	6 to 12	No	1330-20-7	Xylenes, total	0.00109	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	120-82-1	1,2,4-Trichlorobenzene	0.0118	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	95-50-1	1,2-Dichlorobenzene	0.0112	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	541-73-1	1,3-Dichlorobenzene	0.0114	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	106-46-7	1,4-Dichlorobenzene	0.0112	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	90-12-0	1-Methylnaphthalene	0.00508	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	88-06-2	2,4,6-Trichlorophenol	0.0121	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	120-83-2	2,4-Dichlorophenol	0.011	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	105-67-9	2,4-Dimethylphenol	0.00983	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	51-28-5	2,4-Dinitrophenol	0.0881	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	121-14-2	2,4-Dinitrotoluene	0.0108	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	606-20-2	2,6-Dinitrotoluene	0.0123	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	91-58-7	2-Chloronaphthalene	0.00527	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	95-57-8	2-Chlorophenol	0.0124	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	91-57-6	2-Methylnaphthalene	0.00483	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	88-75-5	2-Nitrophenol	0.0135	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	91-94-1	3,3'-Dichlorobenzidine	0.0139	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0853	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	101-55-3	4-Bromophenyl phenyl ether	0.0132	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	59-50-7	4-Chloro-3-methylphenol	0.0122	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0131	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	100-02-7	4-Nitrophenol	0.0118	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	83-32-9	Acenaphthene	0.00236	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	208-96-8	Acenaphthylene	0.0189	1	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	120-12-7	Anthracene	0.0182	1	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	92-87-5	Benzidine	0.0708	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	56-55-3	Benzo(a)anthracene	0.038	1	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	50-32-8	Benzo(a)pyrene	0.048	1	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	205-99-2	Benzo(b)fluoranthene	0.0865	1	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	191-24-2	Benzo(g,h,i)perylene	0.0539	1	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	207-08-9	Benzo(k)fluoranthene	0.0241	1	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	85-68-7	Benzyl butyl phthalate	0.0118	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0113	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0124	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0163	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0477	1	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	218-01-9	Chrysene	0.0382	1	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	53-70-3	Dibenz(a,h)anthracene	0.00916	1	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	84-66-2	Diethyl phthalate	0.0124	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	131-11-3	Dimethyl phthalate	0.0798	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	84-74-2	di-n-Butyl phthalate	0.0129	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	117-84-0	di-n-Octylphthalate	0.0254	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	206-44-0	Fluoranthene	0.0693	1	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	86-73-7	Fluorene	0.00232	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	118-74-1	Hexachlorobenzene	0.0133	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	87-68-3	Hexachlorobutadiene	0.0127	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	77-47-4	Hexachlorocyclopentadiene	0.0198	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	67-72-1	Hexachloroethane	0.0148	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0443	1	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	78-59-1	Isophorone	0.0115	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	91-20-3	Naphthalene	0.00461	0	mg/kg

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	A	BRA06A	0 to 2	No	98-95-3	Nitrobenzene	0.0131	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	62-75-9	N-Nitrosodimethylamine	0.0558	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	621-64-7	N-Nitrosodi-n-propylamine	0.0125	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	86-30-6	N-Nitrosodiphenylamine	0.0285	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	87-86-5	Pentachlorophenol	0.0101	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	85-01-8	Phenanthrene	0.0216	1	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	108-95-2	Phenol	0.0151	0	mg/kg
SVOC	Composite	A	BRA06A	0 to 2	No	129-00-0	Pyrene	0.0659	1	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.0119	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.0113	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.0115	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.0113	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	90-12-0	1-Methylnaphthalene	0.00513	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	88-06-2	2,4,6-Trichlorophenol	0.0122	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	120-83-2	2,4-Dichlorophenol	0.0111	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	105-67-9	2,4-Dimethylphenol	0.00994	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	51-28-5	2,4-Dinitrophenol	0.089	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	121-14-2	2,4-Dinitrotoluene	0.0109	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	606-20-2	2,6-Dinitrotoluene	0.0125	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	91-58-7	2-Chloronaphthalene	0.00532	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	95-57-8	2-Chlorophenol	0.0126	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	91-57-6	2-Methylnaphthalene	0.00488	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	88-75-5	2-Nitrophenol	0.0136	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	91-94-1	3,3'-Dichlorobenzidine	0.014	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0862	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	101-55-3	4-Bromophenyl phenyl ether	0.0134	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	59-50-7	4-Chloro-3-methylphenol	0.0123	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0133	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	100-02-7	4-Nitrophenol	0.0119	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	83-32-9	Acenaphthene	0.00239	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	208-96-8	Acenaphthylene	0.0302	1	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	120-12-7	Anthracene	0.0258	1	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	56-55-3	Benzo(a)anthracene	0.039	1	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	50-32-8	Benzo(a)pyrene	0.0505	1	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	205-99-2	Benzo(b)fluoranthene	0.0825	1	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	191-24-2	Benzo(g,h,i)perylene	0.0573	1	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	207-08-9	Benzo(k)fluoranthene	0.0264	1	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	85-68-7	Benzyl butyl phthalate	0.0119	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0114	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0126	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0482	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	218-01-9	Chrysene	0.0307	1	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	53-70-3	Dibenz(a,h)anthracene	0.0158	1	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	84-66-2	Diethyl phthalate	0.0126	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	131-11-3	Dimethyl phthalate	0.0806	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	84-74-2	di-n-Butyl phthalate	0.013	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	206-44-0	Fluoranthene	0.0699	1	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	86-73-7	Fluorene	0.00234	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	118-74-1	Hexachlorobenzene	0.0135	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	87-68-3	Hexachlorobutadiene	0.0128	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	67-72-1	Hexachloroethane	0.015	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0437	1	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	78-59-1	Isophorone	0.0117	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	91-20-3	Naphthalene	0.00466	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	98-95-3	Nitrobenzene	0.0133	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	62-75-9	N-Nitrosodimethylamine	0.0564	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	621-64-7	N-Nitrosodi-n-propylamine	0.0127	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	86-30-6	N-Nitrosodiphenylamine	0.0288	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	87-86-5	Pentachlorophenol	0.0102	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	85-01-8	Phenanthrene	0.0335	1	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	108-95-2	Phenol	0.0153	0	mg/kg
SVOC	Composite	A	BRA06A	2 to 6	No	129-00-0	Pyrene	0.0671	1	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00132	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00129	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00097	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00105	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	79-00-5	1,1,2-Trichloroethane	0.00083	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	75-34-3	1,1-Dichloroethane	0.00069	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	75-35-4	1,1-Dichloroethene	0.00085	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	563-58-6	1,1-Dichloropropene	0.00113	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	87-61-6	1,2,3-Trichlorobenzene	0.0102	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	96-18-4	1,2,3-Trichloropropane	0.00226	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	526-73-8	1,2,3-Trimethylbenzene	0.0022	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.00614	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	95-63-6	1,2,4-Trimethylbenzene	0.0022	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00544	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.0009	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.00059	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	107-06-2	1,2-Dichloroethane	0.00091	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	78-87-5	1,2-Dichloropropane	0.00198	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00279	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.00084	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	142-28-9	1,3-Dichloropropane	0.0007	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.00098	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	594-20-7	2,2-Dichloropropane	0.00192	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	95-49-8	2-Chlorotoluene	0.00121	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	106-43-4	4-Chlorotoluene	0.00063	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	67-64-1	Acetone	0.0509	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	107-13-1	Acrylonitrile	0.00503	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	71-43-2	Benzene	0.00065	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
VOC	Discrete	A	BRA06A	2 to 6	No	108-86-1	Bromobenzene	0.00126	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	75-27-4	Bromodichloromethane	0.00101	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	75-25-2	Bromoform	0.00163	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	74-83-9	Bromomethane	0.00275	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	56-23-5	Carbon Tetrachloride	0.00125	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	108-90-7	Chlorobenzene	0.00029	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	75-00-3	Chloroethane	0.00237	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	67-66-3	Chloroform	0.00144	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	74-87-3	Chloromethane	0.00607	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	156-59-2	cis-1,2-Dichloroethylene	0.00102	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	10061-01-5	cis-1,3-Dichloropropene	0.00106	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	99-87-6	Cymene	0.00356	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	124-48-1	Dibromochloromethane	0.00085	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	74-95-3	Dibromomethane	0.00105	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	75-71-8	Dichlorodifluoromethane	0.00225	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	100-41-4	Ethylbenzene	0.00103	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	87-68-3	Hexachlorobutadiene	0.00837	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	108-20-3	Isopropyl Ether	0.00057	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	98-82-8	Isopropylbenzene (Cumene)	0.00059	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0886	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00318	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	75-09-2	Methylene chloride	0.00926	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	104-51-8	n-Butylbenzene	0.00732	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	103-65-1	n-Propylbenzene	0.00132	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	135-98-8	sec-Butylbenzene	0.00402	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	100-42-5	Styrene	0.00032	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	98-06-6	t-Butylbenzene	0.00272	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	1634-04-4	tert-Butyl methyl ether	0.00049	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	127-18-4	Tetrachloroethylene (PCE)	0.00125	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	108-88-3	Toluene	0.00181	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	156-60-5	trans-1,2-Dichloroethene	0.00145	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	10061-02-6	trans-1,3-Dichloropropene	0.00159	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	79-01-6	Trichloroethylene (TCE)	0.00081	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	75-69-4	Trichlorofluoromethane	0.00115	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	75-01-4	Vinyl chloride	0.00162	0	mg/kg
VOC	Discrete	A	BRA06A	2 to 6	No	1330-20-7	Xylenes, total	0.00123	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.0121	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.0115	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.0118	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.0115	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	90-12-0	1-Methylnaphthalene	0.00523	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	88-06-2	2,4,6-Trichlorophenol	0.0125	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	120-83-2	2,4-Dichlorophenol	0.0113	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	105-67-9	2,4-Dimethylphenol	0.0101	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	51-28-5	2,4-Dinitrophenol	0.0907	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	121-14-2	2,4-Dinitrotoluene	0.0111	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	606-20-2	2,6-Dinitrotoluene	0.0127	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	91-58-7	2-Chloronaphthalene	0.00543	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	95-57-8	2-Chlorophenol	0.0128	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	91-57-6	2-Methylnaphthalene	0.00497	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	88-75-5	2-Nitrophenol	0.0139	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	91-94-1	3,3'-Dichlorobenzidine	0.0143	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0879	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	101-55-3	4-Bromophenyl phenyl ether	0.0136	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	59-50-7	4-Chloro-3-methylphenol	0.0126	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0135	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	100-02-7	4-Nitrophenol	0.0121	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	83-32-9	Acenaphthene	0.00283	1	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	208-96-8	Acenaphthylene	0.0296	1	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	120-12-7	Anthracene	0.0241	1	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	92-87-5	Benzidine	0.0729	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	56-55-3	Benzo(a)anthracene	0.054	1	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	50-32-8	Benzo(a)pyrene	0.0684	1	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	205-99-2	Benzo(b)fluoranthene	0.11	1	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	191-24-2	Benzo(g,h,i)perylene	0.0802	1	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	207-08-9	Benzo(k)fluoranthene	0.0349	1	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	85-68-7	Benzyl butyl phthalate	0.0121	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0116	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0128	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0168	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0491	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	218-01-9	Chrysene	0.046	1	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	53-70-3	Dibenz(a,h)anthracene	0.0148	1	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	84-66-2	Diethyl phthalate	0.0128	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	131-11-3	Dimethyl phthalate	0.0822	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	84-74-2	di-n-Butyl phthalate	0.0133	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	117-84-0	di-n-Octylphthalate	0.0262	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	206-44-0	Fluoranthene	0.107	1	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	86-73-7	Fluorene	0.00296	1	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	118-74-1	Hexachlorobenzene	0.0137	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	87-68-3	Hexachlorobutadiene	0.013	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	77-47-4	Hexachlorocyclopentadiene	0.0204	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	67-72-1	Hexachloroethane	0.0153	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0723	1	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	78-59-1	Isophorone	0.0119	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	91-20-3	Naphthalene	0.00575	1	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	98-95-3	Nitrobenzene	0.0135	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	62-75-9	N-Nitrosodimethylamine	0.0575	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	621-64-7	N-Nitrosodi-n-propylamine	0.0129	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	86-30-6	N-Nitrosodiphenylamine	0.0293	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	A	BRA06A	6 to 12	No	87-86-5	Pentachlorophenol	0.0104	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	85-01-8	Phenanthrene	0.0569	1	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	108-95-2	Phenol	0.0156	0	mg/kg
SVOC	Composite	A	BRA06A	6 to 12	No	129-00-0	Pyrene	0.0865	1	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00135	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00131	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00099	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00107	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	79-00-5	1,1,2-Trichloroethane	0.00085	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	75-34-3	1,1-Dichloroethane	0.0007	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	75-35-4	1,1-Dichloroethene	0.00086	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	563-58-6	1,1-Dichloropropene	0.00115	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	87-61-6	1,2,3-Trichlorobenzene	0.0104	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	96-18-4	1,2,3-Trichloropropane	0.00231	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	526-73-8	1,2,3-Trimethylbenzene	0.00225	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.00627	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	95-63-6	1,2,4-Trimethylbenzene	0.00225	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00555	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00092	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.00061	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	107-06-2	1,2-Dichloroethane	0.00092	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	78-87-5	1,2-Dichloropropane	0.00202	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00285	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.00085	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	142-28-9	1,3-Dichloropropane	0.00071	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.001	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	594-20-7	2,2-Dichloropropane	0.00197	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	95-49-8	2-Chlorotoluene	0.00123	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	106-43-4	4-Chlorotoluene	0.00064	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	67-64-1	Acetone	0.052	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	107-13-1	Acrylonitrile	0.00514	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	71-43-2	Benzene	0.00067	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	108-86-1	Bromobenzene	0.00128	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	75-27-4	Bromodichloromethane	0.00103	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	75-25-2	Bromoform	0.00167	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	74-83-9	Bromomethane	0.00281	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	56-23-5	Carbon Tetrachloride	0.00128	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	108-90-7	Chlorobenzene	0.0003	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	75-00-3	Chloroethane	0.00242	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	67-66-3	Chloroform	0.00147	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	74-87-3	Chloromethane	0.00619	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	156-59-2	cis-1,2-Dichloroethylene	0.00105	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	10061-01-5	cis-1,3-Dichloropropene	0.00108	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	99-87-6	Cymene	0.00363	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	124-48-1	Dibromochloromethane	0.00087	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	74-95-3	Dibromomethane	0.00107	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	75-71-8	Dichlorodifluoromethane	0.00229	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	100-41-4	Ethylbenzene	0.00105	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	87-68-3	Hexachlorobutadiene	0.00854	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	108-20-3	Isopropyl Ether	0.00058	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	98-82-8	Isopropylbenzene (Cumene)	0.00061	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0904	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00325	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	75-09-2	Methylene chloride	0.00946	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	104-51-8	n-Butylbenzene	0.00748	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	103-65-1	n-Propylbenzene	0.00135	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	135-98-8	sec-Butylbenzene	0.0041	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	100-42-5	Styrene	0.00033	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	98-06-6	t-Butylbenzene	0.00278	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	1634-04-4	tert-Butyl methyl ether	0.0005	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	127-18-4	Tetrachloroethylene (PCE)	0.00128	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	108-88-3	Toluene	0.00185	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	156-60-5	trans-1,2-Dichloroethene	0.00148	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	10061-02-6	trans-1,3-Dichloropropene	0.00162	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	79-01-6	Trichloroethylene (TCE)	0.00083	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	75-69-4	Trichlorofluoromethane	0.00118	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	75-01-4	Vinyl chloride	0.00165	0	mg/kg
VOC	Discrete	A	BRA06A	6 to 12	No	1330-20-7	Xylenes, total	0.00125	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	120-82-1	1,2,4-Trichlorobenzene	0.0117	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	95-50-1	1,2-Dichlorobenzene	0.0111	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	541-73-1	1,3-Dichlorobenzene	0.0114	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	106-46-7	1,4-Dichlorobenzene	0.0112	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	90-12-0	1-Methylnaphthalene	0.00507	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	88-06-2	2,4,6-Trichlorophenol	0.0121	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	120-83-2	2,4-Dichlorophenol	0.0109	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	105-67-9	2,4-Dimethylphenol	0.00982	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	51-28-5	2,4-Dinitrophenol	0.0879	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	121-14-2	2,4-Dinitrotoluene	0.0108	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	606-20-2	2,6-Dinitrotoluene	0.0123	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	91-58-7	2-Chloronaphthalene	0.00526	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	95-57-8	2-Chlorophenol	0.0124	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	91-57-6	2-Methylnaphthalene	0.00482	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	88-75-5	2-Nitrophenol	0.0134	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	91-94-1	3,3'-Dichlorobenzidine	0.0139	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0852	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	101-55-3	4-Bromophenyl phenyl ether	0.0132	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	59-50-7	4-Chloro-3-methylphenol	0.0122	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0131	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	100-02-7	4-Nitrophenol	0.0117	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	83-32-9	Acenaphthene	0.00236	0	mg/kg



TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	A	BRA07A	0 to 2	No	208-96-8	Acenaphthylene	0.00244	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	120-12-7	Anthracene	0.00259	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	92-87-5	Benzidine	0.0706	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	56-55-3	Benzo(a)anthracene	0.0199	1	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	50-32-8	Benzo(a)pyrene	0.0261	1	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	205-99-2	Benzo(b)fluoranthene	0.0439	1	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	191-24-2	Benzo(g,h,i)perylene	0.0292	1	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	207-08-9	Benzo(k)fluoranthene	0.0168	1	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	85-68-7	Benzyl butyl phthalate	0.0117	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0113	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0124	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0162	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0476	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	218-01-9	Chrysene	0.0206	1	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	53-70-3	Dibenz(a,h)anthracene	0.00543	1	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	84-66-2	Diethyl phthalate	0.0124	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	131-11-3	Dimethyl phthalate	0.0797	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	84-74-2	di-n-Butyl phthalate	0.0129	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	117-84-0	di-n-Octylphthalate	0.0254	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	206-44-0	Fluoranthene	0.0416	1	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	86-73-7	Fluorene	0.00231	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	118-74-1	Hexachlorobenzene	0.0133	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	87-68-3	Hexachlorobutadiene	0.0126	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	77-47-4	Hexachlorocyclopentadiene	0.0197	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	67-72-1	Hexachloroethane	0.0148	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.025	1	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	78-59-1	Isophorone	0.0115	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	91-20-3	Naphthalene	0.0046	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	98-95-3	Nitrobenzene	0.0131	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	62-75-9	N-Nitrosodimethylamine	0.0557	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	621-64-7	N-Nitrosodi-n-propylamine	0.0125	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	86-30-6	N-Nitrosodiphenylamine	0.0284	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	87-86-5	Pentachlorophenol	0.0101	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	85-01-8	Phenanthrene	0.0124	1	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	108-95-2	Phenol	0.0151	0	mg/kg
SVOC	Composite	A	BRA07A	0 to 2	No	129-00-0	Pyrene	0.0346	1	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.0117	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.0111	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.0114	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.0112	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	90-12-0	1-Methylnaphthalene	0.00507	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	88-06-2	2,4,6-Trichlorophenol	0.0121	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	120-83-2	2,4-Dichlorophenol	0.0109	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	105-67-9	2,4-Dimethylphenol	0.00982	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	51-28-5	2,4-Dinitrophenol	0.0879	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	121-14-2	2,4-Dinitrotoluene	0.0108	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	606-20-2	2,6-Dinitrotoluene	0.0123	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	91-58-7	2-Chloronaphthalene	0.00526	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	95-57-8	2-Chlorophenol	0.0124	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	91-57-6	2-Methylnaphthalene	0.00482	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	88-75-5	2-Nitrophenol	0.0134	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	91-94-1	3,3'-Dichlorobenzidine	0.0139	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0852	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	101-55-3	4-Bromophenyl phenyl ether	0.0132	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	59-50-7	4-Chloro-3-methylphenol	0.0122	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0131	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	100-02-7	4-Nitrophenol	0.0117	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	83-32-9	Acenaphthene	0.00236	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	208-96-8	Acenaphthylene	0.00244	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	120-12-7	Anthracene	0.00351	1	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	92-87-5	Benzidine	0.0706	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	56-55-3	Benzo(a)anthracene	0.0285	1	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	50-32-8	Benzo(a)pyrene	0.0311	1	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	205-99-2	Benzo(b)fluoranthene	0.0431	1	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	191-24-2	Benzo(g,h,i)perylene	0.0276	1	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	207-08-9	Benzo(k)fluoranthene	0.0146	1	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	85-68-7	Benzyl butyl phthalate	0.0117	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0113	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0124	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0162	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0476	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	218-01-9	Chrysene	0.031	1	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	53-70-3	Dibenz(a,h)anthracene	0.00459	1	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	84-66-2	Diethyl phthalate	0.0124	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	131-11-3	Dimethyl phthalate	0.0797	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	84-74-2	di-n-Butyl phthalate	0.0129	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	117-84-0	di-n-Octylphthalate	0.0254	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	206-44-0	Fluoranthene	0.0493	1	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	86-73-7	Fluorene	0.00231	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	118-74-1	Hexachlorobenzene	0.0133	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	87-68-3	Hexachlorobutadiene	0.0126	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	77-47-4	Hexachlorocyclopentadiene	0.0197	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	67-72-1	Hexachloroethane	0.0148	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0298	1	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	78-59-1	Isophorone	0.0115	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	91-20-3	Naphthalene	0.0046	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	98-95-3	Nitrobenzene	0.0131	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	62-75-9	N-Nitrosodimethylamine	0.0557	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	621-64-7	N-Nitrosodi-n-propylamine	0.0125	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	86-30-6	N-Nitrosodiphenylamine	0.0284	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	A	BRA07A	2 to 6	No	87-86-5	Pentachlorophenol	0.0101	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	85-01-8	Phenanthrene	0.0186	1	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	108-95-2	Phenol	0.0151	0	mg/kg
SVOC	Composite	A	BRA07A	2 to 6	No	129-00-0	Pyrene	0.0445	1	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00122	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00119	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00089	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00097	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	79-00-5	1,1,2-Trichloroethane	0.00077	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	75-34-3	1,1-Dichloroethane	0.00063	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	75-35-4	1,1-Dichloroethene	0.00078	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	563-58-6	1,1-Dichloropropene	0.00104	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	87-61-6	1,2,3-Trichlorobenzene	0.00942	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	96-18-4	1,2,3-Trichloropropane	0.00208	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	526-73-8	1,2,3-Trimethylbenzene	0.0316	1	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.00566	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	95-63-6	1,2,4-Trimethylbenzene	0.00203	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00501	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00083	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.00055	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	107-06-2	1,2-Dichloroethane	0.00083	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	78-87-5	1,2-Dichloropropane	0.00183	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00257	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.00077	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	142-28-9	1,3-Dichloropropane	0.00064	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.0009	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	594-20-7	2,2-Dichloropropane	0.00177	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	95-49-8	2-Chlorotoluene	0.00111	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	106-43-4	4-Chlorotoluene	0.00058	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	67-64-1	Acetone	0.0469	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	107-13-1	Acrylonitrile	0.00464	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	71-43-2	Benzene	0.0006	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	108-86-1	Bromobenzene	0.00116	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	75-27-4	Bromodichloromethane	0.00093	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	75-25-2	Bromoform	0.0015	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	74-83-9	Bromomethane	0.00253	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	56-23-5	Carbon Tetrachloride	0.00115	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	108-90-7	Chlorobenzene	0.00027	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	75-00-3	Chloroethane	0.00218	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	67-66-3	Chloroform	0.00132	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	74-87-3	Chloromethane	0.00559	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	156-59-2	cis-1,2-Dichloroethylene	0.00094	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	10061-01-5	cis-1,3-Dichloropropene	0.00097	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	99-87-6	Cymene	0.00328	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	124-48-1	Dibromochloromethane	0.00079	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	74-95-3	Dibromomethane	0.00096	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	75-71-8	Dichlorodifluoromethane	0.00207	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	100-41-4	Ethylbenzene	0.00095	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	87-68-3	Hexachlorobutadiene	0.00771	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	108-20-3	Isopropyl Ether	0.00053	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	98-82-8	Isopropylbenzene (Cumene)	0.00055	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0816	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00293	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	75-09-2	Methylene chloride	0.00853	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	104-51-8	n-Butylbenzene	0.00675	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	103-65-1	n-Propylbenzene	0.00122	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	135-98-8	sec-Butylbenzene	0.0037	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	100-42-5	Styrene	0.00174	1	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	98-06-6	t-Butylbenzene	0.00251	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	1634-04-4	tert-Butyl methyl ether	0.00045	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	127-18-4	Tetrachloroethylene (PCE)	0.00115	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	108-88-3	Toluene	0.00216	1	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	156-60-5	trans-1,2-Dichloroethene	0.00134	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	10061-02-6	trans-1,3-Dichloropropene	0.00147	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	79-01-6	Trichloroethylene (TCE)	0.00075	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	75-69-4	Trichlorofluoromethane	0.00106	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	75-01-4	Vinyl chloride	0.00149	0	mg/kg
VOC	Discrete	A	BRA07A	2 to 6	No	1330-20-7	Xylenes, total	0.00113	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.0117	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.0111	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.0113	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.0111	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	90-12-0	1-Methylnaphthalene	0.00504	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	88-06-2	2,4,6-Trichlorophenol	0.012	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	120-83-2	2,4-Dichlorophenol	0.0109	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	105-67-9	2,4-Dimethylphenol	0.00977	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	51-28-5	2,4-Dinitrophenol	0.0875	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	121-14-2	2,4-Dinitrotoluene	0.0107	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	606-20-2	2,6-Dinitrotoluene	0.0122	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	91-58-7	2-Chloronaphthalene	0.00523	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	95-57-8	2-Chlorophenol	0.0124	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	91-57-6	2-Methylnaphthalene	0.0048	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	88-75-5	2-Nitrophenol	0.0134	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	91-94-1	3,3'-Dichlorobenzidine	0.0138	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0848	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	101-55-3	4-Bromophenyl phenyl ether	0.0131	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	59-50-7	4-Chloro-3-methylphenol	0.0121	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	7005-72-3	4-Chlorophenyl phenyl ether	0.013	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	100-02-7	4-Nitrophenol	0.0117	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	83-32-9	Acenaphthene	0.00235	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	A	BRA07A	6 to 12	No	208-96-8	Acenaphthylene	0.00243	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	120-12-7	Anthracene	0.00258	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	92-87-5	Benzidine	0.0703	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	56-55-3	Benzo(a)anthracene	0.00595	1	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	50-32-8	Benzo(a)pyrene	0.00821	1	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	205-99-2	Benzo(b)fluoranthene	0.0126	1	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	191-24-2	Benzo(g,h,i)perylene	0.0088	1	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	207-08-9	Benzo(k)fluoranthene	0.00367	1	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	85-68-7	Benzyl butyl phthalate	0.0117	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0112	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0124	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0162	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0474	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	218-01-9	Chrysene	0.00677	1	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	53-70-3	Dibenz(a,h)anthracene	0.00193	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	84-66-2	Diethyl phthalate	0.0124	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	131-11-3	Dimethyl phthalate	0.0793	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	84-74-2	di-n-Butyl phthalate	0.0128	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	117-84-0	di-n-Octylphthalate	0.0253	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	206-44-0	Fluoranthene	0.0113	1	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	86-73-7	Fluorene	0.0023	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	118-74-1	Hexachlorobenzene	0.0133	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	87-68-3	Hexachlorobutadiene	0.0126	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	77-47-4	Hexachlorocyclopentadiene	0.0197	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	67-72-1	Hexachloroethane	0.0147	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.00701	1	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	78-59-1	Isophorone	0.0115	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	91-20-3	Naphthalene	0.00458	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	98-95-3	Nitrobenzene	0.013	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	62-75-9	N-Nitrosodimethylamine	0.0555	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	621-64-7	N-Nitrosodi-n-propylamine	0.0125	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	86-30-6	N-Nitrosodiphenylamine	0.0283	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	87-86-5	Pentachlorophenol	0.0101	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	85-01-8	Phenanthrene	0.0041	1	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	108-95-2	Phenol	0.015	0	mg/kg
SVOC	Composite	A	BRA07A	6 to 12	No	129-00-0	Pyrene	0.0101	1	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00123	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.0012	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	79-34-5	1,1,2,2-Tetrachloroethane	0.0009	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00098	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	79-00-5	1,1,2-Trichloroethane	0.00078	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	75-34-3	1,1-Dichloroethane	0.00064	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	75-35-4	1,1-Dichloroethene	0.00079	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	563-58-6	1,1-Dichloropropene	0.00105	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	87-61-6	1,2,3-Trichlorobenzene	0.00953	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	96-18-4	1,2,3-Trichloropropane	0.00211	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	526-73-8	1,2,3-Trimethylbenzene	0.00205	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.00572	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	95-63-6	1,2,4-Trimethylbenzene	0.00205	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00507	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00084	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.00055	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	107-06-2	1,2-Dichloroethane	0.00084	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	78-87-5	1,2-Dichloropropane	0.00185	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.0026	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.00078	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	142-28-9	1,3-Dichloropropane	0.00065	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.00091	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	594-20-7	2,2-Dichloropropane	0.00179	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	95-49-8	2-Chlorotoluene	0.00112	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	106-43-4	4-Chlorotoluene	0.00059	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	67-64-1	Acetone	0.0474	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	107-13-1	Acrylonitrile	0.00469	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	71-43-2	Benzene	0.00061	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	108-86-1	Bromobenzene	0.00117	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	75-27-4	Bromodichloromethane	0.00094	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	75-25-2	Bromoform	0.00152	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	74-83-9	Bromomethane	0.00256	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	56-23-5	Carbon Tetrachloride	0.00117	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	108-90-7	Chlorobenzene	0.00027	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	75-00-3	Chloroethane	0.00221	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	67-66-3	Chloroform	0.00134	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	74-87-3	Chloromethane	0.00565	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	156-59-2	cis-1,2-Dichloroethylene	0.00095	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	10061-01-5	cis-1,3-Dichloropropene	0.00098	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	99-87-6	Cymene	0.00331	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	124-48-1	Dibromochloromethane	0.0008	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	74-95-3	Dibromomethane	0.00098	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	75-71-8	Dichlorodifluoromethane	0.00209	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	100-41-4	Ethylbenzene	0.00096	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	87-68-3	Hexachlorobutadiene	0.0078	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	108-20-3	Isopropyl Ether	0.00053	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	98-82-8	Isopropylbenzene (Cumene)	0.00055	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0825	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00296	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	75-09-2	Methylene chloride	0.00863	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	104-51-8	n-Butylbenzene	0.00682	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	103-65-1	n-Propylbenzene	0.00123	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	135-98-8	sec-Butylbenzene	0.00374	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	100-42-5	Styrene	0.0003	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
VOC	Discrete	A	BRA07A	6 to 12	No	98-06-6	t-Butylbenzene	0.00253	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	1634-04-4	tert-Butyl methyl ether	0.00046	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	127-18-4	Tetrachloroethylene (PCE)	0.00116	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	108-88-3	Toluene	0.00169	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	156-60-5	trans-1,2-Dichloroethene	0.00135	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	10061-02-6	trans-1,3-Dichloropropene	0.00148	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	79-01-6	Trichloroethylene (TCE)	0.00076	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	75-69-4	Trichlorofluoromethane	0.00107	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	75-01-4	Vinyl chloride	0.00151	0	mg/kg
VOC	Discrete	A	BRA07A	6 to 12	No	1330-20-7	Xylenes, total	0.00114	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	120-82-1	1,2,4-Trichlorobenzene	0.0123	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	95-50-1	1,2-Dichlorobenzene	0.0117	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	541-73-1	1,3-Dichlorobenzene	0.012	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	106-46-7	1,4-Dichlorobenzene	0.0117	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	90-12-0	1-Methylnaphthalene	0.00532	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	88-06-2	2,4,6-Trichlorophenol	0.0127	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	120-83-2	2,4-Dichlorophenol	0.0115	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	105-67-9	2,4-Dimethylphenol	0.0103	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	51-28-5	2,4-Dinitrophenol	0.0923	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	121-14-2	2,4-Dinitrotoluene	0.0113	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	606-20-2	2,6-Dinitrotoluene	0.0129	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	91-58-7	2-Chloronaphthalene	0.00552	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	95-57-8	2-Chlorophenol	0.013	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	91-57-6	2-Methylnaphthalene	0.00506	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	88-75-5	2-Nitrophenol	0.0141	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	91-94-1	3,3'-Dichlorobenzidine	0.0146	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0894	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	101-55-3	4-Bromophenyl phenyl ether	0.0139	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	59-50-7	4-Chloro-3-methylphenol	0.0128	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0137	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	100-02-7	4-Nitrophenol	0.0123	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	83-32-9	Acenaphthene	0.00248	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	208-96-8	Acenaphthylene	0.00558	1	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	120-12-7	Anthracene	0.00868	1	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	92-87-5	Benzdine	0.0742	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	56-55-3	Benzo(a)anthracene	0.0502	1	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	50-32-8	Benzo(a)pyrene	0.07	1	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	205-99-2	Benzo(b)fluoranthene	0.12	1	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	191-24-2	Benzo(g,h,i)perylene	0.0676	1	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	207-08-9	Benzo(k)fluoranthene	0.0341	1	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	85-68-7	Benzyl butyl phthalate	0.0187	1	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0118	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.013	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0171	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0945	1	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	218-01-9	Chrysene	0.0682	1	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	53-70-3	Dibenz(a,h)anthracene	0.0142	1	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	84-66-2	Diethyl phthalate	0.013	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	131-11-3	Dimethyl phthalate	0.0836	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	84-74-2	di-n-Butyl phthalate	0.0135	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	117-84-0	di-n-Octylphthalate	0.0267	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	206-44-0	Fluoranthene	0.102	1	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	86-73-7	Fluorene	0.00243	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	118-74-1	Hexachlorobenzene	0.014	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	87-68-3	Hexachlorobutadiene	0.0133	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	77-47-4	Hexachlorocyclopentadiene	0.0207	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	67-72-1	Hexachloroethane	0.0155	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0638	1	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	78-59-1	Isophorone	0.0121	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	91-20-3	Naphthalene	0.00483	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	98-95-3	Nitrobenzene	0.0137	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	62-75-9	N-Nitrosodimethylamine	0.0585	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	621-64-7	N-Nitrosodi-n-propylamine	0.0131	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	86-30-6	N-Nitrosodiphenylamine	0.0299	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	87-86-5	Pentachlorophenol	0.0106	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	85-01-8	Phenanthrene	0.0258	1	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	108-95-2	Phenol	0.0159	0	mg/kg
SVOC	Composite	A	BRA08A	0 to 2	No	129-00-0	Pyrene	0.0843	1	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.0118	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.0112	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.0114	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.0112	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	90-12-0	1-Methylnaphthalene	0.0051	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	88-06-2	2,4,6-Trichlorophenol	0.0121	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	120-83-2	2,4-Dichlorophenol	0.011	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	105-67-9	2,4-Dimethylphenol	0.00986	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	51-28-5	2,4-Dinitrophenol	0.0883	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	121-14-2	2,4-Dinitrotoluene	0.0108	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	606-20-2	2,6-Dinitrotoluene	0.0124	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	91-58-7	2-Chloronaphthalene	0.00529	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	95-57-8	2-Chlorophenol	0.0125	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	91-57-6	2-Methylnaphthalene	0.00485	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	88-75-5	2-Nitrophenol	0.0135	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	91-94-1	3,3'-Dichlorobenzidine	0.0139	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0856	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	101-55-3	4-Bromophenyl phenyl ether	0.0133	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	59-50-7	4-Chloro-3-methylphenol	0.0122	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0131	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	100-02-7	4-Nitrophenol	0.0118	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	83-32-9	Acenaphthene	0.00237	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	A	BRA08A	2 to 6	No	208-96-8	Acenaphthylene	0.00505	1	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	120-12-7	Anthracene	0.00804	1	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	92-87-5	Benzidine	0.0709	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	56-55-3	Benzo(a)anthracene	0.041	1	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	50-32-8	Benzo(a)pyrene	0.0496	1	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	205-99-2	Benzo(b)fluoranthene	0.0823	1	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	191-24-2	Benzo(g,h,i)perylene	0.0482	1	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	207-08-9	Benzo(k)fluoranthene	0.0267	1	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	85-68-7	Benzyl butyl phthalate	0.0135	1	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0113	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0125	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0163	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0609	1	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	218-01-9	Chrysene	0.0372	1	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	53-70-3	Dibenz(a,h)anthracene	0.00921	1	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	84-66-2	Diethyl phthalate	0.0125	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	131-11-3	Dimethyl phthalate	0.08	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	84-74-2	di-n-Butyl phthalate	0.0129	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	117-84-0	di-n-Octylphthalate	0.0255	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	206-44-0	Fluoranthene	0.0731	1	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	86-73-7	Fluorene	0.00233	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	118-74-1	Hexachlorobenzene	0.0134	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	87-68-3	Hexachlorobutadiene	0.0127	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	77-47-4	Hexachlorocyclopentadiene	0.0198	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	67-72-1	Hexachloroethane	0.0148	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0343	1	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	78-59-1	Isophorone	0.0116	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	91-20-3	Naphthalene	0.00463	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	98-95-3	Nitrobenzene	0.0131	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	62-75-9	N-Nitrosodimethylamine	0.056	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	621-64-7	N-Nitrosodi-n-propylamine	0.0126	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	86-30-6	N-Nitrosodiphenylamine	0.0286	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	87-86-5	Pentachlorophenol	0.0102	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	85-01-8	Phenanthrene	0.0277	1	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	108-95-2	Phenol	0.0152	0	mg/kg
SVOC	Composite	A	BRA08A	2 to 6	No	129-00-0	Pyrene	0.0645	1	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00121	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00118	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00089	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00096	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	79-00-5	1,1,2-Trichloroethane	0.00076	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	75-34-3	1,1-Dichloroethane	0.00063	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	75-35-4	1,1-Dichloroethene	0.00077	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	563-58-6	1,1-Dichloropropene	0.00103	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	87-61-6	1,2,3-Trichlorobenzene	0.00935	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	96-18-4	1,2,3-Trichloropropane	0.00207	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	526-73-8	1,2,3-Trimethylbenzene	0.00201	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.00561	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	95-63-6	1,2,4-Trimethylbenzene	0.00201	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00497	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00083	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.00054	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	107-06-2	1,2-Dichloroethane	0.00083	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	78-87-5	1,2-Dichloropropane	0.00181	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00255	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.00077	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	142-28-9	1,3-Dichloropropane	0.00064	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.00089	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	594-20-7	2,2-Dichloropropane	0.00176	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	95-49-8	2-Chlorotoluene	0.0011	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	106-43-4	4-Chlorotoluene	0.00057	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	67-64-1	Acetone	0.0465	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	107-13-1	Acrylonitrile	0.0046	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	71-43-2	Benzene	0.0006	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	108-86-1	Bromobenzene	0.00115	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	75-27-4	Bromodichloromethane	0.00092	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	75-25-2	Bromoform	0.00149	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	74-83-9	Bromomethane	0.00251	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	56-23-5	Carbon Tetrachloride	0.00115	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	108-90-7	Chlorobenzene	0.00027	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	75-00-3	Chloroethane	0.00217	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	67-66-3	Chloroform	0.00131	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	74-87-3	Chloromethane	0.00555	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	156-59-2	cis-1,2-Dichloroethylene	0.00094	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	10061-01-5	cis-1,3-Dichloropropene	0.00097	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	99-87-6	Cymene	0.00325	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	124-48-1	Dibromochloromethane	0.00078	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	74-95-3	Dibromomethane	0.00096	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	75-71-8	Dichlorodifluoromethane	0.00205	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	100-41-4	Ethylbenzene	0.00094	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	87-68-3	Hexachlorobutadiene	0.00765	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	108-20-3	Isopropyl Ether	0.00052	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	98-82-8	Isopropylbenzene (Cumene)	0.00054	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.081	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00291	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	75-09-2	Methylene chloride	0.00847	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	104-51-8	n-Butylbenzene	0.00669	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	103-65-1	n-Propylbenzene	0.00121	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	135-98-8	sec-Butylbenzene	0.00367	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	100-42-5	Styrene	0.00029	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
VOC	Discrete	A	BRA08A	2 to 6	No	98-06-6	t-Butylbenzene	0.00249	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	1634-04-4	tert-Butyl methyl ether	0.00045	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	127-18-4	Tetrachloroethylene (PCE)	0.00114	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	108-88-3	Toluene	0.00166	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	156-60-5	trans-1,2-Dichloroethene	0.00133	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	10061-02-6	trans-1,3-Dichloropropene	0.00145	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	79-01-6	Trichloroethylene (TCE)	0.00075	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	75-69-4	Trichlorofluoromethane	0.00105	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	75-01-4	Vinyl chloride	0.00148	0	mg/kg
VOC	Discrete	A	BRA08A	2 to 6	No	1330-20-7	Xylenes, total	0.00112	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.0118	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.0112	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.0115	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.0113	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	90-12-0	1-Methylnaphthalene	0.0051	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	88-06-2	2,4,6-Trichlorophenol	0.0122	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	120-83-2	2,4-Dichlorophenol	0.011	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	105-67-9	2,4-Dimethylphenol	0.00988	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	51-28-5	2,4-Dinitrophenol	0.0885	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	121-14-2	2,4-Dinitrotoluene	0.0108	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	606-20-2	2,6-Dinitrotoluene	0.0124	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	91-58-7	2-Chloronaphthalene	0.00529	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	95-57-8	2-Chlorophenol	0.0125	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	91-57-6	2-Methylnaphthalene	0.00485	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	88-75-5	2-Nitrophenol	0.0135	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	91-94-1	3,3'-Dichlorobenzidine	0.014	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0857	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	101-55-3	4-Bromophenyl phenyl ether	0.0133	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	59-50-7	4-Chloro-3-methylphenol	0.0123	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0132	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	100-02-7	4-Nitrophenol	0.0118	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	83-32-9	Acenaphthene	0.00237	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	208-96-8	Acenaphthylene	0.00442	1	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	120-12-7	Anthracene	0.0053	1	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	92-87-5	Benzdine	0.0711	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	56-55-3	Benzo(a)anthracene	0.0351	1	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	50-32-8	Benzo(a)pyrene	0.0491	1	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	205-99-2	Benzo(b)fluoranthene	0.0842	1	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	191-24-2	Benzo(g,h,i)perylene	0.0535	1	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	207-08-9	Benzo(k)fluoranthene	0.0284	1	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	85-68-7	Benzyl butyl phthalate	0.0118	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0114	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0125	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0164	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.175	1	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	218-01-9	Chrysene	0.0464	1	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	53-70-3	Dibenz(a,h)anthracene	0.0104	1	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	84-66-2	Diethyl phthalate	0.0125	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	131-11-3	Dimethyl phthalate	0.0802	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	84-74-2	di-n-Butyl phthalate	0.0129	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	117-84-0	di-n-Octylphthalate	0.0256	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	206-44-0	Fluoranthene	0.0671	1	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	86-73-7	Fluorene	0.00233	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	118-74-1	Hexachlorobenzene	0.0134	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	87-68-3	Hexachlorobutadiene	0.0127	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	77-47-4	Hexachlorocyclopentadiene	0.0199	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	67-72-1	Hexachloroethane	0.0149	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0461	1	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	78-59-1	Isophorone	0.0116	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	91-20-3	Naphthalene	0.00463	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	98-95-3	Nitrobenzene	0.0132	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	62-75-9	N-Nitrosodimethylamine	0.0561	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	621-64-7	N-Nitrosodi-n-propylamine	0.0126	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	86-30-6	N-Nitrosodiphenylamine	0.0286	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	87-86-5	Pentachlorophenol	0.0102	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	85-01-8	Phenanthrene	0.0154	1	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	108-95-2	Phenol	0.0152	0	mg/kg
SVOC	Composite	A	BRA08A	6 to 12	No	129-00-0	Pyrene	0.056	1	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00124	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00121	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00091	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00099	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	79-00-5	1,1,2-Trichloroethane	0.00078	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	75-34-3	1,1-Dichloroethane	0.00064	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	75-35-4	1,1-Dichloroethene	0.00079	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	563-58-6	1,1-Dichloropropene	0.00106	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	87-61-6	1,2,3-Trichlorobenzene	0.00958	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	96-18-4	1,2,3-Trichloropropane	0.00212	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	526-73-8	1,2,3-Trimethylbenzene	0.00206	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.00575	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	95-63-6	1,2,4-Trimethylbenzene	0.00206	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	96-12-8	1,2-Dibromo-3-chloropropane	0.0051	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00085	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.00056	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	107-06-2	1,2-Dichloroethane	0.00085	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	78-87-5	1,2-Dichloropropane	0.00186	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00261	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.00078	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	142-28-9	1,3-Dichloropropane	0.00066	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.00092	0	mg/kg



Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
VOC	Discrete	A	BRA08A	6 to 12	No	594-20-7	2,2-Dichloropropane	0.0018	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	95-49-8	2-Chlorotoluene	0.00113	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	106-43-4	4-Chlorotoluene	0.00059	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	67-64-1	Acetone	0.0477	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	107-13-1	Acrylonitrile	0.00472	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	71-43-2	Benzene	0.00061	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	108-86-1	Bromobenzene	0.00118	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	75-27-4	Bromodichloromethane	0.00095	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	75-25-2	Bromoform	0.00153	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	74-83-9	Bromomethane	0.00257	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	56-23-5	Carbon Tetrachloride	0.00117	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	108-90-7	Chlorobenzene	0.00027	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	75-00-3	Chloroethane	0.00222	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	67-66-3	Chloroform	0.00135	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	74-87-3	Chloromethane	0.00568	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	156-59-2	cis-1,2-Dichloroethylene	0.00096	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	10061-01-5	cis-1,3-Dichloropropene	0.00099	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	99-87-6	Cymene	0.00333	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	124-48-1	Dibromochloromethane	0.0008	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	74-95-3	Dibromomethane	0.00098	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	75-71-8	Dichlorodifluoromethane	0.0021	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	100-41-4	Ethylbenzene	0.00096	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	87-68-3	Hexachlorobutadiene	0.00784	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	108-20-3	Isopropyl Ether	0.00054	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	98-82-8	Isopropylbenzene (Cumene)	0.00056	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.083	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00298	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	75-09-2	Methylene chloride	0.00868	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	104-51-8	n-Butylbenzene	0.00686	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	103-65-1	n-Propylbenzene	0.00124	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	135-98-8	sec-Butylbenzene	0.00376	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	100-42-5	Styrene	0.0003	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	98-06-6	t-Butylbenzene	0.00255	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	1634-04-4	tert-Butyl methyl ether	0.00046	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	127-18-4	Tetrachloroethylene (PCE)	0.00117	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	108-88-3	Toluene	0.0017	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	156-60-5	trans-1,2-Dichloroethene	0.00136	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	10061-02-6	trans-1,3-Dichloropropene	0.00149	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	79-01-6	Trichloroethylene (TCE)	0.00076	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	75-69-4	Trichlorofluoromethane	0.00108	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	75-01-4	Vinyl chloride	0.00152	0	mg/kg
VOC	Discrete	A	BRA08A	6 to 12	No	1330-20-7	Xylenes, total	0.00115	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	120-82-1	1,2,4-Trichlorobenzene	0.0115	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	95-50-1	1,2-Dichlorobenzene	0.0109	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	541-73-1	1,3-Dichlorobenzene	0.0112	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	106-46-7	1,4-Dichlorobenzene	0.0109	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	90-12-0	1-Methylnaphthalene	0.00496	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	88-06-2	2,4,6-Trichlorophenol	0.0118	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	120-83-2	2,4-Dichlorophenol	0.0107	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	105-67-9	2,4-Dimethylphenol	0.00961	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	51-28-5	2,4-Dinitrophenol	0.086	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	121-14-2	2,4-Dinitrotoluene	0.0105	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	606-20-2	2,6-Dinitrotoluene	0.012	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	91-58-7	2-Chloronaphthalene	0.00515	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	95-57-8	2-Chlorophenol	0.0121	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	91-57-6	2-Methylnaphthalene	0.00472	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	88-75-5	2-Nitrophenol	0.0131	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	91-94-1	3,3'-Dichlorobenzidine	0.0136	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0834	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	101-55-3	4-Bromophenyl phenyl ether	0.0129	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	59-50-7	4-Chloro-3-methylphenol	0.0119	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0128	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	100-02-7	4-Nitrophenol	0.0115	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	83-32-9	Acenaphthene	0.00538	1	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	208-96-8	Acenaphthylene	0.00266	1	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	120-12-7	Anthracene	0.0191	1	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	92-87-5	Benzdine	0.0691	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	56-55-3	Benzo(a)anthracene	0.241	1	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	50-32-8	Benzo(a)pyrene	0.19	1	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	205-99-2	Benzo(b)fluoranthene	0.32	1	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	191-24-2	Benzo(g,h,i)perylene	0.0781	1	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	207-08-9	Benzo(k)fluoranthene	0.115	1	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	85-68-7	Benzyl butyl phthalate	0.0115	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	111-91-1	Bis(2-Chloroethoxy) methane	0.011	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0121	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0159	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.15	1	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	218-01-9	Chrysene	0.253	1	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	53-70-3	Dibenz(a,h)anthracene	0.0215	1	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	84-66-2	Diethyl phthalate	0.0121	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	131-11-3	Dimethyl phthalate	0.078	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	84-74-2	di-n-Butyl phthalate	0.0126	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	117-84-0	di-n-Octylphthalate	0.0248	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	206-44-0	Fluoranthene	0.49	1	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	86-73-7	Fluorene	0.00271	1	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	118-74-1	Hexachlorobenzene	0.013	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	87-68-3	Hexachlorobutadiene	0.0124	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	77-47-4	Hexachlorocyclopentadiene	0.0193	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	67-72-1	Hexachloroethane	0.0145	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0992	1	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	A	BRA09A	0 to 2	No	78-59-1	Isophorone	0.0113	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	91-20-3	Naphthalene	0.00451	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	98-95-3	Nitrobenzene	0.0128	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	62-75-9	N-Nitrosodimethylamine	0.0546	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	621-64-7	N-Nitrosodi-n-propylamine	0.0123	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	86-30-6	N-Nitrosodiphenylamine	0.0278	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	87-86-5	Pentachlorophenol	0.00989	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	85-01-8	Phenanthrene	0.0734	1	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	108-95-2	Phenol	0.0148	0	mg/kg
SVOC	Composite	A	BRA09A	0 to 2	No	129-00-0	Pyrene	0.392	1	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.0113	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.0107	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.011	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.0108	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	90-12-0	1-Methylnaphthalene	0.00488	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	88-06-2	2,4,6-Trichlorophenol	0.0116	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	120-83-2	2,4-Dichlorophenol	0.0106	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	105-67-9	2,4-Dimethylphenol	0.00946	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	51-28-5	2,4-Dinitrophenol	0.0847	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	121-14-2	2,4-Dinitrotoluene	0.0104	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	606-20-2	2,6-Dinitrotoluene	0.0119	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	91-58-7	2-Chloronaphthalene	0.00507	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	95-57-8	2-Chlorophenol	0.012	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	91-57-6	2-Methylnaphthalene	0.00465	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	88-75-5	2-Nitrophenol	0.0129	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	91-94-1	3,3'-Dichlorobenzidine	0.0134	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0821	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	101-55-3	4-Bromophenyl phenyl ether	0.0127	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	59-50-7	4-Chloro-3-methylphenol	0.0117	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0126	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	100-02-7	4-Nitrophenol	0.0113	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	83-32-9	Acenaphthene	0.00261	1	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	208-96-8	Acenaphthylene	0.00235	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	120-12-7	Anthracene	0.0174	1	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	56-55-3	Benzo(a)anthracene	0.097	1	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	50-32-8	Benzo(a)pyrene	0.092	1	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	205-99-2	Benzo(b)fluoranthene	0.151	1	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	191-24-2	Benzo(g,h,i)perylene	0.0311	1	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	207-08-9	Benzo(k)fluoranthene	0.0453	1	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	85-68-7	Benzyl butyl phthalate	0.0113	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0109	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.012	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0157	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.314	1	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	218-01-9	Chrysene	0.0926	1	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	53-70-3	Dibenz(a,h)anthracene	0.00806	1	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	84-66-2	Diethyl phthalate	0.012	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	131-11-3	Dimethyl phthalate	0.0768	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	84-74-2	di-n-Butyl phthalate	0.0124	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	117-84-0	di-n-Octylphthalate	0.0245	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	206-44-0	Fluoranthene	0.174	1	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	86-73-7	Fluorene	0.00223	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	118-74-1	Hexachlorobenzene	0.0128	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	87-68-3	Hexachlorobutadiene	0.0122	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	67-72-1	Hexachloroethane	0.0143	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0392	1	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	78-59-1	Isophorone	0.0111	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	91-20-3	Naphthalene	0.00444	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	98-95-3	Nitrobenzene	0.0126	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	62-75-9	N-Nitrosodimethylamine	0.0537	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	621-64-7	N-Nitrosodi-n-propylamine	0.0121	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	86-30-6	N-Nitrosodiphenylamine	0.0274	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	87-86-5	Pentachlorophenol	0.00975	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	85-01-8	Phenanthrene	0.0532	1	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	108-95-2	Phenol	0.0146	0	mg/kg
SVOC	Composite	A	BRA09A	2 to 6	No	129-00-0	Pyrene	0.161	1	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00117	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00114	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00086	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00093	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	79-00-5	1,1,2-Trichloroethane	0.00074	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	75-34-3	1,1-Dichloroethane	0.00061	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	75-35-4	1,1-Dichloroethene	0.00075	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	563-58-6	1,1-Dichloropropene	0.001	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	87-61-6	1,2,3-Trichlorobenzene	0.00905	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	96-18-4	1,2,3-Trichloropropane	0.002	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	526-73-8	1,2,3-Trimethylbenzene	0.00195	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.00544	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	95-63-6	1,2,4-Trimethylbenzene	0.00195	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00482	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.0008	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.00053	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	107-06-2	1,2-Dichloroethane	0.0008	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	78-87-5	1,2-Dichloropropane	0.00176	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00247	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.00074	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	142-28-9	1,3-Dichloropropane	0.00062	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.00087	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	594-20-7	2,2-Dichloropropane	0.00171	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	95-49-8	2-Chlorotoluene	0.00107	0	mg/kg

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
VOC	Discrete	A	BRA09A	2 to 6	No	106-43-4	4-Chlorotoluene	0.00056	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	67-64-1	Acetone	0.0452	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	107-13-1	Acrylonitrile	0.00446	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	71-43-2	Benzene	0.00058	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	108-86-1	Bromobenzene	0.00111	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	75-27-4	Bromodichloromethane	0.0009	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	75-25-2	Bromoform	0.00145	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	74-83-9	Bromomethane	0.00244	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	56-23-5	Carbon Tetrachloride	0.00111	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	108-90-7	Chlorobenzene	0.00026	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	75-00-3	Chloroethane	0.0021	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	67-66-3	Chloroform	0.00127	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	74-87-3	Chloromethane	0.00537	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	156-59-2	cis-1,2-Dichloroethylene	0.00091	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	10061-01-5	cis-1,3-Dichloropropene	0.00094	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	99-87-6	Cymene	0.00315	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	124-48-1	Dibromochloromethane	0.00076	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	74-95-3	Dibromomethane	0.00093	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	75-71-8	Dichlorodifluoromethane	0.00198	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	100-41-4	Ethylbenzene	0.00091	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	87-68-3	Hexachlorobutadiene	0.00741	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	108-20-3	Isopropyl Ether	0.00051	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	98-82-8	Isopropylbenzene (Cumene)	0.00053	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0784	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00282	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	75-09-2	Methylene chloride	0.00821	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	104-51-8	n-Butylbenzene	0.00649	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	103-65-1	n-Propylbenzene	0.00117	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	135-98-8	sec-Butylbenzene	0.00356	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	100-42-5	Styrene	0.00028	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	98-06-6	t-Butylbenzene	0.00241	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	1634-04-4	tert-Butyl methyl ether	0.00043	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	127-18-4	Tetrachloroethylene (PCE)	0.00111	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	108-88-3	Toluene	0.0016	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	156-60-5	trans-1,2-Dichloroethene	0.00128	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	10061-02-6	trans-1,3-Dichloropropene	0.00141	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	79-01-6	Trichloroethylene (TCE)	0.00072	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	75-69-4	Trichlorofluoromethane	0.00102	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	75-01-4	Vinyl chloride	0.00144	0	mg/kg
VOC	Discrete	A	BRA09A	2 to 6	No	1330-20-7	Xylenes, total	0.00109	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.0114	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.0108	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.011	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.0108	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	90-12-0	1-Methylnaphthalene	0.00491	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	88-06-2	2,4,6-Trichlorophenol	0.0117	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	120-83-2	2,4-Dichlorophenol	0.0106	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	105-67-9	2,4-Dimethylphenol	0.00951	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	51-28-5	2,4-Dinitrophenol	0.0852	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	121-14-2	2,4-Dinitrotoluene	0.0104	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	606-20-2	2,6-Dinitrotoluene	0.0119	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	91-58-7	2-Chloronaphthalene	0.00509	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	95-57-8	2-Chlorophenol	0.012	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	91-57-6	2-Methylnaphthalene	0.00467	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	88-75-5	2-Nitrophenol	0.013	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	91-94-1	3,3'-Dichlorobenzidine	0.0134	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0825	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	101-55-3	4-Bromophenyl phenyl ether	0.0128	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	59-50-7	4-Chloro-3-methylphenol	0.0118	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0127	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	100-02-7	4-Nitrophenol	0.0114	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	83-32-9	Acenaphthene	0.00765	1	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	208-96-8	Acenaphthylene	0.00236	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	120-12-7	Anthracene	0.0188	1	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	92-87-5	Benzydine	0.0684	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	56-55-3	Benzo(a)anthracene	0.11	1	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	50-32-8	Benzo(a)pyrene	0.0721	1	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	205-99-2	Benzo(b)fluoranthene	0.0947	1	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	191-24-2	Benzo(g,h,i)perylene	0.0371	1	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	207-08-9	Benzo(k)fluoranthene	0.0361	1	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	85-68-7	Benzyl butyl phthalate	0.0114	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0109	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.012	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0157	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.126	1	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	218-01-9	Chrysene	0.106	1	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	53-70-3	Dibenz(a,h)anthracene	0.0106	1	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	84-66-2	Diethyl phthalate	0.012	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	131-11-3	Dimethyl phthalate	0.0772	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	84-74-2	di-n-Butyl phthalate	0.0125	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	117-84-0	di-n-Octylphthalate	0.0246	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	206-44-0	Fluoranthene	0.212	1	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	86-73-7	Fluorene	0.00345	1	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	118-74-1	Hexachlorobenzene	0.0129	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	87-68-3	Hexachlorobutadiene	0.0122	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	77-47-4	Hexachlorocyclopentadiene	0.0191	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	67-72-1	Hexachloroethane	0.0143	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0496	1	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	78-59-1	Isophorone	0.0112	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	91-20-3	Naphthalene	0.00446	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	A	BRA09A	6 to 12	No	98-95-3	Nitrobenzene	0.0127	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	62-75-9	N-Nitrosodimethylamine	0.054	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	621-64-7	N-Nitrosodi-n-propylamine	0.0121	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	86-30-6	N-Nitrosodiphenylamine	0.0276	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	87-86-5	Pentachlorophenol	0.0098	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	85-01-8	Phenanthrene	0.0704	1	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	108-95-2	Phenol	0.0147	0	mg/kg
SVOC	Composite	A	BRA09A	6 to 12	No	129-00-0	Pyrene	0.156	1	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00113	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.0011	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00083	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.0009	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	79-00-5	1,1,2-Trichloroethane	0.00071	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	75-34-3	1,1-Dichloroethane	0.00059	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	75-35-4	1,1-Dichloroethene	0.00072	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	563-58-6	1,1-Dichloropropene	0.00096	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	87-61-6	1,2,3-Trichlorobenzene	0.00873	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	96-18-4	1,2,3-Trichloropropane	0.00193	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	526-73-8	1,2,3-Trimethylbenzene	0.00188	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.00524	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	95-63-6	1,2,4-Trimethylbenzene	0.00188	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00465	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00077	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.00051	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	107-06-2	1,2-Dichloroethane	0.00077	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	78-87-5	1,2-Dichloropropane	0.00169	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00238	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.00072	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	142-28-9	1,3-Dichloropropane	0.0006	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.00083	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	594-20-7	2,2-Dichloropropane	0.00164	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	95-49-8	2-Chlorotoluene	0.00103	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	106-43-4	4-Chlorotoluene	0.00054	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	67-64-1	Acetone	0.0435	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	107-13-1	Acrylonitrile	0.0043	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	71-43-2	Benzene	0.00056	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	108-86-1	Bromobenzene	0.00107	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	75-27-4	Bromodichloromethane	0.00086	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	75-25-2	Bromoform	0.00139	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	74-83-9	Bromomethane	0.00235	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	56-23-5	Carbon Tetrachloride	0.00107	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	108-90-7	Chlorobenzene	0.00025	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	75-00-3	Chloroethane	0.00203	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	67-66-3	Chloroform	0.00123	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	74-87-3	Chloromethane	0.00518	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	156-59-2	cis-1,2-Dichloroethylene	0.00087	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	10061-01-5	cis-1,3-Dichloropropene	0.0009	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	99-87-6	Cymene	0.00304	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	124-48-1	Dibromochloromethane	0.00073	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	74-95-3	Dibromomethane	0.00089	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	75-71-8	Dichlorodifluoromethane	0.00192	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	100-41-4	Ethylbenzene	0.00088	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	87-68-3	Hexachlorobutadiene	0.00715	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	108-20-3	Isopropyl Ether	0.00049	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	98-82-8	Isopropylbenzene (Cumene)	0.00051	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0756	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00272	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	75-09-2	Methylene chloride	0.00791	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	104-51-8	n-Butylbenzene	0.00625	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	103-65-1	n-Propylbenzene	0.00113	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	135-98-8	sec-Butylbenzene	0.00343	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	100-42-5	Styrene	0.00027	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	98-06-6	t-Butylbenzene	0.00232	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	1634-04-4	tert-Butyl methyl ether	0.00042	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	127-18-4	Tetrachloroethylene (PCE)	0.00107	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	108-88-3	Toluene	0.00155	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	156-60-5	trans-1,2-Dichloroethene	0.00124	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	10061-02-6	trans-1,3-Dichloropropene	0.00136	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	79-01-6	Trichloroethylene (TCE)	0.0007	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	75-69-4	Trichlorofluoromethane	0.00099	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	75-01-4	Vinyl chloride	0.00138	0	mg/kg
VOC	Discrete	A	BRA09A	6 to 12	No	1330-20-7	Xylenes, total	0.00206	1	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	120-82-1	1,2,4-Trichlorobenzene	0.0597	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	95-50-1	1,2-Dichlorobenzene	0.0567	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	541-73-1	1,3-Dichlorobenzene	0.0579	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	106-46-7	1,4-Dichlorobenzene	0.0569	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	90-12-0	1-Methylnaphthalene	0.00515	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	88-06-2	2,4,6-Trichlorophenol	0.0614	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	120-83-2	2,4-Dichlorophenol	0.0557	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	105-67-9	2,4-Dimethylphenol	0.0499	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	51-28-5	2,4-Dinitrophenol	0.446	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	121-14-2	2,4-Dinitrotoluene	0.0548	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	606-20-2	2,6-Dinitrotoluene	0.0625	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	91-58-7	2-Chloronaphthalene	0.00535	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	95-57-8	2-Chlorophenol	0.0631	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	91-57-6	2-Methylnaphthalene	0.0049	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	88-75-5	2-Nitrophenol	0.0683	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	91-94-1	3,3'-Dichlorobenzidine	0.0706	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	534-52-1	4,6-Dinitro-2-methylphenol	0.434	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	101-55-3	4-Bromophenyl phenyl ether	0.0671	0	mg/kg

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	A	BRA10A	0 to 2	No	59-50-7	4-Chloro-3-methylphenol	0.062	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0666	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	100-02-7	4-Nitrophenol	0.0597	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	83-32-9	Acenaphthene	0.0024	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	208-96-8	Acenaphthylene	0.00264	1	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	120-12-7	Anthracene	0.00601	1	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	92-87-5	Benzdine	0.359	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	56-55-3	Benzo(a)anthracene	0.0286	1	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	50-32-8	Benzo(a)pyrene	0.0289	1	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	205-99-2	Benzo(b)fluoranthene	0.0443	1	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	191-24-2	Benzo(g,h,i)perylene	0.0352	1	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	207-08-9	Benzo(k)fluoranthene	0.0148	1	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	85-68-7	Benzyl butyl phthalate	0.0597	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0574	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0631	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0826	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.242	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	218-01-9	Chrysene	0.0349	1	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	53-70-3	Dibenz(a,h)anthracene	0.00653	1	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	84-66-2	Diethyl phthalate	0.0631	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	131-11-3	Dimethyl phthalate	0.405	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	84-74-2	di-n-Butyl phthalate	0.0654	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	117-84-0	di-n-Octylphthalate	0.13	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	206-44-0	Fluoranthene	0.0605	1	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	86-73-7	Fluorene	0.00235	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	118-74-1	Hexachlorobenzene	0.0677	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	87-68-3	Hexachlorobutadiene	0.0643	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	77-47-4	Hexachlorocyclopentadiene	0.1	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	67-72-1	Hexachloroethane	0.0752	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0274	1	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	78-59-1	Isophorone	0.0585	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	91-20-3	Naphthalene	0.00468	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	98-95-3	Nitrobenzene	0.0666	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	62-75-9	N-Nitrosodimethylamine	0.283	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	621-64-7	N-Nitrosodi-n-propylamine	0.0637	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	86-30-6	N-Nitrosodiphenylamine	0.145	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	87-86-5	Pentachlorophenol	0.0514	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	85-01-8	Phenanthrene	0.0221	1	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	108-95-2	Phenol	0.0769	0	mg/kg
SVOC	Composite	A	BRA10A	0 to 2	No	129-00-0	Pyrene	0.0422	1	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.0127	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.0121	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.0124	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.0121	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	90-12-0	1-Methylnaphthalene	0.0055	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	88-06-2	2,4,6-Trichlorophenol	0.0131	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	120-83-2	2,4-Dichlorophenol	0.0119	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	105-67-9	2,4-Dimethylphenol	0.0107	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	51-28-5	2,4-Dinitrophenol	0.0955	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	121-14-2	2,4-Dinitrotoluene	0.0117	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	606-20-2	2,6-Dinitrotoluene	0.0134	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	91-58-7	2-Chloronaphthalene	0.00571	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	95-57-8	2-Chlorophenol	0.0135	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	91-57-6	2-Methylnaphthalene	0.00523	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	88-75-5	2-Nitrophenol	0.0146	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	91-94-1	3,3'-Dichlorobenzidine	0.0151	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0926	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	101-55-3	4-Bromophenyl phenyl ether	0.0143	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	59-50-7	4-Chloro-3-methylphenol	0.0132	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0142	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	100-02-7	4-Nitrophenol	0.0127	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	83-32-9	Acenaphthene	0.00256	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	208-96-8	Acenaphthylene	0.00265	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	120-12-7	Anthracene	0.00282	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	92-87-5	Benzdine	0.0767	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	56-55-3	Benzo(a)anthracene	0.00403	1	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	50-32-8	Benzo(a)pyrene	0.00376	1	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	205-99-2	Benzo(b)fluoranthene	0.00525	1	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	191-24-2	Benzo(g,h,i)perylene	0.00368	1	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	207-08-9	Benzo(k)fluoranthene	0.00264	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	85-68-7	Benzyl butyl phthalate	0.0127	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0123	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0135	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0177	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0517	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	218-01-9	Chrysene	0.00318	1	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	53-70-3	Dibenz(a,h)anthracene	0.00211	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	84-66-2	Diethyl phthalate	0.0135	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	131-11-3	Dimethyl phthalate	0.0865	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	84-74-2	di-n-Butyl phthalate	0.014	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	117-84-0	di-n-Octylphthalate	0.0276	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	206-44-0	Fluoranthene	0.00781	1	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	86-73-7	Fluorene	0.00251	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	118-74-1	Hexachlorobenzene	0.0145	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	87-68-3	Hexachlorobutadiene	0.0137	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	77-47-4	Hexachlorocyclopentadiene	0.0215	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	67-72-1	Hexachloroethane	0.0161	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.00363	1	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	78-59-1	Isophorone	0.0125	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	91-20-3	Naphthalene	0.005	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	A	BRA10A	2 to 6	No	98-95-3	Nitrobenzene	0.0142	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	62-75-9	N-Nitrosodimethylamine	0.0606	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	621-64-7	N-Nitrosodi-n-propylamine	0.0136	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	86-30-6	N-Nitrosodiphenylamine	0.0309	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	87-86-5	Pentachlorophenol	0.011	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	85-01-8	Phenanthrene	0.00396	1	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	108-95-2	Phenol	0.0164	0	mg/kg
SVOC	Composite	A	BRA10A	2 to 6	No	129-00-0	Pyrene	0.00566	1	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00113	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.0011	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00083	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.0009	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	79-00-5	1,1,2-Trichloroethane	0.00071	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	75-34-3	1,1-Dichloroethane	0.00059	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	75-35-4	1,1-Dichloroethene	0.00072	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	563-58-6	1,1-Dichloropropene	0.00097	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	87-61-6	1,2,3-Trichlorobenzene	0.00875	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	96-18-4	1,2,3-Trichloropropane	0.00193	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	526-73-8	1,2,3-Trimethylbenzene	0.00189	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.00525	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	95-63-6	1,2,4-Trimethylbenzene	0.00189	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00466	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00077	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.00051	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	107-06-2	1,2-Dichloroethane	0.00078	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	78-87-5	1,2-Dichloropropane	0.0017	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00239	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.00072	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	142-28-9	1,3-Dichloropropane	0.0006	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.00084	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	594-20-7	2,2-Dichloropropane	0.00165	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	95-49-8	2-Chlorotoluene	0.00103	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	106-43-4	4-Chlorotoluene	0.00054	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	67-64-1	Acetone	0.0436	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	107-13-1	Acrylonitrile	0.00431	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	71-43-2	Benzene	0.00056	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	108-86-1	Bromobenzene	0.00107	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	75-27-4	Bromodichloromethane	0.00087	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	75-25-2	Bromoform	0.0014	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	74-83-9	Bromomethane	0.00235	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	56-23-5	Carbon Tetrachloride	0.00107	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	108-90-7	Chlorobenzene	0.00025	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	75-00-3	Chloroethane	0.00203	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	67-66-3	Chloroform	0.00123	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	74-87-3	Chloromethane	0.00519	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	156-59-2	cis-1,2-Dichloroethylene	0.00088	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	10061-01-5	cis-1,3-Dichloropropene	0.0009	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	99-87-6	Cymene	0.00304	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	124-48-1	Dibromochloromethane	0.00073	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	74-95-3	Dibromomethane	0.0009	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	75-71-8	Dichlorodifluoromethane	0.00192	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	100-41-4	Ethylbenzene	0.00088	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	87-68-3	Hexachlorobutadiene	0.00716	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	108-20-3	Isopropyl Ether	0.00049	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	98-82-8	Isopropylbenzene (Cumene)	0.00051	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0758	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00272	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	75-09-2	Methylene chloride	0.00793	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	104-51-8	n-Butylbenzene	0.00627	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	103-65-1	n-Propylbenzene	0.00113	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	135-98-8	sec-Butylbenzene	0.00344	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	100-42-5	Styrene	0.00027	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	98-06-6	t-Butylbenzene	0.00233	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	1634-04-4	tert-Butyl methyl ether	0.00042	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	127-18-4	Tetrachloroethylene (PCE)	0.00107	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	108-88-3	Toluene	0.00155	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	156-60-5	trans-1,2-Dichloroethene	0.00124	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	10061-02-6	trans-1,3-Dichloropropene	0.00136	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	79-01-6	Trichloroethylene (TCE)	0.0007	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	75-69-4	Trichlorofluoromethane	0.00099	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	75-01-4	Vinyl chloride	0.00139	0	mg/kg
VOC	Discrete	A	BRA10A	2 to 6	No	1330-20-7	Xylenes, total	0.00105	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.0128	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.0122	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.0125	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.0122	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	90-12-0	1-Methylnaphthalene	0.00554	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	88-06-2	2,4,6-Trichlorophenol	0.0132	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	120-83-2	2,4-Dichlorophenol	0.012	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	105-67-9	2,4-Dimethylphenol	0.0107	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	51-28-5	2,4-Dinitrophenol	0.096	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	121-14-2	2,4-Dinitrotoluene	0.0118	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	606-20-2	2,6-Dinitrotoluene	0.0134	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	91-58-7	2-Chloronaphthalene	0.00574	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	95-57-8	2-Chlorophenol	0.0136	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	91-57-6	2-Methylnaphthalene	0.00526	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	88-75-5	2-Nitrophenol	0.0147	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	91-94-1	3,3'-Dichlorobenzidine	0.0152	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0931	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	101-55-3	4-Bromophenyl phenyl ether	0.0144	0	mg/kg



TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	A	BRA10A	6 to 12	No	59-50-7	4-Chloro-3-methylphenol	0.0133	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0143	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	100-02-7	4-Nitrophenol	0.0128	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	83-32-9	Acenaphthene	0.00258	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	208-96-8	Acenaphthylene	0.00266	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	120-12-7	Anthracene	0.00284	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	92-87-5	Benzidine	0.0772	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	56-55-3	Benzo(a)anthracene	0.0153	1	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	50-32-8	Benzo(a)pyrene	0.0143	1	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	205-99-2	Benzo(b)fluoranthene	0.0212	1	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	191-24-2	Benzo(g,h,i)perylene	0.015	1	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	207-08-9	Benzo(k)fluoranthene	0.00816	1	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	85-68-7	Benzyl butyl phthalate	0.0128	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0123	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0136	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0178	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.052	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	218-01-9	Chrysene	0.0186	1	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	53-70-3	Dibenz(a,h)anthracene	0.00249	1	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	84-66-2	Diethyl phthalate	0.0136	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	131-11-3	Dimethyl phthalate	0.087	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	84-74-2	di-n-Butyl phthalate	0.0141	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	117-84-0	di-n-Octylphthalate	0.0277	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	206-44-0	Fluoranthene	0.0471	1	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	86-73-7	Fluorene	0.00253	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	118-74-1	Hexachlorobenzene	0.0145	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	87-68-3	Hexachlorobutadiene	0.0138	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	77-47-4	Hexachlorocyclopentadiene	0.0216	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	67-72-1	Hexachloroethane	0.0161	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0134	1	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	78-59-1	Isophorone	0.0126	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	91-20-3	Naphthalene	0.00503	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	98-95-3	Nitrobenzene	0.0143	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	62-75-9	N-Nitrosodimethylamine	0.0609	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	621-64-7	N-Nitrosodi-n-propylamine	0.0137	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	86-30-6	N-Nitrosodiphenylamine	0.0311	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	87-86-5	Pentachlorophenol	0.011	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	85-01-8	Phenanthrene	0.0196	1	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	108-95-2	Phenol	0.0165	0	mg/kg
SVOC	Composite	A	BRA10A	6 to 12	No	129-00-0	Pyrene	0.0329	1	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00128	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00125	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00094	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00102	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	79-00-5	1,1,2-Trichloroethane	0.00081	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	75-34-3	1,1-Dichloroethane	0.00067	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	75-35-4	1,1-Dichloroethene	0.00082	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	563-58-6	1,1-Dichloropropene	0.0011	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	87-61-6	1,2,3-Trichlorobenzene	0.00992	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	96-18-4	1,2,3-Trichloropropane	0.00219	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	526-73-8	1,2,3-Trimethylbenzene	0.00214	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.00596	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	95-63-6	1,2,4-Trimethylbenzene	0.00214	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00528	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00088	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.00058	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	107-06-2	1,2-Dichloroethane	0.00088	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	78-87-5	1,2-Dichloropropane	0.00192	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00271	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.00081	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	142-28-9	1,3-Dichloropropane	0.00068	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.00095	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	594-20-7	2,2-Dichloropropane	0.00187	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	95-49-8	2-Chlorotoluene	0.00117	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	106-43-4	4-Chlorotoluene	0.00061	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	67-64-1	Acetone	0.0494	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	107-13-1	Acrylonitrile	0.00489	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	71-43-2	Benzene	0.00063	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	108-86-1	Bromobenzene	0.00122	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	75-27-4	Bromodichloromethane	0.00098	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	75-25-2	Bromoform	0.00158	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	74-83-9	Bromomethane	0.00267	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	56-23-5	Carbon Tetrachloride	0.00122	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	108-90-7	Chlorobenzene	0.00028	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	75-00-3	Chloroethane	0.0023	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	67-66-3	Chloroform	0.00139	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	74-87-3	Chloromethane	0.00589	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	156-59-2	cis-1,2-Dichloroethylene	0.00099	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	10061-01-5	cis-1,3-Dichloropropene	0.00102	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	99-87-6	Cymene	0.00345	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	124-48-1	Dibromochloromethane	0.00083	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	74-95-3	Dibromomethane	0.00102	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	75-71-8	Dichlorodifluoromethane	0.00218	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	100-41-4	Ethylbenzene	0.001	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	87-68-3	Hexachlorobutadiene	0.00812	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	108-20-3	Isopropyl Ether	0.00056	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	98-82-8	Isopropylbenzene (Cumene)	0.00058	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.086	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00309	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	75-09-2	Methylene chloride	0.00899	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
VOC	Discrete	A	BRA10A	6 to 12	No	104-51-8	n-Butylbenzene	0.00711	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	103-65-1	n-Propylbenzene	0.00129	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	135-98-8	sec-Butylbenzene	0.0039	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	100-42-5	Styrene	0.00031	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	98-06-6	t-Butylbenzene	0.00264	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	1634-04-4	tert-Butyl methyl ether	0.00047	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	127-18-4	Tetrachloroethylene (PCE)	0.00121	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	108-88-3	Toluene	0.00176	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	156-60-5	trans-1,2-Dichloroethene	0.00141	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	10061-02-6	trans-1,3-Dichloropropene	0.00154	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	79-01-6	Trichloroethylene (TCE)	0.00079	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	75-69-4	Trichlorofluoromethane	0.00112	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	75-01-4	Vinyl chloride	0.00157	0	mg/kg
VOC	Discrete	A	BRA10A	6 to 12	No	1330-20-7	Xylenes, total	0.00119	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	120-82-1	1,2,4-Trichlorobenzene	0.0138	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	95-50-1	1,2-Dichlorobenzene	0.0131	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	541-73-1	1,3-Dichlorobenzene	0.0134	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	106-46-7	1,4-Dichlorobenzene	0.0132	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	90-12-0	1-Methylnaphthalene	0.00596	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	88-06-2	2,4,6-Trichlorophenol	0.0142	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	120-83-2	2,4-Dichlorophenol	0.0129	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	105-67-9	2,4-Dimethylphenol	0.0115	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	51-28-5	2,4-Dinitrophenol	0.103	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	121-14-2	2,4-Dinitrotoluene	0.0127	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	606-20-2	2,6-Dinitrotoluene	0.0145	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	91-58-7	2-Chloronaphthalene	0.00618	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	95-57-8	2-Chlorophenol	0.0146	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	91-57-6	2-Methylnaphthalene	0.00567	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	88-75-5	2-Nitrophenol	0.0158	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	91-94-1	3,3'-Dichlorobenzidine	0.0163	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	534-52-1	4,6-Dinitro-2-methylphenol	0.1	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	101-55-3	4-Bromophenyl phenyl ether	0.0155	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	59-50-7	4-Chloro-3-methylphenol	0.0143	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0154	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	100-02-7	4-Nitrophenol	0.0138	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	83-32-9	Acenaphthene	0.00277	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	208-96-8	Acenaphthylene	0.00287	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	120-12-7	Anthracene	0.00305	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	92-87-5	Benzdine	0.0831	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	56-55-3	Benzo(a)anthracene	0.0689	1	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	50-32-8	Benzo(a)pyrene	0.0881	1	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	205-99-2	Benzo(b)fluoranthene	0.147	1	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	191-24-2	Benzo(g,h,i)perylene	0.0628	1	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	207-08-9	Benzo(k)fluoranthene	0.0516	1	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	85-68-7	Benzyl butyl phthalate	0.0138	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0133	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0146	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0191	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0725	1	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	218-01-9	Chrysene	0.101	1	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	53-70-3	Dibenz(a,h)anthracene	0.0151	1	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	84-66-2	Diethyl phthalate	0.0146	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	131-11-3	Dimethyl phthalate	0.0937	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	84-74-2	di-n-Butyl phthalate	0.0151	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	117-84-0	di-n-Octylphthalate	0.0299	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	206-44-0	Fluoranthene	0.139	1	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	86-73-7	Fluorene	0.00272	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	118-74-1	Hexachlorobenzene	0.0157	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	87-68-3	Hexachlorobutadiene	0.0149	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	77-47-4	Hexachlorocyclopentadiene	0.0232	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	67-72-1	Hexachloroethane	0.0174	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0725	1	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	78-59-1	Isophorone	0.0135	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	91-20-3	Naphthalene	0.00541	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	98-95-3	Nitrobenzene	0.0154	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	62-75-9	N-Nitrosodimethylamine	0.0656	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	621-64-7	N-Nitrosodi-n-propylamine	0.0147	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	86-30-6	N-Nitrosodiphenylamine	0.0334	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	87-86-5	Pentachlorophenol	0.0119	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	85-01-8	Phenanthrene	0.0366	1	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	108-95-2	Phenol	0.0178	0	mg/kg
SVOC	Composite	B	BRA01B	0 to 2	No	129-00-0	Pyrene	0.124	1	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.0131	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.0124	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.0127	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.0125	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	90-12-0	1-Methylnaphthalene	0.00564	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	88-06-2	2,4,6-Trichlorophenol	0.0135	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	120-83-2	2,4-Dichlorophenol	0.0122	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	105-67-9	2,4-Dimethylphenol	0.0109	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	51-28-5	2,4-Dinitrophenol	0.0979	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	121-14-2	2,4-Dinitrotoluene	0.012	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	606-20-2	2,6-Dinitrotoluene	0.0137	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	91-58-7	2-Chloronaphthalene	0.00586	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	95-57-8	2-Chlorophenol	0.0138	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	91-57-6	2-Methylnaphthalene	0.00537	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	88-75-5	2-Nitrophenol	0.015	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	91-94-1	3,3'-Dichlorobenzidine	0.0155	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0949	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	101-55-3	4-Bromophenyl phenyl ether	0.0147	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	B	BRA01B	2 to 6	No	59-50-7	4-Chloro-3-methylphenol	0.0136	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0146	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	100-02-7	4-Nitrophenol	0.0131	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	83-32-9	Acenaphthene	0.00263	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	208-96-8	Acenaphthylene	0.00272	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	120-12-7	Anthracene	0.0106	1	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	92-87-5	Benzidine	0.0787	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	56-55-3	Benzo(a)anthracene	0.114	1	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	50-32-8	Benzo(a)pyrene	0.136	1	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	205-99-2	Benzo(b)fluoranthene	0.225	1	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	191-24-2	Benzo(g,h,i)perylene	0.0597	1	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	207-08-9	Benzo(k)fluoranthene	0.0808	1	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	85-68-7	Benzyl butyl phthalate	0.0131	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0126	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0138	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0181	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.053	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	218-01-9	Chrysene	0.156	1	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	53-70-3	Dibenz(a,h)anthracene	0.018	1	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	84-66-2	Diethyl phthalate	0.0138	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	131-11-3	Dimethyl phthalate	0.0888	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	84-74-2	di-n-Butyl phthalate	0.0143	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	117-84-0	di-n-Octylphthalate	0.0283	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	206-44-0	Fluoranthene	0.211	1	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	86-73-7	Fluorene	0.00258	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	118-74-1	Hexachlorobenzene	0.0148	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	87-68-3	Hexachlorobutadiene	0.0141	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	77-47-4	Hexachlorocyclopentadiene	0.022	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	67-72-1	Hexachloroethane	0.0165	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0744	1	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	78-59-1	Isophorone	0.0128	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	91-20-3	Naphthalene	0.00513	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	98-95-3	Nitrobenzene	0.0146	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	62-75-9	N-Nitrosodimethylamine	0.0621	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	621-64-7	N-Nitrosodi-n-propylamine	0.014	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	86-30-6	N-Nitrosodiphenylamine	0.0317	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	87-86-5	Pentachlorophenol	0.0113	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	85-01-8	Phenanthrene	0.0562	1	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	108-95-2	Phenol	0.0168	0	mg/kg
SVOC	Composite	B	BRA01B	2 to 6	No	129-00-0	Pyrene	0.181	1	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00139	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00135	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00102	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00111	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	79-00-5	1,1,2-Trichloroethane	0.00088	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	75-34-3	1,1-Dichloroethane	0.00072	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	75-35-4	1,1-Dichloroethene	0.00089	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	563-58-6	1,1-Dichloropropene	0.00119	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	87-61-6	1,2,3-Trichlorobenzene	0.0107	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	96-18-4	1,2,3-Trichloropropane	0.00238	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	526-73-8	1,2,3-Trimethylbenzene	0.00232	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.00645	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	95-63-6	1,2,4-Trimethylbenzene	0.00232	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00572	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00095	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.00062	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	107-06-2	1,2-Dichloroethane	0.00095	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	78-87-5	1,2-Dichloropropane	0.00208	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00293	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.00088	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	142-28-9	1,3-Dichloropropane	0.00074	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.00103	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	594-20-7	2,2-Dichloropropane	0.00202	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	95-49-8	2-Chlorotoluene	0.00127	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	106-43-4	4-Chlorotoluene	0.00066	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	67-64-1	Acetone	0.0535	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	107-13-1	Acrylonitrile	0.00529	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	71-43-2	Benzene	0.00069	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	108-86-1	Bromobenzene	0.00132	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	75-27-4	Bromodichloromethane	0.00106	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	75-25-2	Bromoform	0.00172	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	74-83-9	Bromomethane	0.00289	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	56-23-5	Carbon Tetrachloride	0.00132	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	108-90-7	Chlorobenzene	0.00031	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	75-00-3	Chloroethane	0.00249	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	67-66-3	Chloroform	0.00151	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	74-87-3	Chloromethane	0.00638	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	156-59-2	cis-1,2-Dichloroethylene	0.00108	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	10061-01-5	cis-1,3-Dichloropropene	0.00111	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	99-87-6	Cymene	0.00374	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	124-48-1	Dibromochloromethane	0.0009	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	74-95-3	Dibromomethane	0.0011	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	75-71-8	Dichlorodifluoromethane	0.00236	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	100-41-4	Ethylbenzene	0.00108	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	87-68-3	Hexachlorobutadiene	0.0088	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	108-20-3	Isopropyl Ether	0.0006	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	98-82-8	Isopropylbenzene (Cumene)	0.00062	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0931	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00334	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	75-09-2	Methylene chloride	0.00974	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
VOC	Discrete	B	BRA01B	2 to 6	No	104-51-8	n-Butylbenzene	0.0077	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	103-65-1	n-Propylbenzene	0.00139	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	135-98-8	sec-Butylbenzene	0.00422	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	100-42-5	Styrene	0.00034	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	98-06-6	t-Butylbenzene	0.00286	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	1634-04-4	tert-Butyl methyl ether	0.00051	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	127-18-4	Tetrachloroethylene (PCE)	0.00131	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	108-88-3	Toluene	0.00191	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	156-60-5	trans-1,2-Dichloroethene	0.00152	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	10061-02-6	trans-1,3-Dichloropropene	0.00167	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	79-01-6	Trichloroethylene (TCE)	0.00086	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	75-69-4	Trichlorofluoromethane	0.00121	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	75-01-4	Vinyl chloride	0.0017	0	mg/kg
VOC	Discrete	B	BRA01B	2 to 6	No	1330-20-7	Xylenes, total	0.00129	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.0127	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.012	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.0123	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.0121	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	90-12-0	1-Methylnaphthalene	0.00548	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	88-06-2	2,4,6-Trichlorophenol	0.0131	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	120-83-2	2,4-Dichlorophenol	0.0118	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	105-67-9	2,4-Dimethylphenol	0.0106	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	51-28-5	2,4-Dinitrophenol	0.0951	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	121-14-2	2,4-Dinitrotoluene	0.0117	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	606-20-2	2,6-Dinitrotoluene	0.0133	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	91-58-7	2-Chloronaphthalene	0.00569	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	95-57-8	2-Chlorophenol	0.0134	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	91-57-6	2-Methylnaphthalene	0.00521	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	88-75-5	2-Nitrophenol	0.0145	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	91-94-1	3,3'-Dichlorobenzidine	0.015	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0921	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	101-55-3	4-Bromophenyl phenyl ether	0.0143	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	59-50-7	4-Chloro-3-methylphenol	0.0132	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0142	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	100-02-7	4-Nitrophenol	0.0127	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	83-32-9	Acenaphthene	0.00255	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	208-96-8	Acenaphthylene	0.00264	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	120-12-7	Anthracene	0.00281	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	92-87-5	Benzidine	0.0764	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	56-55-3	Benzo(a)anthracene	0.00245	1	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	50-32-8	Benzo(a)pyrene	0.00832	1	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	205-99-2	Benzo(b)fluoranthene	0.0134	1	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	191-24-2	Benzo(g,h,i)perylene	0.00805	1	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	207-08-9	Benzo(k)fluoranthene	0.00262	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	85-68-7	Benzyl butyl phthalate	0.0127	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0122	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0134	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0176	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0515	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	218-01-9	Chrysene	0.0117	1	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	53-70-3	Dibenz(a,h)anthracene	0.0021	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	84-66-2	Diethyl phthalate	0.0134	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	131-11-3	Dimethyl phthalate	0.0861	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	84-74-2	di-n-Butyl phthalate	0.0139	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	117-84-0	di-n-Octylphthalate	0.0275	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	206-44-0	Fluoranthene	0.0127	1	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	86-73-7	Fluorene	0.0025	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	118-74-1	Hexachlorobenzene	0.0144	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	87-68-3	Hexachlorobutadiene	0.0137	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	77-47-4	Hexachlorocyclopentadiene	0.0214	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	67-72-1	Hexachloroethane	0.016	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.00221	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	78-59-1	Isophorone	0.0124	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	91-20-3	Naphthalene	0.00498	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	98-95-3	Nitrobenzene	0.0142	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	62-75-9	N-Nitrosodimethylamine	0.0603	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	621-64-7	N-Nitrosodi-n-propylamine	0.0135	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	86-30-6	N-Nitrosodiphenylamine	0.0307	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	87-86-5	Pentachlorophenol	0.0109	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	85-01-8	Phenanthrene	0.00282	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	108-95-2	Phenol	0.0164	0	mg/kg
SVOC	Composite	B	BRA01B	6 to 12	No	129-00-0	Pyrene	0.0117	1	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00144	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.0014	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00106	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00115	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	79-00-5	1,1,2-Trichloroethane	0.00091	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	75-34-3	1,1-Dichloroethane	0.00075	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	75-35-4	1,1-Dichloroethene	0.00092	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	563-58-6	1,1-Dichloropropene	0.00123	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	87-61-6	1,2,3-Trichlorobenzene	0.0111	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	96-18-4	1,2,3-Trichloropropane	0.00246	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	526-73-8	1,2,3-Trimethylbenzene	0.0024	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.00669	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	95-63-6	1,2,4-Trimethylbenzene	0.0024	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00593	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00099	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.00065	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	107-06-2	1,2-Dichloroethane	0.00099	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	78-87-5	1,2-Dichloropropane	0.00216	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
VOC	Discrete	B	BRA01B	6 to 12	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00304	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.00091	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	142-28-9	1,3-Dichloropropane	0.00076	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.00106	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	594-20-7	2,2-Dichloropropane	0.0021	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	95-49-8	2-Chlorotoluene	0.00131	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	106-43-4	4-Chlorotoluene	0.00068	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	67-64-1	Acetone	0.0555	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	107-13-1	Acrylonitrile	0.00549	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	71-43-2	Benzene	0.00071	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	108-86-1	Bromobenzene	0.00137	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	75-27-4	Bromodichloromethane	0.0011	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	75-25-2	Bromoform	0.00178	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	74-83-9	Bromomethane	0.00299	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	56-23-5	Carbon Tetrachloride	0.00136	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	108-90-7	Chlorobenzene	0.00032	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	75-00-3	Chloroethane	0.00258	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	67-66-3	Chloroform	0.00156	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	74-87-3	Chloromethane	0.00661	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	156-59-2	cis-1,2-Dichloroethylene	0.00112	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	10061-01-5	cis-1,3-Dichloropropene	0.00115	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	99-87-6	Cymene	0.00387	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	124-48-1	Dibromochloromethane	0.00093	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	74-95-3	Dibromomethane	0.00114	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	75-71-8	Dichlorodifluoromethane	0.00245	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	100-41-4	Ethylbenzene	0.00112	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	87-68-3	Hexachlorobutadiene	0.00912	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	108-20-3	Isopropyl Ether	0.00062	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	98-82-8	Isopropylbenzene (Cumene)	0.00065	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0965	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00346	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	75-09-2	Methylene chloride	0.0101	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	104-51-8	n-Butylbenzene	0.00798	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	103-65-1	n-Propylbenzene	0.00144	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	135-98-8	sec-Butylbenzene	0.00438	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	100-42-5	Styrene	0.00035	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	98-06-6	t-Butylbenzene	0.00296	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	1634-04-4	tert-Butyl methyl ether	0.00053	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	127-18-4	Tetrachloroethylene (PCE)	0.00136	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	108-88-3	Toluene	0.00198	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	156-60-5	trans-1,2-Dichloroethene	0.00158	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	10061-02-6	trans-1,3-Dichloropropene	0.00173	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	79-01-6	Trichloroethylene (TCE)	0.00089	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	75-69-4	Trichlorofluoromethane	0.00126	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	75-01-4	Vinyl chloride	0.00176	0	mg/kg
VOC	Discrete	B	BRA01B	6 to 12	No	1330-20-7	Xylenes, total	0.00134	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	120-82-1	1,2,4-Trichlorobenzene	0.0118	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	95-50-1	1,2-Dichlorobenzene	0.0112	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	541-73-1	1,3-Dichlorobenzene	0.0115	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	106-46-7	1,4-Dichlorobenzene	0.0113	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	90-12-0	1-Methylnaphthalene	0.0051	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	88-06-2	2,4,6-Trichlorophenol	0.0121	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	120-83-2	2,4-Dichlorophenol	0.011	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	105-67-9	2,4-Dimethylphenol	0.00988	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	51-28-5	2,4-Dinitrophenol	0.0884	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	121-14-2	2,4-Dinitrotoluene	0.0108	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	606-20-2	2,6-Dinitrotoluene	0.0124	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	91-58-7	2-Chloronaphthalene	0.00529	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	95-57-8	2-Chlorophenol	0.0125	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	91-57-6	2-Methylnaphthalene	0.00485	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	88-75-5	2-Nitrophenol	0.0135	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	91-94-1	3,3'-Dichlorobenzidine	0.014	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0857	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	101-55-3	4-Bromophenyl phenyl ether	0.0133	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	59-50-7	4-Chloro-3-methylphenol	0.0123	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0132	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	100-02-7	4-Nitrophenol	0.0118	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	83-32-9	Acenaphthene	0.00438	1	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	208-96-8	Acenaphthylene	0.00537	1	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	120-12-7	Anthracene	0.0125	1	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	92-87-5	Benzdine	0.0711	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	56-55-3	Benzo(a)anthracene	0.0898	1	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	50-32-8	Benzo(a)pyrene	0.0991	1	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	205-99-2	Benzo(b)fluoranthene	0.175	1	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	191-24-2	Benzo(g,h,i)perylene	0.108	1	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	207-08-9	Benzo(k)fluoranthene	0.0514	1	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	85-68-7	Benzyl butyl phthalate	0.0118	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0114	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0125	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0163	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0479	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	218-01-9	Chrysene	0.0842	1	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	53-70-3	Dibenz(a,h)anthracene	0.0224	1	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	84-66-2	Diethyl phthalate	0.0125	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	131-11-3	Dimethyl phthalate	0.0801	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	84-74-2	di-n-Butyl phthalate	0.0129	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	117-84-0	di-n-Octylphthalate	0.0255	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	206-44-0	Fluoranthene	0.171	1	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	86-73-7	Fluorene	0.00337	1	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	118-74-1	Hexachlorobenzene	0.0134	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	B	BRA02B	0 to 2	No	87-68-3	Hexachlorobutadiene	0.0127	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	77-47-4	Hexachlorocyclopentadiene	0.0199	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	67-72-1	Hexachloroethane	0.0149	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.102	1	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	78-59-1	Isophorone	0.0116	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	91-20-3	Naphthalene	0.00463	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	98-95-3	Nitrobenzene	0.0132	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	62-75-9	N-Nitrosodimethylamine	0.0561	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	621-64-7	N-Nitrosodi-n-propylamine	0.0126	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	86-30-6	N-Nitrosodiphenylamine	0.0286	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	87-86-5	Pentachlorophenol	0.0102	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	85-01-8	Phenanthrene	0.0555	1	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	108-95-2	Phenol	0.0152	0	mg/kg
SVOC	Composite	B	BRA02B	0 to 2	No	129-00-0	Pyrene	0.141	1	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.012	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.0114	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.0116	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.0114	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	90-12-0	1-Methylnaphthalene	0.00684	1	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	88-06-2	2,4,6-Trichlorophenol	0.0123	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	120-83-2	2,4-Dichlorophenol	0.0112	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	105-67-9	2,4-Dimethylphenol	0.01	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	51-28-5	2,4-Dinitrophenol	0.0897	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	121-14-2	2,4-Dinitrotoluene	0.011	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	606-20-2	2,6-Dinitrotoluene	0.0125	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	91-58-7	2-Chloronaphthalene	0.00536	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	95-57-8	2-Chlorophenol	0.0127	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	91-57-6	2-Methylnaphthalene	0.00748	1	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	88-75-5	2-Nitrophenol	0.0137	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	91-94-1	3,3'-Dichlorobenzidine	0.0142	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0869	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	101-55-3	4-Bromophenyl phenyl ether	0.0135	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	59-50-7	4-Chloro-3-methylphenol	0.0124	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0134	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	100-02-7	4-Nitrophenol	0.012	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	83-32-9	Acenaphthene	0.00429	1	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	208-96-8	Acenaphthylene	0.00623	1	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	120-12-7	Anthracene	0.0108	1	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	92-87-5	Benzdine	0.0721	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	56-55-3	Benzo(a)anthracene	0.0655	1	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	50-32-8	Benzo(a)pyrene	0.0657	1	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	205-99-2	Benzo(b)fluoranthene	0.0887	1	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	191-24-2	Benzo(g,h,i)perylene	0.0647	1	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	207-08-9	Benzo(k)fluoranthene	0.0276	1	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	85-68-7	Benzyl butyl phthalate	0.012	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0115	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0127	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0166	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0486	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	218-01-9	Chrysene	0.0562	1	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	53-70-3	Dibenz(a,h)anthracene	0.0147	1	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	84-66-2	Diethyl phthalate	0.0127	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	131-11-3	Dimethyl phthalate	0.0813	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	84-74-2	di-n-Butyl phthalate	0.0131	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	117-84-0	di-n-Octylphthalate	0.0259	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	206-44-0	Fluoranthene	0.136	1	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	86-73-7	Fluorene	0.00287	1	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	118-74-1	Hexachlorobenzene	0.0136	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	87-68-3	Hexachlorobutadiene	0.0129	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	77-47-4	Hexachlorocyclopentadiene	0.0201	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	67-72-1	Hexachloroethane	0.0151	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0607	1	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	78-59-1	Isophorone	0.0117	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	91-20-3	Naphthalene	0.0047	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	98-95-3	Nitrobenzene	0.0134	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	62-75-9	N-Nitrosodimethylamine	0.0569	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	621-64-7	N-Nitrosodi-n-propylamine	0.0128	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	86-30-6	N-Nitrosodiphenylamine	0.029	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	87-86-5	Pentachlorophenol	0.0103	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	85-01-8	Phenanthrene	0.0852	1	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	108-95-2	Phenol	0.0154	0	mg/kg
SVOC	Composite	B	BRA02B	2 to 6	No	129-00-0	Pyrene	0.0951	1	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00146	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00141	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00107	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00116	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	79-00-5	1,1,2-Trichloroethane	0.00091	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	75-34-3	1,1-Dichloroethane	0.00075	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	75-35-4	1,1-Dichloroethene	0.00093	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	563-58-6	1,1-Dichloropropene	0.00124	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	87-61-6	1,2,3-Trichlorobenzene	0.0112	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	96-18-4	1,2,3-Trichloropropane	0.00248	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	526-73-8	1,2,3-Trimethylbenzene	0.00261	1	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.00674	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	95-63-6	1,2,4-Trimethylbenzene	0.00398	1	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00598	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00099	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.00065	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	107-06-2	1,2-Dichloroethane	0.00099	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	78-87-5	1,2-Dichloropropane	0.00218	0	mg/kg



TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
VOC	Discrete	B	BRA02B	2 to 6	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00306	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.00092	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	142-28-9	1,3-Dichloropropane	0.00077	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.00107	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	594-20-7	2,2-Dichloropropane	0.00212	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	95-49-8	2-Chlorotoluene	0.00132	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	106-43-4	4-Chlorotoluene	0.00069	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	67-64-1	Acetone	0.0559	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	107-13-1	Acrylonitrile	0.00553	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	71-43-2	Benzene	0.00072	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	108-86-1	Bromobenzene	0.00139	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	75-27-4	Bromodichloromethane	0.00111	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	75-25-2	Bromoform	0.00179	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	74-83-9	Bromomethane	0.00302	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	56-23-5	Carbon Tetrachloride	0.00137	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	108-90-7	Chlorobenzene	0.00032	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	75-00-3	Chloroethane	0.0026	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	67-66-3	Chloroform	0.0137	1	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	74-87-3	Chloromethane	0.00667	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	156-59-2	cis-1,2-Dichloroethylene	0.00113	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	10061-01-5	cis-1,3-Dichloropropene	0.00116	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	99-87-6	Cymene	0.00391	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	124-48-1	Dibromochloromethane	0.00094	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	74-95-3	Dibromomethane	0.00115	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	75-71-8	Dichlorodifluoromethane	0.00246	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	100-41-4	Ethylbenzene	0.00184	1	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	87-68-3	Hexachlorobutadiene	0.0492	1	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	108-20-3	Isopropyl Ether	0.00063	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	98-82-8	Isopropylbenzene (Cumene)	0.00065	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0973	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.396	1	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	75-09-2	Methylene chloride	0.0102	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	104-51-8	n-Butylbenzene	0.00804	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	103-65-1	n-Propylbenzene	0.00146	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	135-98-8	sec-Butylbenzene	0.00441	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	100-42-5	Styrene	0.00035	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	98-06-6	t-Butylbenzene	0.00299	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	1634-04-4	tert-Butyl methyl ether	0.00054	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	127-18-4	Tetrachloroethylene (PCE)	0.00268	1	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	108-88-3	Toluene	0.002	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	156-60-5	trans-1,2-Dichloroethene	0.00159	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	10061-02-6	trans-1,3-Dichloropropene	0.00175	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	79-01-6	Trichloroethylene (TCE)	0.0009	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	75-69-4	Trichlorofluoromethane	0.00126	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	75-01-4	Vinyl chloride	0.00178	0	mg/kg
VOC	Discrete	B	BRA02B	2 to 6	No	1330-20-7	Xylenes, total	0.0212	1	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.012	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.0114	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.0117	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.0114	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	90-12-0	1-Methylnaphthalene	0.00518	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	88-06-2	2,4,6-Trichlorophenol	0.0123	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	120-83-2	2,4-Dichlorophenol	0.0112	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	105-67-9	2,4-Dimethylphenol	0.01	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	51-28-5	2,4-Dinitrophenol	0.0899	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	121-14-2	2,4-Dinitrotoluene	0.011	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	606-20-2	2,6-Dinitrotoluene	0.0126	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	91-58-7	2-Chloronaphthalene	0.00538	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	95-57-8	2-Chlorophenol	0.0127	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	91-57-6	2-Methylnaphthalene	0.00493	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	88-75-5	2-Nitrophenol	0.0137	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	91-94-1	3,3'-Dichlorobenzidine	0.0142	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0871	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	101-55-3	4-Bromophenyl phenyl ether	0.0135	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	59-50-7	4-Chloro-3-methylphenol	0.0125	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0134	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	100-02-7	4-Nitrophenol	0.012	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	83-32-9	Acenaphthene	0.00412	1	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	208-96-8	Acenaphthylene	0.00354	1	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	120-12-7	Anthracene	0.00938	1	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	92-87-5	Benzidine	0.0722	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	56-55-3	Benzo(a)anthracene	0.0605	1	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	50-32-8	Benzo(a)pyrene	0.0602	1	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	205-99-2	Benzo(b)fluoranthene	0.0884	1	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	191-24-2	Benzo(g,h,i)perylene	0.0602	1	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	207-08-9	Benzo(k)fluoranthene	0.0273	1	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	85-68-7	Benzyl butyl phthalate	0.012	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0115	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0127	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0166	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0487	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	218-01-9	Chrysene	0.0554	1	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	53-70-3	Dibenz(a,h)anthracene	0.0143	1	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	84-66-2	Diethyl phthalate	0.0127	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	131-11-3	Dimethyl phthalate	0.0815	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	84-74-2	di-n-Butyl phthalate	0.0132	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	117-84-0	di-n-Octylphthalate	0.026	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	206-44-0	Fluoranthene	0.114	1	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	86-73-7	Fluorene	0.00413	1	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	118-74-1	Hexachlorobenzene	0.0136	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	B	BRA02B	6 to 12	No	87-68-3	Hexachlorobutadiene	0.0129	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	77-47-4	Hexachlorocyclopentadiene	0.0202	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	67-72-1	Hexachloroethane	0.0151	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0562	1	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	78-59-1	Isophorone	0.0118	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	91-20-3	Naphthalene	0.00471	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	98-95-3	Nitrobenzene	0.0134	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	62-75-9	N-Nitrosodimethylamine	0.057	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	621-64-7	N-Nitrosodi-n-propylamine	0.0128	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	86-30-6	N-Nitrosodiphenylamine	0.0291	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	87-86-5	Pentachlorophenol	0.0103	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	85-01-8	Phenanthrene	0.0658	1	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	108-95-2	Phenol	0.0155	0	mg/kg
SVOC	Composite	B	BRA02B	6 to 12	No	129-00-0	Pyrene	0.086	1	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00121	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00118	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00089	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00097	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	79-00-5	1,1,2-Trichloroethane	0.00076	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	75-34-3	1,1-Dichloroethane	0.00063	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	75-35-4	1,1-Dichloroethene	0.00078	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	563-58-6	1,1-Dichloropropene	0.00104	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	87-61-6	1,2,3-Trichlorobenzene	0.00939	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	96-18-4	1,2,3-Trichloropropane	0.00207	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	526-73-8	1,2,3-Trimethylbenzene	0.00202	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.00563	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	95-63-6	1,2,4-Trimethylbenzene	0.00202	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00499	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00083	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.00054	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	107-06-2	1,2-Dichloroethane	0.00083	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	78-87-5	1,2-Dichloropropane	0.00182	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00256	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.00077	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	142-28-9	1,3-Dichloropropane	0.00064	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.0009	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	594-20-7	2,2-Dichloropropane	0.00177	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	95-49-8	2-Chlorotoluene	0.00111	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	106-43-4	4-Chlorotoluene	0.00058	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	67-64-1	Acetone	0.0467	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	107-13-1	Acrylonitrile	0.00462	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	71-43-2	Benzene	0.0006	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	108-86-1	Bromobenzene	0.00115	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	75-27-4	Bromodichloromethane	0.00093	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	75-25-2	Bromoform	0.0015	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	74-83-9	Bromomethane	0.00252	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	56-23-5	Carbon Tetrachloride	0.00115	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	108-90-7	Chlorobenzene	0.00027	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	75-00-3	Chloroethane	0.00218	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	67-66-3	Chloroform	0.0104	1	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	74-87-3	Chloromethane	0.00557	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	156-59-2	cis-1,2-Dichloroethylene	0.00094	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	10061-01-5	cis-1,3-Dichloropropene	0.00097	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	99-87-6	Cymene	0.00326	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	124-48-1	Dibromochloromethane	0.00078	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	74-95-3	Dibromomethane	0.00096	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	75-71-8	Dichlorodifluoromethane	0.00206	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	100-41-4	Ethylbenzene	0.00094	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	87-68-3	Hexachlorobutadiene	0.0262	1	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	108-20-3	Isopropyl Ether	0.00053	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	98-82-8	Isopropylbenzene (Cumene)	0.00054	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0813	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00292	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	75-09-2	Methylene chloride	0.0085	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	104-51-8	n-Butylbenzene	0.00672	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	103-65-1	n-Propylbenzene	0.00122	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	135-98-8	sec-Butylbenzene	0.00369	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	100-42-5	Styrene	0.00029	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	98-06-6	t-Butylbenzene	0.0025	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	1634-04-4	tert-Butyl methyl ether	0.00045	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	127-18-4	Tetrachloroethylene (PCE)	0.00115	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	108-88-3	Toluene	0.00166	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	156-60-5	trans-1,2-Dichloroethene	0.00133	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	10061-02-6	trans-1,3-Dichloropropene	0.00146	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	79-01-6	Trichloroethylene (TCE)	0.00075	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	75-69-4	Trichlorofluoromethane	0.00106	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	75-01-4	Vinyl chloride	0.00149	0	mg/kg
VOC	Discrete	B	BRA02B	6 to 12	No	1330-20-7	Xylenes, total	0.00113	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	120-82-1	1,2,4-Trichlorobenzene	0.0128	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	95-50-1	1,2-Dichlorobenzene	0.0121	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	541-73-1	1,3-Dichlorobenzene	0.0124	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	106-46-7	1,4-Dichlorobenzene	0.0122	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	90-12-0	1-Methylnaphthalene	0.00552	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	88-06-2	2,4,6-Trichlorophenol	0.0131	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	120-83-2	2,4-Dichlorophenol	0.0119	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	105-67-9	2,4-Dimethylphenol	0.0107	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	51-28-5	2,4-Dinitrophenol	0.0957	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	121-14-2	2,4-Dinitrotoluene	0.0117	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	606-20-2	2,6-Dinitrotoluene	0.0134	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	91-58-7	2-Chloronaphthalene	0.00573	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	B	BRA03B	0 to 2	No	95-57-8	2-Chlorophenol	0.0135	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	91-57-6	2-Methylnaphthalene	0.00525	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	88-75-5	2-Nitrophenol	0.0146	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	91-94-1	3,3'-Dichlorobenzidine	0.0151	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0928	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	101-55-3	4-Bromophenyl phenyl ether	0.0144	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	59-50-7	4-Chloro-3-methylphenol	0.0133	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0143	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	100-02-7	4-Nitrophenol	0.0128	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	83-32-9	Acenaphthene	0.00257	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	208-96-8	Acenaphthylene	0.00265	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	120-12-7	Anthracene	0.0034	1	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	92-87-5	Benzdine	0.0769	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	56-55-3	Benzo(a)anthracene	0.0333	1	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	50-32-8	Benzo(a)pyrene	0.0428	1	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	205-99-2	Benzo(b)fluoranthene	0.0782	1	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	191-24-2	Benzo(g,h,i)perylene	0.0361	1	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	207-08-9	Benzo(k)fluoranthene	0.0184	1	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	85-68-7	Benzyl butyl phthalate	0.016	1	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0123	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0135	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0177	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.133	1	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	218-01-9	Chrysene	0.0408	1	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	53-70-3	Dibenz(a,h)anthracene	0.00806	1	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	84-66-2	Diethyl phthalate	0.0135	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	131-11-3	Dimethyl phthalate	0.0868	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	84-74-2	di-n-Butyl phthalate	0.014	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	117-84-0	di-n-Octylphthalate	0.0276	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	206-44-0	Fluoranthene	0.06	1	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	86-73-7	Fluorene	0.00252	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	118-74-1	Hexachlorobenzene	0.0145	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	87-68-3	Hexachlorobutadiene	0.0138	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	77-47-4	Hexachlorocyclopentadiene	0.0215	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	67-72-1	Hexachloroethane	0.0161	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0343	1	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	78-59-1	Isophorone	0.0125	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	91-20-3	Naphthalene	0.00501	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	98-95-3	Nitrobenzene	0.0143	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	62-75-9	N-Nitrosodimethylamine	0.0607	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	621-64-7	N-Nitrosodi-n-propylamine	0.0136	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	86-30-6	N-Nitrosodiphenylamine	0.031	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	87-86-5	Pentachlorophenol	0.011	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	85-01-8	Phenanthrene	0.0183	1	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	108-95-2	Phenol	0.0165	0	mg/kg
SVOC	Composite	B	BRA03B	0 to 2	No	129-00-0	Pyrene	0.0607	1	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.0133	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.0126	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.0129	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.0127	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	90-12-0	1-Methylnaphthalene	0.00574	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	88-06-2	2,4,6-Trichlorophenol	0.0137	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	120-83-2	2,4-Dichlorophenol	0.0124	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	105-67-9	2,4-Dimethylphenol	0.0111	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	51-28-5	2,4-Dinitrophenol	0.0996	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	121-14-2	2,4-Dinitrotoluene	0.0122	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	606-20-2	2,6-Dinitrotoluene	0.0139	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	91-58-7	2-Chloronaphthalene	0.00596	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	95-57-8	2-Chlorophenol	0.0141	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	91-57-6	2-Methylnaphthalene	0.00612	1	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	88-75-5	2-Nitrophenol	0.0152	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	91-94-1	3,3'-Dichlorobenzidine	0.0157	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0965	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	101-55-3	4-Bromophenyl phenyl ether	0.015	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	59-50-7	4-Chloro-3-methylphenol	0.0138	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0148	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	100-02-7	4-Nitrophenol	0.0133	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	83-32-9	Acenaphthene	0.00267	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	208-96-8	Acenaphthylene	0.00276	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	120-12-7	Anthracene	0.00294	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	92-87-5	Benzdine	0.08	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	56-55-3	Benzo(a)anthracene	0.0106	1	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	50-32-8	Benzo(a)pyrene	0.012	1	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	205-99-2	Benzo(b)fluoranthene	0.0219	1	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	191-24-2	Benzo(g,h,i)perylene	0.00799	1	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	207-08-9	Benzo(k)fluoranthene	0.00478	1	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	85-68-7	Benzyl butyl phthalate	0.0133	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0128	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0141	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0184	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.054	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	218-01-9	Chrysene	0.011	1	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	53-70-3	Dibenz(a,h)anthracene	0.0022	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	84-66-2	Diethyl phthalate	0.0141	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	131-11-3	Dimethyl phthalate	0.0903	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	84-74-2	di-n-Butyl phthalate	0.0146	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	117-84-0	di-n-Octylphthalate	0.0288	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	206-44-0	Fluoranthene	0.0188	1	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	86-73-7	Fluorene	0.00262	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	118-74-1	Hexachlorobenzene	0.0151	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	B	BRA03B	2 to 6	No	87-68-3	Hexachlorobutadiene	0.0143	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	77-47-4	Hexachlorocyclopentadiene	0.0224	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	67-72-1	Hexachloroethane	0.0167	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.00752	1	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	78-59-1	Isophorone	0.013	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	91-20-3	Naphthalene	0.00522	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	98-95-3	Nitrobenzene	0.0148	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	62-75-9	N-Nitrosodimethylamine	0.0632	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	621-64-7	N-Nitrosodi-n-propylamine	0.0142	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	86-30-6	N-Nitrosodiphenylamine	0.0322	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	87-86-5	Pentachlorophenol	0.0115	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	85-01-8	Phenanthrene	0.00415	1	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	108-95-2	Phenol	0.0171	0	mg/kg
SVOC	Composite	B	BRA03B	2 to 6	No	129-00-0	Pyrene	0.0176	1	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00129	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00126	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00095	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00103	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	79-00-5	1,1,2-Trichloroethane	0.00081	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	75-34-3	1,1-Dichloroethane	0.00067	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	75-35-4	1,1-Dichloroethene	0.00083	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	563-58-6	1,1-Dichloropropene	0.0011	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	87-61-6	1,2,3-Trichlorobenzene	0.00998	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	96-18-4	1,2,3-Trichloropropane	0.00221	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	526-73-8	1,2,3-Trimethylbenzene	0.00215	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.00599	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	95-63-6	1,2,4-Trimethylbenzene	0.00215	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00531	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00088	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.00058	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	107-06-2	1,2-Dichloroethane	0.00088	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	78-87-5	1,2-Dichloropropane	0.00193	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00272	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.00082	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	142-28-9	1,3-Dichloropropane	0.00068	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.00095	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	594-20-7	2,2-Dichloropropane	0.00188	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	95-49-8	2-Chlorotoluene	0.00118	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	106-43-4	4-Chlorotoluene	0.00061	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	67-64-1	Acetone	0.0497	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	107-13-1	Acrylonitrile	0.00492	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	71-43-2	Benzene	0.00064	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	108-86-1	Bromobenzene	0.00123	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	75-27-4	Bromodichloromethane	0.00099	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	75-25-2	Bromoform	0.00159	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	74-83-9	Bromomethane	0.00268	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	56-23-5	Carbon Tetrachloride	0.00122	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	108-90-7	Chlorobenzene	0.00029	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	75-00-3	Chloroethane	0.00231	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	67-66-3	Chloroform	0.0014	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	74-87-3	Chloromethane	0.00592	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	156-59-2	cis-1,2-Dichloroethylene	0.001	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	10061-01-5	cis-1,3-Dichloropropene	0.00103	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	99-87-6	Cymene	0.00347	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	124-48-1	Dibromochloromethane	0.00083	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	74-95-3	Dibromomethane	0.00102	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	75-71-8	Dichlorodifluoromethane	0.00219	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	100-41-4	Ethylbenzene	0.001	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	87-68-3	Hexachlorobutadiene	0.00817	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	108-20-3	Isopropyl Ether	0.00056	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	98-82-8	Isopropylbenzene (Cumene)	0.00058	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0865	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.0031	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	75-09-2	Methylene chloride	0.00904	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	104-51-8	n-Butylbenzene	0.00715	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	103-65-1	n-Propylbenzene	0.00129	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	135-98-8	sec-Butylbenzene	0.00392	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	100-42-5	Styrene	0.00031	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	98-06-6	t-Butylbenzene	0.00266	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	1634-04-4	tert-Butyl methyl ether	0.00048	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	127-18-4	Tetrachloroethylene (PCE)	0.00122	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	108-88-3	Toluene	0.00177	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	156-60-5	trans-1,2-Dichloroethene	0.00142	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	10061-02-6	trans-1,3-Dichloropropene	0.00155	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	79-01-6	Trichloroethylene (TCE)	0.0008	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	75-69-4	Trichlorofluoromethane	0.00113	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	75-01-4	Vinyl chloride	0.00158	0	mg/kg
VOC	Discrete	B	BRA03B	2 to 6	No	1330-20-7	Xylenes, total	0.0012	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.0125	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.0119	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.0121	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.0119	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	90-12-0	1-Methylnaphthalene	0.00539	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	88-06-2	2,4,6-Trichlorophenol	0.0129	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	120-83-2	2,4-Dichlorophenol	0.0117	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	105-67-9	2,4-Dimethylphenol	0.0105	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	51-28-5	2,4-Dinitrophenol	0.0936	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	121-14-2	2,4-Dinitrotoluene	0.0115	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	606-20-2	2,6-Dinitrotoluene	0.0131	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	91-58-7	2-Chloronaphthalene	0.0056	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	B	BRA03B	6 to 12	No	95-57-8	2-Chlorophenol	0.0132	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	91-57-6	2-Methylnaphthalene	0.00513	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	88-75-5	2-Nitrophenol	0.0143	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	91-94-1	3,3'-Dichlorobenzidine	0.0148	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0907	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	101-55-3	4-Bromophenyl phenyl ether	0.0141	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	59-50-7	4-Chloro-3-methylphenol	0.013	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0139	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	100-02-7	4-Nitrophenol	0.0125	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	83-32-9	Acenaphthene	0.00251	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	208-96-8	Acenaphthylene	0.0026	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	120-12-7	Anthracene	0.00276	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	92-87-5	Benzdine	0.0752	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	56-55-3	Benzo(a)anthracene	0.00208	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	50-32-8	Benzo(a)pyrene	0.00215	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	205-99-2	Benzo(b)fluoranthene	0.00261	1	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	191-24-2	Benzo(g,h,i)perylene	0.00213	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	207-08-9	Benzo(k)fluoranthene	0.00258	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	85-68-7	Benzyl butyl phthalate	0.0125	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	111-91-1	Bis(2-Chloroethoxy) methane	0.012	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0132	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0173	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0507	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	218-01-9	Chrysene	0.00279	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	53-70-3	Dibenz(a,h)anthracene	0.00207	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	84-66-2	Diethyl phthalate	0.0132	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	131-11-3	Dimethyl phthalate	0.0848	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	84-74-2	di-n-Butyl phthalate	0.0137	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	117-84-0	di-n-Octylphthalate	0.027	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	206-44-0	Fluoranthene	0.00273	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	86-73-7	Fluorene	0.00246	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	118-74-1	Hexachlorobenzene	0.0142	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	87-68-3	Hexachlorobutadiene	0.0135	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	77-47-4	Hexachlorocyclopentadiene	0.021	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	67-72-1	Hexachloroethane	0.0157	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.00217	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	78-59-1	Isophorone	0.0123	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	91-20-3	Naphthalene	0.0049	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	98-95-3	Nitrobenzene	0.0139	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	62-75-9	N-Nitrosodimethylamine	0.0594	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	621-64-7	N-Nitrosodi-n-propylamine	0.0133	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	86-30-6	N-Nitrosodiphenylamine	0.0303	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	87-86-5	Pentachlorophenol	0.0108	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	85-01-8	Phenanthrene	0.00278	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	108-95-2	Phenol	0.0161	0	mg/kg
SVOC	Composite	B	BRA03B	6 to 12	No	129-00-0	Pyrene	0.0024	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00131	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00128	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00096	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00105	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	79-00-5	1,1,2-Trichloroethane	0.00083	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	75-34-3	1,1-Dichloroethane	0.00068	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	75-35-4	1,1-Dichloroethene	0.00084	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	563-58-6	1,1-Dichloropropene	0.00112	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	87-61-6	1,2,3-Trichlorobenzene	0.0102	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	96-18-4	1,2,3-Trichloropropane	0.00225	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	526-73-8	1,2,3-Trimethylbenzene	0.00219	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.0061	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	95-63-6	1,2,4-Trimethylbenzene	0.00219	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00541	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.0009	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.00059	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	107-06-2	1,2-Dichloroethane	0.0009	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	78-87-5	1,2-Dichloropropane	0.00197	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00277	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.00083	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	142-28-9	1,3-Dichloropropane	0.0007	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.00097	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	594-20-7	2,2-Dichloropropane	0.00191	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	95-49-8	2-Chlorotoluene	0.0012	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	106-43-4	4-Chlorotoluene	0.00062	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	67-64-1	Acetone	0.0506	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	107-13-1	Acrylonitrile	0.00501	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	71-43-2	Benzene	0.00065	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	108-86-1	Bromobenzene	0.00125	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	75-27-4	Bromodichloromethane	0.00101	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	75-25-2	Bromoform	0.00162	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	74-83-9	Bromomethane	0.00273	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	56-23-5	Carbon Tetrachloride	0.00125	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	108-90-7	Chlorobenzene	0.00029	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	75-00-3	Chloroethane	0.00236	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	67-66-3	Chloroform	0.00143	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	74-87-3	Chloromethane	0.00603	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	156-59-2	cis-1,2-Dichloroethylene	0.00102	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	10061-01-5	cis-1,3-Dichloropropene	0.00105	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	99-87-6	Cymene	0.00354	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	124-48-1	Dibromochloromethane	0.00085	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	74-95-3	Dibromomethane	0.00104	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	75-71-8	Dichlorodifluoromethane	0.00223	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	100-41-4	Ethylbenzene	0.00102	0	mg/kg



TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
VOC	Discrete	B	BRA03B	6 to 12	No	87-68-3	Hexachlorobutadiene	0.00832	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	108-20-3	Isopropyl Ether	0.00057	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	98-82-8	Isopropylbenzene (Cumene)	0.00059	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.00881	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00316	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	75-09-2	Methylene chloride	0.00921	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	104-51-8	n-Butylbenzene	0.00728	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	103-65-1	n-Propylbenzene	0.00132	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	135-98-8	sec-Butylbenzene	0.00399	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	100-42-5	Styrene	0.00032	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	98-06-6	t-Butylbenzene	0.0027	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	1634-04-4	tert-Butyl methyl ether	0.00049	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	127-18-4	Tetrachloroethylene (PCE)	0.00124	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	108-88-3	Toluene	0.0018	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	156-60-5	trans-1,2-Dichloroethene	0.00144	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	10061-02-6	trans-1,3-Dichloropropene	0.00158	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	79-01-6	Trichloroethylene (TCE)	0.00081	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	75-69-4	Trichlorofluoromethane	0.00115	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	75-01-4	Vinyl chloride	0.00161	0	mg/kg
VOC	Discrete	B	BRA03B	6 to 12	No	1330-20-7	Xylenes, total	0.00122	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	120-82-1	1,2,4-Trichlorobenzene	0.0117	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	95-50-1	1,2-Dichlorobenzene	0.0111	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	541-73-1	1,3-Dichlorobenzene	0.0114	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	106-46-7	1,4-Dichlorobenzene	0.0112	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	90-12-0	1-Methylnaphthalene	0.0133	1	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	88-06-2	2,4,6-Trichlorophenol	0.0121	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	120-83-2	2,4-Dichlorophenol	0.0109	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	105-67-9	2,4-Dimethylphenol	0.00981	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	51-28-5	2,4-Dinitrophenol	0.0878	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	121-14-2	2,4-Dinitrotoluene	0.0108	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	606-20-2	2,6-Dinitrotoluene	0.0123	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	91-58-7	2-Chloronaphthalene	0.00525	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	95-57-8	2-Chlorophenol	0.0124	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	91-57-6	2-Methylnaphthalene	0.0358	1	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	88-75-5	2-Nitrophenol	0.0134	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	91-94-1	3,3'-Dichlorobenzidine	0.0139	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0851	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	101-55-3	4-Bromophenyl phenyl ether	0.0132	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	59-50-7	4-Chloro-3-methylphenol	0.0122	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0131	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	100-02-7	4-Nitrophenol	0.0117	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	83-32-9	Acenaphthene	0.0047	1	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	208-96-8	Acenaphthylene	0.00736	1	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	120-12-7	Anthracene	0.0126	1	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	92-87-5	Benzdine	0.0706	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	56-55-3	Benzo(a)anthracene	0.0816	1	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	50-32-8	Benzo(a)pyrene	0.102	1	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	205-99-2	Benzo(b)fluoranthene	0.163	1	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	191-24-2	Benzo(g,h,i)perylene	0.0814	1	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	207-08-9	Benzo(k)fluoranthene	0.0457	1	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	85-68-7	Benzyl butyl phthalate	0.0329	1	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0113	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0124	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0162	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.115	1	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	218-01-9	Chrysene	0.0989	1	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	53-70-3	Dibenz(a,h)anthracene	0.0157	1	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	84-66-2	Diethyl phthalate	0.0124	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	131-11-3	Dimethyl phthalate	0.0796	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	84-74-2	di-n-Butyl phthalate	0.0129	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	117-84-0	di-n-Octylphthalate	0.0254	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	206-44-0	Fluoranthene	0.159	1	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	86-73-7	Fluorene	0.00378	1	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	118-74-1	Hexachlorobenzene	0.0133	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	87-68-3	Hexachlorobutadiene	0.0126	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	77-47-4	Hexachlorocyclopentadiene	0.0197	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	67-72-1	Hexachloroethane	0.0148	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0718	1	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	78-59-1	Isophorone	0.0115	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	91-20-3	Naphthalene	0.0118	1	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	98-95-3	Nitrobenzene	0.0131	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	62-75-9	N-Nitrosodimethylamine	0.0557	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	621-64-7	N-Nitrosodi-n-propylamine	0.0125	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	86-30-6	N-Nitrosodiphenylamine	0.0284	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	87-86-5	Pentachlorophenol	0.0101	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	85-01-8	Phenanthrene	0.0724	1	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	108-95-2	Phenol	0.0151	0	mg/kg
SVOC	Composite	B	BRA04B	0 to 2	No	129-00-0	Pyrene	0.144	1	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.0117	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.0111	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.0114	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.0112	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	90-12-0	1-Methylnaphthalene	0.0136	1	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	88-06-2	2,4,6-Trichlorophenol	0.012	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	120-83-2	2,4-Dichlorophenol	0.0109	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	105-67-9	2,4-Dimethylphenol	0.00979	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	51-28-5	2,4-Dinitrophenol	0.0877	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	121-14-2	2,4-Dinitrotoluene	0.0107	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	606-20-2	2,6-Dinitrotoluene	0.0123	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	91-58-7	2-Chloronaphthalene	0.00524	0	mg/kg



TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	B	BRA04B	2 to 6	No	95-57-8	2-Chlorophenol	0.0124	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	91-57-6	2-Methylnaphthalene	0.0352	1	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	88-75-5	2-Nitrophenol	0.0134	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	91-94-1	3,3'-Dichlorobenzidine	0.0138	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	534-52-1	4,6-Dinitro-2-methylphenol	0.085	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	101-55-3	4-Bromophenyl phenyl ether	0.0132	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	59-50-7	4-Chloro-3-methylphenol	0.0122	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0131	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	100-02-7	4-Nitrophenol	0.0117	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	83-32-9	Acenaphthene	0.00692	1	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	208-96-8	Acenaphthylene	0.00332	1	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	120-12-7	Anthracene	0.0159	1	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	92-87-5	Benzdine	0.0704	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	56-55-3	Benzo(a)anthracene	0.0583	1	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	50-32-8	Benzo(a)pyrene	0.062	1	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	205-99-2	Benzo(b)fluoranthene	0.0882	1	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	191-24-2	Benzo(g,h,i)perylene	0.0466	1	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	207-08-9	Benzo(k)fluoranthene	0.0302	1	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	85-68-7	Benzyl butyl phthalate	0.0117	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0113	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0124	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0162	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0664	1	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	218-01-9	Chrysene	0.068	1	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	53-70-3	Dibenz(a,h)anthracene	0.00782	1	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	84-66-2	Diethyl phthalate	0.0124	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	131-11-3	Dimethyl phthalate	0.0794	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	84-74-2	di-n-Butyl phthalate	0.0128	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	117-84-0	di-n-Octylphthalate	0.0253	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	206-44-0	Fluoranthene	0.123	1	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	86-73-7	Fluorene	0.00617	1	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	118-74-1	Hexachlorobenzene	0.0133	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	87-68-3	Hexachlorobutadiene	0.0126	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	77-47-4	Hexachlorocyclopentadiene	0.0197	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	67-72-1	Hexachloroethane	0.0147	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0437	1	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	78-59-1	Isophorone	0.0115	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	91-20-3	Naphthalene	0.0136	1	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	98-95-3	Nitrobenzene	0.0131	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	62-75-9	N-Nitrosodimethylamine	0.0556	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	621-64-7	N-Nitrosodi-n-propylamine	0.0125	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	86-30-6	N-Nitrosodiphenylamine	0.0284	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	87-86-5	Pentachlorophenol	0.0101	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	85-01-8	Phenanthrene	0.0864	1	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	108-95-2	Phenol	0.0151	0	mg/kg
SVOC	Composite	B	BRA04B	2 to 6	No	129-00-0	Pyrene	0.106	1	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00127	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00123	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00093	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00101	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	79-00-5	1,1,2-Trichloroethane	0.0008	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	75-34-3	1,1-Dichloroethane	0.00066	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	75-35-4	1,1-Dichloroethene	0.00081	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	563-58-6	1,1-Dichloropropene	0.00108	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	87-61-6	1,2,3-Trichlorobenzene	0.00981	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	96-18-4	1,2,3-Trichloropropane	0.00217	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	526-73-8	1,2,3-Trimethylbenzene	0.00211	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.00589	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	95-63-6	1,2,4-Trimethylbenzene	0.00211	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00522	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00087	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.00057	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	107-06-2	1,2-Dichloroethane	0.00087	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	78-87-5	1,2-Dichloropropane	0.0019	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00268	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.0008	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	142-28-9	1,3-Dichloropropane	0.00067	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.00094	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	594-20-7	2,2-Dichloropropane	0.00185	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	95-49-8	2-Chlorotoluene	0.00116	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	106-43-4	4-Chlorotoluene	0.0006	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	67-64-1	Acetone	0.0488	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	107-13-1	Acrylonitrile	0.00483	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	71-43-2	Benzene	0.00063	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	108-86-1	Bromobenzene	0.0012	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	75-27-4	Bromodichloromethane	0.00097	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	75-25-2	Bromoform	0.00157	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	74-83-9	Bromomethane	0.00264	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	56-23-5	Carbon Tetrachloride	0.0012	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	108-90-7	Chlorobenzene	0.00028	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	75-00-3	Chloroethane	0.00227	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	67-66-3	Chloroform	0.00138	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	74-87-3	Chloromethane	0.00582	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	156-59-2	cis-1,2-Dichloroethylene	0.00098	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	10061-01-5	cis-1,3-Dichloropropene	0.00101	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	99-87-6	Cymene	0.00341	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	124-48-1	Dibromochloromethane	0.00082	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	74-95-3	Dibromomethane	0.001	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	75-71-8	Dichlorodifluoromethane	0.00215	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	100-41-4	Ethylbenzene	0.00099	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
VOC	Discrete	B	BRA04B	2 to 6	No	87-68-3	Hexachlorobutadiene	0.00803	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	108-20-3	Isopropyl Ether	0.00055	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	98-82-8	Isopropylbenzene (Cumene)	0.00057	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0849	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00305	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	75-09-2	Methylene chloride	0.00888	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	104-51-8	n-Butylbenzene	0.00702	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	103-65-1	n-Propylbenzene	0.00127	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	135-98-8	sec-Butylbenzene	0.00385	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	100-42-5	Styrene	0.00031	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	98-06-6	t-Butylbenzene	0.00261	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	1634-04-4	tert-Butyl methyl ether	0.00047	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	127-18-4	Tetrachloroethylene (PCE)	0.0012	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	108-88-3	Toluene	0.00174	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	156-60-5	trans-1,2-Dichloroethene	0.00139	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	10061-02-6	trans-1,3-Dichloropropene	0.00153	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	79-01-6	Trichloroethylene (TCE)	0.00078	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	75-69-4	Trichlorofluoromethane	0.00111	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	75-01-4	Vinyl chloride	0.00155	0	mg/kg
VOC	Discrete	B	BRA04B	2 to 6	No	1330-20-7	Xylenes, total	0.00142	1	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.0121	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.0115	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.0117	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.0115	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	90-12-0	1-Methylnaphthalene	0.147	1	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	88-06-2	2,4,6-Trichlorophenol	0.0124	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	120-83-2	2,4-Dichlorophenol	0.0113	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	105-67-9	2,4-Dimethylphenol	0.0101	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	51-28-5	2,4-Dinitrophenol	0.0906	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	121-14-2	2,4-Dinitrotoluene	0.0111	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	606-20-2	2,6-Dinitrotoluene	0.0127	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	91-58-7	2-Chloronaphthalene	0.00542	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	95-57-8	2-Chlorophenol	0.0128	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	91-57-6	2-Methylnaphthalene	0.448	1	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	88-75-5	2-Nitrophenol	0.0138	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	91-94-1	3,3'-Dichlorobenzidine	0.0143	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0878	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	101-55-3	4-Bromophenyl phenyl ether	0.0136	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	59-50-7	4-Chloro-3-methylphenol	0.0126	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0135	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	100-02-7	4-Nitrophenol	0.0121	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	83-32-9	Acenaphthene	0.0131	1	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	208-96-8	Acenaphthylene	0.0163	1	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	120-12-7	Anthracene	0.0428	1	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	92-87-5	Benzdine	0.0728	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	56-55-3	Benzo(a)anthracene	0.167	1	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	50-32-8	Benzo(a)pyrene	0.127	1	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	205-99-2	Benzo(b)fluoranthene	0.187	1	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	191-24-2	Benzo(g,h,i)perylene	0.0994	1	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	207-08-9	Benzo(k)fluoranthene	0.0659	1	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	85-68-7	Benzyl butyl phthalate	0.0121	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0116	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0128	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0167	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.086	1	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	218-01-9	Chrysene	0.154	1	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	53-70-3	Dibenz(a,h)anthracene	0.0259	1	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	84-66-2	Diethyl phthalate	0.0128	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	131-11-3	Dimethyl phthalate	0.0821	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	84-74-2	di-n-Butyl phthalate	0.0133	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	117-84-0	di-n-Octylphthalate	0.0262	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	206-44-0	Fluoranthene	0.245	1	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	86-73-7	Fluorene	0.0102	1	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	118-74-1	Hexachlorobenzene	0.0137	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	87-68-3	Hexachlorobutadiene	0.013	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	77-47-4	Hexachlorocyclopentadiene	0.0204	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	67-72-1	Hexachloroethane	0.0152	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0971	1	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	78-59-1	Isophorone	0.0119	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	91-20-3	Naphthalene	0.119	1	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	98-95-3	Nitrobenzene	0.0135	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	62-75-9	N-Nitrosodimethylamine	0.0575	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	621-64-7	N-Nitrosodi-n-propylamine	0.0129	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	86-30-6	N-Nitrosodiphenylamine	0.0293	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	87-86-5	Pentachlorophenol	0.0104	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	85-01-8	Phenanthrene	0.331	1	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	108-95-2	Phenol	0.0156	0	mg/kg
SVOC	Composite	B	BRA04B	6 to 12	No	129-00-0	Pyrene	0.243	1	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00131	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00127	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00096	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00104	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	79-00-5	1,1,2-Trichloroethane	0.00082	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	75-34-3	1,1-Dichloroethane	0.00068	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	75-35-4	1,1-Dichloroethene	0.00083	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	563-58-6	1,1-Dichloropropene	0.00111	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	87-61-6	1,2,3-Trichlorobenzene	0.0101	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	96-18-4	1,2,3-Trichloropropane	0.00223	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	526-73-8	1,2,3-Trimethylbenzene	0.00218	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.00606	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
VOC	Discrete	B	BRA04B	6 to 12	No	95-63-6	1,2,4-Trimethylbenzene	0.00218	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00537	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00089	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.00059	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	107-06-2	1,2-Dichloroethane	0.00089	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	78-87-5	1,2-Dichloropropane	0.00196	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00275	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.00083	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	142-28-9	1,3-Dichloropropane	0.00069	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.00096	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	594-20-7	2,2-Dichloropropane	0.0019	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	95-49-8	2-Chlorotoluene	0.00119	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	106-43-4	4-Chlorotoluene	0.00062	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	67-64-1	Acetone	0.0503	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	107-13-1	Acrylonitrile	0.00497	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	71-43-2	Benzene	0.00064	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	108-86-1	Bromobenzene	0.00124	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	75-27-4	Bromodichloromethane	0.001	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	75-25-2	Bromoform	0.00161	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	74-83-9	Bromomethane	0.00271	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	56-23-5	Carbon Tetrachloride	0.00124	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	108-90-7	Chlorobenzene	0.00029	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	75-00-3	Chloroethane	0.00234	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	67-66-3	Chloroform	0.00142	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	74-87-3	Chloromethane	0.00599	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	156-59-2	cis-1,2-Dichloroethylene	0.00101	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	10061-01-5	cis-1,3-Dichloropropene	0.00104	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	99-87-6	Cymene	0.00351	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	124-48-1	Dibromochloromethane	0.00084	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	74-95-3	Dibromomethane	0.00103	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	75-71-8	Dichlorodifluoromethane	0.00222	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	100-41-4	Ethylbenzene	0.00101	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	87-68-3	Hexachlorobutadiene	0.00826	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	108-20-3	Isopropyl Ether	0.00057	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	98-82-8	Isopropylbenzene (Cumene)	0.00059	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0874	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00314	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	75-09-2	Methylene chloride	0.00914	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	104-51-8	n-Butylbenzene	0.00723	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	103-65-1	n-Propylbenzene	0.00131	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	135-98-8	sec-Butylbenzene	0.00397	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	100-42-5	Styrene	0.00032	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	98-06-6	t-Butylbenzene	0.00269	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	1634-04-4	tert-Butyl methyl ether	0.00048	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	127-18-4	Tetrachloroethylene (PCE)	0.00123	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	108-88-3	Toluene	0.00179	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	156-60-5	trans-1,2-Dichloroethene	0.00143	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	10061-02-6	trans-1,3-Dichloropropene	0.00157	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	79-01-6	Trichloroethylene (TCE)	0.0008	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	75-69-4	Trichlorofluoromethane	0.00114	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	75-01-4	Vinyl chloride	0.0016	0	mg/kg
VOC	Discrete	B	BRA04B	6 to 12	No	1330-20-7	Xylenes, total	0.00121	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	120-82-1	1,2,4-Trichlorobenzene	0.0616	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	95-50-1	1,2-Dichlorobenzene	0.0586	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	541-73-1	1,3-Dichlorobenzene	0.0599	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	106-46-7	1,4-Dichlorobenzene	0.0588	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	90-12-0	1-Methylnaphthalene	0.00656	1	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	88-06-2	2,4,6-Trichlorophenol	0.0634	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	120-83-2	2,4-Dichlorophenol	0.0575	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	105-67-9	2,4-Dimethylphenol	0.0516	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	51-28-5	2,4-Dinitrophenol	0.461	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	121-14-2	2,4-Dinitrotoluene	0.0567	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	606-20-2	2,6-Dinitrotoluene	0.0646	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	91-58-7	2-Chloronaphthalene	0.00552	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	95-57-8	2-Chlorophenol	0.0652	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	91-57-6	2-Methylnaphthalene	0.00895	1	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	88-75-5	2-Nitrophenol	0.0705	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	91-94-1	3,3'-Dichlorobenzidine	0.0729	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	534-52-1	4,6-Dinitro-2-methylphenol	0.448	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	101-55-3	4-Bromophenyl phenyl ether	0.0693	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	59-50-7	4-Chloro-3-methylphenol	0.064	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0688	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	100-02-7	4-Nitrophenol	0.0616	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	83-32-9	Acenaphthene	0.01	1	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	208-96-8	Acenaphthylene	0.0055	1	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	120-12-7	Anthracene	0.0292	1	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	92-87-5	Benzidine	0.371	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	56-55-3	Benzo(a)anthracene	0.322	1	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	50-32-8	Benzo(a)pyrene	0.299	1	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	205-99-2	Benzo(b)fluoranthene	0.409	1	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	191-24-2	Benzo(g,h,i)perylene	0.207	1	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	207-08-9	Benzo(k)fluoranthene	0.118	1	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	85-68-7	Benzyl butyl phthalate	14.8	1	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0593	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0652	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0854	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.389	1	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	218-01-9	Chrysene	0.326	1	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	53-70-3	Dibenz(a,h)anthracene	0.051	1	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	84-66-2	Diethyl phthalate	0.0652	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	B	BRA05B	0 to 2	No	131-11-3	Dimethyl phthalate	0.418	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	84-74-2	di-n-Butyl phthalate	0.0838	1	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	117-84-0	di-n-Octylphthalate	0.134	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	206-44-0	Fluoranthene	0.44	1	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	86-73-7	Fluorene	0.00683	1	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	118-74-1	Hexachlorobenzene	0.0699	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	87-68-3	Hexachlorobutadiene	0.0664	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	77-47-4	Hexachlorocyclopentadiene	0.104	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	67-72-1	Hexachloroethane	0.0776	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.255	1	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	78-59-1	Isophorone	0.0605	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	91-20-3	Naphthalene	0.0423	1	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	98-95-3	Nitrobenzene	0.0688	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	62-75-9	N-Nitrosodimethylamine	0.293	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	621-64-7	N-Nitrosodi-n-propylamine	0.0658	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	86-30-6	N-Nitrosodiphenylamine	0.149	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	87-86-5	Pentachlorophenol	0.0531	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	85-01-8	Phenanthrene	0.121	1	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	108-95-2	Phenol	0.0794	0	mg/kg
SVOC	Composite	B	BRA05B	0 to 2	No	129-00-0	Pyrene	0.365	1	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.012	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.0114	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.0117	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.0115	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	90-12-0	1-Methylnaphthalene	0.0586	1	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	88-06-2	2,4,6-Trichlorophenol	0.0124	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	120-83-2	2,4-Dichlorophenol	0.0112	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	105-67-9	2,4-Dimethylphenol	0.0101	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	51-28-5	2,4-Dinitrophenol	0.0902	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	121-14-2	2,4-Dinitrotoluene	0.0111	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	606-20-2	2,6-Dinitrotoluene	0.0126	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	91-58-7	2-Chloronaphthalene	0.0054	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	95-57-8	2-Chlorophenol	0.0127	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	91-57-6	2-Methylnaphthalene	0.0624	1	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	88-75-5	2-Nitrophenol	0.0138	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	91-94-1	3,3'-Dichlorobenzidine	0.0142	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0875	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	101-55-3	4-Bromophenyl phenyl ether	0.0136	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	59-50-7	4-Chloro-3-methylphenol	0.0125	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0134	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	100-02-7	4-Nitrophenol	0.012	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	83-32-9	Acenaphthene	0.00737	1	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	208-96-8	Acenaphthylene	0.00271	1	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	120-12-7	Anthracene	0.00993	1	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	92-87-5	Benzdine	0.0725	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	56-55-3	Benzo(a)anthracene	0.392	1	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	50-32-8	Benzo(a)pyrene	0.522	1	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	205-99-2	Benzo(b)fluoranthene	0.737	1	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	191-24-2	Benzo(g,h,i)perylene	0.338	1	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	207-08-9	Benzo(k)fluoranthene	0.235	1	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	85-68-7	Benzyl butyl phthalate	0.0292	1	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0116	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0127	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0167	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0489	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	218-01-9	Chrysene	0.446	1	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	53-70-3	Dibenz(a,h)anthracene	0.099	1	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	84-66-2	Diethyl phthalate	0.0127	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	131-11-3	Dimethyl phthalate	0.0818	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	84-74-2	di-n-Butyl phthalate	0.0132	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	117-84-0	di-n-Octylphthalate	0.0261	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	206-44-0	Fluoranthene	0.232	1	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	86-73-7	Fluorene	0.00345	1	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	118-74-1	Hexachlorobenzene	0.0137	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	87-68-3	Hexachlorobutadiene	0.013	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	77-47-4	Hexachlorocyclopentadiene	0.0203	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	67-72-1	Hexachloroethane	0.0152	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.456	1	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	78-59-1	Isophorone	0.0118	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	91-20-3	Naphthalene	0.754	1	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	98-95-3	Nitrobenzene	0.0134	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	62-75-9	N-Nitrosodimethylamine	0.0572	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	621-64-7	N-Nitrosodi-n-propylamine	0.0129	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	86-30-6	N-Nitrosodiphenylamine	0.0292	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	87-86-5	Pentachlorophenol	0.0104	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	85-01-8	Phenanthrene	0.0465	1	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	108-95-2	Phenol	0.0155	0	mg/kg
SVOC	Composite	B	BRA05B	2 to 6	No	129-00-0	Pyrene	0.214	1	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00125	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00121	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00091	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00099	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	79-00-5	1,1,2-Trichloroethane	0.00078	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	75-34-3	1,1-Dichloroethane	0.00065	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	75-35-4	1,1-Dichloroethene	0.0008	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	563-58-6	1,1-Dichloropropene	0.00106	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	87-61-6	1,2,3-Trichlorobenzene	0.00963	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	96-18-4	1,2,3-Trichloropropane	0.00213	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	526-73-8	1,2,3-Trimethylbenzene	0.00208	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.00578	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
VOC	Discrete	B	BRA05B	2 to 6	No	95-63-6	1,2,4-Trimethylbenzene	0.00208	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00512	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00085	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.00056	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	107-06-2	1,2-Dichloroethane	0.00085	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	78-87-5	1,2-Dichloropropane	0.00187	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00263	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.00079	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	142-28-9	1,3-Dichloropropane	0.00066	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.00092	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	594-20-7	2,2-Dichloropropane	0.00181	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	95-49-8	2-Chlorotoluene	0.00114	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	106-43-4	4-Chlorotoluene	0.00059	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	67-64-1	Acetone	0.0479	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	107-13-1	Acrylonitrile	0.00474	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	71-43-2	Benzene	0.00061	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	108-86-1	Bromobenzene	0.00118	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	75-27-4	Bromodichloromethane	0.00095	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	75-25-2	Bromoform	0.00154	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	74-83-9	Bromomethane	0.00259	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	56-23-5	Carbon Tetrachloride	0.00118	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	108-90-7	Chlorobenzene	0.00028	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	75-00-3	Chloroethane	0.00223	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	67-66-3	Chloroform	0.00135	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	74-87-3	Chloromethane	0.00571	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	156-59-2	cis-1,2-Dichloroethylene	0.00096	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	10061-01-5	cis-1,3-Dichloropropene	0.00099	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	99-87-6	Cymene	0.00335	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	124-48-1	Dibromochloromethane	0.0008	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	74-95-3	Dibromomethane	0.00099	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	75-71-8	Dichlorodifluoromethane	0.00212	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	100-41-4	Ethylbenzene	0.00097	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	87-68-3	Hexachlorobutadiene	0.00788	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	108-20-3	Isopropyl Ether	0.00054	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	98-82-8	Isopropylbenzene (Cumene)	0.00056	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0834	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.003	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	75-09-2	Methylene chloride	0.00872	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	104-51-8	n-Butylbenzene	0.0069	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	103-65-1	n-Propylbenzene	0.00125	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	135-98-8	sec-Butylbenzene	0.00378	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	100-42-5	Styrene	0.0003	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	98-06-6	t-Butylbenzene	0.00256	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	1634-04-4	tert-Butyl methyl ether	0.00046	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	127-18-4	Tetrachloroethylene (PCE)	0.00118	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	108-88-3	Toluene	0.00171	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	156-60-5	trans-1,2-Dichloroethene	0.00137	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	10061-02-6	trans-1,3-Dichloropropene	0.0015	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	79-01-6	Trichloroethylene (TCE)	0.00077	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	75-69-4	Trichlorofluoromethane	0.00109	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	75-01-4	Vinyl chloride	0.00152	0	mg/kg
VOC	Discrete	B	BRA05B	2 to 6	No	1330-20-7	Xylenes, total	0.00116	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.0122	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.0115	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.0118	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.0116	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	90-12-0	1-Methylnaphthalene	0.00598	1	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	88-06-2	2,4,6-Trichlorophenol	0.0125	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	120-83-2	2,4-Dichlorophenol	0.0113	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	105-67-9	2,4-Dimethylphenol	0.0102	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	51-28-5	2,4-Dinitrophenol	0.0911	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	121-14-2	2,4-Dinitrotoluene	0.0112	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	606-20-2	2,6-Dinitrotoluene	0.0127	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	91-58-7	2-Chloronaphthalene	0.00545	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	95-57-8	2-Chlorophenol	0.0129	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	91-57-6	2-Methylnaphthalene	0.00954	1	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	88-75-5	2-Nitrophenol	0.0139	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	91-94-1	3,3'-Dichlorobenzidine	0.0144	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0883	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	101-55-3	4-Bromophenyl phenyl ether	0.0137	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	59-50-7	4-Chloro-3-methylphenol	0.0126	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0136	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	100-02-7	4-Nitrophenol	0.0122	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	83-32-9	Acenaphthene	0.00244	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	208-96-8	Acenaphthylene	0.00253	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	120-12-7	Anthracene	0.00269	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	92-87-5	Benzidine	0.0732	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	56-55-3	Benzo(a)anthracene	0.0668	1	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	50-32-8	Benzo(a)pyrene	0.12	1	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	205-99-2	Benzo(b)fluoranthene	0.206	1	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	191-24-2	Benzo(g,h,i)perylene	0.122	1	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	207-08-9	Benzo(k)fluoranthene	0.0693	1	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	85-68-7	Benzyl butyl phthalate	0.0122	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0117	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0129	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0168	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0494	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	218-01-9	Chrysene	0.0954	1	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	53-70-3	Dibenz(a,h)anthracene	0.0271	1	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	84-66-2	Diethyl phthalate	0.0129	0	mg/kg



TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	B	BRA05B	6 to 12	No	131-11-3	Dimethyl phthalate	0.0826	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	84-74-2	di-n-Butyl phthalate	0.0133	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	117-84-0	di-n-Octylphthalate	0.0263	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	206-44-0	Fluoranthene	0.0486	1	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	86-73-7	Fluorene	0.0024	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	118-74-1	Hexachlorobenzene	0.0138	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	87-68-3	Hexachlorobutadiene	0.0131	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	77-47-4	Hexachlorocyclopentadiene	0.0205	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	67-72-1	Hexachloroethane	0.0153	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.11	1	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	78-59-1	Isophorone	0.0119	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	91-20-3	Naphthalene	0.0752	1	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	98-95-3	Nitrobenzene	0.0136	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	62-75-9	N-Nitrosodimethylamine	0.0578	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	621-64-7	N-Nitrosodi-n-propylamine	0.013	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	86-30-6	N-Nitrosodiphenylamine	0.0295	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	87-86-5	Pentachlorophenol	0.0105	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	85-01-8	Phenanthrene	0.00912	1	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	108-95-2	Phenol	0.0157	0	mg/kg
SVOC	Composite	B	BRA05B	6 to 12	No	129-00-0	Pyrene	0.0481	1	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	630-20-6	1,1,1,2-Tetrachloroethane	0.0013	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00126	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00095	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00103	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	79-00-5	1,1,2-Trichloroethane	0.00082	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	75-34-3	1,1-Dichloroethane	0.00067	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	75-35-4	1,1-Dichloroethene	0.00083	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	563-58-6	1,1-Dichloropropene	0.00111	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	87-61-6	1,2,3-Trichlorobenzene	0.01	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	96-18-4	1,2,3-Trichloropropane	0.00221	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	526-73-8	1,2,3-Trimethylbenzene	0.00216	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.00601	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	95-63-6	1,2,4-Trimethylbenzene	0.00216	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00533	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00089	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.00058	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	107-06-2	1,2-Dichloroethane	0.00089	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	78-87-5	1,2-Dichloropropane	0.00194	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00273	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.00082	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	142-28-9	1,3-Dichloropropane	0.00069	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.00096	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	594-20-7	2,2-Dichloropropane	0.00189	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	95-49-8	2-Chlorotoluene	0.00118	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	106-43-4	4-Chlorotoluene	0.00062	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	67-64-1	Acetone	0.0499	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	107-13-1	Acrylonitrile	0.00493	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	71-43-2	Benzene	0.00064	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	108-86-1	Bromobenzene	0.00123	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	75-27-4	Bromodichloromethane	0.00099	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	75-25-2	Bromoform	0.0016	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	74-83-9	Bromomethane	0.00269	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	56-23-5	Carbon Tetrachloride	0.00123	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	108-90-7	Chlorobenzene	0.00029	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	75-00-3	Chloroethane	0.00232	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	67-66-3	Chloroform	0.00141	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	74-87-3	Chloromethane	0.00594	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	156-59-2	cis-1,2-Dichloroethylene	0.001	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	10061-01-5	cis-1,3-Dichloropropene	0.00103	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	99-87-6	Cymene	0.00348	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	124-48-1	Dibromochloromethane	0.00084	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	74-95-3	Dibromomethane	0.00102	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	75-71-8	Dichlorodifluoromethane	0.0022	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	100-41-4	Ethylbenzene	0.00101	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	87-68-3	Hexachlorobutadiene	0.0082	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	108-20-3	Isopropyl Ether	0.00056	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	98-82-8	Isopropylbenzene (Cumene)	0.00058	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0868	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00312	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	75-09-2	Methylene chloride	0.00907	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	104-51-8	n-Butylbenzene	0.00717	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	103-65-1	n-Propylbenzene	0.0013	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	135-98-8	sec-Butylbenzene	0.00394	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	100-42-5	Styrene	0.00031	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	98-06-6	t-Butylbenzene	0.00266	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	1634-04-4	tert-Butyl methyl ether	0.00048	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	127-18-4	Tetrachloroethylene (PCE)	0.00122	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	108-88-3	Toluene	0.00178	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	156-60-5	trans-1,2-Dichloroethene	0.00142	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	10061-02-6	trans-1,3-Dichloropropene	0.00156	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	79-01-6	Trichloroethylene (TCE)	0.0008	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	75-69-4	Trichlorofluoromethane	0.00113	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	75-01-4	Vinyl chloride	0.00159	0	mg/kg
VOC	Discrete	B	BRA05B	6 to 12	No	1330-20-7	Xylenes, total	0.0012	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	120-82-1	1,2,4-Trichlorobenzene	0.0112	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	95-50-1	1,2-Dichlorobenzene	0.0106	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	541-73-1	1,3-Dichlorobenzene	0.0108	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	106-46-7	1,4-Dichlorobenzene	0.0106	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	90-12-0	1-Methylnaphthalene	0.00969	1	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	88-06-2	2,4,6-Trichlorophenol	0.0115	0	mg/kg



TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	B	BRA06B	0 to 2	No	120-83-2	2,4-Dichlorophenol	0.0104	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	105-67-9	2,4-Dimethylphenol	0.00933	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	51-28-5	2,4-Dinitrophenol	0.0836	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	121-14-2	2,4-Dinitrotoluene	0.0102	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	606-20-2	2,6-Dinitrotoluene	0.0117	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	91-58-7	2-Chloronaphthalene	0.005	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	95-57-8	2-Chlorophenol	0.0118	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	91-57-6	2-Methylnaphthalene	0.0137	1	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	88-75-5	2-Nitrophenol	0.0128	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	91-94-1	3,3'-Dichlorobenzidine	0.0132	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	534-52-1	4,6-Dinitro-2-methylphenol	0.081	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	101-55-3	4-Bromophenyl phenyl ether	0.0126	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	59-50-7	4-Chloro-3-methylphenol	0.0116	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0124	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	100-02-7	4-Nitrophenol	0.0112	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	83-32-9	Acenaphthene	0.00224	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	208-96-8	Acenaphthylene	0.00232	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	120-12-7	Anthracene	0.00415	1	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	92-87-5	Benzidine	0.0672	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	56-55-3	Benzo(a)anthracene	0.0298	1	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	50-32-8	Benzo(a)pyrene	0.0376	1	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	205-99-2	Benzo(b)fluoranthene	0.0639	1	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	191-24-2	Benzo(g,h,i)perylene	0.0476	1	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	207-08-9	Benzo(k)fluoranthene	0.0211	1	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	85-68-7	Benzyl butyl phthalate	0.0142	1	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0107	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0118	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0154	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0453	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	218-01-9	Chrysene	0.0438	1	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	53-70-3	Dibenz(a,h)anthracene	0.00781	1	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	84-66-2	Diethyl phthalate	0.0118	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	131-11-3	Dimethyl phthalate	0.0757	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	84-74-2	di-n-Butyl phthalate	0.0122	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	117-84-0	di-n-Octylphthalate	0.0241	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	206-44-0	Fluoranthene	0.0654	1	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	86-73-7	Fluorene	0.0022	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	118-74-1	Hexachlorobenzene	0.0127	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	87-68-3	Hexachlorobutadiene	0.012	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	77-47-4	Hexachlorocyclopentadiene	0.0188	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	67-72-1	Hexachloroethane	0.0141	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0371	1	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	78-59-1	Isophorone	0.0109	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	91-20-3	Naphthalene	0.00482	1	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	98-95-3	Nitrobenzene	0.0124	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	62-75-9	N-Nitrosodimethylamine	0.053	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	621-64-7	N-Nitrosodi-n-propylamine	0.0119	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	86-30-6	N-Nitrosodiphenylamine	0.027	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	87-86-5	Pentachlorophenol	0.00961	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	85-01-8	Phenanthrene	0.0171	1	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	108-95-2	Phenol	0.0144	0	mg/kg
SVOC	Composite	B	BRA06B	0 to 2	No	129-00-0	Pyrene	0.0535	1	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.0115	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.011	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.0112	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.011	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	90-12-0	1-Methylnaphthalene	0.00499	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	88-06-2	2,4,6-Trichlorophenol	0.0119	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	120-83-2	2,4-Dichlorophenol	0.0108	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	105-67-9	2,4-Dimethylphenol	0.00966	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	51-28-5	2,4-Dinitrophenol	0.0865	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	121-14-2	2,4-Dinitrotoluene	0.0106	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	606-20-2	2,6-Dinitrotoluene	0.0121	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	91-58-7	2-Chloronaphthalene	0.00517	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	95-57-8	2-Chlorophenol	0.0122	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	91-57-6	2-Methylnaphthalene	0.00474	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	88-75-5	2-Nitrophenol	0.0132	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	91-94-1	3,3'-Dichlorobenzidine	0.0137	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0838	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	101-55-3	4-Bromophenyl phenyl ether	0.013	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	59-50-7	4-Chloro-3-methylphenol	0.012	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0129	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	100-02-7	4-Nitrophenol	0.0115	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	83-32-9	Acenaphthene	0.00244	1	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	208-96-8	Acenaphthylene	0.0024	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	120-12-7	Anthracene	0.00411	1	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	92-87-5	Benzidine	0.0695	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	56-55-3	Benzo(a)anthracene	0.015	1	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	50-32-8	Benzo(a)pyrene	0.0155	1	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	205-99-2	Benzo(b)fluoranthene	0.0255	1	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	191-24-2	Benzo(g,h,i)perylene	0.0191	1	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	207-08-9	Benzo(k)fluoranthene	0.00872	1	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	85-68-7	Benzyl butyl phthalate	0.0115	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0111	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0122	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.016	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0666	1	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	218-01-9	Chrysene	0.0143	1	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	53-70-3	Dibenz(a,h)anthracene	0.00323	1	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	84-66-2	Diethyl phthalate	0.0122	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	B	BRA06B	2 to 6	No	131-11-3	Dimethyl phthalate	0.0784	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	84-74-2	di-n-Butyl phthalate	0.0127	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	117-84-0	di-n-Octylphthalate	0.025	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	206-44-0	Fluoranthene	0.0338	1	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	86-73-7	Fluorene	0.00228	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	118-74-1	Hexachlorobenzene	0.0131	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	87-68-3	Hexachlorobutadiene	0.0124	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	77-47-4	Hexachlorocyclopentadiene	0.0194	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	67-72-1	Hexachloroethane	0.0145	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0135	1	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	78-59-1	Isophorone	0.0113	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	91-20-3	Naphthalene	0.00453	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	98-95-3	Nitrobenzene	0.0129	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	62-75-9	N-Nitrosodimethylamine	0.0549	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	621-64-7	N-Nitrosodi-n-propylamine	0.0123	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	86-30-6	N-Nitrosodiphenylamine	0.028	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	87-86-5	Pentachlorophenol	0.00995	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	85-01-8	Phenanthrene	0.0155	1	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	108-95-2	Phenol	0.0149	0	mg/kg
SVOC	Composite	B	BRA06B	2 to 6	No	129-00-0	Pyrene	0.0247	1	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00117	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00114	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00086	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00093	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	79-00-5	1,1,2-Trichloroethane	0.00074	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	75-34-3	1,1-Dichloroethane	0.00061	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	75-35-4	1,1-Dichloroethene	0.00075	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	563-58-6	1,1-Dichloropropene	0.001	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	87-61-6	1,2,3-Trichlorobenzene	0.00904	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	96-18-4	1,2,3-Trichloropropane	0.002	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	526-73-8	1,2,3-Trimethylbenzene	0.00195	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.00543	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	95-63-6	1,2,4-Trimethylbenzene	0.00195	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00481	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.0008	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.00052	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	107-06-2	1,2-Dichloroethane	0.0008	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	78-87-5	1,2-Dichloropropane	0.00175	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00247	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.00074	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	142-28-9	1,3-Dichloropropane	0.00062	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.00086	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	594-20-7	2,2-Dichloropropane	0.0017	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	95-49-8	2-Chlorotoluene	0.00107	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	106-43-4	4-Chlorotoluene	0.00056	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	67-64-1	Acetone	0.045	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	107-13-1	Acrylonitrile	0.00445	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	71-43-2	Benzene	0.00058	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	108-86-1	Bromobenzene	0.00111	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	75-27-4	Bromodichloromethane	0.0009	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	75-25-2	Bromoform	0.00144	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	74-83-9	Bromomethane	0.00243	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	56-23-5	Carbon Tetrachloride	0.00111	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	108-90-7	Chlorobenzene	0.00026	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	75-00-3	Chloroethane	0.0021	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	67-66-3	Chloroform	0.00127	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	74-87-3	Chloromethane	0.00537	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	156-59-2	cis-1,2-Dichloroethylene	0.00091	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	10061-01-5	cis-1,3-Dichloropropene	0.00093	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	99-87-6	Cymene	0.00315	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	124-48-1	Dibromochloromethane	0.00076	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	74-95-3	Dibromomethane	0.00093	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	75-71-8	Dichlorodifluoromethane	0.00199	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	100-41-4	Ethylbenzene	0.00091	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	87-68-3	Hexachlorobutadiene	0.0074	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	108-20-3	Isopropyl Ether	0.00051	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	98-82-8	Isopropylbenzene (Cumene)	0.00052	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0783	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00281	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	75-09-2	Methylene chloride	0.00819	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	104-51-8	n-Butylbenzene	0.00648	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	103-65-1	n-Propylbenzene	0.00117	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	135-98-8	sec-Butylbenzene	0.00355	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	100-42-5	Styrene	0.00028	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	98-06-6	t-Butylbenzene	0.00241	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	1634-04-4	tert-Butyl methyl ether	0.00043	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	127-18-4	Tetrachloroethylene (PCE)	0.00111	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	108-88-3	Toluene	0.0016	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	156-60-5	trans-1,2-Dichloroethene	0.00128	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	10061-02-6	trans-1,3-Dichloropropene	0.00141	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	79-01-6	Trichloroethylene (TCE)	0.00072	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	75-69-4	Trichlorofluoromethane	0.00102	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	75-01-4	Vinyl chloride	0.00143	0	mg/kg
VOC	Discrete	B	BRA06B	2 to 6	No	1330-20-7	Xylenes, total	0.00109	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.0115	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.0109	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.0111	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.0109	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	90-12-0	1-Methylnaphthalene	0.00495	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	88-06-2	2,4,6-Trichlorophenol	0.0118	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	B	BRA06B	6 to 12	No	120-83-2	2,4-Dichlorophenol	0.0107	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	105-67-9	2,4-Dimethylphenol	0.00959	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	51-28-5	2,4-Dinitrophenol	0.0859	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	121-14-2	2,4-Dinitrotoluene	0.0105	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	606-20-2	2,6-Dinitrotoluene	0.012	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	91-58-7	2-Chloronaphthalene	0.00514	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	95-57-8	2-Chlorophenol	0.0121	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	91-57-6	2-Methylnaphthalene	0.00471	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	88-75-5	2-Nitrophenol	0.0131	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	91-94-1	3,3'-Dichlorobenzidine	0.0136	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0832	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	101-55-3	4-Bromophenyl phenyl ether	0.0129	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	59-50-7	4-Chloro-3-methylphenol	0.0119	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0128	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	100-02-7	4-Nitrophenol	0.0115	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	83-32-9	Acenaphthene	0.0023	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	208-96-8	Acenaphthylene	0.00238	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	120-12-7	Anthracene	0.00254	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	92-87-5	Benzidine	0.069	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	56-55-3	Benzo(a)anthracene	0.00799	1	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	50-32-8	Benzo(a)pyrene	0.0103	1	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	205-99-2	Benzo(b)fluoranthene	0.0152	1	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	191-24-2	Benzo(g,h,i)perylene	0.0289	1	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	207-08-9	Benzo(k)fluoranthene	0.00456	1	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	85-68-7	Benzyl butyl phthalate	0.0115	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	111-91-1	Bis(2-Chloroethoxy) methane	0.011	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0121	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0159	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0465	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	218-01-9	Chrysene	0.00817	1	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	53-70-3	Dibenz(a,h)anthracene	0.00332	1	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	84-66-2	Diethyl phthalate	0.0121	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	131-11-3	Dimethyl phthalate	0.0778	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	84-74-2	di-n-Butyl phthalate	0.0126	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	117-84-0	di-n-Octylphthalate	0.0248	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	206-44-0	Fluoranthene	0.016	1	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	86-73-7	Fluorene	0.00226	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	118-74-1	Hexachlorobenzene	0.013	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	87-68-3	Hexachlorobutadiene	0.0123	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	77-47-4	Hexachlorocyclopentadiene	0.0193	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	67-72-1	Hexachloroethane	0.0144	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0103	1	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	78-59-1	Isophorone	0.0112	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	91-20-3	Naphthalene	0.0045	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	98-95-3	Nitrobenzene	0.0128	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	62-75-9	N-Nitrosodimethylamine	0.0545	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	621-64-7	N-Nitrosodi-n-propylamine	0.0122	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	86-30-6	N-Nitrosodiphenylamine	0.0278	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	87-86-5	Pentachlorophenol	0.00988	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	85-01-8	Phenanthrene	0.00438	1	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	108-95-2	Phenol	0.0148	0	mg/kg
SVOC	Composite	B	BRA06B	6 to 12	No	129-00-0	Pyrene	0.0149	1	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00117	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00114	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00086	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00093	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	79-00-5	1,1,2-Trichloroethane	0.00074	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	75-34-3	1,1-Dichloroethane	0.00061	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	75-35-4	1,1-Dichloroethene	0.00075	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	563-58-6	1,1-Dichloropropene	0.001	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	87-61-6	1,2,3-Trichlorobenzene	0.00905	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	96-18-4	1,2,3-Trichloropropane	0.002	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	526-73-8	1,2,3-Trimethylbenzene	0.00195	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.00543	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	95-63-6	1,2,4-Trimethylbenzene	0.00195	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00481	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.0008	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.00052	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	107-06-2	1,2-Dichloroethane	0.0008	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	78-87-5	1,2-Dichloropropane	0.00175	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00247	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.00074	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	142-28-9	1,3-Dichloropropane	0.00062	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.00086	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	594-20-7	2,2-Dichloropropane	0.0017	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	95-49-8	2-Chlorotoluene	0.00107	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	106-43-4	4-Chlorotoluene	0.00056	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	67-64-1	Acetone	0.045	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	107-13-1	Acrylonitrile	0.00446	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	71-43-2	Benzene	0.00058	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	108-86-1	Bromobenzene	0.00111	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	75-27-4	Bromodichloromethane	0.0009	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	75-25-2	Bromoform	0.00144	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	74-83-9	Bromomethane	0.00243	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	56-23-5	Carbon Tetrachloride	0.00111	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	108-90-7	Chlorobenzene	0.00026	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	75-00-3	Chloroethane	0.0021	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	67-66-3	Chloroform	0.00127	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	74-87-3	Chloromethane	0.00537	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	156-59-2	cis-1,2-Dichloroethylene	0.00091	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
VOC	Discrete	B	BRA06B	6 to 12	No	10061-01-5	cis-1,3-Dichloropropene	0.00093	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	99-87-6	Cymene	0.00315	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	124-48-1	Dibromochloromethane	0.00076	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	74-95-3	Dibromomethane	0.00093	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	75-71-8	Dichlorodifluoromethane	0.00199	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	100-41-4	Ethylbenzene	0.00091	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	87-68-3	Hexachlorobutadiene	0.0074	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	108-20-3	Isopropyl Ether	0.00051	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	98-82-8	Isopropylbenzene (Cumene)	0.00052	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0784	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00281	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	75-09-2	Methylene chloride	0.00819	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	104-51-8	n-Butylbenzene	0.00648	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	103-65-1	n-Propylbenzene	0.00117	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	135-98-8	sec-Butylbenzene	0.00355	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	100-42-5	Styrene	0.00028	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	98-06-6	t-Butylbenzene	0.00241	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	1634-04-4	tert-Butyl methyl ether	0.00043	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	127-18-4	Tetrachloroethylene (PCE)	0.00111	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	108-88-3	Toluene	0.0016	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	156-60-5	trans-1,2-Dichloroethene	0.00128	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	10061-02-6	trans-1,3-Dichloropropene	0.00141	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	79-01-6	Trichloroethylene (TCE)	0.00072	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	75-69-4	Trichlorofluoromethane	0.00102	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	75-01-4	Vinyl chloride	0.00143	0	mg/kg
VOC	Discrete	B	BRA06B	6 to 12	No	1330-20-7	Xylenes, total	0.00109	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	120-82-1	1,2,4-Trichlorobenzene	0.0118	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	95-50-1	1,2-Dichlorobenzene	0.0112	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	541-73-1	1,3-Dichlorobenzene	0.0114	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	106-46-7	1,4-Dichlorobenzene	0.0112	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	90-12-0	1-Methylnaphthalene	0.00508	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	88-06-2	2,4,6-Trichlorophenol	0.0121	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	120-83-2	2,4-Dichlorophenol	0.011	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	105-67-9	2,4-Dimethylphenol	0.00985	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	51-28-5	2,4-Dinitrophenol	0.0882	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	121-14-2	2,4-Dinitrotoluene	0.0108	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	606-20-2	2,6-Dinitrotoluene	0.0123	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	91-58-7	2-Chloronaphthalene	0.00527	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	95-57-8	2-Chlorophenol	0.0125	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	91-57-6	2-Methylnaphthalene	0.00483	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	88-75-5	2-Nitrophenol	0.0135	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	91-94-1	3,3'-Dichlorobenzidine	0.0139	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0855	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	101-55-3	4-Bromophenyl phenyl ether	0.0132	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	59-50-7	4-Chloro-3-methylphenol	0.0122	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0131	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	100-02-7	4-Nitrophenol	0.0118	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	83-32-9	Acenaphthene	0.00274	1	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	208-96-8	Acenaphthylene	0.00963	1	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	120-12-7	Anthracene	0.014	1	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	92-87-5	Benzdine	0.0709	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	56-55-3	Benzo(a)anthracene	0.0599	1	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	50-32-8	Benzo(a)pyrene	0.0825	1	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	205-99-2	Benzo(b)fluoranthene	0.149	1	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	191-24-2	Benzo(g,h,i)perylene	0.102	1	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	207-08-9	Benzo(k)fluoranthene	0.0407	1	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	85-68-7	Benzyl butyl phthalate	0.0207	1	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0113	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0125	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0163	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0832	1	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	218-01-9	Chrysene	0.0821	1	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	53-70-3	Dibenz(a,h)anthracene	0.0181	1	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	84-66-2	Diethyl phthalate	0.0125	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	131-11-3	Dimethyl phthalate	0.0799	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	84-74-2	di-n-Butyl phthalate	0.0129	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	117-84-0	di-n-Octylphthalate	0.0255	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	206-44-0	Fluoranthene	0.115	1	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	86-73-7	Fluorene	0.00232	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	118-74-1	Hexachlorobenzene	0.0134	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	87-68-3	Hexachlorobutadiene	0.0127	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	77-47-4	Hexachlorocyclopentadiene	0.0198	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	67-72-1	Hexachloroethane	0.0148	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0836	1	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	78-59-1	Isophorone	0.0115	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	91-20-3	Naphthalene	0.00462	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	98-95-3	Nitrobenzene	0.0131	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	62-75-9	N-Nitrosodimethylamine	0.0559	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	621-64-7	N-Nitrosodi-n-propylamine	0.0126	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	86-30-6	N-Nitrosodiphenylamine	0.0285	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	87-86-5	Pentachlorophenol	0.0101	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	85-01-8	Phenanthrene	0.0363	1	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	108-95-2	Phenol	0.0152	0	mg/kg
SVOC	Composite	B	BRA07B	0 to 2	No	129-00-0	Pyrene	0.0996	1	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.0116	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.011	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.0112	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.011	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	90-12-0	1-Methylnaphthalene	0.005	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	88-06-2	2,4,6-Trichlorophenol	0.0119	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	B	BRA07B	2 to 6	No	120-83-2	2,4-Dichlorophenol	0.0108	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	105-67-9	2,4-Dimethylphenol	0.00968	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	51-28-5	2,4-Dinitrophenol	0.0867	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	121-14-2	2,4-Dinitrotoluene	0.0106	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	606-20-2	2,6-Dinitrotoluene	0.0121	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	91-58-7	2-Chloronaphthalene	0.00518	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	95-57-8	2-Chlorophenol	0.0122	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	91-57-6	2-Methylnaphthalene	0.00475	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	88-75-5	2-Nitrophenol	0.0132	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	91-94-1	3,3'-Dichlorobenzidine	0.0137	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	534-52-1	4,6-Dinitro-2-methylphenol	0.084	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	101-55-3	4-Bromophenyl phenyl ether	0.013	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	59-50-7	4-Chloro-3-methylphenol	0.012	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0129	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	100-02-7	4-Nitrophenol	0.0116	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	83-32-9	Acenaphthene	0.00233	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	208-96-8	Acenaphthylene	0.0159	1	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	120-12-7	Anthracene	0.0192	1	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	92-87-5	Benzidine	0.0697	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	56-55-3	Benzo(a)anthracene	0.0278	1	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	50-32-8	Benzo(a)pyrene	0.0412	1	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	205-99-2	Benzo(b)fluoranthene	0.0635	1	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	191-24-2	Benzo(g,h,i)perylene	0.0404	1	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	207-08-9	Benzo(k)fluoranthene	0.0211	1	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	85-68-7	Benzyl butyl phthalate	0.0197	1	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0111	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0122	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.016	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0698	1	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	218-01-9	Chrysene	0.0365	1	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	53-70-3	Dibenz(a,h)anthracene	0.00536	1	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	84-66-2	Diethyl phthalate	0.0122	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	131-11-3	Dimethyl phthalate	0.0786	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	84-74-2	di-n-Butyl phthalate	0.0395	1	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	117-84-0	di-n-Octylphthalate	0.025	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	206-44-0	Fluoranthene	0.0448	1	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	86-73-7	Fluorene	0.00228	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	118-74-1	Hexachlorobenzene	0.0131	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	87-68-3	Hexachlorobutadiene	0.0125	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	77-47-4	Hexachlorocyclopentadiene	0.0195	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	67-72-1	Hexachloroethane	0.0146	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0396	1	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	78-59-1	Isophorone	0.0113	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	91-20-3	Naphthalene	0.00454	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	98-95-3	Nitrobenzene	0.0129	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	62-75-9	N-Nitrosodimethylamine	0.055	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	621-64-7	N-Nitrosodi-n-propylamine	0.0124	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	86-30-6	N-Nitrosodiphenylamine	0.028	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	87-86-5	Pentachlorophenol	0.00997	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	85-01-8	Phenanthrene	0.0178	1	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	108-95-2	Phenol	0.0149	0	mg/kg
SVOC	Composite	B	BRA07B	2 to 6	No	129-00-0	Pyrene	0.0496	1	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00114	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00111	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00084	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00091	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	79-00-5	1,1,2-Trichloroethane	0.00072	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	75-34-3	1,1-Dichloroethane	0.00059	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	75-35-4	1,1-Dichloroethene	0.00073	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	563-58-6	1,1-Dichloropropene	0.00098	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	87-61-6	1,2,3-Trichlorobenzene	0.00885	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	96-18-4	1,2,3-Trichloropropane	0.00196	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	526-73-8	1,2,3-Trimethylbenzene	0.00191	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.00531	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	95-63-6	1,2,4-Trimethylbenzene	0.00191	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00471	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00078	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.00051	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	107-06-2	1,2-Dichloroethane	0.00078	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	78-87-5	1,2-Dichloropropane	0.00171	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00241	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.00072	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	142-28-9	1,3-Dichloropropane	0.00061	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.00085	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	594-20-7	2,2-Dichloropropane	0.00167	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	95-49-8	2-Chlorotoluene	0.00104	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	106-43-4	4-Chlorotoluene	0.00054	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	67-64-1	Acetone	0.0441	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	107-13-1	Acrylonitrile	0.00436	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	71-43-2	Benzene	0.00056	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	108-86-1	Bromobenzene	0.00109	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	75-27-4	Bromodichloromethane	0.00088	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	75-25-2	Bromoform	0.00141	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	74-83-9	Bromomethane	0.00238	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	56-23-5	Carbon Tetrachloride	0.00108	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	108-90-7	Chlorobenzene	0.00025	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	75-00-3	Chloroethane	0.00205	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	67-66-3	Chloroform	0.00124	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	74-87-3	Chloromethane	0.00525	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	156-59-2	cis-1,2-Dichloroethylene	0.00089	0	mg/kg



TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
VOC	Discrete	B	BRA07B	2 to 6	No	10061-01-5	cis-1,3-Dichloropropene	0.00091	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	99-87-6	Cymene	0.00308	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	124-48-1	Dibromochloromethane	0.00074	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	74-95-3	Dibromomethane	0.00091	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	75-71-8	Dichlorodifluoromethane	0.00194	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	100-41-4	Ethylbenzene	0.00089	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	87-68-3	Hexachlorobutadiene	0.00724	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	108-20-3	Isopropyl Ether	0.0005	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	98-82-8	Isopropylbenzene (Cumene)	0.00051	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0767	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00275	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	75-09-2	Methylene chloride	0.00802	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	104-51-8	n-Butylbenzene	0.00634	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	103-65-1	n-Propylbenzene	0.00115	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	135-98-8	sec-Butylbenzene	0.00348	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	100-42-5	Styrene	0.00028	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	98-06-6	t-Butylbenzene	0.00235	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	1634-04-4	tert-Butyl methyl ether	0.00042	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	127-18-4	Tetrachloroethylene (PCE)	0.00108	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	108-88-3	Toluene	0.00157	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	156-60-5	trans-1,2-Dichloroethene	0.00126	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	10061-02-6	trans-1,3-Dichloropropene	0.00138	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	79-01-6	Trichloroethylene (TCE)	0.00071	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	75-69-4	Trichlorofluoromethane	0.001	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	75-01-4	Vinyl chloride	0.0014	0	mg/kg
VOC	Discrete	B	BRA07B	2 to 6	No	1330-20-7	Xylenes, total	0.00106	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.0117	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.0111	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.0114	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.0112	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	90-12-0	1-Methylnaphthalene	0.00506	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	88-06-2	2,4,6-Trichlorophenol	0.0121	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	120-83-2	2,4-Dichlorophenol	0.0109	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	105-67-9	2,4-Dimethylphenol	0.0098	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	51-28-5	2,4-Dinitrophenol	0.0877	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	121-14-2	2,4-Dinitrotoluene	0.0108	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	606-20-2	2,6-Dinitrotoluene	0.0123	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	91-58-7	2-Chloronaphthalene	0.00525	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	95-57-8	2-Chlorophenol	0.0124	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	91-57-6	2-Methylnaphthalene	0.00481	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	88-75-5	2-Nitrophenol	0.0134	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	91-94-1	3,3'-Dichlorobenzidine	0.0139	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	534-52-1	4,6-Dinitro-2-methylphenol	0.085	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	101-55-3	4-Bromophenyl phenyl ether	0.0132	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	59-50-7	4-Chloro-3-methylphenol	0.0122	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0131	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	100-02-7	4-Nitrophenol	0.0117	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	83-32-9	Acenaphthene	0.00235	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	208-96-8	Acenaphthylene	0.0111	1	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	120-12-7	Anthracene	0.0159	1	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	92-87-5	Benzdine	0.0705	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	56-55-3	Benzo(a)anthracene	0.0215	1	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	50-32-8	Benzo(a)pyrene	0.0318	1	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	205-99-2	Benzo(b)fluoranthene	0.0533	1	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	191-24-2	Benzo(g,h,i)perylene	0.0434	1	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	207-08-9	Benzo(k)fluoranthene	0.0172	1	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	85-68-7	Benzyl butyl phthalate	0.0117	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0113	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0124	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0162	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0475	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	218-01-9	Chrysene	0.0217	1	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	53-70-3	Dibenz(a,h)anthracene	0.00754	1	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	84-66-2	Diethyl phthalate	0.0124	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	131-11-3	Dimethyl phthalate	0.0795	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	84-74-2	di-n-Butyl phthalate	0.0128	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	117-84-0	di-n-Octylphthalate	0.0253	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	206-44-0	Fluoranthene	0.0389	1	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	86-73-7	Fluorene	0.00231	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	118-74-1	Hexachlorobenzene	0.0133	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	87-68-3	Hexachlorobutadiene	0.0126	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	77-47-4	Hexachlorocyclopentadiene	0.0197	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	67-72-1	Hexachloroethane	0.0148	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0362	1	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	78-59-1	Isophorone	0.0115	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	91-20-3	Naphthalene	0.0046	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	98-95-3	Nitrobenzene	0.0131	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	62-75-9	N-Nitrosodimethylamine	0.0556	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	621-64-7	N-Nitrosodi-n-propylamine	0.0125	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	86-30-6	N-Nitrosodiphenylamine	0.0284	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	87-86-5	Pentachlorophenol	0.0101	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	85-01-8	Phenanthrene	0.0145	1	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	108-95-2	Phenol	0.0151	0	mg/kg
SVOC	Composite	B	BRA07B	6 to 12	No	129-00-0	Pyrene	0.0358	1	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00115	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00112	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00084	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00091	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	79-00-5	1,1,2-Trichloroethane	0.00072	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	75-34-3	1,1-Dichloroethane	0.0006	0	mg/kg



TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
VOC	Discrete	B	BRA07B	6 to 12	No	75-35-4	1,1-Dichloroethene	0.00073	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	563-58-6	1,1-Dichloropropene	0.00098	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	87-61-6	1,2,3-Trichlorobenzene	0.00888	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	96-18-4	1,2,3-Trichloropropane	0.00196	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	526-73-8	1,2,3-Trimethylbenzene	0.00191	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.00533	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	95-63-6	1,2,4-Trimethylbenzene	0.00191	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00472	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00079	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.00052	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	107-06-2	1,2-Dichloroethane	0.00079	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	78-87-5	1,2-Dichloropropane	0.00172	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00242	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.00073	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	142-28-9	1,3-Dichloropropane	0.00061	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.00085	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	594-20-7	2,2-Dichloropropane	0.00167	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	95-49-8	2-Chlorotoluene	0.00105	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	106-43-4	4-Chlorotoluene	0.00055	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	67-64-1	Acetone	0.0442	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	107-13-1	Acrylonitrile	0.00437	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	71-43-2	Benzene	0.00057	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	108-86-1	Bromobenzene	0.00109	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	75-27-4	Bromodichloromethane	0.00088	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	75-25-2	Bromoform	0.00142	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	74-83-9	Bromomethane	0.00239	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	56-23-5	Carbon Tetrachloride	0.00109	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	108-90-7	Chlorobenzene	0.00025	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	75-00-3	Chloroethane	0.00206	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	67-66-3	Chloroform	0.00125	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	74-87-3	Chloromethane	0.00527	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	156-59-2	cis-1,2-Dichloroethylene	0.00089	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	10061-01-5	cis-1,3-Dichloropropene	0.00092	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	99-87-6	Cymene	0.00309	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	124-48-1	Dibromochloromethane	0.00074	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	74-95-3	Dibromomethane	0.00091	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	75-71-8	Dichlorodifluoromethane	0.00195	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	100-41-4	Ethylbenzene	0.00089	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	87-68-3	Hexachlorobutadiene	0.00727	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	108-20-3	Isopropyl Ether	0.0005	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	98-82-8	Isopropylbenzene (Cumene)	0.00052	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0769	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00276	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	75-09-2	Methylene chloride	0.00804	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	104-51-8	n-Butylbenzene	0.00636	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	103-65-1	n-Propylbenzene	0.00115	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	135-98-8	sec-Butylbenzene	0.00349	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	100-42-5	Styrene	0.00028	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	98-06-6	t-Butylbenzene	0.00236	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	1634-04-4	tert-Butyl methyl ether	0.00042	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	127-18-4	Tetrachloroethylene (PCE)	0.00109	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	108-88-3	Toluene	0.00157	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	156-60-5	trans-1,2-Dichloroethene	0.00126	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	10061-02-6	trans-1,3-Dichloropropene	0.00138	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	79-01-6	Trichloroethylene (TCE)	0.00071	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	75-69-4	Trichlorofluoromethane	0.001	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	75-01-4	Vinyl chloride	0.00141	0	mg/kg
VOC	Discrete	B	BRA07B	6 to 12	No	1330-20-7	Xylenes, total	0.00107	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	120-82-1	1,2,4-Trichlorobenzene	0.0117	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	95-50-1	1,2-Dichlorobenzene	0.0111	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	541-73-1	1,3-Dichlorobenzene	0.0114	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	106-46-7	1,4-Dichlorobenzene	0.0111	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	90-12-0	1-Methylnaphthalene	0.0396	1	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	88-06-2	2,4,6-Trichlorophenol	0.012	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	120-83-2	2,4-Dichlorophenol	0.0109	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	105-67-9	2,4-Dimethylphenol	0.00978	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	51-28-5	2,4-Dinitrophenol	0.0876	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	121-14-2	2,4-Dinitrotoluene	0.0107	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	606-20-2	2,6-Dinitrotoluene	0.0123	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	91-58-7	2-Chloronaphthalene	0.00524	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	95-57-8	2-Chlorophenol	0.0124	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	91-57-6	2-Methylnaphthalene	0.0545	1	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	88-75-5	2-Nitrophenol	0.0134	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	91-94-1	3,3'-Dichlorobenzidine	0.0138	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0849	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	101-55-3	4-Bromophenyl phenyl ether	0.0132	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	59-50-7	4-Chloro-3-methylphenol	0.0121	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	7005-72-3	4-Chlorophenyl phenyl ether	0.013	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	100-02-7	4-Nitrophenol	0.0117	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	83-32-9	Acenaphthene	0.00606	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	208-96-8	Acenaphthylene	0.0166	1	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	120-12-7	Anthracene	0.0103	1	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	56-55-3	Benzo(a)anthracene	0.0551	1	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	50-32-8	Benzo(a)pyrene	0.0649	1	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	205-99-2	Benzo(b)fluoranthene	0.129	1	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	191-24-2	Benzo(g,h,i)perylene	0.0469	1	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	207-08-9	Benzo(k)fluoranthene	0.0429	1	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	85-68-7	Benzyl butyl phthalate	0.0117	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0112	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0124	0	mg/kg

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	B	BRA08B	0 to 2	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0162	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0687	1	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	218-01-9	Chrysene	0.108	1	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	53-70-3	Dibenz(a,h)anthracene	0.011	1	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	84-66-2	Diethyl phthalate	0.0124	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	131-11-3	Dimethyl phthalate	0.0794	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	84-74-2	di-n-Butyl phthalate	0.0128	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	117-84-0	di-n-Octylphthalate	0.0253	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	206-44-0	Fluoranthene	0.0955	1	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	86-73-7	Fluorene	0.0517	1	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	118-74-1	Hexachlorobenzene	0.0133	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	87-68-3	Hexachlorobutadiene	0.0126	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	67-72-1	Hexachloroethane	0.0147	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0481	1	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	78-59-1	Isophorone	0.0115	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	91-20-3	Naphthalene	0.0557	1	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	98-95-3	Nitrobenzene	0.013	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	62-75-9	N-Nitrosodimethylamine	0.0555	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	621-64-7	N-Nitrosodi-n-propylamine	0.0125	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	86-30-6	N-Nitrosodiphenylamine	0.0283	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	87-86-5	Pentachlorophenol	0.0101	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	85-01-8	Phenanthrene	0.0264	1	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	108-95-2	Phenol	0.0151	0	mg/kg
SVOC	Composite	B	BRA08B	0 to 2	No	129-00-0	Pyrene	0.108	1	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.0115	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.0109	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.0112	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.011	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	90-12-0	1-Methylnaphthalene	0.00497	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	88-06-2	2,4,6-Trichlorophenol	0.0118	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	120-83-2	2,4-Dichlorophenol	0.0107	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	105-67-9	2,4-Dimethylphenol	0.00962	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	51-28-5	2,4-Dinitrophenol	0.0861	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	121-14-2	2,4-Dinitrotoluene	0.0106	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	606-20-2	2,6-Dinitrotoluene	0.0121	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	91-58-7	2-Chloronaphthalene	0.00515	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	95-57-8	2-Chlorophenol	0.0122	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	91-57-6	2-Methylnaphthalene	0.00472	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	88-75-5	2-Nitrophenol	0.0132	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	91-94-1	3,3'-Dichlorobenzidine	0.0136	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0835	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	101-55-3	4-Bromophenyl phenyl ether	0.0129	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	59-50-7	4-Chloro-3-methylphenol	0.0119	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0128	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	100-02-7	4-Nitrophenol	0.0115	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	83-32-9	Acenaphthene	0.00231	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	208-96-8	Acenaphthylene	0.00727	1	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	120-12-7	Anthracene	0.00793	1	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	56-55-3	Benzo(a)anthracene	0.0323	1	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	50-32-8	Benzo(a)pyrene	0.0316	1	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	205-99-2	Benzo(b)fluoranthene	0.053	1	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	191-24-2	Benzo(g,h,i)perylene	0.0258	1	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	207-08-9	Benzo(k)fluoranthene	0.0181	1	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	85-68-7	Benzyl butyl phthalate	0.0115	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0111	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0122	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0159	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0467	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	218-01-9	Chrysene	0.0422	1	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	53-70-3	Dibenz(a,h)anthracene	0.00599	1	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	84-66-2	Diethyl phthalate	0.0122	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	131-11-3	Dimethyl phthalate	0.0781	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	84-74-2	di-n-Butyl phthalate	0.0126	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	117-84-0	di-n-Octylphthalate	0.0249	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	206-44-0	Fluoranthene	0.0655	1	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	86-73-7	Fluorene	0.00227	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	118-74-1	Hexachlorobenzene	0.013	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	87-68-3	Hexachlorobutadiene	0.0124	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	77-47-4	Hexachlorocyclopentadiene	0.0194	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	67-72-1	Hexachloroethane	0.0145	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0243	1	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	78-59-1	Isophorone	0.0113	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	91-20-3	Naphthalene	0.00451	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	98-95-3	Nitrobenzene	0.0128	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	62-75-9	N-Nitrosodimethylamine	0.0546	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	621-64-7	N-Nitrosodi-n-propylamine	0.0123	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	86-30-6	N-Nitrosodiphenylamine	0.0279	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	87-86-5	Pentachlorophenol	0.00991	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	85-01-8	Phenanthrene	0.0222	1	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	108-95-2	Phenol	0.0148	0	mg/kg
SVOC	Composite	B	BRA08B	2 to 6	No	129-00-0	Pyrene	0.0526	1	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00124	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00121	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00091	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00099	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	79-00-5	1,1,2-Trichloroethane	0.00078	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	75-34-3	1,1-Dichloroethane	0.00064	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	75-35-4	1,1-Dichloroethene	0.00079	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	563-58-6	1,1-Dichloropropene	0.00106	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	87-61-6	1,2,3-Trichlorobenzene	0.0096	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
VOC	Discrete	B	BRA08B	2 to 6	No	96-18-4	1,2,3-Trichloropropane	0.00212	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	526-73-8	1,2,3-Trimethylbenzene	0.00207	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.00576	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	95-63-6	1,2,4-Trimethylbenzene	0.00207	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00511	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00085	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.00056	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	107-06-2	1,2-Dichloroethane	0.00085	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	78-87-5	1,2-Dichloropropane	0.00186	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00262	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.00079	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	142-28-9	1,3-Dichloropropane	0.00066	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.00092	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	594-20-7	2,2-Dichloropropane	0.00181	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	95-49-8	2-Chlorotoluene	0.00113	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	106-43-4	4-Chlorotoluene	0.00059	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	67-64-1	Acetone	0.0478	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	107-13-1	Acrylonitrile	0.00473	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	71-43-2	Benzene	0.00061	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	108-86-1	Bromobenzene	0.00118	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	75-27-4	Bromodichloromethane	0.00095	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	75-25-2	Bromoform	0.00153	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	74-83-9	Bromomethane	0.00258	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	56-23-5	Carbon Tetrachloride	0.00118	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	108-90-7	Chlorobenzene	0.00028	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	75-00-3	Chloroethane	0.00223	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	67-66-3	Chloroform	0.00135	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	74-87-3	Chloromethane	0.0057	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	156-59-2	cis-1,2-Dichloroethylene	0.00096	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	10061-01-5	cis-1,3-Dichloropropene	0.00099	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	99-87-6	Cymene	0.00334	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	124-48-1	Dibromochloromethane	0.0008	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	74-95-3	Dibromomethane	0.00098	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	75-71-8	Dichlorodifluoromethane	0.00211	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	100-41-4	Ethylbenzene	0.00097	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	87-68-3	Hexachlorobutadiene	0.00786	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	108-20-3	Isopropyl Ether	0.00054	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	98-82-8	Isopropylbenzene (Cumene)	0.00056	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0832	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00299	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	75-09-2	Methylene chloride	0.0087	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	104-51-8	n-Butylbenzene	0.00688	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	103-65-1	n-Propylbenzene	0.00124	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	135-98-8	sec-Butylbenzene	0.00377	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	100-42-5	Styrene	0.0003	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	98-06-6	t-Butylbenzene	0.00255	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	1634-04-4	tert-Butyl methyl ether	0.00046	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	127-18-4	Tetrachloroethylene (PCE)	0.00117	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	108-88-3	Toluene	0.0017	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	156-60-5	trans-1,2-Dichloroethene	0.00136	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	10061-02-6	trans-1,3-Dichloropropene	0.00149	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	79-01-6	Trichloroethylene (TCE)	0.00077	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	75-69-4	Trichlorofluoromethane	0.00108	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	75-01-4	Vinyl chloride	0.00152	0	mg/kg
VOC	Discrete	B	BRA08B	2 to 6	No	1330-20-7	Xylenes, total	0.00115	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.0117	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.0111	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.0113	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.0111	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	90-12-0	1-Methylnaphthalene	0.00503	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	88-06-2	2,4,6-Trichlorophenol	0.012	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	120-83-2	2,4-Dichlorophenol	0.0109	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	105-67-9	2,4-Dimethylphenol	0.00975	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	51-28-5	2,4-Dinitrophenol	0.0873	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	121-14-2	2,4-Dinitrotoluene	0.0107	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	606-20-2	2,6-Dinitrotoluene	0.0122	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	91-58-7	2-Chloronaphthalene	0.00522	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	95-57-8	2-Chlorophenol	0.0123	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	91-57-6	2-Methylnaphthalene	0.00479	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	88-75-5	2-Nitrophenol	0.0133	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	91-94-1	3,3'-Dichlorobenzidine	0.0138	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0847	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	101-55-3	4-Bromophenyl phenyl ether	0.0131	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	59-50-7	4-Chloro-3-methylphenol	0.0121	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	7005-72-3	4-Chlorophenyl phenyl ether	0.013	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	100-02-7	4-Nitrophenol	0.0117	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	83-32-9	Acenaphthene	0.00234	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	208-96-8	Acenaphthylene	0.00891	1	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	120-12-7	Anthracene	0.00693	1	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	92-87-5	Benzidine	0.0702	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	56-55-3	Benzo(a)anthracene	0.0221	1	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	50-32-8	Benzo(a)pyrene	0.0255	1	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	205-99-2	Benzo(b)fluoranthene	0.0518	1	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	191-24-2	Benzo(g,h,i)perylene	0.0288	1	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	207-08-9	Benzo(k)fluoranthene	0.0174	1	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	85-68-7	Benzyl butyl phthalate	0.0117	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0112	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0123	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0161	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0473	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	B	BRA08B	6 to 12	No	218-01-9	Chrysene	0.0457	1	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	53-70-3	Dibenz(a,h)anthracene	0.005	1	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	84-66-2	Diethyl phthalate	0.0123	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	131-11-3	Dimethyl phthalate	0.0792	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	84-74-2	di-n-Butyl phthalate	0.0128	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	117-84-0	di-n-Octylphthalate	0.0252	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	206-44-0	Fluoranthene	0.0471	1	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	86-73-7	Fluorene	0.0023	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	118-74-1	Hexachlorobenzene	0.0132	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	87-68-3	Hexachlorobutadiene	0.0126	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	77-47-4	Hexachlorocyclopentadiene	0.0196	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	67-72-1	Hexachloroethane	0.0147	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0219	1	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	78-59-1	Isophorone	0.0114	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	91-20-3	Naphthalene	0.00457	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	98-95-3	Nitrobenzene	0.013	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	62-75-9	N-Nitrosodimethylamine	0.0554	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	621-64-7	N-Nitrosodi-n-propylamine	0.0124	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	86-30-6	N-Nitrosodiphenylamine	0.0283	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	87-86-5	Pentachlorophenol	0.01	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	85-01-8	Phenanthrene	0.0122	1	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	108-95-2	Phenol	0.015	0	mg/kg
SVOC	Composite	B	BRA08B	6 to 12	No	129-00-0	Pyrene	0.0451	1	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00132	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00129	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00097	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00105	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	79-00-5	1,1,2-Trichloroethane	0.00083	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	75-34-3	1,1-Dichloroethane	0.00069	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	75-35-4	1,1-Dichloroethene	0.00085	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	563-58-6	1,1-Dichloropropene	0.00113	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	87-61-6	1,2,3-Trichlorobenzene	0.0102	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	96-18-4	1,2,3-Trichloropropane	0.00226	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	526-73-8	1,2,3-Trimethylbenzene	0.0022	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.00614	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	95-63-6	1,2,4-Trimethylbenzene	0.0022	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00544	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.0009	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.00059	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	107-06-2	1,2-Dichloroethane	0.00091	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	78-87-5	1,2-Dichloropropane	0.00198	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00279	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.00084	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	142-28-9	1,3-Dichloropropane	0.0007	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.00098	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	594-20-7	2,2-Dichloropropane	0.00192	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	95-49-8	2-Chlorotoluene	0.00121	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	106-43-4	4-Chlorotoluene	0.00063	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	67-64-1	Acetone	0.0509	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	107-13-1	Acrylonitrile	0.00503	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	71-43-2	Benzene	0.00065	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	108-86-1	Bromobenzene	0.00126	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	75-27-4	Bromodichloromethane	0.00101	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	75-25-2	Bromoform	0.00163	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	74-83-9	Bromomethane	0.00275	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	56-23-5	Carbon Tetrachloride	0.00125	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	108-90-7	Chlorobenzene	0.00029	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	75-00-3	Chloroethane	0.00237	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	67-66-3	Chloroform	0.00144	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	74-87-3	Chloromethane	0.00607	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	156-59-2	cis-1,2-Dichloroethylene	0.00102	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	10061-01-5	cis-1,3-Dichloropropene	0.00106	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	99-87-6	Cymene	0.00356	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	124-48-1	Dibromochloromethane	0.00085	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	74-95-3	Dibromomethane	0.00105	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	75-71-8	Dichlorodifluoromethane	0.00225	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	100-41-4	Ethylbenzene	0.00103	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	87-68-3	Hexachlorobutadiene	0.00837	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	108-20-3	Isopropyl Ether	0.00057	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	98-82-8	Isopropylbenzene (Cumene)	0.00059	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0886	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00318	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	75-09-2	Methylene chloride	0.00926	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	104-51-8	n-Butylbenzene	0.00732	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	103-65-1	n-Propylbenzene	0.00132	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	135-98-8	sec-Butylbenzene	0.00402	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	100-42-5	Styrene	0.00032	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	98-06-6	t-Butylbenzene	0.00272	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	1634-04-4	tert-Butyl methyl ether	0.00049	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	127-18-4	Tetrachloroethylene (PCE)	0.00125	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	108-88-3	Toluene	0.00181	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	156-60-5	trans-1,2-Dichloroethene	0.00145	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	10061-02-6	trans-1,3-Dichloropropene	0.00159	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	79-01-6	Trichloroethylene (TCE)	0.00081	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	75-69-4	Trichlorofluoromethane	0.00115	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	75-01-4	Vinyl chloride	0.00162	0	mg/kg
VOC	Discrete	B	BRA08B	6 to 12	No	1330-20-7	Xylenes, total	0.00123	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	120-82-1	1,2,4-Trichlorobenzene	0.0126	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	95-50-1	1,2-Dichlorobenzene	0.0119	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	541-73-1	1,3-Dichlorobenzene	0.0122	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	B	BRA09B	0 to 2	No	106-46-7	1,4-Dichlorobenzene	0.012	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	90-12-0	1-Methylnaphthalene	0.00543	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	88-06-2	2,4,6-Trichlorophenol	0.0129	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	120-83-2	2,4-Dichlorophenol	0.0117	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	105-67-9	2,4-Dimethylphenol	0.0105	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	51-28-5	2,4-Dinitrophenol	0.0942	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	121-14-2	2,4-Dinitrotoluene	0.0115	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	606-20-2	2,6-Dinitrotoluene	0.0132	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	91-58-7	2-Chloronaphthalene	0.00564	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	95-57-8	2-Chlorophenol	0.0133	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	91-57-6	2-Methylnaphthalene	0.00516	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	88-75-5	2-Nitrophenol	0.0144	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	91-94-1	3,3'-Dichlorobenzidine	0.0149	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0913	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	101-55-3	4-Bromophenyl phenyl ether	0.0141	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	59-50-7	4-Chloro-3-methylphenol	0.0131	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	7005-72-3	4-Chlorophenyl phenyl ether	0.014	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	100-02-7	4-Nitrophenol	0.0126	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	83-32-9	Acenaphthene	0.00316	1	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	208-96-8	Acenaphthylene	0.00353	1	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	120-12-7	Anthracene	0.0103	1	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	92-87-5	Benzdine	0.0757	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	56-55-3	Benzo(a)anthracene	0.0795	1	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	50-32-8	Benzo(a)pyrene	0.0795	1	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	205-99-2	Benzo(b)fluoranthene	0.135	1	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	191-24-2	Benzo(g,h,i)perylene	0.0925	1	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	207-08-9	Benzo(k)fluoranthene	0.0469	1	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	85-68-7	Benzyl butyl phthalate	0.0126	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0121	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0133	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0174	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0796	1	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	218-01-9	Chrysene	0.0977	1	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	53-70-3	Dibenz(a,h)anthracene	0.0175	1	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	84-66-2	Diethyl phthalate	0.0133	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	131-11-3	Dimethyl phthalate	0.0854	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	84-74-2	di-n-Butyl phthalate	0.0138	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	117-84-0	di-n-Octylphthalate	0.0272	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	206-44-0	Fluoranthene	0.178	1	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	86-73-7	Fluorene	0.00248	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	118-74-1	Hexachlorobenzene	0.0143	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	87-68-3	Hexachlorobutadiene	0.0135	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	77-47-4	Hexachlorocyclopentadiene	0.0212	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	67-72-1	Hexachloroethane	0.0158	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0798	1	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	78-59-1	Isophorone	0.0123	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	91-20-3	Naphthalene	0.00493	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	98-95-3	Nitrobenzene	0.014	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	62-75-9	N-Nitrosodimethylamine	0.0597	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	621-64-7	N-Nitrosodi-n-propylamine	0.0134	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	86-30-6	N-Nitrosodiphenylamine	0.0305	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	87-86-5	Pentachlorophenol	0.0108	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	85-01-8	Phenanthrene	0.0571	1	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	108-95-2	Phenol	0.0162	0	mg/kg
SVOC	Composite	B	BRA09B	0 to 2	No	129-00-0	Pyrene	0.126	1	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.0117	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.0111	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.0114	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.0112	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	90-12-0	1-Methylnaphthalene	0.00507	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	88-06-2	2,4,6-Trichlorophenol	0.0121	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	120-83-2	2,4-Dichlorophenol	0.0109	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	105-67-9	2,4-Dimethylphenol	0.00982	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	51-28-5	2,4-Dinitrophenol	0.0879	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	121-14-2	2,4-Dinitrotoluene	0.0108	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	606-20-2	2,6-Dinitrotoluene	0.0123	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	91-58-7	2-Chloronaphthalene	0.00526	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	95-57-8	2-Chlorophenol	0.0124	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	91-57-6	2-Methylnaphthalene	0.00482	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	88-75-5	2-Nitrophenol	0.0134	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	91-94-1	3,3'-Dichlorobenzidine	0.0139	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0852	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	101-55-3	4-Bromophenyl phenyl ether	0.0132	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	59-50-7	4-Chloro-3-methylphenol	0.0122	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0131	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	100-02-7	4-Nitrophenol	0.0117	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	83-32-9	Acenaphthene	0.00236	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	208-96-8	Acenaphthylene	0.00244	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	120-12-7	Anthracene	0.00324	1	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	92-87-5	Benzdine	0.0706	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	56-55-3	Benzo(a)anthracene	0.0368	1	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	50-32-8	Benzo(a)pyrene	0.0402	1	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	205-99-2	Benzo(b)fluoranthene	0.0637	1	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	191-24-2	Benzo(g,h,i)perylene	0.0379	1	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	207-08-9	Benzo(k)fluoranthene	0.021	1	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	85-68-7	Benzyl butyl phthalate	0.0117	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0113	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0124	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0162	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0476	0	mg/kg



TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	B	BRA09B	2 to 6	No	218-01-9	Chrysene	0.0344	1	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	53-70-3	Dibenz(a,h)anthracene	0.00879	1	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	84-66-2	Diethyl phthalate	0.0124	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	131-11-3	Dimethyl phthalate	0.0797	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	84-74-2	di-n-Butyl phthalate	0.0129	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	117-84-0	di-n-Octylphthalate	0.0254	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	206-44-0	Fluoranthene	0.0685	1	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	86-73-7	Fluorene	0.00231	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	118-74-1	Hexachlorobenzene	0.0133	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	87-68-3	Hexachlorobutadiene	0.0126	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	77-47-4	Hexachlorocyclopentadiene	0.0197	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	67-72-1	Hexachloroethane	0.0148	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0332	1	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	78-59-1	Isophorone	0.0115	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	91-20-3	Naphthalene	0.0046	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	98-95-3	Nitrobenzene	0.0131	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	62-75-9	N-Nitrosodimethylamine	0.0557	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	621-64-7	N-Nitrosodi-n-propylamine	0.0125	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	86-30-6	N-Nitrosodiphenylamine	0.0284	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	87-86-5	Pentachlorophenol	0.0101	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	85-01-8	Phenanthrene	0.0271	1	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	108-95-2	Phenol	0.0151	0	mg/kg
SVOC	Composite	B	BRA09B	2 to 6	No	129-00-0	Pyrene	0.0625	1	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00115	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00112	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00084	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00091	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	79-00-5	1,1,2-Trichloroethane	0.00072	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	75-34-3	1,1-Dichloroethane	0.0006	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	75-35-4	1,1-Dichloroethene	0.00073	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	563-58-6	1,1-Dichloropropene	0.00098	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	87-61-6	1,2,3-Trichlorobenzene	0.00888	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	96-18-4	1,2,3-Trichloropropane	0.00196	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	526-73-8	1,2,3-Trimethylbenzene	0.00191	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.00533	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	95-63-6	1,2,4-Trimethylbenzene	0.00191	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00472	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00079	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.00052	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	107-06-2	1,2-Dichloroethane	0.00079	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	78-87-5	1,2-Dichloropropane	0.00172	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00242	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.00073	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	142-28-9	1,3-Dichloropropane	0.00061	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.00085	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	594-20-7	2,2-Dichloropropane	0.00167	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	95-49-8	2-Chlorotoluene	0.00105	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	106-43-4	4-Chlorotoluene	0.00055	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	67-64-1	Acetone	0.0442	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	107-13-1	Acrylonitrile	0.00437	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	71-43-2	Benzene	0.00057	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	108-86-1	Bromobenzene	0.00109	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	75-27-4	Bromodichloromethane	0.00088	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	75-25-2	Bromoform	0.00142	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	74-83-9	Bromomethane	0.00239	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	56-23-5	Carbon Tetrachloride	0.00109	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	108-90-7	Chlorobenzene	0.00025	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	75-00-3	Chloroethane	0.00206	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	67-66-3	Chloroform	0.00125	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	74-87-3	Chloromethane	0.00527	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	156-59-2	cis-1,2-Dichloroethylene	0.00089	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	10061-01-5	cis-1,3-Dichloropropene	0.00092	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	99-87-6	Cymene	0.00309	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	124-48-1	Dibromochloromethane	0.00074	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	74-95-3	Dibromomethane	0.00091	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	75-71-8	Dichlorodifluoromethane	0.00195	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	100-41-4	Ethylbenzene	0.00089	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	87-68-3	Hexachlorobutadiene	0.00727	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	108-20-3	Isopropyl Ether	0.0005	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	98-82-8	Isopropylbenzene (Cumene)	0.00052	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0769	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00276	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	75-09-2	Methylene chloride	0.00804	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	104-51-8	n-Butylbenzene	0.00636	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	103-65-1	n-Propylbenzene	0.00115	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	135-98-8	sec-Butylbenzene	0.00349	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	100-42-5	Styrene	0.00028	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	98-06-6	t-Butylbenzene	0.00236	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	1634-04-4	tert-Butyl methyl ether	0.00042	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	127-18-4	Tetrachloroethylene (PCE)	0.00109	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	108-88-3	Toluene	0.00157	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	156-60-5	trans-1,2-Dichloroethene	0.00126	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	10061-02-6	trans-1,3-Dichloropropene	0.00138	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	79-01-6	Trichloroethylene (TCE)	0.00071	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	75-69-4	Trichlorofluoromethane	0.001	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	75-01-4	Vinyl chloride	0.00141	0	mg/kg
VOC	Discrete	B	BRA09B	2 to 6	No	1330-20-7	Xylenes, total	0.00107	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.0114	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.0108	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.011	0	mg/kg



TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	B	BRA09B	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.0108	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	90-12-0	1-Methylnaphthalene	0.0049	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	88-06-2	2,4,6-Trichlorophenol	0.0117	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	120-83-2	2,4-Dichlorophenol	0.0106	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	105-67-9	2,4-Dimethylphenol	0.0095	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	51-28-5	2,4-Dinitrophenol	0.085	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	121-14-2	2,4-Dinitrotoluene	0.0104	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	606-20-2	2,6-Dinitrotoluene	0.0119	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	91-58-7	2-Chloronaphthalene	0.00509	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	95-57-8	2-Chlorophenol	0.012	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	91-57-6	2-Methylnaphthalene	0.00466	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	88-75-5	2-Nitrophenol	0.013	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	91-94-1	3,3'-Dichlorobenzidine	0.0134	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0824	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	101-55-3	4-Bromophenyl phenyl ether	0.0128	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	59-50-7	4-Chloro-3-methylphenol	0.0118	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0127	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	100-02-7	4-Nitrophenol	0.0114	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	83-32-9	Acenaphthene	0.00228	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	208-96-8	Acenaphthylene	0.0025	1	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	120-12-7	Anthracene	0.00314	1	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	92-87-5	Benzidine	0.0683	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	56-55-3	Benzo(a)anthracene	0.0186	1	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	50-32-8	Benzo(a)pyrene	0.019	1	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	205-99-2	Benzo(b)fluoranthene	0.0281	1	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	191-24-2	Benzo(g,h,i)perylene	0.0201	1	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	207-08-9	Benzo(k)fluoranthene	0.00836	1	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	85-68-7	Benzyl butyl phthalate	0.0114	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0109	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.012	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0157	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0461	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	218-01-9	Chrysene	0.0163	1	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	53-70-3	Dibenz(a,h)anthracene	0.00395	1	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	84-66-2	Diethyl phthalate	0.012	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	131-11-3	Dimethyl phthalate	0.0771	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	84-74-2	di-n-Butyl phthalate	0.0124	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	117-84-0	di-n-Octylphthalate	0.0246	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	206-44-0	Fluoranthene	0.0358	1	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	86-73-7	Fluorene	0.00224	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	118-74-1	Hexachlorobenzene	0.0129	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	87-68-3	Hexachlorobutadiene	0.0122	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	77-47-4	Hexachlorocyclopentadiene	0.0191	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	67-72-1	Hexachloroethane	0.0143	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0184	1	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	78-59-1	Isophorone	0.0111	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	91-20-3	Naphthalene	0.00445	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	98-95-3	Nitrobenzene	0.0127	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	62-75-9	N-Nitrosodimethylamine	0.0539	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	621-64-7	N-Nitrosodi-n-propylamine	0.0121	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	86-30-6	N-Nitrosodiphenylamine	0.0275	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	87-86-5	Pentachlorophenol	0.00978	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	85-01-8	Phenanthrene	0.0151	1	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	108-95-2	Phenol	0.0146	0	mg/kg
SVOC	Composite	B	BRA09B	6 to 12	No	129-00-0	Pyrene	0.0246	1	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00113	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.0011	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00083	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.0009	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	79-00-5	1,1,2-Trichloroethane	0.00071	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	75-34-3	1,1-Dichloroethane	0.00058	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	75-35-4	1,1-Dichloroethene	0.00072	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	563-58-6	1,1-Dichloropropene	0.00096	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	87-61-6	1,2,3-Trichlorobenzene	0.00872	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	96-18-4	1,2,3-Trichloropropane	0.00193	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	526-73-8	1,2,3-Trimethylbenzene	0.00188	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.00523	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	95-63-6	1,2,4-Trimethylbenzene	0.00188	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00464	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00077	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.00051	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	107-06-2	1,2-Dichloroethane	0.00077	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	78-87-5	1,2-Dichloropropane	0.00169	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00238	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.00071	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	142-28-9	1,3-Dichloropropane	0.0006	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.00083	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	594-20-7	2,2-Dichloropropane	0.00164	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	95-49-8	2-Chlorotoluene	0.00103	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	106-43-4	4-Chlorotoluene	0.00054	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	67-64-1	Acetone	0.0434	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	107-13-1	Acrylonitrile	0.00429	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	71-43-2	Benzene	0.00056	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	108-86-1	Bromobenzene	0.00107	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	75-27-4	Bromodichloromethane	0.00086	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	75-25-2	Bromoform	0.00139	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	74-83-9	Bromomethane	0.00234	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	56-23-5	Carbon Tetrachloride	0.00107	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	108-90-7	Chlorobenzene	0.00025	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	75-00-3	Chloroethane	0.00202	0	mg/kg

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
VOC	Discrete	B	BRA09B	6 to 12	No	67-66-3	Chloroform	0.00122	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	74-87-3	Chloromethane	0.00517	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	156-59-2	cis-1,2-Dichloroethylene	0.00087	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	10061-01-5	cis-1,3-Dichloropropene	0.0009	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	99-87-6	Cymene	0.00303	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	124-48-1	Dibromochloromethane	0.00073	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	74-95-3	Dibromomethane	0.00089	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	75-71-8	Dichlorodifluoromethane	0.00191	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	100-41-4	Ethylbenzene	0.00088	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	87-68-3	Hexachlorobutadiene	0.00713	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	108-20-3	Isopropyl Ether	0.00049	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	98-82-8	Isopropylbenzene (Cumene)	0.00051	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0755	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00271	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	75-09-2	Methylene chloride	0.0079	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	104-51-8	n-Butylbenzene	0.00624	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	103-65-1	n-Propylbenzene	0.00113	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	135-98-8	sec-Butylbenzene	0.00342	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	100-42-5	Styrene	0.00027	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	98-06-6	t-Butylbenzene	0.00232	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	1634-04-4	tert-Butyl methyl ether	0.00042	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	127-18-4	Tetrachloroethylene (PCE)	0.00107	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	108-88-3	Toluene	0.00155	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	156-60-5	trans-1,2-Dichloroethene	0.00124	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	10061-02-6	trans-1,3-Dichloropropene	0.00136	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	79-01-6	Trichloroethylene (TCE)	0.00069	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	75-69-4	Trichlorofluoromethane	0.00098	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	75-01-4	Vinyl chloride	0.00138	0	mg/kg
VOC	Discrete	B	BRA09B	6 to 12	No	1330-20-7	Xylenes, total	0.00105	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	120-82-1	1,2,4-Trichlorobenzene	0.0113	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	95-50-1	1,2-Dichlorobenzene	0.0107	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	541-73-1	1,3-Dichlorobenzene	0.011	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	106-46-7	1,4-Dichlorobenzene	0.0108	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	90-12-0	1-Methylnaphthalene	0.00488	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	88-06-2	2,4,6-Trichlorophenol	0.0116	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	120-83-2	2,4-Dichlorophenol	0.0105	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	105-67-9	2,4-Dimethylphenol	0.00946	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	51-28-5	2,4-Dinitrophenol	0.0847	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	121-14-2	2,4-Dinitrotoluene	0.0104	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	606-20-2	2,6-Dinitrotoluene	0.0118	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	91-58-7	2-Chloronaphthalene	0.00507	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	95-57-8	2-Chlorophenol	0.012	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	91-57-6	2-Methylnaphthalene	0.00464	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	88-75-5	2-Nitrophenol	0.0129	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	91-94-1	3,3'-Dichlorobenzidine	0.0134	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	534-52-1	4,6-Dinitro-2-methylphenol	0.0821	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	101-55-3	4-Bromophenyl phenyl ether	0.0127	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	59-50-7	4-Chloro-3-methylphenol	0.0117	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0126	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	100-02-7	4-Nitrophenol	0.0113	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	83-32-9	Acenaphthene	0.00227	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	208-96-8	Acenaphthylene	0.00667	1	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	120-12-7	Anthracene	0.00871	1	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	92-87-5	Benzidine	0.0681	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	56-55-3	Benzo(a)anthracene	0.0596	1	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	50-32-8	Benzo(a)pyrene	0.0741	1	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	205-99-2	Benzo(b)fluoranthene	0.106	1	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	191-24-2	Benzo(g,h,i)perylene	0.0678	1	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	207-08-9	Benzo(k)fluoranthene	0.0359	1	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	85-68-7	Benzyl butyl phthalate	0.0247	1	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0109	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.012	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0157	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0895	1	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	218-01-9	Chrysene	0.0761	1	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	53-70-3	Dibenz(a,h)anthracene	0.0132	1	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	84-66-2	Diethyl phthalate	0.012	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	131-11-3	Dimethyl phthalate	0.0768	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	84-74-2	di-n-Butyl phthalate	0.0124	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	117-84-0	di-n-Octylphthalate	0.0245	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	206-44-0	Fluoranthene	0.14	1	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	86-73-7	Fluorene	0.00223	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	118-74-1	Hexachlorobenzene	0.0128	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	87-68-3	Hexachlorobutadiene	0.0122	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	77-47-4	Hexachlorocyclopentadiene	0.019	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	67-72-1	Hexachloroethane	0.0142	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0613	1	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	78-59-1	Isophorone	0.0111	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	91-20-3	Naphthalene	0.00444	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	98-95-3	Nitrobenzene	0.0126	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	62-75-9	N-Nitrosodimethylamine	0.0537	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	621-64-7	N-Nitrosodi-n-propylamine	0.0121	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	86-30-6	N-Nitrosodiphenylamine	0.0274	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	87-86-5	Pentachlorophenol	0.00974	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	85-01-8	Phenanthrene	0.0435	1	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	108-95-2	Phenol	0.0146	0	mg/kg
SVOC	Composite	B	BRA10B	0 to 2	No	129-00-0	Pyrene	0.116	1	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.0598	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.0568	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.0581	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
SVOC	Composite	B	BRA10B	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.057	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	90-12-0	1-Methylnaphthalene	0.00999	1	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	88-06-2	2,4,6-Trichlorophenol	0.0615	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	120-83-2	2,4-Dichlorophenol	0.0558	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	105-67-9	2,4-Dimethylphenol	0.05	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	121-14-2	2,4-Dinitrotoluene	0.055	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	606-20-2	2,6-Dinitrotoluene	0.0627	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	91-58-7	2-Chloronaphthalene	0.00536	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	95-57-8	2-Chlorophenol	0.0632	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	91-57-6	2-Methylnaphthalene	0.00514	1	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	88-75-5	2-Nitrophenol	0.0684	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	91-94-1	3,3'-Dichlorobenzidine	0.0707	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	534-52-1	4,6-Dinitro-2-methylphenol	0.435	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	101-55-3	4-Bromophenyl phenyl ether	0.0673	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	59-50-7	4-Chloro-3-methylphenol	0.0621	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0667	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	100-02-7	4-Nitrophenol	0.0598	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	83-32-9	Acenaphthene	0.00927	1	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	208-96-8	Acenaphthylene	0.236	1	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	120-12-7	Anthracene	0.0746	1	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	92-87-5	Benzdine	0.36	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	56-55-3	Benzo(a)anthracene	1.01	1	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	50-32-8	Benzo(a)pyrene	0.752	1	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	205-99-2	Benzo(b)fluoranthene	1.26	1	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	191-24-2	Benzo(g,h,i)perylene	0.462	1	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	207-08-9	Benzo(k)fluoranthene	0.484	1	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	85-68-7	Benzyl butyl phthalate	0.0598	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0575	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0632	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0828	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.243	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	218-01-9	Chrysene	1.17	1	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	53-70-3	Dibenz(a,h)anthracene	0.143	1	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	84-66-2	Diethyl phthalate	0.0632	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	131-11-3	Dimethyl phthalate	0.406	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	84-74-2	di-n-Butyl phthalate	0.0655	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	117-84-0	di-n-Octylphthalate	0.13	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	206-44-0	Fluoranthene	2.94	1	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	86-73-7	Fluorene	0.0401	1	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	118-74-1	Hexachlorobenzene	0.0678	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	87-68-3	Hexachlorobutadiene	0.0644	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	67-72-1	Hexachloroethane	0.0753	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.57	1	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	78-59-1	Isophorone	0.0586	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	91-20-3	Naphthalene	0.00864	1	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	98-95-3	Nitrobenzene	0.0667	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	62-75-9	N-Nitrosodimethylamine	0.284	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	621-64-7	N-Nitrosodi-n-propylamine	0.0638	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	86-30-6	N-Nitrosodiphenylamine	0.145	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	87-86-5	Pentachlorophenol	0.0515	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	85-01-8	Phenanthrene	1.49	1	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	108-95-2	Phenol	0.077	0	mg/kg
SVOC	Composite	B	BRA10B	2 to 6	No	129-00-0	Pyrene	1.89	1	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00151	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00147	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00111	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.0012	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	79-00-5	1,1,2-Trichloroethane	0.00095	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	75-34-3	1,1-Dichloroethane	0.00078	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	75-35-4	1,1-Dichloroethene	0.00097	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	563-58-6	1,1-Dichloropropene	0.00129	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	87-61-6	1,2,3-Trichlorobenzene	0.0117	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	96-18-4	1,2,3-Trichloropropane	0.00259	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	526-73-8	1,2,3-Trimethylbenzene	0.00252	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	120-82-1	1,2,4-Trichlorobenzene	0.00703	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	95-63-6	1,2,4-Trimethylbenzene	0.00252	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00623	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00103	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	95-50-1	1,2-Dichlorobenzene	0.00068	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	107-06-2	1,2-Dichloroethane	0.00104	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	78-87-5	1,2-Dichloropropane	0.00227	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00319	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	541-73-1	1,3-Dichlorobenzene	0.00096	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	142-28-9	1,3-Dichloropropane	0.0008	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	106-46-7	1,4-Dichlorobenzene	0.00112	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	594-20-7	2,2-Dichloropropane	0.0022	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	95-49-8	2-Chlorotoluene	0.00138	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	106-43-4	4-Chlorotoluene	0.00072	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	67-64-1	Acetone	0.0583	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	107-13-1	Acrylonitrile	0.00576	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	71-43-2	Benzene	0.00075	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	108-86-1	Bromobenzene	0.00144	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	75-27-4	Bromodichloromethane	0.00116	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	75-25-2	Bromoform	0.00187	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	74-83-9	Bromomethane	0.00315	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	56-23-5	Carbon Tetrachloride	0.00143	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	108-90-7	Chlorobenzene	0.00034	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	75-00-3	Chloroethane	0.00271	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	67-66-3	Chloroform	0.00164	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	74-87-3	Chloromethane	0.00695	0	mg/kg

TABLE A1

ANALYTICAL RESULTS FOR DIOXINS/FURANS, SVOCS AND VOCS

Former Houston Wood Preserving Works, Houston, Texas

Geosyntec Consultants

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
VOC	Discrete	B	BRA10B	2 to 6	No	156-59-2	cis-1,2-Dichloroethylene	0.00117	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	10061-01-5	cis-1,3-Dichloropropene	0.00121	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	99-87-6	Cymene	0.00407	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	124-48-1	Dibromochloromethane	0.00098	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	74-95-3	Dibromomethane	0.0012	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	75-71-8	Dichlorodifluoromethane	0.00257	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	100-41-4	Ethylbenzene	0.00118	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	87-68-3	Hexachlorobutadiene	0.00958	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	108-20-3	Isopropyl Ether	0.00066	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	98-82-8	Isopropylbenzene (Cumene)	0.00068	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.101	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00364	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	75-09-2	Methylene chloride	0.0106	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	104-51-8	n-Butylbenzene	0.00838	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	103-65-1	n-Propylbenzene	0.00152	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	135-98-8	sec-Butylbenzene	0.0046	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	100-42-5	Styrene	0.00037	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	98-06-6	t-Butylbenzene	0.00311	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	1634-04-4	tert-Butyl methyl ether	0.00056	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	127-18-4	Tetrachloroethylene (PCE)	0.00143	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	108-88-3	Toluene	0.00208	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	156-60-5	trans-1,2-Dichloroethene	0.00166	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	10061-02-6	trans-1,3-Dichloropropene	0.00182	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	79-01-6	Trichloroethylene (TCE)	0.00093	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	75-69-4	Trichlorofluoromethane	0.00132	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	75-01-4	Vinyl chloride	0.00185	0	mg/kg
VOC	Discrete	B	BRA10B	2 to 6	No	1330-20-7	Xylenes, total	0.00141	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.0127	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.012	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.0123	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.0121	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	90-12-0	1-Methylnaphthalene	0.00547	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	88-06-2	2,4,6-Trichlorophenol	0.013	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	120-83-2	2,4-Dichlorophenol	0.0118	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	105-67-9	2,4-Dimethylphenol	0.0106	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	51-28-5	2,4-Dinitrophenol	0.0949	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	121-14-2	2,4-Dinitrotoluene	0.0116	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	606-20-2	2,6-Dinitrotoluene	0.0133	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	91-58-7	2-Chloronaphthalene	0.00568	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	95-57-8	2-Chlorophenol	0.0134	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	91-57-6	2-Methylnaphthalene	0.0052	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	88-75-5	2-Nitrophenol	0.0145	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	91-94-1	3,3'-Dichlorobenzidine	0.015	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	534-52-1	4,6-Dinitro-2-methylphenol	0.092	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	101-55-3	4-Bromophenyl phenyl ether	0.0143	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	59-50-7	4-Chloro-3-methylphenol	0.0132	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	7005-72-3	4-Chlorophenyl phenyl ether	0.0141	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	100-02-7	4-Nitrophenol	0.0127	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	83-32-9	Acenaphthene	0.00255	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	208-96-8	Acenaphthylene	0.00956	1	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	120-12-7	Anthracene	0.00803	1	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	92-87-5	Benzidine	0.0762	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	56-55-3	Benzo(a)anthracene	0.0241	1	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	50-32-8	Benzo(a)pyrene	0.0291	1	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	205-99-2	Benzo(b)fluoranthene	0.0476	1	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	191-24-2	Benzo(g,h,i)perylene	0.0278	1	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	207-08-9	Benzo(k)fluoranthene	0.0141	1	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	85-68-7	Benzyl butyl phthalate	0.0127	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	111-91-1	Bis(2-Chloroethoxy) methane	0.0122	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	111-44-4	Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	0.0134	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	108-60-1	Bis(2-Chloroisopropyl) ether	0.0175	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	117-81-7	Bis(2-Ethylhexyl) phthalate	0.0514	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	218-01-9	Chrysene	0.0296	1	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	53-70-3	Dibenz(a,h)anthracene	0.00537	1	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	84-66-2	Diethyl phthalate	0.0134	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	131-11-3	Dimethyl phthalate	0.086	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	84-74-2	di-n-Butyl phthalate	0.0139	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	117-84-0	di-n-Octylphthalate	0.0274	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	206-44-0	Fluoranthene	0.052	1	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	86-73-7	Fluorene	0.0025	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	118-74-1	Hexachlorobenzene	0.0144	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	87-68-3	Hexachlorobutadiene	0.0136	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	77-47-4	Hexachlorocyclopentadiene	0.0213	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	67-72-1	Hexachloroethane	0.016	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	193-39-5	Indeno(1,2,3-c,d)pyrene	0.0229	1	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	78-59-1	Isophorone	0.0124	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	91-20-3	Naphthalene	0.00497	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	98-95-3	Nitrobenzene	0.0141	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	62-75-9	N-Nitrosodimethylamine	0.0602	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	621-64-7	N-Nitrosodi-n-propylamine	0.0135	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	86-30-6	N-Nitrosodiphenylamine	0.0307	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	87-86-5	Pentachlorophenol	0.0109	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	85-01-8	Phenanthrene	0.0333	1	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	108-95-2	Phenol	0.0163	0	mg/kg
SVOC	Composite	B	BRA10B	6 to 12	No	129-00-0	Pyrene	0.0488	1	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	630-20-6	1,1,1,2-Tetrachloroethane	0.00143	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	71-55-6	1,1,1-Trichloroethane (TCA)	0.00139	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	79-34-5	1,1,2,2-Tetrachloroethane	0.00105	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.00114	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	79-00-5	1,1,2-Trichloroethane	0.0009	0	mg/kg

Analyte Group	Sample Type	BRA Group	Location ID	Depth Interval (in)	Sieved?	CASRN	Analyte	Value <sup>1</sup>	Detect <sup>2</sup>	Units
VOC	Discrete	B	BRA10B	6 to 12	No	75-34-3	1,1-Dichloroethane	0.00074	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	75-35-4	1,1-Dichloroethene	0.00091	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	563-58-6	1,1-Dichloropropene	0.00122	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	87-61-6	1,2,3-Trichlorobenzene	0.011	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	96-18-4	1,2,3-Trichloropropane	0.00244	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	526-73-8	1,2,3-Trimethylbenzene	0.00238	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	120-82-1	1,2,4-Trichlorobenzene	0.00663	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	95-63-6	1,2,4-Trimethylbenzene	0.00238	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	96-12-8	1,2-Dibromo-3-chloropropane	0.00588	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	106-93-4	1,2-Dibromoethane (Ethylene Dibromide)	0.00098	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	95-50-1	1,2-Dichlorobenzene	0.00064	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	107-06-2	1,2-Dichloroethane	0.00098	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	78-87-5	1,2-Dichloropropane	0.00214	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	108-67-8	1,3,5-Trimethylbenzene (Mesitylene)	0.00301	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	541-73-1	1,3-Dichlorobenzene	0.0009	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	142-28-9	1,3-Dichloropropane	0.00076	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	106-46-7	1,4-Dichlorobenzene	0.00105	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	594-20-7	2,2-Dichloropropane	0.00208	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	95-49-8	2-Chlorotoluene	0.0013	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	106-43-4	4-Chlorotoluene	0.00068	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	67-64-1	Acetone	0.055	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	107-13-1	Acrylonitrile	0.00544	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	71-43-2	Benzene	0.0007	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	108-86-1	Bromobenzene	0.00136	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	75-27-4	Bromodichloromethane	0.00109	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	75-25-2	Bromoform	0.00176	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	74-83-9	Bromomethane	0.00297	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	56-23-5	Carbon Tetrachloride	0.00135	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	108-90-7	Chlorobenzene	0.00032	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	75-00-3	Chloroethane	0.00256	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	67-66-3	Chloroform	0.00155	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	74-87-3	Chloromethane	0.00655	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	156-59-2	cis-1,2-Dichloroethylene	0.00111	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	10061-01-5	cis-1,3-Dichloropropene	0.00114	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	99-87-6	Cymene	0.00384	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	124-48-1	Dibromochloromethane	0.00092	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	74-95-3	Dibromomethane	0.00113	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	75-71-8	Dichlorodifluoromethane	0.00243	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	100-41-4	Ethylbenzene	0.00111	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	87-68-3	Hexachlorobutadiene	0.00904	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	108-20-3	Isopropyl Ether	0.00062	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	98-82-8	Isopropylbenzene (Cumene)	0.00064	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	78-93-3	Methyl Ethyl Ketone (2-Butanone)	0.0957	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	108-10-1	Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	0.00344	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	75-09-2	Methylene chloride	0.01	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	104-51-8	n-Butylbenzene	0.00791	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	103-65-1	n-Propylbenzene	0.00143	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	135-98-8	sec-Butylbenzene	0.00434	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	100-42-5	Styrene	0.00035	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	98-06-6	t-Butylbenzene	0.00294	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	1634-04-4	tert-Butyl methyl ether	0.00053	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	127-18-4	Tetrachloroethylene (PCE)	0.00135	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	108-88-3	Toluene	0.0028	1	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	156-60-5	trans-1,2-Dichloroethene	0.00157	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	10061-02-6	trans-1,3-Dichloropropene	0.00172	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	79-01-6	Trichloroethylene (TCE)	0.00088	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	75-69-4	Trichlorofluoromethane	0.00125	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	75-01-4	Vinyl chloride	0.00175	0	mg/kg
VOC	Discrete	B	BRA10B	6 to 12	No	1330-20-7	Xylenes, total	0.00181	1	mg/kg

**Notes:**

1 - The value is the maximum detected value among field duplicates, if applicable. For nondetects the value is the associated minimum detection limit.

2 - The detect value is 1 for detected data and 0 for nondetect data.

BRA - background reference area

CASRN - Chemical Abstracts Service registry number

ID - identification

in - inch

mg/kg - milligrams per kilogram

ng/kg - nanograms per kilogram

SVOC - semi-volatile organic compounds

2,3,7,8-TCDD TEQ - 2,3,7,8-tetrachlorodibenzo-p-dioxin toxic equivalency (WHO 2005, ND = MDL)

Toxic equivalency using 2005 World Health Organization toxic equivalency factor for 2,3,7,8-tetrachlorodibenzo-p-dioxin, used to calculate 2,3,7,8-TCDD TEQs in Tables 1-3

MDL - method detection limit

ND - non-detect

VOC - volatile organic compounds

**TABLE A2**  
**SHAPIRO-WILK TEST RESULTS FOR DIOXINS/FURANS AND SVOCs**  
Former Houston Wood Preserving Works, Houston, Texas

Analyte Group	Analyte	BRA Group	Depth Interval (in)	Total Samples	Shapiro-Wilk Test Statistic	Shapiro-Wilk Test p-value	Data Approximately Normal <sup>1</sup>
Dioxins/Furans	2,3,7,8-TCDD TEQ	A	0 to 2	10	0.832	0.0355	No
Dioxins/Furans	2,3,7,8-TCDD TEQ	A	2 to 6	10	0.833	0.0363	No
Dioxins/Furans	2,3,7,8-TCDD TEQ	A	6 to 12	10	0.737	0.0025	No
Dioxins/Furans	2,3,7,8-TCDD TEQ	B	0 to 2	10	0.839	0.0424	No
Dioxins/Furans	2,3,7,8-TCDD TEQ	B	2 to 6	10	0.769	0.0061	No
Dioxins/Furans	2,3,7,8-TCDD TEQ	B	6 to 12	10	0.841	0.0452	No
SVOC	Anthracene	A	0 to 2	10	0.877	0.1208	Yes
SVOC	Anthracene	A	2 to 6	10	0.653	0.0002	No
SVOC	Anthracene	A	6 to 12	10	0.626	0.0001	No
SVOC	Anthracene	B	0 to 2	10	0.831	0.0346	No
SVOC	Anthracene	B	2 to 6	10	0.595	0.0000	No
SVOC	Anthracene	B	6 to 12	10	0.636	0.0001	No
SVOC	Benzo(a)anthracene	A	0 to 2	10	0.566	0.0000	No
SVOC	Benzo(a)anthracene	A	2 to 6	10	0.590	0.0000	No
SVOC	Benzo(a)anthracene	A	6 to 12	10	0.791	0.0113	No
SVOC	Benzo(a)anthracene	B	0 to 2	10	0.590	0.0000	No
SVOC	Benzo(a)anthracene	B	2 to 6	10	0.585	0.0000	No
SVOC	Benzo(a)anthracene	B	6 to 12	10	0.725	0.0018	No
SVOC	Benzo(a)pyrene	A	0 to 2	10	0.686	0.0006	No
SVOC	Benzo(a)pyrene	A	2 to 6	10	0.675	0.0004	No
SVOC	Benzo(a)pyrene	A	6 to 12	10	0.816	0.0228	No
SVOC	Benzo(a)pyrene	B	0 to 2	10	0.645	0.0002	No
SVOC	Benzo(a)pyrene	B	2 to 6	10	0.649	0.0002	No
SVOC	Benzo(a)pyrene	B	6 to 12	10	0.792	0.0116	No
SVOC	Benzo(b)fluoranthene	A	0 to 2	10	0.697	0.0008	No
SVOC	Benzo(b)fluoranthene	A	2 to 6	10	0.722	0.0016	No
SVOC	Benzo(b)fluoranthene	A	6 to 12	10	0.829	0.0326	No
SVOC	Benzo(b)fluoranthene	B	0 to 2	10	0.725	0.0018	No
SVOC	Benzo(b)fluoranthene	B	2 to 6	10	0.639	0.0002	No
SVOC	Benzo(b)fluoranthene	B	6 to 12	10	0.805	0.0168	No



**TABLE A2**  
**SHAPIRO-WILK TEST RESULTS FOR DIOXINS/FURANS AND SVOCs**  
Former Houston Wood Preserving Works, Houston, Texas

Analyte Group	Analyte	BRA Group	Depth Interval (in)	Total Samples	Shapiro-Wilk Test Statistic	Shapiro-Wilk Test p-value	Data Approximately Normal <sup>1</sup>
SVOC	Benzo(g,h,i)perylene	A	0 to 2	10	0.925	0.4008	Yes
SVOC	Benzo(g,h,i)perylene	A	2 to 6	10	0.729	0.0020	No
SVOC	Benzo(g,h,i)perylene	A	6 to 12	10	0.805	0.0167	No
SVOC	Benzo(g,h,i)perylene	B	0 to 2	10	0.824	0.0280	No
SVOC	Benzo(g,h,i)perylene	B	2 to 6	10	0.644	0.0002	No
SVOC	Benzo(g,h,i)perylene	B	6 to 12	10	0.869	0.0978	Yes
SVOC	Benzo(k)fluoranthene	A	0 to 2	10	0.633	0.0001	No
SVOC	Benzo(k)fluoranthene	A	2 to 6	10	0.682	0.0005	No
SVOC	Benzo(k)fluoranthene	A	6 to 12	10	0.798	0.0139	No
SVOC	Benzo(k)fluoranthene	B	0 to 2	10	0.755	0.0041	No
SVOC	Benzo(k)fluoranthene	B	2 to 6	10	0.625	0.0001	No
SVOC	Benzo(k)fluoranthene	B	6 to 12	10	0.768	0.0060	No
SVOC	Chrysene	A	0 to 2	10	0.577	0.0000	No
SVOC	Chrysene	A	2 to 6	10	0.615	0.0001	No
SVOC	Chrysene	A	6 to 12	10	0.817	0.0235	No
SVOC	Chrysene	B	0 to 2	10	0.633	0.0001	No
SVOC	Chrysene	B	2 to 6	10	0.589	0.0000	No
SVOC	Chrysene	B	6 to 12	10	0.814	0.0212	No
SVOC	Dibenz(a,h)anthracene	A	0 to 2	10	0.823	0.0277	No
SVOC	Dibenz(a,h)anthracene	A	2 to 6	10	0.654	0.0002	No
SVOC	Dibenz(a,h)anthracene	A	6 to 12	10	0.753	0.0039	No
SVOC	Dibenz(a,h)anthracene	B	0 to 2	10	0.713	0.0013	No
SVOC	Dibenz(a,h)anthracene	B	2 to 6	10	0.626	0.0001	No
SVOC	Dibenz(a,h)anthracene	B	6 to 12	10	0.761	0.0048	No
SVOC	Fluoranthene	A	0 to 2	10	0.559	0.0000	No
SVOC	Fluoranthene	A	2 to 6	10	0.534	0.0000	No
SVOC	Fluoranthene	A	6 to 12	10	0.812	0.0205	No
SVOC	Fluoranthene	B	0 to 2	10	0.731	0.0021	No
SVOC	Fluoranthene	B	2 to 6	10	0.438	0.0000	No
SVOC	Fluoranthene	B	6 to 12	10	0.720	0.0015	No

**TABLE A2**  
**SHAPIRO-WILK TEST RESULTS FOR DIOXINS/FURANS AND SVOCs**  
Former Houston Wood Preserving Works, Houston, Texas

Analyte Group	Analyte	BRA Group	Depth Interval (in)	Total Samples	Shapiro-Wilk Test Statistic	Shapiro-Wilk Test p-value	Data Approximately Normal <sup>1</sup>
SVOC	Indeno(1,2,3-c,d)pyrene	A	0 to 2	10	0.874	0.1107	Yes
SVOC	Indeno(1,2,3-c,d)pyrene	A	2 to 6	10	0.632	0.0001	No
SVOC	Indeno(1,2,3-c,d)pyrene	A	6 to 12	10	0.812	0.0201	No
SVOC	Indeno(1,2,3-c,d)pyrene	B	0 to 2	10	0.686	0.0006	No
SVOC	Indeno(1,2,3-c,d)pyrene	B	2 to 6	10	0.625	0.0001	No
SVOC	Indeno(1,2,3-c,d)pyrene	B	6 to 12	10	0.837	0.0402	No
SVOC	Phenanthrene	A	0 to 2	10	0.834	0.0378	No
SVOC	Phenanthrene	A	2 to 6	10	0.441	0.0000	No
SVOC	Phenanthrene	A	6 to 12	10	0.764	0.0052	No
SVOC	Phenanthrene	B	0 to 2	10	0.867	0.0927	Yes
SVOC	Phenanthrene	B	2 to 6	10	0.422	0.0000	No
SVOC	Phenanthrene	B	6 to 12	10	0.510	0.0000	No
SVOC	Pyrene	A	0 to 2	10	0.578	0.0000	No
SVOC	Pyrene	A	2 to 6	10	0.567	0.0000	No
SVOC	Pyrene	A	6 to 12	10	0.786	0.0097	No
SVOC	Pyrene	B	0 to 2	10	0.699	0.0009	No
SVOC	Pyrene	B	2 to 6	10	0.465	0.0000	No
SVOC	Pyrene	B	6 to 12	10	0.680	0.0005	No

**Notes:**

1 - Based on the results of the Shapiro-Wilk test conducted at the 5% level of significance.

BRA - background reference area

in - inch

SVOC - semi-volatile organic compound

2,3,7,8-TCDD TEQ - 2,3,7,8-tetrachlorodibenzo-p-dioxin toxic equivalency (WHO 2005, ND = MDL)

Toxic equivalency using 2005 World Health Organization toxic equivalency factor for 2,3,7,8-tetrachlorodibenzo-p-dioxin, used to calculate 2,3,7,8-TCDD TEQs in Tables 1-3

MDL - method detection limit

ND - non-detect

**TABLE A3**  
**PAIRED DUNN'S TEST RESULTS FOR SVOCs**  
Former Houston Wood Preserving Works, Houston, Texas

Analyte Group	Analyte	Comparison Group 1			Comparison Group 2			Dunn's Test		
		BRA Group	Depth Interval (in)	Total Samples	BRA Group	Depth Interval (in)	Total Samples	Test Statistic	p-value	Statistically Significant Difference Between Groups <sup>1</sup>
SVOC	Benzo(a)pyrene	A	0 to 2	10	A	2 to 6	10	-0.20	0.838	No
SVOC	Benzo(a)pyrene	A	0 to 2	10	A	6 to 12	10	-1.05	0.294	No
SVOC	Benzo(a)pyrene	A	0 to 2	10	B	0 to 2	10	1.95	0.052	No
SVOC	Benzo(a)pyrene	A	0 to 2	10	B	2 to 6	10	0.88	0.377	No
SVOC	Benzo(a)pyrene	A	0 to 2	10	B	6 to 12	10	-0.58	0.565	No
SVOC	Benzo(a)pyrene	A	2 to 6	10	A	6 to 12	10	-0.85	0.398	No
SVOC	Benzo(a)pyrene	A	2 to 6	10	B	0 to 2	10	2.15	0.031	Yes
SVOC	Benzo(a)pyrene	A	2 to 6	10	B	2 to 6	10	1.09	0.276	No
SVOC	Benzo(a)pyrene	A	2 to 6	10	B	6 to 12	10	-0.37	0.710	No
SVOC	Benzo(a)pyrene	A	6 to 12	10	B	0 to 2	10	3.00	0.003	Yes
SVOC	Benzo(a)pyrene	A	6 to 12	10	B	2 to 6	10	1.93	0.053	No
SVOC	Benzo(a)pyrene	A	6 to 12	10	B	6 to 12	10	0.47	0.636	No
SVOC	Benzo(a)pyrene	B	0 to 2	10	B	2 to 6	10	-1.06	0.288	No
SVOC	Benzo(a)pyrene	B	0 to 2	10	B	6 to 12	10	-2.52	0.012	Yes
SVOC	Benzo(a)pyrene	B	2 to 6	10	B	6 to 12	10	-1.46	0.144	No
SVOC	Benzo(b)fluoranthene	A	0 to 2	10	A	2 to 6	10	-0.45	0.654	No
SVOC	Benzo(b)fluoranthene	A	0 to 2	10	A	6 to 12	10	-1.18	0.239	No
SVOC	Benzo(b)fluoranthene	A	0 to 2	10	B	0 to 2	10	1.91	0.056	No
SVOC	Benzo(b)fluoranthene	A	0 to 2	10	B	2 to 6	10	0.73	0.466	No
SVOC	Benzo(b)fluoranthene	A	0 to 2	10	B	6 to 12	10	-0.63	0.530	No
SVOC	Benzo(b)fluoranthene	A	2 to 6	10	A	6 to 12	10	-0.73	0.466	No
SVOC	Benzo(b)fluoranthene	A	2 to 6	10	B	0 to 2	10	2.36	0.018	Yes
SVOC	Benzo(b)fluoranthene	A	2 to 6	10	B	2 to 6	10	1.18	0.239	No
SVOC	Benzo(b)fluoranthene	A	2 to 6	10	B	6 to 12	10	-0.18	0.858	No
SVOC	Benzo(b)fluoranthene	A	6 to 12	10	B	0 to 2	10	3.09	0.002	Yes
SVOC	Benzo(b)fluoranthene	A	6 to 12	10	B	2 to 6	10	1.91	0.056	No
SVOC	Benzo(b)fluoranthene	A	6 to 12	10	B	6 to 12	10	0.55	0.582	No
SVOC	Benzo(b)fluoranthene	B	0 to 2	10	B	2 to 6	10	-1.18	0.239	No
SVOC	Benzo(b)fluoranthene	B	0 to 2	10	B	6 to 12	10	-2.54	0.011	Yes
SVOC	Benzo(b)fluoranthene	B	2 to 6	10	B	6 to 12	10	-1.36	0.175	No
SVOC	Benzo(g,h,i)perylene	A	0 to 2	10	A	2 to 6	10	-0.47	0.636	No
SVOC	Benzo(g,h,i)perylene	A	0 to 2	10	A	6 to 12	10	-1.09	0.276	No
SVOC	Benzo(g,h,i)perylene	A	0 to 2	10	B	0 to 2	10	2.14	0.032	Yes
SVOC	Benzo(g,h,i)perylene	A	0 to 2	10	B	2 to 6	10	0.67	0.506	No
SVOC	Benzo(g,h,i)perylene	A	0 to 2	10	B	6 to 12	10	-0.17	0.868	No

**TABLE A3**  
**PAIRED DUNN'S TEST RESULTS FOR SVOCs**  
Former Houston Wood Preserving Works, Houston, Texas

Analyte Group	Analyte	Comparison Group 1			Comparison Group 2			Dunn's Test		
		BRA Group	Depth Interval (in)	Total Samples	BRA Group	Depth Interval (in)	Total Samples	Test Statistic	p-value	Statistically Significant Difference Between Groups <sup>1</sup>
SVOC	Benzo(g,h,i)perylene	A	2 to 6	10	A	6 to 12	10	-0.61	0.539	No
SVOC	Benzo(g,h,i)perylene	A	2 to 6	10	B	0 to 2	10	2.61	0.009	Yes
SVOC	Benzo(g,h,i)perylene	A	2 to 6	10	B	2 to 6	10	1.14	0.254	No
SVOC	Benzo(g,h,i)perylene	A	2 to 6	10	B	6 to 12	10	0.31	0.759	No
SVOC	Benzo(g,h,i)perylene	A	6 to 12	10	B	0 to 2	10	3.23	0.001	Yes
SVOC	Benzo(g,h,i)perylene	A	6 to 12	10	B	2 to 6	10	1.75	0.079	No
SVOC	Benzo(g,h,i)perylene	A	6 to 12	10	B	6 to 12	10	0.92	0.357	No
SVOC	Benzo(g,h,i)perylene	B	0 to 2	10	B	2 to 6	10	-1.47	0.141	No
SVOC	Benzo(g,h,i)perylene	B	0 to 2	10	B	6 to 12	10	-2.30	0.021	Yes
SVOC	Benzo(g,h,i)perylene	B	2 to 6	10	B	6 to 12	10	-0.83	0.405	No
SVOC	Benzo(k)fluoranthene	A	0 to 2	10	A	2 to 6	10	-0.36	0.715	No
SVOC	Benzo(k)fluoranthene	A	0 to 2	10	A	6 to 12	10	-1.00	0.318	No
SVOC	Benzo(k)fluoranthene	A	0 to 2	10	B	0 to 2	10	1.97	0.049	Yes
SVOC	Benzo(k)fluoranthene	A	0 to 2	10	B	2 to 6	10	0.80	0.424	No
SVOC	Benzo(k)fluoranthene	A	0 to 2	10	B	6 to 12	10	-0.71	0.477	No
SVOC	Benzo(k)fluoranthene	A	2 to 6	10	A	6 to 12	10	-0.63	0.526	No
SVOC	Benzo(k)fluoranthene	A	2 to 6	10	B	0 to 2	10	2.33	0.020	Yes
SVOC	Benzo(k)fluoranthene	A	2 to 6	10	B	2 to 6	10	1.17	0.244	No
SVOC	Benzo(k)fluoranthene	A	2 to 6	10	B	6 to 12	10	-0.35	0.730	No
SVOC	Benzo(k)fluoranthene	A	6 to 12	10	B	0 to 2	10	2.96	0.003	Yes
SVOC	Benzo(k)fluoranthene	A	6 to 12	10	B	2 to 6	10	1.80	0.072	No
SVOC	Benzo(k)fluoranthene	A	6 to 12	10	B	6 to 12	10	0.29	0.773	No
SVOC	Benzo(k)fluoranthene	B	0 to 2	10	B	2 to 6	10	-1.17	0.244	No
SVOC	Benzo(k)fluoranthene	B	0 to 2	10	B	6 to 12	10	-2.68	0.007	Yes
SVOC	Benzo(k)fluoranthene	B	2 to 6	10	B	6 to 12	10	-1.51	0.131	No
SVOC	Chrysene	A	0 to 2	10	A	2 to 6	10	-0.63	0.526	No
SVOC	Chrysene	A	0 to 2	10	A	6 to 12	10	-1.03	0.303	No
SVOC	Chrysene	A	0 to 2	10	B	0 to 2	10	2.16	0.030	Yes
SVOC	Chrysene	A	0 to 2	10	B	2 to 6	10	0.92	0.357	No
SVOC	Chrysene	A	0 to 2	10	B	6 to 12	10	-0.50	0.618	No
SVOC	Chrysene	A	2 to 6	10	A	6 to 12	10	-0.40	0.691	No
SVOC	Chrysene	A	2 to 6	10	B	0 to 2	10	2.80	0.005	Yes
SVOC	Chrysene	A	2 to 6	10	B	2 to 6	10	1.56	0.120	No
SVOC	Chrysene	A	2 to 6	10	B	6 to 12	10	0.13	0.893	No
SVOC	Chrysene	A	6 to 12	10	B	0 to 2	10	3.19	0.001	Yes

**TABLE A3**  
**PAIRED DUNN'S TEST RESULTS FOR SVOCs**  
Former Houston Wood Preserving Works, Houston, Texas

Analyte Group	Analyte	Comparison Group 1			Comparison Group 2			Dunn's Test		
		BRA Group	Depth Interval (in)	Total Samples	BRA Group	Depth Interval (in)	Total Samples	Test Statistic	p-value	Statistically Significant Difference Between Groups <sup>1</sup>
SVOC	Chrysene	A	6 to 12	10	B	2 to 6	10	1.95	0.051	No
SVOC	Chrysene	A	6 to 12	10	B	6 to 12	10	0.53	0.595	No
SVOC	Chrysene	B	0 to 2	10	B	2 to 6	10	-1.24	0.214	No
SVOC	Chrysene	B	0 to 2	10	B	6 to 12	10	-2.66	0.008	Yes
SVOC	Chrysene	B	2 to 6	10	B	6 to 12	10	-1.42	0.155	No
SVOC	Dibenz(a,h)anthracene	A	0 to 2	10	A	2 to 6	10	-0.24	0.808	No
SVOC	Dibenz(a,h)anthracene	A	0 to 2	10	A	6 to 12	10	-1.02	0.309	No
SVOC	Dibenz(a,h)anthracene	A	0 to 2	10	B	0 to 2	10	2.08	0.037	Yes
SVOC	Dibenz(a,h)anthracene	A	0 to 2	10	B	2 to 6	10	0.82	0.413	No
SVOC	Dibenz(a,h)anthracene	A	0 to 2	10	B	6 to 12	10	-0.18	0.858	No
SVOC	Dibenz(a,h)anthracene	A	2 to 6	10	A	6 to 12	10	-0.77	0.439	No
SVOC	Dibenz(a,h)anthracene	A	2 to 6	10	B	0 to 2	10	2.32	0.020	Yes
SVOC	Dibenz(a,h)anthracene	A	2 to 6	10	B	2 to 6	10	1.06	0.288	No
SVOC	Dibenz(a,h)anthracene	A	2 to 6	10	B	6 to 12	10	0.06	0.949	No
SVOC	Dibenz(a,h)anthracene	A	6 to 12	10	B	0 to 2	10	3.10	0.002	Yes
SVOC	Dibenz(a,h)anthracene	A	6 to 12	10	B	2 to 6	10	1.84	0.066	No
SVOC	Dibenz(a,h)anthracene	A	6 to 12	10	B	6 to 12	10	0.84	0.402	No
SVOC	Dibenz(a,h)anthracene	B	0 to 2	10	B	2 to 6	10	-1.26	0.207	No
SVOC	Dibenz(a,h)anthracene	B	0 to 2	10	B	6 to 12	10	-2.26	0.024	Yes
SVOC	Dibenz(a,h)anthracene	B	2 to 6	10	B	6 to 12	10	-1.00	0.318	No
SVOC	Fluoranthene	A	0 to 2	10	A	2 to 6	10	-0.47	0.636	No
SVOC	Fluoranthene	A	0 to 2	10	A	6 to 12	10	-1.04	0.297	No
SVOC	Fluoranthene	A	0 to 2	10	B	0 to 2	10	1.69	0.091	No
SVOC	Fluoranthene	A	0 to 2	10	B	2 to 6	10	0.77	0.442	No
SVOC	Fluoranthene	A	0 to 2	10	B	6 to 12	10	-1.09	0.274	No
SVOC	Fluoranthene	A	2 to 6	10	A	6 to 12	10	-0.57	0.569	No
SVOC	Fluoranthene	A	2 to 6	10	B	0 to 2	10	2.16	0.030	Yes
SVOC	Fluoranthene	A	2 to 6	10	B	2 to 6	10	1.24	0.214	No
SVOC	Fluoranthene	A	2 to 6	10	B	6 to 12	10	-0.62	0.535	No
SVOC	Fluoranthene	A	6 to 12	10	B	0 to 2	10	2.73	0.006	Yes
SVOC	Fluoranthene	A	6 to 12	10	B	2 to 6	10	1.81	0.070	No
SVOC	Fluoranthene	A	6 to 12	10	B	6 to 12	10	-0.05	0.959	No
SVOC	Fluoranthene	B	0 to 2	10	B	2 to 6	10	-0.92	0.357	No
SVOC	Fluoranthene	B	0 to 2	10	B	6 to 12	10	-2.78	0.005	Yes
SVOC	Fluoranthene	B	2 to 6	10	B	6 to 12	10	-1.86	0.062	No

**TABLE A3**  
**PAIRED DUNN'S TEST RESULTS FOR SVOCs**  
Former Houston Wood Preserving Works, Houston, Texas

Analyte Group	Analyte	Comparison Group 1			Comparison Group 2			Dunn's Test		
		BRA Group	Depth Interval (in)	Total Samples	BRA Group	Depth Interval (in)	Total Samples	Test Statistic	p-value	Statistically Significant Difference Between Groups <sup>1</sup>
SVOC	Indeno(1,2,3-c,d)pyrene	A	0 to 2	10	A	2 to 6	10	-0.46	0.645	No
SVOC	Indeno(1,2,3-c,d)pyrene	A	0 to 2	10	A	6 to 12	10	-0.97	0.330	No
SVOC	Indeno(1,2,3-c,d)pyrene	A	0 to 2	10	B	0 to 2	10	1.95	0.051	No
SVOC	Indeno(1,2,3-c,d)pyrene	A	0 to 2	10	B	2 to 6	10	0.67	0.501	No
SVOC	Indeno(1,2,3-c,d)pyrene	A	0 to 2	10	B	6 to 12	10	-0.58	0.564	No
SVOC	Indeno(1,2,3-c,d)pyrene	A	2 to 6	10	A	6 to 12	10	-0.51	0.609	No
SVOC	Indeno(1,2,3-c,d)pyrene	A	2 to 6	10	B	0 to 2	10	2.41	0.016	Yes
SVOC	Indeno(1,2,3-c,d)pyrene	A	2 to 6	10	B	2 to 6	10	1.13	0.257	No
SVOC	Indeno(1,2,3-c,d)pyrene	A	2 to 6	10	B	6 to 12	10	-0.12	0.908	No
SVOC	Indeno(1,2,3-c,d)pyrene	A	6 to 12	10	B	0 to 2	10	2.93	0.003	Yes
SVOC	Indeno(1,2,3-c,d)pyrene	A	6 to 12	10	B	2 to 6	10	1.65	0.100	No
SVOC	Indeno(1,2,3-c,d)pyrene	A	6 to 12	10	B	6 to 12	10	0.40	0.691	No
SVOC	Indeno(1,2,3-c,d)pyrene	B	0 to 2	10	B	2 to 6	10	-1.28	0.200	No
SVOC	Indeno(1,2,3-c,d)pyrene	B	0 to 2	10	B	6 to 12	10	-2.53	0.011	Yes
SVOC	Indeno(1,2,3-c,d)pyrene	B	2 to 6	10	B	6 to 12	10	-1.25	0.212	No
SVOC	Pyrene	A	0 to 2	10	A	2 to 6	10	-0.28	0.778	No
SVOC	Pyrene	A	0 to 2	10	A	6 to 12	10	-0.96	0.337	No
SVOC	Pyrene	A	0 to 2	10	B	0 to 2	10	1.92	0.055	No
SVOC	Pyrene	A	0 to 2	10	B	2 to 6	10	0.93	0.350	No
SVOC	Pyrene	A	0 to 2	10	B	6 to 12	10	-0.92	0.357	No
SVOC	Pyrene	A	2 to 6	10	A	6 to 12	10	-0.68	0.497	No
SVOC	Pyrene	A	2 to 6	10	B	0 to 2	10	2.20	0.028	Yes
SVOC	Pyrene	A	2 to 6	10	B	2 to 6	10	1.22	0.224	No
SVOC	Pyrene	A	2 to 6	10	B	6 to 12	10	-0.64	0.522	No
SVOC	Pyrene	A	6 to 12	10	B	0 to 2	10	2.88	0.004	Yes
SVOC	Pyrene	A	6 to 12	10	B	2 to 6	10	1.89	0.058	No
SVOC	Pyrene	A	6 to 12	10	B	6 to 12	10	0.04	0.969	No
SVOC	Pyrene	B	0 to 2	10	B	2 to 6	10	-0.99	0.324	No
SVOC	Pyrene	B	0 to 2	10	B	6 to 12	10	-2.84	0.004	Yes
SVOC	Pyrene	B	2 to 6	10	B	6 to 12	10	-1.86	0.063	No

**Notes:**

1 - Based on the results of pairwise Dunn's tests used to evaluate difference in median concentrations between the two groups, conducted at the 5% level of significance.

BRA - background reference area

in - inch

SVOC - semi-volatile organic compound



**TABLE A4**  
**ROSNER'S OUTLIER TEST RESULTS FOR DIOXINS/FURANS AND SVOCs**  
Former Houston Wood Preserving Works, Houston, Texas

Analyte Group	Analyte	Units	BRA Group	Total Samples	Detection Frequency	Potential Outlier in Rosner's Test on Natural Logarithm Transformed Data	Test Statistic Value	Critical Value for 5% Significance Level	Potential High Outlier (Lognormal) <sup>1</sup>	Potential Outlier Value
Dioxins/Furans	2,3,7,8-TCDD TEQ	ng/kg	Both BRA A and B	60	100%	3.497	2.02	3.2	No	--
SVOC	Acenaphthylene	mg/kg	Both BRA A and B	60	52%	-1.444	2.179	3.2	No	--
SVOC	Anthracene	mg/kg	Both BRA A and B	60	72%	-2.303	1.728	3.152	No	--
SVOC	Benzo(a)anthracene	mg/kg	Both BRA A and B	60	97%	0.00995	2.837	3.2	No	--
SVOC	Benzo(a)pyrene	mg/kg	Both BRA A and B	60	97%	-0.285	2.647	3.2	No	--
SVOC	Benzo(a)pyrene	mg/kg	A	30	97%	-1.336	2.137	2.88	No	--
SVOC	Benzo(a)pyrene	mg/kg	B	30	97%	-0.285	2.509	2.91	No	--
SVOC	Benzo(b)fluoranthene	mg/kg	Both BRA A and B	60	98%	0.231	2.659	3.19	No	--
SVOC	Benzo(b)fluoranthene	mg/kg	A	30	97%	-0.992	2.031	2.88	No	--
SVOC	Benzo(b)fluoranthene	mg/kg	B	30	100%	0.231	2.49	2.89	No	--
SVOC	Benzo(g,h,i)perylene	mg/kg	Both BRA A and B	60	97%	-0.772	2.513	3.2	No	--
SVOC	Benzo(g,h,i)perylene	mg/kg	A	30	97%	-1.726	2.048	2.88	No	--
SVOC	Benzo(g,h,i)perylene	mg/kg	B	30	97%	-0.772	2.426	2.91	No	--
SVOC	Benzo(k)fluoranthene	mg/kg	Both BRA A and B	60	92%	-0.726	2.968	3.2	No	--
SVOC	Benzo(k)fluoranthene	mg/kg	A	30	90%	-2.071	2.156	2.86	No	--
SVOC	Benzo(k)fluoranthene	mg/kg	B	30	93%	-0.726	2.708	2.91	No	--
SVOC	Chrysene	mg/kg	Both BRA A and B	60	97%	0.157	2.931	3.2	No	--
SVOC	Chrysene	mg/kg	A	30	97%	-1.324	2.085	2.91	No	--
SVOC	Chrysene	mg/kg	B	30	97%	0.157	2.761	2.91	No	--
SVOC	Dibenz(a,h)anthracene	mg/kg	Both BRA A and B	60	85%	-1.945	2.495	3.2	No	--
SVOC	Dibenz(a,h)anthracene	mg/kg	A	30	80%	-6.084	1.567	2.91	No	--
SVOC	Dibenz(a,h)anthracene	mg/kg	B	30	90%	-1.945	2.401	2.91	No	--
SVOC	Fluoranthene	mg/kg	Both BRA A and B	60	97%	1.078	3.335	3.2	<b>Yes</b>	2.94
SVOC	Fluoranthene	mg/kg	A	30	97%	-0.248	2.393	2.91	No	--
SVOC	Fluoranthene	mg/kg	B	30	97%	1.078	3.32	2.91	<b>Yes</b>	2.94
SVOC	Indeno(1,2,3-c,d)pyrene	mg/kg	Both BRA A and B	60	95%	-0.562	2.61	3.2	No	--
SVOC	Indeno(1,2,3-c,d)pyrene	mg/kg	A	30	97%	-1.505	2.144	2.89	No	--
SVOC	Indeno(1,2,3-c,d)pyrene	mg/kg	B	30	93%	-0.562	2.521	2.91	No	--
SVOC	Phenanthrene	mg/kg	Both BRA A and B	60	90%	0.399	3.444	3.2	<b>Yes</b>	1.49
SVOC	Pyrene	mg/kg	Both BRA A and B	60	97%	0.637	3.135	3.2	No	--
SVOC	Pyrene	mg/kg	A	30	97%	-0.499	2.314	2.91	No	--
SVOC	Pyrene	mg/kg	B	30	97%	0.637	3.168	2.91	<b>Yes</b>	1.89

**Notes:**

1 - Potential high outliers are based on Rosner's Test on the natural logarithm of the concentration values evaluated at a 5% level of significance.

BRA - background reference area

mg/kg - milligrams per kilogram

ng/kg - nanograms per kilogram

SVOC - semi-volatile organic compound

2,3,7,8-TCDD TEQ - 2,3,7,8-tetrachlorodibenzo-p-dioxin toxic equivalency (WHO 2005, ND = MDL)

Toxic equivalency using 2005 World Health Organization toxic equivalency factor for 2,3,7,8-tetrachlorodibenzo-p-dioxin, used to calculate 2,3,7,8-TCDD TEQs in Tables 1-3

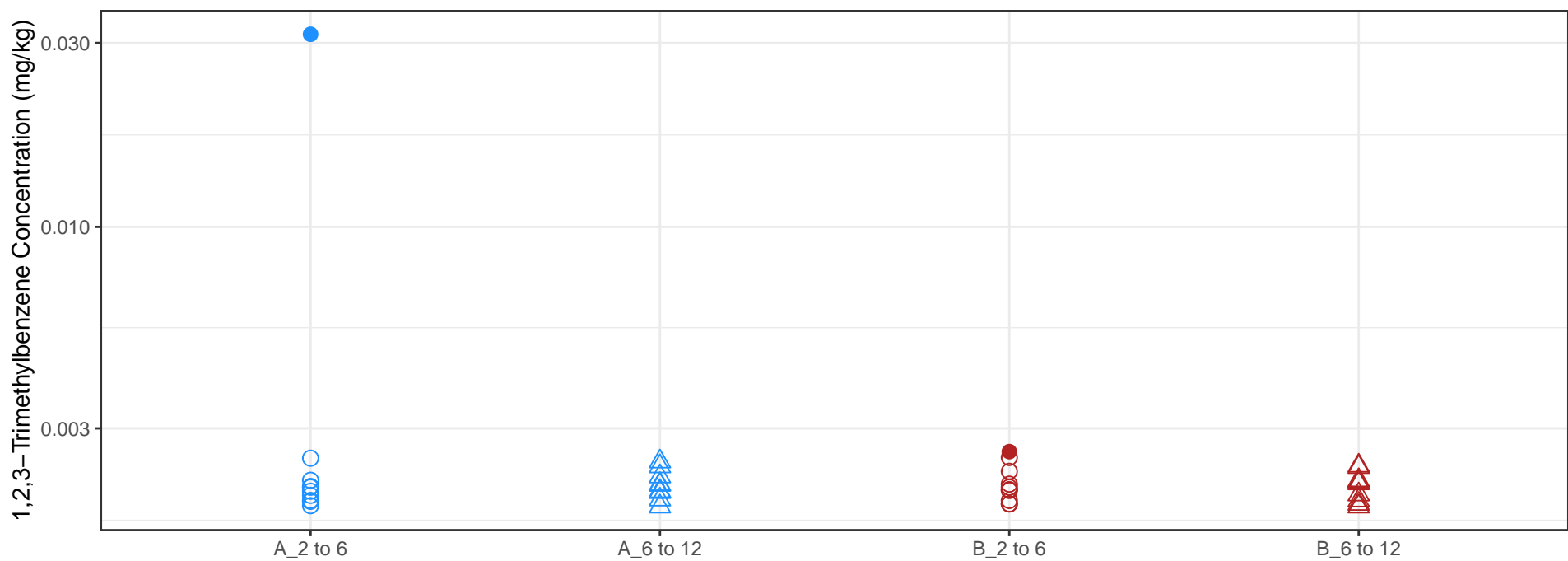
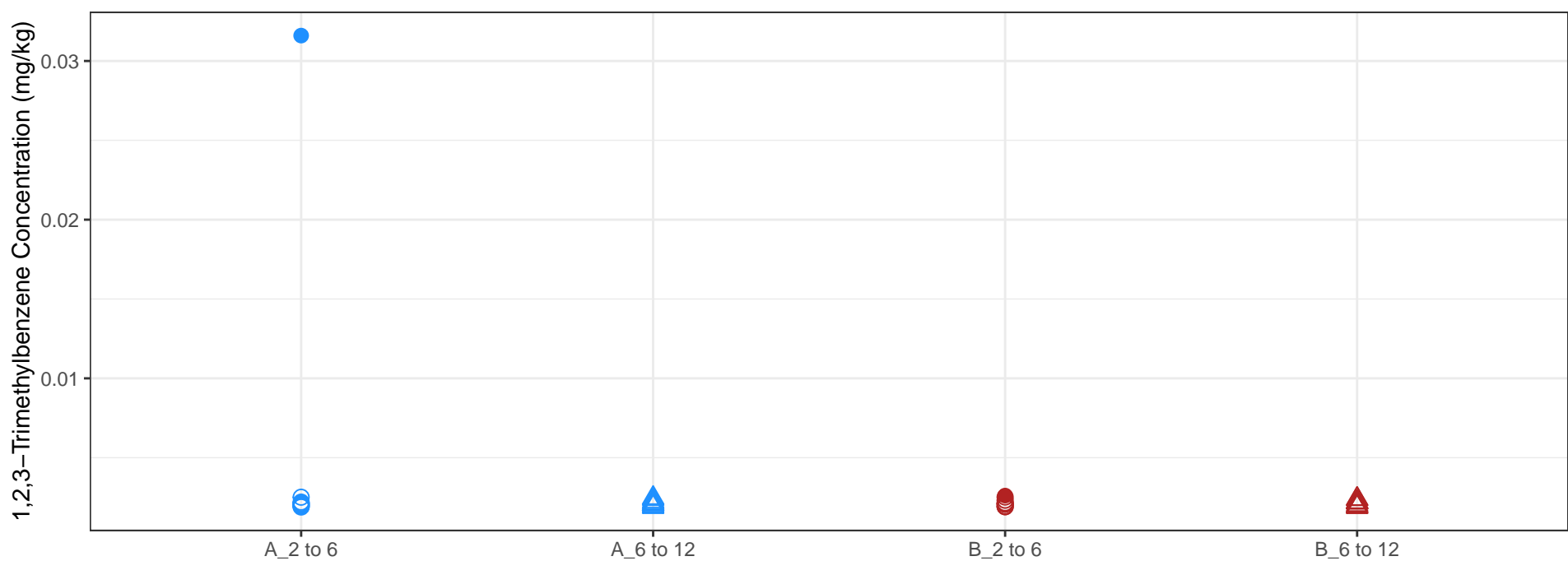
MDL - method detection limit

ND - non-detect

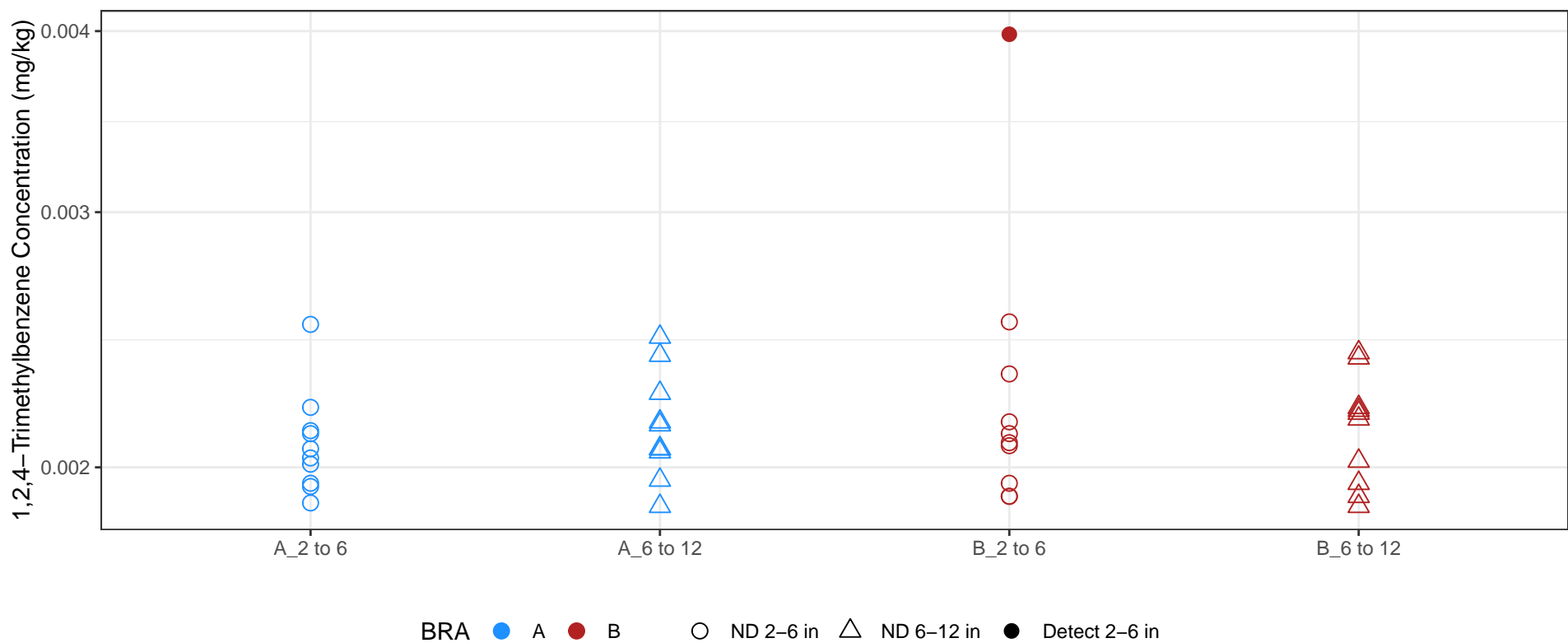
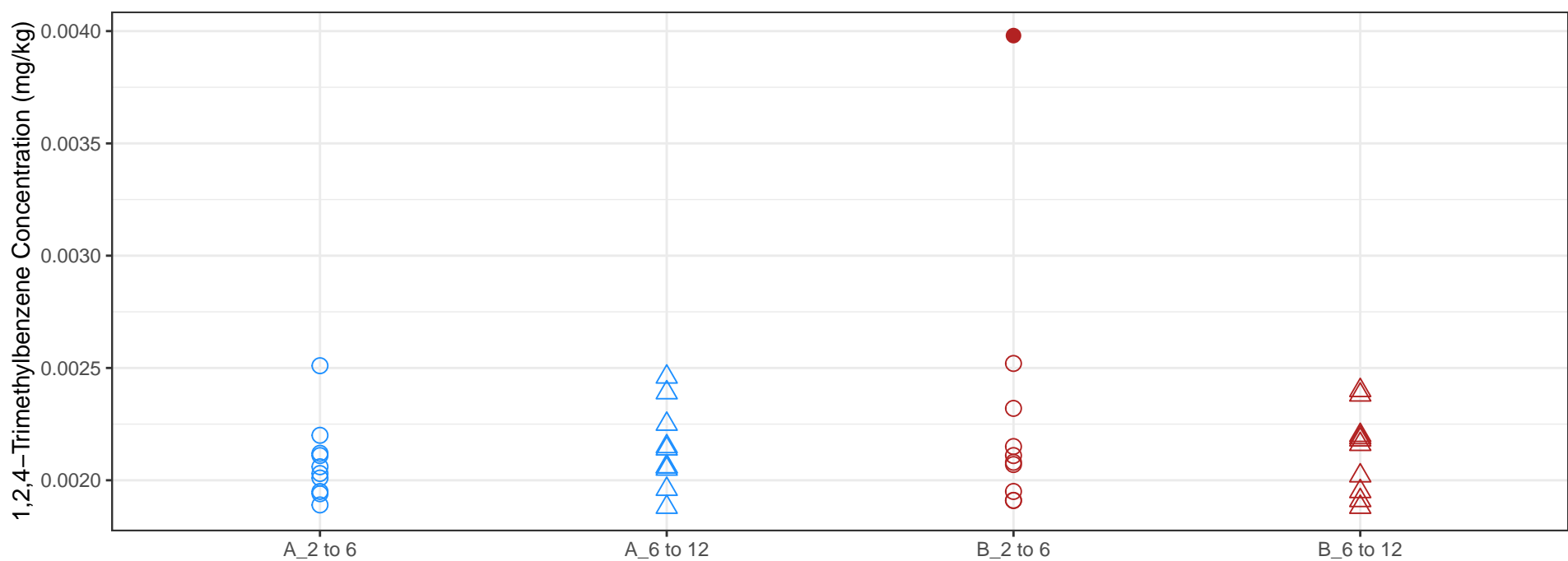
## **Attachment B**

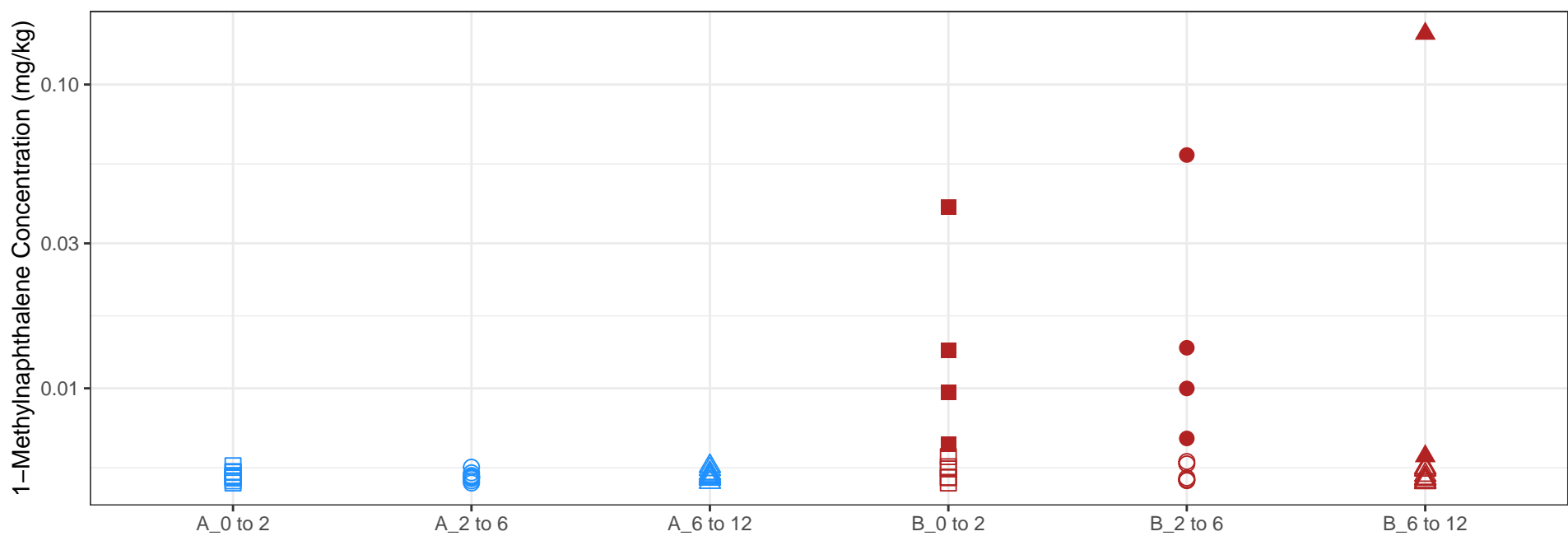
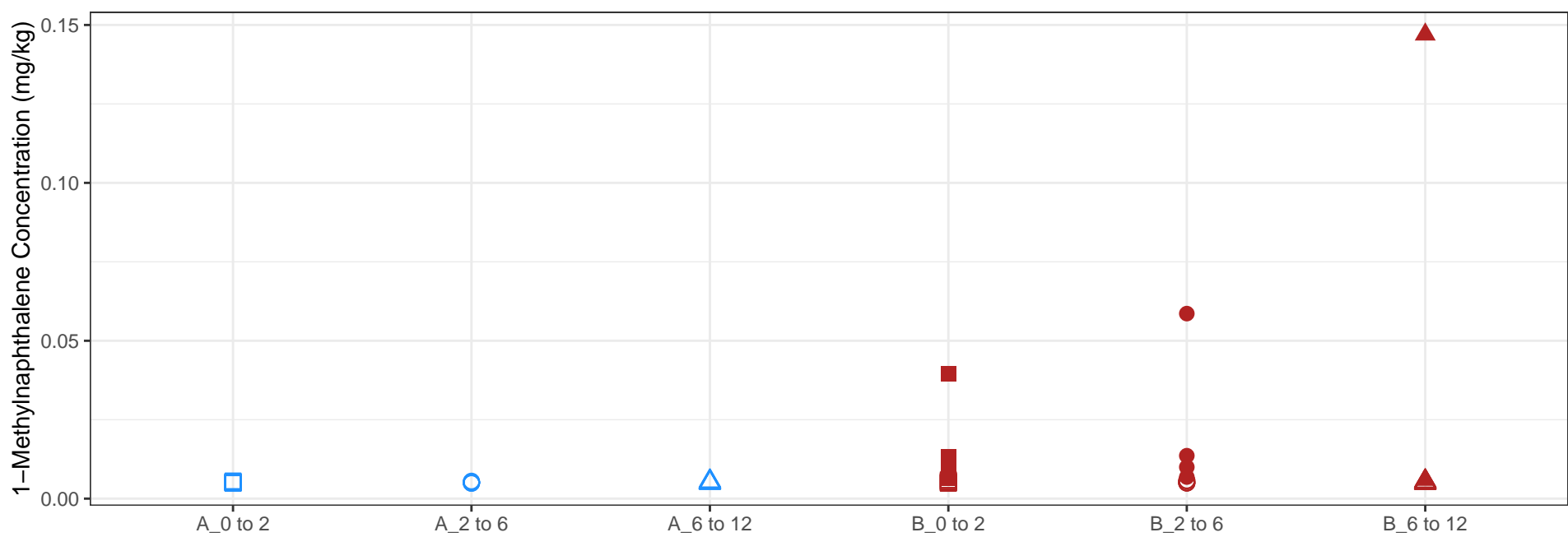
### **Statistical Plots**

## **Dot Plots**



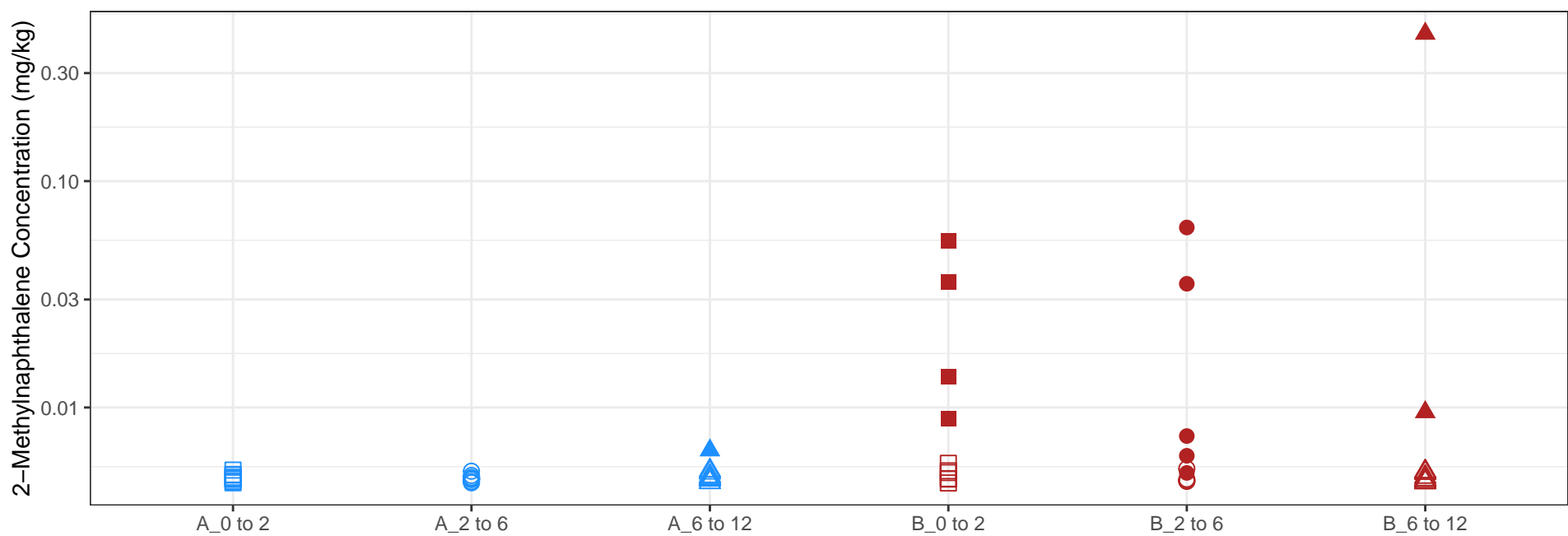
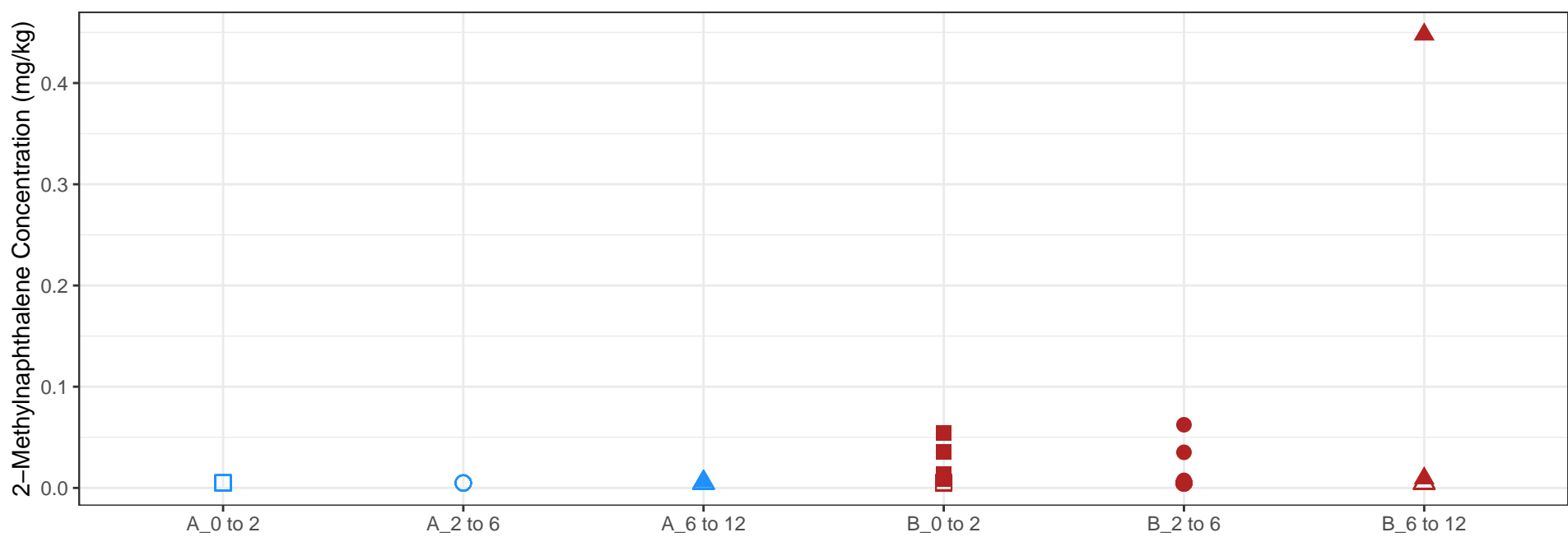
BRA    ● A    ● B    ○ ND 2-6 in    △ ND 6-12 in    ● Detect 2-6 in





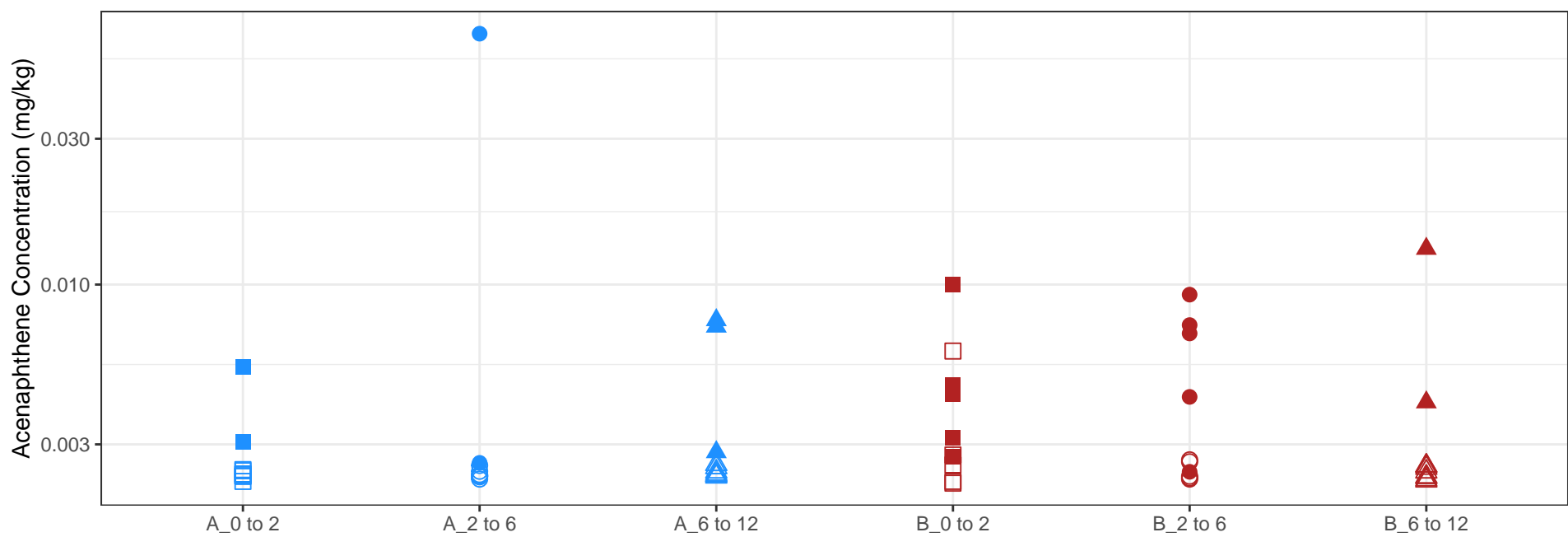
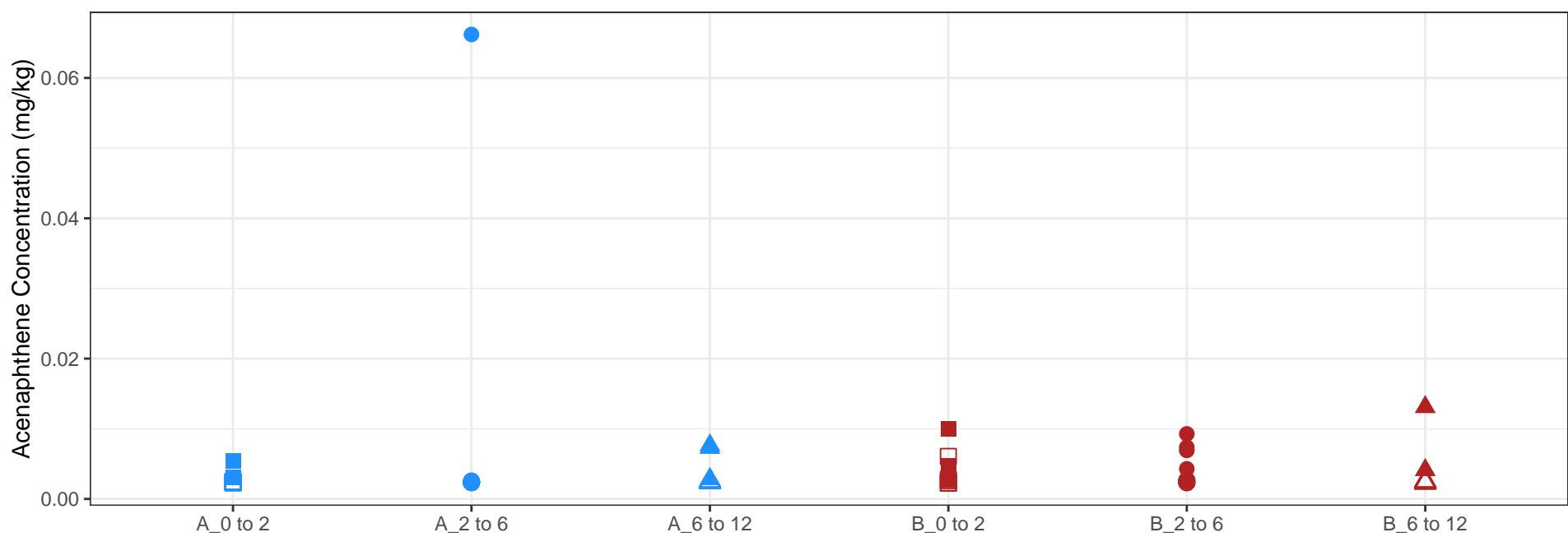
□ ND 0-2 in    △ ND 6-12 in    ● Detect 2-6 in    BRA    ● A    ● B  
○ ND 2-6 in    ■ Detect 0-2 in    ▲ Detect 6-12 in





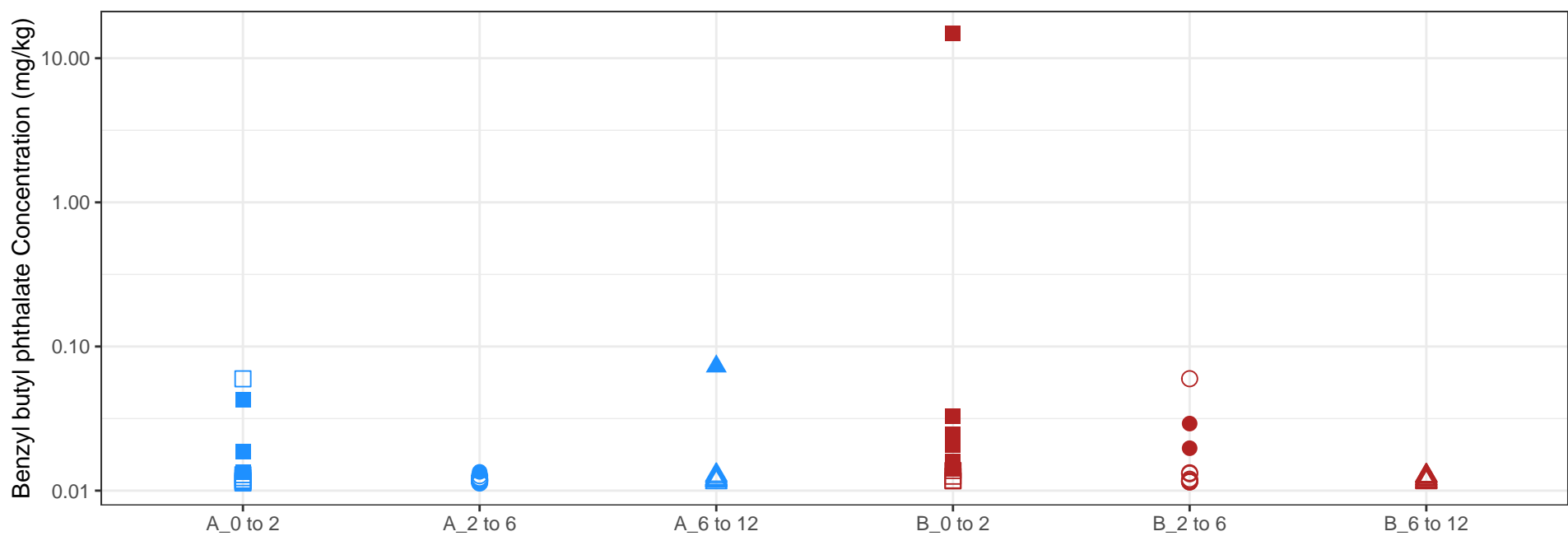
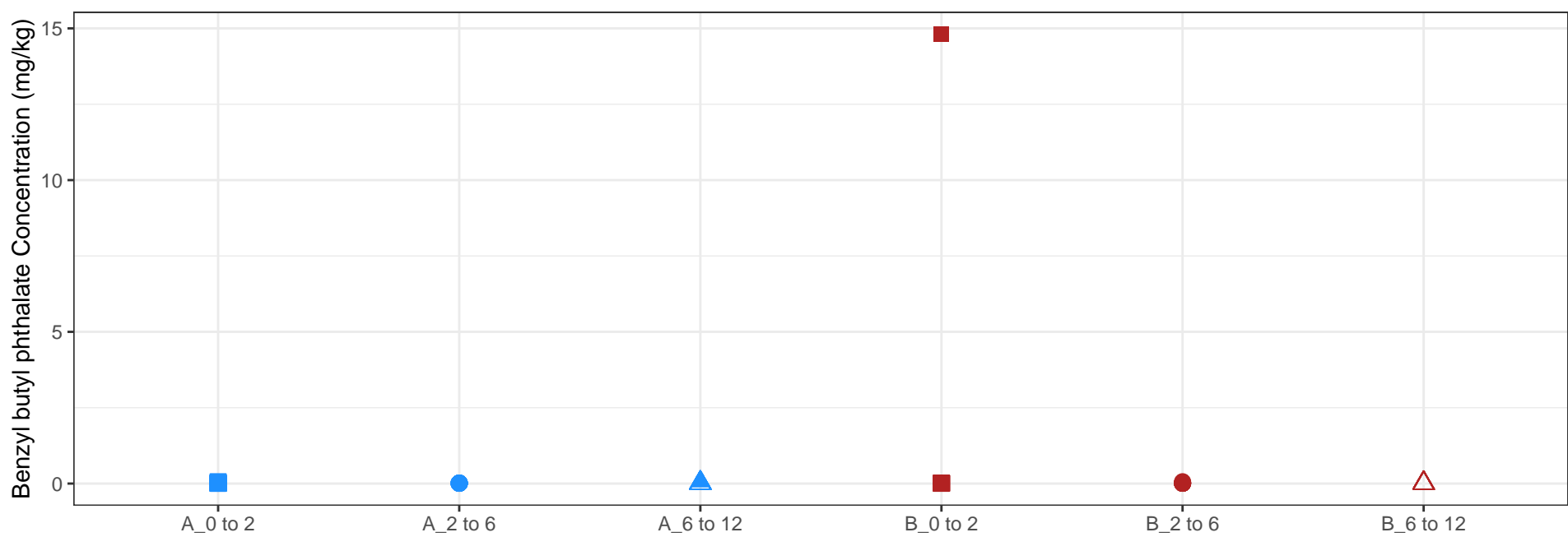
□ ND 0–2 in    △ ND 6–12 in    ● Detect 2–6 in    BRA    ● A    ● B

○ ND 2–6 in    ■ Detect 0–2 in    ▲ Detect 6–12 in



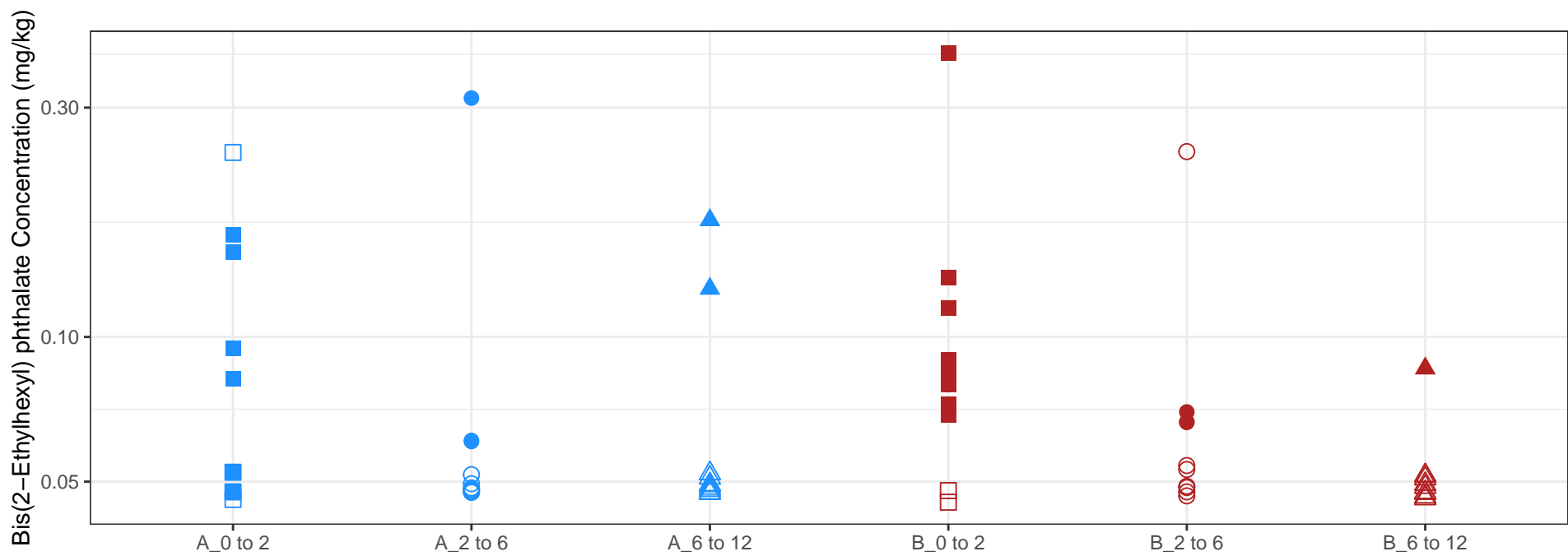
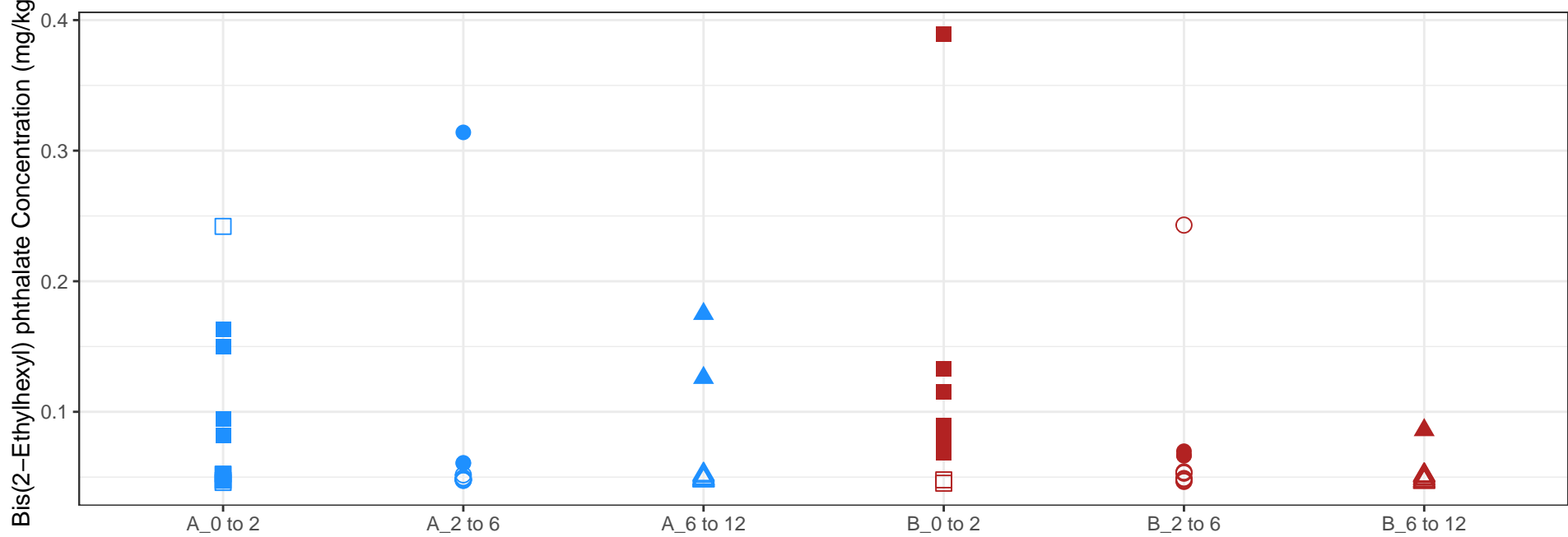
□ ND 0-2 in    △ ND 6-12 in    ● Detect 2-6 in    BRA    ● A    ● B

○ ND 2-6 in    ■ Detect 0-2 in    ▲ Detect 6-12 in



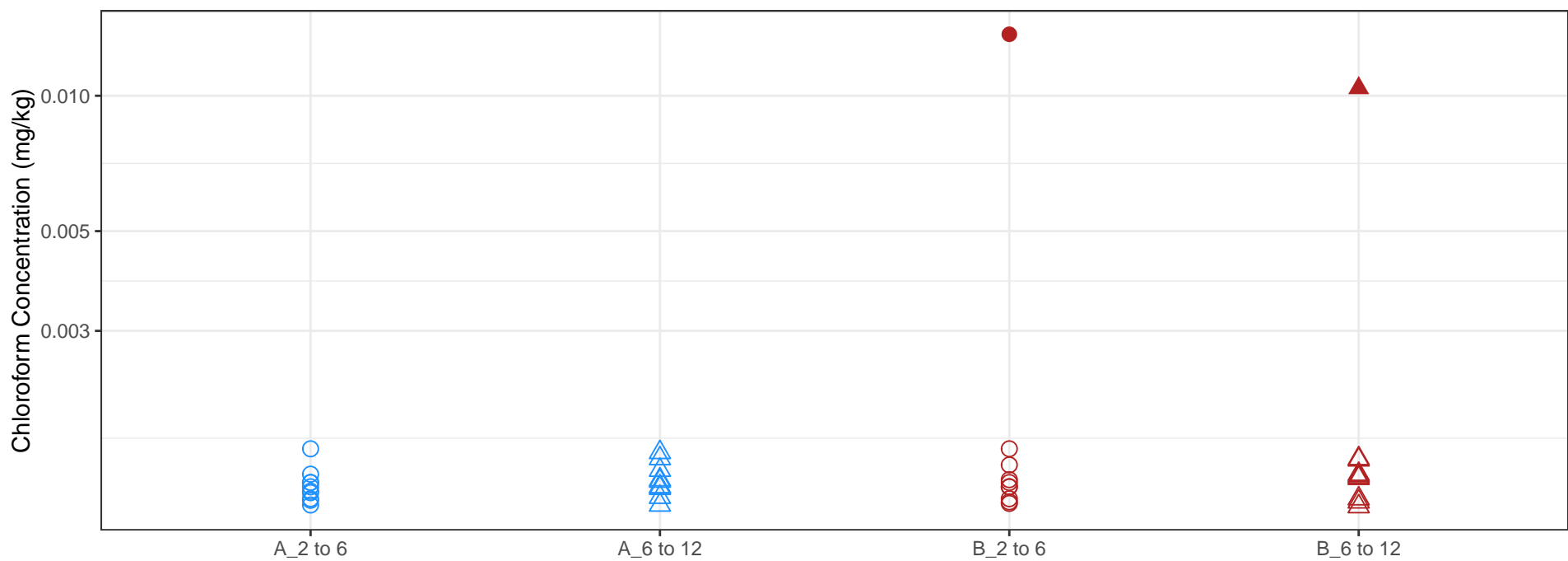
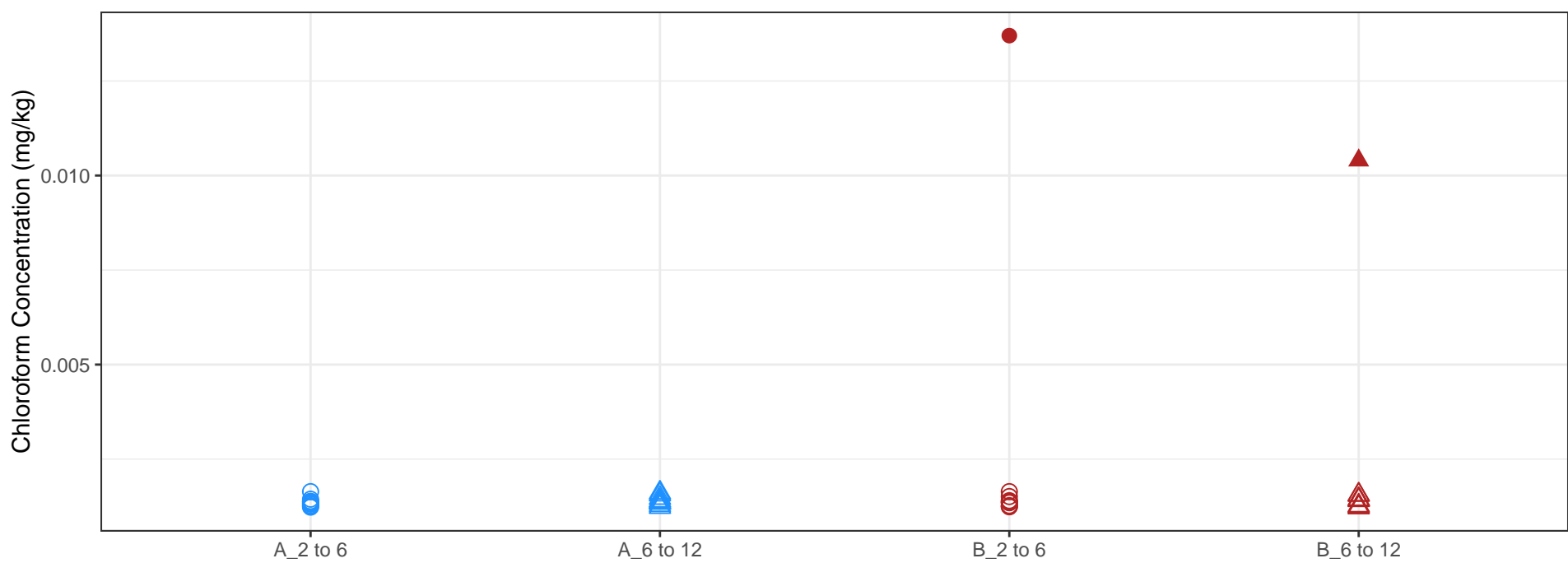
□ ND 0-2 in    △ ND 6-12 in    ● Detect 2-6 in    BRA    ● A    ● B

○ ND 2-6 in    ■ Detect 0-2 in    ▲ Detect 6-12 in

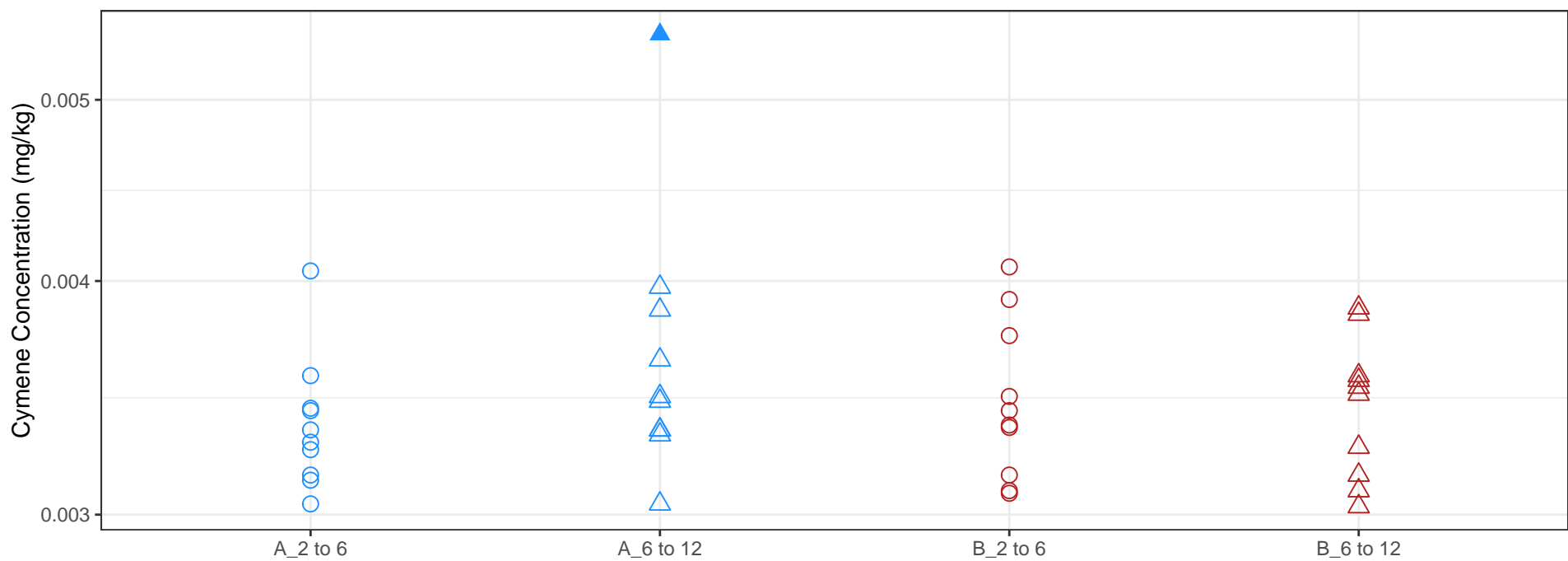
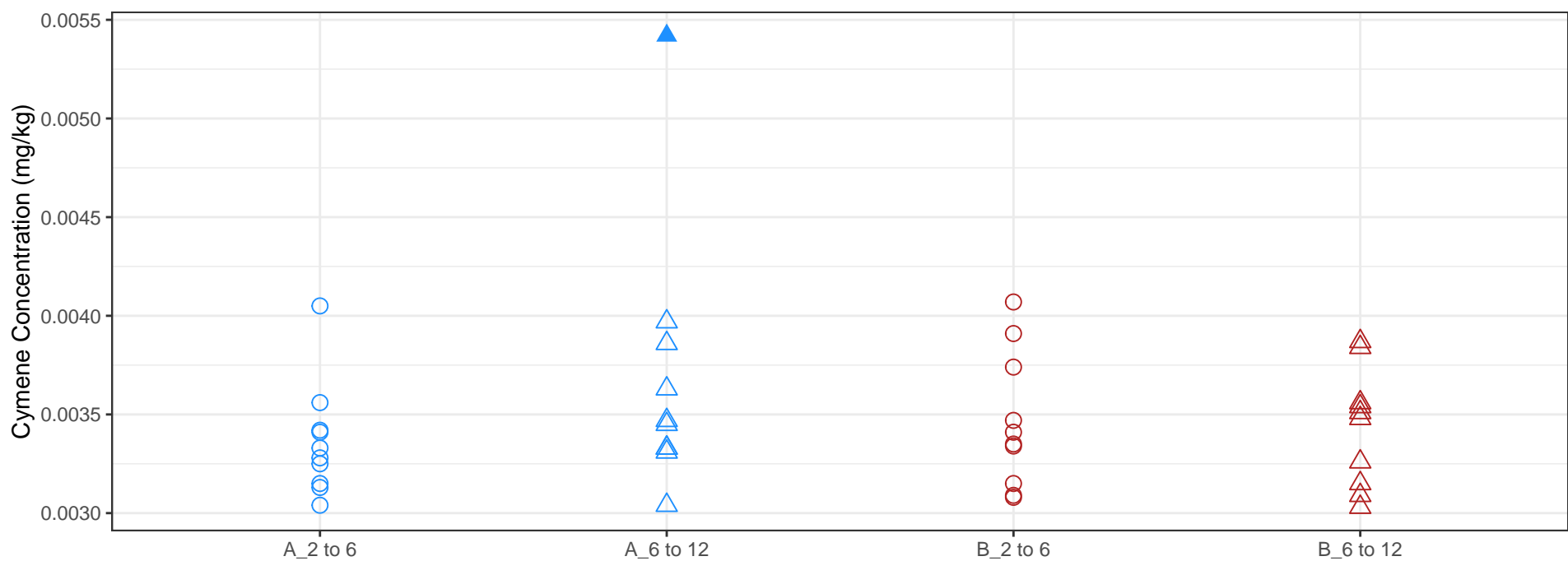


□ ND 0-2 in    △ ND 6-12 in    ● Detect 2-6 in    BRA    ● A    ● B

○ ND 2-6 in    ■ Detect 0-2 in    ▲ Detect 6-12 in

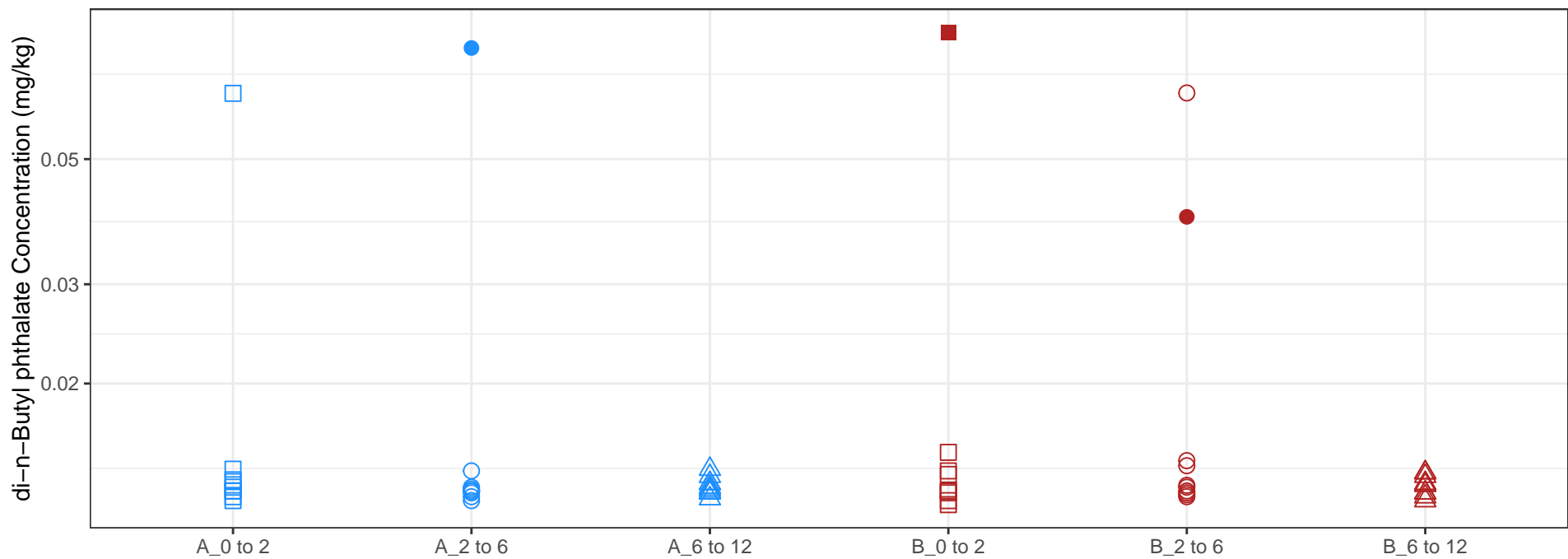
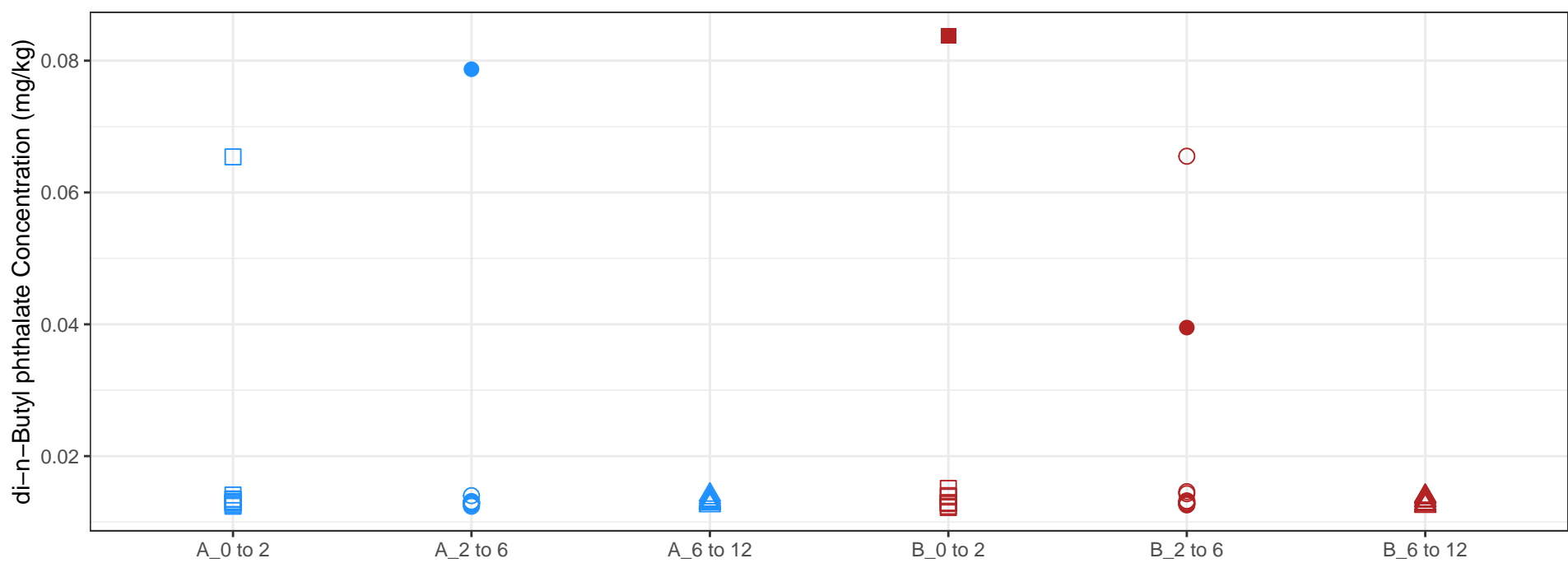


BRA    ● A    ● B    ○ ND 2-6 in    △ ND 6-12 in    ● Detect 2-6 in    ▲ Detect 6-12 in

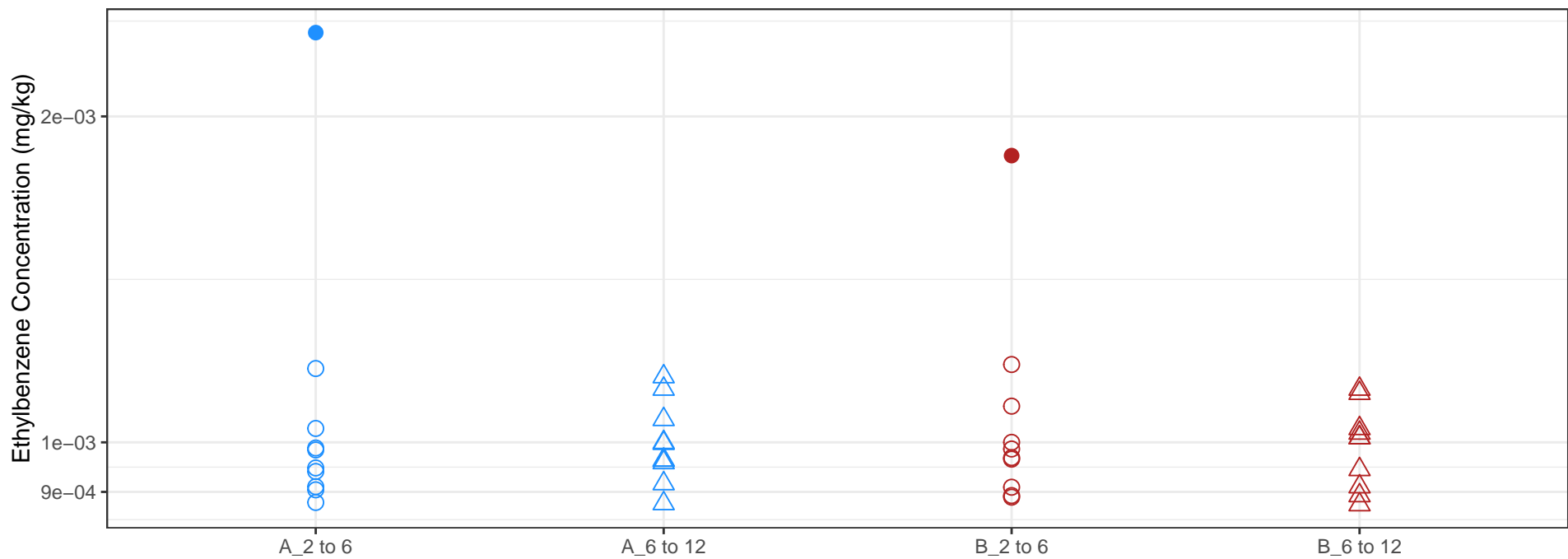
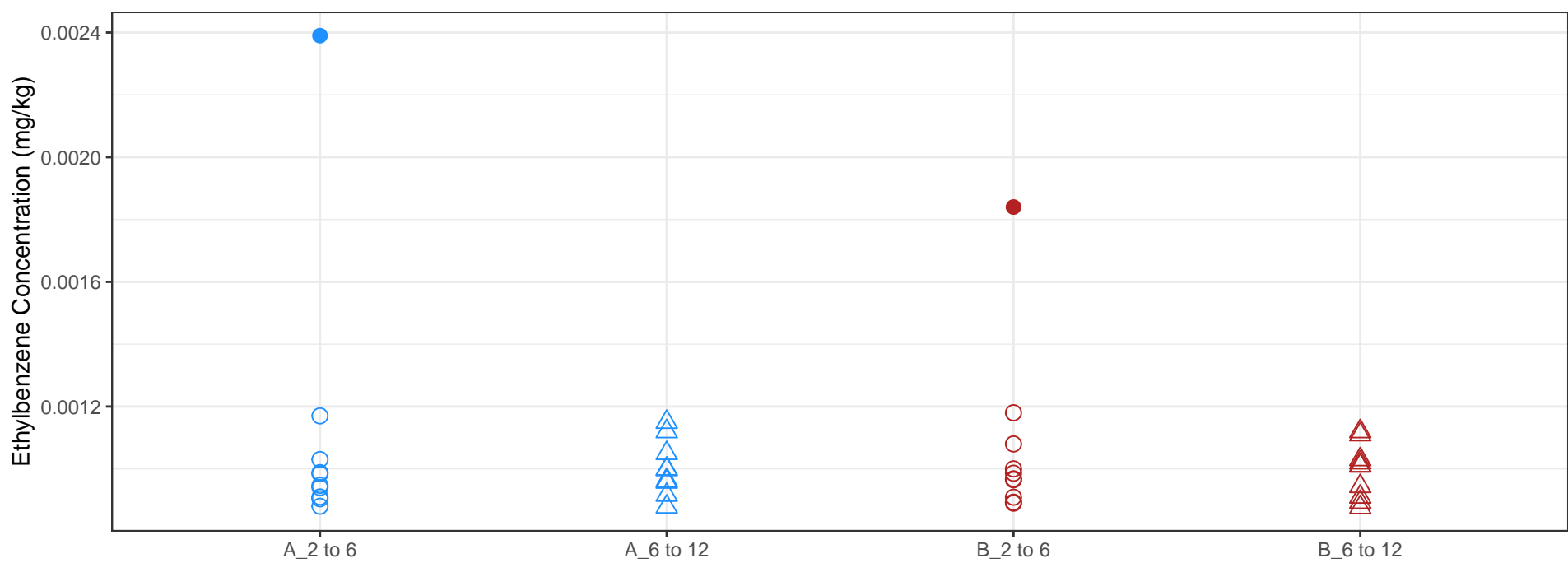


○ ND 2-6 in    △ ND 6-12 in    ▲ Detect 6-12 in    BRA    ● A    ● B

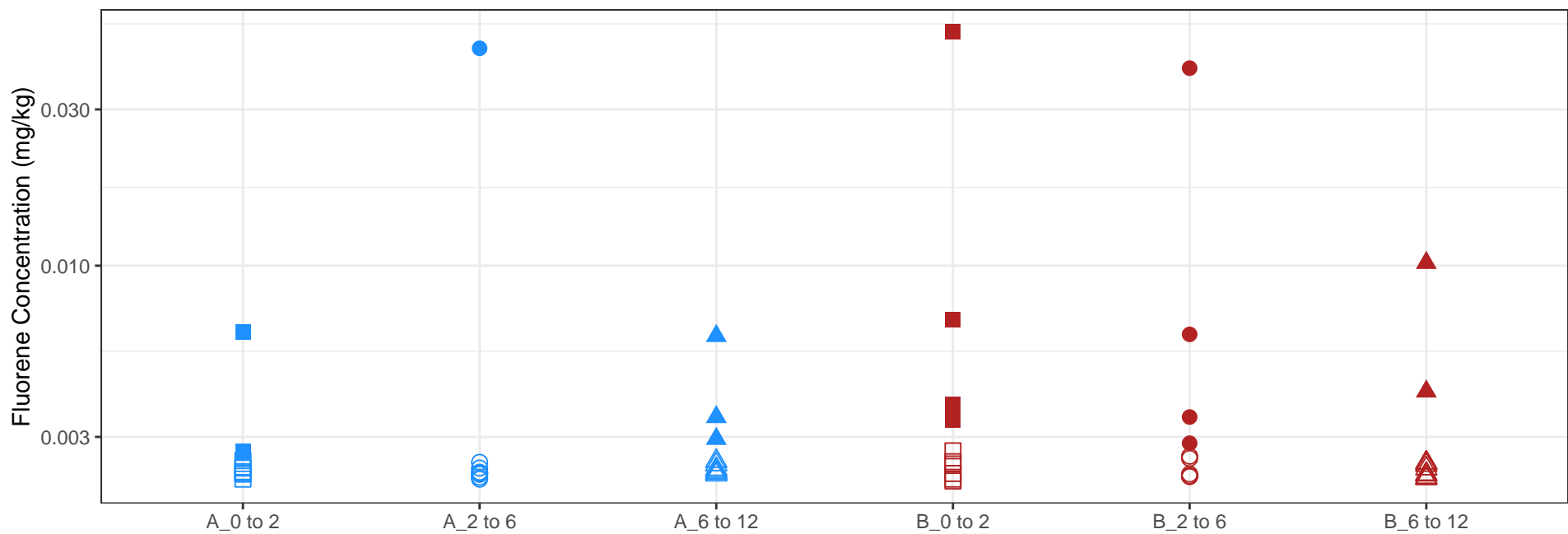
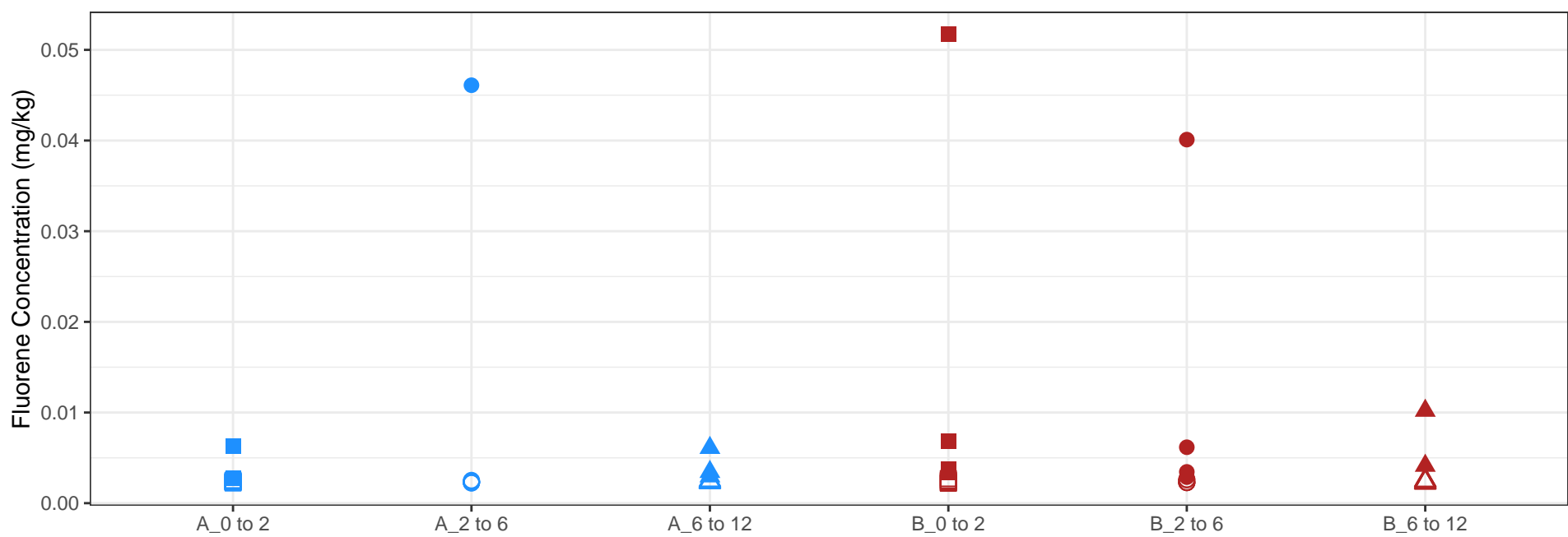




BRA    ● A    ● B    □ ND 0–2 in    ○ ND 2–6 in    △ ND 6–12 in    ■ Detect 0–2 in    ● Detect 2–6 in

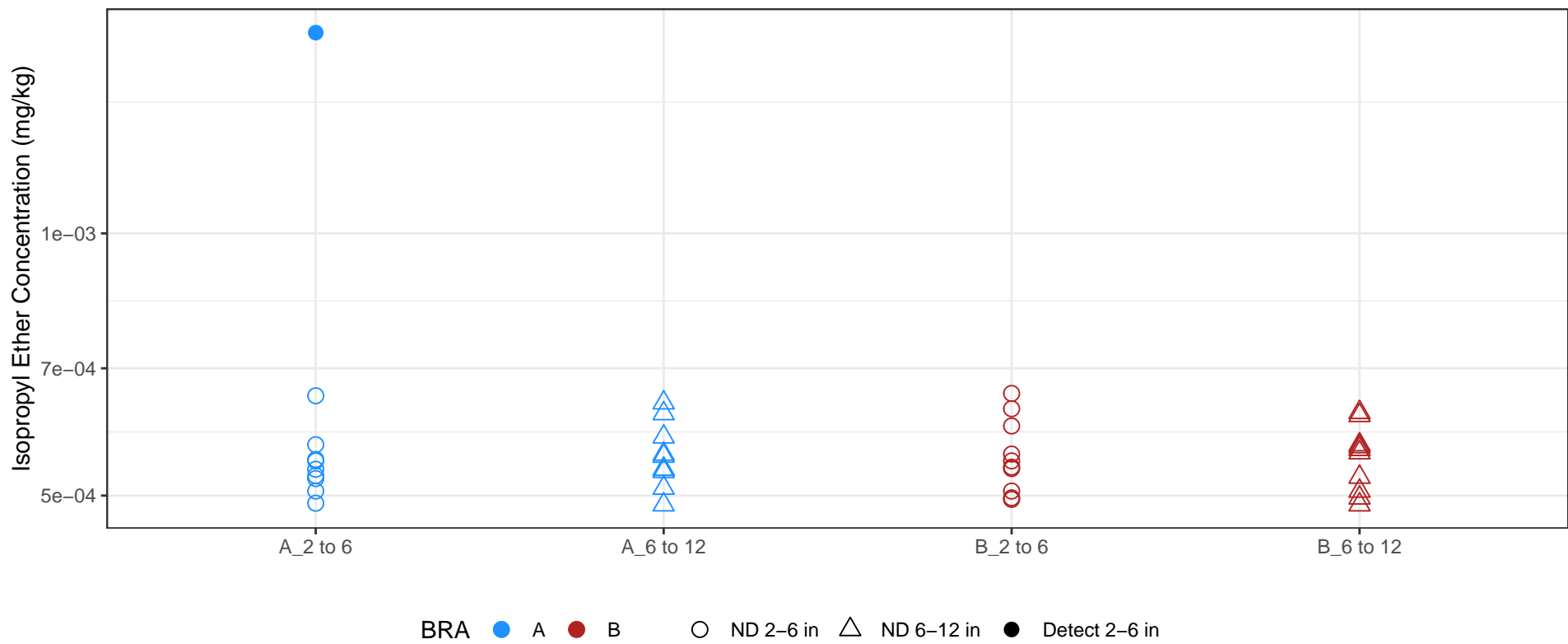
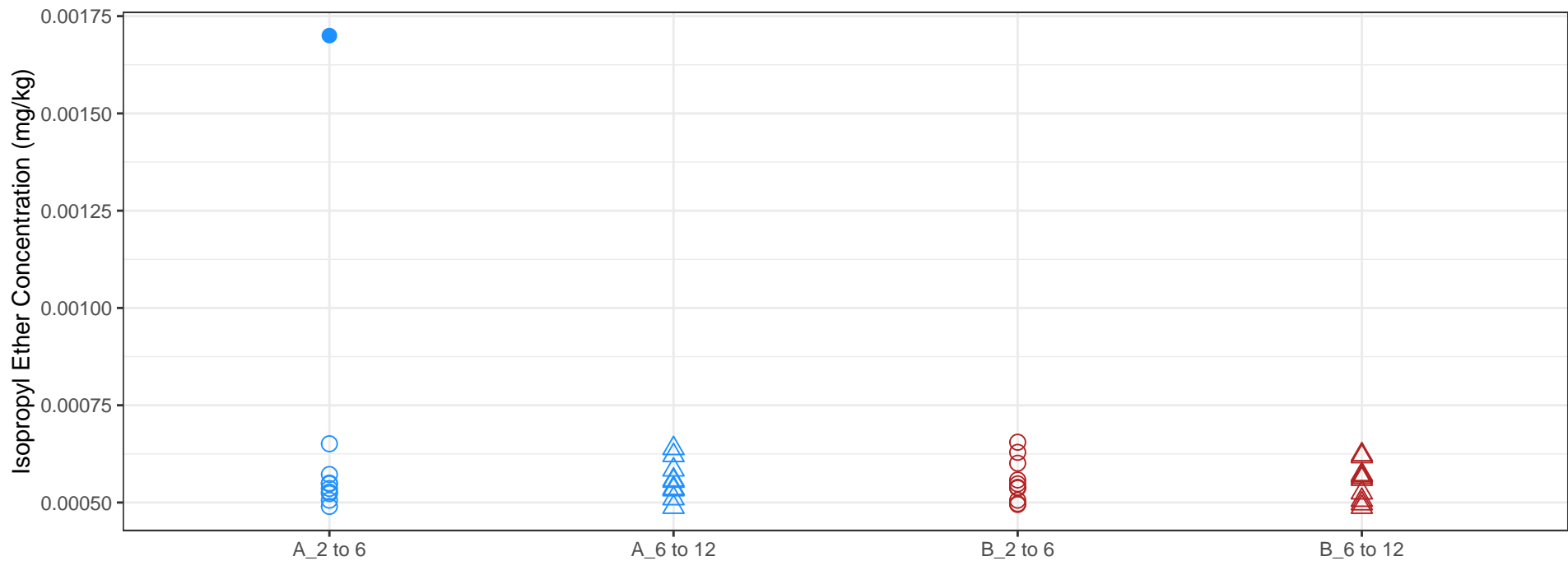


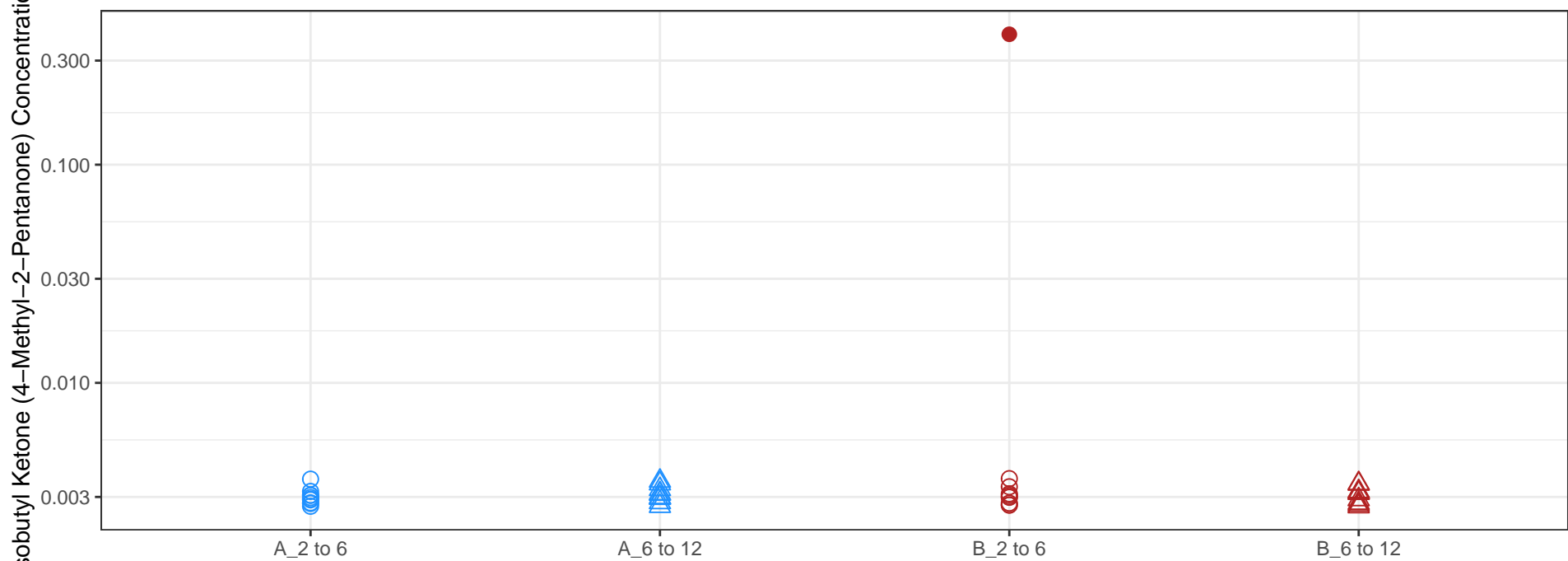
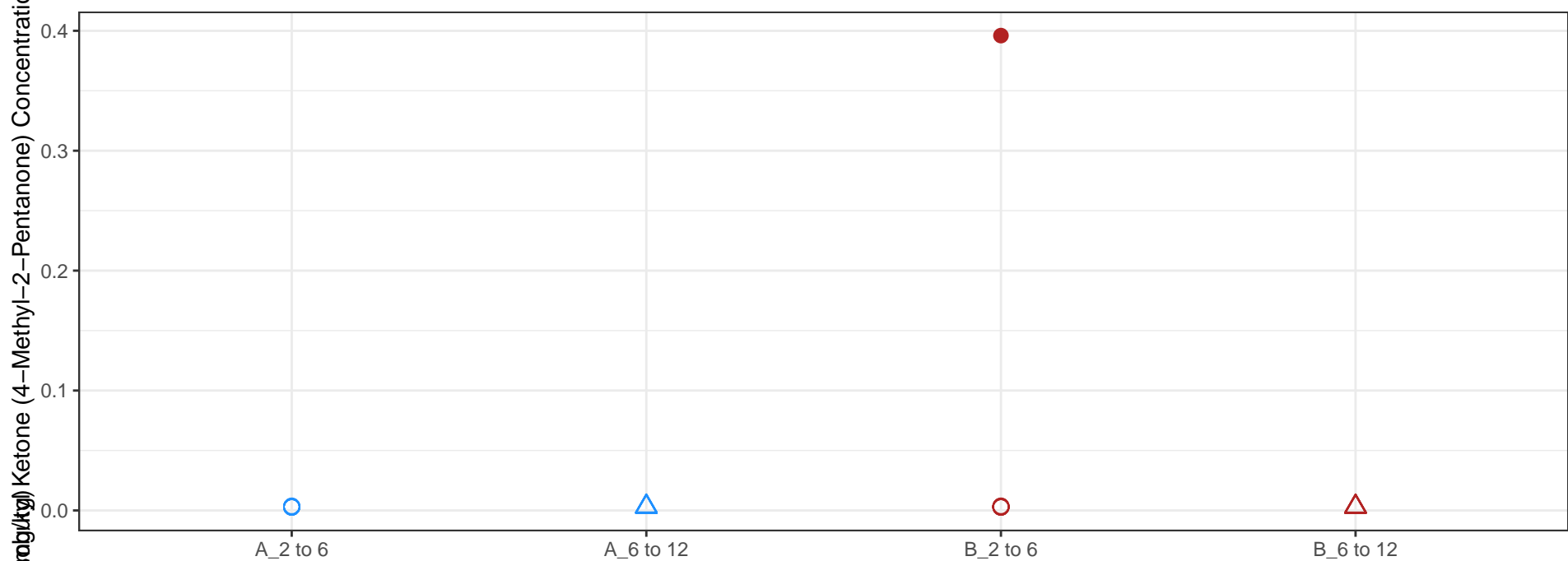
BRA    ● A    ● B    ○ ND 2-6 in    △ ND 6-12 in    ● Detect 2-6 in



□ ND 0-2 in    △ ND 6-12 in    ● Detect 2-6 in    BRA    ● A    ● B  
○ ND 2-6 in    ■ Detect 0-2 in    ▲ Detect 6-12 in

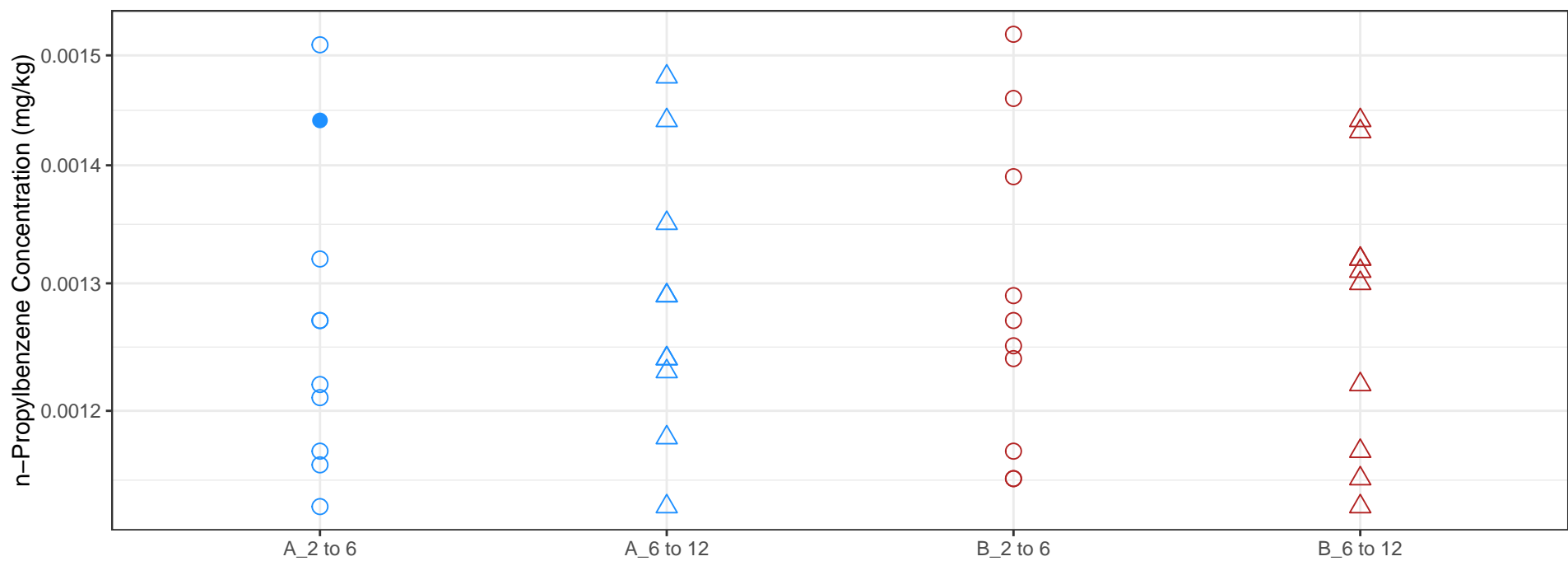
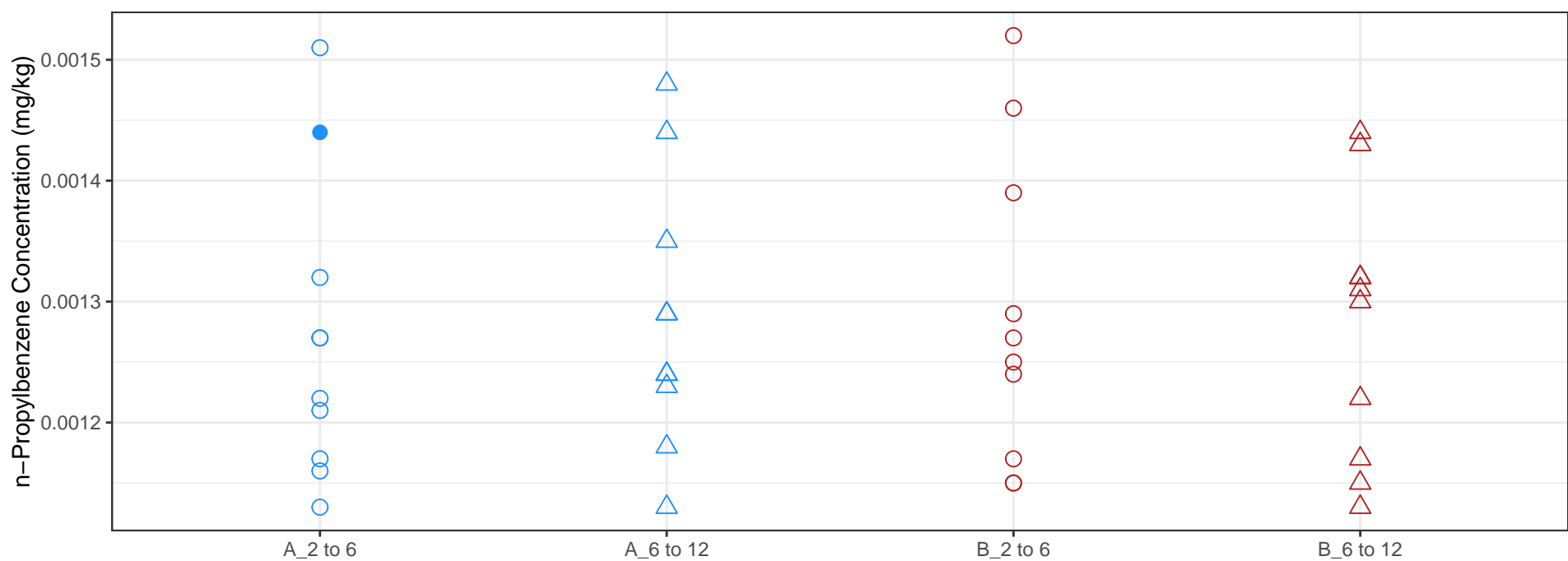




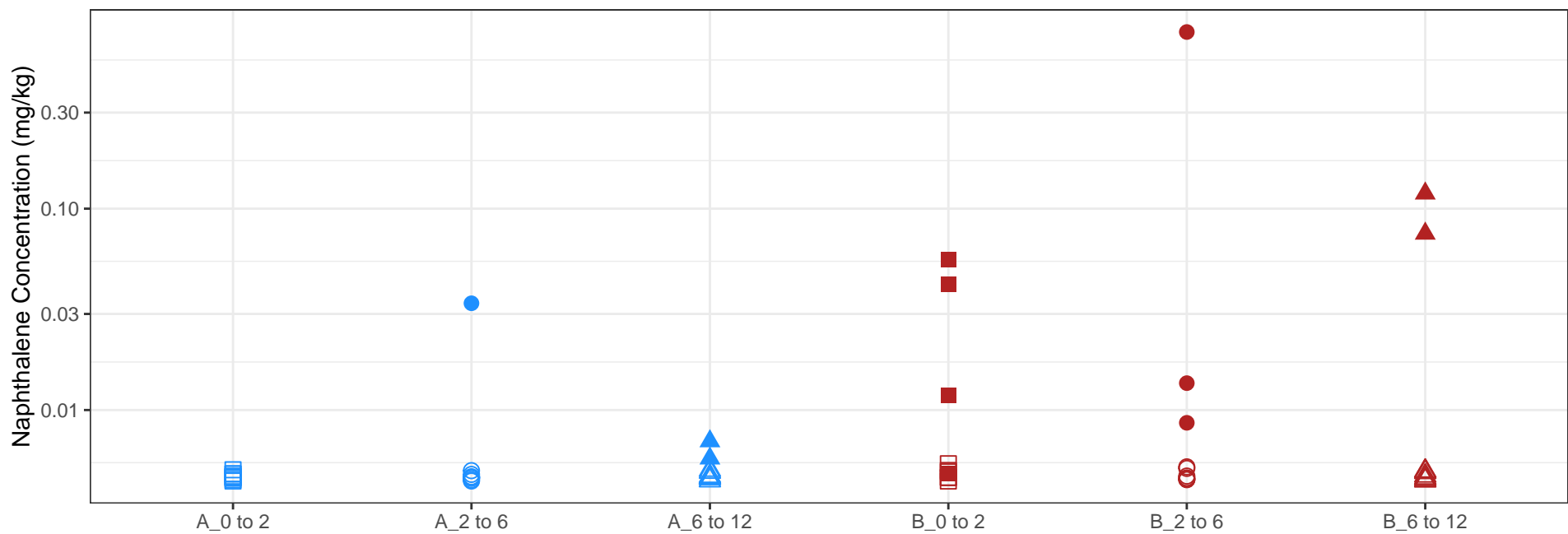
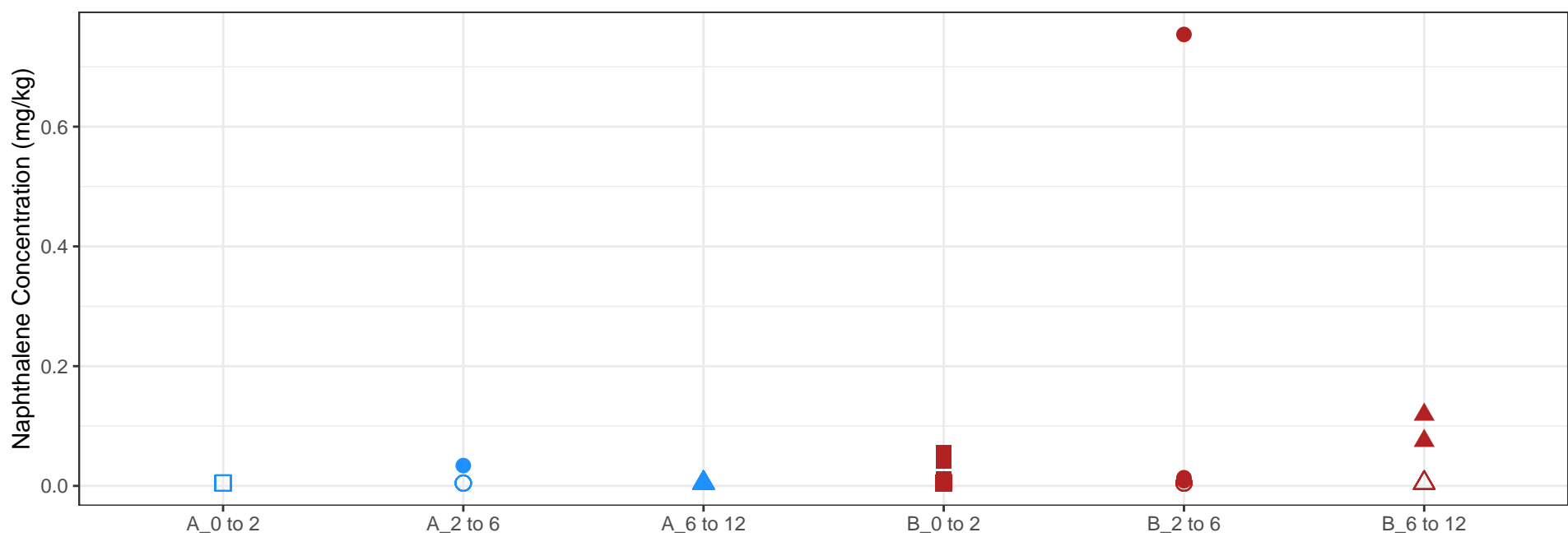


BRA    ● A    ● B    ○ ND 2-6 in    △ ND 6-12 in    ● Detect 2-6 in



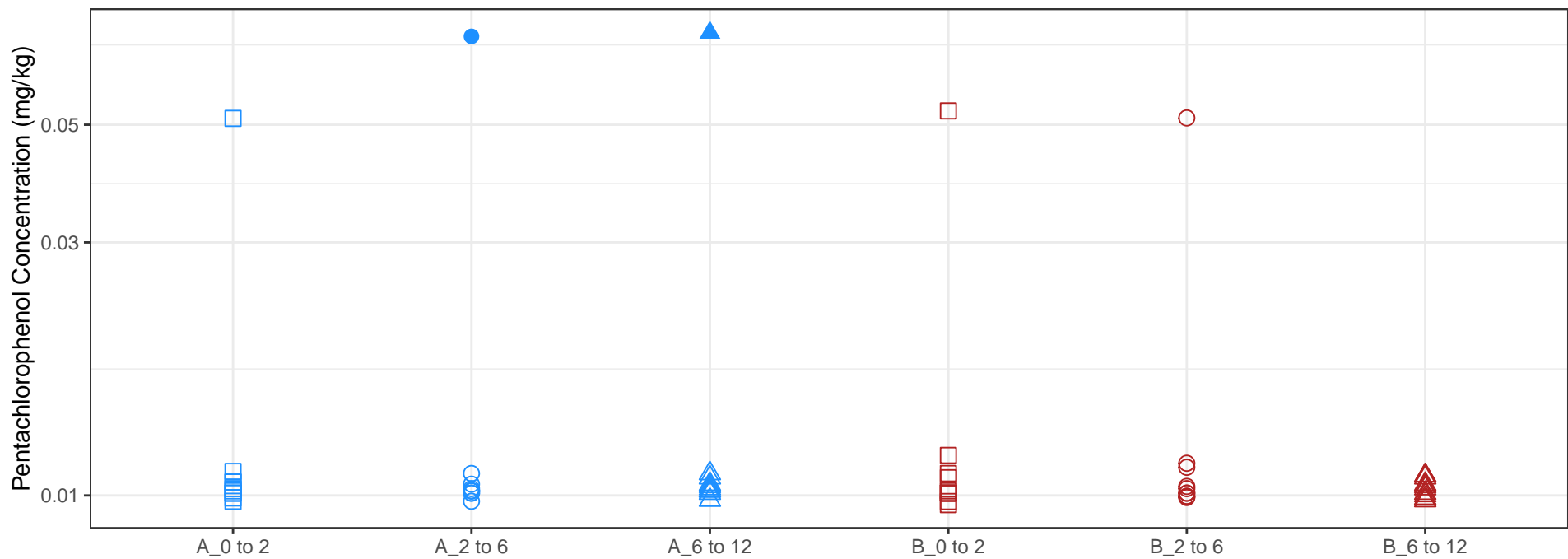
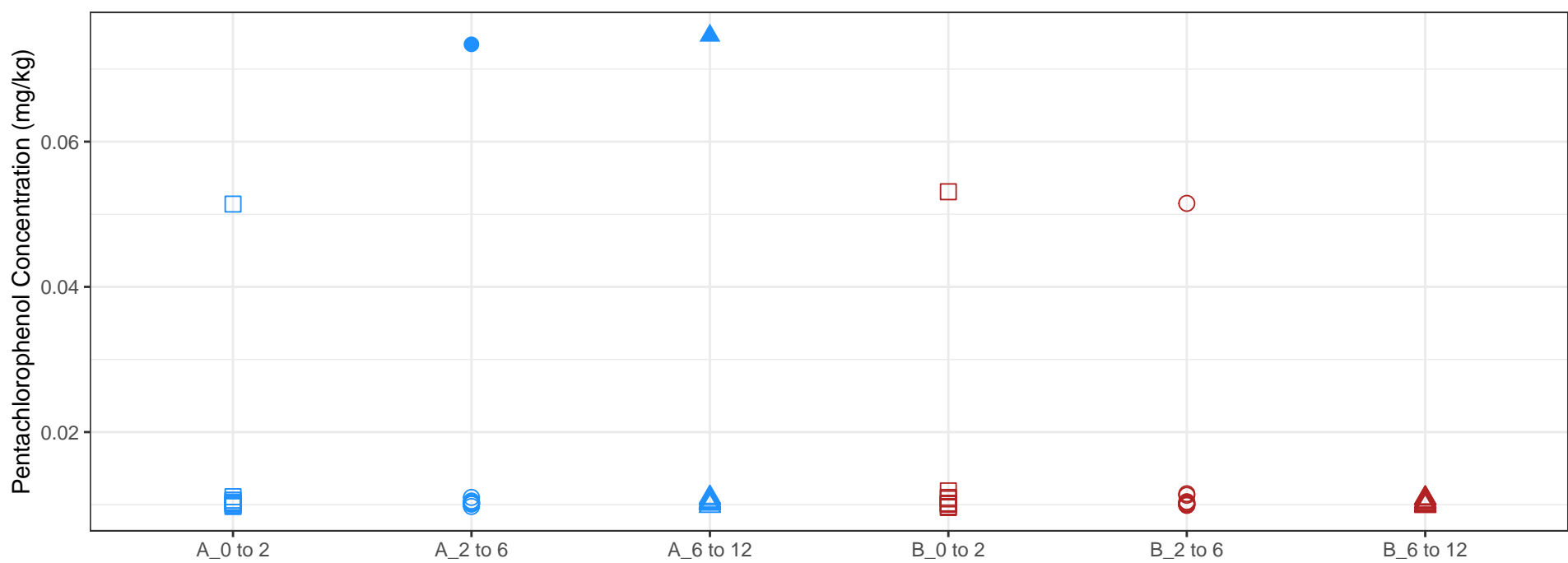


BRA    ● A    ● B    ○ ND 2-6 in    △ ND 6-12 in    ● Detect 2-6 in

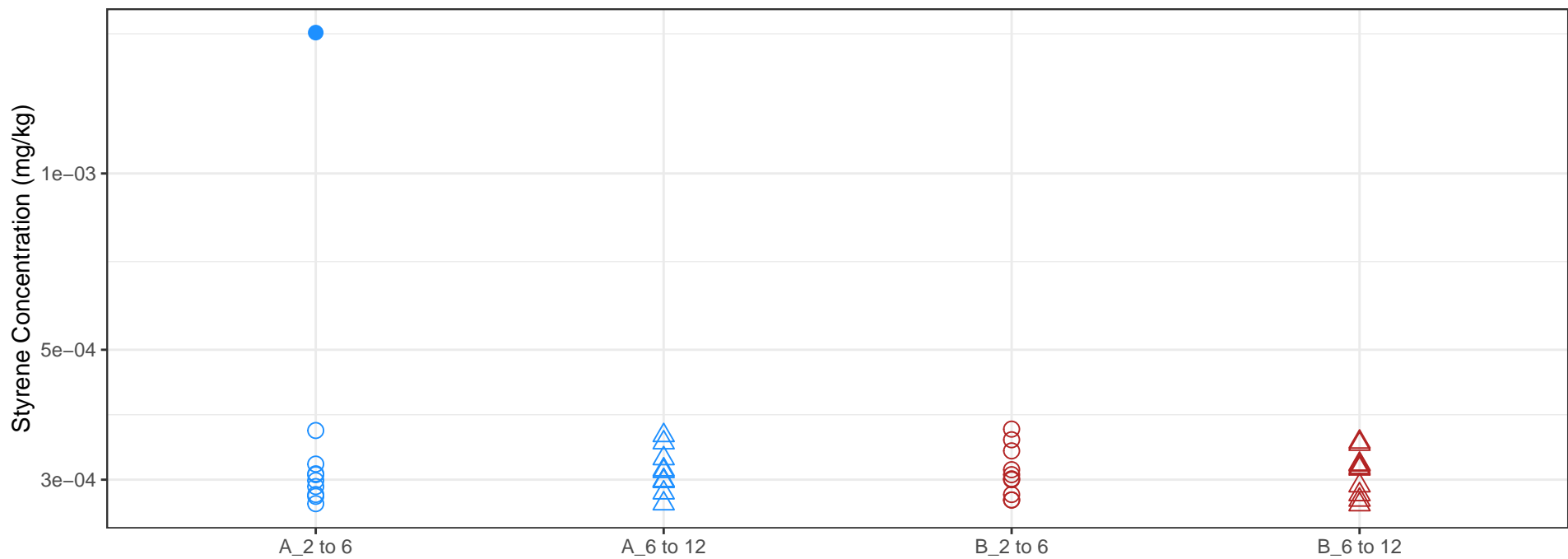
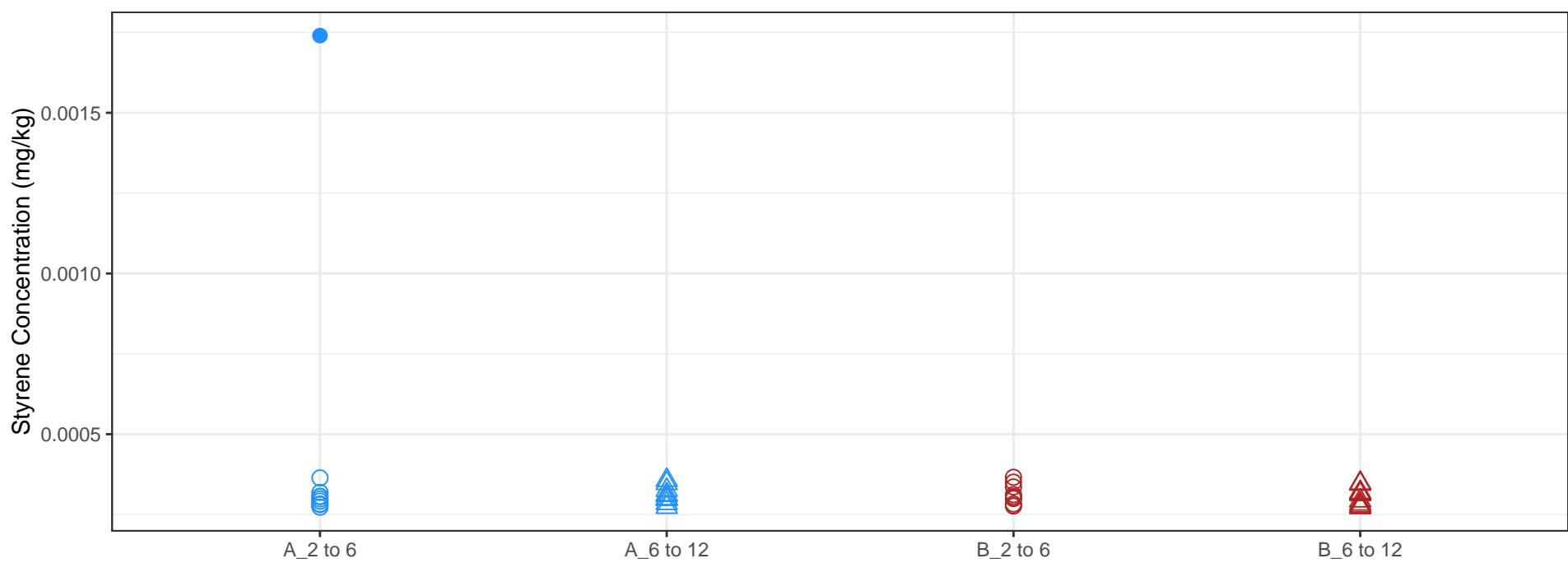


□ ND 0-2 in    △ ND 6-12 in    ● Detect 2-6 in    BRA    ● A    ● B

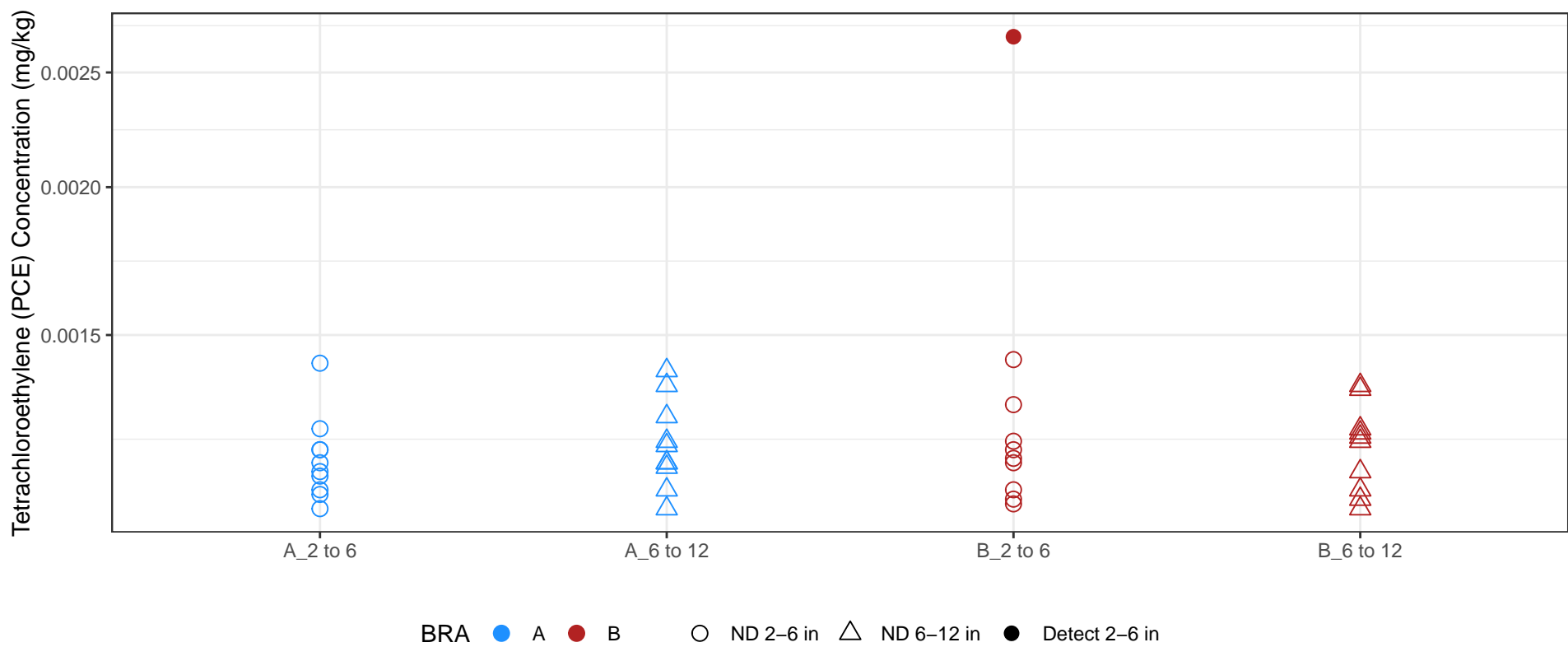
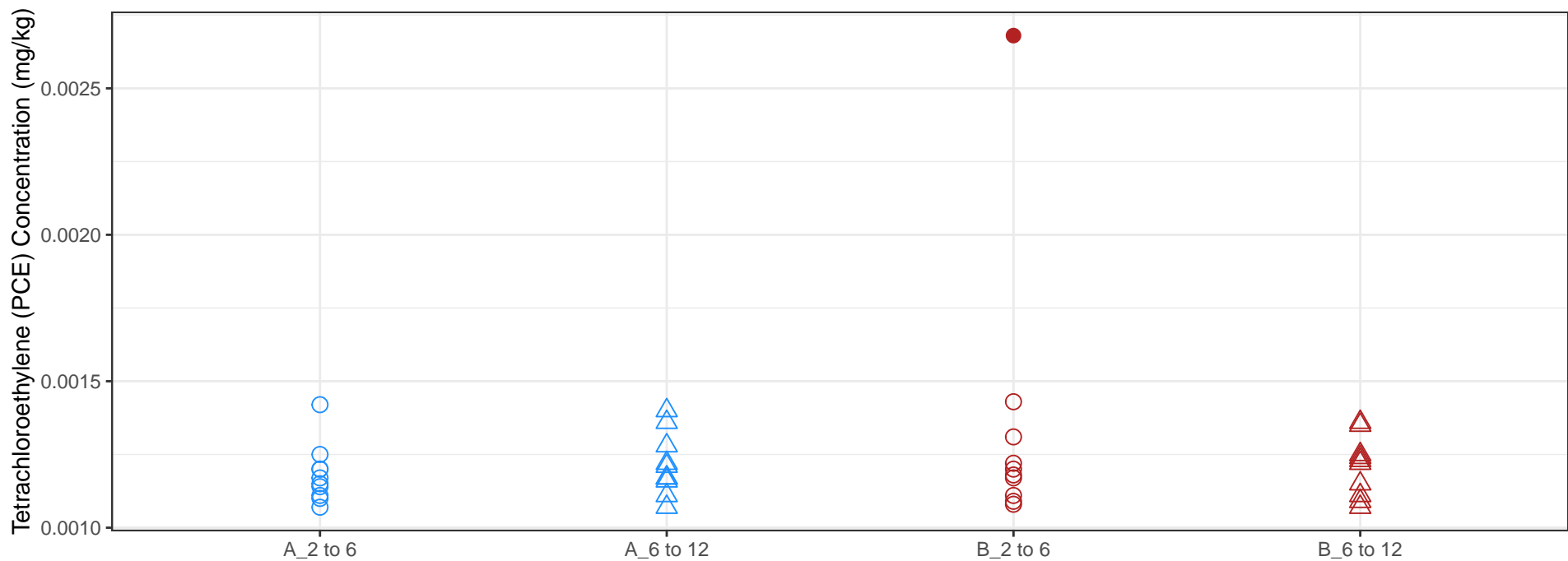
○ ND 2-6 in    ■ Detect 0-2 in    ▲ Detect 6-12 in

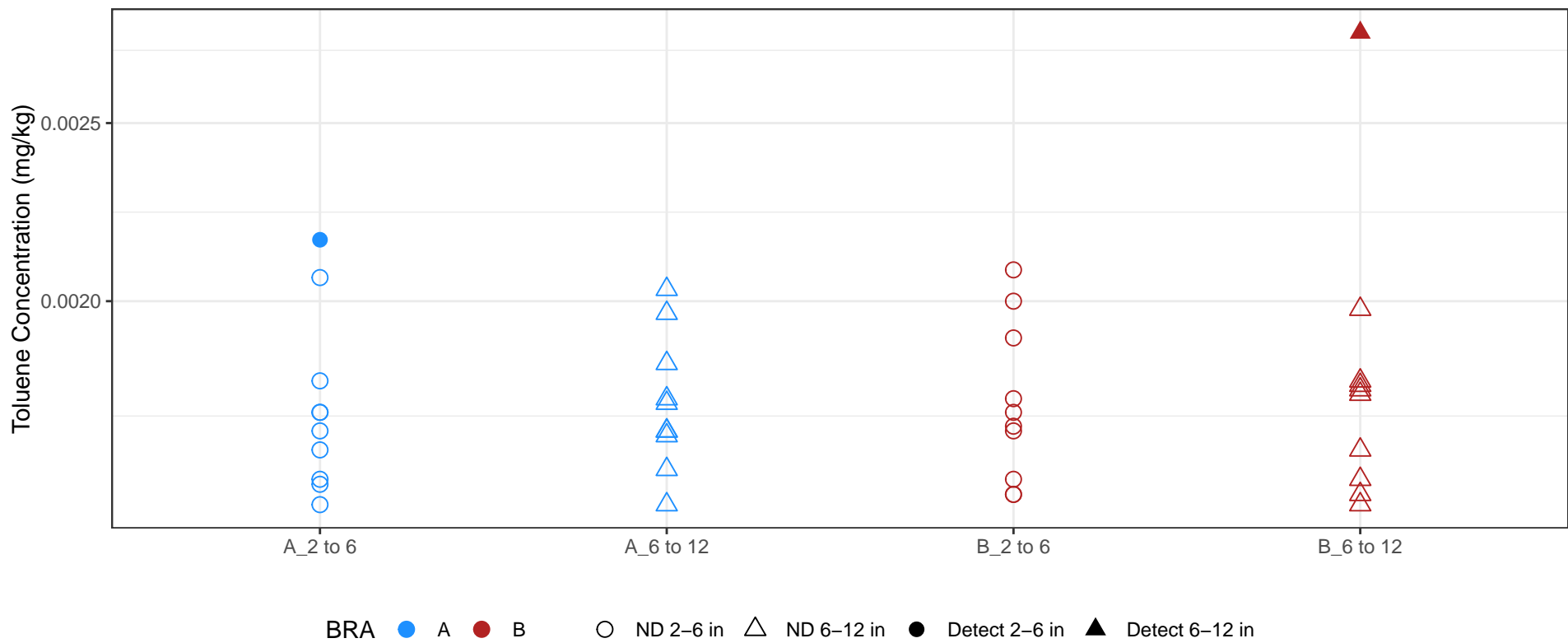
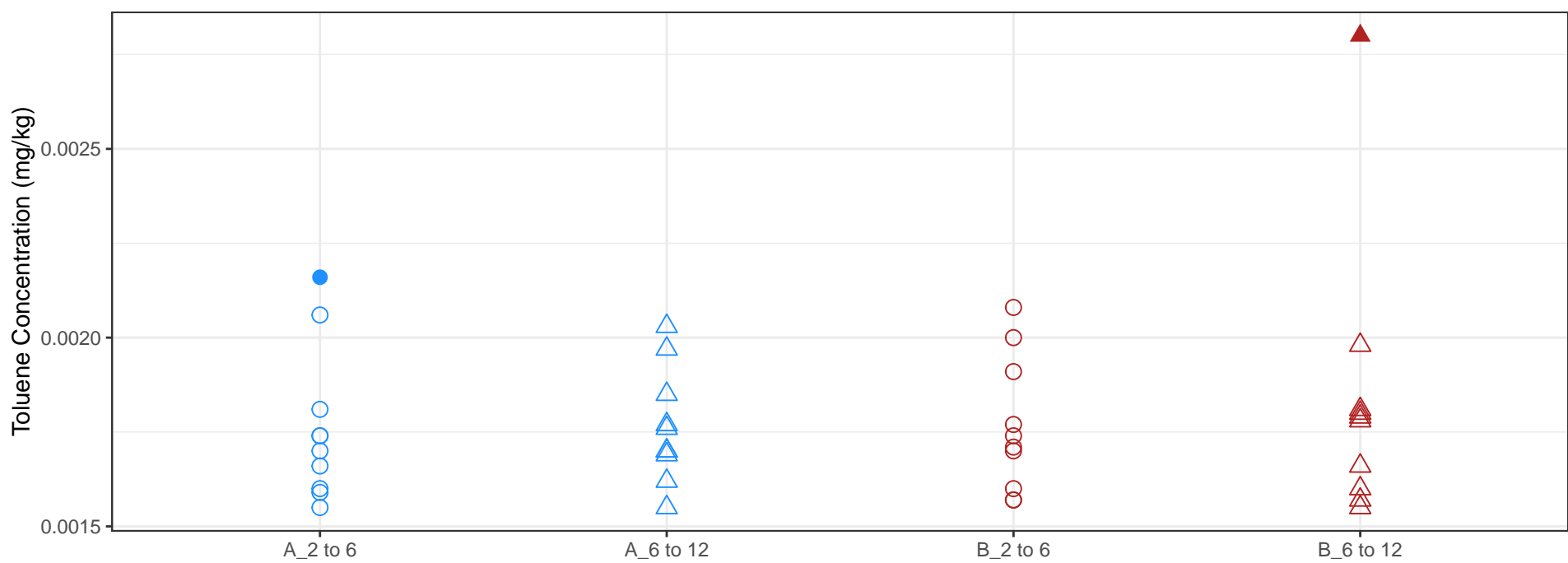


□ ND 0-2 in    ○ ND 2-6 in    △ ND 6-12 in    ● Detect 2-6 in    ▲ Detect 6-12 in    BRA    ● A    ● B

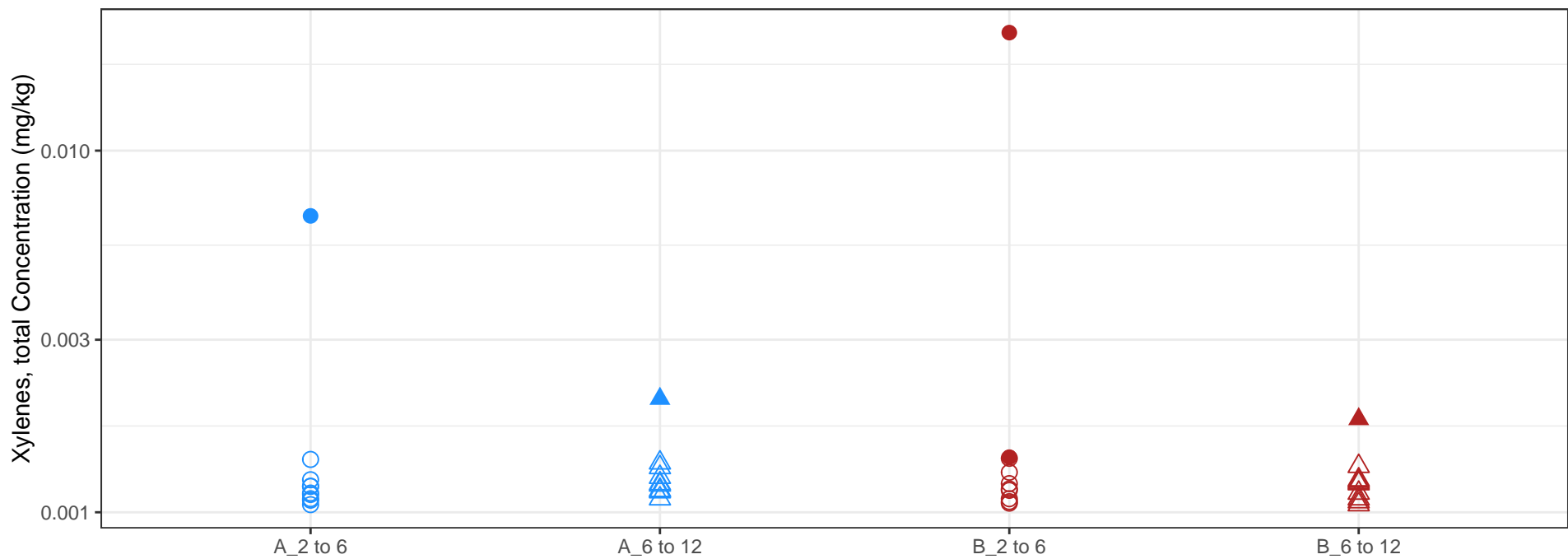


BRA ● A ● B ○ ND 2-6 in △ ND 6-12 in ● Detect 2-6 in





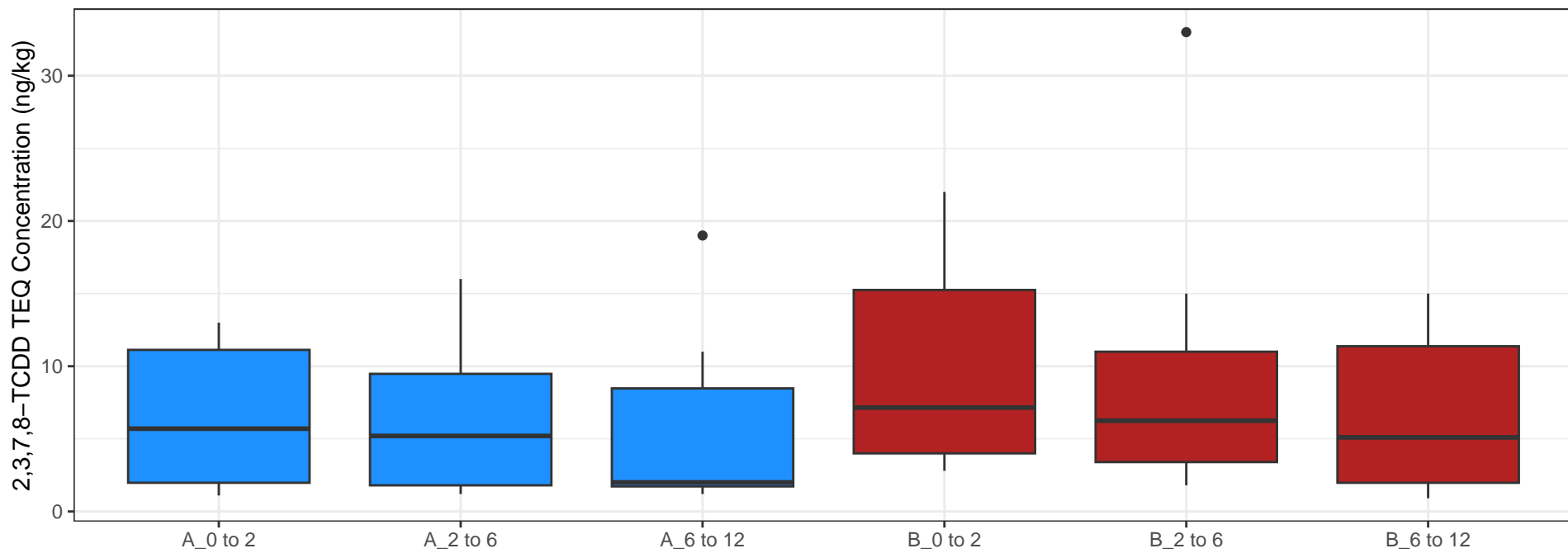




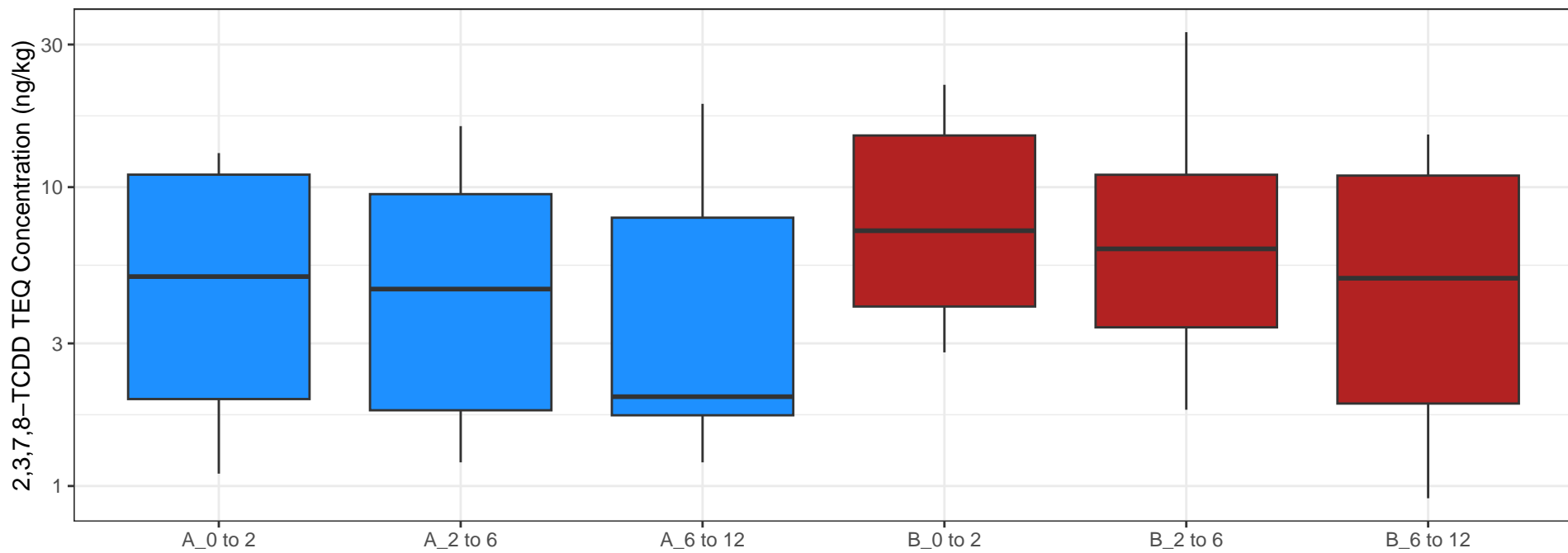
BRA ● A ● B ○ ND 2–6 in △ ND 6–12 in ● Detect 2–6 in ▲ Detect 6–12 in

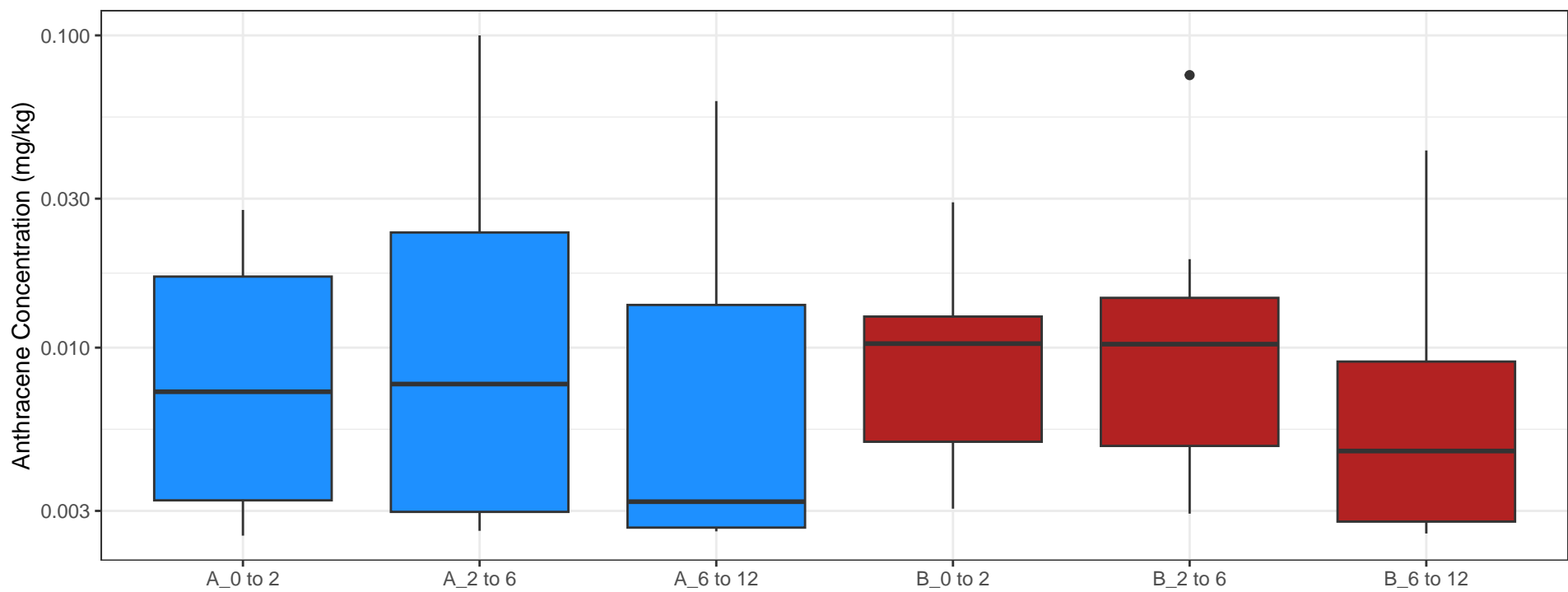
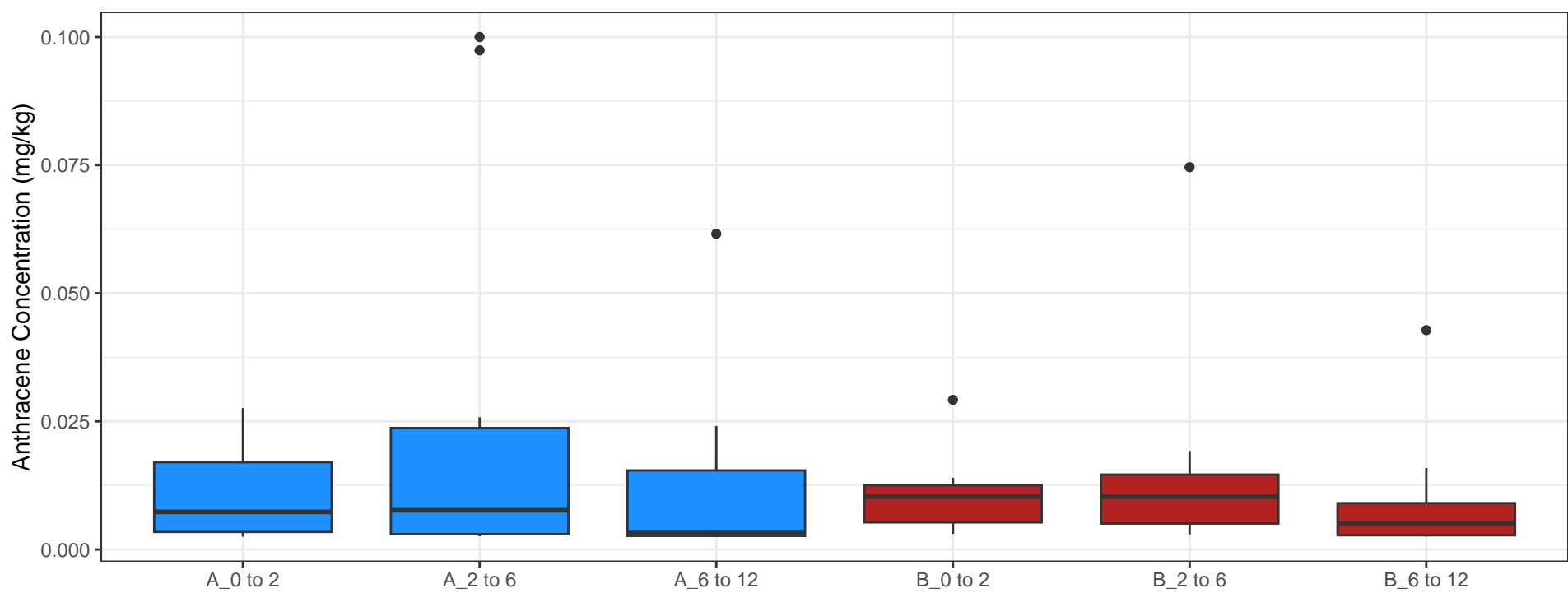
## Box Plots

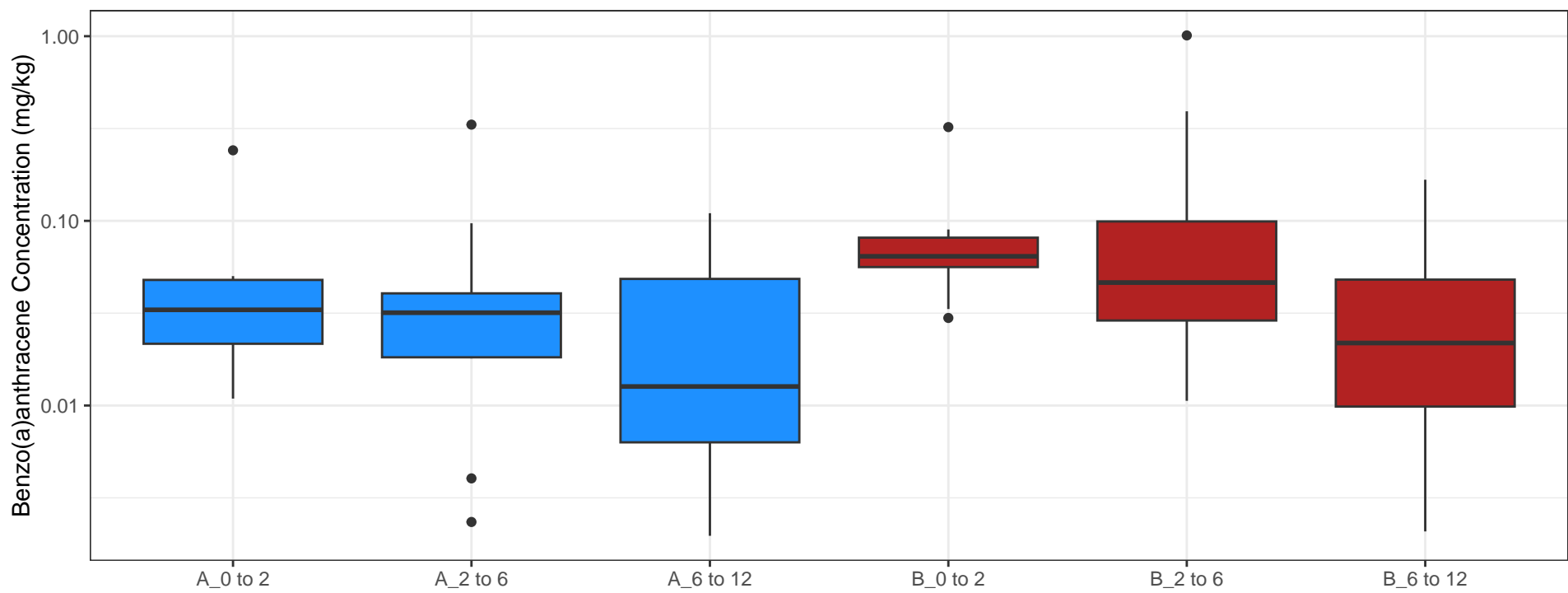
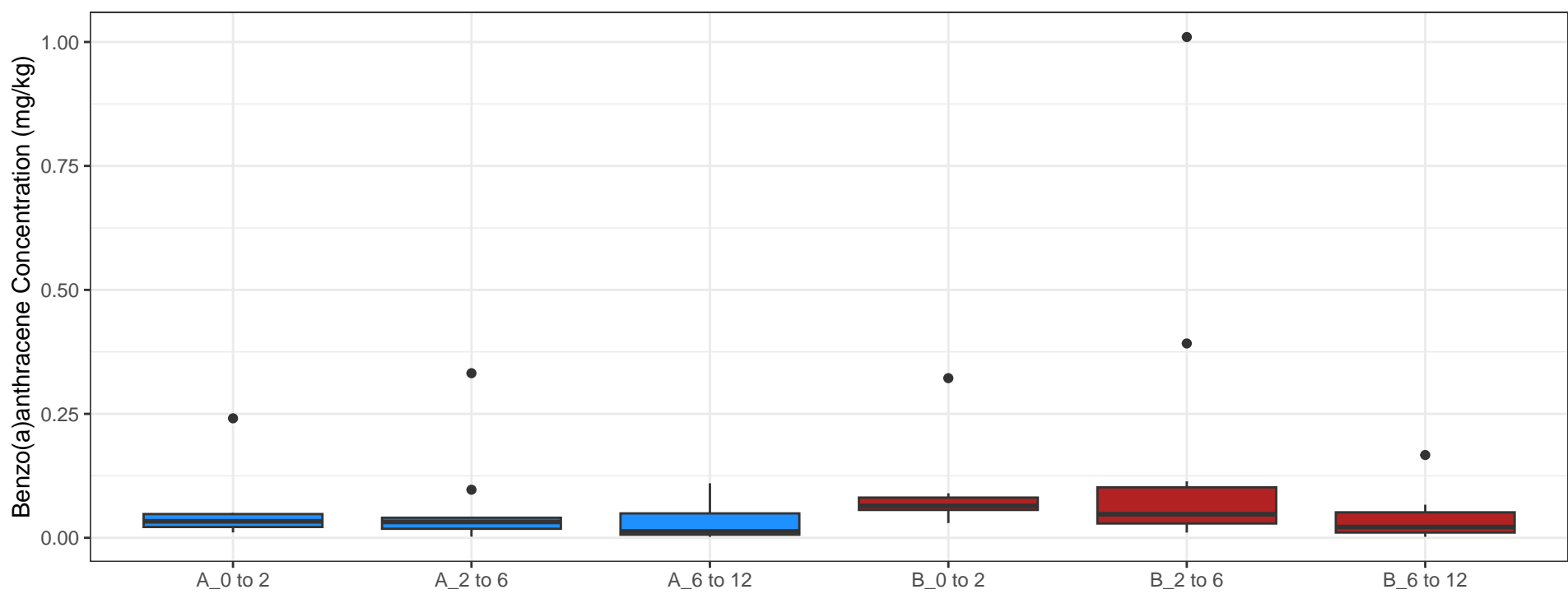
Linear Scale

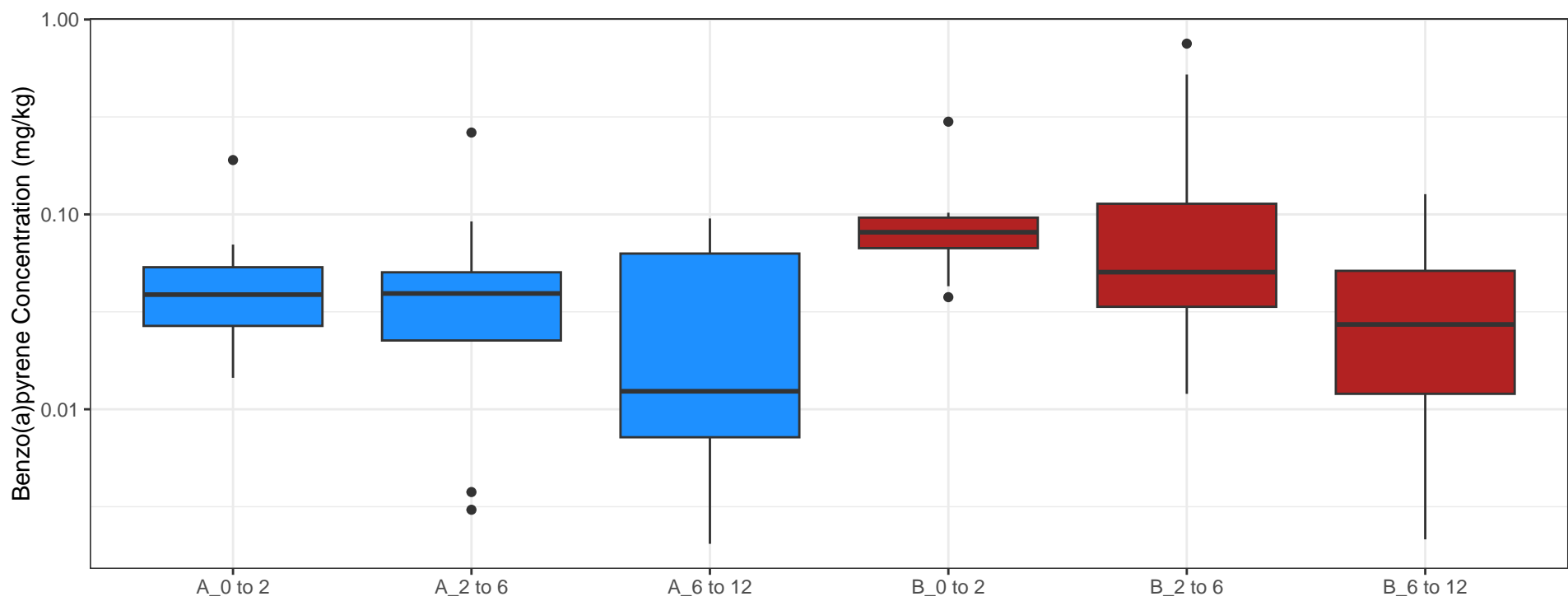
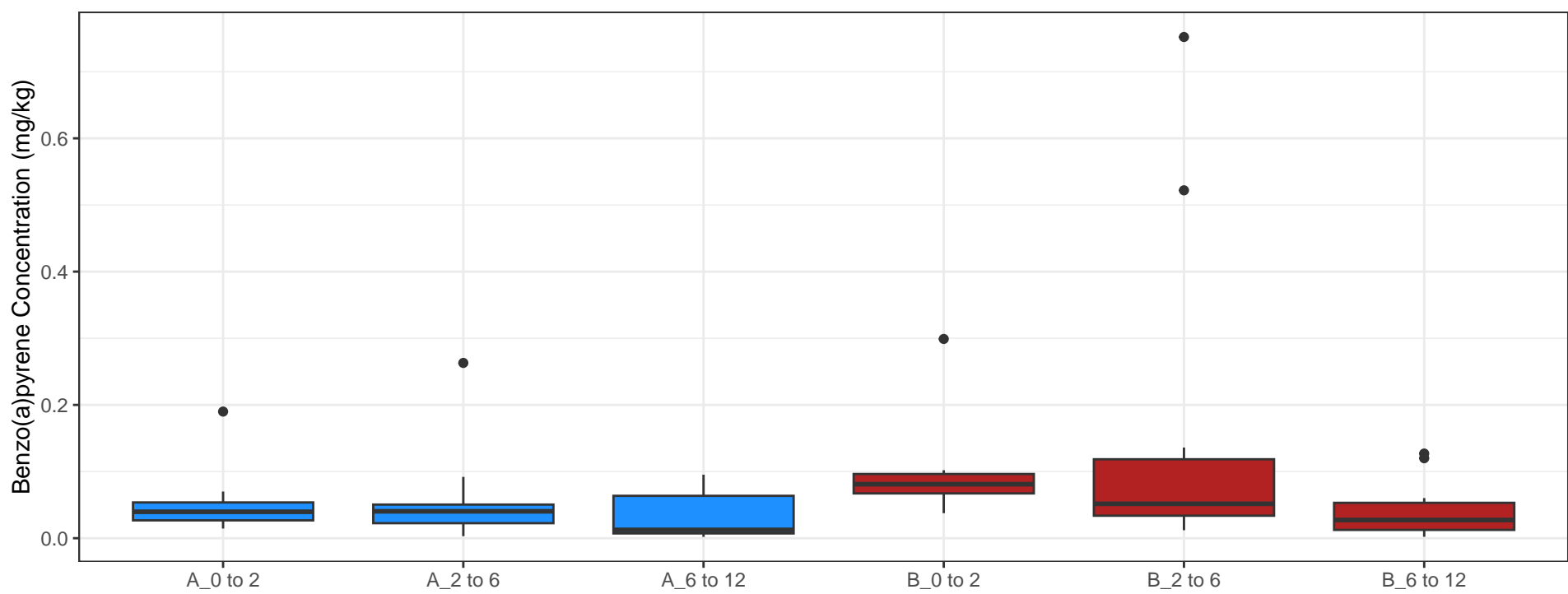


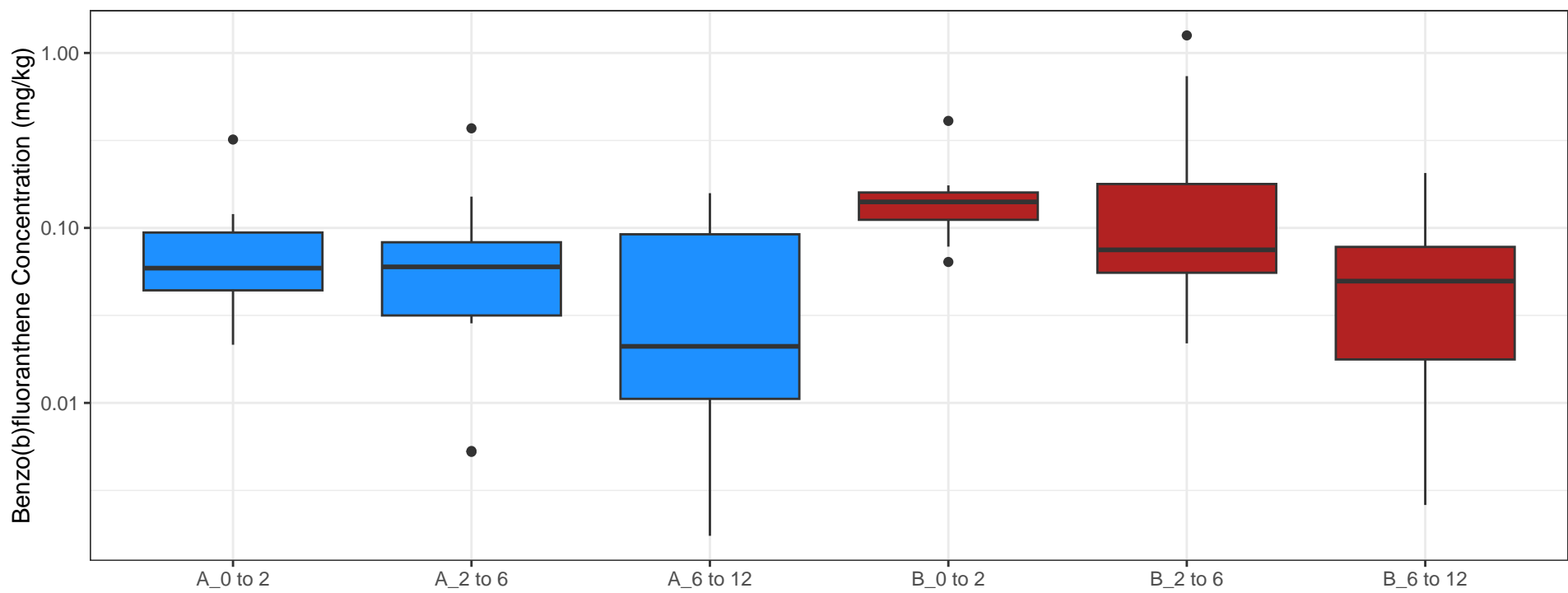
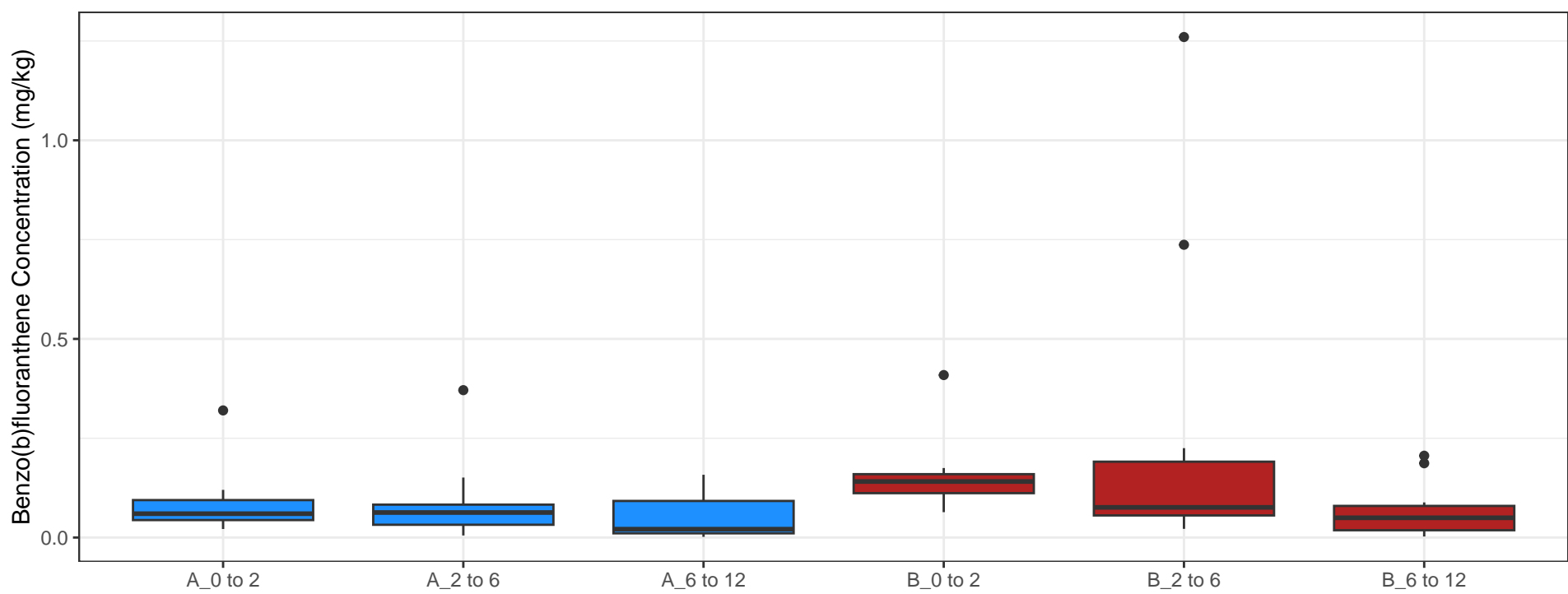
Log Scale



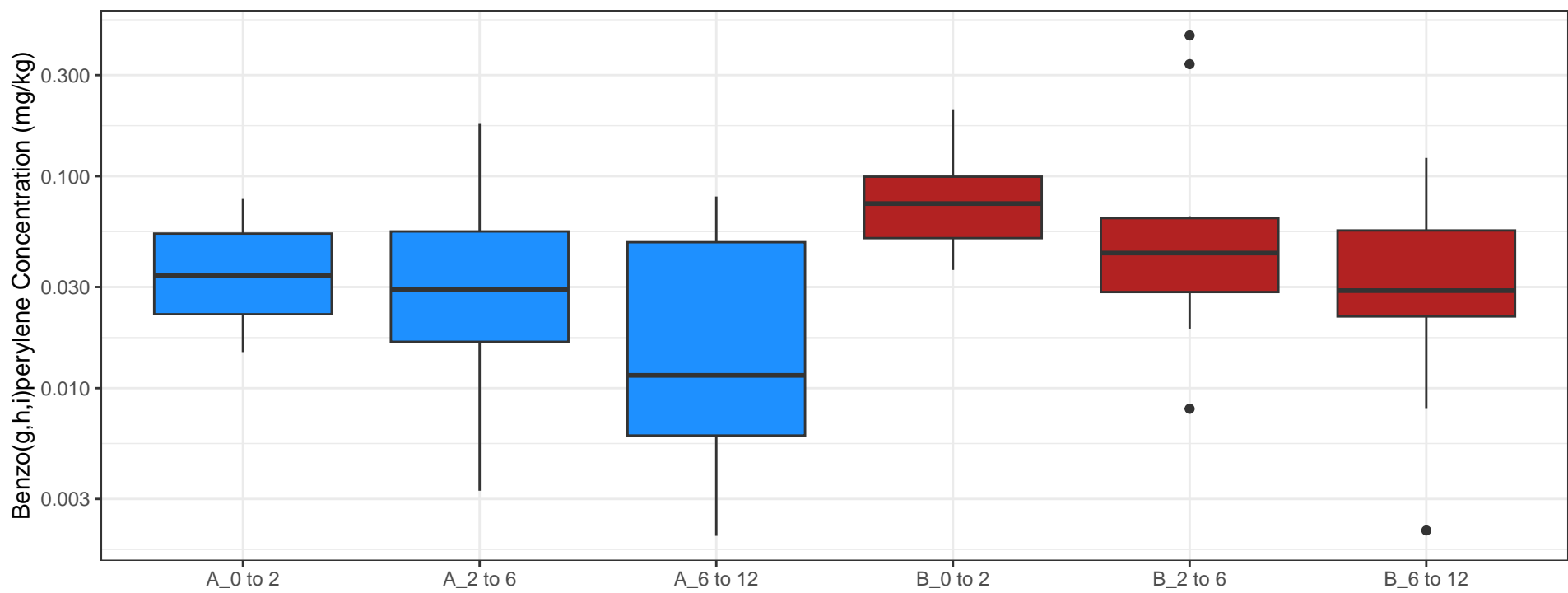
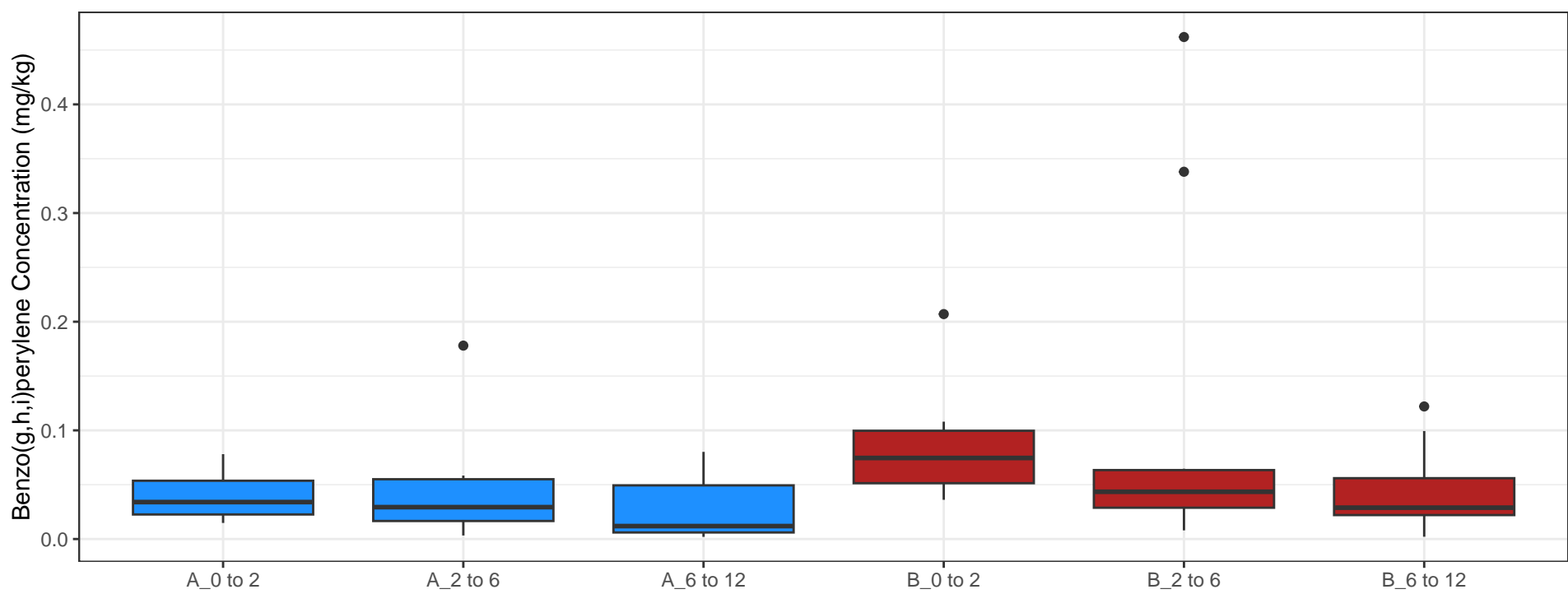


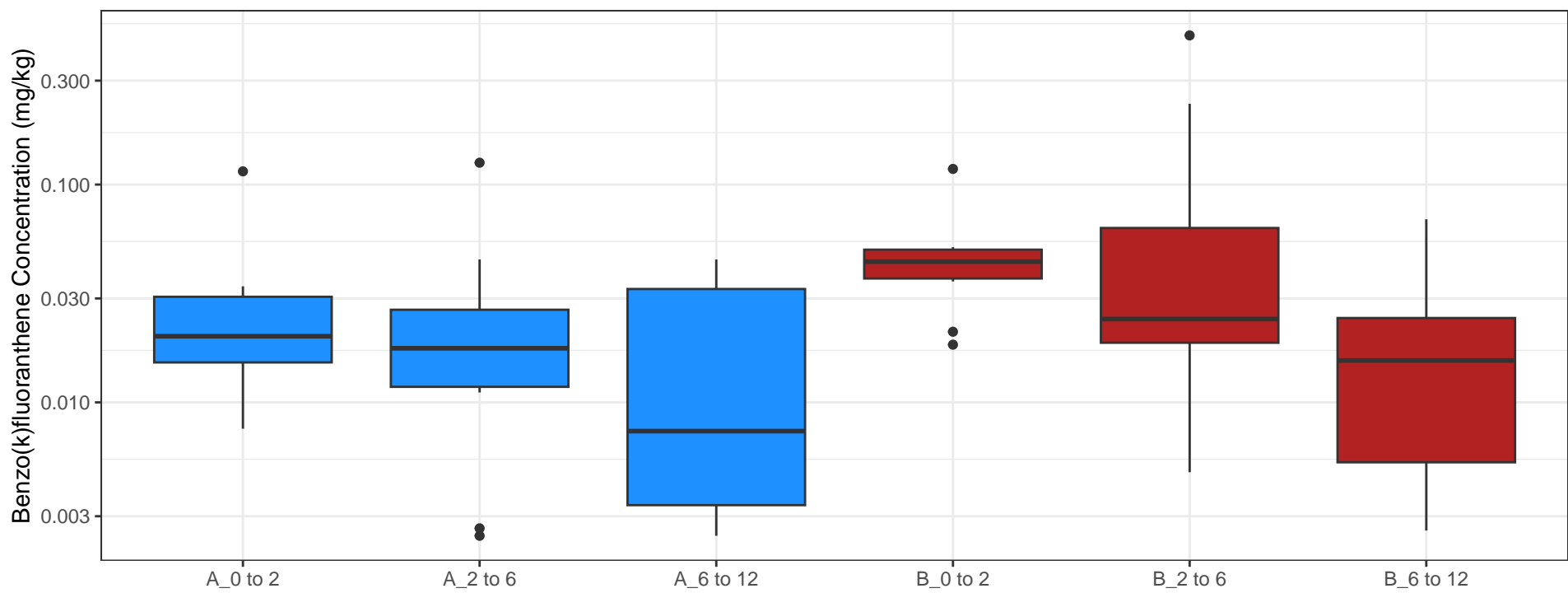
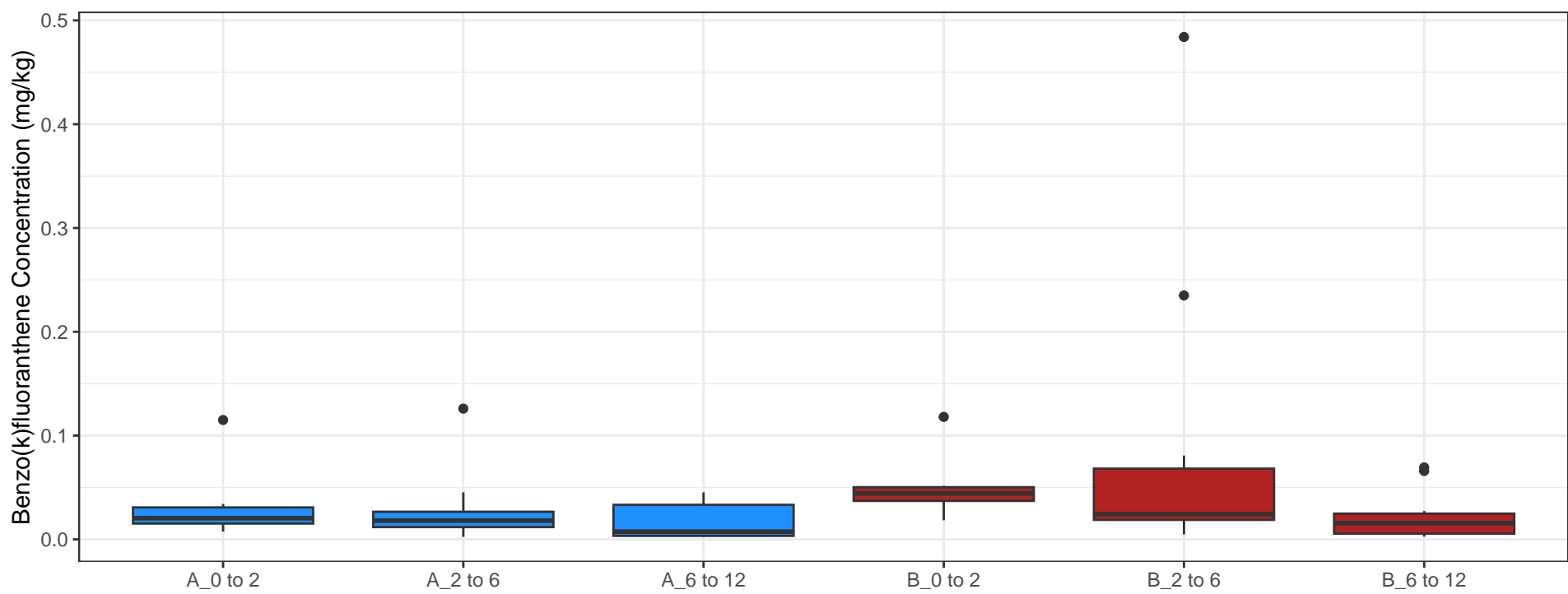


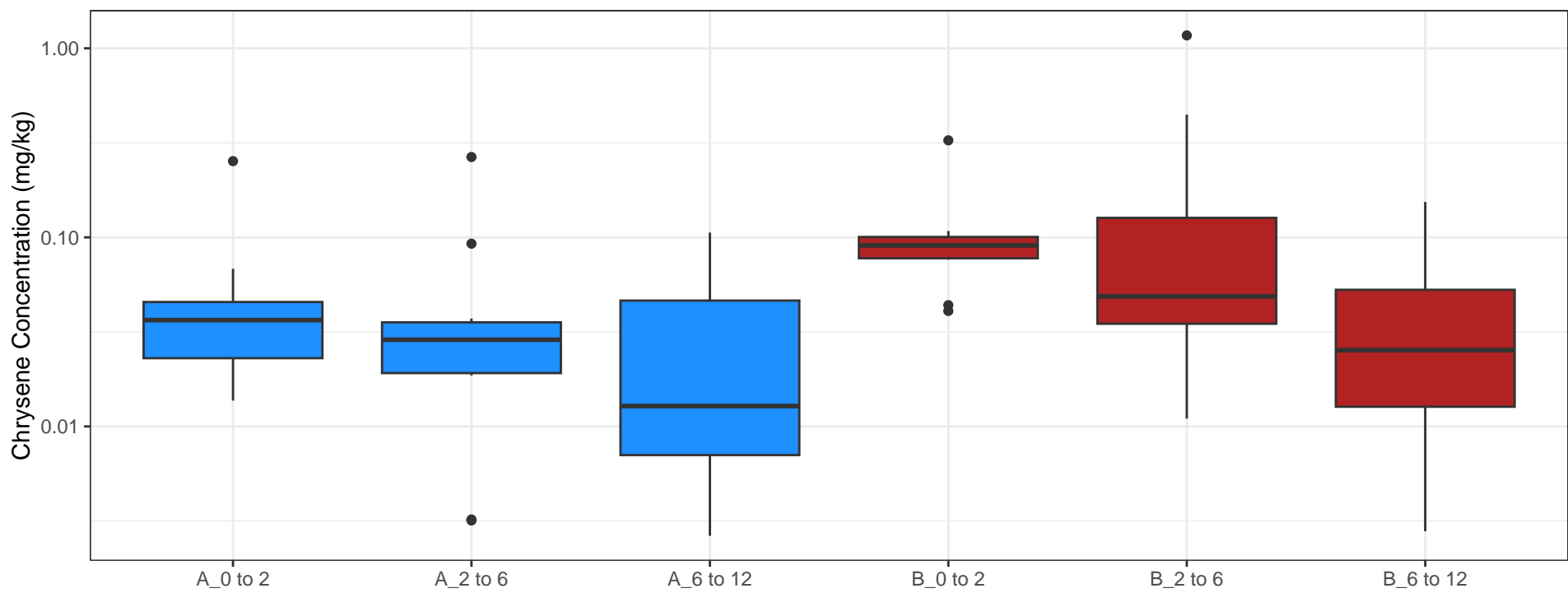
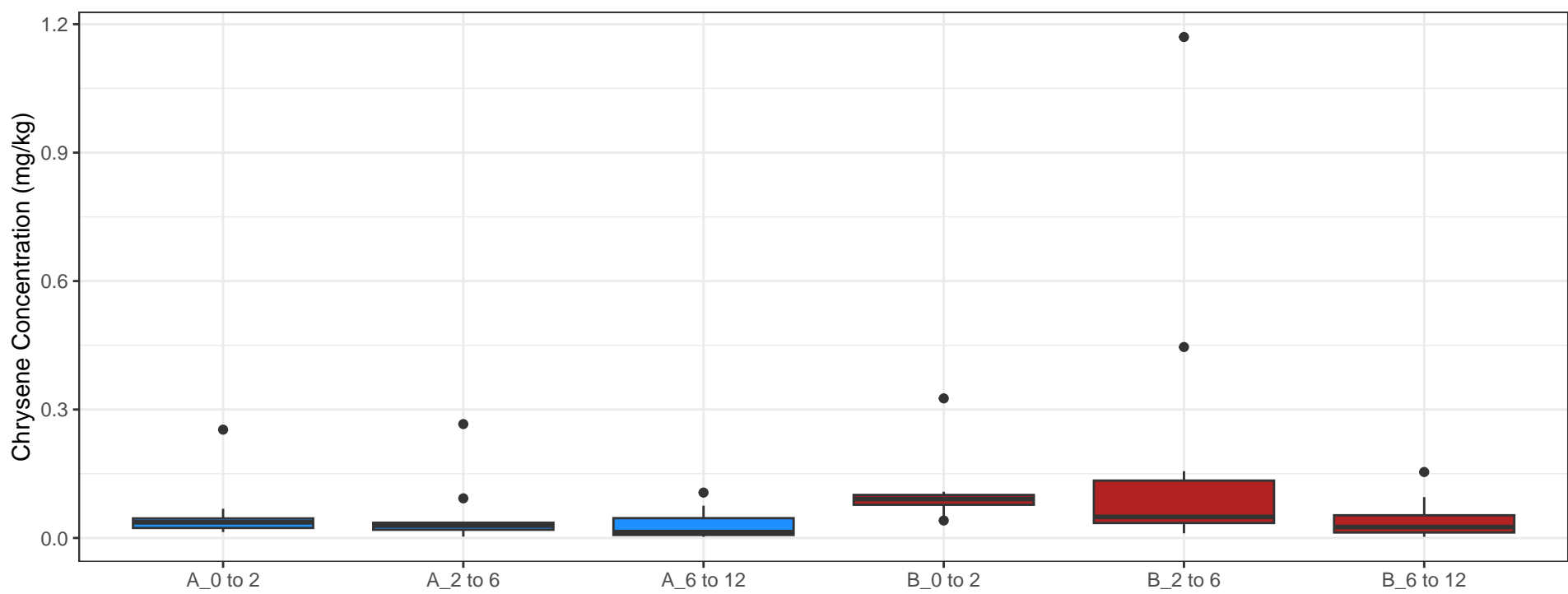


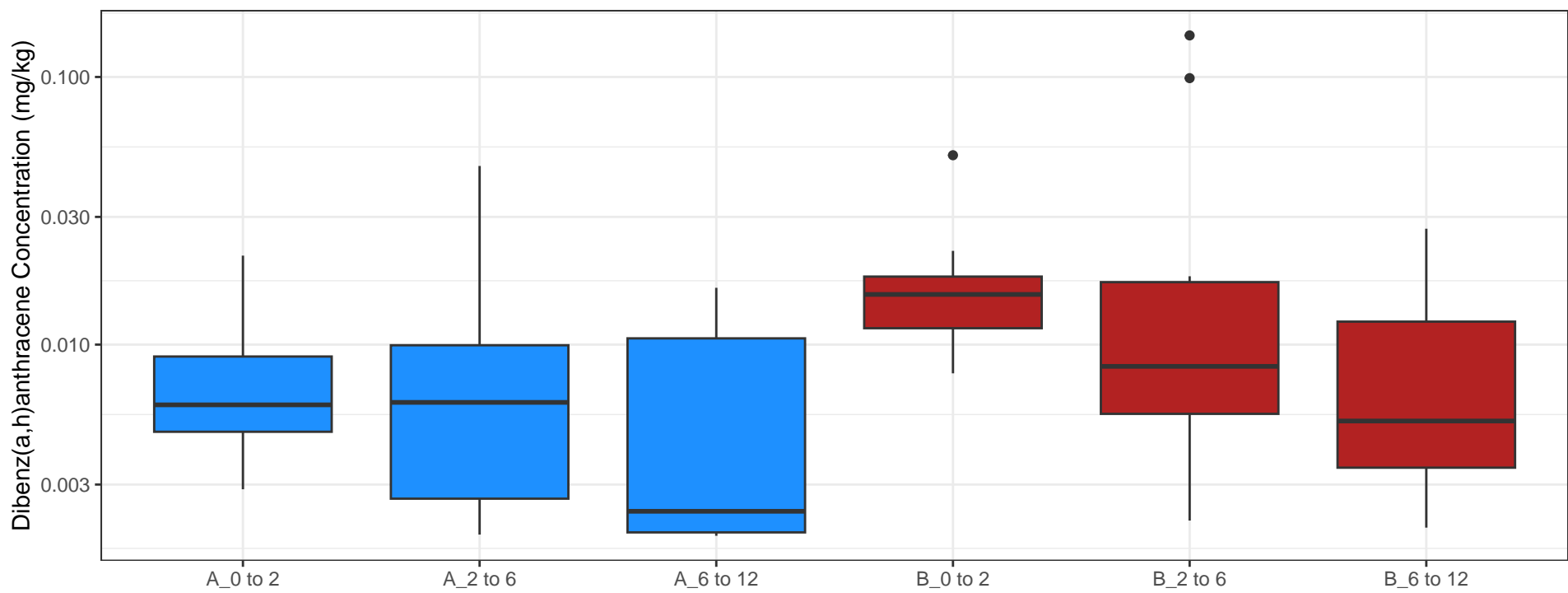
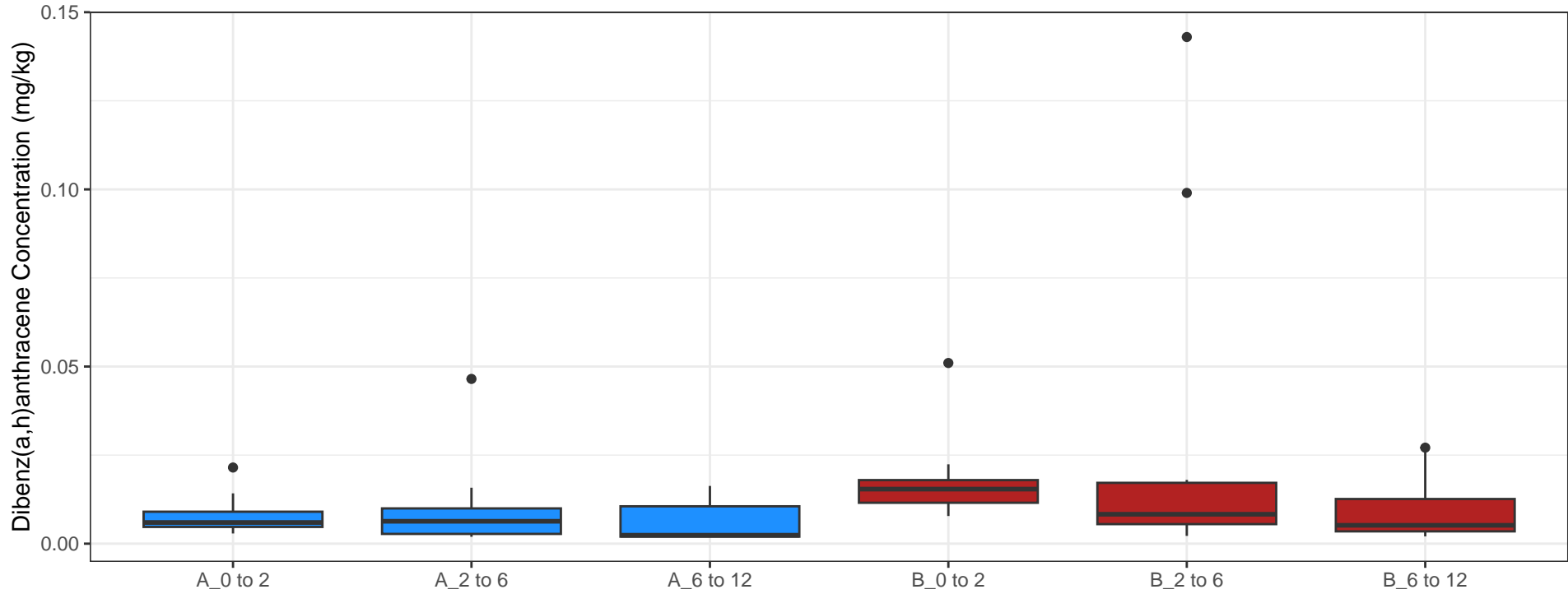


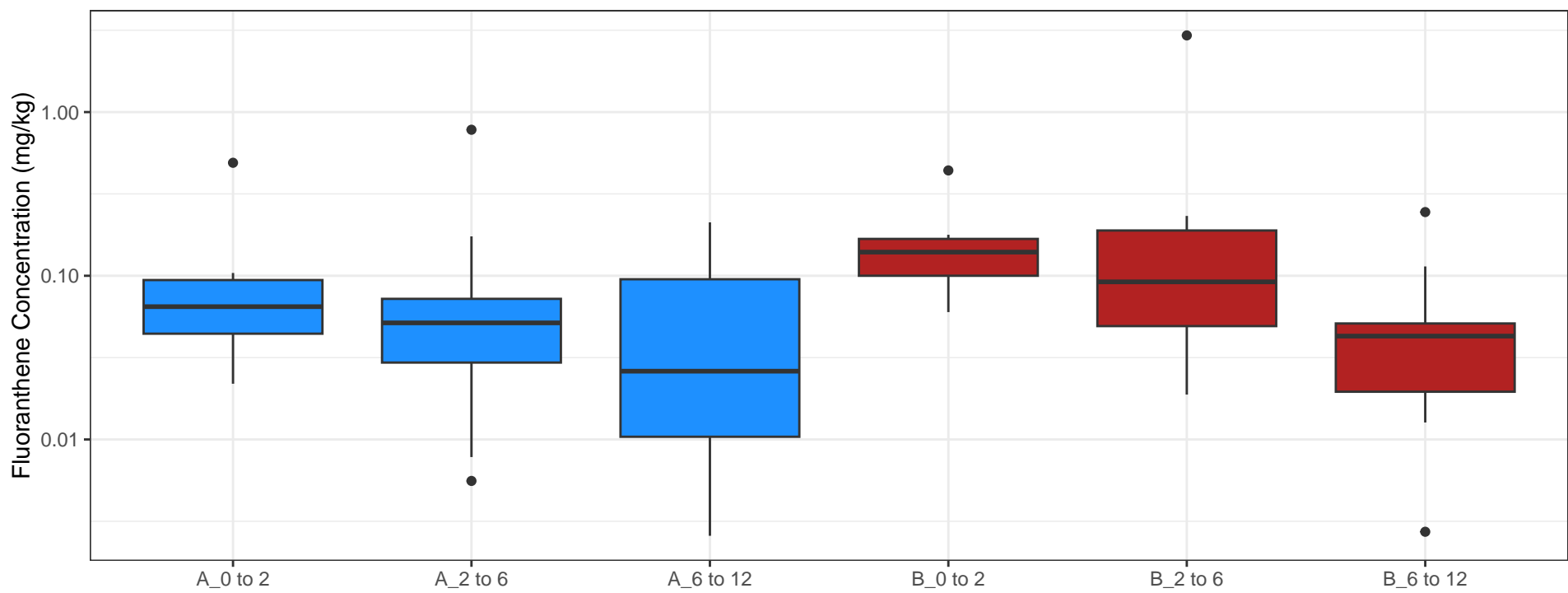
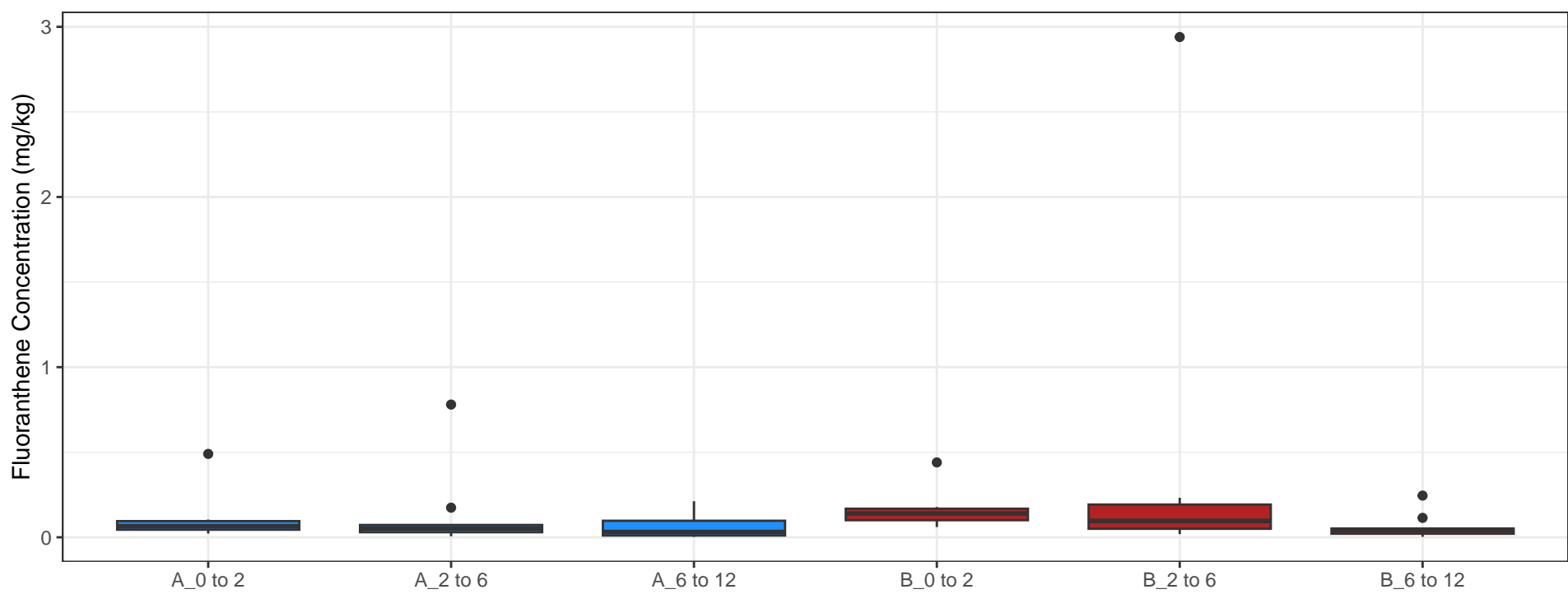


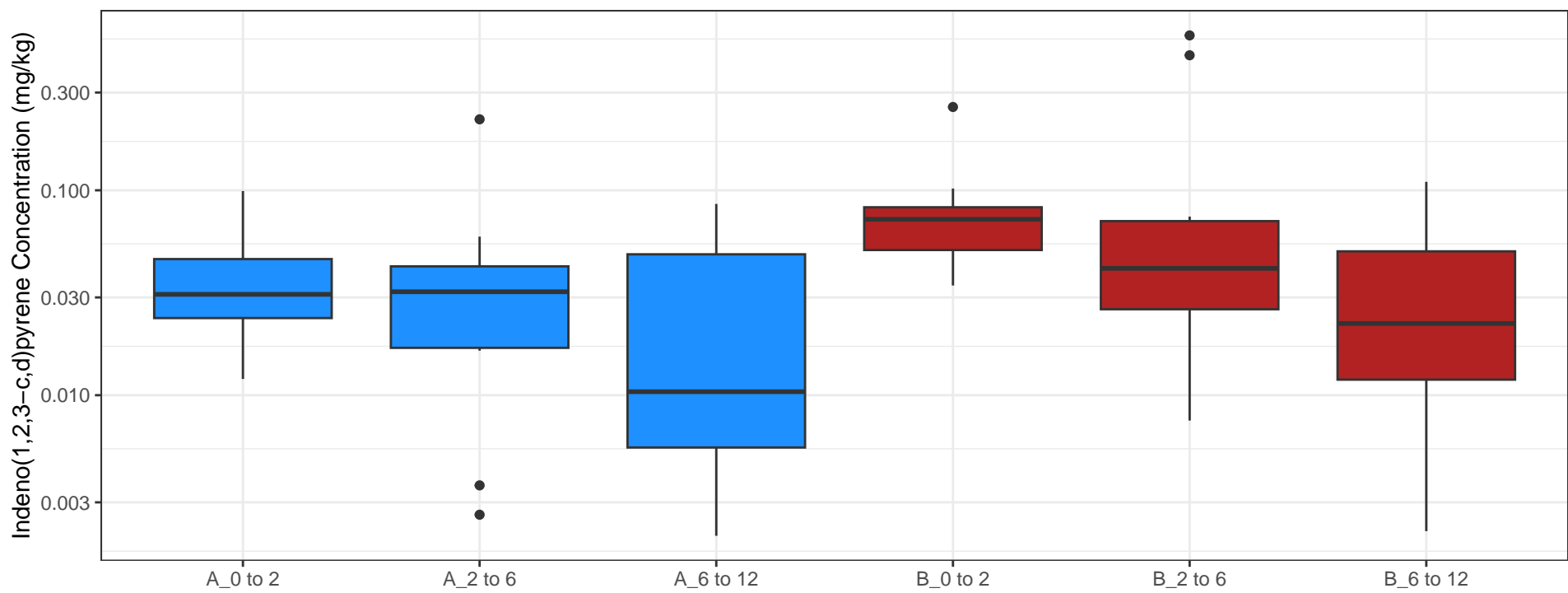
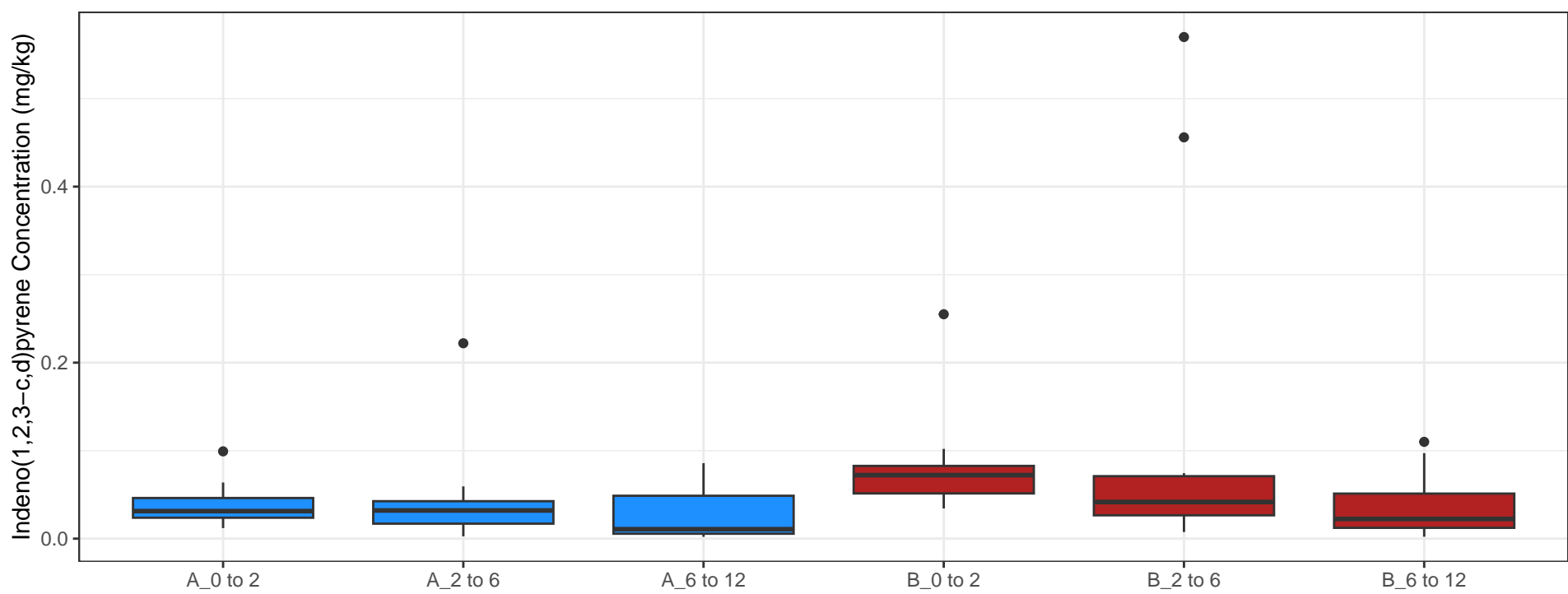


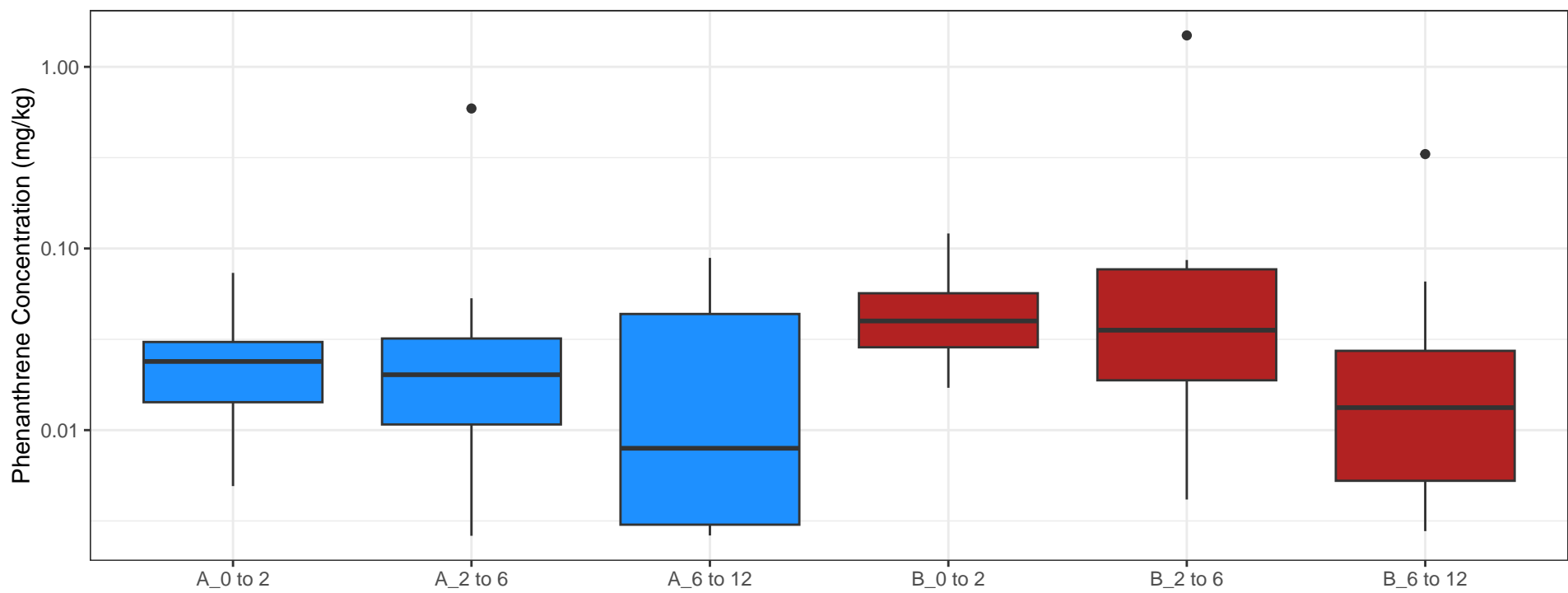
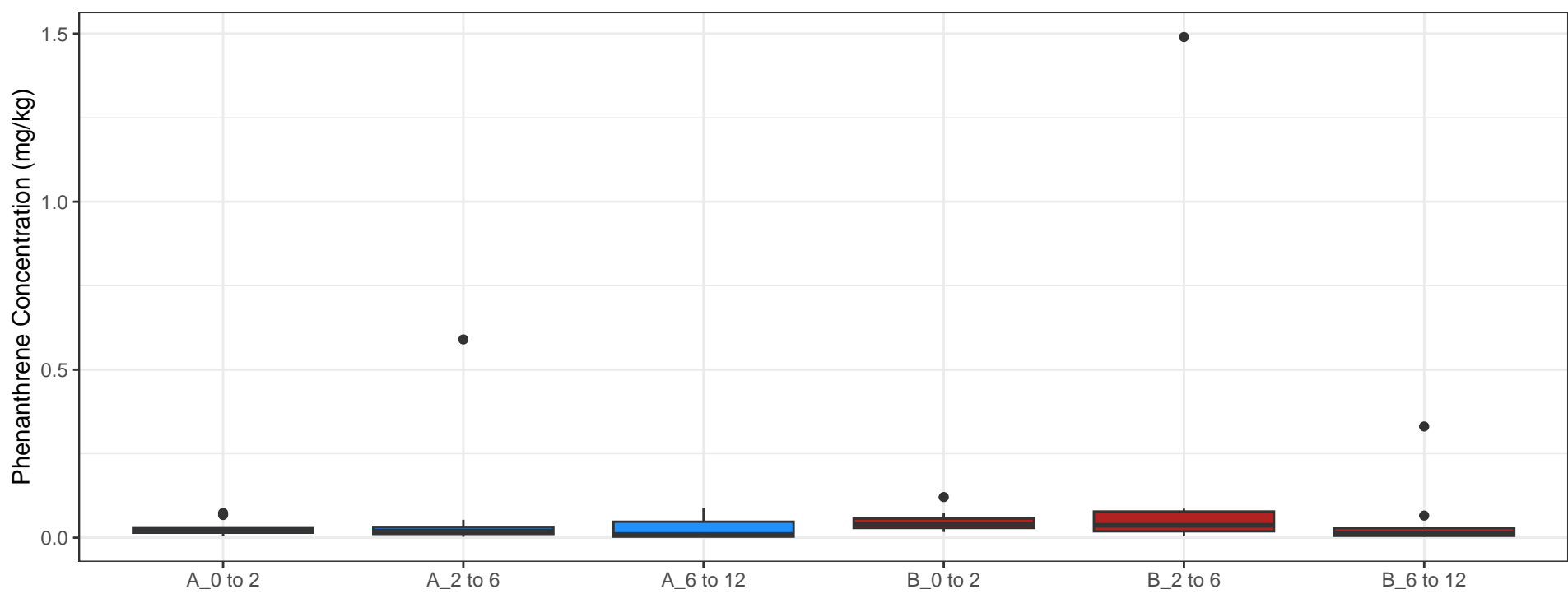




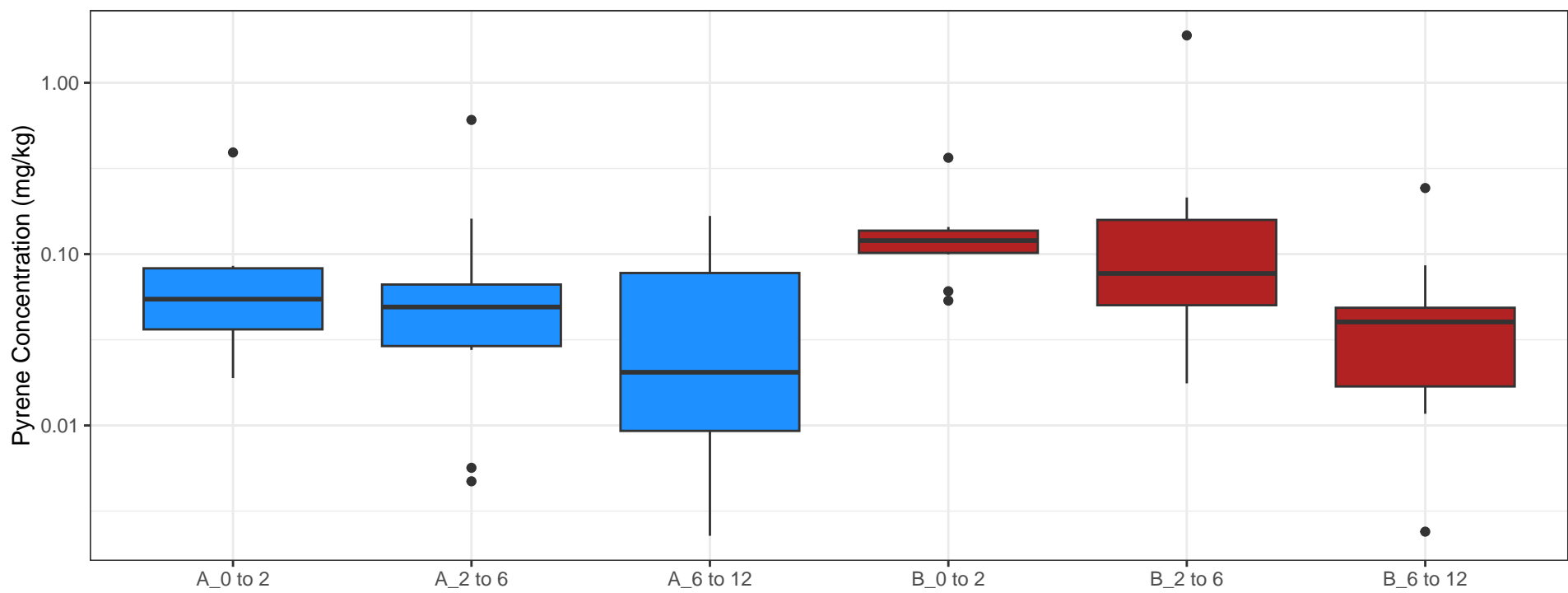
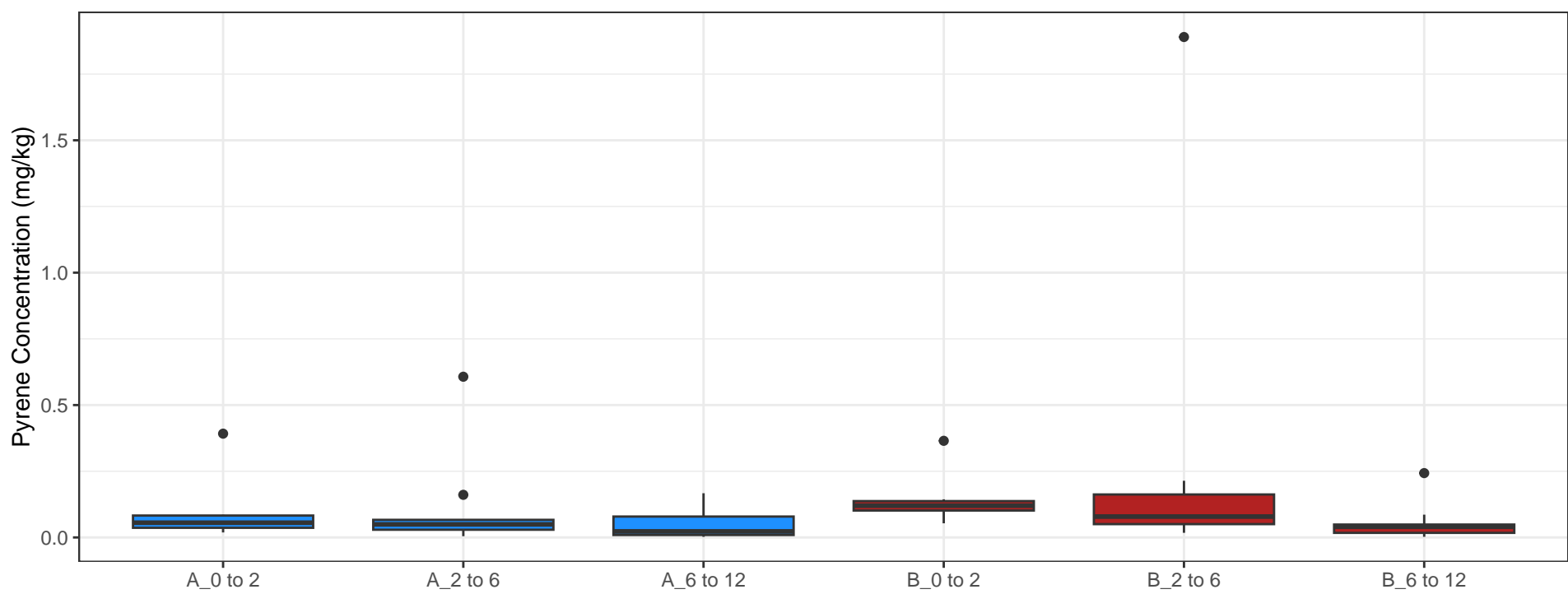




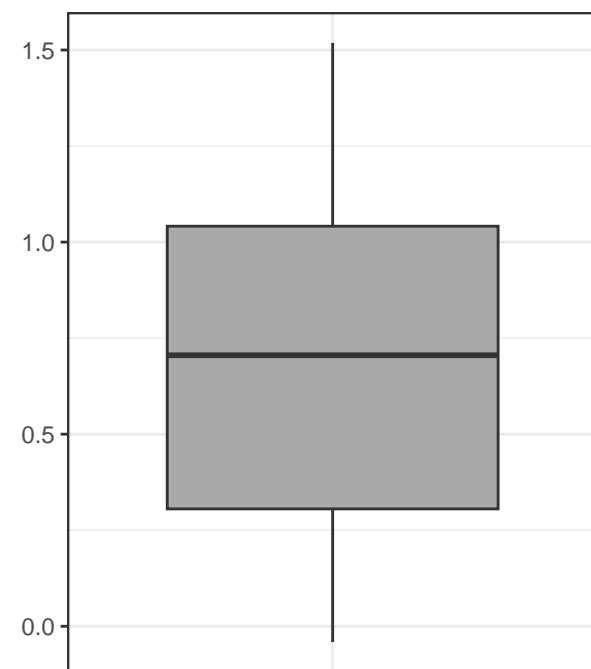
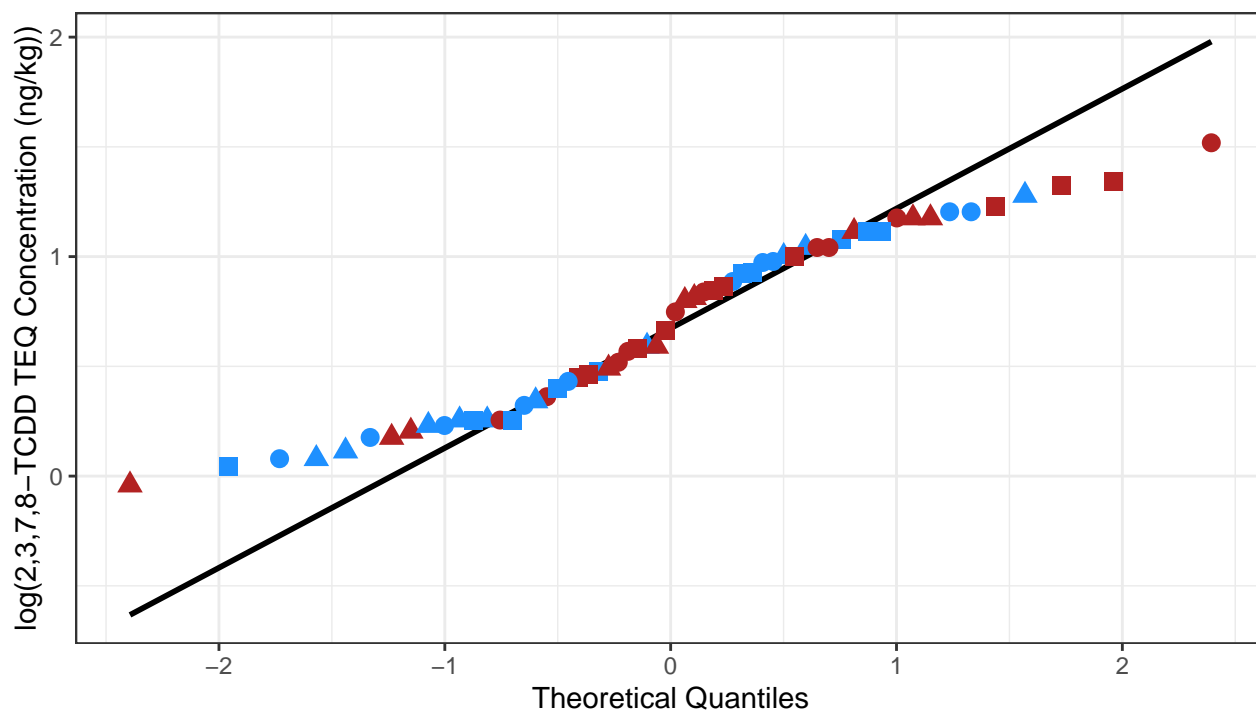
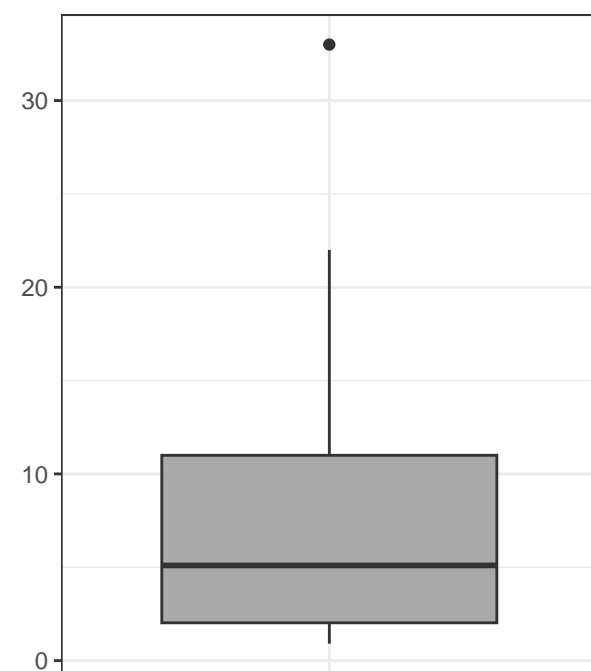
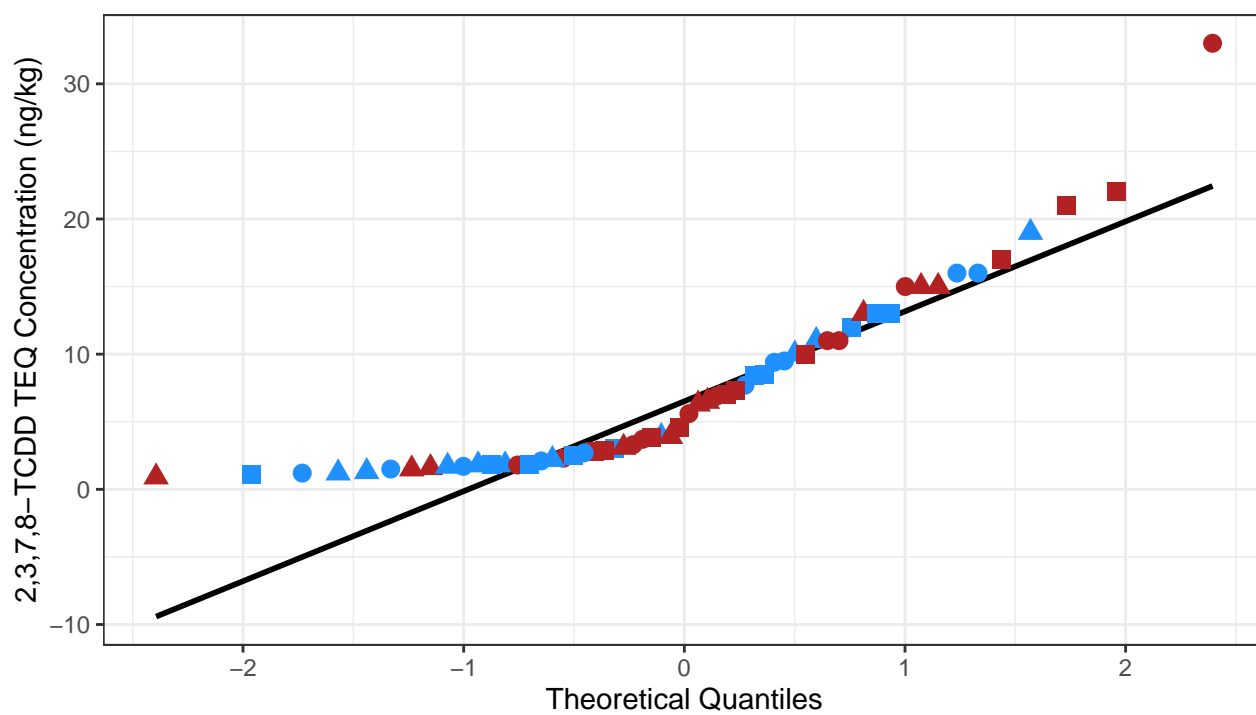




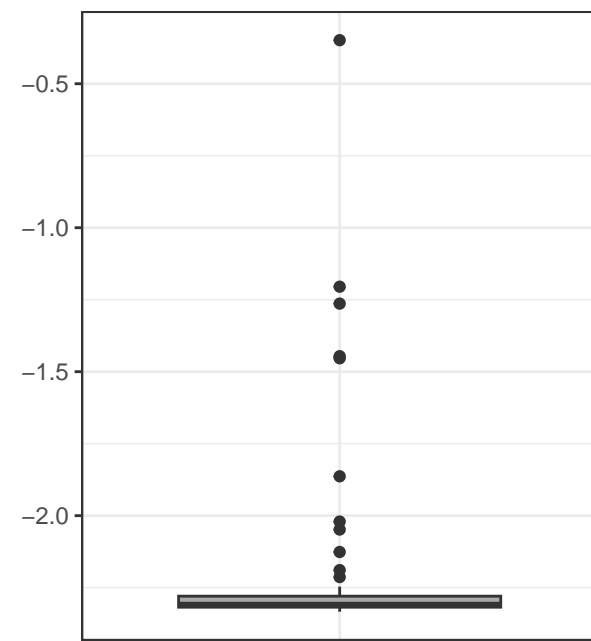
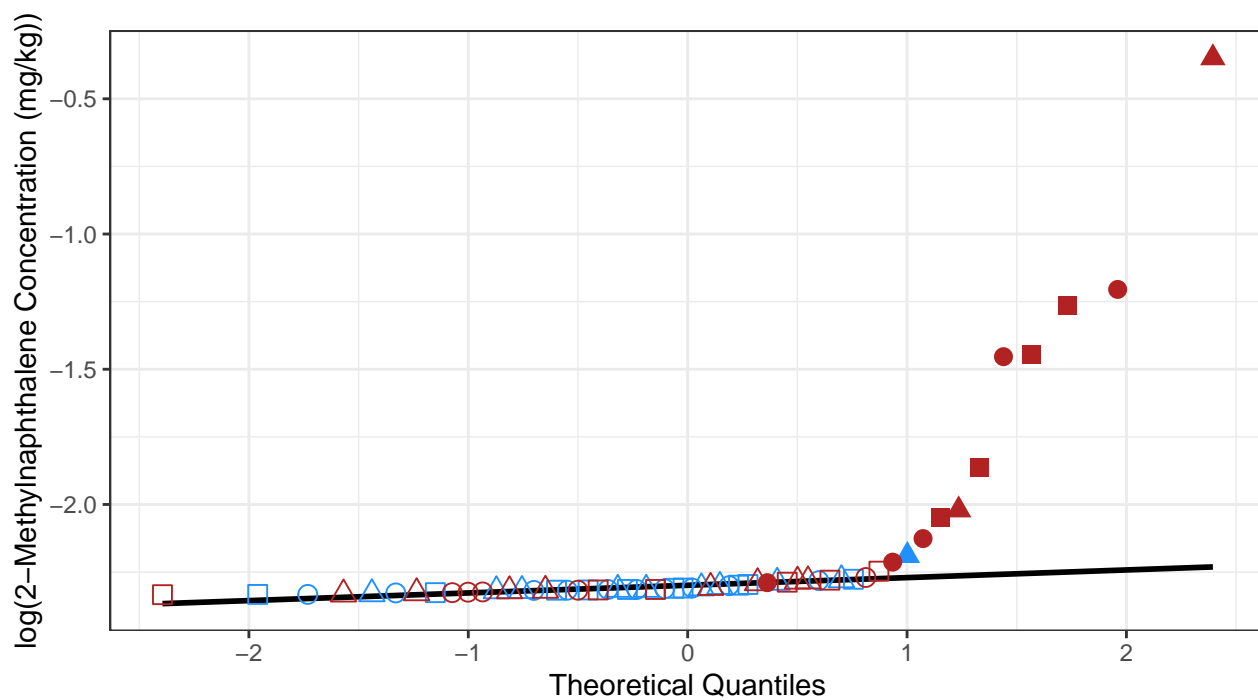
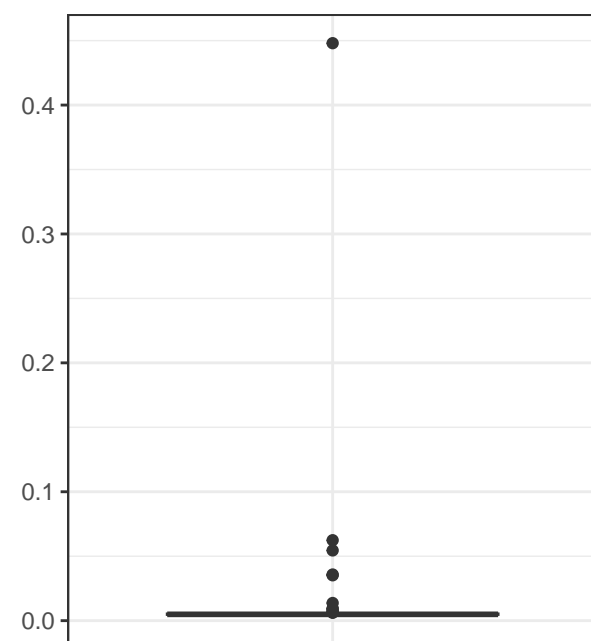
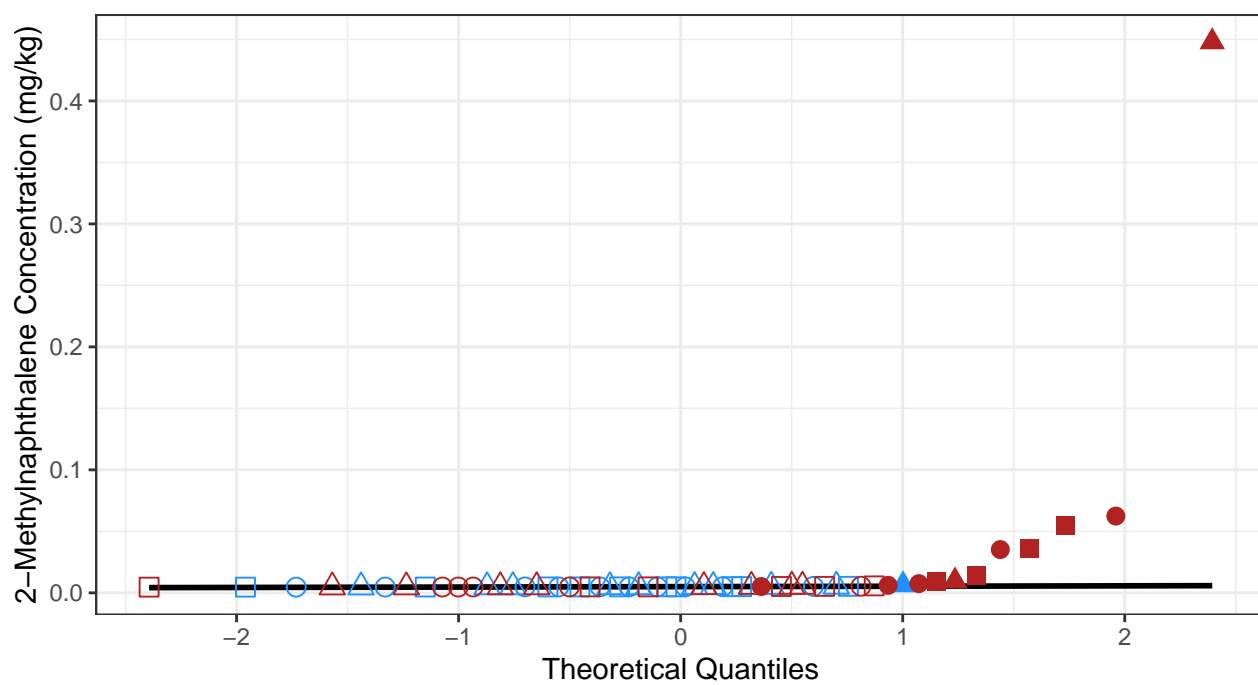




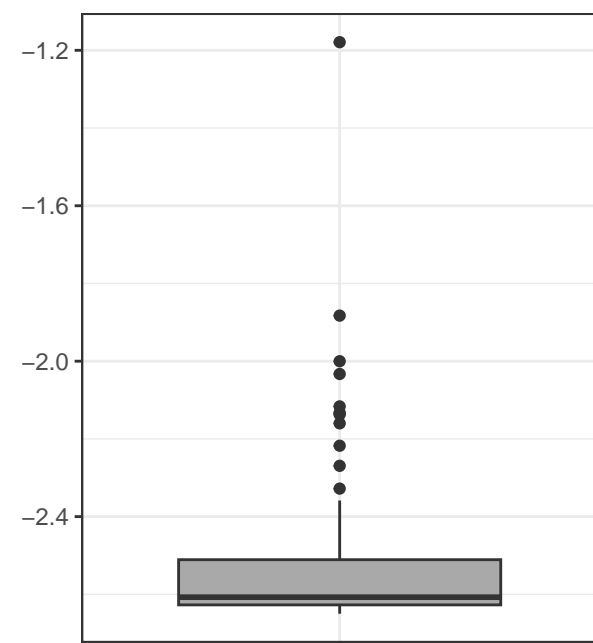
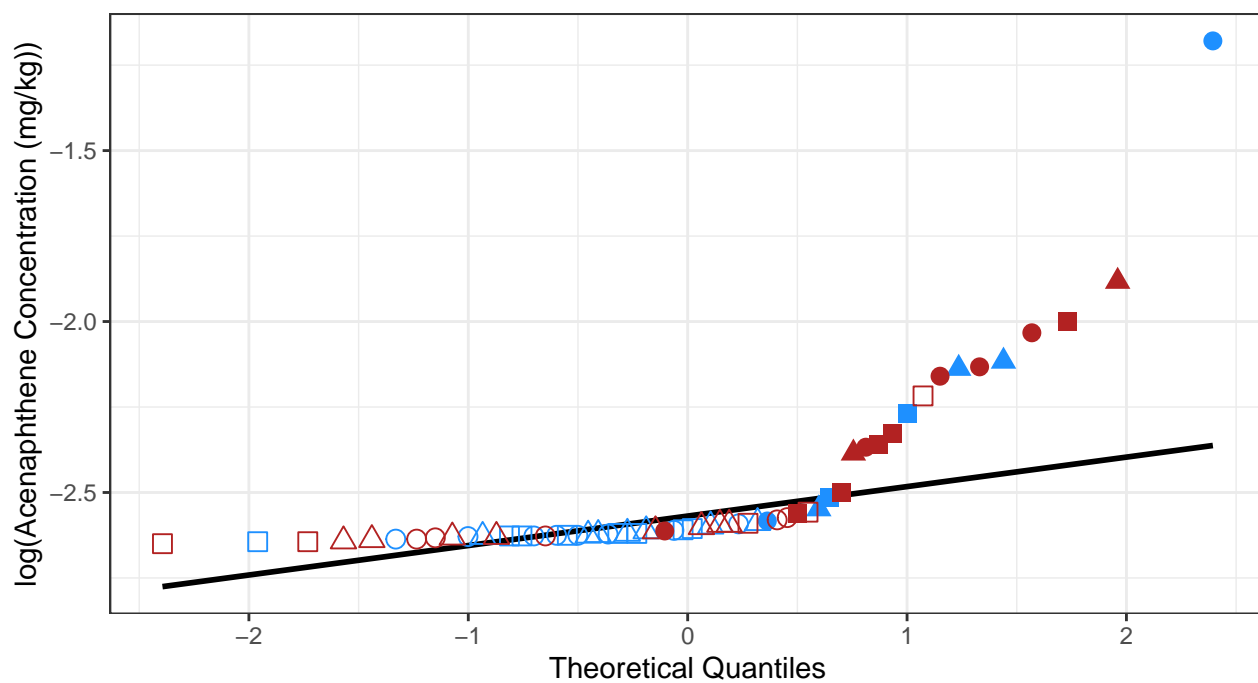
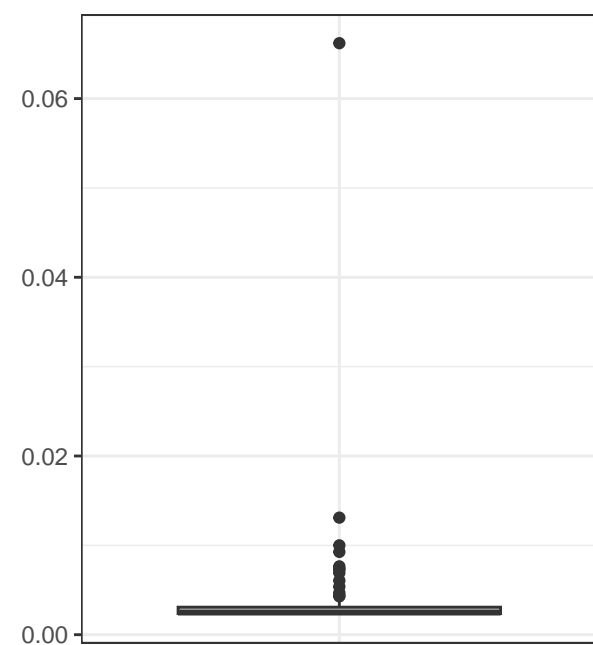
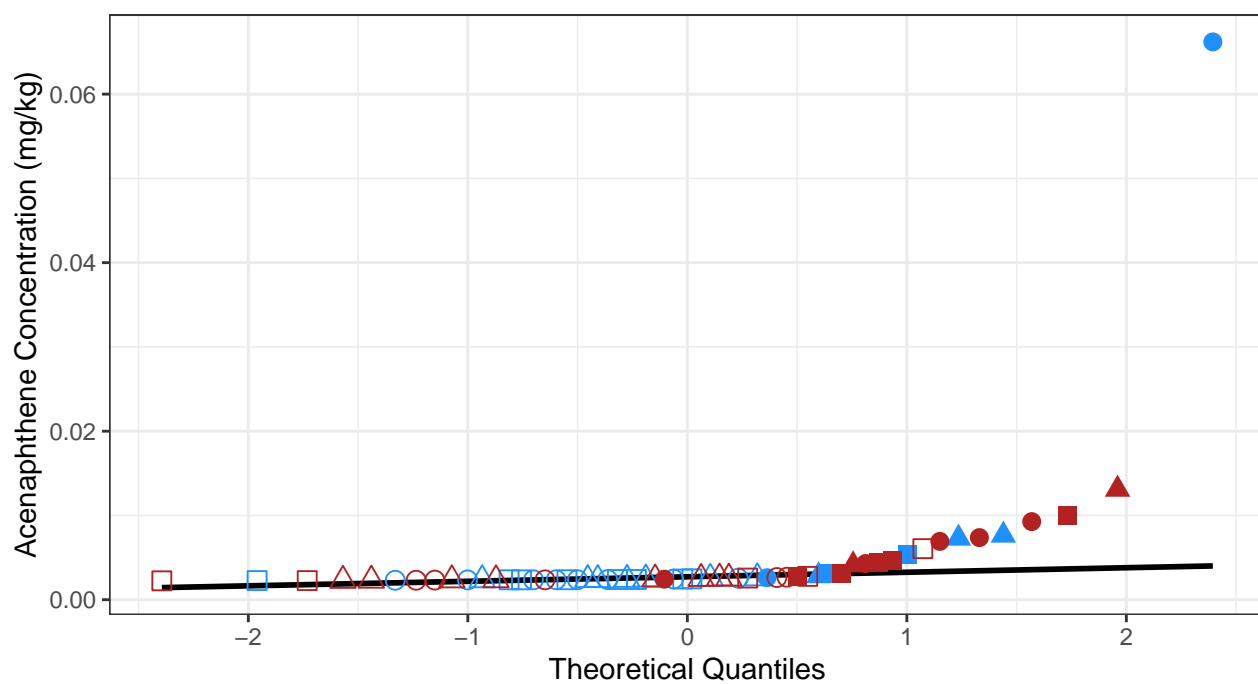
## QQ Plots



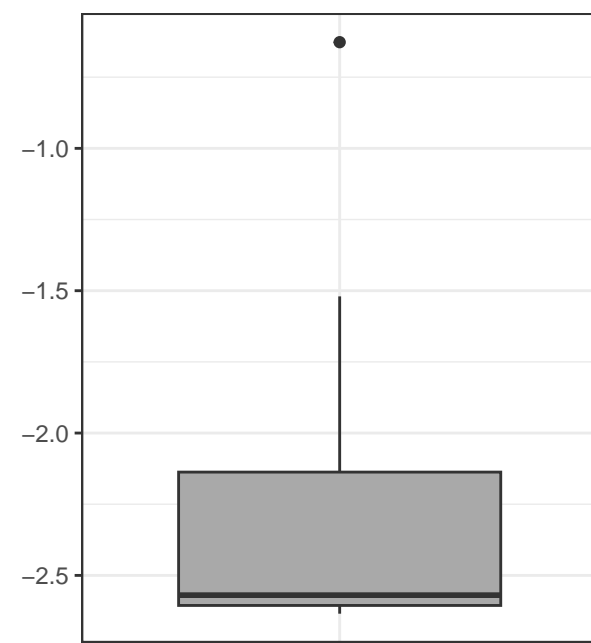
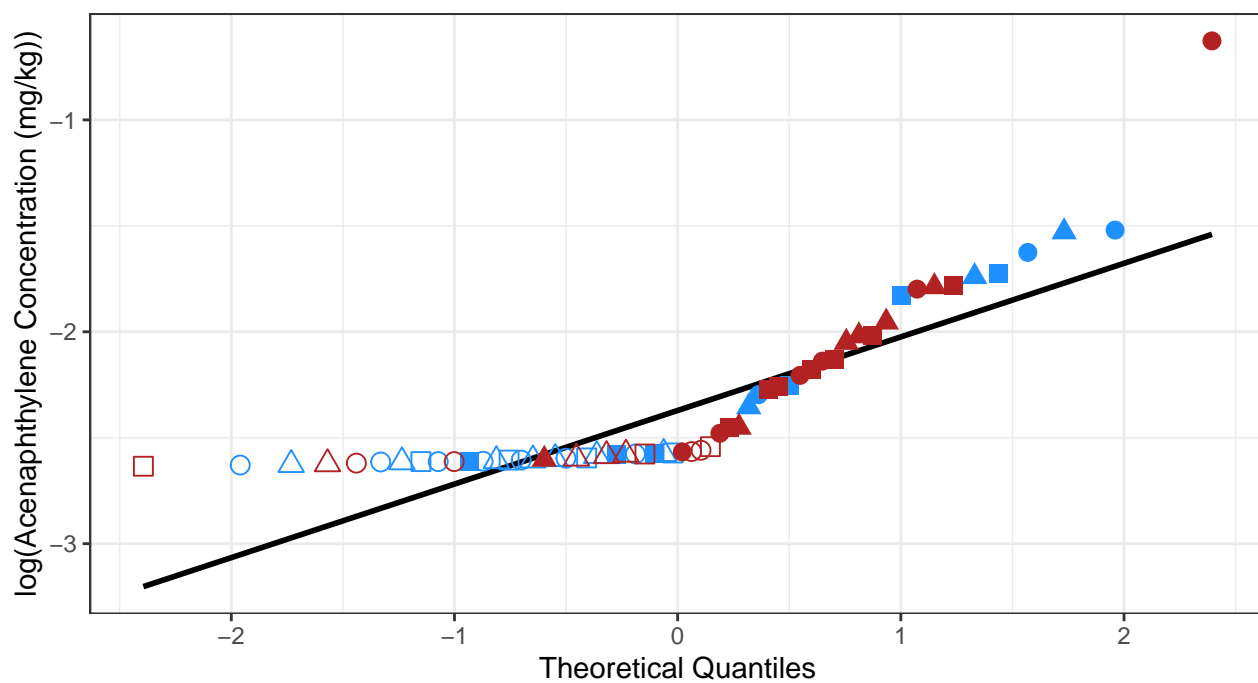
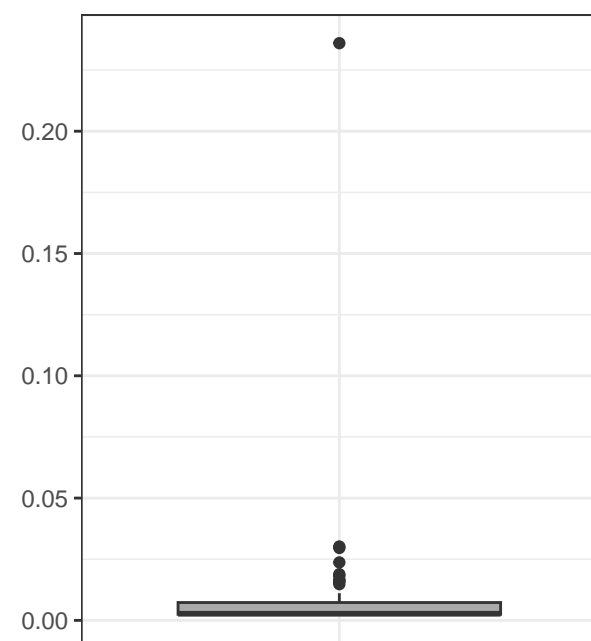
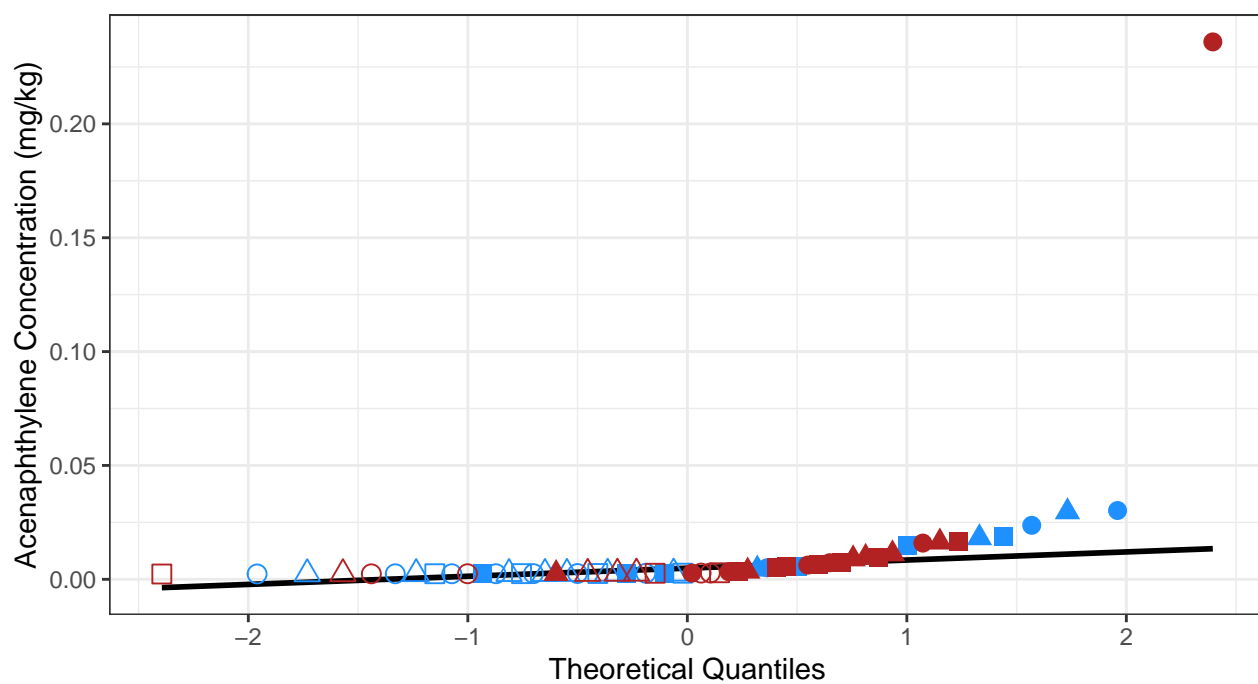
■ Detect 0-2 in    ● Detect 2-6 in    ▲ Detect 6-12 in    BRA    ● A    ● B



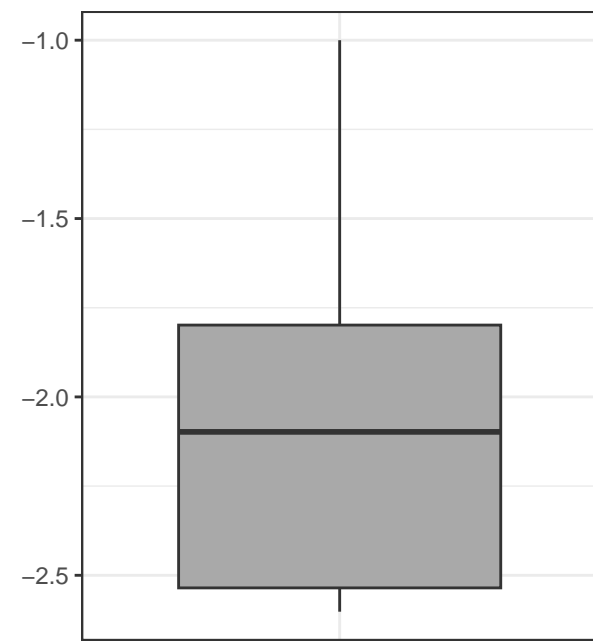
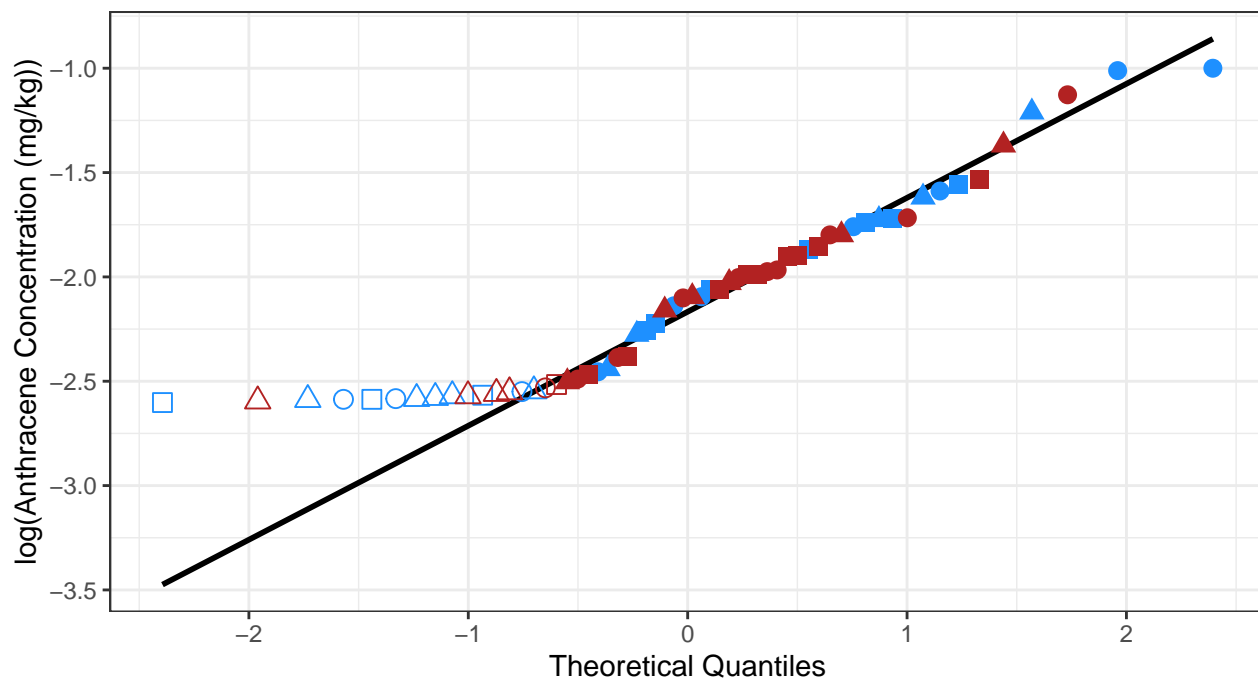
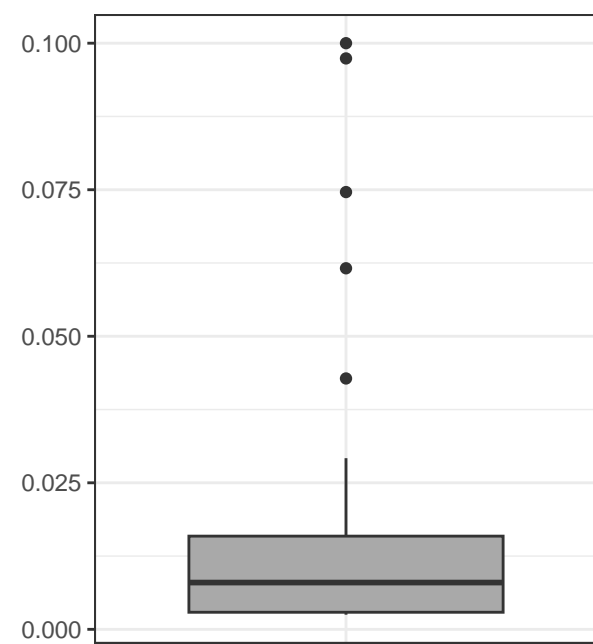
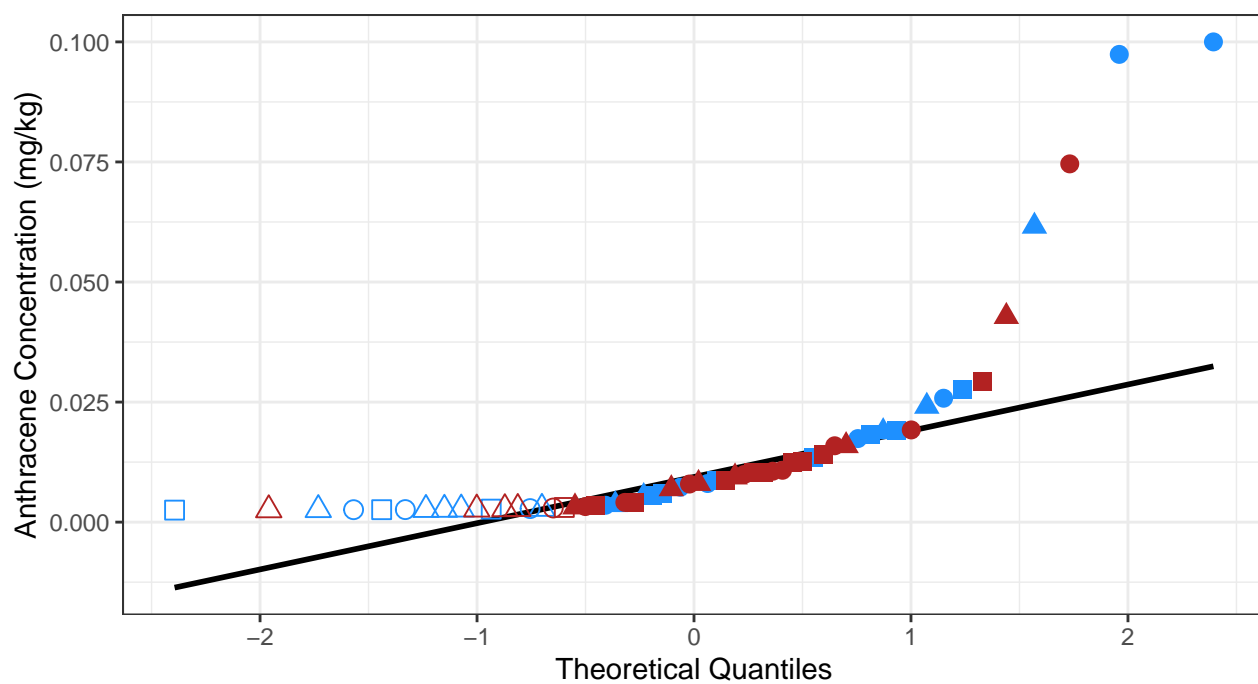
□ ND 0-2 in    △ ND 6-12 in    ● Detect 2-6 in    BRA    ● A    ● B  
 ○ ND 2-6 in    ■ Detect 0-2 in    ▲ Detect 6-12 in



□ ND 0–2 in    △ ND 6–12 in    ● Detect 2–6 in    BRA    ● A    ● B  
 ○ ND 2–6 in    ■ Detect 0–2 in    ▲ Detect 6–12 in

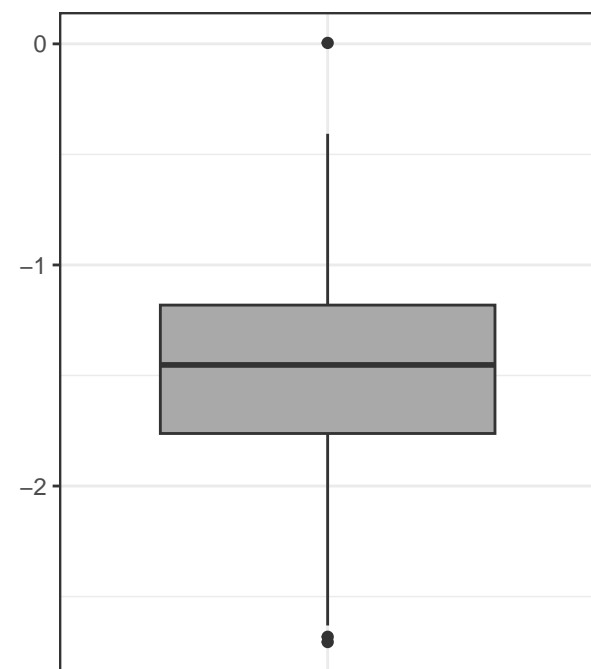
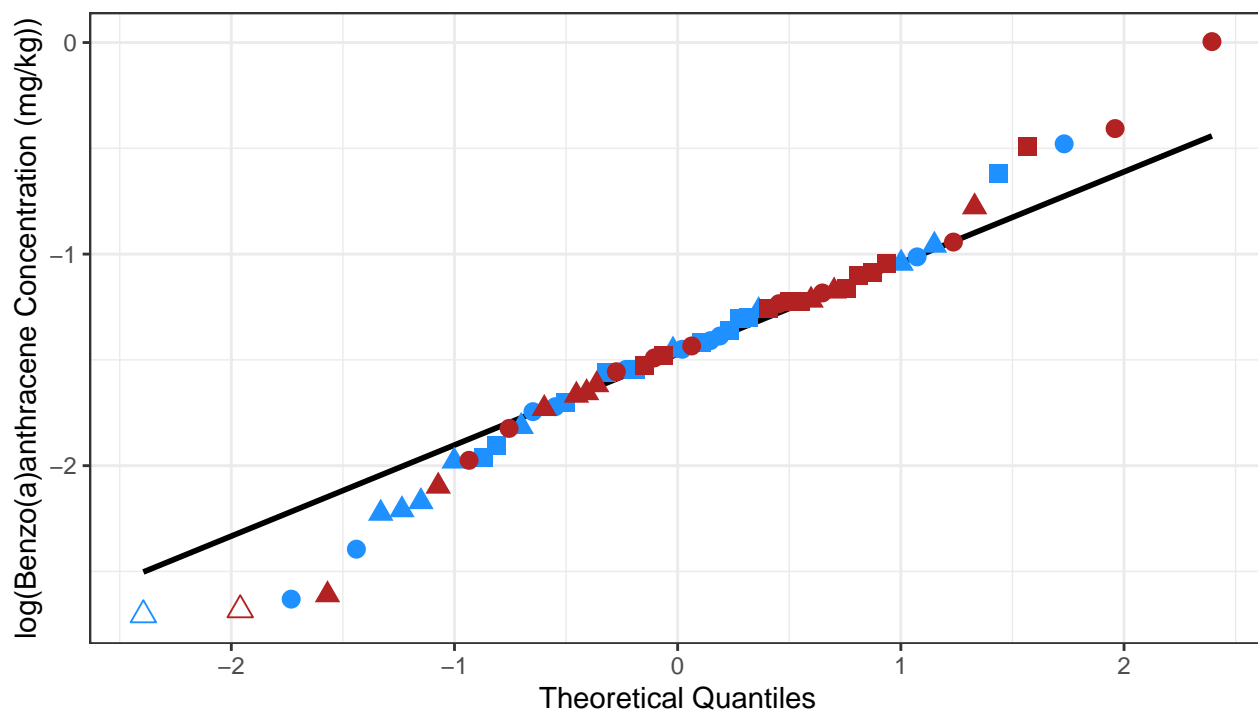
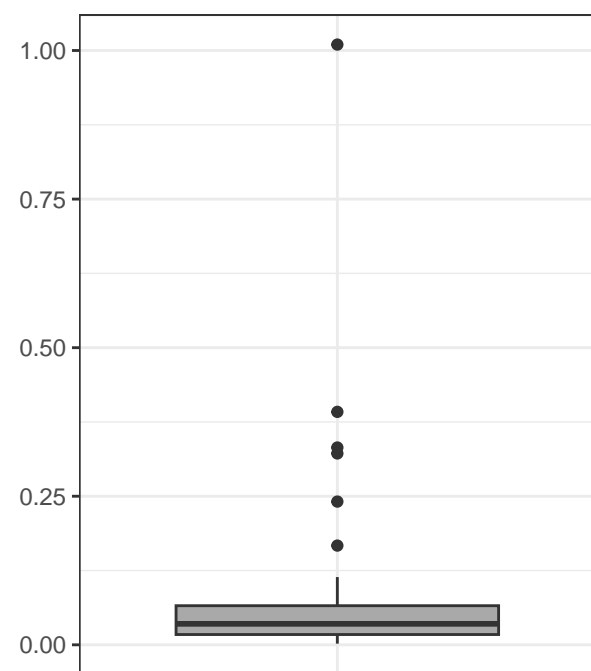
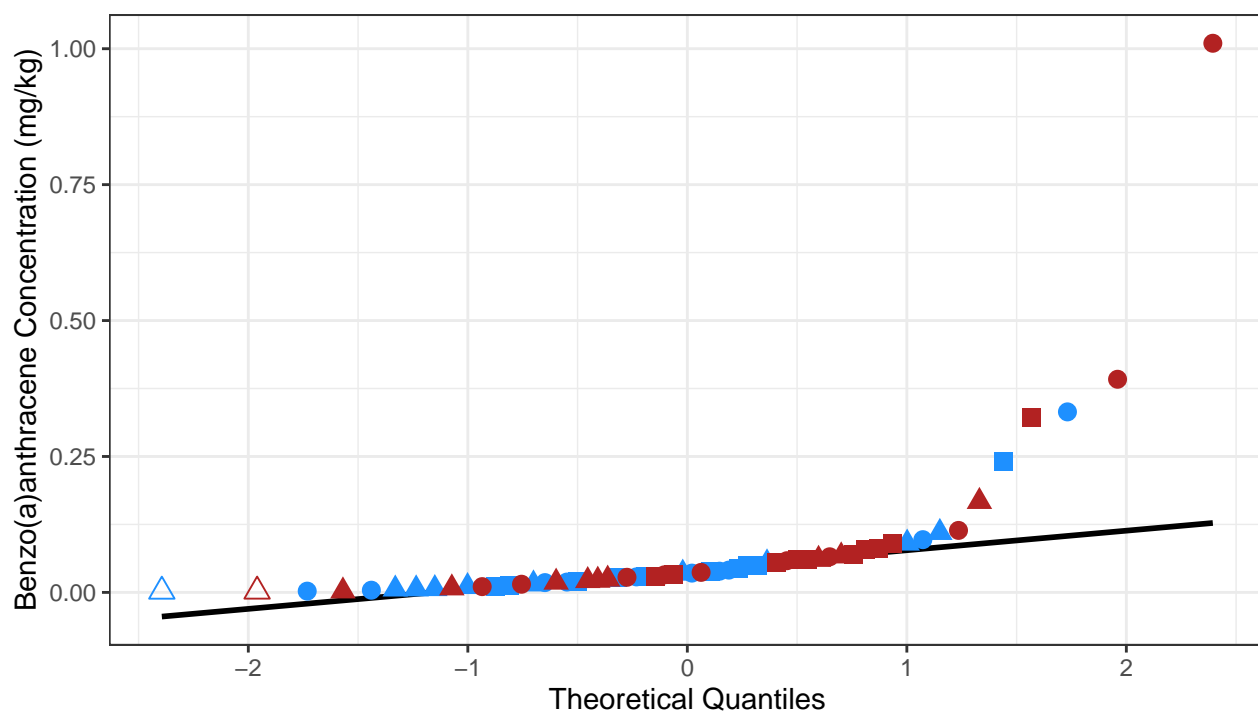


□ ND 0-2 in    △ ND 6-12 in    ● Detect 2-6 in    BRA    ● A    ● B  
 ○ ND 2-6 in    ■ Detect 0-2 in    ▲ Detect 6-12 in

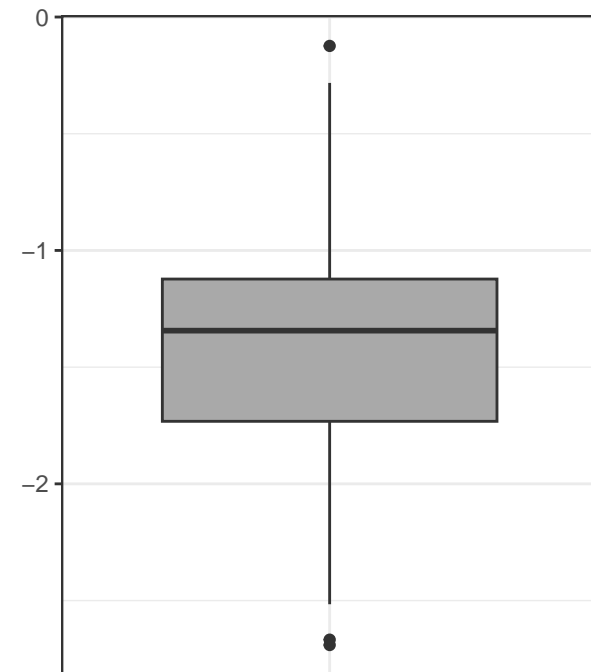
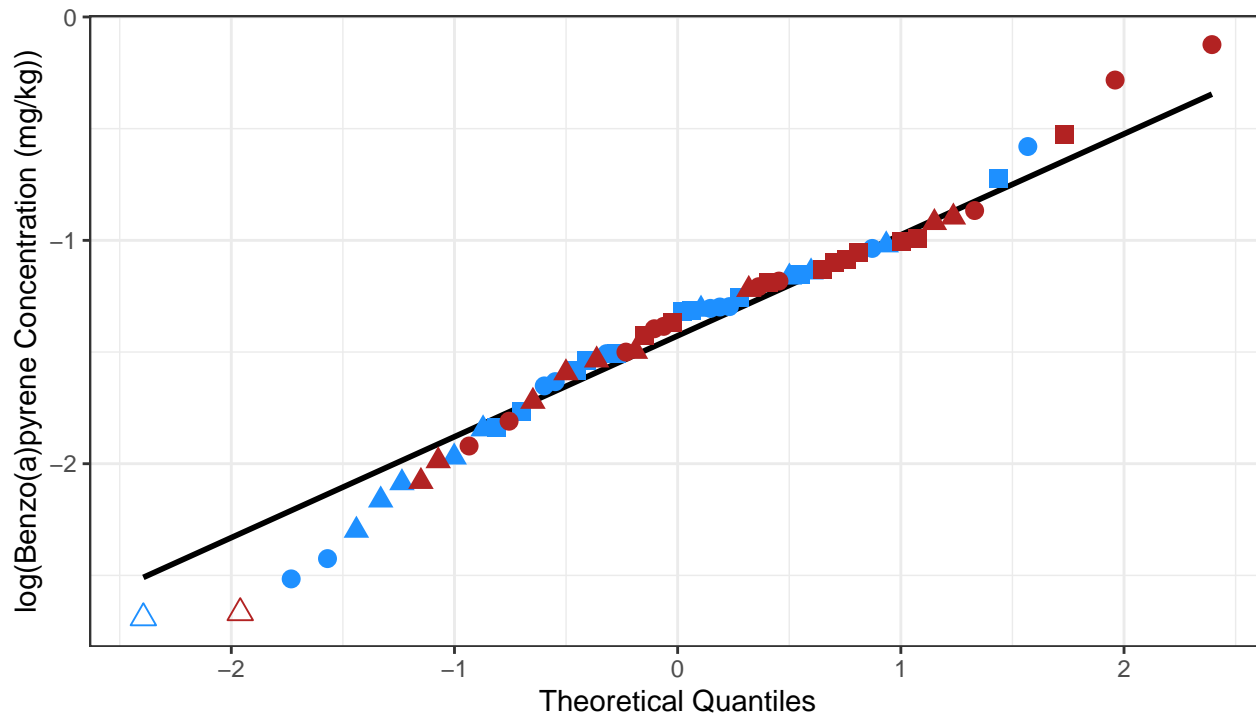
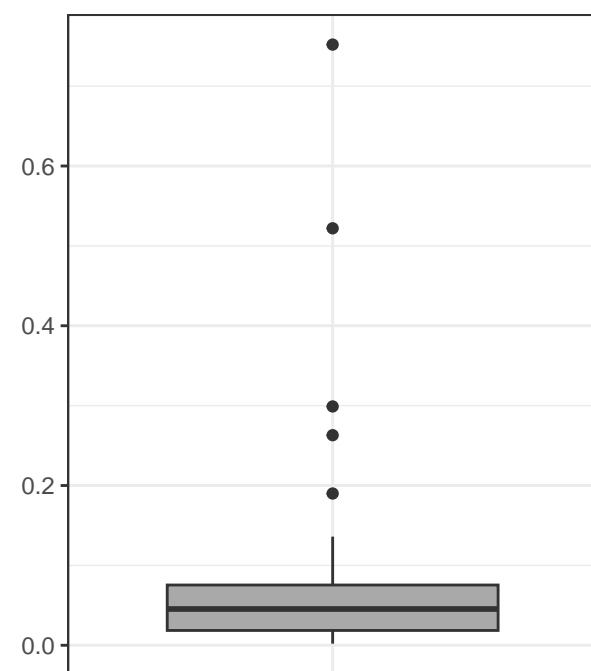
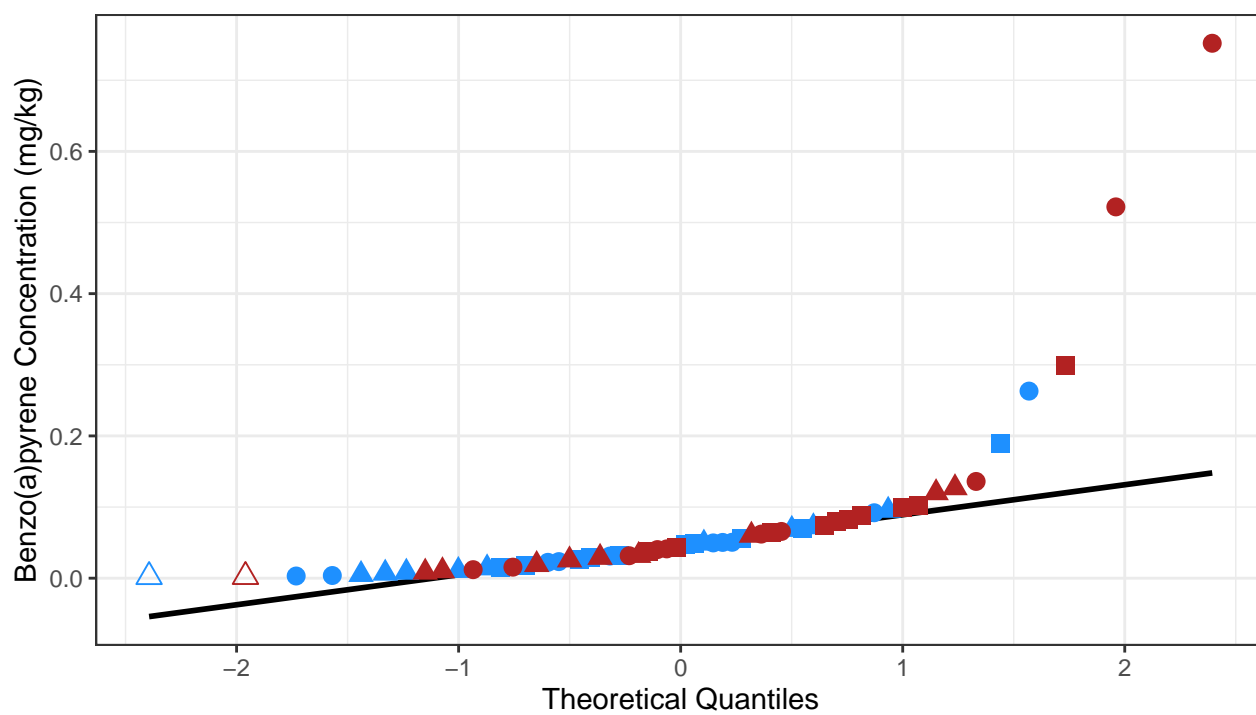


□ ND 0–2 in    △ ND 6–12 in    ● Detect 2–6 in    BRA    ● A    ● B  
○ ND 2–6 in    ■ Detect 0–2 in    ▲ Detect 6–12 in

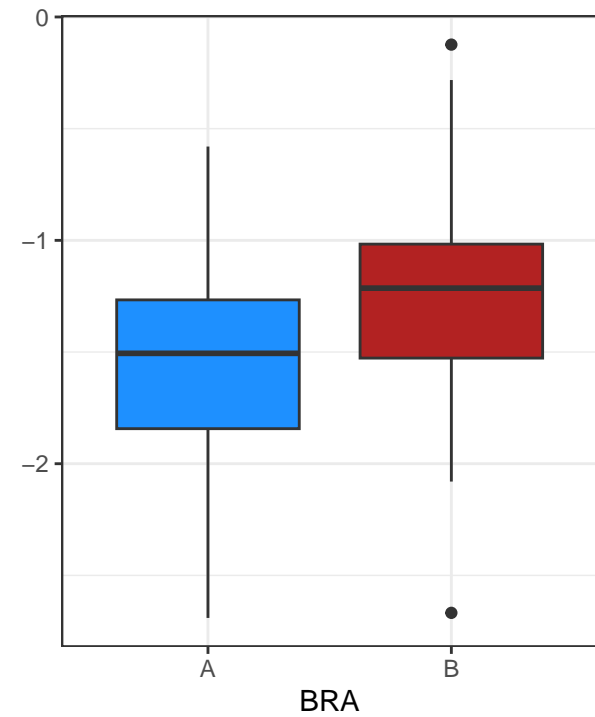
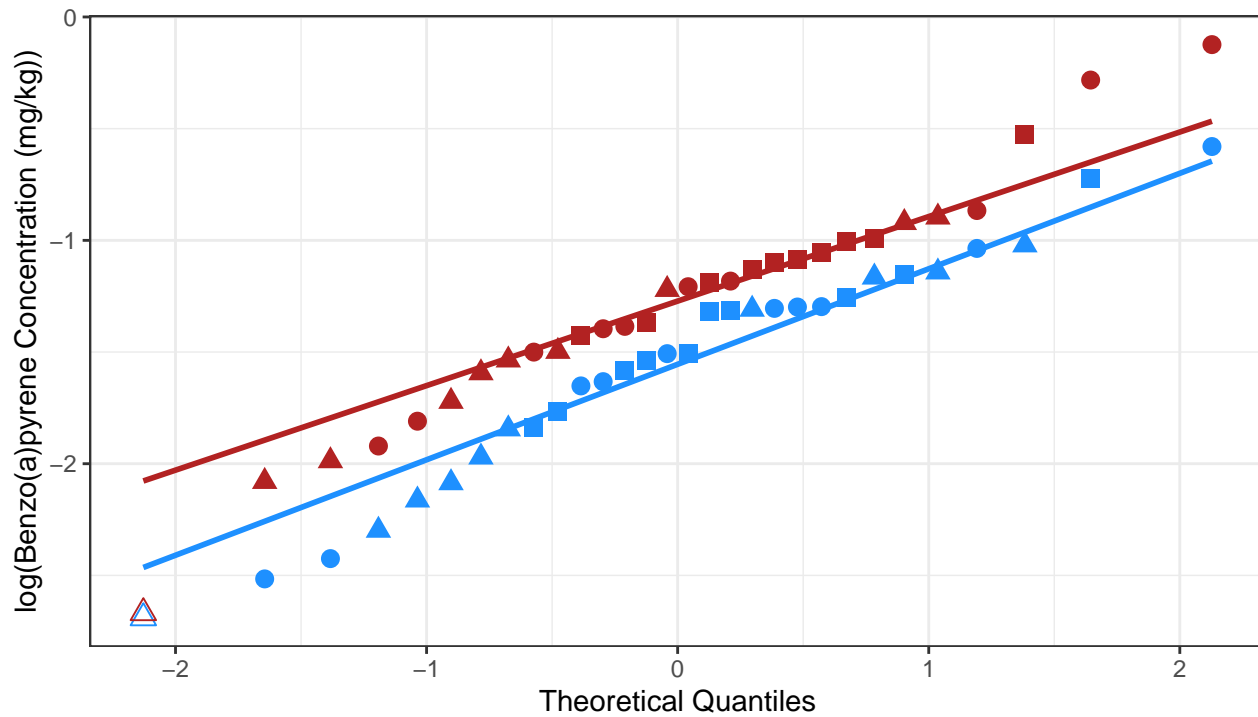
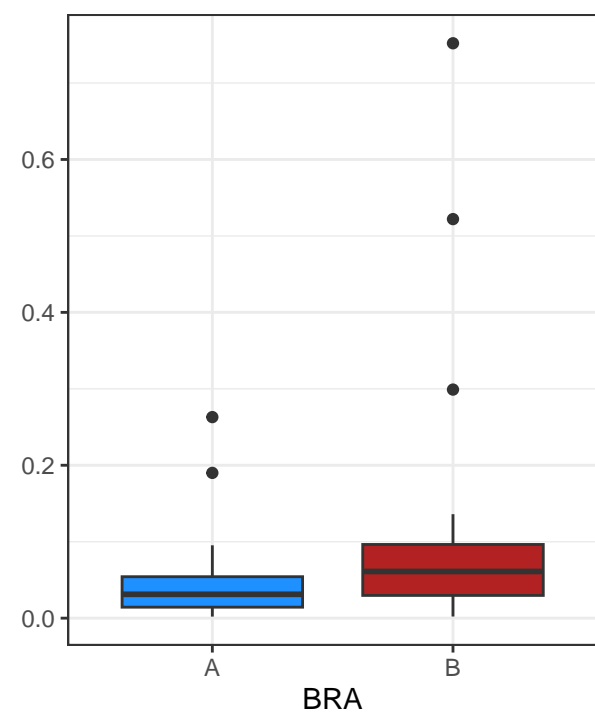
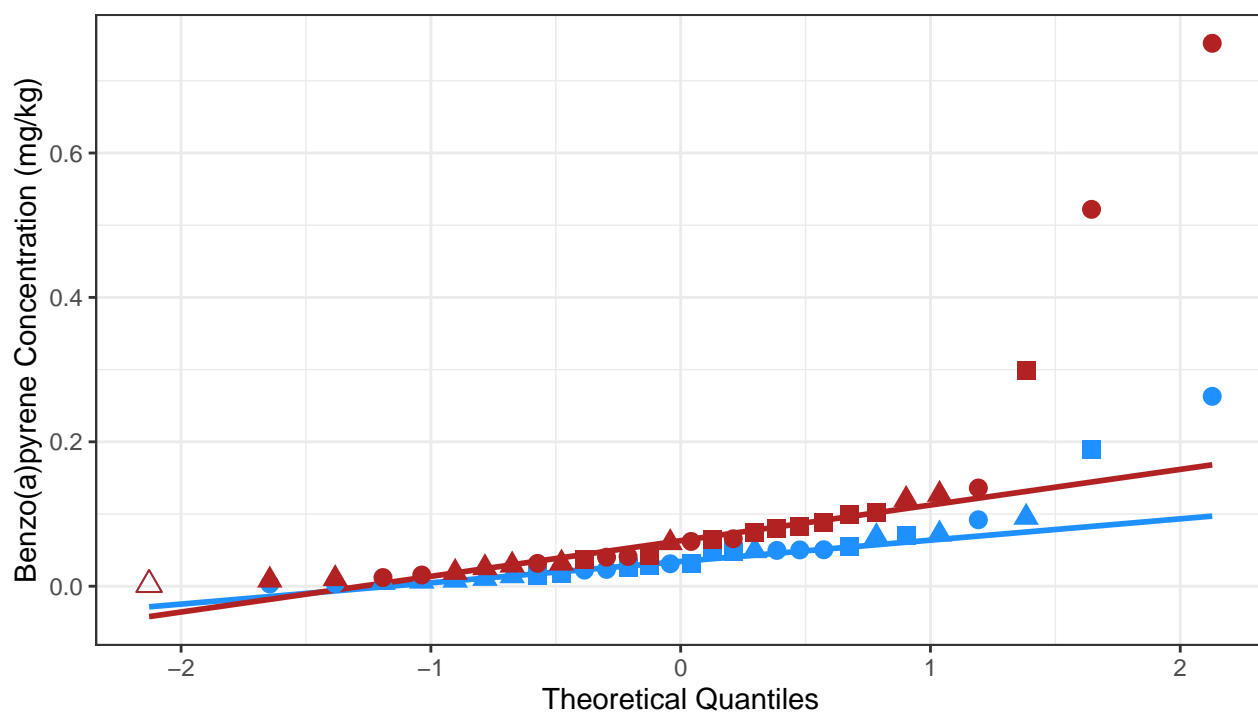




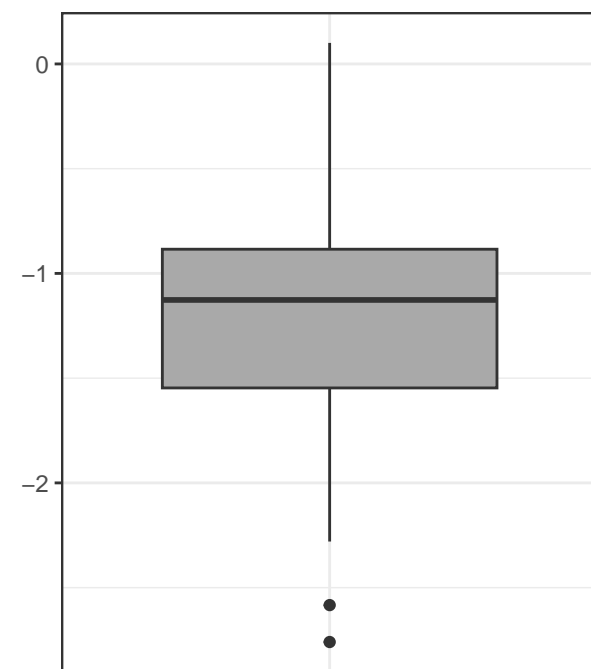
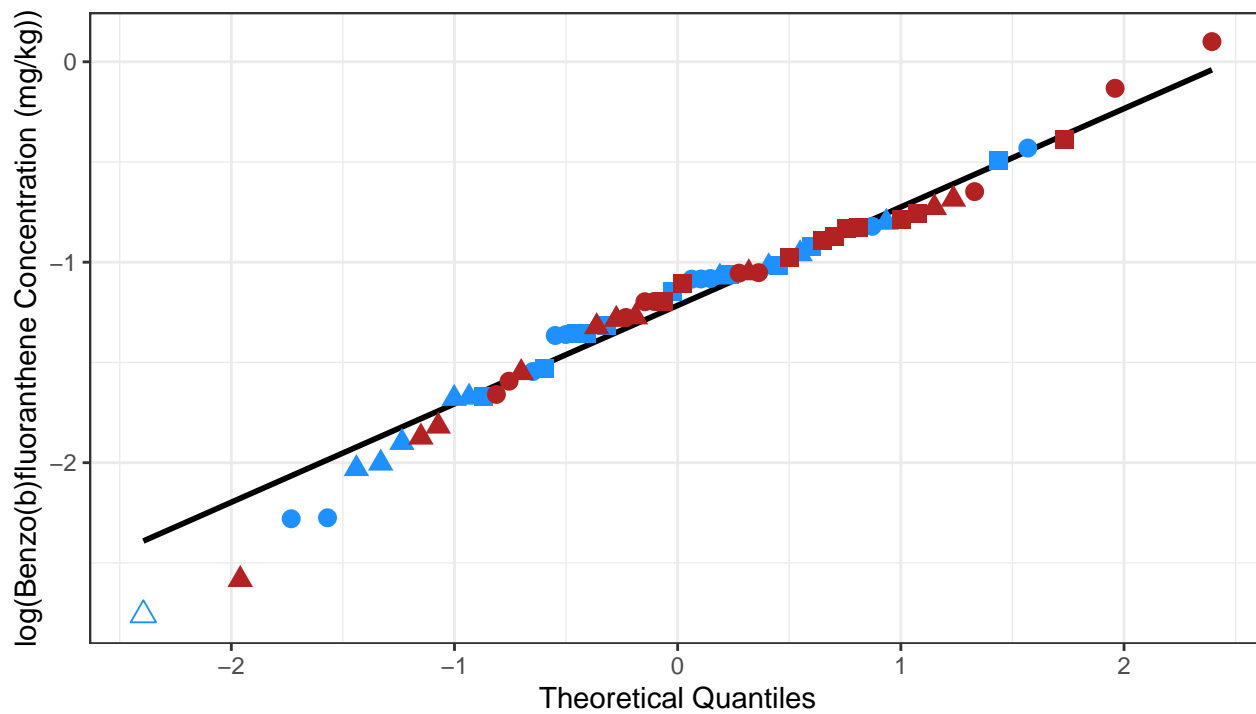
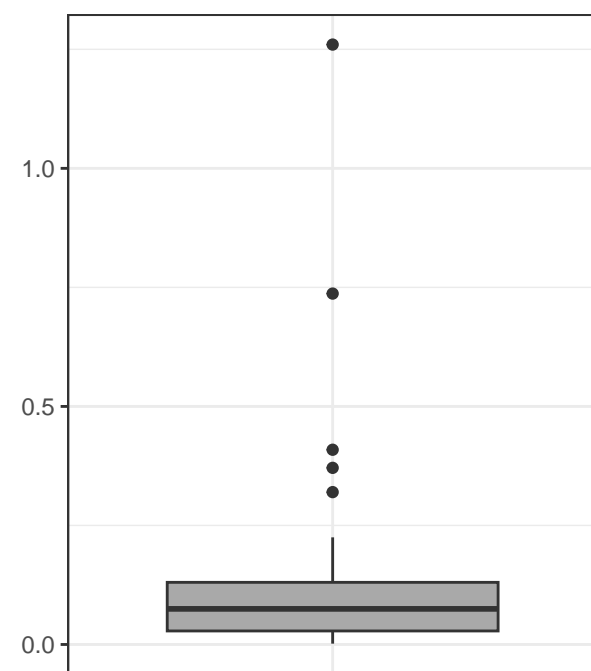
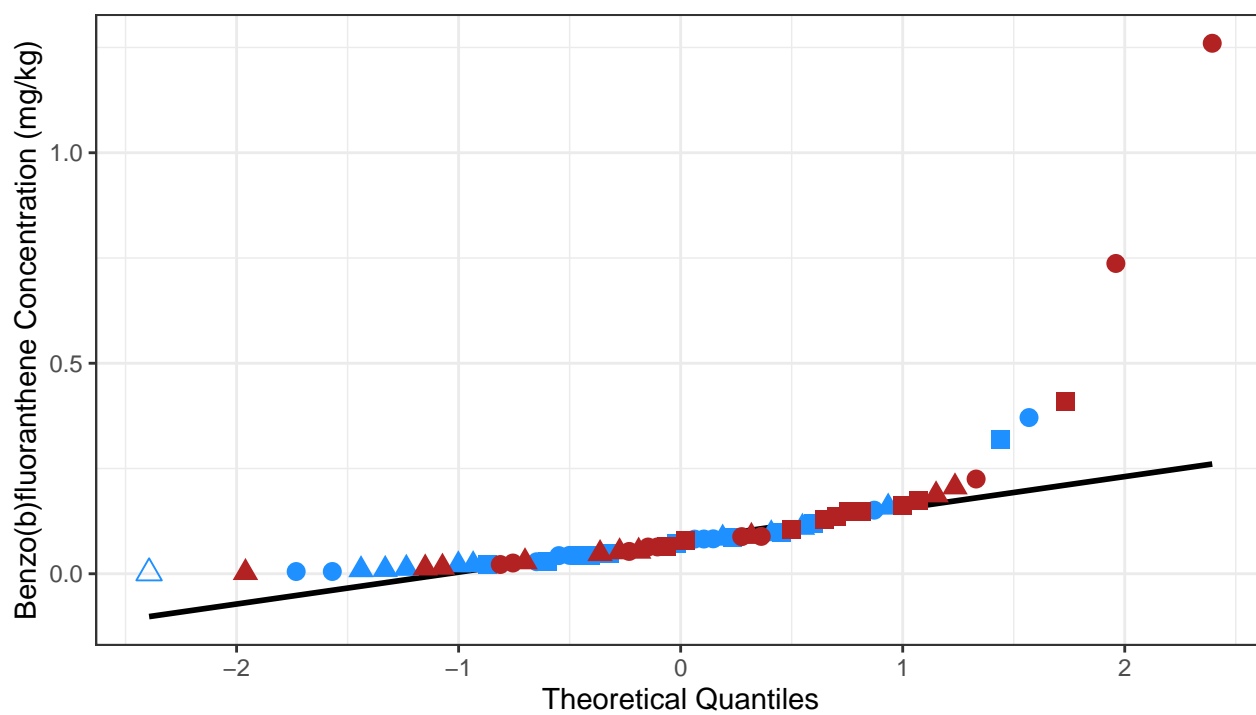
BRA    ● A    ● B    △ ND 6–12 in    ■ Detect 0–2 in    ● Detect 2–6 in    ▲ Detect 6–12 in



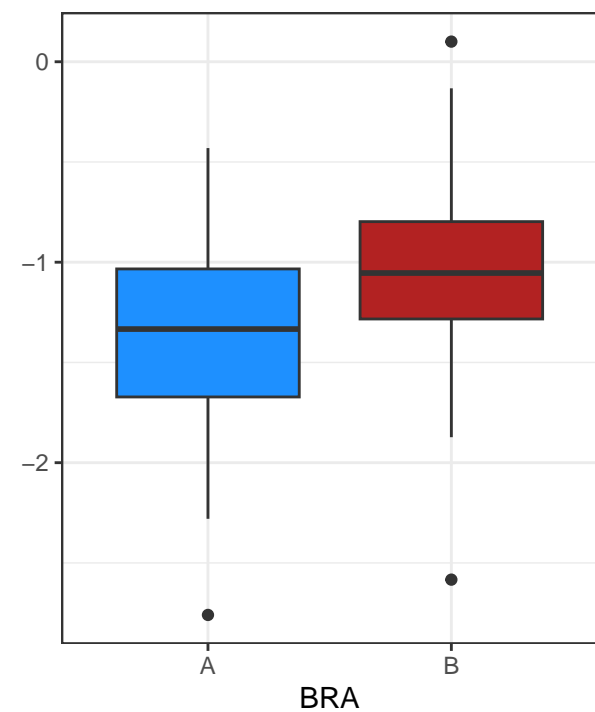
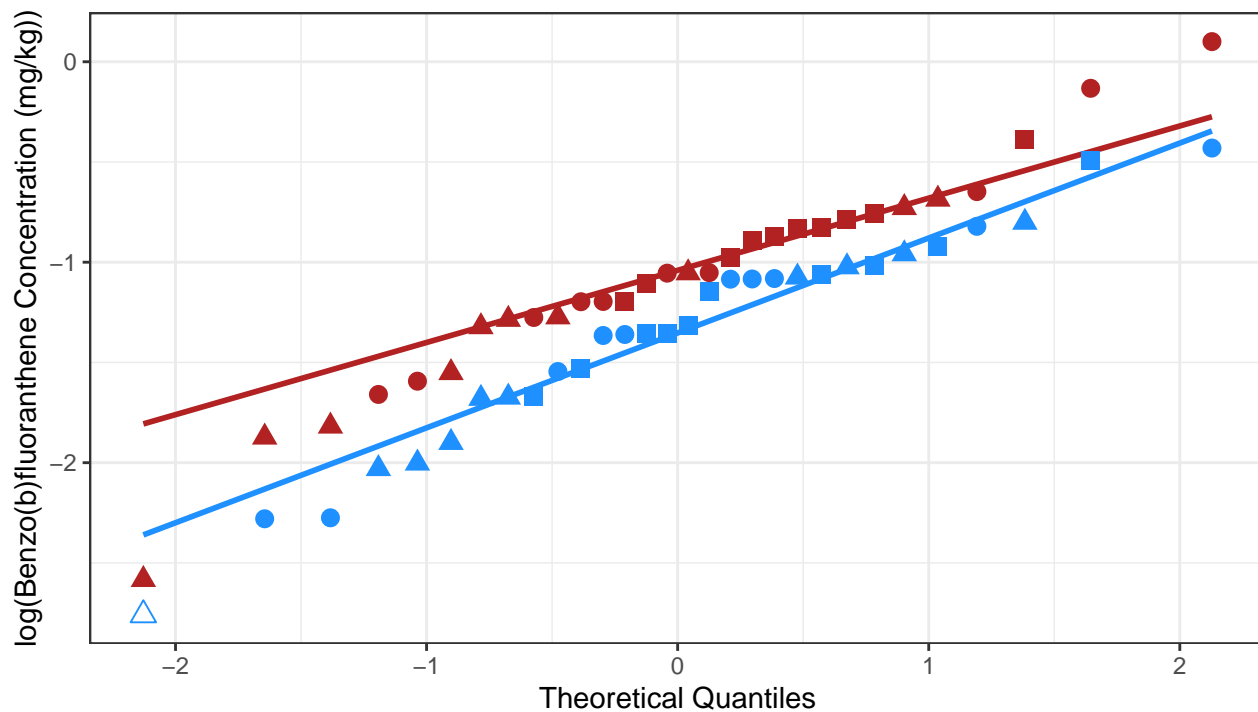
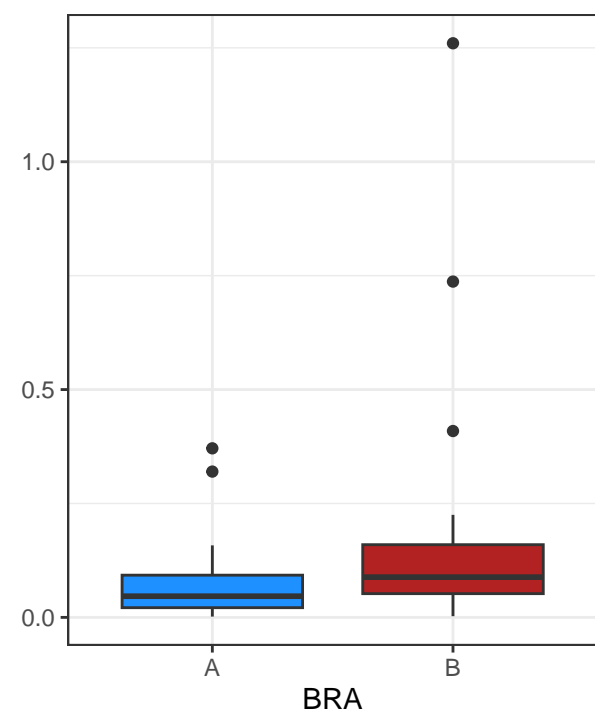
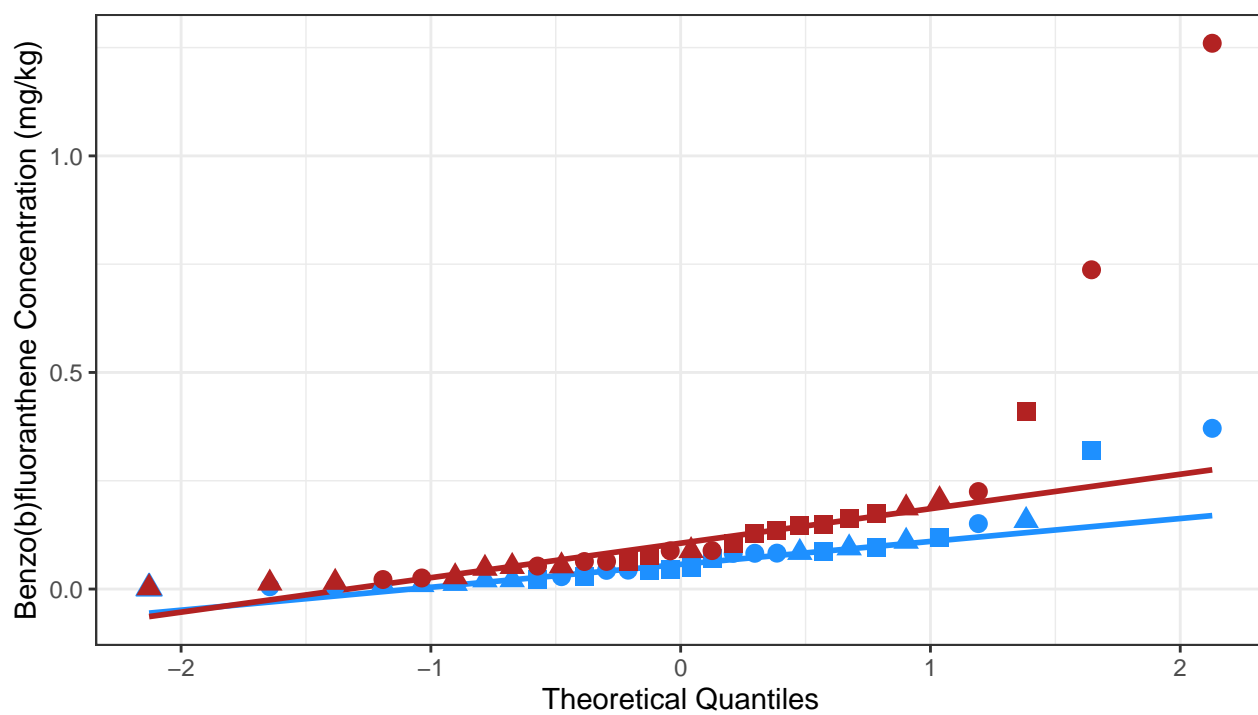
BRA    ●    A    ●    B    △    ND 6–12 in    ■    Detect 0–2 in    ●    Detect 2–6 in    ▲    Detect 6–12 in



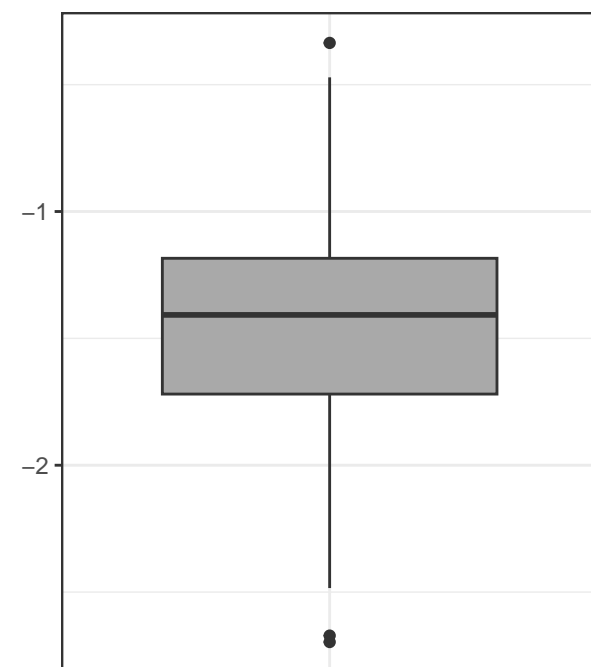
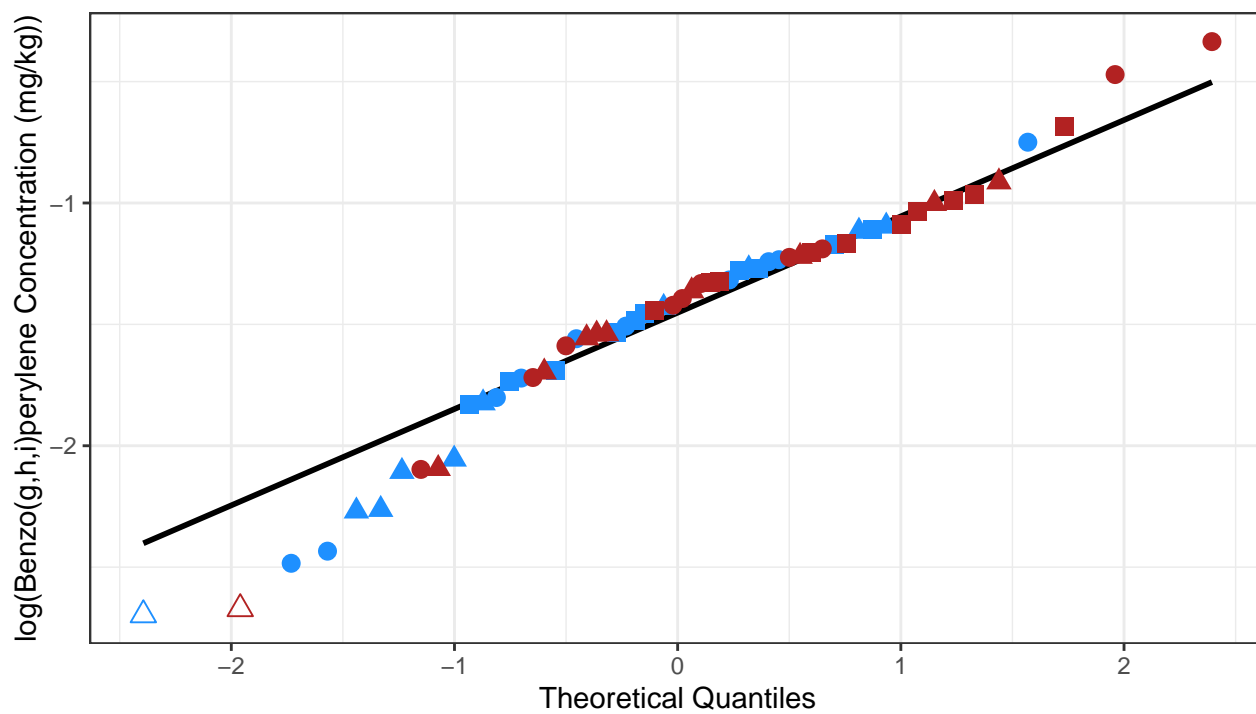
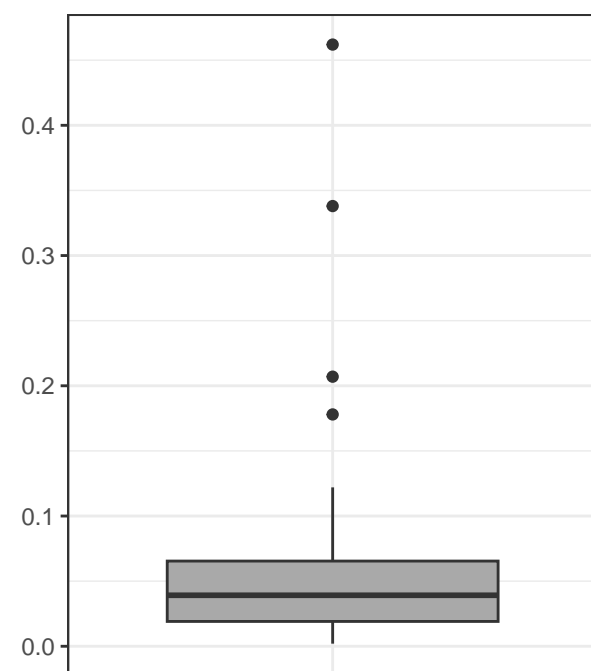
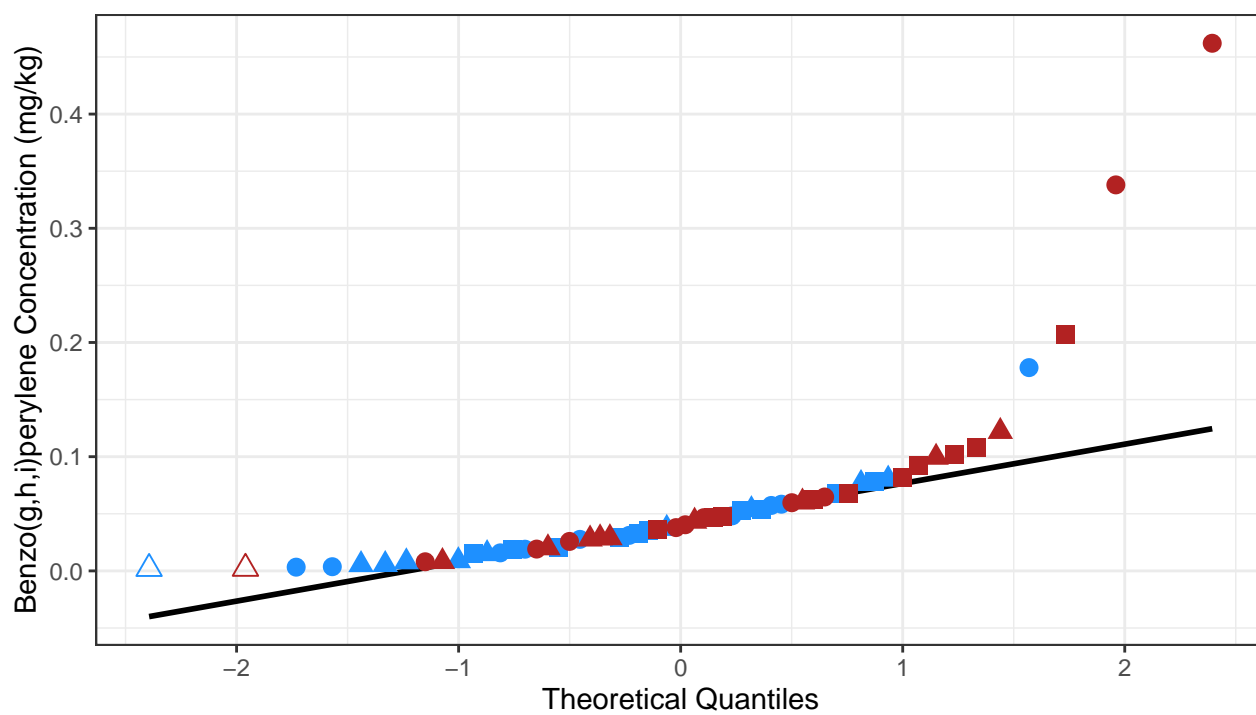
BRA A B  $\triangle$  ND 6-12 in  $\blacksquare$  Detect 0-2 in  $\bullet$  Detect 2-6 in  $\blacktriangle$  Detect 6-12 in



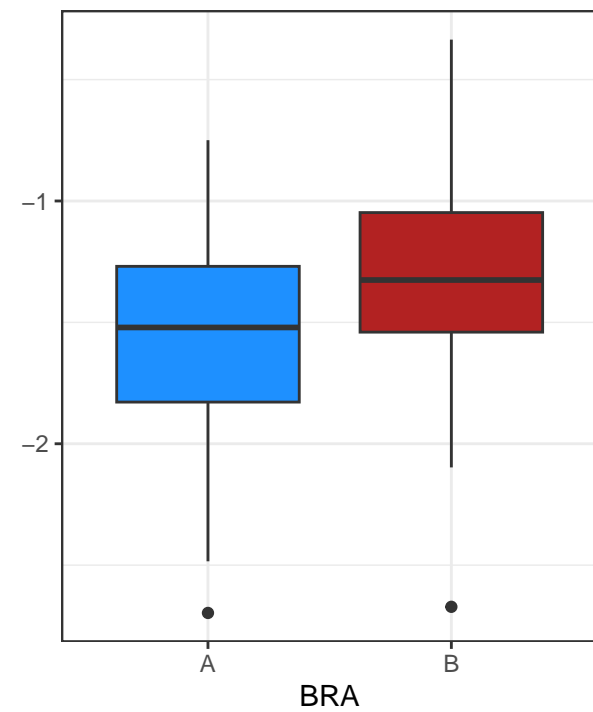
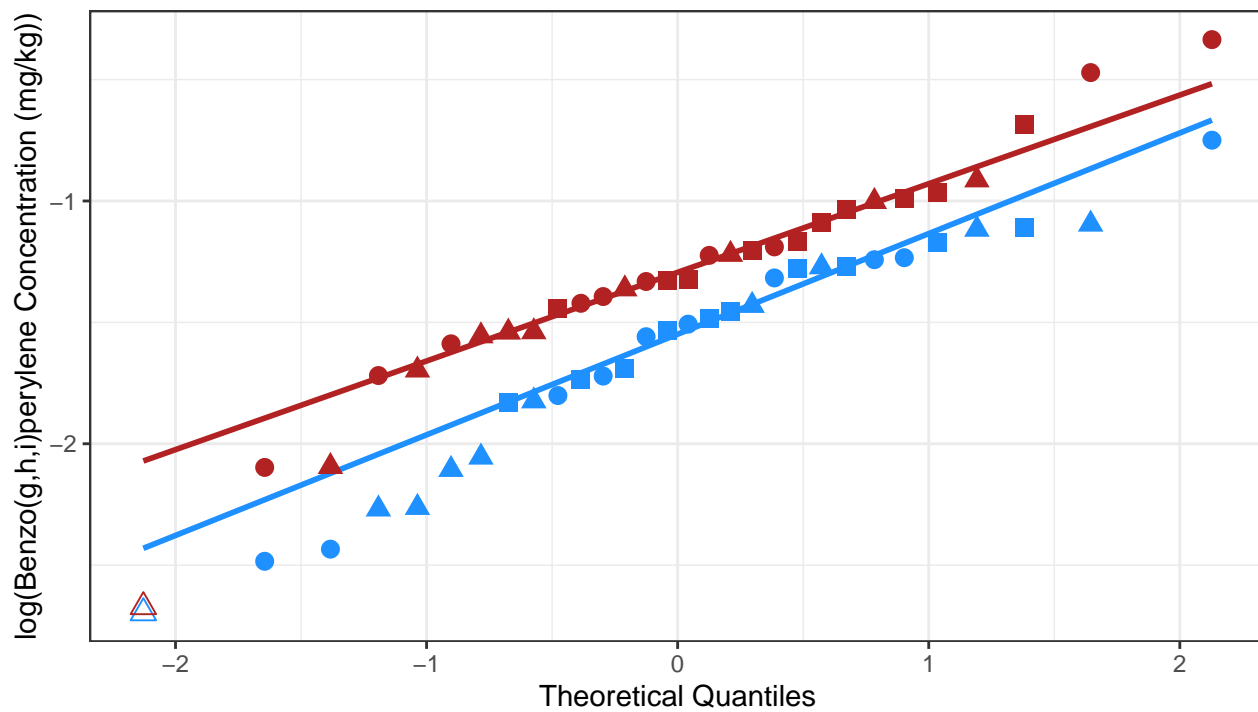
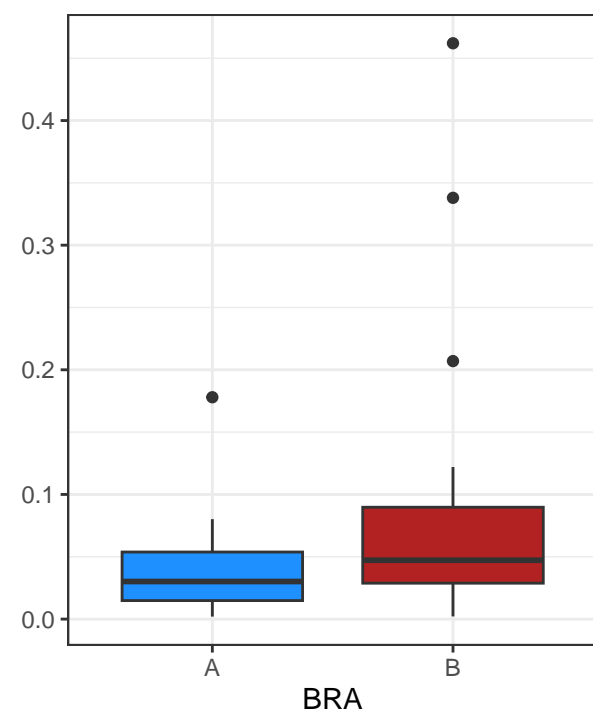
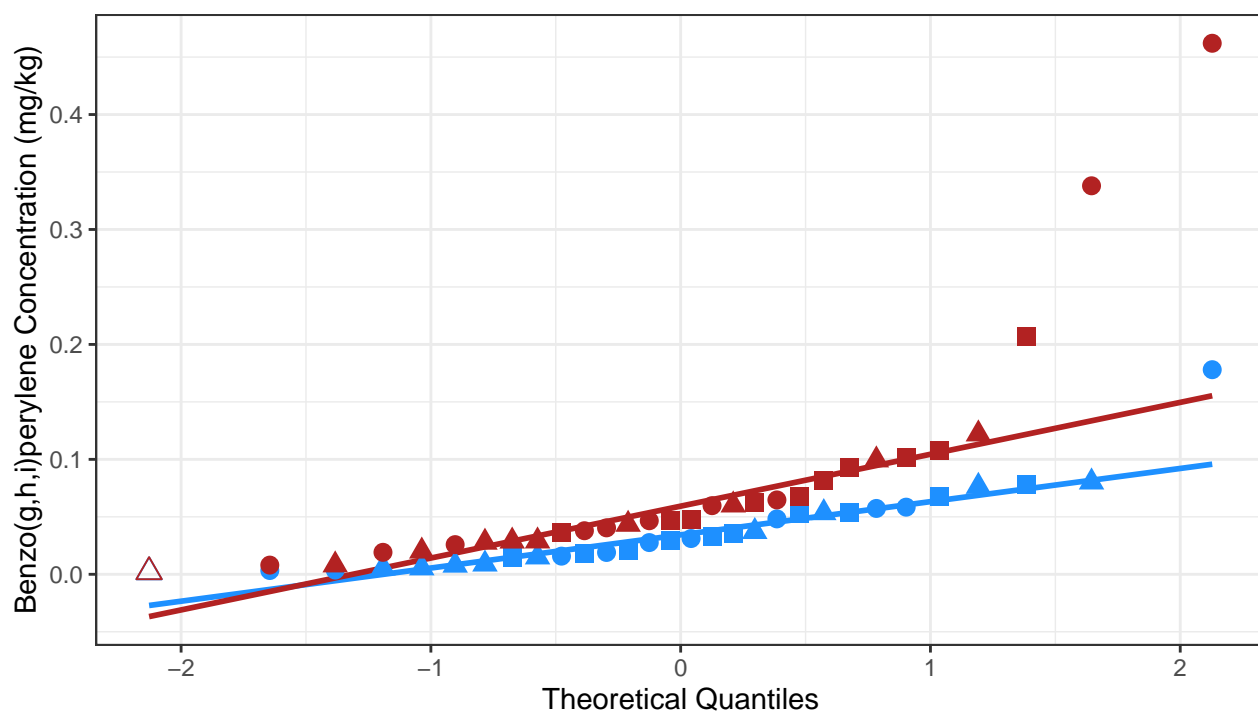
BRA    ● A    ● B    △ ND 6–12 in    ■ Detect 0–2 in    ● Detect 2–6 in    ▲ Detect 6–12 in



BRA    ● A    ● B    △ ND 6–12 in    ■ Detect 0–2 in    ● Detect 2–6 in    ▲ Detect 6–12 in

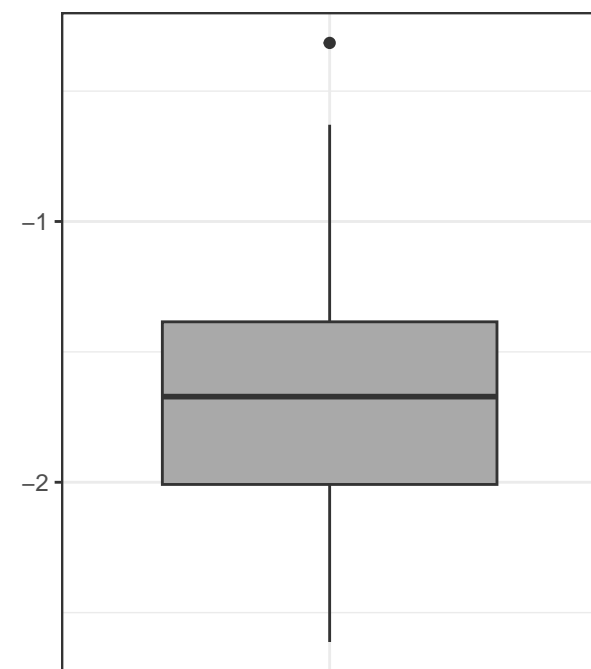
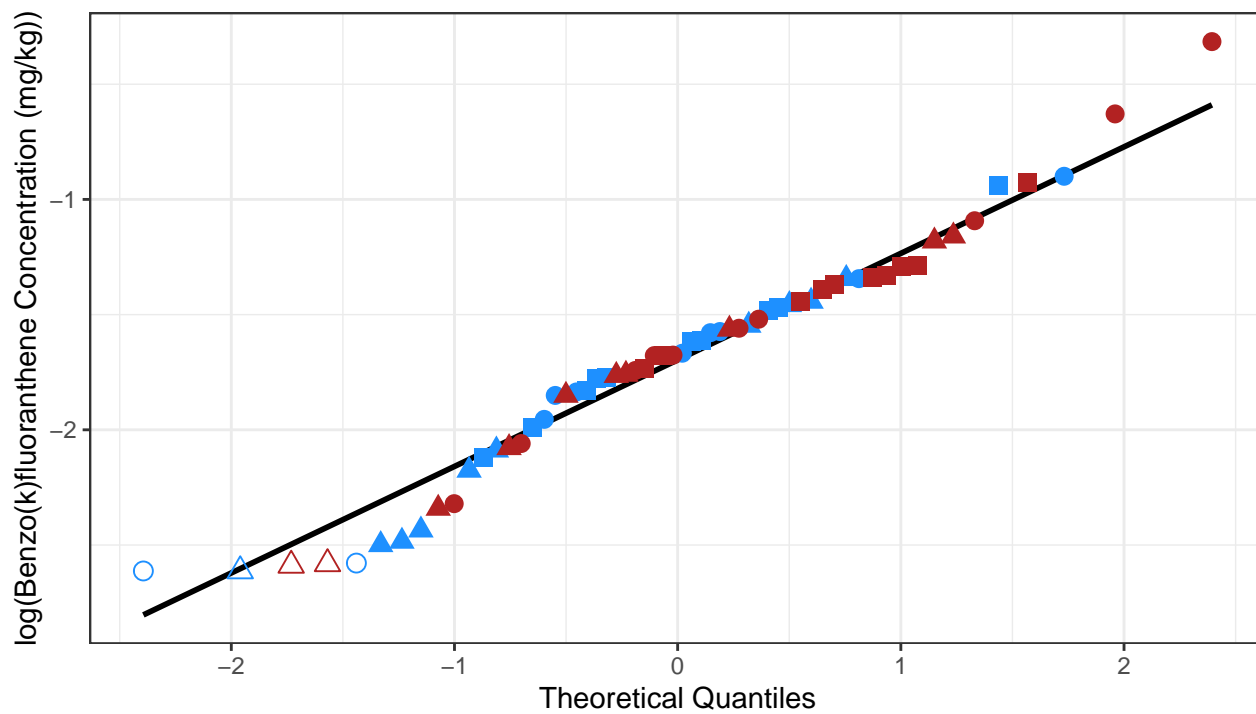
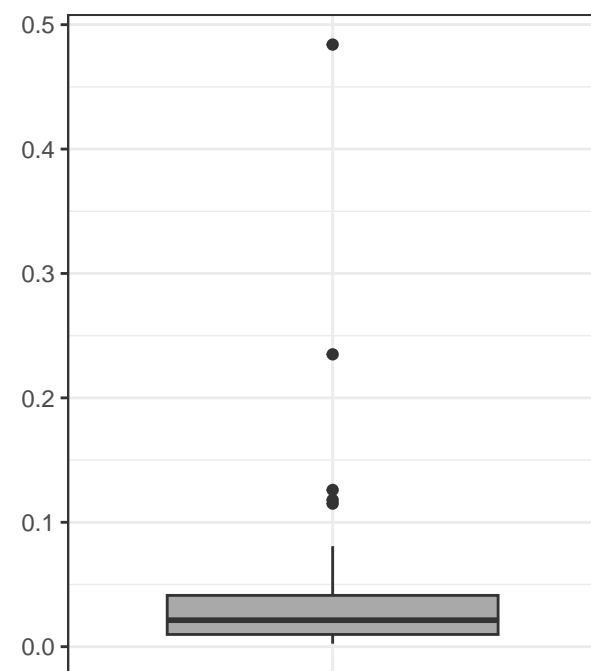
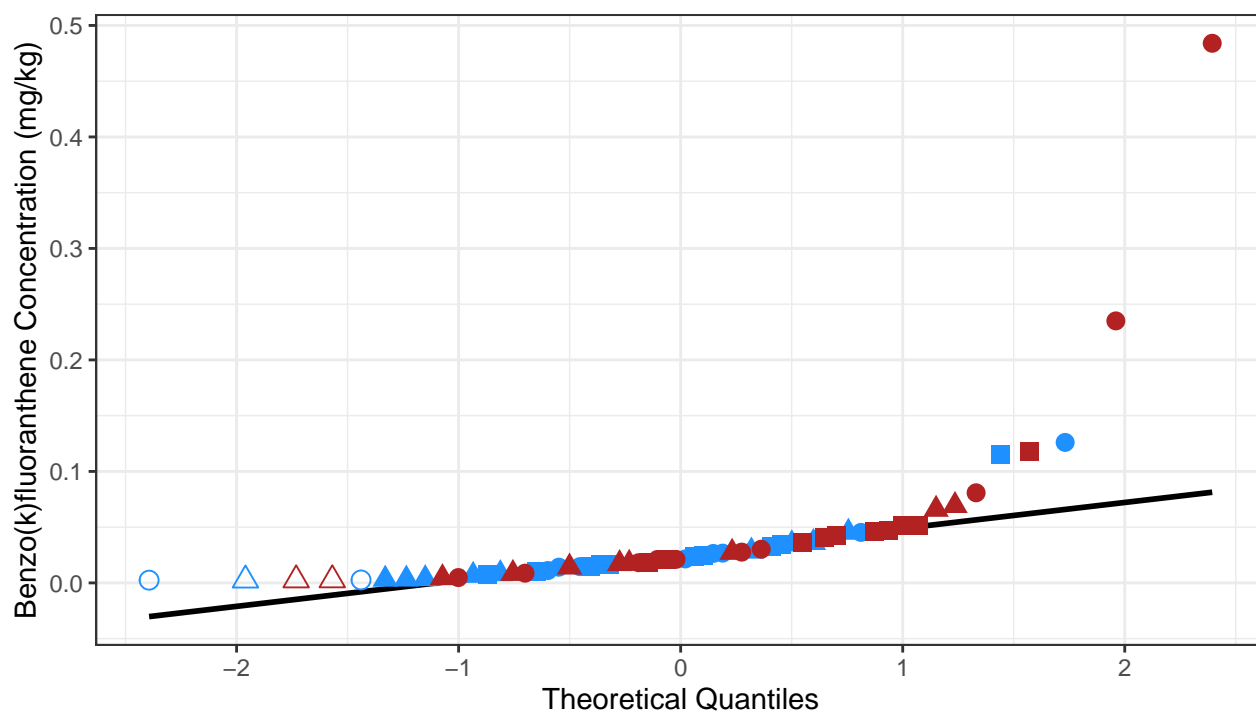


BRA    ● A    ● B    △ ND 6–12 in    ■ Detect 0–2 in    ● Detect 2–6 in    ▲ Detect 6–12 in

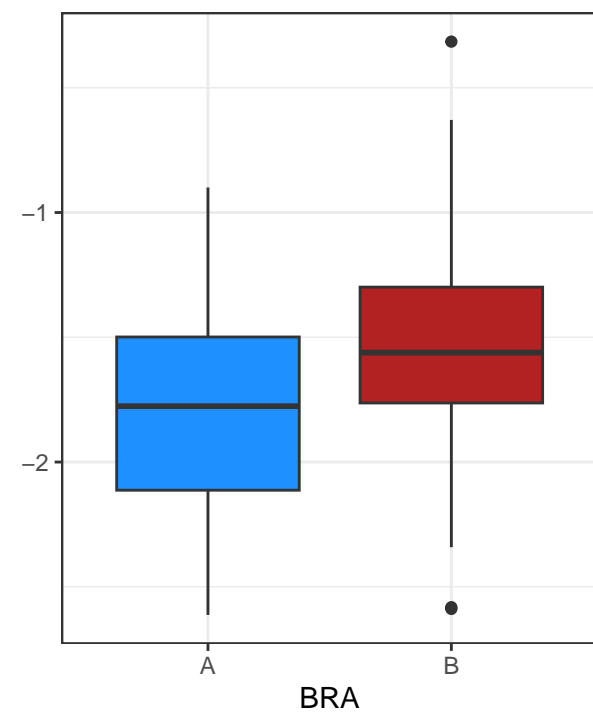
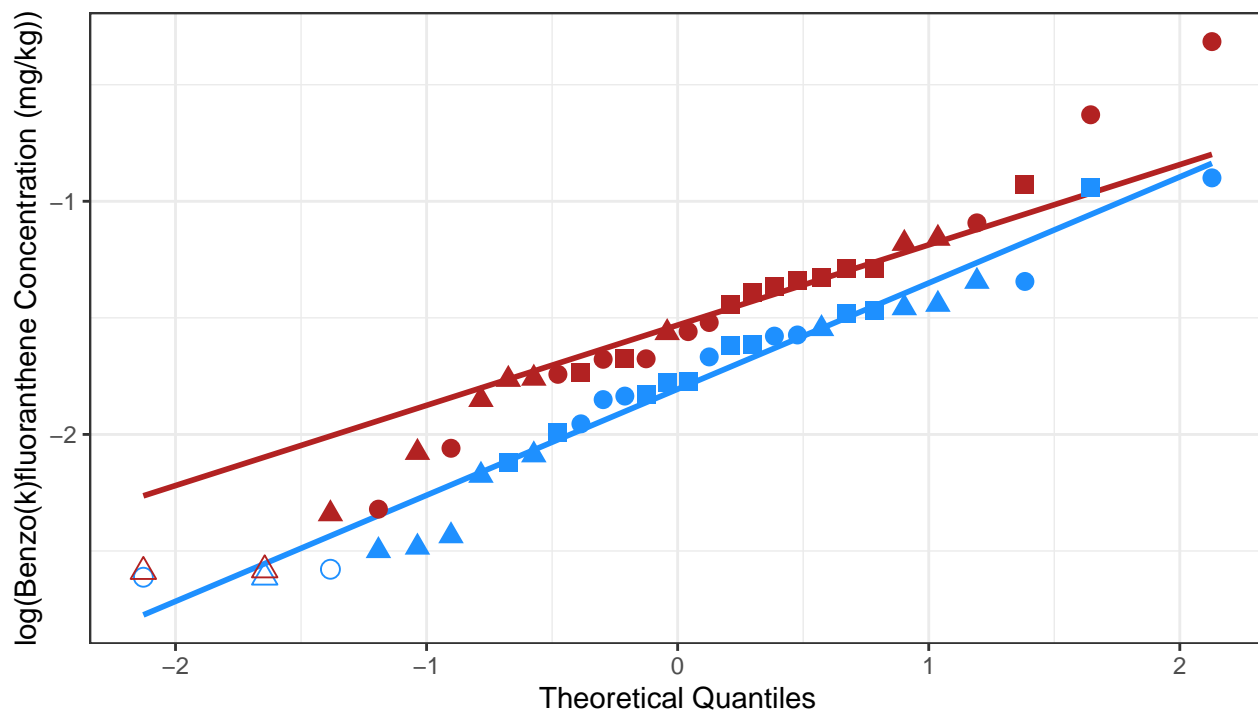
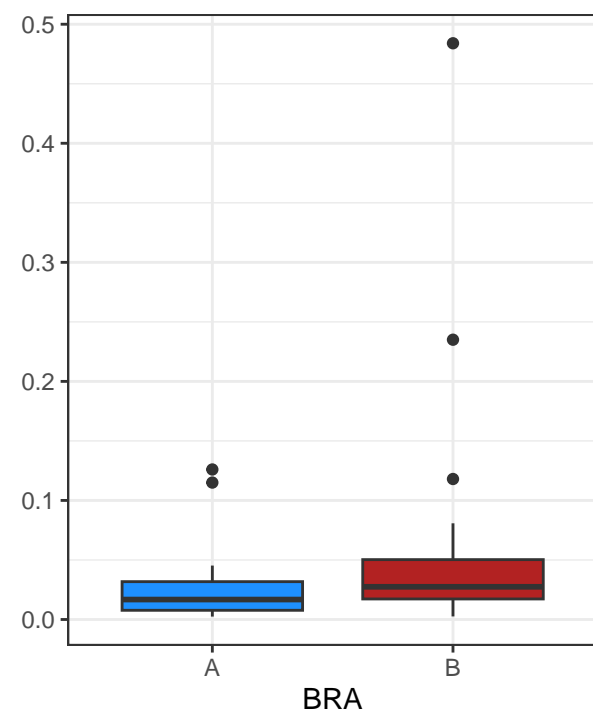
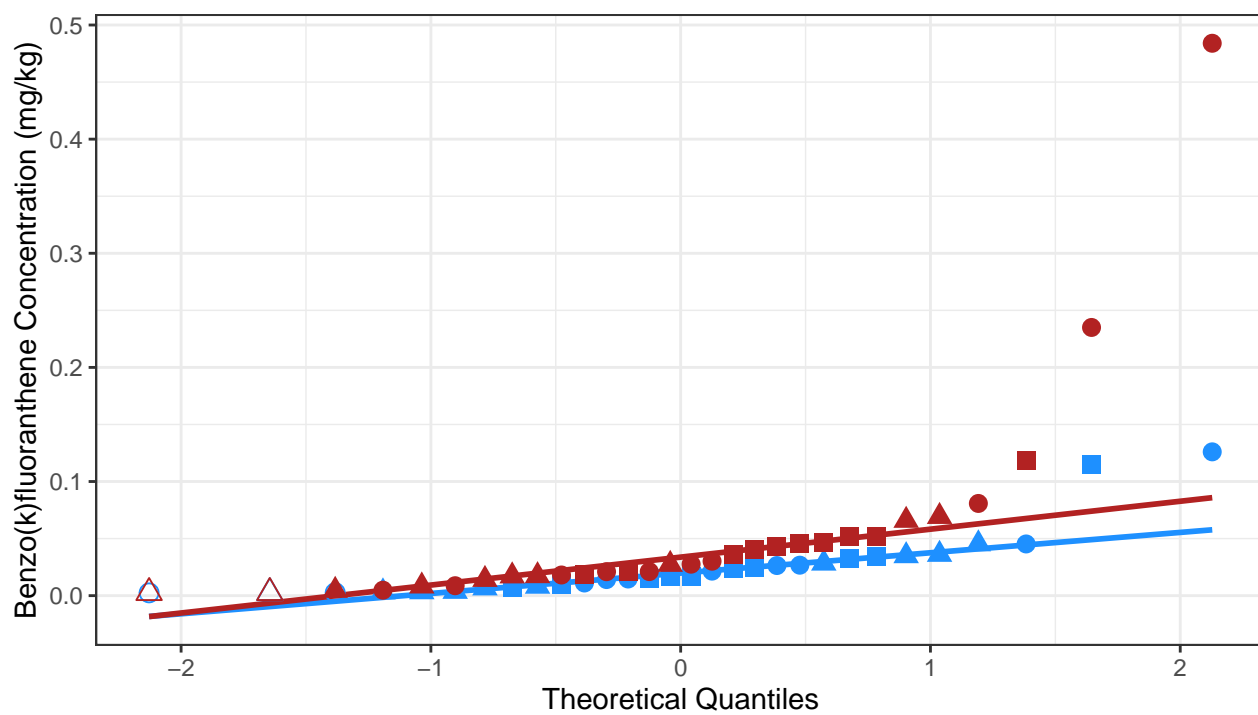


BRA    A    B     $\triangle$  ND 6–12 in     $\blacksquare$  Detect 0–2 in     $\bullet$  Detect 2–6 in     $\blacktriangle$  Detect 6–12 in

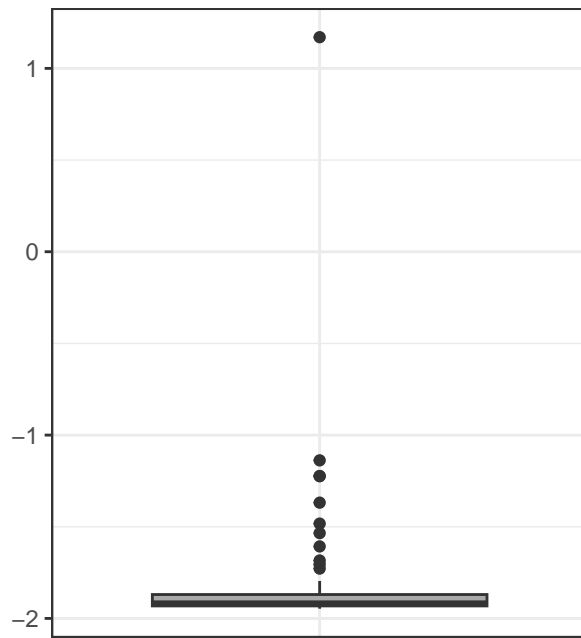
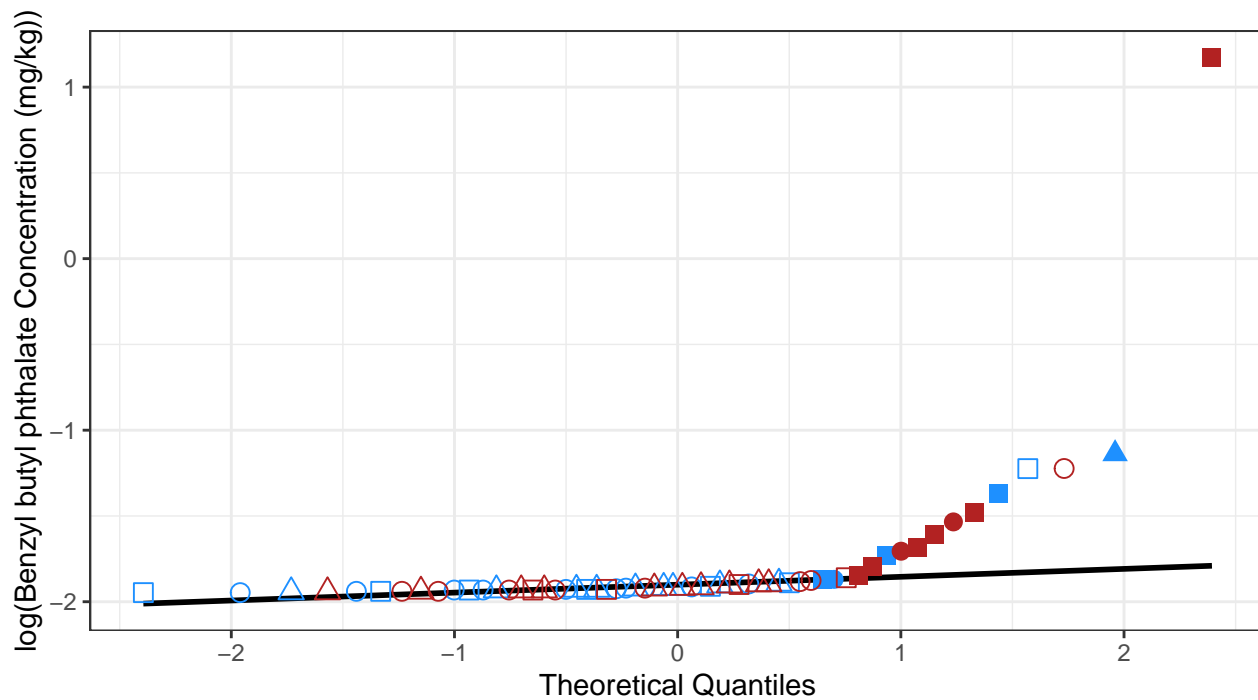
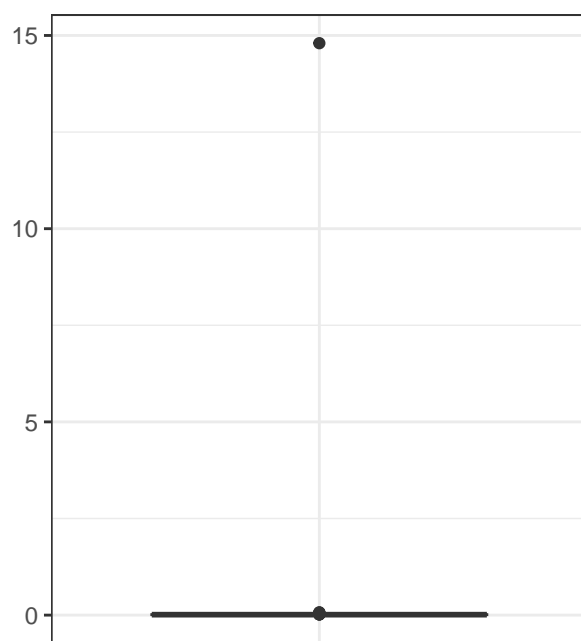
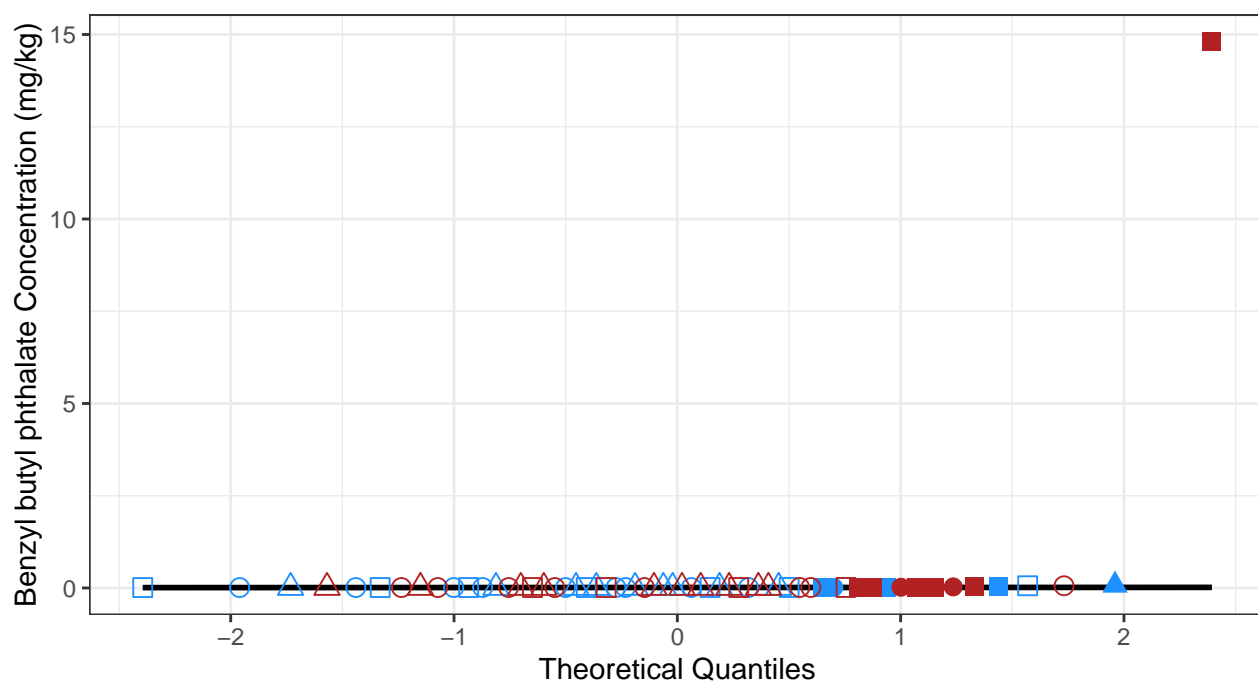




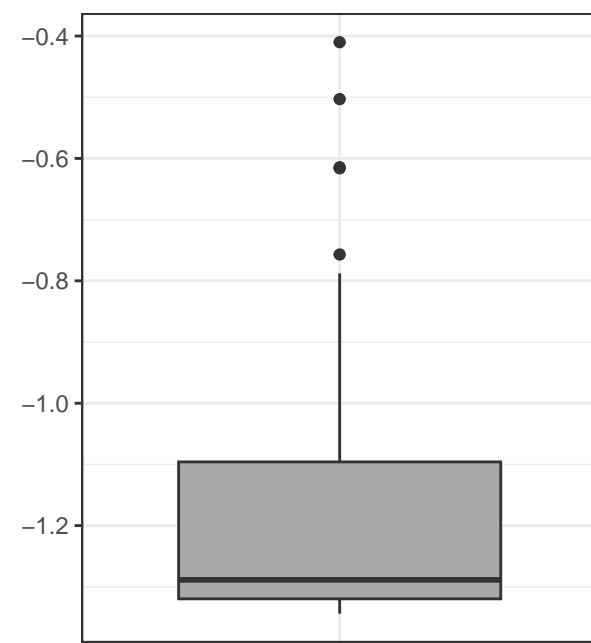
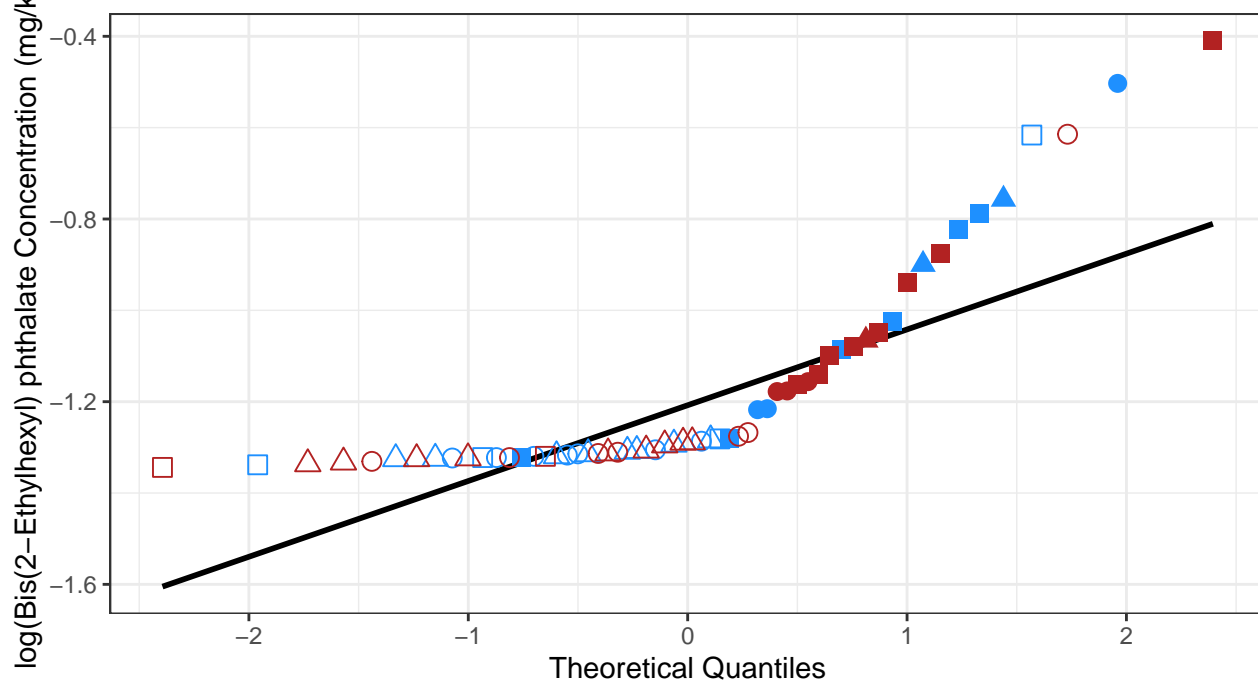
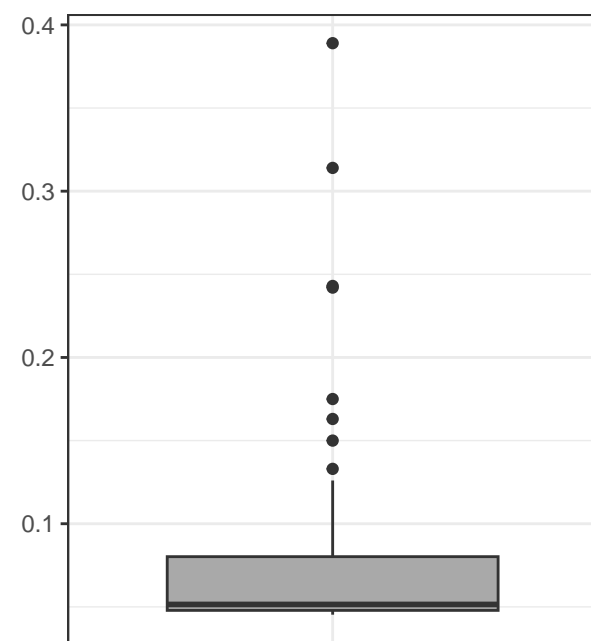
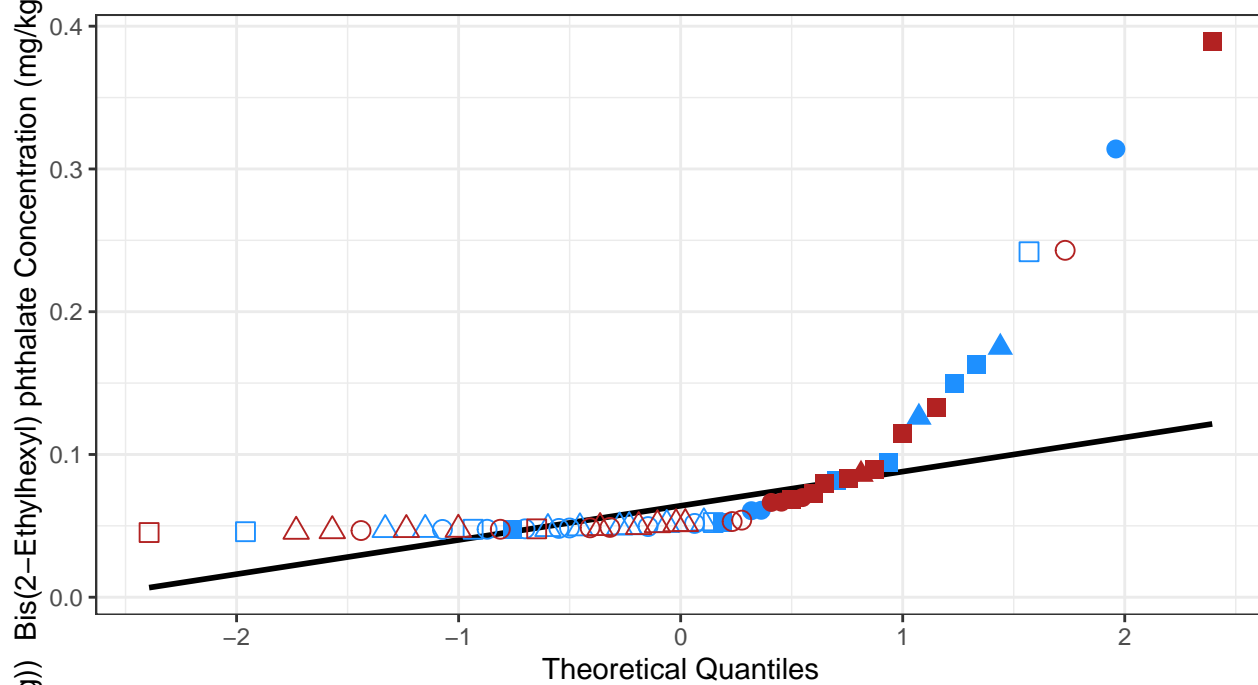
BRA    ● A    ● B    ○ ND 2-6 in    △ ND 6-12 in    ■ Detect 0-2 in    ● Detect 2-6 in    ▲ Detect 6-12 in



BRA    ● A    ● B    ○ ND 2–6 in    △ ND 6–12 in    ■ Detect 0–2 in    ● Detect 2–6 in    ▲ Detect 6–12 in

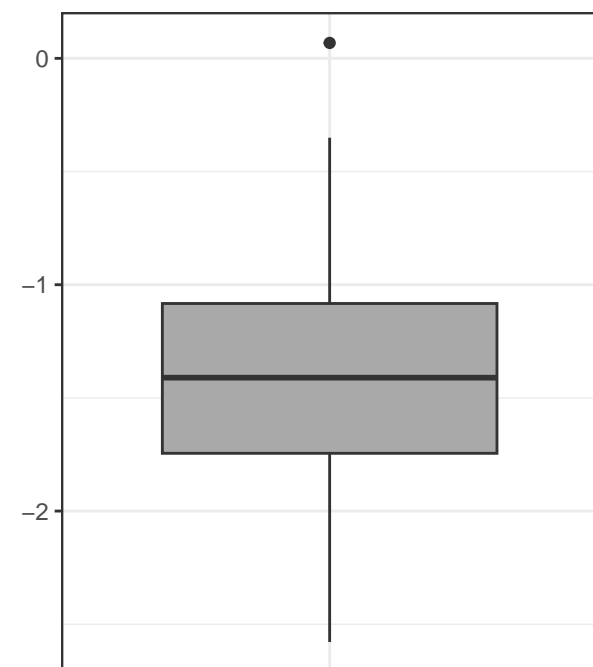
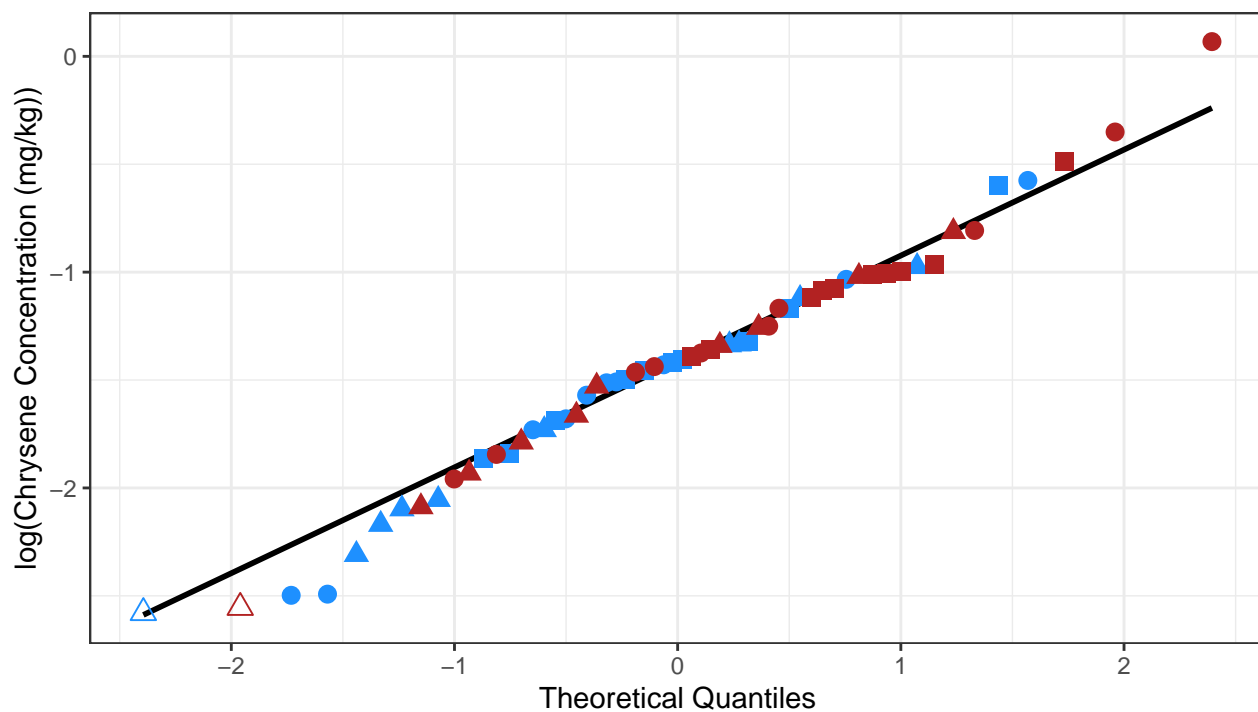
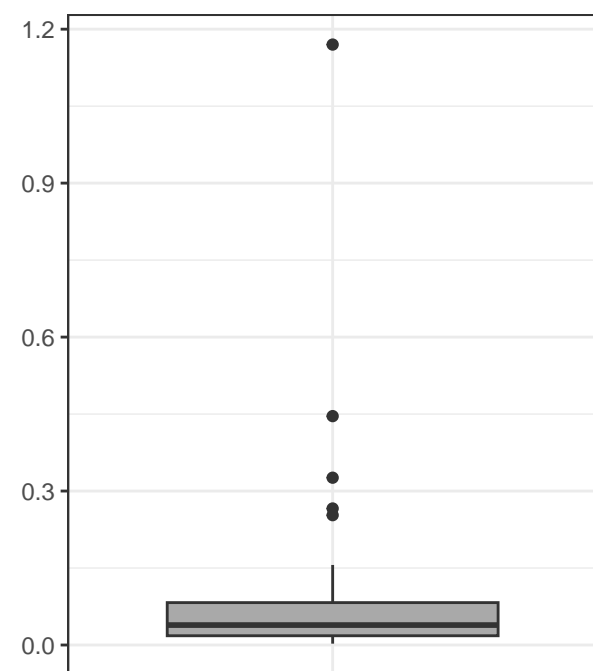
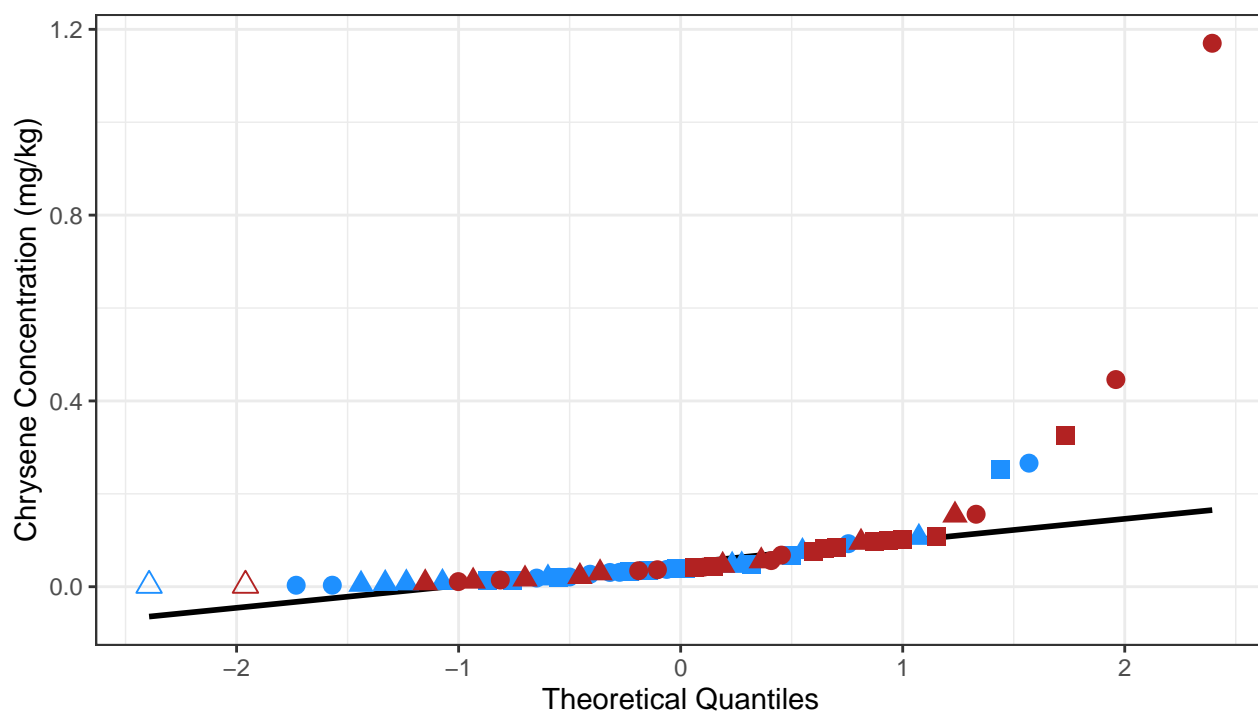


□ ND 0-2 in    △ ND 6-12 in    ● Detect 2-6 in    BRA    ● A    ● B  
○ ND 2-6 in    ■ Detect 0-2 in    ▲ Detect 6-12 in

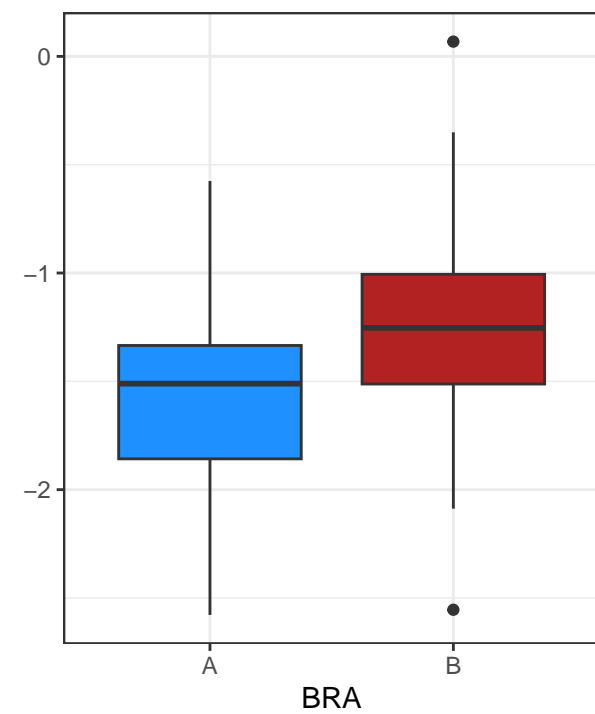
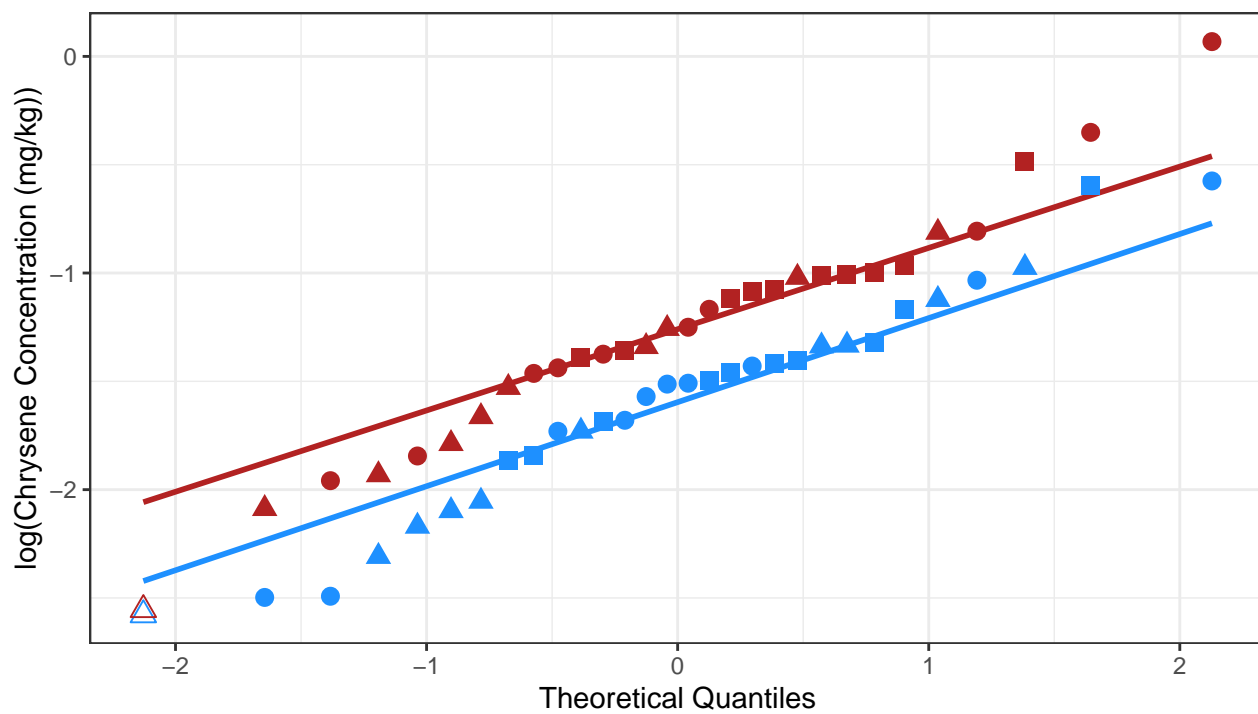
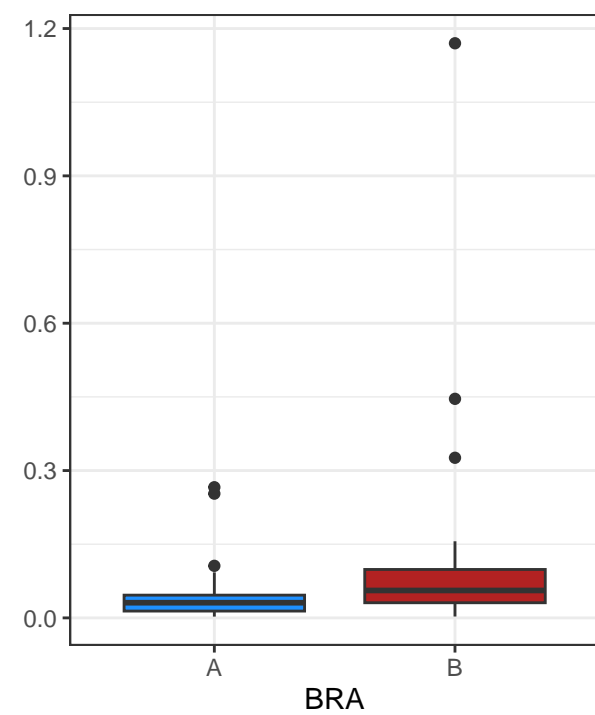
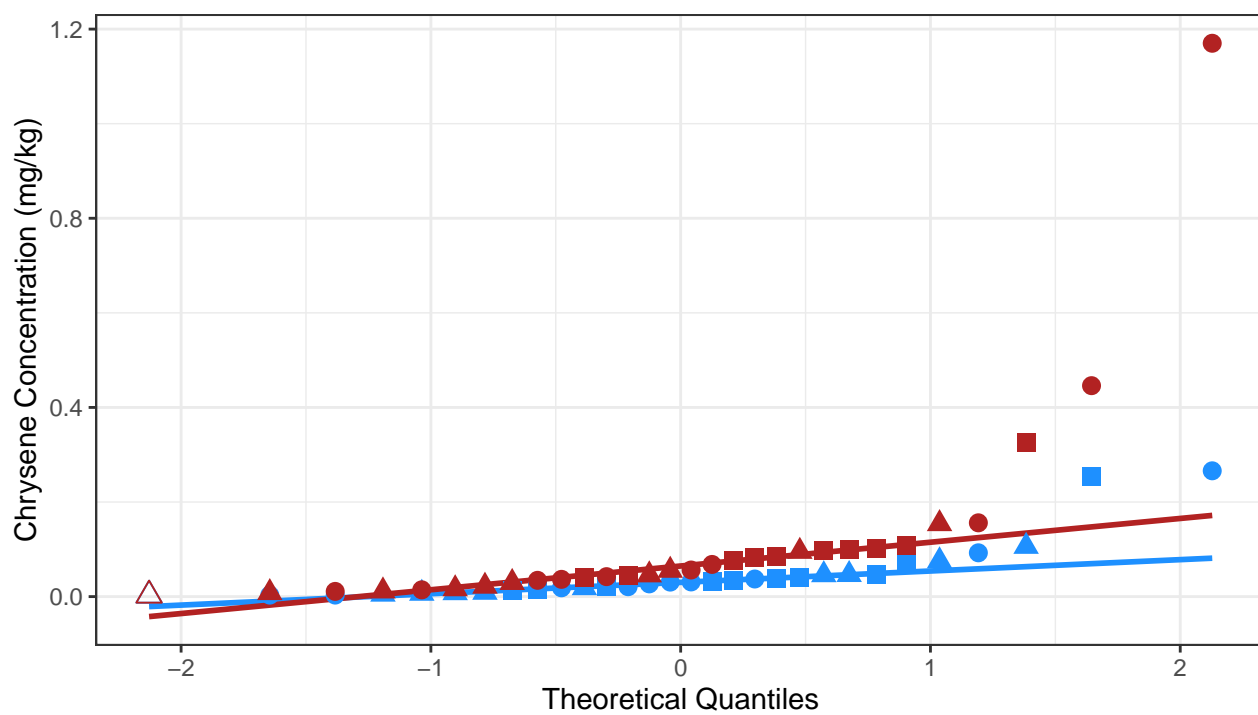


□ ND 0-2 in    △ ND 6-12 in    ● Detect 2-6 in    BRA    ● A    ● B

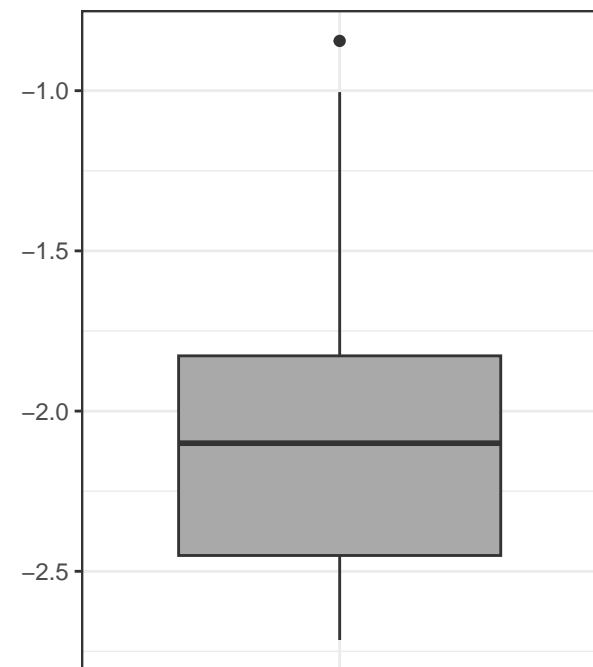
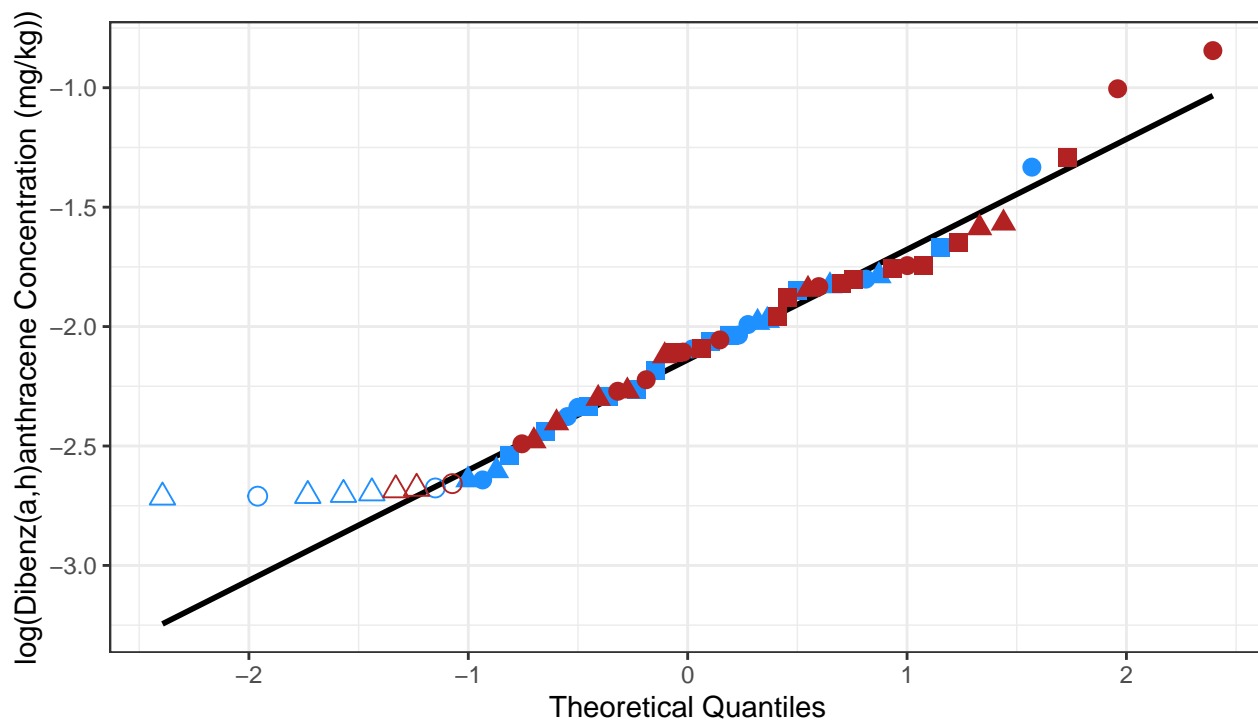
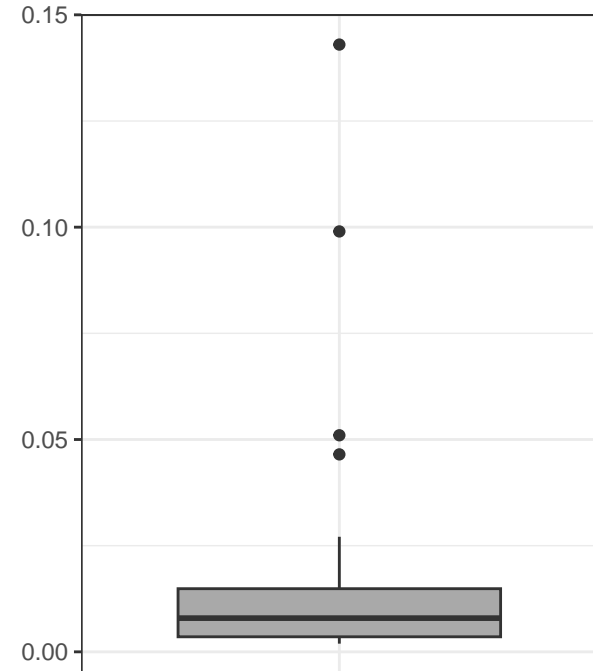
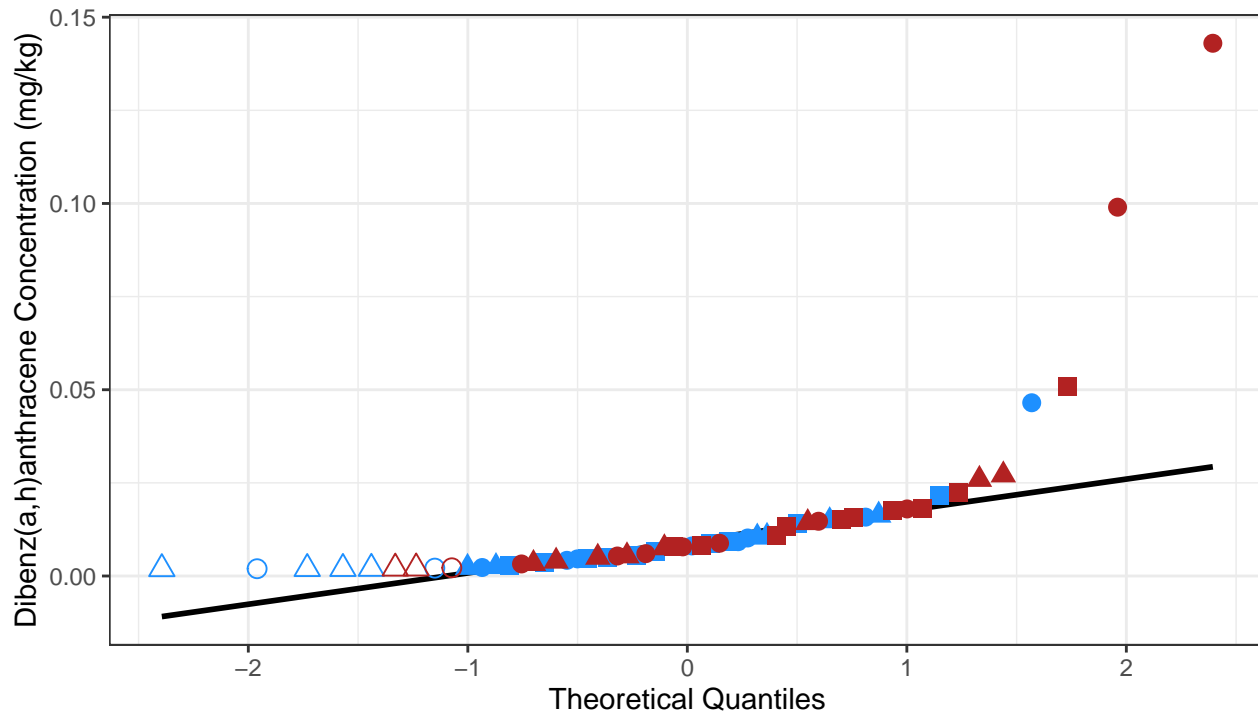
○ ND 2-6 in    ■ Detect 0-2 in    ▲ Detect 6-12 in



BRA    ● A    ● B    △ ND 6–12 in    ■ Detect 0–2 in    ● Detect 2–6 in    ▲ Detect 6–12 in

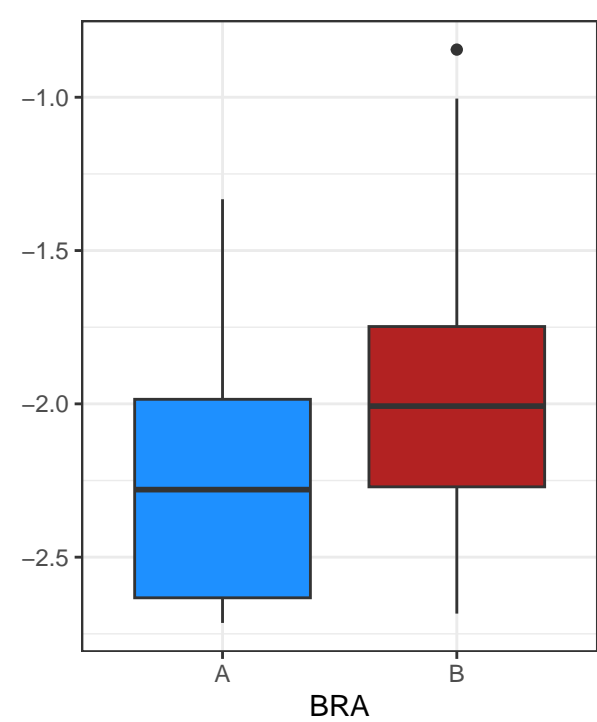
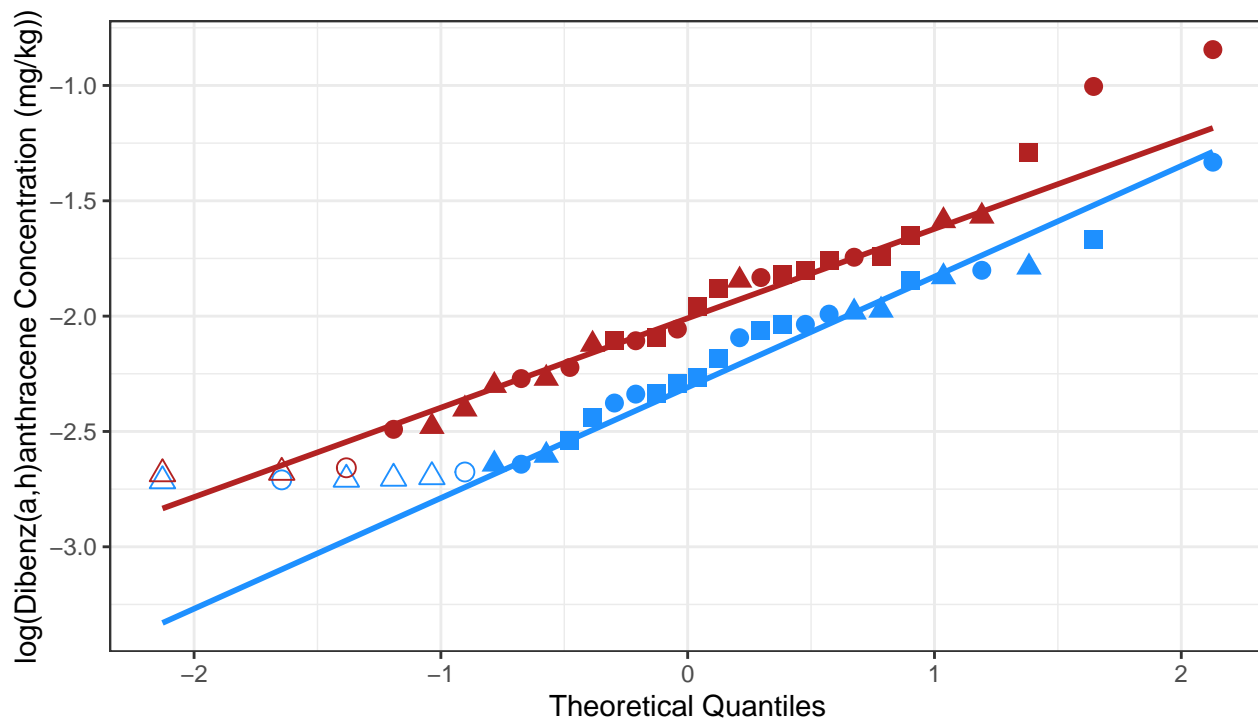
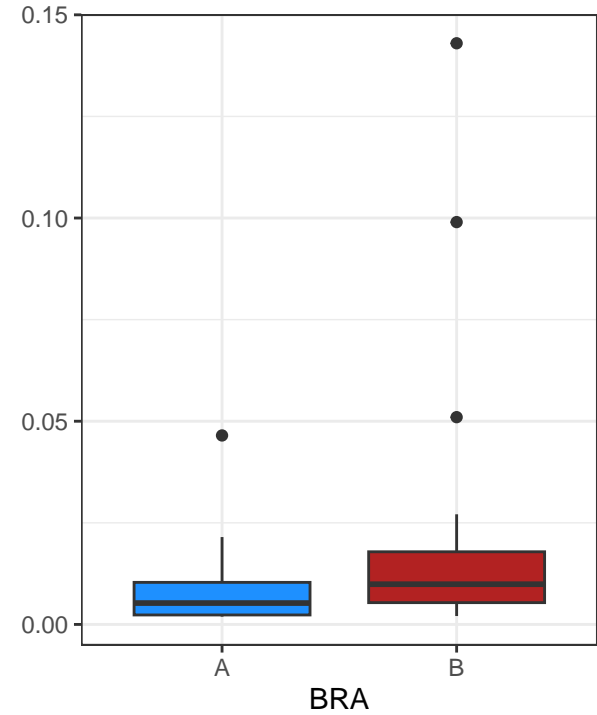
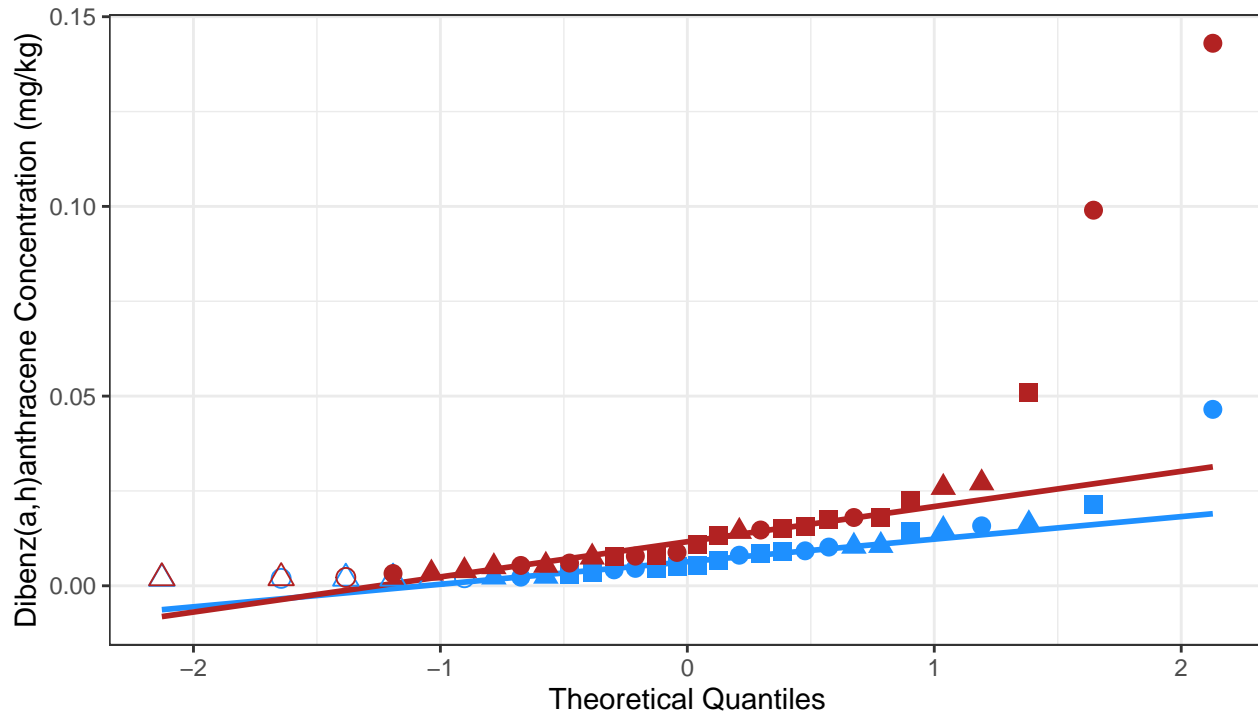


BRA    ● A    ● B    △ ND 6–12 in    ■ Detect 0–2 in    ● Detect 2–6 in    ▲ Detect 6–12 in

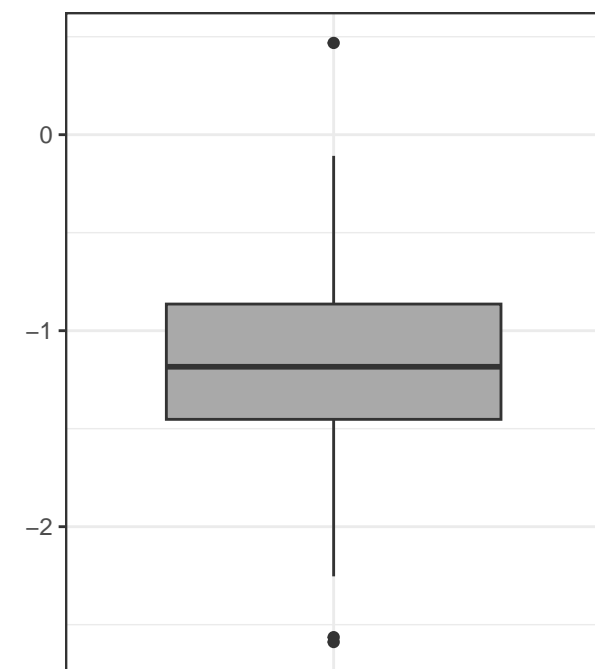
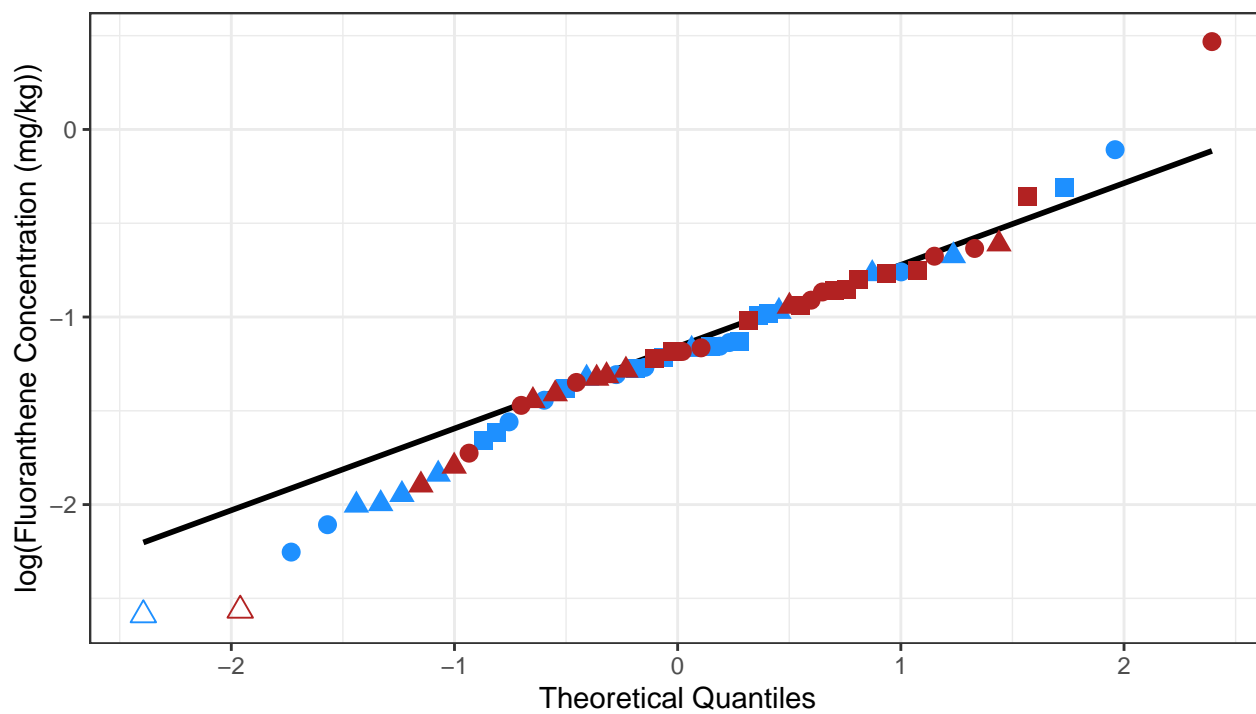
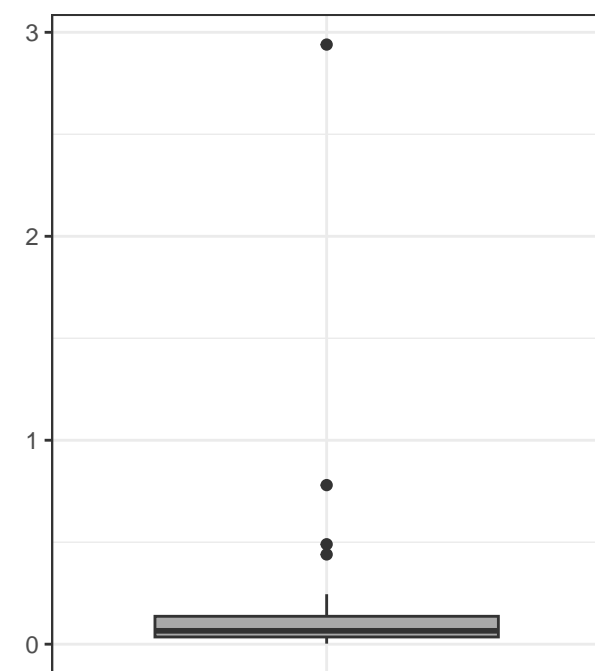
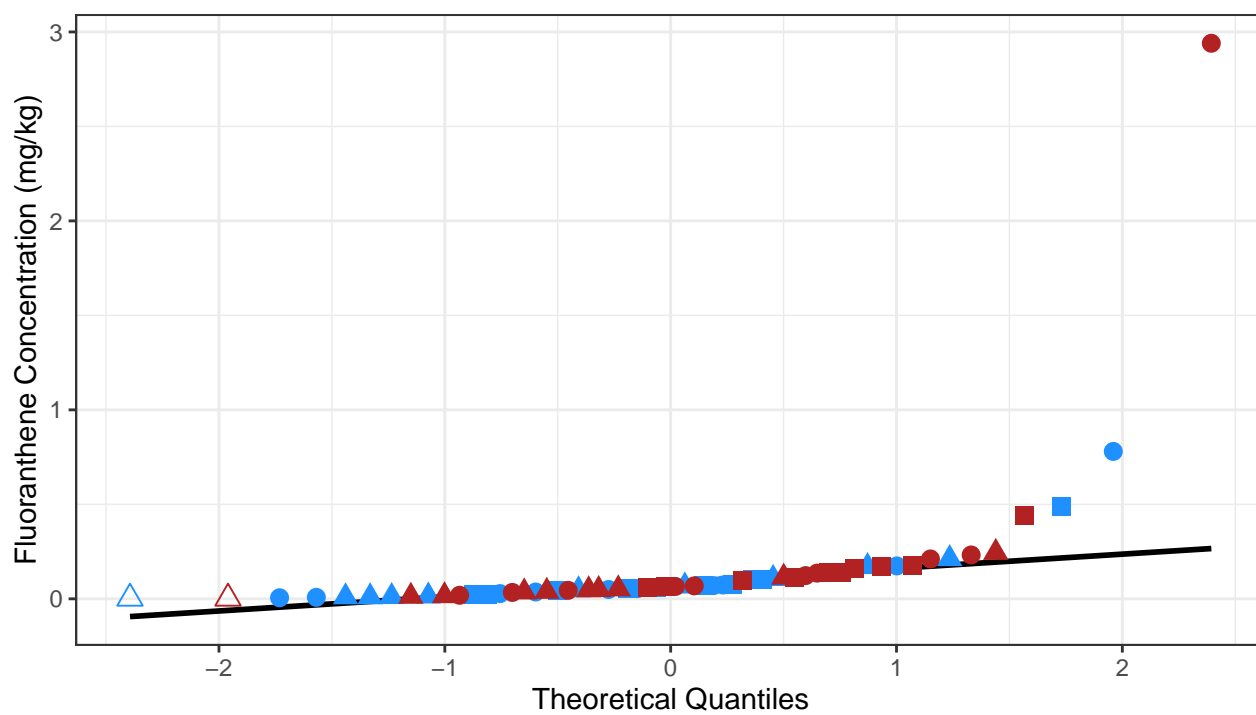


BRA    ● A    ● B    ○ ND 2-6 in    △ ND 6-12 in    ■ Detect 0-2 in    ● Detect 2-6 in    ▲ Detect 6-12 in

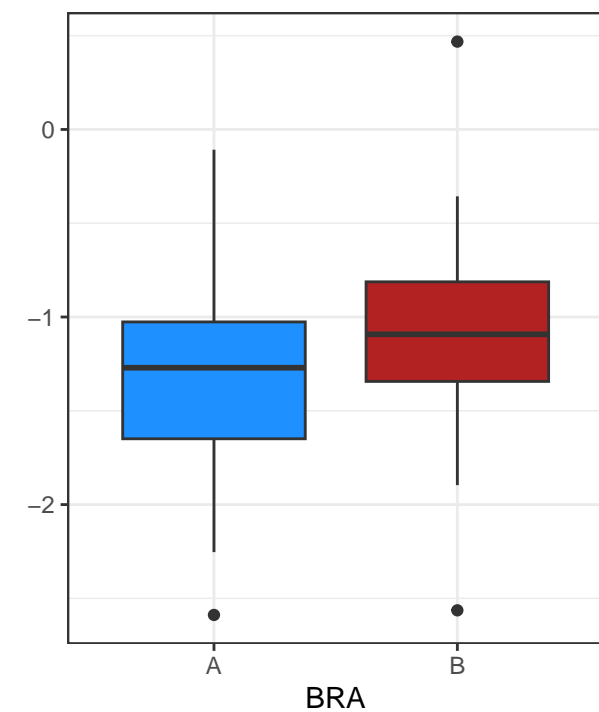
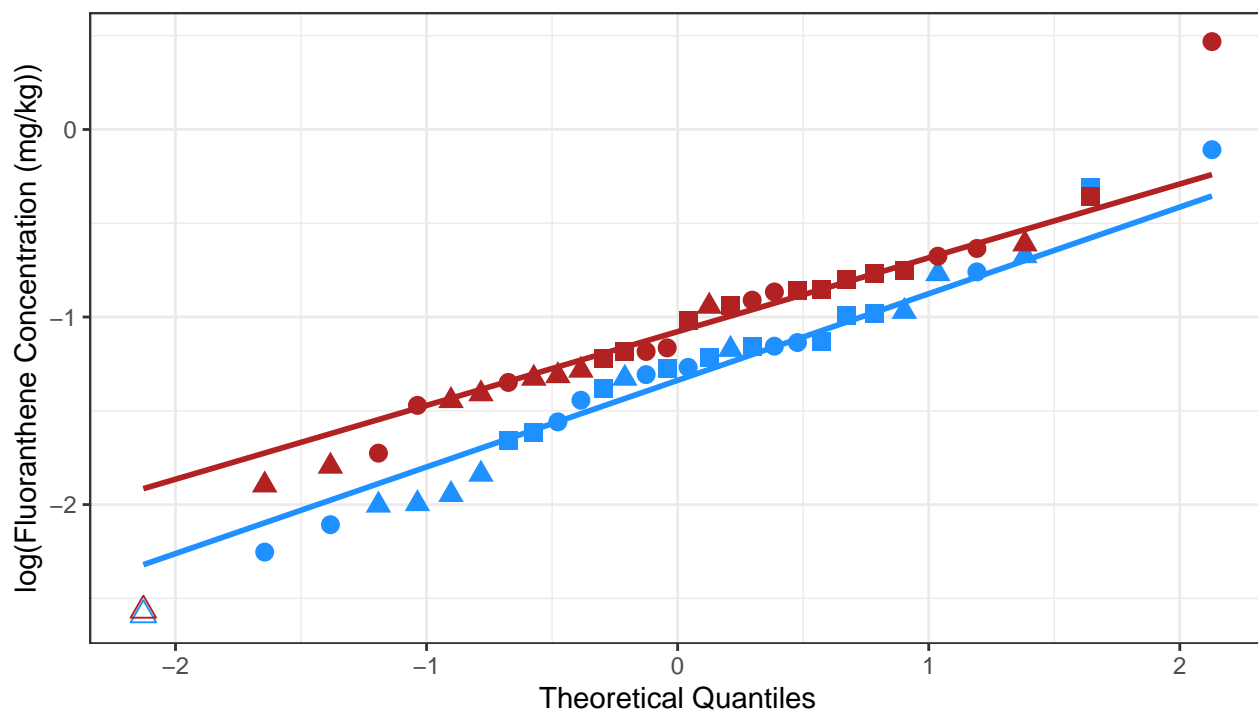
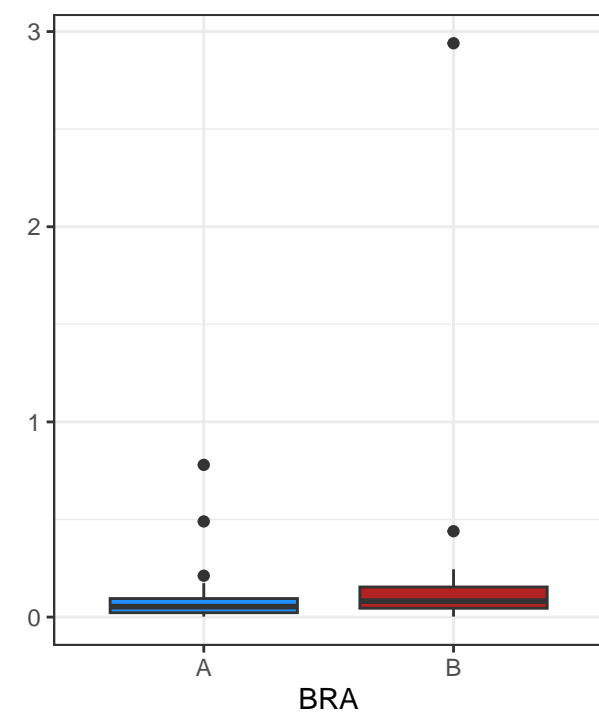
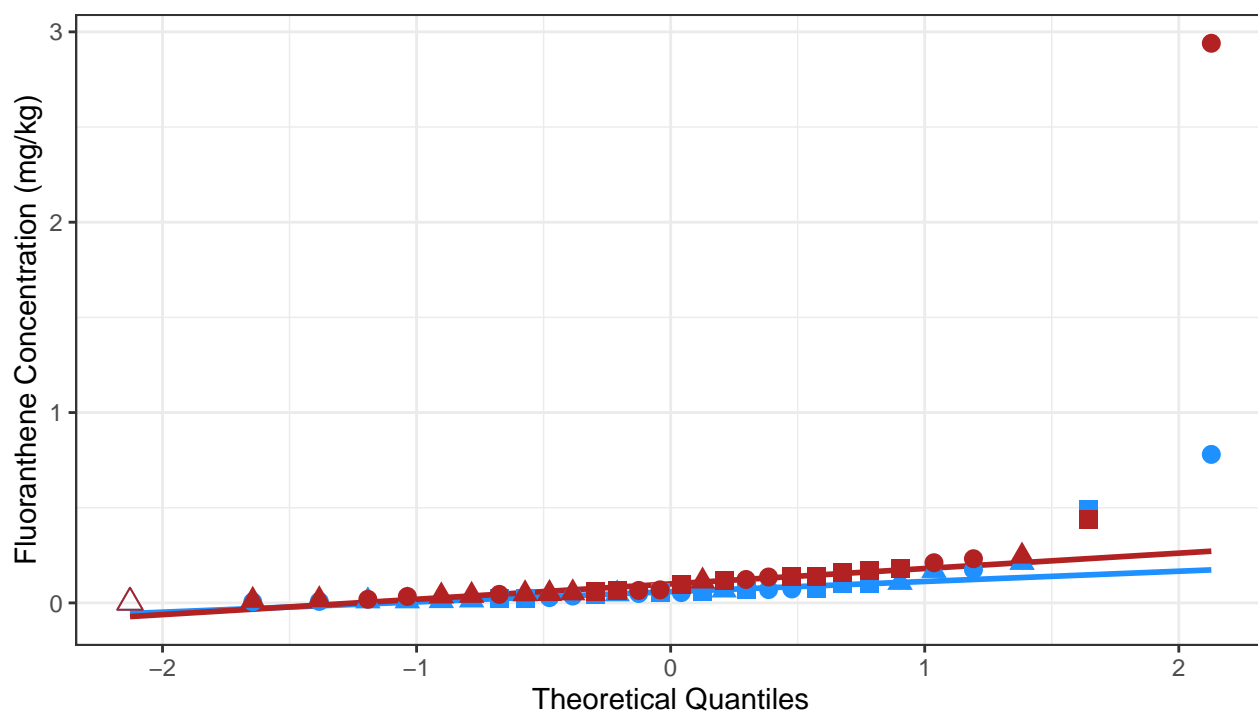




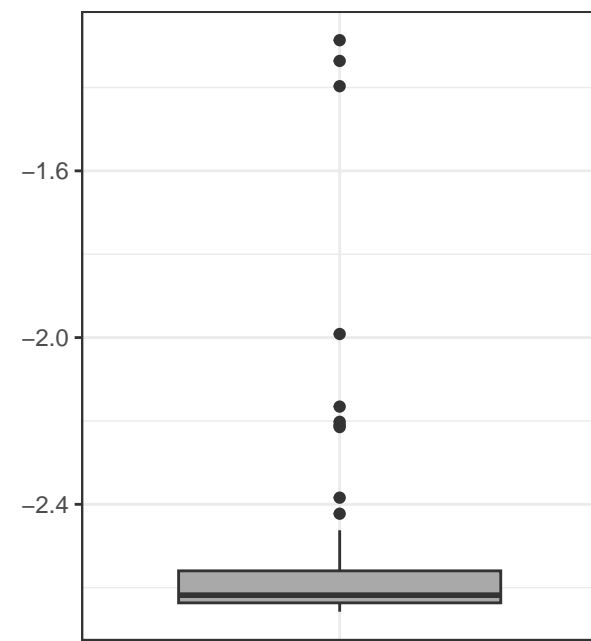
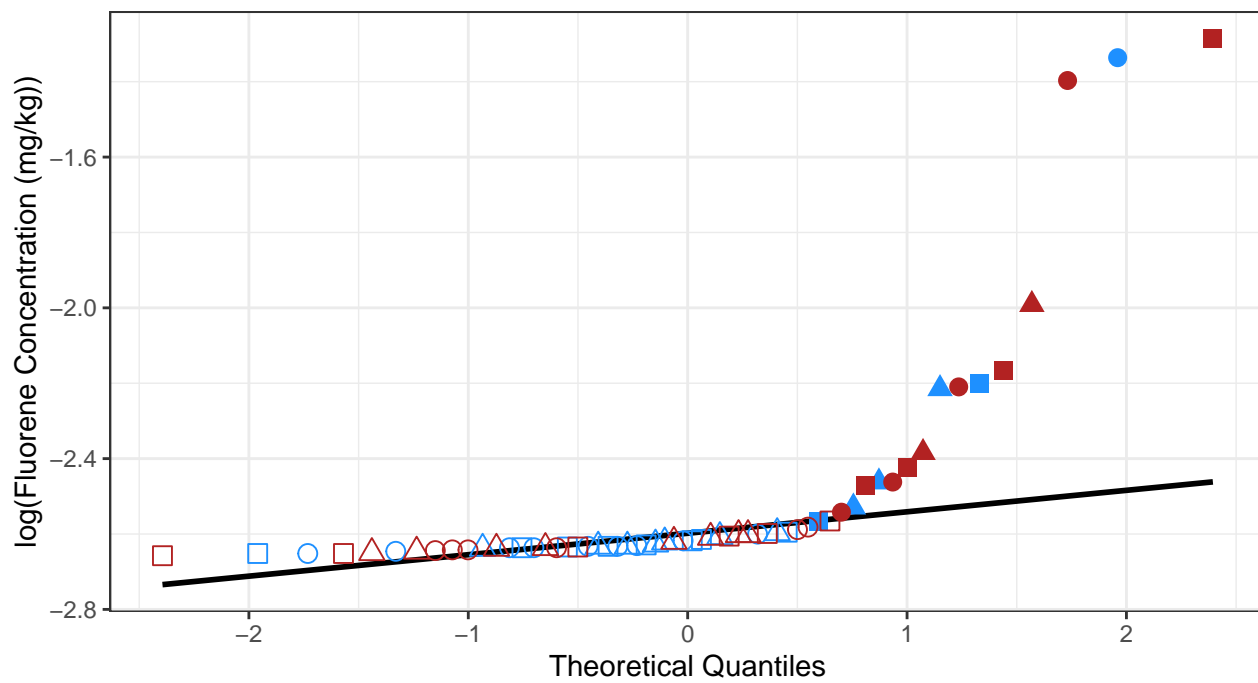
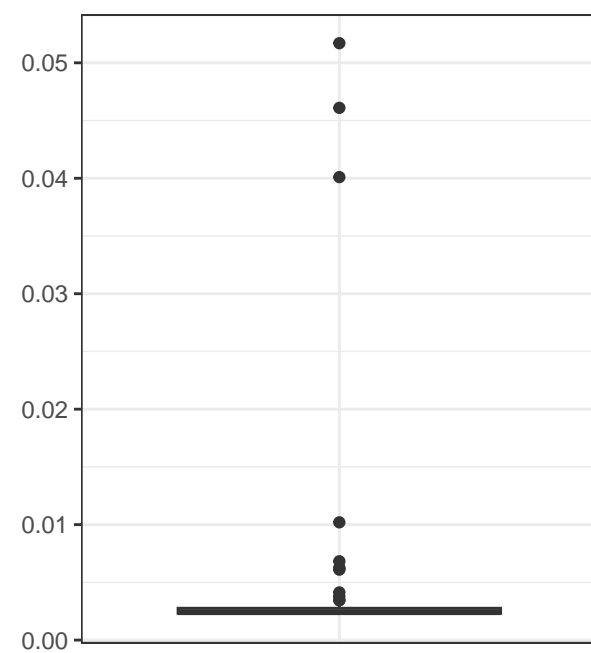
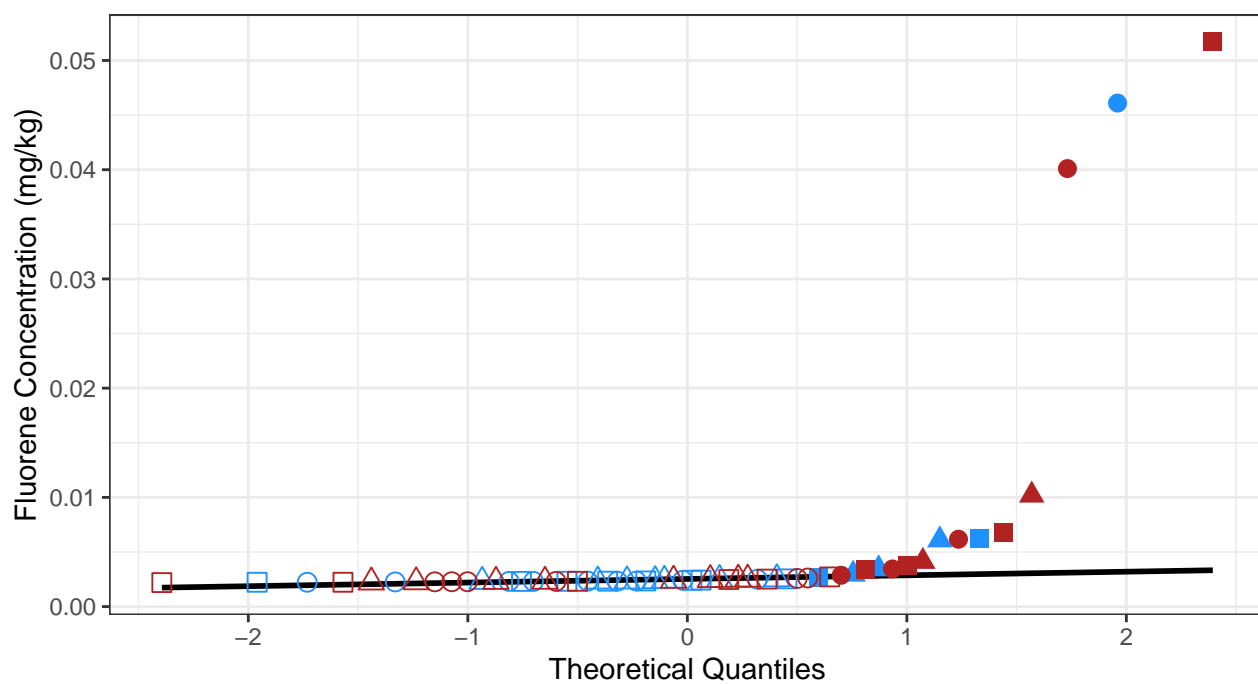
BRA    ● A    ● B    ○ ND 2-6 in    △ ND 6-12 in    ■ Detect 0-2 in    ● Detect 2-6 in    ▲ Detect 6-12 in



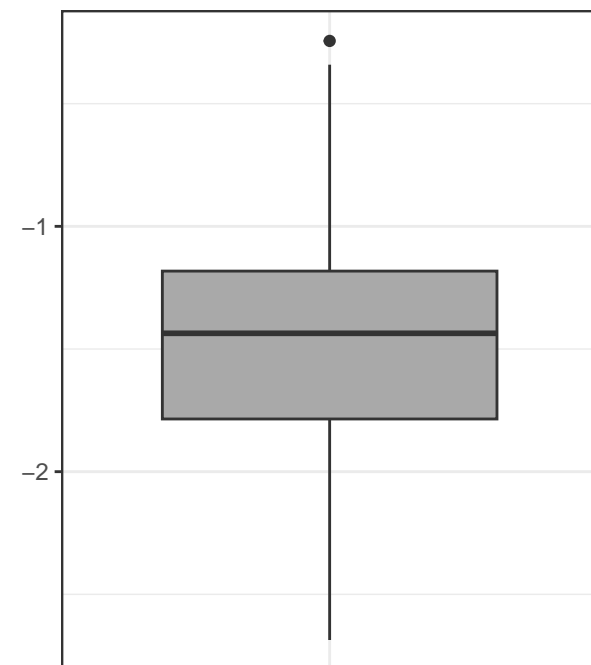
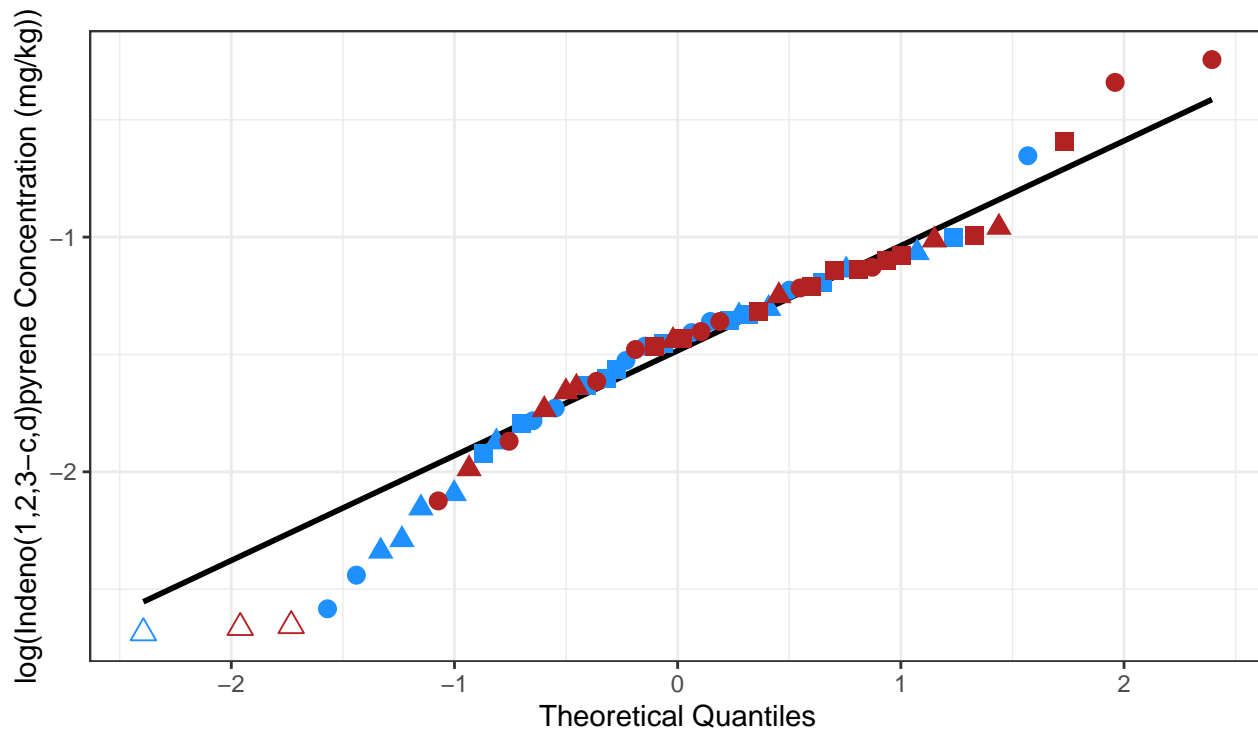
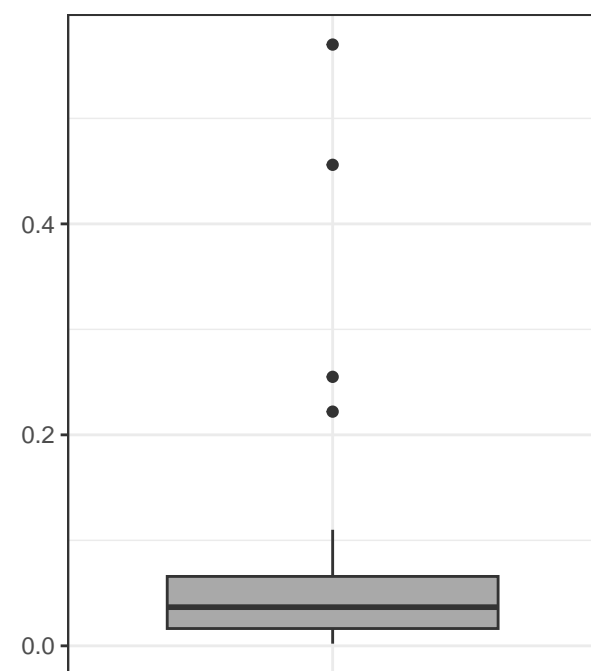
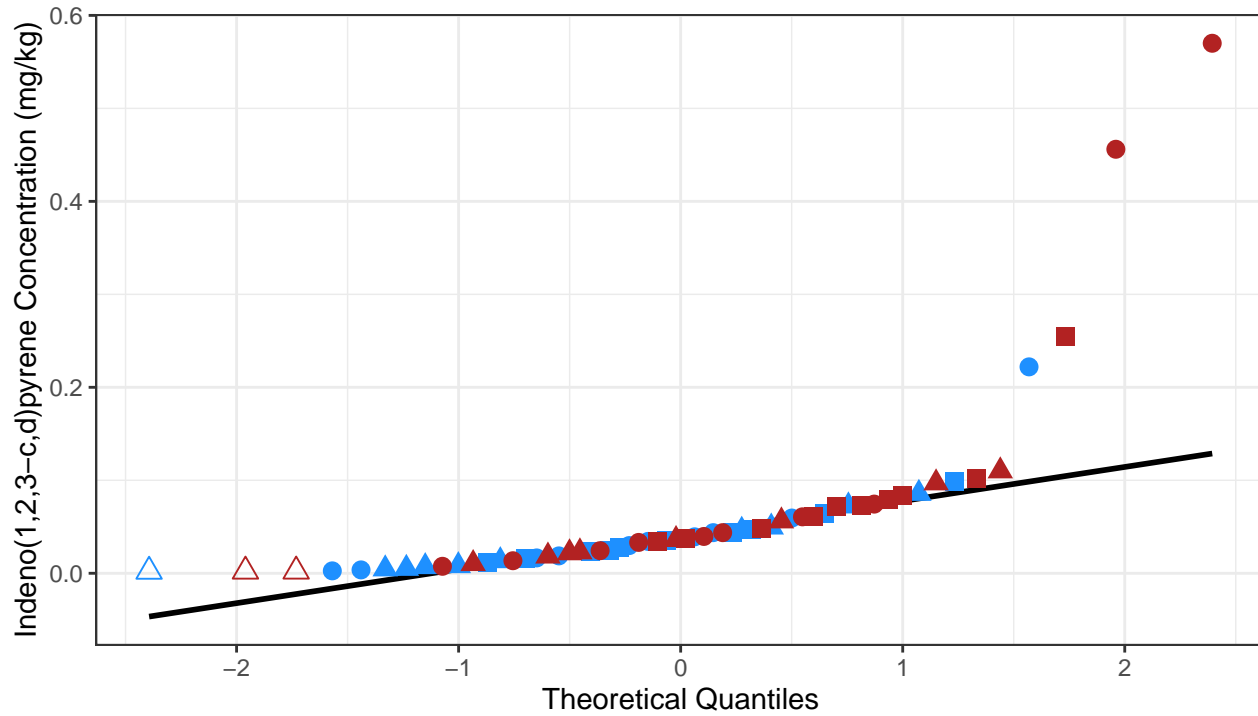
BRA    ● A    ● B    △ ND 6–12 in    ■ Detect 0–2 in    ● Detect 2–6 in    ▲ Detect 6–12 in



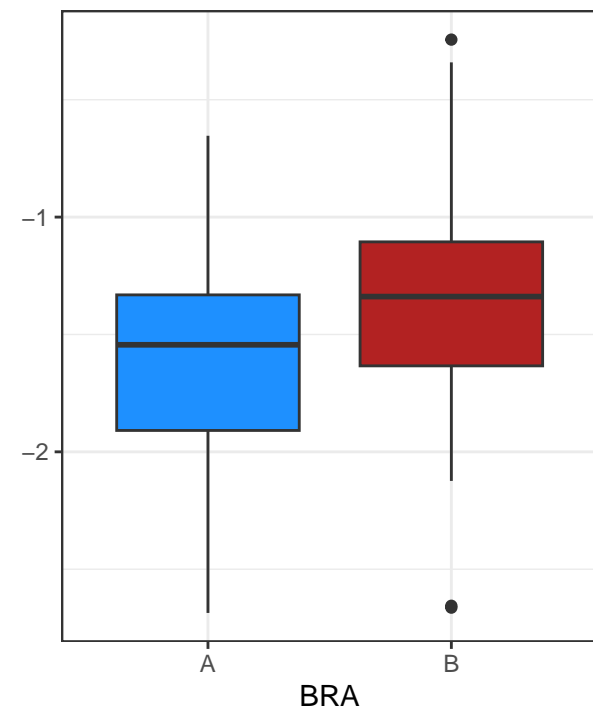
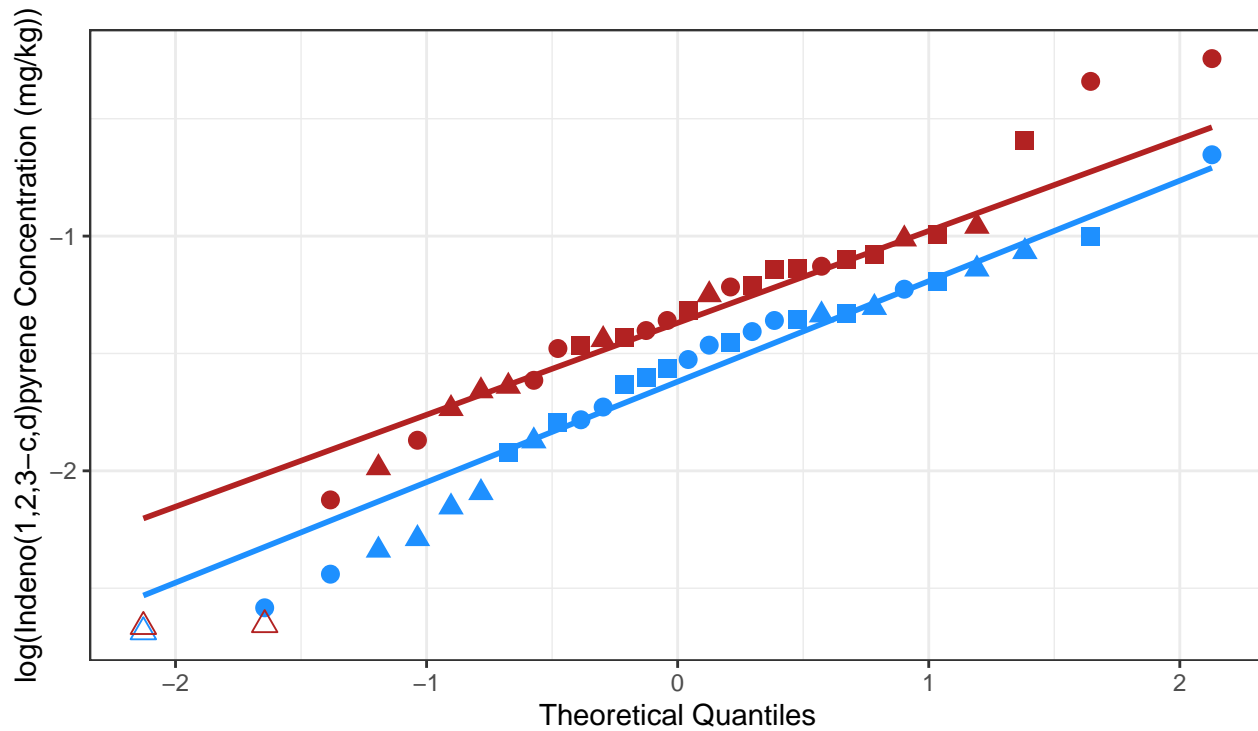
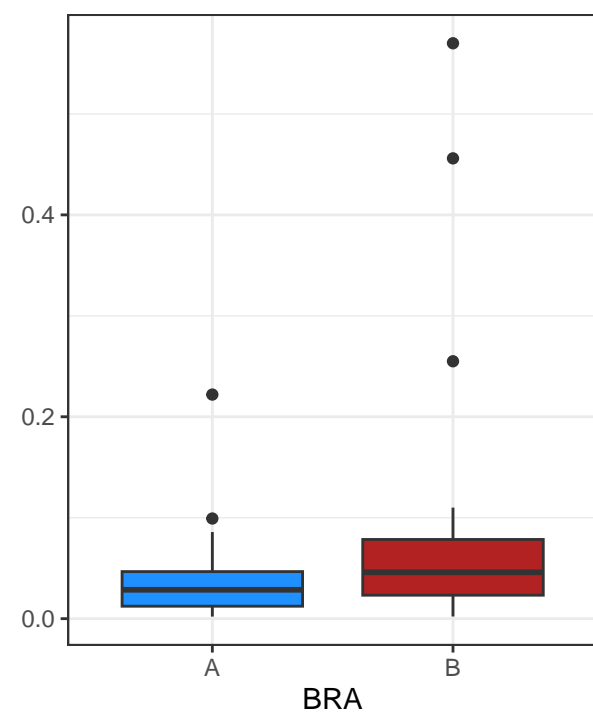
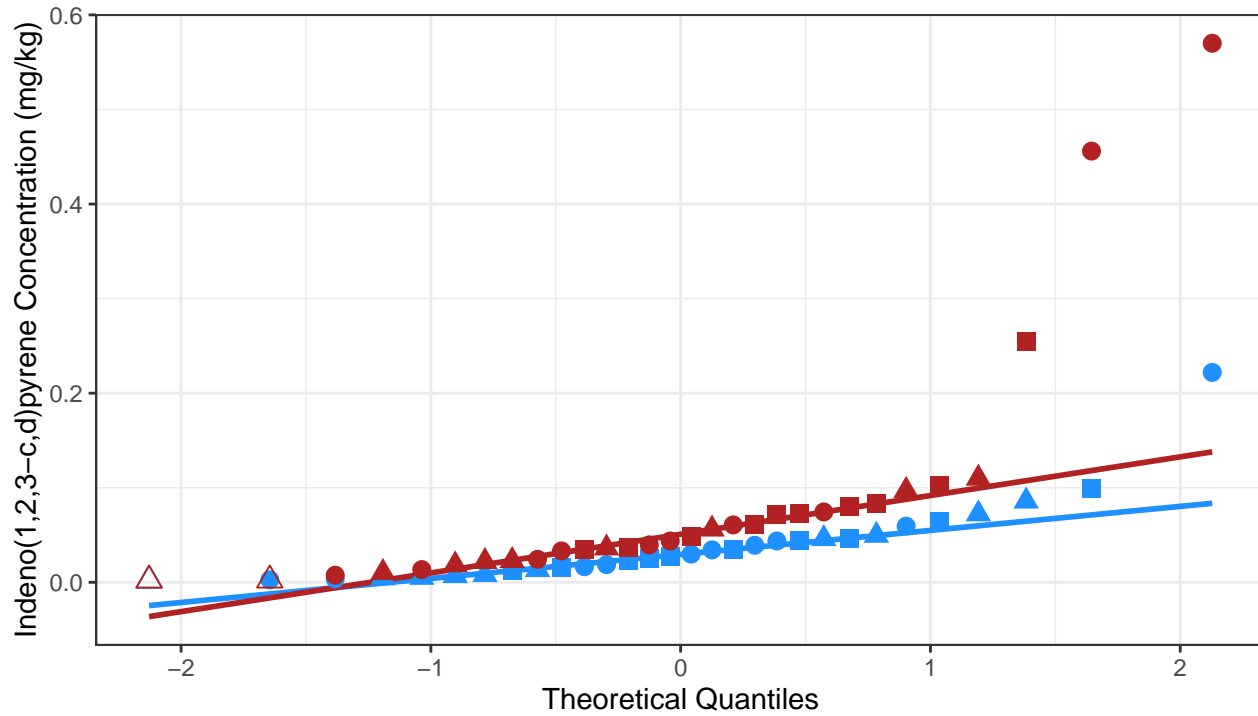
BRA    A    B     $\triangle$  ND 6–12 in     $\blacksquare$  Detect 0–2 in     $\bullet$  Detect 2–6 in     $\blacktriangle$  Detect 6–12 in



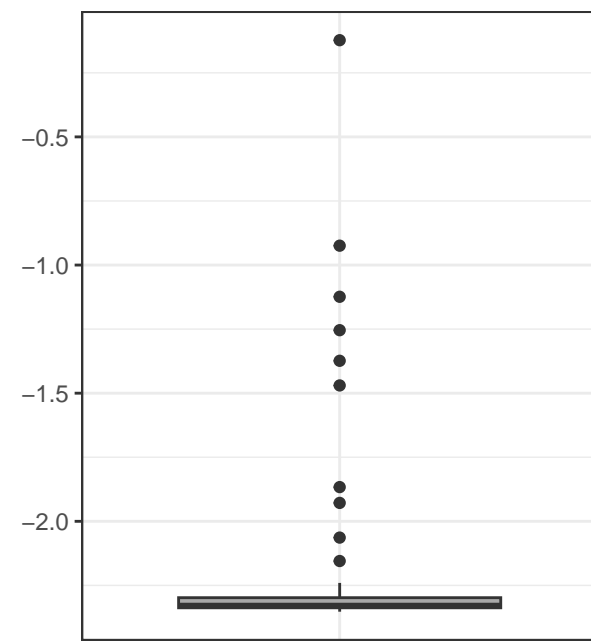
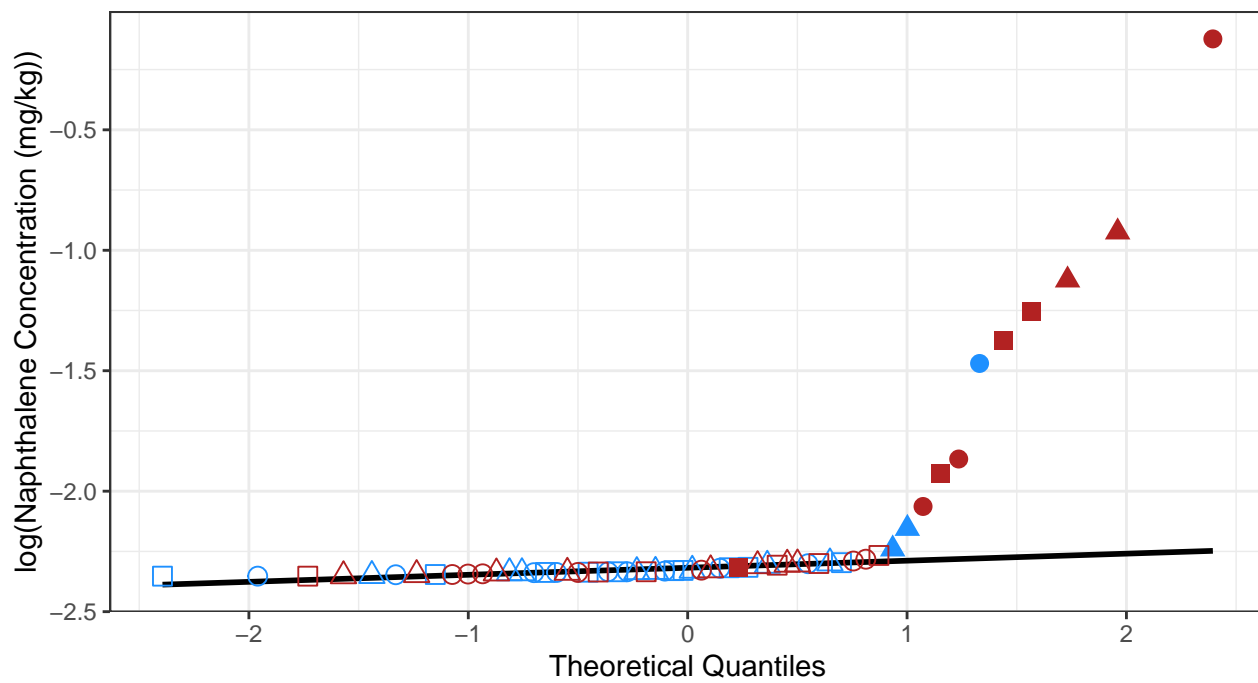
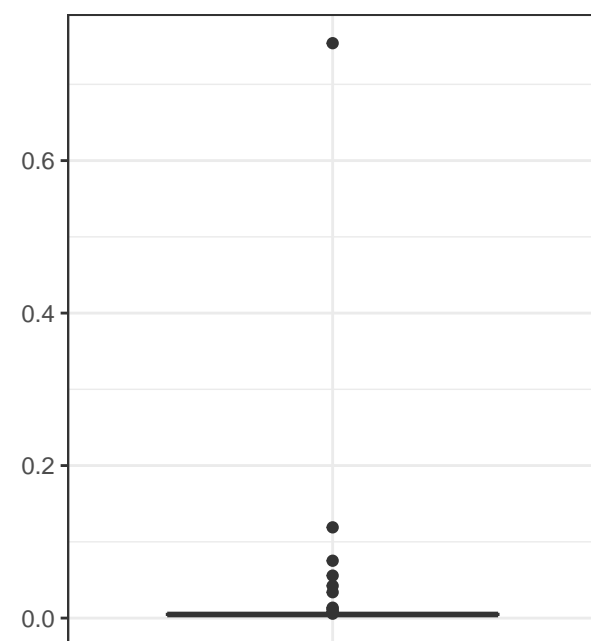
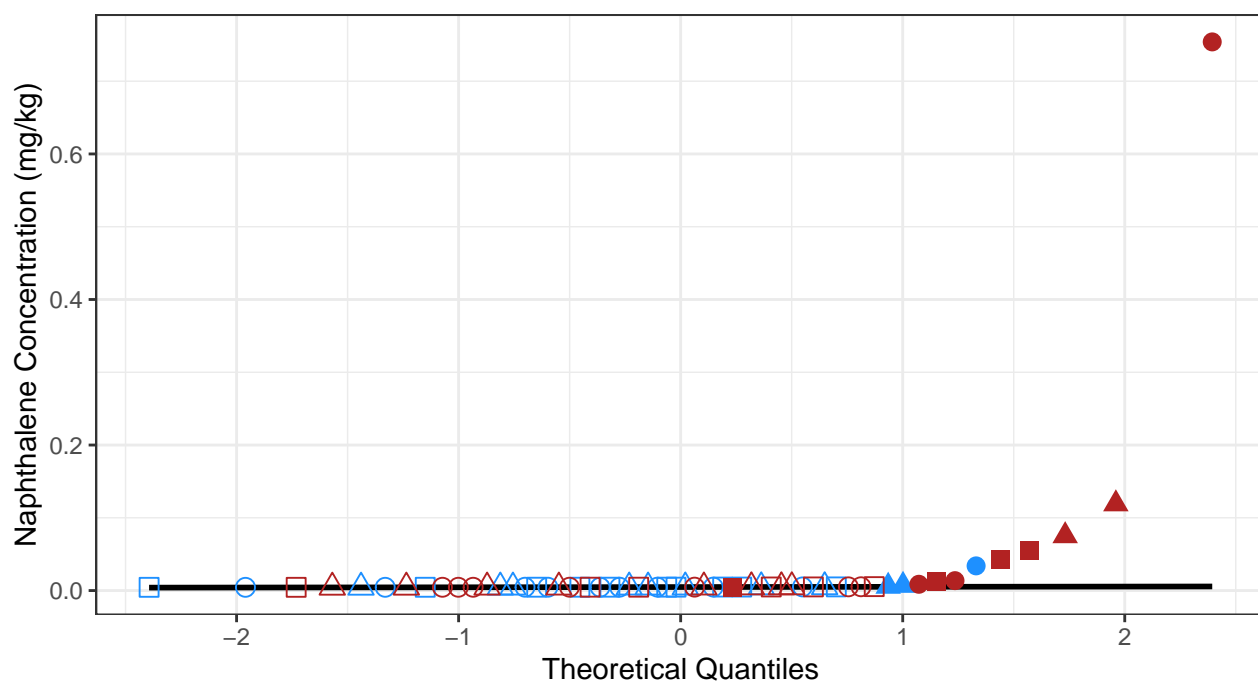
□ ND 0–2 in    △ ND 6–12 in    ● Detect 2–6 in    BRA    ● A    ● B  
 ○ ND 2–6 in    ■ Detect 0–2 in    ▲ Detect 6–12 in



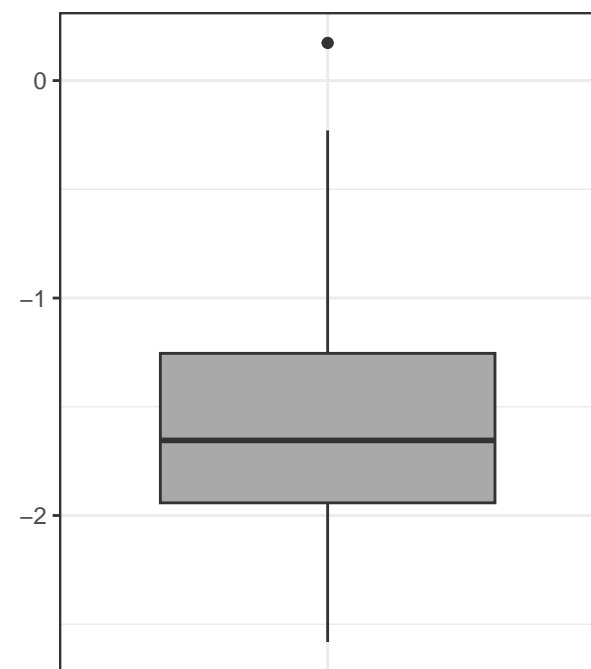
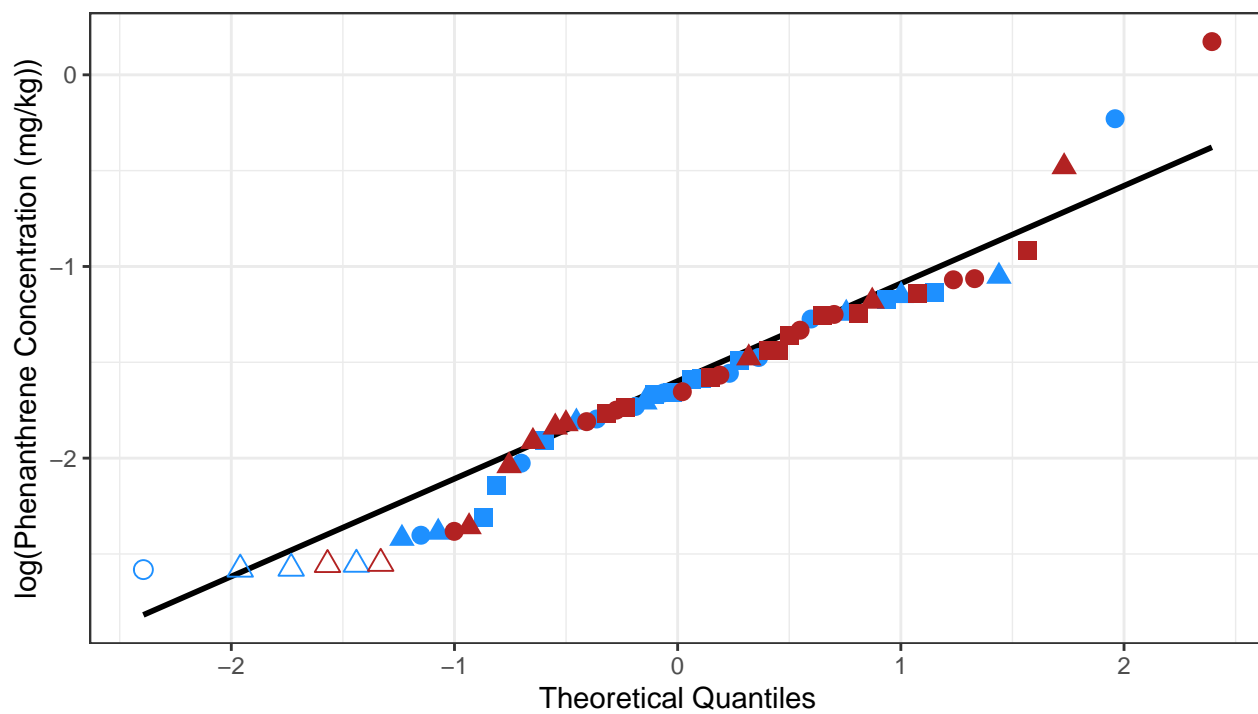
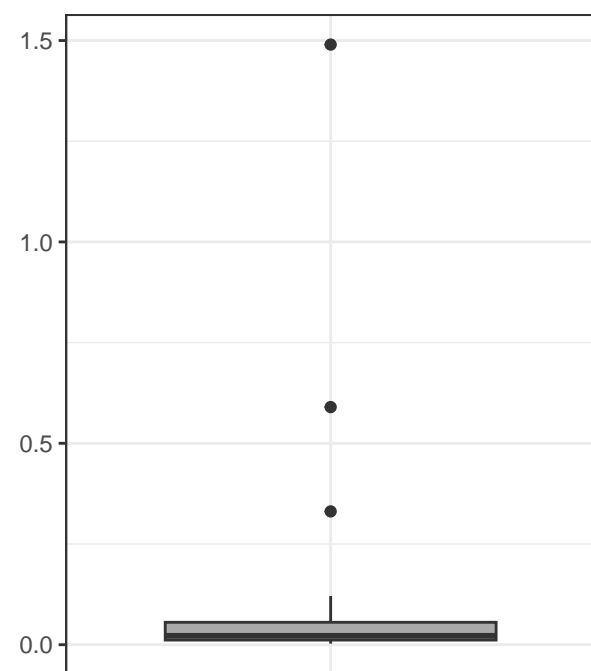
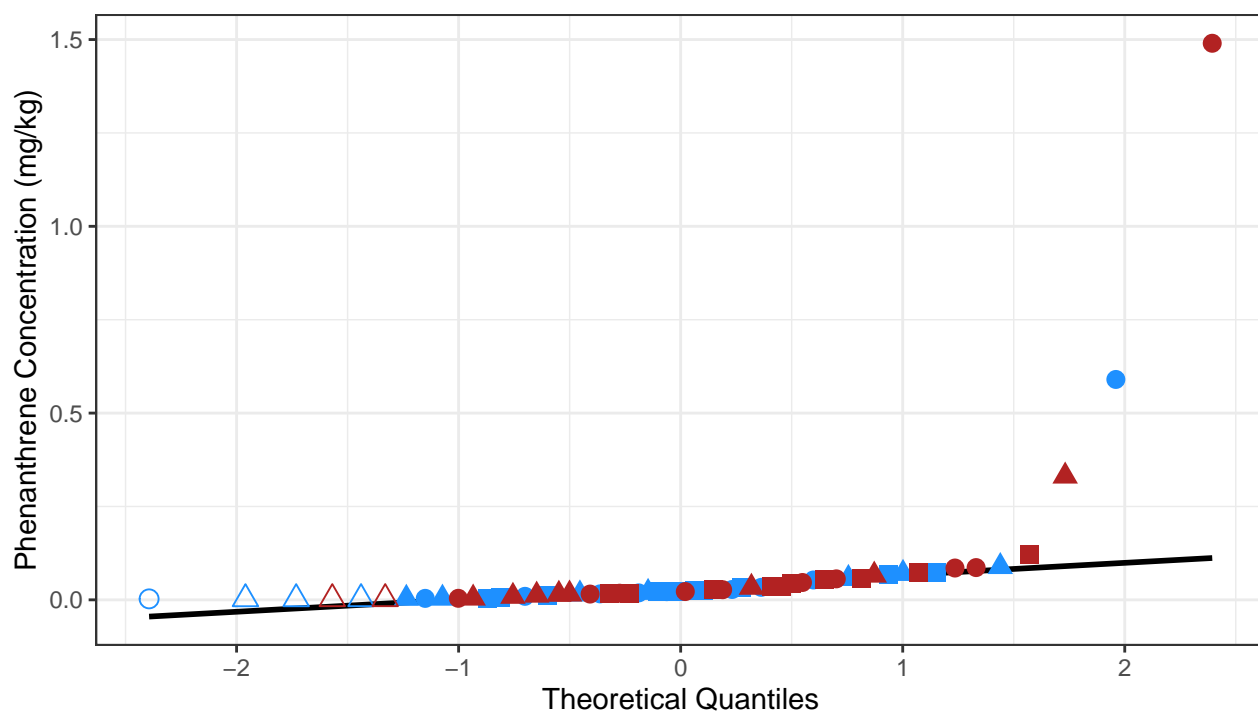
BRA    ● A    ● B    △ ND 6-12 in    ■ Detect 0-2 in    ● Detect 2-6 in    ▲ Detect 6-12 in



BRA    ● A    ● B    △ ND 6–12 in    ■ Detect 0–2 in    ● Detect 2–6 in    ▲ Detect 6–12 in

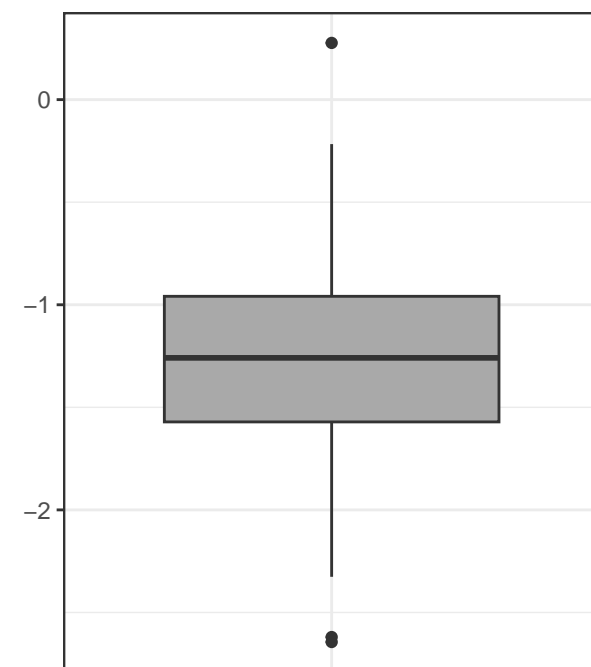
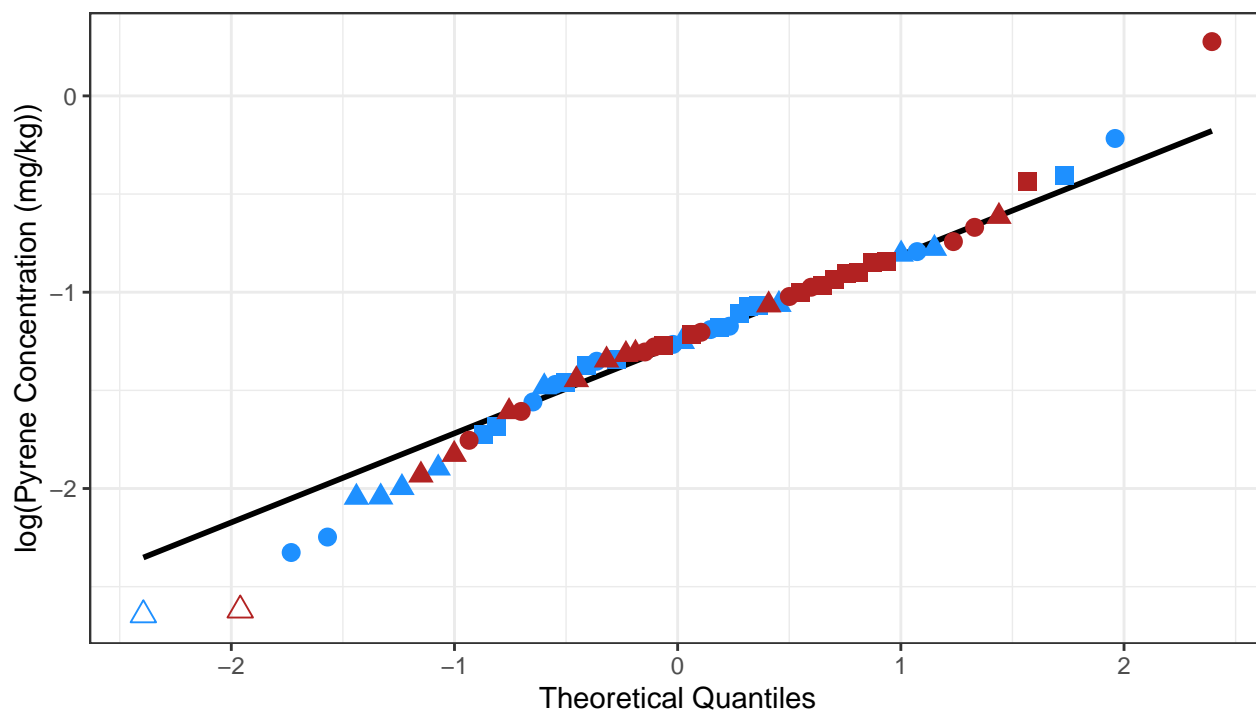
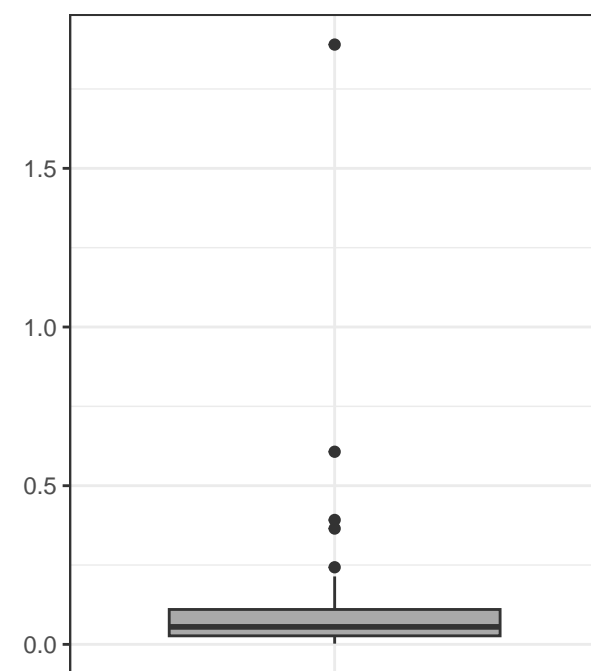
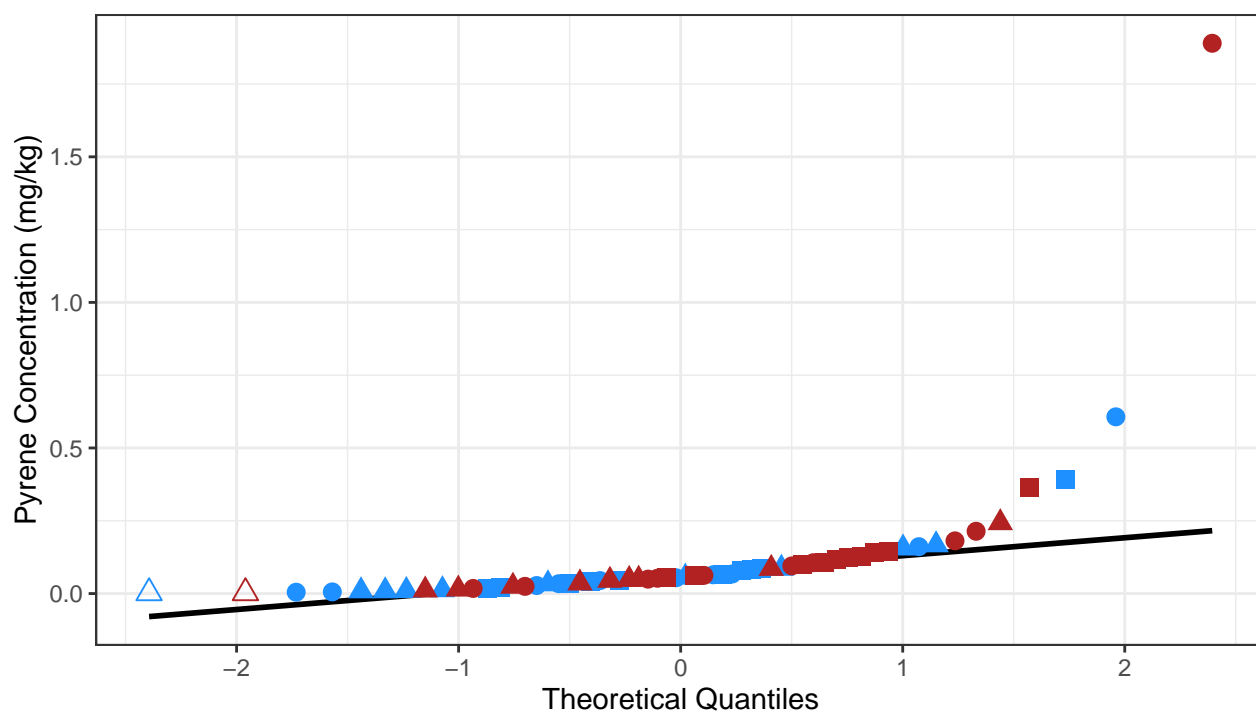


□ ND 0-2 in    △ ND 6-12 in    ● Detect 2-6 in    BRA    ● A    ● B  
○ ND 2-6 in    ■ Detect 0-2 in    ▲ Detect 6-12 in

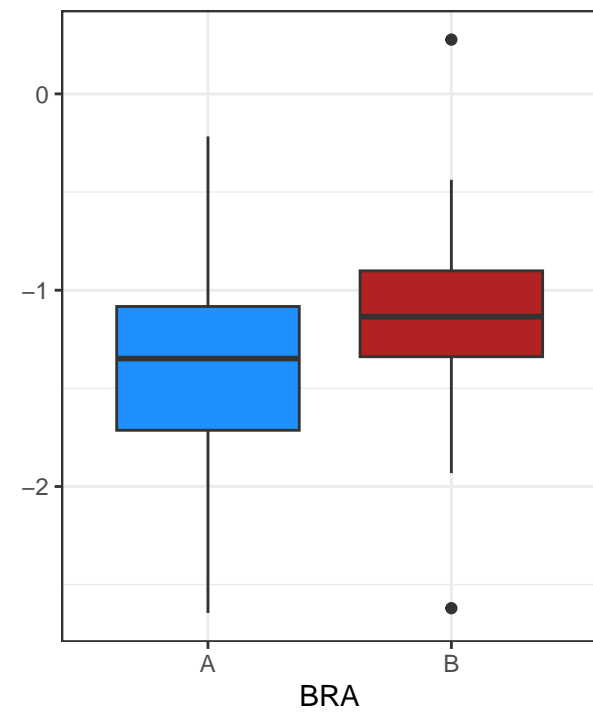
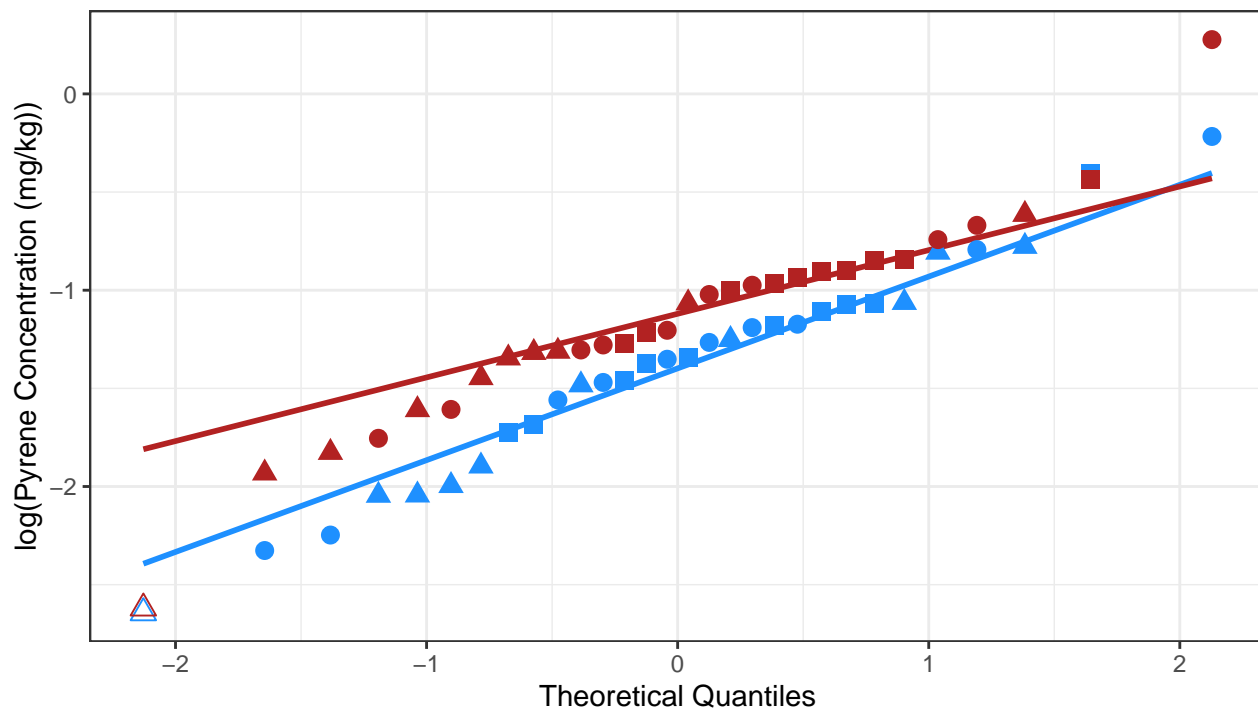
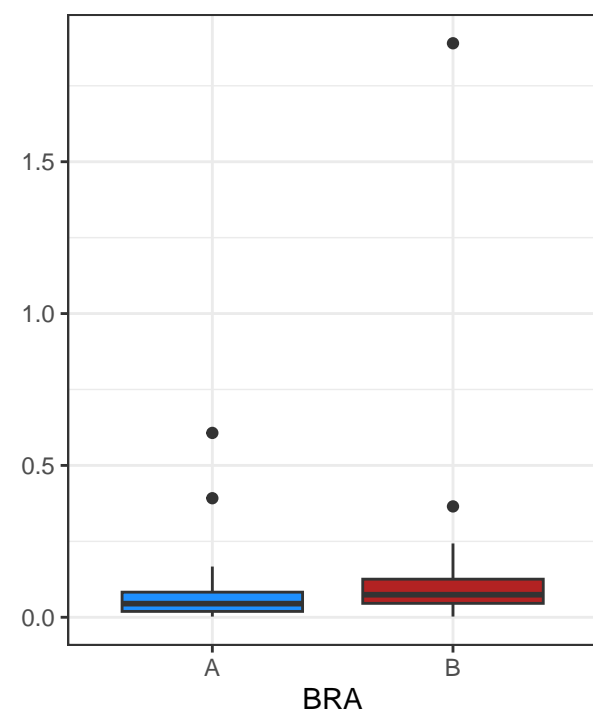
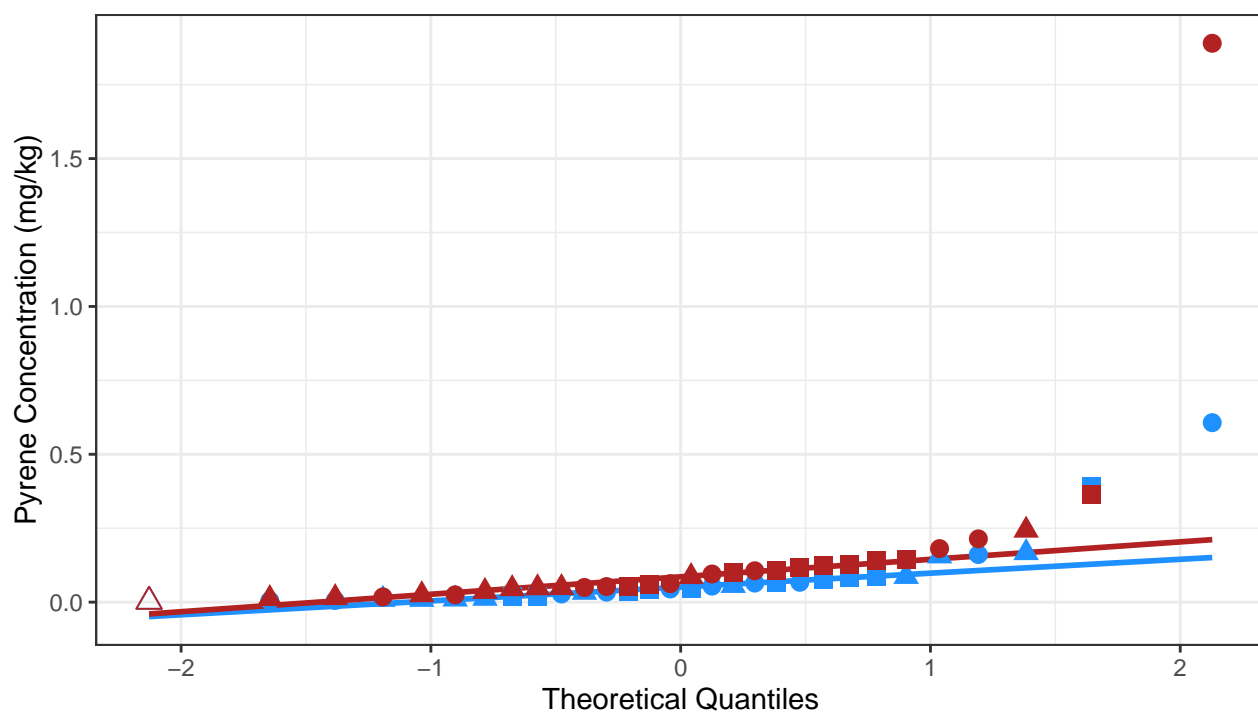


BRA    ● A    ● B    ○ ND 2–6 in    △ ND 6–12 in    ■ Detect 0–2 in    ● Detect 2–6 in    ▲ Detect 6–12 in





BRA   ● A   ● B   △ ND 6-12 in   ■ Detect 0-2 in   ● Detect 2-6 in   ▲ Detect 6-12 in



BRA A B  $\triangle$  ND 6-12 in  $\blacksquare$  Detect 0-2 in  $\bullet$  Detect 2-6 in  $\blacktriangle$  Detect 6-12 in

**Attachment C**  
**ProUCL Input and Output Files**

## **ProUCL Input Files**

## ATTACHMENT C

## ProUCL Input Files - Dioxins/Furans

Former Houston Wood Preserving Works, Houston, Texas

SoilEvent	BRA_Group	sys_loc_code	DepthRange	DepthGroup	C_vs_D	Siev_vs_Unsiev	cas_rn	chemical_name	TEQ	Result_Unit_Rpt	Detect
BRA1-10	A	BRA05A	6 to 12	Deep	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	11	ng/kg	1
BRA1-10	A	BRA10A	6 to 12	Deep	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	3.9	ng/kg	1
BRA1-10	B	BRA05B	2 to 6	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	6.9	ng/kg	1
BRA1-10	B	BRA05B	6 to 12	Deep	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	3.9	ng/kg	1
BRA1-10	B	BRA10B	2 to 6	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	11	ng/kg	1
BRA1-10	B	BRA10B	6 to 12	Deep	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	6.5	ng/kg	1
BRA1-10	A	BRA01A	0 to 2	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	12	ng/kg	1
BRA1-10	A	BRA01A	2 to 6	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	7.7	ng/kg	1
BRA1-10	A	BRA06A	0 to 2	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	8.5	ng/kg	1
BRA1-10	A	BRA06A	2 to 6	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	9.5	ng/kg	1
BRA1-10	B	BRA01B	0 to 2	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	22	ng/kg	1
BRA1-10	B	BRA01B	2 to 6	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	15	ng/kg	1
BRA1-10	B	BRA06B	0 to 2	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	2.8	ng/kg	1
BRA1-10	B	BRA06B	2 to 6	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	2.3	ng/kg	1
BRA1-10	A	BRA01A	6 to 12	Deep	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	10	ng/kg	1
BRA1-10	A	BRA02A	0 to 2	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	2.5	ng/kg	1
BRA1-10	A	BRA06A	6 to 12	Deep	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	1.8	ng/kg	1
BRA1-10	A	BRA07A	0 to 2	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	1.8	ng/kg	1
BRA1-10	B	BRA01B	6 to 12	Deep	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	15	ng/kg	1
BRA1-10	B	BRA02B	0 to 2	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	17	ng/kg	1
BRA1-10	B	BRA06B	6 to 12	Deep	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	1.6	ng/kg	1
BRA1-10	B	BRA07B	0 to 2	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	10	ng/kg	1
BRA1-10	A	BRA02A	2 to 6	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	2.7	ng/kg	1
BRA1-10	A	BRA02A	6 to 12	Deep	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	1.8	ng/kg	1
BRA1-10	A	BRA07A	2 to 6	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	2.1	ng/kg	1
BRA1-10	A	BRA07A	6 to 12	Deep	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	1.7	ng/kg	1
BRA1-10	B	BRA02B	2 to 6	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	33	ng/kg	1
BRA1-10	B	BRA02B	6 to 12	Deep	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	13	ng/kg	1
BRA1-10	B	BRA07B	2 to 6	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	11	ng/kg	1
BRA1-10	B	BRA07B	6 to 12	Deep	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	15	ng/kg	1
BRA1-10	A	BRA03A	0 to 2	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	3	ng/kg	1
BRA1-10	A	BRA03A	2 to 6	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	1.5	ng/kg	1
BRA1-10	A	BRA08A	0 to 2	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	8.4	ng/kg	1
BRA1-10	A	BRA08A	2 to 6	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	16	ng/kg	1
BRA1-10	B	BRA03B	0 to 2	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	3.8	ng/kg	1
BRA1-10	B	BRA03B	2 to 6	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	1.8	ng/kg	1
BRA1-10	B	BRA08B	0 to 2	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	21	ng/kg	1
BRA1-10	B	BRA08B	2 to 6	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	3.3	ng/kg	1
BRA1-10	A	BRA03A	6 to 12	Deep	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	2.2	ng/kg	1
BRA1-10	A	BRA04A	0 to 2	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	1.8	ng/kg	1
BRA1-10	A	BRA08A	6 to 12	Deep	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	19	ng/kg	1
BRA1-10	A	BRA09A	0 to 2	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	1.1	ng/kg	1
BRA1-10	B	BRA03B	6 to 12	Deep	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	0.91	ng/kg	1
BRA1-10	B	BRA04B	0 to 2	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	7	ng/kg	1
BRA1-10	B	BRA08B	6 to 12	Deep	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	1.5	ng/kg	1
BRA1-10	B	BRA09B	0 to 2	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	2.9	ng/kg	1
BRA1-10	A	BRA04A	2 to 6	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	1.7	ng/kg	1
BRA1-10	A	BRA04A	6 to 12	Deep	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	1.3	ng/kg	1
BRA1-10	A	BRA09A	2 to 6	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	1.2	ng/kg	1
BRA1-10	A	BRA09A	6 to 12	Deep	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	1.2	ng/kg	1
BRA1-10	B	BRA04B	2 to 6	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	5.6	ng/kg	1
BRA1-10	B	BRA04B	6 to 12	Deep	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	6.3	ng/kg	1
BRA1-10	B	BRA09B	2 to 6	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	3.7	ng/kg	1
BRA1-10	B	BRA09B	6 to 12	Deep	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	3.1	ng/kg	1

ATTACHMENT C  
ProUCL Input Files - Dioxins/Furans  
Former Houston Wood Preserving Works, Houston, Texas

SoilEvent	BRA_Group	sys_loc_code	DepthRange	DepthGroup	C_vs_D	Siev_vs_Unsiev	cas_rn	chemical_name	TEQ	Result_Unit_Rpt	Detect
BRA1-10	A	BRA05A	0 to 2	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	13	ng/kg	1
BRA1-10	A	BRA05A	2 to 6	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	16	ng/kg	1
BRA1-10	A	BRA10A	0 to 2	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	13	ng/kg	1
BRA1-10	A	BRA10A	2 to 6	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	9.4	ng/kg	1
BRA1-10	B	BRA05B	0 to 2	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	7.3	ng/kg	1
BRA1-10	B	BRA10B	0 to 2	Shallow	Composite	Sieved	DFTEQ2005_ND1	Dioxin/furan TCDD toxicity equivalent (WHO 2005, ND = RL)	4.6	ng/kg	1

*Notes:*  
Toxic equivalency using 2005 World Health Organization toxic equivalency factor for 2,3,7,8-tetrachlorodibenzo-p-dioxin, used to calculated 2,3,7,8-TCDD TEQs in Tables 1-3

ATTACHMENT C  
ProUCL Full Analysis Analytes  
Former Houston Wood Preserving Works, Houston, Texas

C vs D	Siev vs Unsiev	SoilEvent	BRA_Group	sys_loc_code	DepthRange	Result_Unit_Rpt	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene
Composite	Unsieved	BRA1-10	A	BRA01A	0 to 2	mg/kg	0.00268	0.00556	0.0276	0.0313	0.0486	0.0204	0.0167	0.0318	0.00508	0.0534
Composite	Unsieved	BRA1-10	A	BRA01A	2 to 6	mg/kg	0.00253	0.00727	0.018	0.0233	0.0436	0.019	0.0141	0.0209	0.0042	0.0276
Composite	Unsieved	BRA1-10	A	BRA01A	6 to 12	mg/kg	0.0026	0.00363	0.0105	0.0107	0.0209	0.00783	0.00667	0.00883	0.00228	0.0145
Composite	Unsieved	BRA1-10	A	BRA02A	0 to 2	mg/kg	0.00245	0.0025	0.0109	0.0145	0.0215	0.0148	0.00757	0.0137	0.00288	0.0219
Composite	Unsieved	BRA1-10	A	BRA02A	2 to 6	mg/kg	0.00243	0.00259	0.019	0.0223	0.0285	0.0158	0.0111	0.0186	0.00228	0.036
Composite	Unsieved	BRA1-10	A	BRA02A	6 to 12	mg/kg	0.00252	0.00269	0.00618	0.00687	0.00994	0.00546	0.00317	0.00799	0.00201	0.00992
Composite	Unsieved	BRA1-10	A	BRA03A	0 to 2	mg/kg	0.00254	0.00271	0.0125	0.0172	0.0294	0.0184	0.0102	0.0144	0.00362	0.0241
Composite	Unsieved	BRA1-10	A	BRA03A	2 to 6	mg/kg	0.00245	0.00261	0.00234	0.00305	0.00531	0.00328	0.00244	0.00322	0.00195	0.00558
Composite	Unsieved	BRA1-10	A	BRA03A	6 to 12	mg/kg	0.00246	0.00261	0.00197	0.00204	0.00174	0.00201	0.00244	0.00264	0.00196	0.00258
Composite	Unsieved	BRA1-10	A	BRA04A	0 to 2	mg/kg	0.00248	0.0135	0.0494	0.0484	0.0714	0.0328	0.0244	0.0477	0.00461	0.104
Composite	Unsieved	BRA1-10	A	BRA04A	2 to 6	mg/kg	0.00248	0.0974	0.332	0.263	0.371	0.178	0.126	0.266	0.0465	0.78
Composite	Unsieved	BRA1-10	A	BRA04A	6 to 12	mg/kg	0.00248	0.00264	0.00675	0.00503	0.00933	0.00538	0.00328	0.00491	0.00198	0.0101
Composite	Unsieved	BRA1-10	A	BRA05A	0 to 2	mg/kg	0.0148	0.0276	0.0436	0.0554	0.0968	0.0528	0.0329	0.0395	0.00863	0.0741
Composite	Unsieved	BRA1-10	A	BRA05A	2 to 6	mg/kg	0.0237	0.1	0.0355	0.0503	0.0829	0.0584	0.0215	0.0269	0.0102	0.0539
Composite	Unsieved	BRA1-10	A	BRA05A	6 to 12	mg/kg	0.0182	0.0616	0.0904	0.0953	0.158	0.0764	0.0453	0.0754	0.0163	0.17
Composite	Unsieved	BRA1-10	A	BRA06A	0 to 2	mg/kg	0.0189	0.0182	0.038	0.048	0.0865	0.0539	0.0241	0.0382	0.00916	0.0693
Composite	Unsieved	BRA1-10	A	BRA06A	2 to 6	mg/kg	0.0302	0.0258	0.039	0.0505	0.0825	0.0573	0.0264	0.0307	0.0158	0.0699
Composite	Unsieved	BRA1-10	A	BRA06A	6 to 12	mg/kg	0.0296	0.0241	0.054	0.0684	0.11	0.0802	0.0349	0.046	0.0148	0.107
Composite	Unsieved	BRA1-10	A	BRA07A	0 to 2	mg/kg	0.00244	0.00259	0.0199	0.0261	0.0439	0.0292	0.0168	0.0206	0.00543	0.0416
Composite	Unsieved	BRA1-10	A	BRA07A	2 to 6	mg/kg	0.00244	0.00351	0.0285	0.0311	0.0431	0.0276	0.0146	0.031	0.00459	0.0493
Composite	Unsieved	BRA1-10	A	BRA07A	6 to 12	mg/kg	0.00243	0.00258	0.00595	0.00821	0.0126	0.0088	0.00367	0.00677	0.00193	0.0113
Composite	Unsieved	BRA1-10	A	BRA08A	0 to 2	mg/kg	0.00558	0.00868	0.0502	0.07	0.12	0.0676	0.0341	0.0682	0.0142	0.102
Composite	Unsieved	BRA1-10	A	BRA08A	2 to 6	mg/kg	0.00505	0.00804	0.041	0.0496	0.0823	0.0482	0.0267	0.0372	0.00921	0.0731
Composite	Unsieved	BRA1-10	A	BRA08A	6 to 12	mg/kg	0.00442	0.0053	0.0351	0.0491	0.0842	0.0535	0.0284	0.0464	0.0104	0.0671
Composite	Unsieved	BRA1-10	A	BRA09A	0 to 2	mg/kg	0.00266	0.0191	0.241	0.19	0.32	0.0781	0.115	0.253	0.0215	0.49
Composite	Unsieved	BRA1-10	A	BRA09A	2 to 6	mg/kg	0.00235	0.0174	0.097	0.092	0.151	0.0311	0.0453	0.0926	0.00806	0.174
Composite	Unsieved	BRA1-10	A	BRA09A	6 to 12	mg/kg	0.00236	0.0188	0.11	0.0721	0.0947	0.0371	0.0361	0.106	0.0106	0.212
Composite	Unsieved	BRA1-10	A	BRA10A	0 to 2	mg/kg	0.00264	0.00601	0.0286	0.0289	0.0443	0.0352	0.0148	0.0349	0.00653	0.0605
Composite	Unsieved	BRA1-10	A	BRA10A	2 to 6	mg/kg	0.00265	0.00282	0.00403	0.00376	0.00525	0.00368	0.00264	0.00318	0.00211	0.00781
Composite	Unsieved	BRA1-10	A	BRA10A	6 to 12	mg/kg	0.00266	0.00284	0.0153	0.0143	0.0212	0.015	0.00816	0.0186	0.00249	0.0471
Composite	Unsieved	BRA1-10	B	BRA01B	0 to 2	mg/kg	0.00287	0.00305	0.0689	0.0881	0.147	0.0628	0.0516	0.101	0.0151	0.139
Composite	Unsieved	BRA1-10	B	BRA01B	2 to 6	mg/kg	0.00272	0.0106	0.114	0.136	0.225	0.0597	0.0808	0.156	0.018	0.211
Composite	Unsieved	BRA1-10	B	BRA01B	6 to 12	mg/kg	0.00264	0.00281	0.00245	0.00832	0.0134	0.00805	0.00262	0.0117	0.0021	0.0127
Composite	Unsieved	BRA1-10	B	BRA02B	0 to 2	mg/kg	0.00537	0.0125	0.0898	0.0991	0.175	0.108	0.0514	0.0842	0.0224	0.171
Composite	Unsieved	BRA1-10	B	BRA02B	2 to 6	mg/kg	0.00623	0.0108	0.0655	0.0657	0.0887	0.0647	0.0276	0.0562	0.0147	0.136
Composite	Unsieved	BRA1-10	B	BRA02B	6 to 12	mg/kg	0.00354	0.00938	0.0605	0.0602	0.0884	0.0602	0.0273	0.0554	0.0143	0.114
Composite	Unsieved	BRA1-10	B	BRA03B	0 to 2	mg/kg	0.00265	0.0034	0.0333	0.0428	0.0782	0.0361	0.0184	0.0408	0.00806	0.06
Composite	Unsieved	BRA1-10	B	BRA03B	2 to 6	mg/kg	0.00276	0.00294	0.0106	0.012	0.0219	0.00799	0.00478	0.011	0.0022	0.0188
Composite	Unsieved	BRA1-10	B	BRA03B	6 to 12	mg/kg	0.0026	0.00276	0.00208	0.00215	0.00261	0.00213	0.00258	0.00279	0.00207	0.00273
Composite	Unsieved	BRA1-10	B	BRA04B	0 to 2	mg/kg	0.00736	0.0126	0.0816	0.102	0.163	0.0814	0.0457	0.0989	0.0157	0.159
Composite	Unsieved	BRA1-10	B	BRA04B	2 to 6	mg/kg	0.00332	0.0159	0.0583	0.062	0.0882	0.0466	0.0302	0.068	0.00782	0.123
Composite	Unsieved	BRA1-10	B	BRA04B	6 to 12	mg/kg	0.0163	0.0428	0.167	0.127	0.187	0.0994	0.0659	0.154	0.0259	0.245
Composite	Unsieved	BRA1-10	B	BRA05B	0 to 2	mg/kg	0.0055	0.0292	0.322	0.299	0.409	0.207	0.118	0.326	0.051	0.44
Composite	Unsieved	BRA1-10	B	BRA05B	2 to 6	mg/kg	0.00271	0.00993	0.392	0.522	0.737	0.338	0.235	0.446	0.099	0.232
Composite	Unsieved	BRA1-10	B	BRA05B	6 to 12	mg/kg	0.00253	0.00269	0.0668	0.12	0.206	0.122	0.0693	0.0954	0.0271	0.0486
Composite	Unsieved	BRA1-10	B	BRA06B	0 to 2	mg/kg	0.00232	0.00415	0.0298	0.0376	0.0639	0.0476	0.0211	0.0438	0.00781	0.0654
Composite	Unsieved	BRA1-10	B	BRA06B	2 to 6	mg/kg	0.0024	0.00411	0.015	0.0155	0.0255	0.0191	0.00872	0.0143	0.00323	0.0338
Composite	Unsieved	BRA1-10	B	BRA06B	6 to 12	mg/kg	0.00238	0.00254	0.00799	0.0103	0.0152	0.0289	0.00456	0.00817	0.00332	0.016
Composite	Unsieved	BRA1-10	B	BRA07B	0 to 2	mg/kg	0.00963	0.014	0.0599	0.0825	0.149	0.102	0.0407	0.0821	0.0181	0.115
Composite	Unsieved	BRA1-10	B	BRA07B	2 to 6	mg/kg	0.0159	0.0192	0.0278	0.0412	0.0635	0.0404	0.0211	0.0365	0.00536	0.0448
Composite	Unsieved	BRA1-10	B	BRA07B	6 to 12	mg/kg	0.0111	0.0159	0.0215	0.0318	0.0533	0.0434	0.0172	0.0217	0.00754	0.0389
Composite	Unsieved	BRA1-10	B	BRA08B	0 to 2	mg/kg	0.0166	0.0103	0.0551	0.0649	0.129	0.0469	0.0429	0.108	0.011	0.0955
Composite	Unsieved	BRA1-10	B	BRA08B	2 to 6	mg/kg	0.00727	0.00793	0.0323	0.0316	0.053	0.0258	0.0181	0.0422	0.00599	0.0655
Composite	Unsieved	BRA1-10	B	BRA08B	6 to 12	mg/kg	0.00891	0.00693	0.0221	0.0255	0.0518	0.0288	0.0174	0.0457	0.005	0.0471
Composite	Unsieved	BRA1-10	B	BRA09B	0 to 2	mg/kg	0.00353	0.0103	0.0795	0.0795	0.135	0.0925	0.0469	0.0977	0.0175	0.178
Composite	Unsieved	BRA1-10	B	BRA09B	2 to 6	mg/kg	0.00244	0.00324	0.0368	0.0402	0.0637	0.0379	0.021	0.0344	0.00879	0.0685
Composite	Unsieved	BRA1-10	B	BRA09B	6 to 12	mg/kg	0.0025	0.00314	0.0186	0.019	0.0281	0.0201	0.00836	0.0163	0.00395	0.0358
Composite	Unsieved	BRA1-10	B	BRA10B	0 to 2	mg/kg	0.00667	0.00871	0.0596	0.0741	0.106	0.0678	0.0359	0.0761	0.0132	0.14
Composite	Unsieved	BRA1-10	B	BRA10B	2 to 6	mg/kg	0.236	0.0746	1.01	0.752	1.26	0.462	0.484	1.17	0.143	2.94
Composite	Unsieved	BRA1-10	B	BRA10B	6 to 12	mg/kg	0.00956	0.00803	0.0241	0.0291	0.0476	0.0278	0.0141	0.0296	0.00537	0.052

ATTACHMENT C  
ProUCL Full Analysis Analytes  
Former Houston Wood Preserving Works, Houston, Texas

C vs D	Siev vs Unsiev	SoilEvent	BRA_Group	sys_loc_code	DepthRange	Result_Unit_Rpt	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	D_Acenaphthylene	D_Anthracene	D_Benzo(a)anthracene	D_Benzo(a)pyrene	D_Benzo(b)fluoranthene	D_Benzo(g,h,i)perylene
Composite	Unsieved	BRA1-10	A	BRA01A	0 to 2	mg/kg	0.0234	0.0259	0.0452	0	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA01A	2 to 6	mg/kg	0.0187	0.00941	0.0276	0	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA01A	6 to 12	mg/kg	0.00807	0.00279	0.0127	0	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA02A	0 to 2	mg/kg	0.012	0.00721	0.0189	1	0	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA02A	2 to 6	mg/kg	0.0165	0.016	0.0339	0	0	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA02A	6 to 12	mg/kg	0.00514	0.00381	0.00901	0	0	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA03A	0 to 2	mg/kg	0.0161	0.00492	0.0207	0	0	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA03A	2 to 6	mg/kg	0.00261	0.00262	0.00472	0	0	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA03A	6 to 12	mg/kg	0.00206	0.00263	0.00227	0	0	0	0	0	0
Composite	Unsieved	BRA1-10	A	BRA04A	0 to 2	mg/kg	0.0352	0.0676	0.0854	0	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA04A	2 to 6	mg/kg	0.222	0.59	0.607	0	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA04A	6 to 12	mg/kg	0.00459	0.00266	0.00904	0	0	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA05A	0 to 2	mg/kg	0.0468	0.0323	0.0778	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA05A	2 to 6	mg/kg	0.0594	0.0219	0.0542	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA05A	6 to 12	mg/kg	0.0858	0.0888	0.167	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA06A	0 to 2	mg/kg	0.0443	0.0216	0.0659	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA06A	2 to 6	mg/kg	0.0437	0.0335	0.0671	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA06A	6 to 12	mg/kg	0.0723	0.0569	0.0865	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA07A	0 to 2	mg/kg	0.025	0.0124	0.0346	0	0	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA07A	2 to 6	mg/kg	0.0298	0.0186	0.0445	0	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA07A	6 to 12	mg/kg	0.00701	0.0041	0.0101	0	0	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA08A	0 to 2	mg/kg	0.0638	0.0258	0.0843	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA08A	2 to 6	mg/kg	0.0343	0.0277	0.0645	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA08A	6 to 12	mg/kg	0.0461	0.0154	0.056	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA09A	0 to 2	mg/kg	0.0992	0.0734	0.392	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA09A	2 to 6	mg/kg	0.0392	0.0532	0.161	0	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA09A	6 to 12	mg/kg	0.0496	0.0704	0.156	0	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA10A	0 to 2	mg/kg	0.0274	0.0221	0.0422	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA10A	2 to 6	mg/kg	0.00363	0.00396	0.00566	0	0	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA10A	6 to 12	mg/kg	0.0134	0.0196	0.0329	0	0	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA01B	0 to 2	mg/kg	0.0725	0.0366	0.124	0	0	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA01B	2 to 6	mg/kg	0.0744	0.0562	0.181	0	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA01B	6 to 12	mg/kg	0.00221	0.00282	0.0117	0	0	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA02B	0 to 2	mg/kg	0.102	0.0555	0.141	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA02B	2 to 6	mg/kg	0.0607	0.0852	0.0951	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA02B	6 to 12	mg/kg	0.0562	0.0658	0.086	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA03B	0 to 2	mg/kg	0.0343	0.0183	0.0607	0	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA03B	2 to 6	mg/kg	0.00752	0.00415	0.0176	0	0	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA03B	6 to 12	mg/kg	0.00217	0.00278	0.0024	0	0	0	0	1	0
Composite	Unsieved	BRA1-10	B	BRA04B	0 to 2	mg/kg	0.0718	0.0724	0.144	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA04B	2 to 6	mg/kg	0.0437	0.0864	0.106	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA04B	6 to 12	mg/kg	0.0971	0.331	0.243	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA05B	0 to 2	mg/kg	0.255	0.121	0.365	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA05B	2 to 6	mg/kg	0.456	0.0465	0.214	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA05B	6 to 12	mg/kg	0.11	0.00912	0.0481	0	0	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA06B	0 to 2	mg/kg	0.0371	0.0171	0.0535	0	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA06B	2 to 6	mg/kg	0.0135	0.0155	0.0247	0	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA06B	6 to 12	mg/kg	0.0103	0.00438	0.0149	0	0	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA07B	0 to 2	mg/kg	0.0836	0.0363	0.0996	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA07B	2 to 6	mg/kg	0.0396	0.0178	0.0496	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA07B	6 to 12	mg/kg	0.0362	0.0145	0.0358	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA08B	0 to 2	mg/kg	0.0481	0.0264	0.108	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA08B	2 to 6	mg/kg	0.0243	0.0222	0.0526	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA08B	6 to 12	mg/kg	0.0219	0.0122	0.0451	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA09B	0 to 2	mg/kg	0.0798	0.0571	0.126	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA09B	2 to 6	mg/kg	0.0332	0.0271	0.0625	0	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA09B	6 to 12	mg/kg	0.0184	0.0151	0.0246	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA10B	0 to 2	mg/kg	0.0613	0.0435	0.116	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA10B	2 to 6	mg/kg	0.57	1.49	1.89	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA10B	6 to 12	mg/kg	0.0229	0.0333	0.0488	1	1	1	1	1	1



ATTACHMENT C  
ProUCL Full Analysis Analytes  
Former Houston Wood Preserving Works, Houston, Texas

C vs D	Siev vs Unsiev	SoilEvent	BRA_Group	sys_loc_code	DepthRange	Result_Unit_Rpt	D_Benzo(k)fluoranthene	D_Chrysene	D_Dibenz(a,h)anthracene	D_Fluoranthene	D_Indeno(1,2,3-c,d)pyrene	D_Phenanthrene	D_Pyrene
Composite	Unsieved	BRA1-10	A	BRA01A	0 to 2	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA01A	2 to 6	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA01A	6 to 12	mg/kg	1	1	1	1	1	0	1
Composite	Unsieved	BRA1-10	A	BRA02A	0 to 2	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA02A	2 to 6	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA02A	6 to 12	mg/kg	1	1	0	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA03A	0 to 2	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA03A	2 to 6	mg/kg	0	1	0	1	1	0	1
Composite	Unsieved	BRA1-10	A	BRA03A	6 to 12	mg/kg	0	0	0	0	0	0	0
Composite	Unsieved	BRA1-10	A	BRA04A	0 to 2	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA04A	2 to 6	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA04A	6 to 12	mg/kg	1	1	0	1	1	0	1
Composite	Unsieved	BRA1-10	A	BRA05A	0 to 2	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA05A	2 to 6	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA05A	6 to 12	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA06A	0 to 2	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA06A	2 to 6	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA06A	6 to 12	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA07A	0 to 2	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA07A	2 to 6	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA07A	6 to 12	mg/kg	1	1	0	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA08A	0 to 2	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA08A	2 to 6	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA08A	6 to 12	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA09A	0 to 2	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA09A	2 to 6	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA09A	6 to 12	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA10A	0 to 2	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA10A	2 to 6	mg/kg	0	1	0	1	1	1	1
Composite	Unsieved	BRA1-10	A	BRA10A	6 to 12	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA01B	0 to 2	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA01B	2 to 6	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA01B	6 to 12	mg/kg	0	1	0	1	0	0	1
Composite	Unsieved	BRA1-10	B	BRA02B	0 to 2	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA02B	2 to 6	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA02B	6 to 12	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA03B	0 to 2	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA03B	2 to 6	mg/kg	1	1	0	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA03B	6 to 12	mg/kg	0	0	0	0	0	0	0
Composite	Unsieved	BRA1-10	B	BRA04B	0 to 2	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA04B	2 to 6	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA04B	6 to 12	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA05B	0 to 2	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA05B	2 to 6	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA05B	6 to 12	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA06B	0 to 2	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA06B	2 to 6	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA06B	6 to 12	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA07B	0 to 2	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA07B	2 to 6	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA07B	6 to 12	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA08B	0 to 2	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA08B	2 to 6	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA08B	6 to 12	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA09B	0 to 2	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA09B	2 to 6	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA09B	6 to 12	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA10B	0 to 2	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA10B	2 to 6	mg/kg	1	1	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA10B	6 to 12	mg/kg	1	1	1	1	1	1	1

ATTACHMENT C  
ProUCL NP Only Analytes  
Former Houston Wood Preserving Works, Houston, Texas

C vs D	Siev vs Unsiev	SoilEvent	BRA_Group	sys_loc_code	DepthRange	Result_Unit_Rpt	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Benzyl butyl phthalate	Bis(2-Ethylhexyl) phthalate	Fluorene	Naphthalene	D_1-Methylnaphthalene	D_2-Methylnaphthalene
Composite	Unsieved	BRA1-10	A	BRA01A	0 to 2	mg/kg	0.00556	0.00529	0.00306	0.0129	0.0523	0.00254	0.00505	0	0
Composite	Unsieved	BRA1-10	A	BRA01A	2 to 6	mg/kg	0.00527	0.00501	0.00245	0.0122	0.0495	0.00241	0.00479	0	0
Composite	Unsieved	BRA1-10	A	BRA01A	6 to 12	mg/kg	0.00541	0.00515	0.00252	0.0125	0.0509	0.00247	0.00492	0	0
Composite	Unsieved	BRA1-10	A	BRA02A	0 to 2	mg/kg	0.00488	0.00465	0.00227	0.0113	0.0459	0.00223	0.00444	0	0
Composite	Unsieved	BRA1-10	A	BRA02A	2 to 6	mg/kg	0.00505	0.00481	0.00235	0.0117	0.0475	0.00231	0.00459	0	0
Composite	Unsieved	BRA1-10	A	BRA02A	6 to 12	mg/kg	0.00525	0.00647	0.00244	0.0121	0.0493	0.00239	0.007	0	1
Composite	Unsieved	BRA1-10	A	BRA03A	0 to 2	mg/kg	0.00529	0.00503	0.00246	0.0123	0.0524	0.00241	0.00481	0	0
Composite	Unsieved	BRA1-10	A	BRA03A	2 to 6	mg/kg	0.0051	0.00485	0.00237	0.0118	0.0479	0.00233	0.00463	0	0
Composite	Unsieved	BRA1-10	A	BRA03A	6 to 12	mg/kg	0.0051	0.00485	0.00238	0.0118	0.048	0.00233	0.00464	0	0
Composite	Unsieved	BRA1-10	A	BRA04A	0 to 2	mg/kg	0.00516	0.00491	0.0024	0.0135	0.163	0.00628	0.00469	0	0
Composite	Unsieved	BRA1-10	A	BRA04A	2 to 6	mg/kg	0.00516	0.00491	0.0662	0.012	0.0485	0.0461	0.0339	0	0
Composite	Unsieved	BRA1-10	A	BRA04A	6 to 12	mg/kg	0.00516	0.00491	0.0024	0.012	0.0485	0.00236	0.00469	0	0
Composite	Unsieved	BRA1-10	A	BRA05A	0 to 2	mg/kg	0.0051	0.00485	0.00237	0.0428	0.082	0.00233	0.00463	0	0
Composite	Unsieved	BRA1-10	A	BRA05A	2 to 6	mg/kg	0.00496	0.00471	0.00231	0.0115	0.0606	0.00226	0.0045	0	0
Composite	Unsieved	BRA1-10	A	BRA05A	6 to 12	mg/kg	0.00503	0.00479	0.00729	0.0728	0.0473	0.0061	0.00458	0	0
Composite	Unsieved	BRA1-10	A	BRA06A	0 to 2	mg/kg	0.00508	0.00483	0.00236	0.0118	0.0477	0.00232	0.00461	0	0
Composite	Unsieved	BRA1-10	A	BRA06A	2 to 6	mg/kg	0.00513	0.00488	0.00239	0.0119	0.0482	0.00234	0.00466	0	0
Composite	Unsieved	BRA1-10	A	BRA06A	6 to 12	mg/kg	0.00523	0.00497	0.00283	0.0121	0.0491	0.00296	0.00575	0	0
Composite	Unsieved	BRA1-10	A	BRA07A	0 to 2	mg/kg	0.00507	0.00482	0.00236	0.0117	0.0476	0.00231	0.0046	0	0
Composite	Unsieved	BRA1-10	A	BRA07A	2 to 6	mg/kg	0.00507	0.00482	0.00236	0.0117	0.0476	0.00231	0.0046	0	0
Composite	Unsieved	BRA1-10	A	BRA07A	6 to 12	mg/kg	0.00504	0.0048	0.00235	0.0117	0.0474	0.0023	0.00458	0	0
Composite	Unsieved	BRA1-10	A	BRA08A	0 to 2	mg/kg	0.00532	0.00506	0.00248	0.0187	0.0945	0.00243	0.00483	0	0
Composite	Unsieved	BRA1-10	A	BRA08A	2 to 6	mg/kg	0.0051	0.00485	0.00237	0.0135	0.0609	0.00233	0.00463	0	0
Composite	Unsieved	BRA1-10	A	BRA08A	6 to 12	mg/kg	0.0051	0.00485	0.00237	0.0118	0.175	0.00233	0.00463	0	0
Composite	Unsieved	BRA1-10	A	BRA09A	0 to 2	mg/kg	0.00496	0.00472	0.00538	0.0115	0.15	0.00271	0.00451	0	0
Composite	Unsieved	BRA1-10	A	BRA09A	2 to 6	mg/kg	0.00488	0.00465	0.00261	0.0113	0.314	0.00223	0.00444	0	0
Composite	Unsieved	BRA1-10	A	BRA09A	6 to 12	mg/kg	0.00491	0.00467	0.00765	0.0114	0.126	0.00345	0.00446	0	0
Composite	Unsieved	BRA1-10	A	BRA10A	0 to 2	mg/kg	0.00515	0.0049	0.0024	0.0597	0.242	0.00235	0.00468	0	0
Composite	Unsieved	BRA1-10	A	BRA10A	2 to 6	mg/kg	0.0055	0.00523	0.00256	0.0127	0.0517	0.00251	0.005	0	0
Composite	Unsieved	BRA1-10	A	BRA10A	6 to 12	mg/kg	0.00554	0.00526	0.00258	0.0128	0.052	0.00253	0.00503	0	0
Composite	Unsieved	BRA1-10	B	BRA01B	0 to 2	mg/kg	0.00596	0.00567	0.00277	0.0138	0.0725	0.00272	0.00541	0	0
Composite	Unsieved	BRA1-10	B	BRA01B	2 to 6	mg/kg	0.00564	0.00537	0.00263	0.0131	0.053	0.00258	0.00513	0	0
Composite	Unsieved	BRA1-10	B	BRA01B	6 to 12	mg/kg	0.00548	0.00521	0.00255	0.0127	0.0515	0.0025	0.00498	0	0
Composite	Unsieved	BRA1-10	B	BRA02B	0 to 2	mg/kg	0.0051	0.00485	0.00438	0.0118	0.0479	0.00337	0.00463	0	0
Composite	Unsieved	BRA1-10	B	BRA02B	2 to 6	mg/kg	0.00684	0.00748	0.00429	0.012	0.0486	0.00287	0.0047	1	1
Composite	Unsieved	BRA1-10	B	BRA02B	6 to 12	mg/kg	0.00518	0.00493	0.00412	0.012	0.0487	0.00413	0.00471	0	0
Composite	Unsieved	BRA1-10	B	BRA03B	0 to 2	mg/kg	0.00552	0.00525	0.00257	0.016	0.133	0.00252	0.00501	0	0
Composite	Unsieved	BRA1-10	B	BRA03B	2 to 6	mg/kg	0.00574	0.00612	0.00267	0.0133	0.054	0.00262	0.00522	0	1
Composite	Unsieved	BRA1-10	B	BRA03B	6 to 12	mg/kg	0.00539	0.00513	0.00251	0.0125	0.0507	0.00246	0.0049	0	0
Composite	Unsieved	BRA1-10	B	BRA04B	0 to 2	mg/kg	0.0133	0.0358	0.0047	0.0329	0.115	0.00378	0.0118	1	1
Composite	Unsieved	BRA1-10	B	BRA04B	2 to 6	mg/kg	0.0136	0.0352	0.00692	0.0117	0.0664	0.00617	0.0136	1	1
Composite	Unsieved	BRA1-10	B	BRA04B	6 to 12	mg/kg	0.147	0.448	0.0131	0.0121	0.086	0.0102	0.119	1	1
Composite	Unsieved	BRA1-10	B	BRA05B	0 to 2	mg/kg	0.00656	0.00895	0.01	14.8	0.389	0.00683	0.0423	1	1
Composite	Unsieved	BRA1-10	B	BRA05B	2 to 6	mg/kg	0.0586	0.0624	0.00737	0.0292	0.0489	0.00345	0.754	1	1
Composite	Unsieved	BRA1-10	B	BRA05B	6 to 12	mg/kg	0.00598	0.00954	0.00244	0.0122	0.0494	0.0024	0.0752	1	1
Composite	Unsieved	BRA1-10	B	BRA06B	0 to 2	mg/kg	0.00969	0.0137	0.00224	0.0142	0.0453	0.0022	0.00482	1	1
Composite	Unsieved	BRA1-10	B	BRA06B	2 to 6	mg/kg	0.00499	0.00474	0.00244	0.0115	0.0666	0.00228	0.00453	0	0
Composite	Unsieved	BRA1-10	B	BRA06B	6 to 12	mg/kg	0.00495	0.00471	0.0023	0.0115	0.0465	0.00226	0.0045	0	0
Composite	Unsieved	BRA1-10	B	BRA07B	0 to 2	mg/kg	0.00508	0.00483	0.00274	0.0207	0.0832	0.00232	0.00462	0	0
Composite	Unsieved	BRA1-10	B	BRA07B	2 to 6	mg/kg	0.005	0.00475	0.00233	0.0197	0.0698	0.00228	0.00454	0	0
Composite	Unsieved	BRA1-10	B	BRA07B	6 to 12	mg/kg	0.00506	0.00481	0.00235	0.0117	0.0475	0.00231	0.0046	0	0
Composite	Unsieved	BRA1-10	B	BRA08B	0 to 2	mg/kg	0.0396	0.0545	0.00606	0.0117	0.0687	0.0517	0.0557	1	1
Composite	Unsieved	BRA1-10	B	BRA08B	2 to 6	mg/kg	0.00497	0.00472	0.00231	0.0115	0.0467	0.00227	0.00451	0	0
Composite	Unsieved	BRA1-10	B	BRA08B	6 to 12	mg/kg	0.00503	0.00479	0.00234	0.0117	0.0473	0.0023	0.00457	0	0
Composite	Unsieved	BRA1-10	B	BRA09B	0 to 2	mg/kg	0.00543	0.00516	0.00316	0.0126	0.0796	0.00248	0.00493	0	0
Composite	Unsieved	BRA1-10	B	BRA09B	2 to 6	mg/kg	0.00507	0.00482	0.00236	0.0117	0.0476	0.00231	0.0046	0	0
Composite	Unsieved	BRA1-10	B	BRA09B	6 to 12	mg/kg	0.0049	0.00466	0.00228	0.0114	0.0461	0.00224	0.00445	0	0
Composite	Unsieved	BRA1-10	B	BRA10B	0 to 2	mg/kg	0.00488	0.00464	0.00227	0.0247	0.0895	0.00223	0.00444	0	0
Composite	Unsieved	BRA1-10	B	BRA10B	2 to 6	mg/kg	0.00999	0.00514	0.00927	0.0598	0.243	0.0401	0.00864	1	1
Composite	Unsieved	BRA1-10	B	BRA10B	6 to 12	mg/kg	0.00547	0.0052	0.00255	0.0127	0.0514	0.0025	0.00497	0	0

ATTACHMENT C  
ProUCL NP Only Analytes  
Former Houston Wood Preserving Works, Houston, Texas

C vs D	Siev vs Unsiev	SoilEvent	BRA_Group	sys_loc_code	DepthRange	Result_Unit_Rpt	D_Acenaphthene	D_Benzyl butyl phthalate	D_Bis(2-Ethylhexyl) phthalate	D_Fluorene	D_Naphthalene
Composite	Unsieved	BRA1-10	A	BRA01A	0 to 2	mg/kg	1	0	0	0	0
Composite	Unsieved	BRA1-10	A	BRA01A	2 to 6	mg/kg	0	0	0	0	0
Composite	Unsieved	BRA1-10	A	BRA01A	6 to 12	mg/kg	0	0	0	0	0
Composite	Unsieved	BRA1-10	A	BRA02A	0 to 2	mg/kg	0	0	0	0	0
Composite	Unsieved	BRA1-10	A	BRA02A	2 to 6	mg/kg	0	0	0	0	0
Composite	Unsieved	BRA1-10	A	BRA02A	6 to 12	mg/kg	0	0	0	0	1
Composite	Unsieved	BRA1-10	A	BRA03A	0 to 2	mg/kg	0	0	1	0	0
Composite	Unsieved	BRA1-10	A	BRA03A	2 to 6	mg/kg	0	0	0	0	0
Composite	Unsieved	BRA1-10	A	BRA03A	6 to 12	mg/kg	0	0	0	0	0
Composite	Unsieved	BRA1-10	A	BRA04A	0 to 2	mg/kg	0	1	1	1	0
Composite	Unsieved	BRA1-10	A	BRA04A	2 to 6	mg/kg	1	0	0	1	1
Composite	Unsieved	BRA1-10	A	BRA04A	6 to 12	mg/kg	0	0	0	0	0
Composite	Unsieved	BRA1-10	A	BRA05A	0 to 2	mg/kg	0	1	1	0	0
Composite	Unsieved	BRA1-10	A	BRA05A	2 to 6	mg/kg	0	0	1	0	0
Composite	Unsieved	BRA1-10	A	BRA05A	6 to 12	mg/kg	1	1	0	1	0
Composite	Unsieved	BRA1-10	A	BRA06A	0 to 2	mg/kg	0	0	1	0	0
Composite	Unsieved	BRA1-10	A	BRA06A	2 to 6	mg/kg	0	0	0	0	0
Composite	Unsieved	BRA1-10	A	BRA06A	6 to 12	mg/kg	1	0	0	1	1
Composite	Unsieved	BRA1-10	A	BRA07A	0 to 2	mg/kg	0	0	0	0	0
Composite	Unsieved	BRA1-10	A	BRA07A	2 to 6	mg/kg	0	0	0	0	0
Composite	Unsieved	BRA1-10	A	BRA07A	6 to 12	mg/kg	0	0	0	0	0
Composite	Unsieved	BRA1-10	A	BRA08A	0 to 2	mg/kg	0	1	1	0	0
Composite	Unsieved	BRA1-10	A	BRA08A	2 to 6	mg/kg	0	1	1	0	0
Composite	Unsieved	BRA1-10	A	BRA08A	6 to 12	mg/kg	0	0	1	0	0
Composite	Unsieved	BRA1-10	A	BRA09A	0 to 2	mg/kg	1	0	1	1	0
Composite	Unsieved	BRA1-10	A	BRA09A	2 to 6	mg/kg	1	0	1	0	0
Composite	Unsieved	BRA1-10	A	BRA09A	6 to 12	mg/kg	1	0	1	1	0
Composite	Unsieved	BRA1-10	A	BRA10A	0 to 2	mg/kg	0	0	0	0	0
Composite	Unsieved	BRA1-10	A	BRA10A	2 to 6	mg/kg	0	0	0	0	0
Composite	Unsieved	BRA1-10	A	BRA10A	6 to 12	mg/kg	0	0	0	0	0
Composite	Unsieved	BRA1-10	B	BRA01B	0 to 2	mg/kg	0	0	1	0	0
Composite	Unsieved	BRA1-10	B	BRA01B	2 to 6	mg/kg	0	0	0	0	0
Composite	Unsieved	BRA1-10	B	BRA01B	6 to 12	mg/kg	0	0	0	0	0
Composite	Unsieved	BRA1-10	B	BRA02B	0 to 2	mg/kg	1	0	0	1	0
Composite	Unsieved	BRA1-10	B	BRA02B	2 to 6	mg/kg	1	0	0	1	0
Composite	Unsieved	BRA1-10	B	BRA02B	6 to 12	mg/kg	1	0	0	1	0
Composite	Unsieved	BRA1-10	B	BRA03B	0 to 2	mg/kg	0	1	1	0	0
Composite	Unsieved	BRA1-10	B	BRA03B	2 to 6	mg/kg	0	0	0	0	0
Composite	Unsieved	BRA1-10	B	BRA03B	6 to 12	mg/kg	0	0	0	0	0
Composite	Unsieved	BRA1-10	B	BRA04B	0 to 2	mg/kg	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA04B	2 to 6	mg/kg	1	0	1	1	1
Composite	Unsieved	BRA1-10	B	BRA04B	6 to 12	mg/kg	1	0	1	1	1
Composite	Unsieved	BRA1-10	B	BRA05B	0 to 2	mg/kg	1	1	1	1	1
Composite	Unsieved	BRA1-10	B	BRA05B	2 to 6	mg/kg	1	1	0	1	1
Composite	Unsieved	BRA1-10	B	BRA05B	6 to 12	mg/kg	0	0	0	0	1
Composite	Unsieved	BRA1-10	B	BRA06B	0 to 2	mg/kg	0	1	0	0	1
Composite	Unsieved	BRA1-10	B	BRA06B	2 to 6	mg/kg	1	0	1	0	0
Composite	Unsieved	BRA1-10	B	BRA06B	6 to 12	mg/kg	0	0	0	0	0
Composite	Unsieved	BRA1-10	B	BRA07B	0 to 2	mg/kg	1	1	1	0	0
Composite	Unsieved	BRA1-10	B	BRA07B	2 to 6	mg/kg	0	1	1	0	0
Composite	Unsieved	BRA1-10	B	BRA07B	6 to 12	mg/kg	0	0	0	0	0
Composite	Unsieved	BRA1-10	B	BRA08B	0 to 2	mg/kg	0	0	1	1	1
Composite	Unsieved	BRA1-10	B	BRA08B	2 to 6	mg/kg	0	0	0	0	0
Composite	Unsieved	BRA1-10	B	BRA08B	6 to 12	mg/kg	0	0	0	0	0
Composite	Unsieved	BRA1-10	B	BRA09B	0 to 2	mg/kg	1	0	1	0	0
Composite	Unsieved	BRA1-10	B	BRA09B	2 to 6	mg/kg	0	0	0	0	0
Composite	Unsieved	BRA1-10	B	BRA09B	6 to 12	mg/kg	0	0	0	0	0
Composite	Unsieved	BRA1-10	B	BRA10B	0 to 2	mg/kg	0	1	1	0	0
Composite	Unsieved	BRA1-10	B	BRA10B	2 to 6	mg/kg	1	0	0	1	1
Composite	Unsieved	BRA1-10	B	BRA10B	6 to 12	mg/kg	0	0	0	0	0

**ProUCL Output File**  
**Both BRAs - TEQ**

**ATTACHMENT C**  
**ProUCL Output Files - TEQ BTV Output both BRAs**  
Former Houston Wood Preserving Works, Houston, Texas

**Background Statistics for Uncensored Full Data Sets**

**User Selected Options**

Date/Time of Computation ProUCL 5.2 10/11/2024 4:53:09 PM  
From File P:\GIS\HWPW\Stats\TEQ analysis 20241011\TEQ input data.xlsx  
Full Precision OFF  
Confidence Coefficient 95%  
Coverage 95%  
New or Future K Observations 1  
Number of Bootstrap Operations 2000

**TEQ**

**General Statistics**

Total Number of Observations	60	Number of Distinct Observations	44
Minimum	0.91	First Quartile	2.025
Second Largest	22	Median	5.1
Maximum	33	Third Quartile	11
Mean	7.427	SD	6.624
Coefficient of Variation	0.892	Skewness	1.429
Mean of logged Data	1.596	SD of logged Data	0.949

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.017	d2max (for USL)	3.027
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**Normal GOF Test**

Shapiro Wilk Test Statistic 0.847  
1% Shapiro Wilk P Value 3.7569E-8  
Lilliefors Test Statistic 0.186  
1% Lilliefors Critical Value 0.132

**Normal GOF Test**

Data Not Normal at 1% Significance Level

**Lilliefors GOF Test**

Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level**

**Background Statistics Assuming Normal Distribution**

95% UTL with 95% Coverage	20.79	90% Percentile (z)	15.92
95% UPL (t)	18.59	95% Percentile (z)	18.32
95% USL	27.48	99% Percentile (z)	22.84

**Gamma GOF Test**

A-D Test Statistic 1.203  
5% A-D Critical Value 0.772  
K-S Test Statistic 0.131  
5% K-S Critical Value 0.117

**Anderson-Darling Gamma GOF Test**

Data Not Gamma Distributed at 5% Significance Level

**Kolmogorov-Smirnov Gamma GOF Test**

Data Not Gamma Distributed at 5% Significance Level

**Data Not Gamma Distributed at 5% Significance Level**

**Gamma Statistics**

k hat (MLE)	1.364	k star (bias corrected MLE)	1.307
Theta hat (MLE)	5.443	Theta star (bias corrected MLE)	5.681
nu hat (MLE)	163.7	nu star (bias corrected)	156.9
MLE Mean (bias corrected)	7.427	MLE Sd (bias corrected)	6.496

**ATTACHMENT C**  
**ProUCL Output Files - TEQ BTV Output both BRAs**  
Former Houston Wood Preserving Works, Houston, Texas

**Background Statistics Assuming Gamma Distribution**

95% Wilson Hilferty (WH) Approx. Gamma UPL	20.36	90% Percentile	16.01
95% Hawkins Wixley (HW) Approx. Gamma UPL	21.01	95% Percentile	20.27
95% WH Approx. Gamma UTL with 95% Coverage	24.81	99% Percentile	29.98
95% HW Approx. Gamma UTL with 95% Coverage	26.12		
95% WH USL	42.22	95% HW USL	47.54

**Lognormal GOF Test**

Shapiro Wilk Test Statistic	0.937	<b>Shapiro Wilk Lognormal GOF Test</b>
10% Shapiro Wilk P Value	0.00553	Data Not Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.106	<b>Lilliefors Lognormal GOF Test</b>
10% Lilliefors Critical Value	0.104	Data Not Lognormal at 10% Significance Level

**Data Not Lognormal at 10% Significance Level**

**Background Statistics assuming Lognormal Distribution**

95% UTL with 95% Coverage	33.42	90% Percentile (z)	16.64
95% UPL (t)	24.39	95% Percentile (z)	23.48
95% USL	87.11	99% Percentile (z)	44.82

**Nonparametric Distribution Free Background Statistics**

**Data do not follow a Discernible Distribution**

**Nonparametric Upper Limits for Background Threshold Values**

Order of Statistic, order	60	95% UTL with 95% Coverage	33
Approx, f used to compute achieved CC	1.553	Approximate Actual Confidence Coefficient achieved by UTL	0.808
		Approximate Sample Size needed to achieve specified CC	59
95% Percentile Bootstrap UTL with 95% Coverage	22.55	95% BCA Bootstrap UTL with 95% Coverage	22.55
95% UPL	20.9	90% Percentile	16
90% Chebyshev UPL	27.46	95% Percentile	19.1
95% Chebyshev UPL	36.54	99% Percentile	26.51
95% USL	33		

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20. Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ProUCL Output File**  
**Both BRAs without Outlier**

## ATTACHMENT C

## ProUCL Output Files - BTV Output from ProUCL both BRAs Without Outlier

Former Houston Wood Preserving Works, Houston, Texas

## Background Statistics for Data Sets with Non-Detects

## User Selected Options

Date/Time of Computation ProUCL 5.2 3/3/2025 10:14:59 AM  
 From File for ProUCL full analysis analytes\_withoutOutliers.xls  
 Full Precision OFF  
 Confidence Coefficient 95%  
 Coverage 95%  
 Different or Future K Observations 1  
 Number of Bootstrap Operations 2000

## Fluoranthene

## General Statistics

Total Number of Observations	59	Number of Missing Observations	1
Number of Distinct Observations	58		
Number of Detects	57	Number of Non-Detects	2
Number of Distinct Detects	56	Number of Distinct Non-Detects	2
Minimum Detect	0.00558	Minimum Non-Detect	0.00258
Maximum Detect	0.78	Maximum Non-Detect	0.00273
Variance Detected	0.0171	Percent Non-Detects	3.39%
Mean Detected	0.107	SD Detected	0.131
Mean of Detected Logged Data	-2.758	SD of Detected Logged Data	1.056

## Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.02	d2max (for USL)	3.021
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## Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic 0.663  
 1% Shapiro Wilk P Value 2.220E-16  
 Lilliefors Test Statistic 0.22  
 1% Lilliefors Critical Value 0.135

## Normal GOF Test on Detected Observations Only

Data Not Normal at 1% Significance Level

## Lilliefors GOF Test

Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level**

## Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

KM Mean	0.103	KM SD	0.129
95% UTL95% Coverage	0.363	95% KM UPL (t)	0.32
90% KM Percentile (z)	0.268	95% KM Percentile (z)	0.315
99% KM Percentile (z)	0.403	95% KM USL	0.492

## DL/2 Substitution Background Statistics Assuming Normal Distribution

Mean	0.103	SD	0.13
95% UTL95% Coverage	0.366	95% UPL (t)	0.322
90% Percentile (z)	0.27	95% Percentile (z)	0.317
99% Percentile (z)	0.406	95% USL	0.496

**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons**

## Gamma GOF Tests on Detected Observations Only

A-D Test Statistic 0.654  
 5% A-D Critical Value 0.777  
 K-S Test Statistic 0.126  
 5% K-S Critical Value 0.121

## Anderson-Darling GOF Test

Detected data appear Gamma Distributed at 5% Significance Level

## Kolmogorov-Smirnov GOF

Data Not Gamma Distributed at 5% Significance Level

**Detected data follow Appr. Gamma Distribution at 5% Significance Level**

## Gamma Statistics on Detected Data Only

k hat (MLE) 1.1  
 Theta hat (MLE) 0.0968  
 nu hat (MLE) 125.4  
 MLE Mean (bias corrected) 0.107  
 MLE Sd (bias corrected) 0.104

k star (bias corrected MLE) 1.054  
 Theta star (bias corrected MLE) 0.101  
 nu star (bias corrected) 120.2

95% Percentile of Chisquare (2kstar) 6.199

## Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs  
 GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)  
 For such situations, GROS method may yield incorrect values of UCLs and BTVs  
 This is especially true when the sample size is small.  
 For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00558	Mean	0.103
Maximum	0.78	Median	0.0654
SD	0.13	CV	1.257
k hat (MLE)	1.044	k star (bias corrected MLE)	1.002
Theta hat (MLE)	0.099	Theta star (bias corrected MLE)	0.103
nu hat (MLE)	123.2	nu star (bias corrected)	118.2
MLE Mean (bias corrected)	0.103	MLE Sd (bias corrected)	0.103
95% Percentile of Chisquare (2kstar)	5.999	90% Percentile	0.238
95% Percentile	0.309	99% Percentile	0.475



## ATTACHMENT C

## ProUCL Output Files - BTV Output from ProUCL both BRAs Without Outlier

Former Houston Wood Preserving Works, Houston, Texas

The following statistics are computed using Gamma ROS Statistics on Imputed Data  
Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.377	0.396	95% Approx. Gamma UPL	0.303	0.311
95% Gamma USL	0.667	0.756			

## Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.103	SD (KM)	0.129
Variance (KM)	0.0166	SE of Mean (KM)	0.0169
k hat (KM)	0.639	k star (KM)	0.618
nu hat (KM)	75.37	nu star (KM)	72.87
theta hat (KM)	0.161	theta star (KM)	0.167
80% gamma percentile (KM)	0.17	90% gamma percentile (KM)	0.266
95% gamma percentile (KM)	0.367	99% gamma percentile (KM)	0.61

The following statistics are computed using gamma distribution and KM estimates  
Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.382	0.406	95% Approx. Gamma UPL	0.306	0.317
95% KM Gamma Percentile	0.297	0.307	95% Gamma USL	0.681	0.786

## Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.981	Shapiro Wilk GOF Test	
10% Shapiro Wilk P Value	0.735	Detected Data appear Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.0733	Lilliefors GOF Test	
10% Lilliefors Critical Value	0.107	Detected Data appear Lognormal at 10% Significance Level	

Detected Data appear Lognormal at 10% Significance Level

## Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.103	Mean in Log Scale	-2.846
SD in Original Scale	0.13	SD in Log Scale	1.14
95% UTL95% Coverage	0.581	95% BCA UTL95% Coverage	0.519
95% Bootstrap (%) UTL95% Coverage	0.519	95% UPL (t)	0.397
90% Percentile (z)	0.25	95% Percentile (z)	0.379
99% Percentile (z)	0.823	95% USL	1.817

## Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-2.867	95% KM UTL (Lognormal)95% Coverage	0.618
KM SD of Logged Data	1.181	95% KM UPL (Lognormal)	0.416
95% KM Percentile Lognormal (z)	0.397	95% KM USL (Lognormal)	2.014

## Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.103	Mean in Log Scale	-2.889
SD in Original Scale	0.13	SD in Log Scale	1.255
95% UTL95% Coverage	0.702	95% UPL (t)	0.461
90% Percentile (z)	0.278	95% Percentile (z)	0.438
99% Percentile (z)	1.031	95% USL	2.463

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

## Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution

## Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	58	95% UTL with 95% Coverage	0.78
Approx, f used to compute achieved CC	1.526	Approximate Actual Confidence Coefficient achieved by UTL	0.801
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.44
95% USL	0.78	95% KM Chebyshev UPL	0.67

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20. Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL both BRAs Without Outlier**  
Former Houston Wood Preserving Works, Houston, Texas

**Phenanthrene**

General Statistics			
Total Number of Observations	59	Number of Missing Observations	1
Number of Distinct Observations	59		
Number of Detects	53	Number of Non-Detects	6
Number of Distinct Detects	53	Number of Distinct Non-Detects	6
Minimum Detect	0.00381	Minimum Non-Detect	0.00262
Maximum Detect	0.59	Maximum Non-Detect	0.00282
Variance Detected	0.00809	Percent Non-Detects	10.17%
Mean Detected	0.0501	SD Detected	0.0899
Mean of Detected Logged Data	-3.625	SD of Detected Logged Data	1.063

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.02	d2max (for USL)	3.021
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.452
1% Shapiro Wilk P Value	0
Lilliefors Test Statistic	0.303
1% Lilliefors Critical Value	0.14

**Normal GOF Test on Detected Observations Only**

Data Not Normal at 1% Significance Level

**Lilliefors GOF Test**

Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level****Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.0453	KM SD	0.0857
95% UTL95% Coverage	0.218	95% KM UPL (t)	0.19
90% KM Percentile (z)	0.155	95% KM Percentile (z)	0.186
99% KM Percentile (z)	0.245	95% KM USL	0.304

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.0452	SD	0.0865
95% UTL95% Coverage	0.22	95% UPL (t)	0.191
90% Percentile (z)	0.156	95% Percentile (z)	0.187
99% Percentile (z)	0.246	95% USL	0.306

**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons****Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	1.705
5% A-D Critical Value	0.784
K-S Test Statistic	0.132
5% K-S Critical Value	0.126

**Anderson-Darling GOF Test**

Data Not Gamma Distributed at 5% Significance Level

**Kolmogorov-Smirnov GOF**

Data Not Gamma Distributed at 5% Significance Level

**Data Not Gamma Distributed at 5% Significance Level****Gamma Statistics on Detected Data Only**

k hat (MLE)	0.922
Theta hat (MLE)	0.0544
nu hat (MLE)	97.75
MLE Mean (bias corrected)	0.0501
MLE Sd (bias corrected)	0.0534

k star (bias corrected MLE)	0.883
Theta star (bias corrected MLE)	0.0568
nu star (bias corrected)	93.55

95% Percentile of Chisquare (2kstar) 5.528

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs  
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)  
For such situations, GROS method may yield incorrect values of UCLs and BTVs  
This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00381	Mean	0.0461
Maximum	0.59	Median	0.0221
SD	0.086	CV	1.868
k hat (MLE)	0.903	k star (bias corrected MLE)	0.869
Theta hat (MLE)	0.051	Theta star (bias corrected MLE)	0.053
nu hat (MLE)	106.6	nu star (bias corrected)	102.5
MLE Mean (bias corrected)	0.0461	MLE Sd (bias corrected)	0.0494
95% Percentile of Chisquare (2kstar)	5.472	90% Percentile	0.11
95% Percentile	0.145	99% Percentile	0.228

**The following statistics are computed using Gamma ROS Statistics on Imputed Data****Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW	WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.17	0.172	95% Approx. Gamma UPL	0.135
95% Gamma USL	0.309	0.334		0.134

## ATTACHMENT C

## ProUCL Output Files - BTV Output from ProUCL both BRAs Without Outlier

Former Houston Wood Preserving Works, Houston, Texas

## Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0453	SD (KM)	0.0857
Variance (KM)	0.00734	SE of Mean (KM)	0.0113
k hat (KM)	0.28	k star (KM)	0.277
nu hat (KM)	33.01	nu star (KM)	32.67
theta hat (KM)	0.162	theta star (KM)	0.164
80% gamma percentile (KM)	0.068	90% gamma percentile (KM)	0.135
95% gamma percentile (KM)	0.213	99% gamma percentile (KM)	0.417

The following statistics are computed using gamma distribution and KM estimates

## Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.176	0.182	95% Approx. Gamma UPL	0.138	0.139
95% KM Gamma Percentile	0.134	0.135	95% Gamma USL	0.328	0.367

## Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.964	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk P Value	0.2	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.0759	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.111	Detected Data appear Lognormal at 10% Significance Level

Detected Data appear Lognormal at 10% Significance Level

## Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.0453	Mean in Log Scale	-3.864
SD in Original Scale	0.0864	SD in Log Scale	1.235
95% UTL95% Coverage	0.255	95% BCA UTL95% Coverage	0.331
95% Bootstrap (%) UTL95% Coverage	0.357	95% UPL (t)	0.168
90% Percentile (z)	0.102	95% Percentile (z)	0.16
99% Percentile (z)	0.372	95% USL	0.876

## Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-3.861	95% KM UTL (Lognormal)95% Coverage	0.247
KM SD of Logged Data	1.219	95% KM UPL (Lognormal)	0.164
95% KM Percentile Lognormal (z)	0.156	95% KM USL (Lognormal)	0.837

## Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.0452	Mean in Log Scale	-3.928
SD in Original Scale	0.0865	SD in Log Scale	1.355
95% UTL95% Coverage	0.304	95% UPL (t)	0.193
90% Percentile (z)	0.112	95% Percentile (z)	0.183
99% Percentile (z)	0.461	95% USL	1.18

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

## Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution

## Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	58	95% UTL with 95% Coverage	0.59
Approx, f used to compute achieved CC	1.526	Approximate Actual Confidence Coefficient achieved by UTL	0.801
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.121
95% USL	0.59	95% KM Chebyshev UPL	0.422

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ProUCL Output File**  
**Both BRAs**

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL both BRAs**  
Former Houston Wood Preserving Works, Houston, Texas

**Background Statistics for Data Sets with Non-Detects**

**User Selected Options**

Date/Time of Computation ProUCL 5.2 2/28/2025 6:11:32 PM  
From File for ProUCL full analysis analytes.xls  
Full Precision OFF  
Confidence Coefficient 95%  
Coverage 95%  
Different or Future K Observations 1  
Number of Bootstrap Operations 2000

**Acenaphthylene**

**General Statistics**

Total Number of Observations	60	Number of Missing Observations	0
Number of Distinct Observations	49		
Number of Detects	31	Number of Non-Detects	29
Number of Distinct Detects	31	Number of Distinct Non-Detects	21
Minimum Detect	0.00245	Minimum Non-Detect	0.00232
Maximum Detect	0.236	Maximum Non-Detect	0.00287
Variance Detected	0.00171	Percent Non-Detects	48.33%
Mean Detected	0.0173	SD Detected	0.0413
Mean of Detected Logged Data	-4.784	SD of Detected Logged Data	0.985

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.017	d2max (for USL)	3.027
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.329	<b>Shapiro Wilk GOF Test</b>
1% Shapiro Wilk Critical Value	0.902	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.36	<b>Lilliefors GOF Test</b>
1% Lilliefors Critical Value	0.182	Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level**

**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.0101	KM SD	0.0302
95% UTL95% Coverage	0.0709	95% KM UPL (t)	0.0609
90% KM Percentile (z)	0.0487	95% KM Percentile (z)	0.0597
99% KM Percentile (z)	0.0802	95% KM USL	0.101

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.00955	SD	0.0306
95% UTL95% Coverage	0.0712	95% UPL (t)	0.061
90% Percentile (z)	0.0487	95% Percentile (z)	0.0598
99% Percentile (z)	0.0806	95% USL	0.102

**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons**

## ATTACHMENT C

## ProUCL Output Files - BTV Output from ProUCL both BRAs

Former Houston Wood Preserving Works, Houston, Texas

## Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.394	<b>Anderson-Darling GOF Test</b>	
5% A-D Critical Value	0.785	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.196	<b>Kolmogorov-Smirnov GOF</b>	
5% K-S Critical Value	0.164	Data Not Gamma Distributed at 5% Significance Level	

**Data Not Gamma Distributed at 5% Significance Level**

## Gamma Statistics on Detected Data Only

k hat (MLE)	0.815	k star (bias corrected MLE)	0.758
Theta hat (MLE)	0.0212	Theta star (bias corrected MLE)	0.0228
nu hat (MLE)	50.53	nu star (bias corrected)	46.97
MLE Mean (bias corrected)	0.0173		
MLE Sd (bias corrected)	0.0199	95% Percentile of Chisquare (2kstar)	5.012

## Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has &gt; 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as &lt;1.0, especially when the sample size is small (e.g., &lt;15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00245	Mean	0.0138
Maximum	0.236	Median	0.01
SD	0.0297	CV	2.157
k hat (MLE)	1.356	k star (bias corrected MLE)	1.299
Theta hat (MLE)	0.0102	Theta star (bias corrected MLE)	0.0106
nu hat (MLE)	162.7	nu star (bias corrected)	155.9
MLE Mean (bias corrected)	0.0138	MLE Sd (bias corrected)	0.0121
95% Percentile of Chisquare (2kstar)	7.105	90% Percentile	0.0297
95% Percentile	0.0377	99% Percentile	0.0558

The following statistics are computed using Gamma ROS Statistics on Imputed Data

## Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.0417	0.0398	95% Approx. Gamma UPL	0.0344	0.0326
95% Gamma USL	0.0702	0.0693			

## Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0101	SD (KM)	0.0302
Variance (KM)	9.1014E-4	SE of Mean (KM)	0.00396
k hat (KM)	0.111	k star (KM)	0.117
nu hat (KM)	13.36	nu star (KM)	14.03
theta hat (KM)	0.0904	theta star (KM)	0.0861
80% gamma percentile (KM)	0.00856	90% gamma percentile (KM)	0.0283
95% gamma percentile (KM)	0.0576	99% gamma percentile (KM)	0.148

The following statistics are computed using gamma distribution and KM estimates

## Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.036	0.0338	95% Approx. Gamma UPL	0.0283	0.0262
95% KM Gamma Percentile	0.0275	0.0254	95% Gamma USL	0.0678	0.0674

## ATTACHMENT C

## ProUCL Output Files - BTV Output from ProUCL both BRAs

Former Houston Wood Preserving Works, Houston, Texas

## Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.905	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk Critical Value	0.94	Data Not Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.106	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.143	Detected Data appear Lognormal at 10% Significance Level

Detected Data appear Approximate Lognormal at 10% Significance Level

## Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.00931	Mean in Log Scale	-5.959
SD in Original Scale	0.0306	SD in Log Scale	1.436
95% UTL95% Coverage	0.0467	95% BCA UTL95% Coverage	0.0405
95% Bootstrap (%) UTL95% Coverage	0.0405	95% UPL (t)	0.029
90% Percentile (z)	0.0163	95% Percentile (z)	0.0274
99% Percentile (z)	0.0728	95% USL	0.199

## Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean of Logged Data	-5.4	95% KM UTL (Lognormal)95% Coverage	0.0303
KM SD of Logged Data	0.944	95% KM UPL (Lognormal)	0.0222
95% KM Percentile Lognormal (z)	0.0213	95% KM USL (Lognormal)	0.0787

## Background DL/2 Statistics Assuming Lognormal Distribution

Mean in Original Scale	0.00955	Mean in Log Scale	-5.698
SD in Original Scale	0.0306	SD in Log Scale	1.185
95% UTL95% Coverage	0.0366	95% UPL (t)	0.0247
90% Percentile (z)	0.0153	95% Percentile (z)	0.0235
99% Percentile (z)	0.0528	95% USL	0.121

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

## Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution

## Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	59	95% UTL with95% Coverage	0.236
Approx, f used to compute achieved CC	1.553	Approximate Actual Confidence Coefficient achieved by UTL	0.808
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.0293
95% USL	0.236	95% KM Chebyshev UPL	0.143

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers

and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL both BRAs**  
Former Houston Wood Preserving Works, Houston, Texas

**Anthracene****General Statistics**

Total Number of Observations	60	Number of Missing Observations	0
Number of Distinct Observations	55		
Number of Detects	43	Number of Non-Detects	17
Number of Distinct Detects	41	Number of Distinct Non-Detects	14
Minimum Detect	0.00314	Minimum Non-Detect	0.0025
Maximum Detect	0.1	Maximum Non-Detect	0.00305
Variance Detected	5.2649E-4	Percent Non-Detects	28.33%
Mean Detected	0.0191	SD Detected	0.0229
Mean of Detected Logged Data	-4.409	SD of Detected Logged Data	0.896

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.017	d2max (for USL)	3.027
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.639	<b>Shapiro Wilk GOF Test</b>
1% Shapiro Wilk Critical Value	0.923	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.288	<b>Lilliefors GOF Test</b>
1% Lilliefors Critical Value	0.156	Data Not Normal at 1% Significance Level

Data Not Normal at 1% Significance Level

**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.0144	KM SD	0.0206
95% UTL95% Coverage	0.0559	95% KM UPL (t)	0.0491
90% KM Percentile (z)	0.0408	95% KM Percentile (z)	0.0482
99% KM Percentile (z)	0.0623	95% KM USL	0.0767

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.014	SD	0.021
95% UTL95% Coverage	0.0563	95% UPL (t)	0.0494
90% Percentile (z)	0.0409	95% Percentile (z)	0.0485
99% Percentile (z)	0.0628	95% USL	0.0775

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

**Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	1.7	<b>Anderson-Darling GOF Test</b>
5% A-D Critical Value	0.772	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.169	<b>Kolmogorov-Smirnov GOF</b>
5% K-S Critical Value	0.138	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

k hat (MLE)	1.256	k star (bias corrected MLE)	1.184
Theta hat (MLE)	0.0152	Theta star (bias corrected MLE)	0.0161
nu hat (MLE)	108	nu star (bias corrected)	101.8
MLE Mean (bias corrected)	0.0191		
MLE Sd (bias corrected)	0.0175	95% Percentile of Chisquare (2kstar)	6.686



## ATTACHMENT C

## ProUCL Output Files - BTV Output from ProUCL both BRAs

Former Houston Wood Preserving Works, Houston, Texas

## Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has &gt; 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as &lt;1.0, especially when the sample size is small (e.g., &lt;15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00314	Mean	0.0165
Maximum	0.1	Median	0.01
SD	0.0198	CV	1.201
k hat (MLE)	1.537	k star (bias corrected MLE)	1.472
Theta hat (MLE)	0.0107	Theta star (bias corrected MLE)	0.0112
nu hat (MLE)	184.5	nu star (bias corrected)	176.6
MLE Mean (bias corrected)	0.0165	MLE Sd (bias corrected)	0.0136
95% Percentile of Chisquare (2kstar)	7.716	90% Percentile	0.0345
95% Percentile	0.0432	99% Percentile	0.0629

The following statistics are computed using Gamma ROS Statistics on Imputed Data

## Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.0509	0.051	95% Approx. Gamma UPL	0.0422	0.0417
95% Gamma USL	0.0848	0.0889			

## Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0144	SD (KM)	0.0206
Variance (KM)	4.2416E-4	SE of Mean (KM)	0.00269
k hat (KM)	0.486	k star (KM)	0.473
nu hat (KM)	58.35	nu star (KM)	56.76
theta hat (KM)	0.0295	theta star (KM)	0.0304
80% gamma percentile (KM)	0.0235	90% gamma percentile (KM)	0.0393
95% gamma percentile (KM)	0.0563	99% gamma percentile (KM)	0.0982

The following statistics are computed using gamma distribution and KM estimates

## Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.053	0.054	95% Approx. Gamma UPL	0.0423	0.0423
95% KM Gamma Percentile	0.0412	0.041	95% Gamma USL	0.0961	0.105

## Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.946	Shapiro Wilk GOF Test			
10% Shapiro Wilk Critical Value	0.951	Data Not Lognormal at 10% Significance Level			
Lilliefors Test Statistic	0.096	Lilliefors GOF Test			
10% Lilliefors Critical Value	0.123	Detected Data appear Lognormal at 10% Significance Level			

Detected Data appear Approximate Lognormal at 10% Significance Level

## Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.0141	Mean in Log Scale	-4.984
SD in Original Scale	0.0209	SD in Log Scale	1.196
95% UTL95% Coverage	0.0763	95% BCA UTL95% Coverage	0.0975
95% Bootstrap (%) UTL95% Coverage	0.0975	95% UPL (t)	0.0513
90% Percentile (z)	0.0317	95% Percentile (z)	0.0489
99% Percentile (z)	0.111	95% USL	0.255

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL both BRAs**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-4.857	95% KM UTL (Lognormal)	95% Coverage	0.0626
KM SD of Logged Data	1.034	95% KM UPL (Lognormal)		0.0444
95% KM Percentile Lognormal (z)	0.0426	95% KM USL (Lognormal)		0.178

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.014	Mean in Log Scale	-5.032
SD in Original Scale	0.021	SD in Log Scale	1.253
95% UTL	95% Coverage	95% UPL (t)	0.0539
90% Percentile (z)	0.0325	95% Percentile (z)	0.0513
99% Percentile (z)	0.12	95% USL	0.29

**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**

**Nonparametric Distribution Free Background Statistics**

**Data appear to follow a Discernible Distribution**

**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**

Order of Statistic, r	59	95% UTL with 95% Coverage	0.1
Approx, f used to compute achieved CC	1.553	Approximate Actual Confidence Coefficient achieved by UTL	0.808
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.0739
95% USL	0.1	95% KM Chebyshev UPL	0.105

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL both BRAs**  
Former Houston Wood Preserving Works, Houston, Texas

**Benzo(a)anthracene**

General Statistics			
Total Number of Observations	60	Number of Missing Observations	0
Number of Distinct Observations	60		
Number of Detects	58	Number of Non-Detects	2
Number of Distinct Detects	58	Number of Distinct Non-Detects	2
Minimum Detect	0.00234	Minimum Non-Detect	0.00197
Maximum Detect	1.01	Maximum Non-Detect	0.00208
Variance Detected	0.0219	Percent Non-Detects	3.333%
Mean Detected	0.0777	SD Detected	0.148
Mean of Detected Logged Data	-3.325	SD of Detected Logged Data	1.203

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.017	d2max (for USL)	3.027
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.47
1% Shapiro Wilk P Value	0
Lilliefors Test Statistic	0.311
1% Lilliefors Critical Value	0.134

**Normal GOF Test on Detected Observations Only**

Data Not Normal at 1% Significance Level

**Lilliefors GOF Test**

Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level****Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.0752	KM SD	0.145
95% UTL95% Coverage	0.367	95% KM UPL (t)	0.319
90% KM Percentile (z)	0.261	95% KM Percentile (z)	0.313
99% KM Percentile (z)	0.412	95% KM USL	0.513

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.0751	SD	0.146
95% UTL95% Coverage	0.37	95% UPL (t)	0.321
90% Percentile (z)	0.262	95% Percentile (z)	0.315
99% Percentile (z)	0.415	95% USL	0.517

**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons****Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	2.049
5% A-D Critical Value	0.791
K-S Test Statistic	0.164
5% K-S Critical Value	0.121

**Anderson-Darling GOF Test**

Data Not Gamma Distributed at 5% Significance Level

**Kolmogorov-Smirnov GOF**

Data Not Gamma Distributed at 5% Significance Level

**Data Not Gamma Distributed at 5% Significance Level****Gamma Statistics on Detected Data Only**

k hat (MLE)	0.774	k star (bias corrected MLE)	0.745
Theta hat (MLE)	0.1	Theta star (bias corrected MLE)	0.104
nu hat (MLE)	89.78	nu star (bias corrected)	86.47
MLE Mean (bias corrected)	0.0777		
MLE Sd (bias corrected)	0.09	95% Percentile of Chisquare (2kstar)	4.961

## ATTACHMENT C

## ProUCL Output Files - BTV Output from ProUCL both BRAs

Former Houston Wood Preserving Works, Houston, Texas

## Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has &gt; 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as &lt;1.0, especially when the sample size is small (e.g., &lt;15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00234	Mean	0.0754
Maximum	1.01	Median	0.0353
SD	0.146	CV	1.934
k hat (MLE)	0.762	k star (bias corrected MLE)	0.735
Theta hat (MLE)	0.0989	Theta star (bias corrected MLE)	0.103
nu hat (MLE)	91.5	nu star (bias corrected)	88.26
MLE Mean (bias corrected)	0.0754	MLE Sd (bias corrected)	0.0879
95% Percentile of Chisquare (2kstar)	4.918	90% Percentile	0.187
95% Percentile	0.252	99% Percentile	0.407

The following statistics are computed using Gamma ROS Statistics on Imputed Data

## Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.296	0.302	95% Approx. Gamma UPL	0.233	0.231
95% Gamma USL	0.559	0.619			

## Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0752	SD (KM)	0.145
Variance (KM)	0.021	SE of Mean (KM)	0.0189
k hat (KM)	0.269	k star (KM)	0.267
nu hat (KM)	32.33	nu star (KM)	32.04
theta hat (KM)	0.279	theta star (KM)	0.281
80% gamma percentile (KM)	0.112	90% gamma percentile (KM)	0.224
95% gamma percentile (KM)	0.357	99% gamma percentile (KM)	0.705

The following statistics are computed using gamma distribution and KM estimates

## Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.298	0.307	95% Approx. Gamma UPL	0.233	0.234
95% KM Gamma Percentile	0.226	0.226	95% Gamma USL	0.566	0.637

## Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.982	<b>Shapiro Wilk GOF Test</b>			
10% Shapiro Wilk P Value	0.781	Detected Data appear Lognormal at 10% Significance Level			
Lilliefors Test Statistic	0.0702	<b>Lilliefors GOF Test</b>			
10% Lilliefors Critical Value	0.106	Detected Data appear Lognormal at 10% Significance Level			

Detected Data appear Lognormal at 10% Significance Level

## Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.0751	Mean in Log Scale	-3.423
SD in Original Scale	0.146	SD in Log Scale	1.296
95% UTL95% Coverage	0.445	95% BCA UTL95% Coverage	0.423
95% Bootstrap (%) UTL95% Coverage	0.392	95% UPL (t)	0.29
90% Percentile (z)	0.172	95% Percentile (z)	0.275
99% Percentile (z)	0.665	95% USL	1.649

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL both BRAs**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-3.422	95% KM UTL (Lognormal)	95% Coverage	0.434
KM SD of Logged Data	1.283	95% KM UPL (Lognormal)		0.284
95% KM Percentile Lognormal (z)	0.269	95% KM USL (Lognormal)		1.586

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.0751	Mean in Log Scale	-3.444
SD in Original Scale	0.146	SD in Log Scale	1.347
95% UTL	95% Coverage	95% UPL (t)	0.309
90% Percentile (z)	0.179	95% Percentile (z)	0.293
99% Percentile (z)	0.733	95% USL	1.885

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

**Nonparametric Distribution Free Background Statistics**

Data appear to follow a Discernible Distribution

**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**

Order of Statistic, r	59	95% UTL with 95% Coverage	1.01
Approx, f used to compute achieved CC	1.553	Approximate Actual Confidence Coefficient achieved by UTL	0.808
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.332
95% USL	1.01	95% KM Chebyshev UPL	0.712

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL both BRAs**  
Former Houston Wood Preserving Works, Houston, Texas

**Benzo(a)pyrene**

General Statistics			
Total Number of Observations	60	Number of Missing Observations	0
Number of Distinct Observations	60		
Number of Detects	58	Number of Non-Detects	2
Number of Distinct Detects	58	Number of Distinct Non-Detects	2
Minimum Detect	0.00305	Minimum Non-Detect	0.00204
Maximum Detect	0.752	Maximum Non-Detect	0.00215
Variance Detected	0.015	Percent Non-Detects	3.333%
Mean Detected	0.0781	SD Detected	0.123
Mean of Detected Logged Data	-3.186	SD of Detected Logged Data	1.123

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.017	d2max (for USL)	3.027
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.54
1% Shapiro Wilk P Value	0
Lilliefors Test Statistic	0.285
1% Lilliefors Critical Value	0.134

**Normal GOF Test on Detected Observations Only**

Data Not Normal at 1% Significance Level

**Lilliefors GOF Test**

Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level****Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.0755	KM SD	0.12
95% UTL95% Coverage	0.318	95% KM UPL (t)	0.278
90% KM Percentile (z)	0.23	95% KM Percentile (z)	0.273
99% KM Percentile (z)	0.355	95% KM USL	0.44

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.0755	SD	0.121
95% UTL95% Coverage	0.32	95% UPL (t)	0.28
90% Percentile (z)	0.231	95% Percentile (z)	0.275
99% Percentile (z)	0.358	95% USL	0.443

**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons****Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	1.362
5% A-D Critical Value	0.784
K-S Test Statistic	0.132
5% K-S Critical Value	0.121

**Anderson-Darling GOF Test**

Data Not Gamma Distributed at 5% Significance Level

**Kolmogorov-Smirnov GOF**

Data Not Gamma Distributed at 5% Significance Level

**Data Not Gamma Distributed at 5% Significance Level****Gamma Statistics on Detected Data Only**

k hat (MLE)	0.918	k star (bias corrected MLE)	0.882
Theta hat (MLE)	0.085	Theta star (bias corrected MLE)	0.0885
nu hat (MLE)	106.5	nu star (bias corrected)	102.3
MLE Mean (bias corrected)	0.0781		
MLE Sd (bias corrected)	0.0831	95% Percentile of Chisquare (2kstar)	5.526

## ATTACHMENT C

## ProUCL Output Files - BTV Output from ProUCL both BRAs

Former Houston Wood Preserving Works, Houston, Texas

## Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has &gt; 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as &lt;1.0, especially when the sample size is small (e.g., &lt;15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00305	Mean	0.0758
Maximum	0.752	Median	0.0454
SD	0.121	CV	1.599
k hat (MLE)	0.896	k star (bias corrected MLE)	0.862
Theta hat (MLE)	0.0846	Theta star (bias corrected MLE)	0.0879
nu hat (MLE)	107.5	nu star (bias corrected)	103.4
MLE Mean (bias corrected)	0.0758	MLE Sd (bias corrected)	0.0816
95% Percentile of Chisquare (2kstar)	5.445	90% Percentile	0.181
95% Percentile	0.239	99% Percentile	0.376

The following statistics are computed using Gamma ROS Statistics on Imputed Data

## Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.286	0.295	95% Approx. Gamma UPL	0.228	0.23
95% Gamma USL	0.524	0.584			

## Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0755	SD (KM)	0.12
Variance (KM)	0.0145	SE of Mean (KM)	0.0157
k hat (KM)	0.394	k star (KM)	0.386
nu hat (KM)	47.3	nu star (KM)	46.26
theta hat (KM)	0.192	theta star (KM)	0.196
80% gamma percentile (KM)	0.121	90% gamma percentile (KM)	0.215
95% gamma percentile (KM)	0.318	99% gamma percentile (KM)	0.578

The following statistics are computed using gamma distribution and KM estimates

## Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.289	0.302	95% Approx. Gamma UPL	0.23	0.234
95% KM Gamma Percentile	0.223	0.226	95% Gamma USL	0.534	0.606

## Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.982	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk P Value	0.783	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.0727	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.106	Detected Data appear Lognormal at 10% Significance Level

Detected Data appear Lognormal at 10% Significance Level

## Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.0756	Mean in Log Scale	-3.277
SD in Original Scale	0.121	SD in Log Scale	1.21
95% UTL95% Coverage	0.433	95% BCA UTL95% Coverage	0.522
95% Bootstrap (%) UTL95% Coverage	0.522	95% UPL (t)	0.29
90% Percentile (z)	0.178	95% Percentile (z)	0.276
99% Percentile (z)	0.63	95% USL	1.471

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL both BRAs**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-3.286	95% KM UTL (Lognormal)	95% Coverage	0.438
KM SD of Logged Data	1.22	95% KM UPL (Lognormal)		0.292
95% KM Percentile Lognormal (z)	0.278	95% KM USL (Lognormal)		1.504

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.0755	Mean in Log Scale	-3.308
SD in Original Scale	0.121	SD in Log Scale	1.289
95% UTL	95% Coverage	95% UPL (t)	0.321
90% Percentile (z)	0.191	95% Percentile (z)	0.305
99% Percentile (z)	0.733	95% USL	1.808

**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**

**Nonparametric Distribution Free Background Statistics**

**Data appear to follow a Discernible Distribution**

**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**

Order of Statistic, r	59	95% UTL with 95% Coverage	0.752
Approx, f used to compute achieved CC	1.553	Approximate Actual Confidence Coefficient achieved by UTL	0.808
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.297
95% USL	0.752	95% KM Chebyshev UPL	0.604

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.



**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL both BRAs**  
Former Houston Wood Preserving Works, Houston, Texas

**Benzo(b)fluoranthene**

General Statistics			
Total Number of Observations	60	Number of Missing Observations	0
Number of Distinct Observations	60		
Number of Detects	59	Number of Non-Detects	1
Number of Distinct Detects	59	Number of Distinct Non-Detects	1
Minimum Detect	0.00261	Minimum Non-Detect	0.00174
Maximum Detect	1.26	Maximum Non-Detect	0.00174
Variance Detected	0.0369	Percent Non-Detects	1.667%
Mean Detected	0.122	SD Detected	0.192
Mean of Detected Logged Data	-2.765	SD of Detected Logged Data	1.185

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.017	d2max (for USL)	3.027
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.537
1% Shapiro Wilk P Value	0
Lilliefors Test Statistic	0.268
1% Lilliefors Critical Value	0.133

**Normal GOF Test on Detected Observations Only**

Data Not Normal at 1% Significance Level

**Lilliefors GOF Test**

Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level****Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.12	KM SD	0.19
95% UTL95% Coverage	0.502	95% KM UPL (t)	0.439
90% KM Percentile (z)	0.363	95% KM Percentile (z)	0.431
99% KM Percentile (z)	0.561	95% KM USL	0.693

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.12	SD	0.191
95% UTL95% Coverage	0.505	95% UPL (t)	0.442
90% Percentile (z)	0.365	95% Percentile (z)	0.434
99% Percentile (z)	0.564	95% USL	0.698

**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons****Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	1.055
5% A-D Critical Value	0.785
K-S Test Statistic	0.116
5% K-S Critical Value	0.12

**Anderson-Darling GOF Test**

Data Not Gamma Distributed at 5% Significance Level

**Kolmogorov-Smirnov GOF**

Detected data appear Gamma Distributed at 5% Significance Level

**Detected data follow Appr. Gamma Distribution at 5% Significance Level****Gamma Statistics on Detected Data Only**

k hat (MLE)	0.89	k star (bias corrected MLE)	0.856
Theta hat (MLE)	0.137	Theta star (bias corrected MLE)	0.142
nu hat (MLE)	105	nu star (bias corrected)	101
MLE Mean (bias corrected)	0.122		
MLE Sd (bias corrected)	0.131	95% Percentile of Chisquare (2kstar)	5.421

## ATTACHMENT C

## ProUCL Output Files - BTV Output from ProUCL both BRAs

Former Houston Wood Preserving Works, Houston, Texas

## Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has &gt; 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as &lt;1.0, especially when the sample size is small (e.g., &lt;15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00261	Mean	0.12
Maximum	1.26	Median	0.0748
SD	0.191	CV	1.596
k hat (MLE)	0.872	k star (bias corrected MLE)	0.84
Theta hat (MLE)	0.137	Theta star (bias corrected MLE)	0.143
nu hat (MLE)	104.7	nu star (bias corrected)	100.8
MLE Mean (bias corrected)	0.12	MLE Sd (bias corrected)	0.131
95% Percentile of Chisquare (2kstar)	5.354	90% Percentile	0.288
95% Percentile	0.382	99% Percentile	0.603

The following statistics are computed using Gamma ROS Statistics on Imputed Data

## Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.458	0.478	95% Approx. Gamma UPL	0.364	0.371
95% Gamma USL	0.841	0.953			

## Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.12	SD (KM)	0.19
Variance (KM)	0.0359	SE of Mean (KM)	0.0247
k hat (KM)	0.398	k star (KM)	0.389
nu hat (KM)	47.76	nu star (KM)	46.71
theta hat (KM)	0.3	theta star (KM)	0.307
80% gamma percentile (KM)	0.192	90% gamma percentile (KM)	0.339
95% gamma percentile (KM)	0.502	99% gamma percentile (KM)	0.911

The following statistics are computed using gamma distribution and KM estimates

## Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.458	0.482	95% Approx. Gamma UPL	0.364	0.373
95% KM Gamma Percentile	0.353	0.361	95% Gamma USL	0.844	0.967

## Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.982	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk P Value	0.776	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.103	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.105	Detected Data appear Lognormal at 10% Significance Level

Detected Data appear Lognormal at 10% Significance Level

## Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.12	Mean in Log Scale	-2.816
SD in Original Scale	0.191	SD in Log Scale	1.241
95% UTL95% Coverage	0.731	95% BCA UTL95% Coverage	0.763
95% Bootstrap (%) UTL95% Coverage	0.763	95% UPL (t)	0.484
90% Percentile (z)	0.293	95% Percentile (z)	0.461
99% Percentile (z)	1.073	95% USL	2.559

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL both BRAs**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-2.825	95% KM UTL (Lognormal)	95% Coverage	0.741
KM SD of Logged Data	1.252	95% KM UPL (Lognormal)		0.489
95% KM Percentile Lognormal (z)	0.465	95% KM USL (Lognormal)		2.626

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.12	Mean in Log Scale	-2.836
SD in Original Scale	0.191	SD in Log Scale	1.298
95% UTL	95% Coverage	95% UPL (t)	0.523
90% Percentile (z)	0.31	95% Percentile (z)	0.496
99% Percentile (z)	1.202	95% USL	2.984

**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**

**Nonparametric Distribution Free Background Statistics**

**Data appear to follow a Discernible Distribution**

**Nonparametric Upper Limits for BTVs (no distinction made between detects and nondetects)**

Order of Statistic, r	59	95% UTL with 95% Coverage	1.26
Approx, f used to compute achieved CC	1.553	Approximate Actual Confidence Coefficient achieved by UTL	0.808
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.407
95% USL	1.26	95% KM Chebyshev UPL	0.953

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL both BRAs**  
Former Houston Wood Preserving Works, Houston, Texas

Benzo(g,h,i)perylene

General Statistics			
Total Number of Observations	60	Number of Missing Observations	0
Number of Distinct Observations	60		
Number of Detects	58	Number of Non-Detects	2
Number of Distinct Detects	58	Number of Distinct Non-Detects	2
Minimum Detect	0.00328	Minimum Non-Detect	0.00201
Maximum Detect	0.462	Maximum Non-Detect	0.00213
Variance Detected	0.00588	Percent Non-Detects	3.333%
Mean Detected	0.0608	SD Detected	0.0767
Mean of Detected Logged Data	-3.293	SD of Detected Logged Data	1.026

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.017	d2max (for USL)	3.027
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.618
1% Shapiro Wilk P Value	0
Lilliefors Test Statistic	0.24
1% Lilliefors Critical Value	0.134

**Normal GOF Test on Detected Observations Only**

Data Not Normal at 1% Significance Level

**Lilliefors GOF Test**

Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level****Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.0589	KM SD	0.0755
95% UTL95% Coverage	0.211	95% KM UPL (t)	0.186
90% KM Percentile (z)	0.156	95% KM Percentile (z)	0.183
99% KM Percentile (z)	0.234	95% KM USL	0.287

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.0588	SD	0.0762
95% UTL95% Coverage	0.212	95% UPL (t)	0.187
90% Percentile (z)	0.156	95% Percentile (z)	0.184
99% Percentile (z)	0.236	95% USL	0.289

**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons****Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	0.831
5% A-D Critical Value	0.776
K-S Test Statistic	0.109
5% K-S Critical Value	0.12

**Anderson-Darling GOF Test**

Data Not Gamma Distributed at 5% Significance Level

**Kolmogorov-Smirnov GOF**

Detected data appear Gamma Distributed at 5% Significance Level

**Detected data follow Appr. Gamma Distribution at 5% Significance Level****Gamma Statistics on Detected Data Only**

k hat (MLE)	1.151	k star (bias corrected MLE)	1.103
Theta hat (MLE)	0.0529	Theta star (bias corrected MLE)	0.0552
nu hat (MLE)	133.5	nu star (bias corrected)	127.9
MLE Mean (bias corrected)	0.0608		
MLE Sd (bias corrected)	0.0579	95% Percentile of Chisquare (2kstar)	6.383

## ATTACHMENT C

## ProUCL Output Files - BTV Output from ProUCL both BRAs

Former Houston Wood Preserving Works, Houston, Texas

## Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has &gt; 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as &lt;1.0, especially when the sample size is small (e.g., &lt;15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00328	Mean	0.0591
Maximum	0.462	Median	0.0392
SD	0.0759	CV	1.284
k hat (MLE)	1.119	k star (bias corrected MLE)	1.074
Theta hat (MLE)	0.0528	Theta star (bias corrected MLE)	0.0551
nu hat (MLE)	134.3	nu star (bias corrected)	128.9
MLE Mean (bias corrected)	0.0591	MLE Sd (bias corrected)	0.0571
95% Percentile of Chisquare (2kstar)	6.276	90% Percentile	0.134
95% Percentile	0.173	99% Percentile	0.263

The following statistics are computed using Gamma ROS Statistics on Imputed Data

## Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.208	0.217	95% Approx. Gamma UPL	0.169	0.172
95% Gamma USL	0.366	0.409			

## Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0589	SD (KM)	0.0755
Variance (KM)	0.0057	SE of Mean (KM)	0.00983
k hat (KM)	0.608	k star (KM)	0.589
nu hat (KM)	72.98	nu star (KM)	70.66
theta hat (KM)	0.0968	theta star (KM)	0.1
80% gamma percentile (KM)	0.097	90% gamma percentile (KM)	0.154
95% gamma percentile (KM)	0.213	99% gamma percentile (KM)	0.357

The following statistics are computed using gamma distribution and KM estimates

## Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.212	0.224	95% Approx. Gamma UPL	0.171	0.176
95% KM Gamma Percentile	0.166	0.171	95% Gamma USL	0.377	0.43

## Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.973	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk P Value	0.402	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.0932	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.106	Detected Data appear Lognormal at 10% Significance Level

Detected Data appear Lognormal at 10% Significance Level

## Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.0589	Mean in Log Scale	-3.376
SD in Original Scale	0.0761	SD in Log Scale	1.105
95% UTL95% Coverage	0.317	95% BCA UTL95% Coverage	0.344
95% Bootstrap (%) UTL95% Coverage	0.338	95% UPL (t)	0.22
90% Percentile (z)	0.141	95% Percentile (z)	0.21
99% Percentile (z)	0.446	95% USL	0.968

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL both BRAs**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-3.391	95% KM UTL (Lognormal)	95% Coverage	0.328
KM SD of Logged Data	1.129	95% KM UPL (Lognormal)		0.226
95% KM Percentile Lognormal (z)	0.216	95% KM USL (Lognormal)		1.027

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.0588	Mean in Log Scale	-3.413
SD in Original Scale	0.0762	SD in Log Scale	1.199
95% UTL	95% Coverage	95% UPL (t)	0.248
90% Percentile (z)	0.153	95% Percentile (z)	0.237
99% Percentile (z)	0.536	95% USL	1.241

**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**

**Nonparametric Distribution Free Background Statistics**

**Data appear to follow a Discernible Distribution**

**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**

Order of Statistic, r	59	95% UTL with 95% Coverage	0.462
Approx, f used to compute achieved CC	1.553	Approximate Actual Confidence Coefficient achieved by UTL	0.808
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.206
95% USL	0.462	95% KM Chebyshev UPL	0.391

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL both BRAs**  
Former Houston Wood Preserving Works, Houston, Texas

**Benzo(k)fluoranthene**

General Statistics			
Total Number of Observations	60	Number of Missing Observations	0
Number of Distinct Observations	56		
Number of Detects	55	Number of Non-Detects	5
Number of Distinct Detects	52	Number of Distinct Non-Detects	4
Minimum Detect	0.00317	Minimum Non-Detect	0.00244
Maximum Detect	0.484	Maximum Non-Detect	0.00264
Variance Detected	0.00517	Percent Non-Detects	8.333%
Mean Detected	0.0433	SD Detected	0.0719
Mean of Detected Logged Data	-3.72	SD of Detected Logged Data	1.02

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.017	d2max (for USL)	3.027
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.489
1% Shapiro Wilk P Value	0
Lilliefors Test Statistic	0.308
1% Lilliefors Critical Value	0.138

**Normal GOF Test on Detected Observations Only**

Data Not Normal at 1% Significance Level

**Lilliefors GOF Test**

Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level****Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.0399	KM SD	0.0692
95% UTL95% Coverage	0.179	95% KM UPL (t)	0.156
90% KM Percentile (z)	0.128	95% KM Percentile (z)	0.154
99% KM Percentile (z)	0.201	95% KM USL	0.249

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.0398	SD	0.0698
95% UTL95% Coverage	0.181	95% UPL (t)	0.157
90% Percentile (z)	0.129	95% Percentile (z)	0.155
99% Percentile (z)	0.202	95% USL	0.251

**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons****Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	1.733
5% A-D Critical Value	0.78
K-S Test Statistic	0.158
5% K-S Critical Value	0.123

**Anderson-Darling GOF Test**

Data Not Gamma Distributed at 5% Significance Level

**Kolmogorov-Smirnov GOF**

Data Not Gamma Distributed at 5% Significance Level

**Data Not Gamma Distributed at 5% Significance Level****Gamma Statistics on Detected Data Only**

k hat (MLE)	0.995	k star (bias corrected MLE)	0.953
Theta hat (MLE)	0.0435	Theta star (bias corrected MLE)	0.0454
nu hat (MLE)	109.5	nu star (bias corrected)	104.9
MLE Mean (bias corrected)	0.0433		
MLE Sd (bias corrected)	0.0443	95% Percentile of Chisquare (2kstar)	5.809

## ATTACHMENT C

## ProUCL Output Files - BTV Output from ProUCL both BRAs

Former Houston Wood Preserving Works, Houston, Texas

## Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has &gt; 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as &lt;1.0, especially when the sample size is small (e.g., &lt;15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00317	Mean	0.0405
Maximum	0.484	Median	0.0213
SD	0.0694	CV	1.714
k hat (MLE)	0.984	k star (bias corrected MLE)	0.946
Theta hat (MLE)	0.0412	Theta star (bias corrected MLE)	0.0428
nu hat (MLE)	118.1	nu star (bias corrected)	113.5
MLE Mean (bias corrected)	0.0405	MLE Sd (bias corrected)	0.0416
95% Percentile of Chisquare (2kstar)	5.78	90% Percentile	0.0945
95% Percentile	0.124	99% Percentile	0.192

The following statistics are computed using Gamma ROS Statistics on Imputed Data

## Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.146	0.147	95% Approx. Gamma UPL	0.117	0.116
95% Gamma USL	0.262	0.283			

## Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0399	SD (KM)	0.0692
Variance (KM)	0.00478	SE of Mean (KM)	0.00901
k hat (KM)	0.332	k star (KM)	0.327
nu hat (KM)	39.88	nu star (KM)	39.22
theta hat (KM)	0.12	theta star (KM)	0.122
80% gamma percentile (KM)	0.0623	90% gamma percentile (KM)	0.116
95% gamma percentile (KM)	0.177	99% gamma percentile (KM)	0.334

The following statistics are computed using gamma distribution and KM estimates

## Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.151	0.155	95% Approx. Gamma UPL	0.119	0.12
95% KM Gamma Percentile	0.116	0.116	95% Gamma USL	0.277	0.309

## Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.977	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk P Value	0.574	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.0837	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.109	Detected Data appear Lognormal at 10% Significance Level

Detected Data appear Lognormal at 10% Significance Level

## Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.0399	Mean in Log Scale	-3.912
SD in Original Scale	0.0697	SD in Log Scale	1.168
95% UTL95% Coverage	0.211	95% BCA UTL95% Coverage	0.235
95% Bootstrap (%) UTL95% Coverage	0.247	95% UPL (t)	0.143
90% Percentile (z)	0.0894	95% Percentile (z)	0.137
99% Percentile (z)	0.303	95% USL	0.687



**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL both BRAs**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-3.912	95% KM UTL (Lognormal)	95% Coverage	0.206
KM SD of Logged Data	1.157	95% KM UPL (Lognormal)		0.141
95% KM Percentile Lognormal (z)	0.134	95% KM USL (Lognormal)		0.664

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.0398	Mean in Log Scale	-3.966
SD in Original Scale	0.0698	SD in Log Scale	1.275
95% UTL	95% Coverage	95% UPL (t)	0.162
90% Percentile (z)	0.0971	95% Percentile (z)	0.154
99% Percentile (z)	0.368	95% USL	0.9

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

**Nonparametric Distribution Free Background Statistics**

Data appear to follow a Discernible Distribution

**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**

Order of Statistic, r	59	95% UTL with 95% Coverage	0.484
Approx, f used to compute achieved CC	1.553	Approximate Actual Confidence Coefficient achieved by UTL	0.808
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.126
95% USL	0.484	95% KM Chebyshev UPL	0.344

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL both BRAs**  
Former Houston Wood Preserving Works, Houston, Texas

Chrysene

General Statistics			
Total Number of Observations	60	Number of Missing Observations	0
Number of Distinct Observations	59		
Number of Detects	58	Number of Non-Detects	2
Number of Distinct Detects	57	Number of Distinct Non-Detects	2
Minimum Detect	0.00318	Minimum Non-Detect	0.00264
Maximum Detect	1.17	Maximum Non-Detect	0.00279
Variance Detected	0.0277	Percent Non-Detects	3.333%
Mean Detected	0.0852	SD Detected	0.166
Mean of Detected Logged Data	-3.212	SD of Detected Logged Data	1.176

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.017	d2max (for USL)	3.027
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.45
1% Shapiro Wilk P Value	0
Lilliefors Test Statistic	0.325
1% Lilliefors Critical Value	0.134

**Normal GOF Test on Detected Observations Only**

Data Not Normal at 1% Significance Level

**Lilliefors GOF Test**

Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level****Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.0825	KM SD	0.163
95% UTL95% Coverage	0.411	95% KM UPL (t)	0.357
90% KM Percentile (z)	0.291	95% KM Percentile (z)	0.35
99% KM Percentile (z)	0.461	95% KM USL	0.575

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.0825	SD	0.164
95% UTL95% Coverage	0.414	95% UPL (t)	0.359
90% Percentile (z)	0.293	95% Percentile (z)	0.352
99% Percentile (z)	0.464	95% USL	0.579

**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons****Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	1.871
5% A-D Critical Value	0.79
K-S Test Statistic	0.156
5% K-S Critical Value	0.121

**Anderson-Darling GOF Test**

Data Not Gamma Distributed at 5% Significance Level

**Kolmogorov-Smirnov GOF**

Data Not Gamma Distributed at 5% Significance Level

**Data Not Gamma Distributed at 5% Significance Level****Gamma Statistics on Detected Data Only**

k hat (MLE)	0.792	k star (bias corrected MLE)	0.763
Theta hat (MLE)	0.108	Theta star (bias corrected MLE)	0.112
nu hat (MLE)	91.89	nu star (bias corrected)	88.47
MLE Mean (bias corrected)	0.0852		
MLE Sd (bias corrected)	0.0976	95% Percentile of Chisquare (2kstar)	5.034

## ATTACHMENT C

## ProUCL Output Files - BTV Output from ProUCL both BRAs

Former Houston Wood Preserving Works, Houston, Texas

## Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has &gt; 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as &lt;1.0, especially when the sample size is small (e.g., &lt;15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00318	Mean	0.0827
Maximum	1.17	Median	0.0389
SD	0.164	CV	1.982
k hat (MLE)	0.777	k star (bias corrected MLE)	0.749
Theta hat (MLE)	0.106	Theta star (bias corrected MLE)	0.11
nu hat (MLE)	93.25	nu star (bias corrected)	89.92
MLE Mean (bias corrected)	0.0827	MLE Sd (bias corrected)	0.0956
95% Percentile of Chisquare (2kstar)	4.977	90% Percentile	0.204
95% Percentile	0.275	99% Percentile	0.442

The following statistics are computed using Gamma ROS Statistics on Imputed Data

## Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.322	0.328	95% Approx. Gamma UPL	0.253	0.252
95% Gamma USL	0.605	0.668			

## Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0825	SD (KM)	0.163
Variance (KM)	0.0265	SE of Mean (KM)	0.0212
k hat (KM)	0.257	k star (KM)	0.255
nu hat (KM)	30.82	nu star (KM)	30.62
theta hat (KM)	0.321	theta star (KM)	0.323
80% gamma percentile (KM)	0.121	90% gamma percentile (KM)	0.247
95% gamma percentile (KM)	0.397	99% gamma percentile (KM)	0.794

The following statistics are computed using gamma distribution and KM estimates

## Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.323	0.332	95% Approx. Gamma UPL	0.254	0.254
95% KM Gamma Percentile	0.246	0.245	95% Gamma USL	0.611	0.683

## Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.985	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk P Value	0.857	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.0799	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.106	Detected Data appear Lognormal at 10% Significance Level

Detected Data appear Lognormal at 10% Significance Level

## Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.0825	Mean in Log Scale	-3.308
SD in Original Scale	0.164	SD in Log Scale	1.268
95% UTL95% Coverage	0.471	95% BCA UTL95% Coverage	0.482
95% Bootstrap (%) UTL95% Coverage	0.482	95% UPL (t)	0.31
90% Percentile (z)	0.186	95% Percentile (z)	0.294
99% Percentile (z)	0.698	95% USL	1.696

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL both BRAs**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-3.303	95% KM UTL (Lognormal)	95% Coverage	0.454
KM SD of Logged Data	1.246	95% KM UPL (Lognormal)		0.3
95% KM Percentile Lognormal (z)	0.285	95% KM USL (Lognormal)		1.596

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.0825	Mean in Log Scale	-3.325
SD in Original Scale	0.164	SD in Log Scale	1.308
95% UTL	95% Coverage	95% UPL (t)	0.326
90% Percentile (z)	0.192	95% Percentile (z)	0.309
99% Percentile (z)	0.754	95% USL	1.887

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

**Nonparametric Distribution Free Background Statistics**

Data appear to follow a Discernible Distribution

**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**

Order of Statistic, r	59	95% UTL with	95% Coverage	1.17
Approx, f used to compute achieved CC	1.553	Approximate Actual Confidence Coefficient achieved by UTL		0.808
Approximate Sample Size needed to achieve specified CC	59	95% UPL		0.323
95% USL	1.17	95% KM Chebyshev UPL		0.798

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL both BRAs**  
Former Houston Wood Preserving Works, Houston, Texas

Dibenz(a,h)anthracene

General Statistics			
Total Number of Observations	60	Number of Missing Observations	0
Number of Distinct Observations	58		
Number of Detects	51	Number of Non-Detects	9
Number of Distinct Detects	49	Number of Distinct Non-Detects	9
Minimum Detect	0.00228	Minimum Non-Detect	0.00193
Maximum Detect	0.143	Maximum Non-Detect	0.0022
Variance Detected	5.7330E-4	Percent Non-Detects	15%
Mean Detected	0.016	SD Detected	0.0239
Mean of Detected Logged Data	-4.622	SD of Detected Logged Data	0.895

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.017	d2max (for USL)	3.027
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.518
1% Shapiro Wilk P Value	0
Lilliefors Test Statistic	0.309
1% Lilliefors Critical Value	0.143

**Normal GOF Test on Detected Observations Only**

Data Not Normal at 1% Significance Level

**Lilliefors GOF Test**

Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level****Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.0139	KM SD	0.0224
95% UTL95% Coverage	0.0592	95% KM UPL (t)	0.0517
90% KM Percentile (z)	0.0427	95% KM Percentile (z)	0.0508
99% KM Percentile (z)	0.0661	95% KM USL	0.0818

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.0138	SD	0.0227
95% UTL95% Coverage	0.0596	95% UPL (t)	0.052
90% Percentile (z)	0.0429	95% Percentile (z)	0.0511
99% Percentile (z)	0.0666	95% USL	0.0825

**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons****Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	2.15	<b>Anderson-Darling GOF Test</b>
5% A-D Critical Value	0.776	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.172	<b>Kolmogorov-Smirnov GOF</b>
5% K-S Critical Value	0.127	Data Not Gamma Distributed at 5% Significance Level

**Data Not Gamma Distributed at 5% Significance Level****Gamma Statistics on Detected Data Only**

k hat (MLE)	1.162	k star (bias corrected MLE)	1.107
Theta hat (MLE)	0.0138	Theta star (bias corrected MLE)	0.0145
nu hat (MLE)	118.5	nu star (bias corrected)	112.9
MLE Mean (bias corrected)	0.016		
MLE Sd (bias corrected)	0.0152	95% Percentile of Chisquare (2kstar)	6.398

## ATTACHMENT C

## ProUCL Output Files - BTV Output from ProUCL both BRAs

Former Houston Wood Preserving Works, Houston, Texas

## Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has &gt; 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as &lt;1.0, especially when the sample size is small (e.g., &lt;15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00228	Mean	0.0151
Maximum	0.143	Median	0.01
SD	0.0221	CV	1.464
k hat (MLE)	1.31	k star (bias corrected MLE)	1.256
Theta hat (MLE)	0.0115	Theta star (bias corrected MLE)	0.012
nu hat (MLE)	157.2	nu star (bias corrected)	150.7
MLE Mean (bias corrected)	0.0151	MLE Sd (bias corrected)	0.0135
95% Percentile of Chisquare (2kstar)	6.949	90% Percentile	0.0329
95% Percentile	0.0419	99% Percentile	0.0623

The following statistics are computed using Gamma ROS Statistics on Imputed Data

## Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.049	0.0489	95% Approx. Gamma UPL	0.0402	0.0395
95% Gamma USL	0.0838	0.0878			

## Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0139	SD (KM)	0.0224
Variance (KM)	5.0310E-4	SE of Mean (KM)	0.00292
k hat (KM)	0.385	k star (KM)	0.377
nu hat (KM)	46.19	nu star (KM)	45.21
theta hat (KM)	0.0362	theta star (KM)	0.0369
80% gamma percentile (KM)	0.0223	90% gamma percentile (KM)	0.0397
95% gamma percentile (KM)	0.059	99% gamma percentile (KM)	0.108

The following statistics are computed using gamma distribution and KM estimates

## Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.05	0.0506	95% Approx. Gamma UPL	0.0401	0.0398
95% KM Gamma Percentile	0.039	0.0386	95% Gamma USL	0.0898	0.0972

## Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.953	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk P Value	0.0769	Data Not Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.0909	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.113	Detected Data appear Lognormal at 10% Significance Level

Detected Data appear Approximate Lognormal at 10% Significance Level

## Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.0138	Mean in Log Scale	-4.916
SD in Original Scale	0.0227	SD in Log Scale	1.085
95% UTL95% Coverage	0.0654	95% BCA UTL95% Coverage	0.101
95% Bootstrap (%) UTL95% Coverage	0.101	95% UPL (t)	0.0456
90% Percentile (z)	0.0294	95% Percentile (z)	0.0437
99% Percentile (z)	0.0915	95% USL	0.196

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL both BRAs**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-4.866	95% KM UTL (Lognormal)	95% Coverage	0.0582
KM SD of Logged Data	1.003	95% KM UPL (Lognormal)		0.0417
95% KM Percentile Lognormal (z)	0.0401	95% KM USL (Lognormal)		0.16

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.0138	Mean in Log Scale	-4.962
SD in Original Scale	0.0227	SD in Log Scale	1.16
95% UTL	95% Coverage	95% UPL (t)	0.0494
90% Percentile (z)	0.031	95% Percentile (z)	0.0472
99% Percentile (z)	0.104	95% USL	0.235

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

**Nonparametric Distribution Free Background Statistics**

Data appear to follow a Discernible Distribution

**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**

Order of Statistic, r	59	95% UTL with 95% Coverage	0.143
Approx, f used to compute achieved CC	1.553	Approximate Actual Confidence Coefficient achieved by UTL	0.808
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.0508
95% USL	0.143	95% KM Chebyshev UPL	0.112

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL both BRAs**  
Former Houston Wood Preserving Works, Houston, Texas

**Fluoranthene**

General Statistics			
Total Number of Observations	60	Number of Missing Observations	0
Number of Distinct Observations	59		
Number of Detects	58	Number of Non-Detects	2
Number of Distinct Detects	57	Number of Distinct Non-Detects	2
Minimum Detect	0.00558	Minimum Non-Detect	0.00258
Maximum Detect	2.94	Maximum Non-Detect	0.00273
Variance Detected	0.155	Percent Non-Detects	3.333%
Mean Detected	0.155	SD Detected	0.394
Mean of Detected Logged Data	-2.692	SD of Detected Logged Data	1.162

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.017	d2max (for USL)	3.027
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.333
1% Shapiro Wilk P Value	0
Lilliefors Test Statistic	0.352
1% Lilliefors Critical Value	0.134

**Normal GOF Test on Detected Observations Only**

Data Not Normal at 1% Significance Level

**Lilliefors GOF Test**

Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level****Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.15	KM SD	0.385
95% UTL95% Coverage	0.927	95% KM UPL (t)	0.799
90% KM Percentile (z)	0.644	95% KM Percentile (z)	0.784
99% KM Percentile (z)	1.046	95% KM USL	1.316

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.15	SD	0.388
95% UTL95% Coverage	0.933	95% UPL (t)	0.805
90% Percentile (z)	0.648	95% Percentile (z)	0.789
99% Percentile (z)	1.054	95% USL	1.326

**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons****Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	2.711
5% A-D Critical Value	0.795
K-S Test Statistic	0.167
5% K-S Critical Value	0.122

**Anderson-Darling GOF Test**

Data Not Gamma Distributed at 5% Significance Level

**Kolmogorov-Smirnov GOF**

Data Not Gamma Distributed at 5% Significance Level

**Data Not Gamma Distributed at 5% Significance Level****Gamma Statistics on Detected Data Only**

k hat (MLE)	0.725	k star (bias corrected MLE)	0.699
Theta hat (MLE)	0.214	Theta star (bias corrected MLE)	0.222
nu hat (MLE)	84.04	nu star (bias corrected)	81.03
MLE Mean (bias corrected)	0.155		
MLE Sd (bias corrected)	0.186	95% Percentile of Chisquare (2kstar)	4.759



## ATTACHMENT C

## ProUCL Output Files - BTV Output from ProUCL both BRAs

Former Houston Wood Preserving Works, Houston, Texas

## Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has &gt; 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as &lt;1.0, especially when the sample size is small (e.g., &lt;15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00558	Mean	0.151
Maximum	2.94	Median	0.0655
SD	0.388	CV	2.578
k hat (MLE)	0.701	k star (bias corrected MLE)	0.677
Theta hat (MLE)	0.215	Theta star (bias corrected MLE)	0.222
nu hat (MLE)	84.09	nu star (bias corrected)	81.22
MLE Mean (bias corrected)	0.151	MLE Sd (bias corrected)	0.183
95% Percentile of Chisquare (2kstar)	4.664	90% Percentile	0.381
95% Percentile	0.519	99% Percentile	0.849

The following statistics are computed using Gamma ROS Statistics on Imputed Data

## Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.583	0.58	95% Approx. Gamma UPL	0.455	0.442
95% Gamma USL	1.115	1.199			

## Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.15	SD (KM)	0.385
Variance (KM)	0.148	SE of Mean (KM)	0.0501
k hat (KM)	0.152	k star (KM)	0.156
nu hat (KM)	18.29	nu star (KM)	18.71
theta hat (KM)	0.986	theta star (KM)	0.964
80% gamma percentile (KM)	0.169	90% gamma percentile (KM)	0.448
95% gamma percentile (KM)	0.821	99% gamma percentile (KM)	1.895

The following statistics are computed using gamma distribution and KM estimates

## Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.585	0.588	95% Approx. Gamma UPL	0.456	0.447
95% KM Gamma Percentile	0.441	0.431	95% Gamma USL	1.123	1.227

## Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.978	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk P Value	0.593	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.0727	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.106	Detected Data appear Lognormal at 10% Significance Level

Detected Data appear Lognormal at 10% Significance Level

## Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.15	Mean in Log Scale	-2.786
SD in Original Scale	0.388	SD in Log Scale	1.251
95% UTL95% Coverage	0.769	95% BCA UTL95% Coverage	0.888
95% Bootstrap (%) UTL95% Coverage	0.888	95% UPL (t)	0.508
90% Percentile (z)	0.306	95% Percentile (z)	0.483
99% Percentile (z)	1.132	95% USL	2.72

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL both BRAs**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-2.801	95% KM UTL (Lognormal)	95% Coverage	0.795
KM SD of Logged Data	1.275	95% KM UPL (Lognormal)		0.521
95% KM Percentile Lognormal (z)	0.495	95% KM USL (Lognormal)		2.883

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.15	Mean in Log Scale	-2.823
SD in Original Scale	0.388	SD in Log Scale	1.346
95% UTL	95% Coverage	95% UPL (t)	0.574
90% Percentile (z)	0.333	95% Percentile (z)	0.543
99% Percentile (z)	1.36	95% USL	3.49

**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**

**Nonparametric Distribution Free Background Statistics**

**Data appear to follow a Discernible Distribution**

**Nonparametric Upper Limits for BTVs (no distinction made between detects and nondetects)**

Order of Statistic, r	59	95% UTL with 95% Coverage	2.94
Approx, f used to compute achieved CC	1.553	Approximate Actual Confidence Coefficient achieved by UTL	0.808
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.488
95% USL	2.94	95% KM Chebyshev UPL	1.843

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL both BRAs**  
Former Houston Wood Preserving Works, Houston, Texas

Indeno(1,2,3-c,d)pyrene

General Statistics			
Total Number of Observations	60	Number of Missing Observations	0
Number of Distinct Observations	58		
Number of Detects	57	Number of Non-Detects	3
Number of Distinct Detects	55	Number of Distinct Non-Detects	3
Minimum Detect	0.00261	Minimum Non-Detect	0.00206
Maximum Detect	0.57	Maximum Non-Detect	0.00221
Variance Detected	0.00966	Percent Non-Detects	5%
Mean Detected	0.0649	SD Detected	0.0983
Mean of Detected Logged Data	-3.335	SD of Detected Logged Data	1.093

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.017	d2max (for USL)	3.027
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.539
1% Shapiro Wilk P Value	0
Lilliefors Test Statistic	0.275
1% Lilliefors Critical Value	0.135

**Normal GOF Test on Detected Observations Only**

Data Not Normal at 1% Significance Level

**Lilliefors GOF Test**

Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level**

**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.0617	KM SD	0.0959
95% UTL95% Coverage	0.255	95% KM UPL (t)	0.223
90% KM Percentile (z)	0.185	95% KM Percentile (z)	0.22
99% KM Percentile (z)	0.285	95% KM USL	0.352

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.0617	SD	0.0968
95% UTL95% Coverage	0.257	95% UPL (t)	0.225
90% Percentile (z)	0.186	95% Percentile (z)	0.221
99% Percentile (z)	0.287	95% USL	0.355

**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons**

**Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	1.422
5% A-D Critical Value	0.781
K-S Test Statistic	0.126
5% K-S Critical Value	0.121

**Anderson-Darling GOF Test**

Data Not Gamma Distributed at 5% Significance Level

**Kolmogorov-Smirnov GOF**

Data Not Gamma Distributed at 5% Significance Level

**Data Not Gamma Distributed at 5% Significance Level**

**Gamma Statistics on Detected Data Only**

k hat (MLE)	0.968	k star (bias corrected MLE)	0.928
Theta hat (MLE)	0.067	Theta star (bias corrected MLE)	0.0698
nu hat (MLE)	110.3	nu star (bias corrected)	105.8
MLE Mean (bias corrected)	0.0649		
MLE Sd (bias corrected)	0.0673	95% Percentile of Chisquare (2kstar)	5.711

## ATTACHMENT C

## ProUCL Output Files - BTV Output from ProUCL both BRAs

Former Houston Wood Preserving Works, Houston, Texas

## Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has &gt; 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as &lt;1.0, especially when the sample size is small (e.g., &lt;15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00261	Mean	0.0621
Maximum	0.57	Median	0.0367
SD	0.0965	CV	1.554
k hat (MLE)	0.939	k star (bias corrected MLE)	0.903
Theta hat (MLE)	0.0661	Theta star (bias corrected MLE)	0.0687
nu hat (MLE)	112.7	nu star (bias corrected)	108.4
MLE Mean (bias corrected)	0.0621	MLE Sd (bias corrected)	0.0653
95% Percentile of Chisquare (2kstar)	5.612	90% Percentile	0.147
95% Percentile	0.193	99% Percentile	0.301

The following statistics are computed using Gamma ROS Statistics on Imputed Data

## Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.231	0.238	95% Approx. Gamma UPL	0.184	0.186
95% Gamma USL	0.418	0.464			

## Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0617	SD (KM)	0.0959
Variance (KM)	0.00921	SE of Mean (KM)	0.0125
k hat (KM)	0.414	k star (KM)	0.404
nu hat (KM)	49.64	nu star (KM)	48.49
theta hat (KM)	0.149	theta star (KM)	0.153
80% gamma percentile (KM)	0.0997	90% gamma percentile (KM)	0.174
95% gamma percentile (KM)	0.256	99% gamma percentile (KM)	0.46

The following statistics are computed using gamma distribution and KM estimates

## Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.236	0.247	95% Approx. Gamma UPL	0.187	0.191
95% KM Gamma Percentile	0.182	0.185	95% Gamma USL	0.434	0.495

## Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.976	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk P Value	0.526	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.0882	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.107	Detected Data appear Lognormal at 10% Significance Level

Detected Data appear Lognormal at 10% Significance Level

## Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.0617	Mean in Log Scale	-3.462
SD in Original Scale	0.0967	SD in Log Scale	1.203
95% UTL95% Coverage	0.355	95% BCA UTL95% Coverage	0.462
95% Bootstrap (%) UTL95% Coverage	0.462	95% UPL (t)	0.238
90% Percentile (z)	0.147	95% Percentile (z)	0.227
99% Percentile (z)	0.515	95% USL	1.197

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL both BRAs**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-3.477	95% KM UTL (Lognormal)	95% Coverage	0.365
KM SD of Logged Data	1.225	95% KM UPL (Lognormal)		0.243
95% KM Percentile Lognormal (z)	0.232	95% KM USL (Lognormal)		1.259

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.0617	Mean in Log Scale	-3.51
SD in Original Scale	0.0968	SD in Log Scale	1.314
95% UTL	95% Coverage	95% UPL (t)	0.274
90% Percentile (z)	0.161	95% Percentile (z)	0.26
99% Percentile (z)	0.635	95% USL	1.595

**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**

**Nonparametric Distribution Free Background Statistics**

**Data appear to follow a Discernible Distribution**

**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**

Order of Statistic, r	59	95% UTL with 95% Coverage	0.57
Approx, f used to compute achieved CC	1.553	Approximate Actual Confidence Coefficient achieved by UTL	0.808
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.253
95% USL	0.57	95% KM Chebyshev UPL	0.483

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL both BRAs**  
Former Houston Wood Preserving Works, Houston, Texas

**Phenanthrene**

General Statistics			
Total Number of Observations	60	Number of Missing Observations	0
Number of Distinct Observations	60		
Number of Detects	54	Number of Non-Detects	6
Number of Distinct Detects	54	Number of Distinct Non-Detects	6
Minimum Detect	0.00381	Minimum Non-Detect	0.00262
Maximum Detect	1.49	Maximum Non-Detect	0.00282
Variance Detected	0.0463	Percent Non-Detects	10%
Mean Detected	0.0768	SD Detected	0.215
Mean of Detected Logged Data	-3.551	SD of Detected Logged Data	1.187

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.017	d2max (for USL)	3.027
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.323
1% Shapiro Wilk P Value	0
Lilliefors Test Statistic	0.404
1% Lilliefors Critical Value	0.139

**Normal GOF Test on Detected Observations Only**

Data Not Normal at 1% Significance Level

**Lilliefors GOF Test**

Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level****Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.0694	KM SD	0.204
95% UTL95% Coverage	0.48	95% KM UPL (t)	0.412
90% KM Percentile (z)	0.33	95% KM Percentile (z)	0.404
99% KM Percentile (z)	0.543	95% KM USL	0.685

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.0693	SD	0.205
95% UTL95% Coverage	0.483	95% UPL (t)	0.415
90% Percentile (z)	0.332	95% Percentile (z)	0.407
99% Percentile (z)	0.547	95% USL	0.691

**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons****Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	4.186
5% A-D Critical Value	0.804
K-S Test Statistic	0.221
5% K-S Critical Value	0.127

**Anderson-Darling GOF Test**

Data Not Gamma Distributed at 5% Significance Level

**Kolmogorov-Smirnov GOF**

Data Not Gamma Distributed at 5% Significance Level

**Data Not Gamma Distributed at 5% Significance Level****Gamma Statistics on Detected Data Only**

k hat (MLE)	0.624	k star (bias corrected MLE)	0.602
Theta hat (MLE)	0.123	Theta star (bias corrected MLE)	0.128
nu hat (MLE)	67.42	nu star (bias corrected)	65.01
MLE Mean (bias corrected)	0.0768		
MLE Sd (bias corrected)	0.099	95% Percentile of Chisquare (2kstar)	4.327

## ATTACHMENT C

## ProUCL Output Files - BTV Output from ProUCL both BRAs

Former Houston Wood Preserving Works, Houston, Texas

## Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has &gt; 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as &lt;1.0, especially when the sample size is small (e.g., &lt;15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00381	Mean	0.0701
Maximum	1.49	Median	0.0222
SD	0.205	CV	2.924
k hat (MLE)	0.616	k star (bias corrected MLE)	0.597
Theta hat (MLE)	0.114	Theta star (bias corrected MLE)	0.118
nu hat (MLE)	73.97	nu star (bias corrected)	71.6
MLE Mean (bias corrected)	0.0701	MLE Sd (bias corrected)	0.0908
95% Percentile of Chisquare (2kstar)	4.303	90% Percentile	0.183
95% Percentile	0.253	99% Percentile	0.423

The following statistics are computed using Gamma ROS Statistics on Imputed Data

## Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.273	0.261	95% Approx. Gamma UPL	0.21	0.197
95% Gamma USL	0.535	0.554			

## Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0694	SD (KM)	0.204
Variance (KM)	0.0414	SE of Mean (KM)	0.0265
k hat (KM)	0.116	k star (KM)	0.122
nu hat (KM)	13.95	nu star (KM)	14.58
theta hat (KM)	0.597	theta star (KM)	0.571
80% gamma percentile (KM)	0.0617	90% gamma percentile (KM)	0.197
95% gamma percentile (KM)	0.395	99% gamma percentile (KM)	0.998

The following statistics are computed using gamma distribution and KM estimates

## Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.276	0.27	95% Approx. Gamma UPL	0.212	0.202
95% KM Gamma Percentile	0.204	0.194	95% Gamma USL	0.552	0.59

## Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.943	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk P Value	0.0208	Data Not Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.0966	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.11	Detected Data appear Lognormal at 10% Significance Level

Detected Data appear Approximate Lognormal at 10% Significance Level

## Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.0693	Mean in Log Scale	-3.811
SD in Original Scale	0.205	SD in Log Scale	1.373
95% UTL95% Coverage	0.353	95% BCA UTL95% Coverage	0.635
95% Bootstrap (%) UTL95% Coverage	0.635	95% UPL (t)	0.224
90% Percentile (z)	0.129	95% Percentile (z)	0.212
99% Percentile (z)	0.54	95% USL	1.412

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL both BRAs**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-3.79	95% KM UTL (Lognormal)	95% Coverage	0.328
KM SD of Logged Data	1.327	95% KM UPL (Lognormal)		0.211
95% KM Percentile Lognormal (z)	0.2	95% KM USL (Lognormal)		1.253

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.0693	Mean in Log Scale	-3.856
SD in Original Scale	0.205	SD in Log Scale	1.455
95% UTL	95% Coverage	95% UPL (t)	0.246
90% Percentile (z)	0.137	95% Percentile (z)	0.232
99% Percentile (z)	0.625	95% USL	1.731

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

**Nonparametric Distribution Free Background Statistics**

Data appear to follow a Discernible Distribution

**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**

Order of Statistic, r	59	95% UTL with	95% Coverage	1.49
Approx, f used to compute achieved CC	1.553	Approximate Actual Confidence Coefficient achieved by UTL		0.808
Approximate Sample Size needed to achieve specified CC	59	95% UPL		0.32
95% USL	1.49	95% KM Chebyshev UPL		0.964

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.



**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL both BRAs**  
Former Houston Wood Preserving Works, Houston, Texas

Pyrene

General Statistics			
Total Number of Observations	60	Number of Missing Observations	0
Number of Distinct Observations	60		
Number of Detects	58	Number of Non-Detects	2
Number of Distinct Detects	58	Number of Distinct Non-Detects	2
Minimum Detect	0.00472	Minimum Non-Detect	0.00227
Maximum Detect	1.89	Maximum Non-Detect	0.0024
Variance Detected	0.0667	Percent Non-Detects	3.333%
Mean Detected	0.122	SD Detected	0.258
Mean of Detected Logged Data	-2.837	SD of Detected Logged Data	1.138

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.017	d2max (for USL)	3.027
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.395
1% Shapiro Wilk P Value	0
Lilliefors Test Statistic	0.325
1% Lilliefors Critical Value	0.134

**Normal GOF Test on Detected Observations Only**

Data Not Normal at 1% Significance Level

**Lilliefors GOF Test**

Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level**

**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.118	KM SD	0.253
95% UTL95% Coverage	0.627	95% KM UPL (t)	0.543
90% KM Percentile (z)	0.442	95% KM Percentile (z)	0.533
99% KM Percentile (z)	0.705	95% KM USL	0.882

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.118	SD	0.255
95% UTL95% Coverage	0.632	95% UPL (t)	0.547
90% Percentile (z)	0.444	95% Percentile (z)	0.537
99% Percentile (z)	0.71	95% USL	0.889

**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons**

**Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	1.947
5% A-D Critical Value	0.789
K-S Test Statistic	0.136
5% K-S Critical Value	0.121

**Anderson-Darling GOF Test**

Data Not Gamma Distributed at 5% Significance Level

**Kolmogorov-Smirnov GOF**

Data Not Gamma Distributed at 5% Significance Level

**Data Not Gamma Distributed at 5% Significance Level**

**Gamma Statistics on Detected Data Only**

k hat (MLE)	0.81	k star (bias corrected MLE)	0.779
Theta hat (MLE)	0.15	Theta star (bias corrected MLE)	0.156
nu hat (MLE)	93.93	nu star (bias corrected)	90.4
MLE Mean (bias corrected)	0.122		
MLE Sd (bias corrected)	0.138	95% Percentile of Chisquare (2kstar)	5.104

## ATTACHMENT C

## ProUCL Output Files - BTV Output from ProUCL both BRAs

Former Houston Wood Preserving Works, Houston, Texas

## Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has &gt; 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as &lt;1.0, especially when the sample size is small (e.g., &lt;15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00472	Mean	0.118
Maximum	1.89	Median	0.0551
SD	0.255	CV	2.156
k hat (MLE)	0.783	k star (bias corrected MLE)	0.755
Theta hat (MLE)	0.151	Theta star (bias corrected MLE)	0.156
nu hat (MLE)	94.01	nu star (bias corrected)	90.64
MLE Mean (bias corrected)	0.118	MLE Sd (bias corrected)	0.136
95% Percentile of Chisquare (2kstar)	5.003	90% Percentile	0.291
95% Percentile	0.391	99% Percentile	0.628

The following statistics are computed using Gamma ROS Statistics on Imputed Data

## Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.453	0.458	95% Approx. Gamma UPL	0.357	0.353
95% Gamma USL	0.848	0.927			

## Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.118	SD (KM)	0.253
Variance (KM)	0.0638	SE of Mean (KM)	0.0329
k hat (KM)	0.218	k star (KM)	0.218
nu hat (KM)	26.11	nu star (KM)	26.14
theta hat (KM)	0.542	theta star (KM)	0.541
80% gamma percentile (KM)	0.162	90% gamma percentile (KM)	0.356
95% gamma percentile (KM)	0.593	99% gamma percentile (KM)	1.238

The following statistics are computed using gamma distribution and KM estimates

## Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.456	0.467	95% Approx. Gamma UPL	0.358	0.358
95% KM Gamma Percentile	0.348	0.346	95% Gamma USL	0.859	0.956

## Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Approximate Test Statistic	0.984	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk P Value	0.846	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.0769	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.106	Detected Data appear Lognormal at 10% Significance Level

Detected Data appear Lognormal at 10% Significance Level

## Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects

Mean in Original Scale	0.118	Mean in Log Scale	-2.93
SD in Original Scale	0.255	SD in Log Scale	1.227
95% UTL95% Coverage	0.634	95% BCA UTL95% Coverage	0.671
95% Bootstrap (%) UTL95% Coverage	0.671	95% UPL (t)	0.422
90% Percentile (z)	0.257	95% Percentile (z)	0.402
99% Percentile (z)	0.927	95% USL	2.189

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL both BRAs**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-2.945	95% KM UTL (Lognormal)	95% Coverage	0.659
KM SD of Logged Data	1.254	95% KM UPL (Lognormal)		0.435
95% KM Percentile Lognormal (z)	0.413	95% KM USL (Lognormal)		2.337

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.118	Mean in Log Scale	-2.968
SD in Original Scale	0.255	SD in Log Scale	1.325
95% UTL	95% Coverage	95% UPL (t)	0.479
90% Percentile (z)	0.281	95% Percentile (z)	0.454
99% Percentile (z)	1.12	95% USL	2.834

**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**

**Nonparametric Distribution Free Background Statistics**

**Data appear to follow a Discernible Distribution**

**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**

Order of Statistic, r	59	95% UTL with	95% Coverage	1.89
Approx, f used to compute achieved CC	1.553	Approximate Actual Confidence Coefficient achieved by UTL		0.808
Approximate Sample Size needed to achieve specified CC	59	95% UPL		0.391
95% USL	1.89	95% KM Chebyshev UPL		1.228

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ProUCL Output File**  
**By BRA without Outlier**

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA Without Outlier**  
Former Houston Wood Preserving Works, Houston, Texas

**Background Statistics for Data Sets with Non-Detects**

**User Selected Options**

Date/Time of Computation ProUCL 5.2 3/3/2025 10:16:08 AM  
From File for ProUCL full analysis analytes\_withoutOutliers.xls  
Full Precision OFF  
Confidence Coefficient 95%  
Coverage 95%  
Different or Future K Observations 1  
Number of Bootstrap Operations 2000

**Pyrene (a)**

**General Statistics**

Total Number of Observations	30	Number of Missing Observations	0
Number of Distinct Observations	30		
Number of Detects	29	Number of Non-Detects	1
Number of Distinct Detects	29	Number of Distinct Non-Detects	1
Minimum Detect	0.00472	Minimum Non-Detect	0.00227
Maximum Detect	0.607	Maximum Non-Detect	0.00227
Variance Detected	0.016	Percent Non-Detects	3.333%
Mean Detected	0.0854	SD Detected	0.126
Mean of Detected Logged Data	-3.127	SD of Detected Logged Data	1.174

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.22	d2max (for USL)	2.745
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.589	<b>Shapiro Wilk GOF Test</b>
1% Shapiro Wilk Critical Value	0.898	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.324	<b>Lilliefors GOF Test</b>
1% Lilliefors Critical Value	0.189	Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level**

**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.0826	KM SD	0.123
95% UTL95% Coverage	0.356	95% KM UPL (t)	0.295
90% KM Percentile (z)	0.24	95% KM Percentile (z)	0.285
99% KM Percentile (z)	0.369	95% KM USL	0.42

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.0826	SD	0.125
95% UTL95% Coverage	0.36	95% UPL (t)	0.299
90% Percentile (z)	0.243	95% Percentile (z)	0.288
99% Percentile (z)	0.374	95% USL	0.426

**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons**

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA Without Outlier**  
Former Houston Wood Preserving Works, Houston, Texas

**Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	0.766	<b>Anderson-Darling GOF Test</b>
5% A-D Critical Value	0.779	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.183	<b>Kolmogorov-Smirnov GOF</b>
5% K-S Critical Value	0.168	Data Not Gamma Distributed at 5% Significance Level

**Detected data follow Appr. Gamma Distribution at 5% Significance Level**

**Gamma Statistics on Detected Data Only**

k hat (MLE)	0.88	k star (bias corrected MLE)	0.812
Theta hat (MLE)	0.0971	Theta star (bias corrected MLE)	0.105
nu hat (MLE)	51.01	nu star (bias corrected)	47.07
MLE Mean (bias corrected)	0.0854		
MLE Sd (bias corrected)	0.0948	95% Percentile of Chisquare (2kstar)	5.238

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00472	Mean	0.0829
Maximum	0.607	Median	0.0449
SD	0.125	CV	1.507
k hat (MLE)	0.857	k star (bias corrected MLE)	0.794
Theta hat (MLE)	0.0967	Theta star (bias corrected MLE)	0.104
nu hat (MLE)	51.45	nu star (bias corrected)	47.64
MLE Mean (bias corrected)	0.0829	MLE Sd (bias corrected)	0.093
95% Percentile of Chisquare (2kstar)	5.165	90% Percentile	0.202
95% Percentile	0.27	99% Percentile	0.43

The following statistics are computed using Gamma ROS Statistics on Imputed Data

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.372	0.393	95% Approx. Gamma UPL	0.265	0.27
95% Gamma USL	0.513	0.567			

**Estimates of Gamma Parameters using KM Estimates**

Mean (KM)	0.0826	SD (KM)	0.123
Variance (KM)	0.0151	SE of Mean (KM)	0.0229
k hat (KM)	0.451	k star (KM)	0.428
nu hat (KM)	27.08	nu star (KM)	25.71
theta hat (KM)	0.183	theta star (KM)	0.193
80% gamma percentile (KM)	0.134	90% gamma percentile (KM)	0.23
95% gamma percentile (KM)	0.335	99% gamma percentile (KM)	0.597

The following statistics are computed using gamma distribution and KM estimates

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.371	0.396	95% Approx. Gamma UPL	0.264	0.271
95% KM Gamma Percentile	0.248	0.253	95% Gamma USL	0.513	0.574

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA Without Outlier**  
Former Houston Wood Preserving Works, Houston, Texas

**Lognormal GOF Test on Detected Observations Only**

Shapiro Wilk Test Statistic	0.976	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk Critical Value	0.937	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.109	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.148	Detected Data appear Lognormal at 10% Significance Level

**Detected Data appear Lognormal at 10% Significance Level**

**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**

Mean in Original Scale	0.0826	Mean in Log Scale	-3.225
SD in Original Scale	0.125	SD in Log Scale	1.273
95% UTL95% Coverage	0.671	95% BCA UTL95% Coverage	0.607
95% Bootstrap (%) UTL95% Coverage	0.607	95% UPL (t)	0.358
90% Percentile (z)	0.203	95% Percentile (z)	0.323
99% Percentile (z)	0.768	95% USL	1.31

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-3.226	95% KM UTL (Lognormal)95% Coverage	0.641
KM SD of Logged Data	1.253	95% KM UPL (Lognormal)	0.346
95% KM Percentile Lognormal (z)	0.312	95% KM USL (Lognormal)	1.237

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.0826	Mean in Log Scale	-3.249
SD in Original Scale	0.125	SD in Log Scale	1.333
95% UTL95% Coverage	0.748	95% UPL (t)	0.388
90% Percentile (z)	0.214	95% Percentile (z)	0.348
99% Percentile (z)	0.862	95% USL	1.506

**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**

**Nonparametric Distribution Free Background Statistics**

**Data appear to follow a Discernible Distribution**

**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**

Order of Statistic, r	30	95% UTL with95% Coverage	0.607
Approx, f used to compute achieved CC	1.579	Approximate Actual Confidence Coefficient achieved by UTL	0.785
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.489
95% USL	0.607	95% KM Chebyshev UPL	0.628

**Note:** The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA Without Outlier**  
Former Houston Wood Preserving Works, Houston, Texas

Pyrene (b)

**General Statistics**

Total Number of Observations	29	Number of Missing Observations	1
Number of Distinct Observations	29		
Number of Detects	28	Number of Non-Detects	1
Number of Distinct Detects	28	Number of Distinct Non-Detects	1
Minimum Detect	0.0117	Minimum Non-Detect	0.0024
Maximum Detect	0.365	Maximum Non-Detect	0.0024
Variance Detected	0.00633	Percent Non-Detects	3.448%
Mean Detected	0.0964	SD Detected	0.0795
Mean of Detected Logged Data	-2.661	SD of Detected Logged Data	0.858

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.232	d2max (for USL)	2.73
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.846	<b>Shapiro Wilk GOF Test</b>
1% Shapiro Wilk Critical Value	0.896	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.165	<b>Lilliefors GOF Test</b>
1% Lilliefors Critical Value	0.191	Detected Data appear Normal at 1% Significance Level

Detected Data appear Approximate Normal at 1% Significance Level

**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.0931	KM SD	0.0786
95% UTL95% Coverage	0.269	95% KM UPL (t)	0.229
90% KM Percentile (z)	0.194	95% KM Percentile (z)	0.223
99% KM Percentile (z)	0.276	95% KM USL	0.308

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.0931	SD	0.0801
95% UTL95% Coverage	0.272	95% UPL (t)	0.232
90% Percentile (z)	0.196	95% Percentile (z)	0.225
99% Percentile (z)	0.279	95% USL	0.312

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

**Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	0.222	<b>Anderson-Darling GOF Test</b>
5% A-D Critical Value	0.761	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.103	<b>Kolmogorov-Smirnov GOF</b>
5% K-S Critical Value	0.168	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

k hat (MLE)	1.703	k star (bias corrected MLE)	1.545
Theta hat (MLE)	0.0566	Theta star (bias corrected MLE)	0.0624
nu hat (MLE)	95.39	nu star (bias corrected)	86.5
MLE Mean (bias corrected)	0.0964		
MLE Sd (bias corrected)	0.0776	95% Percentile of Chisquare (2kstar)	7.969



**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA Without Outlier**  
Former Houston Wood Preserving Works, Houston, Texas

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.0934
Maximum	0.365	Median	0.0625
SD	0.0797	CV	0.854
k hat (MLE)	1.546	k star (bias corrected MLE)	1.409
Theta hat (MLE)	0.0604	Theta star (bias corrected MLE)	0.0663
nu hat (MLE)	89.66	nu star (bias corrected)	81.72
MLE Mean (bias corrected)	0.0934	MLE Sd (bias corrected)	0.0787
95% Percentile of Chisquare (2kstar)	7.497	90% Percentile	0.198
95% Percentile	0.249	99% Percentile	0.364

The following statistics are computed using Gamma ROS Statistics on Imputed Data

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.336	0.36	95% Approx. Gamma UPL	0.254	0.264
95% Gamma USL	0.433	0.478			

**Estimates of Gamma Parameters using KM Estimates**

Mean (KM)	0.0931	SD (KM)	0.0786
Variance (KM)	0.00619	SE of Mean (KM)	0.0149
k hat (KM)	1.403	k star (KM)	1.281
nu hat (KM)	81.36	nu star (KM)	74.28
theta hat (KM)	0.0664	theta star (KM)	0.0727
80% gamma percentile (KM)	0.147	90% gamma percentile (KM)	0.202
95% gamma percentile (KM)	0.256	99% gamma percentile (KM)	0.38

The following statistics are computed using gamma distribution and KM estimates

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.343	0.374	95% Approx. Gamma UPL	0.258	0.272
95% KM Gamma Percentile	0.245	0.257	95% Gamma USL	0.444	0.502

**Lognormal GOF Test on Detected Observations Only**

Shapiro Wilk Test Statistic	0.976	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk Critical Value	0.936	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.104	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.151	Detected Data appear Lognormal at 10% Significance Level

Detected Data appear Lognormal at 10% Significance Level

**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**

Mean in Original Scale	0.0933	Mean in Log Scale	-2.735
SD in Original Scale	0.0798	SD in Log Scale	0.933
95% UTL95% Coverage	0.52	95% BCA UTL95% Coverage	0.365
95% Bootstrap (%) UTL95% Coverage	0.365	95% UPL (t)	0.326
90% Percentile (z)	0.214	95% Percentile (z)	0.301
99% Percentile (z)	0.568	95% USL	0.828

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA Without Outlier**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-2.777	95% KM UTL (Lognormal)	95% Coverage	0.622
KM SD of Logged Data	1.032	95% KM UPL (Lognormal)		0.371
95% KM Percentile Lognormal (z)	0.34	95% KM USL (Lognormal)		1.04

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.0931	Mean in Log Scale	-2.801
SD in Original Scale	0.0801	SD in Log Scale	1.131
95% UTL	95% Coverage	95% UPL (t)	0.43
90% Percentile (z)	0.259	95% Percentile (z)	0.391
99% Percentile (z)	0.844	95% USL	1.333

**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**

**Nonparametric Distribution Free Background Statistics**

**Data appear to follow a Discernible Distribution**

**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**

Order of Statistic, r	29	95% UTL with 95% Coverage	0.365
Approx, f used to compute achieved CC	1.526	Approximate Actual Confidence Coefficient achieved by UTL	0.774
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.304
95% USL	0.365	95% KM Chebyshev UPL	0.442

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA Without Outlier**  
Former Houston Wood Preserving Works, Houston, Texas

**Fluoranthene (a)**

General Statistics			
Total Number of Observations	30	Number of Missing Observations	0
Number of Distinct Observations	30		
Number of Detects	29	Number of Non-Detects	1
Number of Distinct Detects	29	Number of Distinct Non-Detects	1
Minimum Detect	0.00558	Minimum Non-Detect	0.00258
Maximum Detect	0.78	Maximum Non-Detect	0.00258
Variance Detected	0.0259	Percent Non-Detects	3.333%
Mean Detected	0.102	SD Detected	0.161
Mean of Detected Logged Data	-2.979	SD of Detected Logged Data	1.181

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.22	d2max (for USL)	2.745
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.56	<b>Shapiro Wilk GOF Test</b>
1% Shapiro Wilk Critical Value	0.898	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.316	<b>Lilliefors GOF Test</b>
1% Lilliefors Critical Value	0.189	Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level****Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.099	KM SD	0.157
95% UTL95% Coverage	0.447	95% KM UPL (t)	0.37
90% KM Percentile (z)	0.3	95% KM Percentile (z)	0.357
99% KM Percentile (z)	0.463	95% KM USL	0.529

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.0989	SD	0.159
95% UTL95% Coverage	0.453	95% UPL (t)	0.374
90% Percentile (z)	0.303	95% Percentile (z)	0.361
99% Percentile (z)	0.47	95% USL	0.536

**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons****Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	0.934	<b>Anderson-Darling GOF Test</b>
5% A-D Critical Value	0.78	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.187	<b>Kolmogorov-Smirnov GOF</b>
5% K-S Critical Value	0.168	Data Not Gamma Distributed at 5% Significance Level

**Data Not Gamma Distributed at 5% Significance Level****Gamma Statistics on Detected Data Only**

k hat (MLE)	0.843	k star (bias corrected MLE)	0.779
Theta hat (MLE)	0.121	Theta star (bias corrected MLE)	0.131
nu hat (MLE)	48.89	nu star (bias corrected)	45.16
MLE Mean (bias corrected)	0.102		
MLE Sd (bias corrected)	0.116	95% Percentile of Chisquare (2kstar)	5.101

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA Without Outlier**  
Former Houston Wood Preserving Works, Houston, Texas

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00558	Mean	0.0992
Maximum	0.78	Median	0.0537
SD	0.159	CV	1.604
k hat (MLE)	0.818	k star (bias corrected MLE)	0.759
Theta hat (MLE)	0.121	Theta star (bias corrected MLE)	0.131
nu hat (MLE)	49.11	nu star (bias corrected)	45.53
MLE Mean (bias corrected)	0.0992	MLE Sd (bias corrected)	0.114
95% Percentile of Chisquare (2kstar)	5.018	90% Percentile	0.244
95% Percentile	0.328	99% Percentile	0.527

The following statistics are computed using Gamma ROS Statistics on Imputed Data

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.451	0.475	95% Approx. Gamma UPL	0.32	0.324
95% Gamma USL	0.625	0.687			

**Estimates of Gamma Parameters using KM Estimates**

Mean (KM)	0.099	SD (KM)	0.157
Variance (KM)	0.0245	SE of Mean (KM)	0.0291
k hat (KM)	0.399	k star (KM)	0.382
nu hat (KM)	23.97	nu star (KM)	22.9
theta hat (KM)	0.248	theta star (KM)	0.259
80% gamma percentile (KM)	0.159	90% gamma percentile (KM)	0.282
95% gamma percentile (KM)	0.418	99% gamma percentile (KM)	0.762

The following statistics are computed using gamma distribution and KM estimates

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.448	0.476	95% Approx. Gamma UPL	0.318	0.324
95% KM Gamma Percentile	0.299	0.302	95% Gamma USL	0.623	0.692

**Lognormal GOF Test on Detected Observations Only**

Shapiro Wilk Test Statistic	0.973	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk Critical Value	0.937	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.099	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.148	Detected Data appear Lognormal at 10% Significance Level

Detected Data appear Lognormal at 10% Significance Level

**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**

Mean in Original Scale	0.099	Mean in Log Scale	-3.078
SD in Original Scale	0.159	SD in Log Scale	1.28
95% UTL95% Coverage	0.79	95% BCA UTL95% Coverage	0.78
95% Bootstrap (%) UTL95% Coverage	0.78	95% UPL (t)	0.42
90% Percentile (z)	0.238	95% Percentile (z)	0.378
99% Percentile (z)	0.906	95% USL	1.548

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA Without Outlier**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-3.078	95% KM UTL (Lognormal)	95% Coverage	0.755
KM SD of Logged Data	1.26	95% KM UPL (Lognormal)		0.406
95% KM Percentile Lognormal (z)	0.366	95% KM USL (Lognormal)		1.464

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.0989	Mean in Log Scale	-3.102
SD in Original Scale	0.159	SD in Log Scale	1.34
95% UTL	95% Coverage	95% UPL (t)	0.455
90% Percentile (z)	0.251	95% Percentile (z)	0.408
99% Percentile (z)	1.017	95% USL	1.782

**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**

**Nonparametric Distribution Free Background Statistics**

**Data appear to follow a Discernible Distribution**

**Nonparametric Upper Limits for BTVs (no distinction made between detects and nondetects)**

Order of Statistic, r	30	95% UTL with 95% Coverage	0.78
Approx, f used to compute achieved CC	1.579	Approximate Actual Confidence Coefficient achieved by UTL	0.785
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.621
95% USL	0.78	95% KM Chebyshev UPL	0.793

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA Without Outlier**  
Former Houston Wood Preserving Works, Houston, Texas

**Fluoranthene (b)****General Statistics**

Total Number of Observations	29	Number of Missing Observations	1
Number of Distinct Observations	29		
Number of Detects	28	Number of Non-Detects	1
Number of Distinct Detects	28	Number of Distinct Non-Detects	1
Minimum Detect	0.0127	Minimum Non-Detect	0.00273
Maximum Detect	0.44	Maximum Non-Detect	0.00273
Variance Detected	0.0086	Percent Non-Detects	3.448%
Mean Detected	0.111	SD Detected	0.0928
Mean of Detected Logged Data	-2.529	SD of Detected Logged Data	0.872

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.232	d2max (for USL)	2.73
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.84	<b>Shapiro Wilk GOF Test</b>
1% Shapiro Wilk Critical Value	0.896	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.176	<b>Lilliefors GOF Test</b>
1% Lilliefors Critical Value	0.191	Detected Data appear Normal at 1% Significance Level

Detected Data appear Approximate Normal at 1% Significance Level

**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.107	KM SD	0.0917
95% UTL95% Coverage	0.312	95% KM UPL (t)	0.266
90% KM Percentile (z)	0.225	95% KM Percentile (z)	0.258
99% KM Percentile (z)	0.32	95% KM USL	0.357

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.107	SD	0.0933
95% UTL95% Coverage	0.315	95% UPL (t)	0.269
90% Percentile (z)	0.227	95% Percentile (z)	0.261
99% Percentile (z)	0.324	95% USL	0.362

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

**Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	0.254	<b>Anderson-Darling GOF Test</b>
5% A-D Critical Value	0.761	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.12	<b>Kolmogorov-Smirnov GOF</b>
5% K-S Critical Value	0.168	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

k hat (MLE)	1.66	k star (bias corrected MLE)	1.506
Theta hat (MLE)	0.0668	Theta star (bias corrected MLE)	0.0737
nu hat (MLE)	92.98	nu star (bias corrected)	84.35
MLE Mean (bias corrected)	0.111		
MLE Sd (bias corrected)	0.0904	95% Percentile of Chisquare (2kstar)	7.836

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA Without Outlier**  
Former Houston Wood Preserving Works, Houston, Texas

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.107
Maximum	0.44	Median	0.0685
SD	0.093	CV	0.865
k hat (MLE)	1.496	k star (bias corrected MLE)	1.364
Theta hat (MLE)	0.0718	Theta star (bias corrected MLE)	0.0788
nu hat (MLE)	86.75	nu star (bias corrected)	79.11
MLE Mean (bias corrected)	0.107	MLE Sd (bias corrected)	0.092
95% Percentile of Chisquare (2kstar)	7.338	90% Percentile	0.229
95% Percentile	0.289	99% Percentile	0.425

The following statistics are computed using Gamma ROS Statistics on Imputed Data

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.392	0.421	95% Approx. Gamma UPL	0.296	0.308
95% Gamma USL	0.507	0.562			

**Estimates of Gamma Parameters using KM Estimates**

Mean (KM)	0.107	SD (KM)	0.0917
Variance (KM)	0.0084	SE of Mean (KM)	0.0173
k hat (KM)	1.368	k star (KM)	1.25
nu hat (KM)	79.37	nu star (KM)	72.49
theta hat (KM)	0.0783	theta star (KM)	0.0858
80% gamma percentile (KM)	0.169	90% gamma percentile (KM)	0.234
95% gamma percentile (KM)	0.297	99% gamma percentile (KM)	0.442

The following statistics are computed using gamma distribution and KM estimates

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.399	0.435	95% Approx. Gamma UPL	0.299	0.315
95% KM Gamma Percentile	0.284	0.298	95% Gamma USL	0.517	0.585

**Lognormal GOF Test on Detected Observations Only**

Shapiro Wilk Test Statistic	0.974	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk Critical Value	0.936	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.123	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.151	Detected Data appear Lognormal at 10% Significance Level

Detected Data appear Lognormal at 10% Significance Level

**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**

Mean in Original Scale	0.107	Mean in Log Scale	-2.604
SD in Original Scale	0.093	SD in Log Scale	0.947
95% UTL95% Coverage	0.612	95% BCA UTL95% Coverage	0.44
95% Bootstrap (%) UTL95% Coverage	0.44	95% UPL (t)	0.381
90% Percentile (z)	0.249	95% Percentile (z)	0.351
99% Percentile (z)	0.669	95% USL	0.981

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA Without Outlier**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-2.646	95% KM UTL (Lognormal)	95% Coverage	0.727
KM SD of Logged Data	1.042	95% KM UPL (Lognormal)		0.431
95% KM Percentile Lognormal (z)	0.394	95% KM USL (Lognormal)		1.222

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.107	Mean in Log Scale	-2.669
SD in Original Scale	0.0933	SD in Log Scale	1.142
95% UTL	95% Coverage	95% UPL (t)	0.499
90% Percentile (z)	0.299	95% Percentile (z)	0.453
99% Percentile (z)	0.986	95% USL	1.564

**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**

**Nonparametric Distribution Free Background Statistics**

**Data appear to follow a Discernible Distribution**

**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**

Order of Statistic, r	29	95% UTL with 95% Coverage	0.44
Approx, f used to compute achieved CC	1.526	Approximate Actual Confidence Coefficient achieved by UTL	0.774
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.343
95% USL	0.44	95% KM Chebyshev UPL	0.514

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.



**ProUCL Output File**  
**By BRA**

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Background Statistics for Data Sets with Non-Detects****User Selected Options**

Date/Time of Computation ProUCL 5.2 2/28/2025 6:20:15 PM  
From File for ProUCL full analysis analytes.xls  
Full Precision OFF  
Confidence Coefficient 95%  
Coverage 95%  
Different or Future K Observations 1  
Number of Bootstrap Operations 2000

**Benzo(a)pyrene (a)****General Statistics**

Total Number of Observations	30	Number of Missing Observations	0
Number of Distinct Observations	30		
Number of Detects	29	Number of Non-Detects	1
Number of Distinct Detects	29	Number of Distinct Non-Detects	1
Minimum Detect	0.00305	Minimum Non-Detect	0.00204
Maximum Detect	0.263	Maximum Non-Detect	0.00204
Variance Detected	0.00316	Percent Non-Detects	3.333%
Mean Detected	0.05	SD Detected	0.0562
Mean of Detected Logged Data	-3.513	SD of Detected Logged Data	1.101

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.22	d2max (for USL)	2.745
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.713	<b>Shapiro Wilk GOF Test</b>
1% Shapiro Wilk Critical Value	0.898	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.22	<b>Lilliefors GOF Test</b>
1% Lilliefors Critical Value	0.189	Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level****Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.0484	KM SD	0.055
95% UTL95% Coverage	0.17	95% KM UPL (t)	0.143
90% KM Percentile (z)	0.119	95% KM Percentile (z)	0.139
99% KM Percentile (z)	0.176	95% KM USL	0.199

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.0483	SD	0.0559
95% UTL95% Coverage	0.172	95% UPL (t)	0.145
90% Percentile (z)	0.12	95% Percentile (z)	0.14
99% Percentile (z)	0.178	95% USL	0.202

**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons**

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	0.35	<b>Anderson-Darling GOF Test</b>
5% A-D Critical Value	0.772	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.097	<b>Kolmogorov-Smirnov GOF</b>
5% K-S Critical Value	0.167	Detected data appear Gamma Distributed at 5% Significance Level
<b>Detected data appear Gamma Distributed at 5% Significance Level</b>		

**Gamma Statistics on Detected Data Only**

k hat (MLE)	1.105	k star (bias corrected MLE)	1.014
Theta hat (MLE)	0.0452	Theta star (bias corrected MLE)	0.0493
nu hat (MLE)	64.11	nu star (bias corrected)	58.81
MLE Mean (bias corrected)	0.05		
MLE Sd (bias corrected)	0.0496	95% Percentile of Chisquare (2kstar)	6.045

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs  
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)  
For such situations, GROS method may yield incorrect values of UCLs and BTVs  
This is especially true when the sample size is small.  
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00305	Mean	0.0486
Maximum	0.263	Median	0.0312
SD	0.0557	CV	1.145
k hat (MLE)	1.087	k star (bias corrected MLE)	1.001
Theta hat (MLE)	0.0447	Theta star (bias corrected MLE)	0.0486
nu hat (MLE)	65.25	nu star (bias corrected)	60.06
MLE Mean (bias corrected)	0.0486	MLE Sd (bias corrected)	0.0486
95% Percentile of Chisquare (2kstar)	5.995	90% Percentile	0.112
95% Percentile	0.146	99% Percentile	0.224

**The following statistics are computed using Gamma ROS Statistics on Imputed Data**

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.201	0.216	95% Approx. Gamma UPL	0.147	0.153
95% Gamma USL	0.271	0.303			

**Estimates of Gamma Parameters using KM Estimates**

Mean (KM)	0.0484	SD (KM)	0.055
Variance (KM)	0.00302	SE of Mean (KM)	0.0102
k hat (KM)	0.774	k star (KM)	0.719
nu hat (KM)	46.46	nu star (KM)	43.15
theta hat (KM)	0.0624	theta star (KM)	0.0672
80% gamma percentile (KM)	0.0794	90% gamma percentile (KM)	0.121
95% gamma percentile (KM)	0.163	99% gamma percentile (KM)	0.264

**The following statistics are computed using gamma distribution and KM estimates**

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.202	0.22	95% Approx. Gamma UPL	0.147	0.154
95% KM Gamma Percentile	0.139	0.145	95% Gamma USL	0.274	0.311

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Lognormal GOF Test on Detected Observations Only**

Shapiro Wilk Test Statistic	0.969	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk Critical Value	0.937	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.15	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.148	Data Not Lognormal at 10% Significance Level

**Detected Data appear Approximate Lognormal at 10% Significance Level**

**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**

Mean in Original Scale	0.0484	Mean in Log Scale	-3.605
SD in Original Scale	0.0559	SD in Log Scale	1.193
95% UTL95% Coverage	0.384	95% BCA UTL95% Coverage	0.23
95% Bootstrap (%) UTL95% Coverage	0.263	95% UPL (t)	0.213
90% Percentile (z)	0.125	95% Percentile (z)	0.193
99% Percentile (z)	0.436	95% USL	0.719

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-3.602	95% KM UTL (Lognormal)95% Coverage	0.364
KM SD of Logged Data	1.168	95% KM UPL (Lognormal)	0.205
95% KM Percentile Lognormal (z)	0.186	95% KM USL (Lognormal)	0.672

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.0483	Mean in Log Scale	-3.625
SD in Original Scale	0.0559	SD in Log Scale	1.245
95% UTL95% Coverage	0.423	95% UPL (t)	0.229
90% Percentile (z)	0.131	95% Percentile (z)	0.206
99% Percentile (z)	0.482	95% USL	0.812

**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**

**Nonparametric Distribution Free Background Statistics**

**Data appear to follow a Discernible Distribution**

**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**

Order of Statistic, r	30	95% UTL with95% Coverage	0.263
Approx, f used to compute achieved CC	1.579	Approximate Actual Confidence Coefficient achieved by UTL	0.785
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.223
95% USL	0.263	95% KM Chebyshev UPL	0.292

**Note:** The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers

and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Benzo(a)pyrene (b)**

General Statistics			
Total Number of Observations	30	Number of Missing Observations	0
Number of Distinct Observations	30		
Number of Detects	29	Number of Non-Detects	1
Number of Distinct Detects	29	Number of Distinct Non-Detects	1
Minimum Detect	0.00832	Minimum Non-Detect	0.00215
Maximum Detect	0.752	Maximum Non-Detect	0.00215
Variance Detected	0.0258	Percent Non-Detects	3.333%
Mean Detected	0.106	SD Detected	0.161
Mean of Detected Logged Data	-2.858	SD of Detected Logged Data	1.064

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.22	d2max (for USL)	2.745
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.56	<b>Shapiro Wilk GOF Test</b>
1% Shapiro Wilk Critical Value	0.898	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.323	<b>Lilliefors GOF Test</b>
1% Lilliefors Critical Value	0.189	Data Not Normal at 1% Significance Level

Data Not Normal at 1% Significance Level

**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.103	KM SD	0.156
95% UTL95% Coverage	0.45	95% KM UPL (t)	0.373
90% KM Percentile (z)	0.303	95% KM Percentile (z)	0.36
99% KM Percentile (z)	0.466	95% KM USL	0.532

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.103	SD	0.159
95% UTL95% Coverage	0.456	95% UPL (t)	0.377
90% Percentile (z)	0.307	95% Percentile (z)	0.364
99% Percentile (z)	0.473	95% USL	0.539

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

**Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	1.239	<b>Anderson-Darling GOF Test</b>
5% A-D Critical Value	0.776	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.174	<b>Kolmogorov-Smirnov GOF</b>
5% K-S Critical Value	0.168	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

k hat (MLE)	0.944	k star (bias corrected MLE)	0.87
Theta hat (MLE)	0.112	Theta star (bias corrected MLE)	0.122
nu hat (MLE)	54.77	nu star (bias corrected)	50.44
MLE Mean (bias corrected)	0.106		
MLE Sd (bias corrected)	0.114	95% Percentile of Chisquare (2kstar)	5.476

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00832	Mean	0.103
Maximum	0.752	Median	0.0611
SD	0.159	CV	1.543
k hat (MLE)	0.908	k star (bias corrected MLE)	0.84
Theta hat (MLE)	0.113	Theta star (bias corrected MLE)	0.123
nu hat (MLE)	54.49	nu star (bias corrected)	50.38
MLE Mean (bias corrected)	0.103	MLE Sd (bias corrected)	0.112
95% Percentile of Chisquare (2kstar)	5.354	90% Percentile	0.247
95% Percentile	0.328	99% Percentile	0.518

**The following statistics are computed using Gamma ROS Statistics on Imputed Data**

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.447	0.464	95% Approx. Gamma UPL	0.321	0.322
95% Gamma USL	0.614	0.663			

**Estimates of Gamma Parameters using KM Estimates**

Mean (KM)	0.103	SD (KM)	0.156
Variance (KM)	0.0245	SE of Mean (KM)	0.0291
k hat (KM)	0.431	k star (KM)	0.41
nu hat (KM)	25.88	nu star (KM)	24.63
theta hat (KM)	0.238	theta star (KM)	0.25
80% gamma percentile (KM)	0.166	90% gamma percentile (KM)	0.289
95% gamma percentile (KM)	0.423	99% gamma percentile (KM)	0.759

**The following statistics are computed using gamma distribution and KM estimates**

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.447	0.471	95% Approx. Gamma UPL	0.32	0.325
95% KM Gamma Percentile	0.302	0.304	95% Gamma USL	0.616	0.676

**Lognormal GOF Test on Detected Observations Only**

Shapiro Wilk Test Statistic	0.968	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk Critical Value	0.937	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.105	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.148	Detected Data appear Lognormal at 10% Significance Level

**Detected Data appear Lognormal at 10% Significance Level**

**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**

Mean in Original Scale	0.103	Mean in Log Scale	-2.947
SD in Original Scale	0.159	SD in Log Scale	1.153
95% UTL95% Coverage	0.679	95% BCA UTL95% Coverage	0.752
95% Bootstrap (%) UTL95% Coverage	0.752	95% UPL (t)	0.385
90% Percentile (z)	0.23	95% Percentile (z)	0.35
99% Percentile (z)	0.767	95% USL	1.243

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-2.968	95% KM UTL (Lognormal)	95% Coverage	0.714
KM SD of Logged Data	1.185	95% KM UPL (Lognormal)		0.398
95% KM Percentile Lognormal (z)	0.361	95% KM USL (Lognormal)		1.33

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.103	Mean in Log Scale	-2.991
SD in Original Scale	0.159	SD in Log Scale	1.273
95% UTL	95% Coverage	95% UPL (t)	0.453
90% Percentile (z)	0.257	95% Percentile (z)	0.408
99% Percentile (z)	0.971	95% USL	1.654

**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**

**Nonparametric Distribution Free Background Statistics**

**Data appear to follow a Discernible Distribution**

**Nonparametric Upper Limits for BTVs (no distinction made between detects and nondetects)**

Order of Statistic, r	30	95% UTL with 95% Coverage	0.752
Approx, f used to compute achieved CC	1.579	Approximate Actual Confidence Coefficient achieved by UTL	0.785
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.626
95% USL	0.752	95% KM Chebyshev UPL	0.796

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Benzo(b)fluoranthene (a)****General Statistics**

Total Number of Observations	30	Number of Missing Observations	0
Number of Distinct Observations	30		
Number of Detects	29	Number of Non-Detects	1
Number of Distinct Detects	29	Number of Distinct Non-Detects	1
Minimum Detect	0.00525	Minimum Non-Detect	0.00174
Maximum Detect	0.371	Maximum Non-Detect	0.00174
Variance Detected	0.00729	Percent Non-Detects	3.333%
Mean Detected	0.0793	SD Detected	0.0854
Mean of Detected Logged Data	-3.044	SD of Detected Logged Data	1.101

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.22	d2max (for USL)	2.745
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.738	<b>Shapiro Wilk GOF Test</b>
1% Shapiro Wilk Critical Value	0.898	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.212	<b>Lilliefors GOF Test</b>
1% Lilliefors Critical Value	0.189	Data Not Normal at 1% Significance Level

Data Not Normal at 1% Significance Level

**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.0767	KM SD	0.0836
95% UTL95% Coverage	0.262	95% KM UPL (t)	0.221
90% KM Percentile (z)	0.184	95% KM Percentile (z)	0.214
99% KM Percentile (z)	0.271	95% KM USL	0.306

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.0767	SD	0.0851
95% UTL95% Coverage	0.266	95% UPL (t)	0.224
90% Percentile (z)	0.186	95% Percentile (z)	0.217
99% Percentile (z)	0.275	95% USL	0.31

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

**Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	0.364	<b>Anderson-Darling GOF Test</b>
5% A-D Critical Value	0.771	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.0902	<b>Kolmogorov-Smirnov GOF</b>
5% K-S Critical Value	0.167	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

k hat (MLE)	1.12	k star (bias corrected MLE)	1.027
Theta hat (MLE)	0.0708	Theta star (bias corrected MLE)	0.0772
nu hat (MLE)	64.96	nu star (bias corrected)	59.57
MLE Mean (bias corrected)	0.0793		
MLE Sd (bias corrected)	0.0782	95% Percentile of Chisquare (2kstar)	6.096



**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00525	Mean	0.077
Maximum	0.371	Median	0.0465
SD	0.0848	CV	1.102
k hat (MLE)	1.077	k star (bias corrected MLE)	0.992
Theta hat (MLE)	0.0714	Theta star (bias corrected MLE)	0.0776
nu hat (MLE)	64.64	nu star (bias corrected)	59.51
MLE Mean (bias corrected)	0.077	MLE Sd (bias corrected)	0.0773
95% Percentile of Chisquare (2kstar)	5.959	90% Percentile	0.178
95% Percentile	0.231	99% Percentile	0.356

**The following statistics are computed using Gamma ROS Statistics on Imputed Data**

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.32	0.346	95% Approx. Gamma UPL	0.235	0.244
95% Gamma USL	0.432	0.487			

**Estimates of Gamma Parameters using KM Estimates**

Mean (KM)	0.0767	SD (KM)	0.0836
Variance (KM)	0.00699	SE of Mean (KM)	0.0155
k hat (KM)	0.841	k star (KM)	0.779
nu hat (KM)	50.45	nu star (KM)	46.74
theta hat (KM)	0.0912	theta star (KM)	0.0984
80% gamma percentile (KM)	0.125	90% gamma percentile (KM)	0.188
95% gamma percentile (KM)	0.251	99% gamma percentile (KM)	0.401

**The following statistics are computed using gamma distribution and KM estimates**

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.324	0.356	95% Approx. Gamma UPL	0.236	0.249
95% KM Gamma Percentile	0.223	0.234	95% Gamma USL	0.439	0.504

**Lognormal GOF Test on Detected Observations Only**

Shapiro Wilk Test Statistic	0.961	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk Critical Value	0.937	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.138	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.148	Detected Data appear Lognormal at 10% Significance Level

**Detected Data appear Lognormal at 10% Significance Level**

**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**

Mean in Original Scale	0.0767	Mean in Log Scale	-3.135
SD in Original Scale	0.085	SD in Log Scale	1.192
95% UTL95% Coverage	0.614	95% BCA UTL95% Coverage	0.371
95% Bootstrap (%) UTL95% Coverage	0.371	95% UPL (t)	0.341
90% Percentile (z)	0.2	95% Percentile (z)	0.309
99% Percentile (z)	0.697	95% USL	1.148

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-3.154	95% KM UTL (Lognormal)	95% Coverage	0.638
KM SD of Logged Data	1.218	95% KM UPL (Lognormal)		0.35
95% KM Percentile Lognormal (z)	0.317	95% KM USL (Lognormal)		1.21

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.0767	Mean in Log Scale	-3.177
SD in Original Scale	0.0851	SD in Log Scale	1.306
95% UTL	95% Coverage	95% UPL (t)	0.398
90% Percentile (z)	0.222	95% Percentile (z)	0.357
99% Percentile (z)	0.87	95% USL	1.502

**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**

**Nonparametric Distribution Free Background Statistics**

**Data appear to follow a Discernible Distribution**

**Nonparametric Upper Limits for BTVs (no distinction made between detects and nondetects)**

Order of Statistic, r	30	95% UTL with 95% Coverage	0.371
Approx, f used to compute achieved CC	1.579	Approximate Actual Confidence Coefficient achieved by UTL	0.785
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.343
95% USL	0.371	95% KM Chebyshev UPL	0.447

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Benzo(b)fluoranthene (b)****General Statistics**

Total Number of Observations	30	Number of Distinct Observations	30
Minimum	0.00261	First Quartile	0.0521
Second Largest	0.737	Median	0.0883
Maximum	1.26	Third Quartile	0.16
Mean	0.163	SD	0.252
Coefficient of Variation	1.548	Skewness	3.475
Mean of logged Data	-2.495	SD of logged Data	1.218

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.22	d2max (for USL)	2.745
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**Normal GOF Test**

Shapiro Wilk Test Statistic	0.555
1% Shapiro Wilk Critical Value	0.9
Lilliefors Test Statistic	0.302
1% Lilliefors Critical Value	0.185

**Shapiro Wilk GOF Test**

Data Not Normal at 1% Significance Level

**Lilliefors GOF Test**

Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level****Background Statistics Assuming Normal Distribution**

95% UTL with 95% Coverage	0.721	90% Percentile (z)	0.485
95% UPL (t)	0.597	95% Percentile (z)	0.576
95% USL	0.853	99% Percentile (z)	0.748

**Gamma GOF Test**

A-D Test Statistic	0.904
5% A-D Critical Value	0.782
K-S Test Statistic	0.15
5% K-S Critical Value	0.166

**Anderson-Darling Gamma GOF Test**

Data Not Gamma Distributed at 5% Significance Level

**Kolmogorov-Smirnov Gamma GOF Test**

Detected data appear Gamma Distributed at 5% Significance Level

**Detected data follow Appr. Gamma Distribution at 5% Significance Level****Gamma Statistics**

k hat (MLE)	0.866	k star (bias corrected MLE)	0.802
Theta hat (MLE)	0.188	Theta star (bias corrected MLE)	0.203
nu hat (MLE)	51.97	nu star (bias corrected)	48.1
MLE Mean (bias corrected)	0.163	MLE Sd (bias corrected)	0.181

**Background Statistics Assuming Gamma Distribution**

95% Wilson Hilferty (WH) Approx. Gamma UPL	0.515	90% Percentile	0.395
95% Hawkins Wixley (HW) Approx. Gamma UPL	0.525	95% Percentile	0.527
95% WH Approx. Gamma UTL with 95% Coverage	0.719	99% Percentile	0.838
95% HW Approx. Gamma UTL with 95% Coverage	0.763		
95% WH USL	0.99	95% HW USL	1.097

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Lognormal GOF Test**

Shapiro Wilk Test Statistic	0.969	<b>Shapiro Wilk Lognormal GOF Test</b>
10% Shapiro Wilk Critical Value	0.939	Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.126	<b>Lilliefors Lognormal GOF Test</b>
10% Lilliefors Critical Value	0.146	Data appear Lognormal at 10% Significance Level

**Data appear Lognormal at 10% Significance Level**

**Background Statistics assuming Lognormal Distribution**

95% UTL with 95% Coverage	1.232	90% Percentile (z)	0.393
95% UPL (t)	0.676	95% Percentile (z)	0.612
95% USL	2.337	99% Percentile (z)	1.403

**Nonparametric Distribution Free Background Statistics**

**Data appear Approximate Gamma Distribution at 5% Significance Level**

**Nonparametric Upper Limits for Background Threshold Values**

Order of Statistic, order	30	95% UTL with 95% Coverage	1.26
Approx, f used to compute achieved CC	1.579	Approximate Actual Confidence Coefficient achieved by UTL	0.785
		Approximate Sample Size needed to achieve specified CC	59
95% Percentile Bootstrap UTL with 95% Coverage	1.26	95% BCA Bootstrap UTL with 95% Coverage	1.025
95% UPL	0.972	90% Percentile	0.243
90% Chebyshev UPL	0.93	95% Percentile	0.589
95% Chebyshev UPL	1.277	99% Percentile	1.108
95% USL	1.26		

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Benzo(g,h,i)perylene (a)****General Statistics**

Total Number of Observations	30	Number of Missing Observations	0
Number of Distinct Observations	30		
Number of Detects	29	Number of Non-Detects	1
Number of Distinct Detects	29	Number of Distinct Non-Detects	1
Minimum Detect	0.00328	Minimum Non-Detect	0.00201
Maximum Detect	0.178	Maximum Non-Detect	0.00201
Variance Detected	0.00129	Percent Non-Detects	3.333%
Mean Detected	0.0391	SD Detected	0.0359
Mean of Detected Logged Data	-3.655	SD of Detected Logged Data	1.01

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.22	d2max (for USL)	2.745
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.806	<b>Shapiro Wilk GOF Test</b>
1% Shapiro Wilk Critical Value	0.898	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.159	<b>Lilliefors GOF Test</b>
1% Lilliefors Critical Value	0.189	Detected Data appear Normal at 1% Significance Level

Detected Data appear Approximate Normal at 1% Significance Level

**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.0379	KM SD	0.0353
95% UTL95% Coverage	0.116	95% KM UPL (t)	0.0989
90% KM Percentile (z)	0.0832	95% KM Percentile (z)	0.096
99% KM Percentile (z)	0.12	95% KM USL	0.135

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.0379	SD	0.0359
95% UTL95% Coverage	0.118	95% UPL (t)	0.1
90% Percentile (z)	0.0839	95% Percentile (z)	0.097
99% Percentile (z)	0.121	95% USL	0.137

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

**Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	0.265	<b>Anderson-Darling GOF Test</b>
5% A-D Critical Value	0.766	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.0867	<b>Kolmogorov-Smirnov GOF</b>
5% K-S Critical Value	0.166	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

k hat (MLE)	1.349	k star (bias corrected MLE)	1.232
Theta hat (MLE)	0.029	Theta star (bias corrected MLE)	0.0318
nu hat (MLE)	78.22	nu star (bias corrected)	71.46
MLE Mean (bias corrected)	0.0391		
MLE Sd (bias corrected)	0.0353	95% Percentile of Chisquare (2kstar)	6.863

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00328	Mean	0.0382
Maximum	0.178	Median	0.0302
SD	0.0357	CV	0.934
k hat (MLE)	1.33	k star (bias corrected MLE)	1.219
Theta hat (MLE)	0.0287	Theta star (bias corrected MLE)	0.0313
nu hat (MLE)	79.77	nu star (bias corrected)	73.13
MLE Mean (bias corrected)	0.0382	MLE Sd (bias corrected)	0.0346
95% Percentile of Chisquare (2kstar)	6.814	90% Percentile	0.0837
95% Percentile	0.107	99% Percentile	0.159

The following statistics are computed using Gamma ROS Statistics on Imputed Data

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.146	0.157	95% Approx. Gamma UPL	0.109	0.114
95% Gamma USL	0.193	0.216			

**Estimates of Gamma Parameters using KM Estimates**

Mean (KM)	0.0379	SD (KM)	0.0353
Variance (KM)	0.00125	SE of Mean (KM)	0.00656
k hat (KM)	1.153	k star (KM)	1.06
nu hat (KM)	69.18	nu star (KM)	63.59
theta hat (KM)	0.0329	theta star (KM)	0.0358
80% gamma percentile (KM)	0.0607	90% gamma percentile (KM)	0.086
95% gamma percentile (KM)	0.111	99% gamma percentile (KM)	0.17

The following statistics are computed using gamma distribution and KM estimates

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.148	0.161	95% Approx. Gamma UPL	0.11	0.116
95% KM Gamma Percentile	0.104	0.109	95% Gamma USL	0.197	0.223

**Lognormal GOF Test on Detected Observations Only**

Shapiro Wilk Test Statistic	0.954	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk Critical Value	0.937	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.112	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.148	Detected Data appear Lognormal at 10% Significance Level

Detected Data appear Lognormal at 10% Significance Level

**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**

Mean in Original Scale	0.0379	Mean in Log Scale	-3.739
SD in Original Scale	0.0359	SD in Log Scale	1.093
95% UTL95% Coverage	0.269	95% BCA UTL95% Coverage	0.134
95% Bootstrap (%) UTL95% Coverage	0.178	95% UPL (t)	0.157
90% Percentile (z)	0.0965	95% Percentile (z)	0.144
99% Percentile (z)	0.302	95% USL	0.478

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-3.74	95% KM UTL (Lognormal)	95% Coverage	0.26
KM SD of Logged Data	1.078	95% KM UPL (Lognormal)		0.153
95% KM Percentile Lognormal (z)	0.14	95% KM USL (Lognormal)		0.458

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.0379	Mean in Log Scale	-3.763
SD in Original Scale	0.0359	SD in Log Scale	1.156
95% UTL	95% Coverage	95% UPL (t)	0.171
90% Percentile (z)	0.102	95% Percentile (z)	0.155
99% Percentile (z)	0.342	95% USL	0.555

**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**

**Nonparametric Distribution Free Background Statistics**

**Data appear to follow a Discernible Distribution**

**Nonparametric Upper Limits for BTVs (no distinction made between detects and nondetects)**

Order of Statistic, r	30	95% UTL with 95% Coverage	0.178
Approx, f used to compute achieved CC	1.579	Approximate Actual Confidence Coefficient achieved by UTL	0.785
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.124
95% USL	0.178	95% KM Chebyshev UPL	0.194

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

Benzo(g,h,i)perylene (b)

General Statistics			
Total Number of Observations	30	Number of Missing Observations	0
Number of Distinct Observations	30		
Number of Detects	29	Number of Non-Detects	1
Number of Distinct Detects	29	Number of Distinct Non-Detects	1
Minimum Detect	0.00799	Minimum Non-Detect	0.00213
Maximum Detect	0.462	Maximum Non-Detect	0.00213
Variance Detected	0.00971	Percent Non-Detects	3.333%
Mean Detected	0.0825	SD Detected	0.0985
Mean of Detected Logged Data	-2.932	SD of Detected Logged Data	0.923

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.22	d2max (for USL)	2.745
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.638	<b>Shapiro Wilk GOF Test</b>
1% Shapiro Wilk Critical Value	0.898	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.26	<b>Lilliefors GOF Test</b>
1% Lilliefors Critical Value	0.189	Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level****Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.0798	KM SD	0.0963
95% UTL95% Coverage	0.294	95% KM UPL (t)	0.246
90% KM Percentile (z)	0.203	95% KM Percentile (z)	0.238
99% KM Percentile (z)	0.304	95% KM USL	0.344

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.0798	SD	0.098
95% UTL95% Coverage	0.297	95% UPL (t)	0.249
90% Percentile (z)	0.205	95% Percentile (z)	0.241
99% Percentile (z)	0.308	95% USL	0.349

**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons****Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	0.917	<b>Anderson-Darling GOF Test</b>
5% A-D Critical Value	0.768	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.155	<b>Kolmogorov-Smirnov GOF</b>
5% K-S Critical Value	0.166	Detected data appear Gamma Distributed at 5% Significance Level

**Detected data follow Appr. Gamma Distribution at 5% Significance Level****Gamma Statistics on Detected Data Only**

k hat (MLE)	1.285	k star (bias corrected MLE)	1.175
Theta hat (MLE)	0.0642	Theta star (bias corrected MLE)	0.0702
nu hat (MLE)	74.52	nu star (bias corrected)	68.14
MLE Mean (bias corrected)	0.0825		
MLE Sd (bias corrected)	0.0761	95% Percentile of Chisquare (2kstar)	6.653



**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00799	Mean	0.0801
Maximum	0.462	Median	0.0473
SD	0.0977	CV	1.22
k hat (MLE)	1.219	k star (bias corrected MLE)	1.119
Theta hat (MLE)	0.0657	Theta star (bias corrected MLE)	0.0716
nu hat (MLE)	73.14	nu star (bias corrected)	67.16
MLE Mean (bias corrected)	0.0801	MLE Sd (bias corrected)	0.0757
95% Percentile of Chisquare (2kstar)	6.446	90% Percentile	0.179
95% Percentile	0.231	99% Percentile	0.349

**The following statistics are computed using Gamma ROS Statistics on Imputed Data**

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.311	0.324	95% Approx. Gamma UPL	0.231	0.234
95% Gamma USL	0.415	0.448			

**Estimates of Gamma Parameters using KM Estimates**

Mean (KM)	0.0798	SD (KM)	0.0963
Variance (KM)	0.00927	SE of Mean (KM)	0.0179
k hat (KM)	0.687	k star (KM)	0.641
nu hat (KM)	41.25	nu star (KM)	38.45
theta hat (KM)	0.116	theta star (KM)	0.125
80% gamma percentile (KM)	0.132	90% gamma percentile (KM)	0.205
95% gamma percentile (KM)	0.281	99% gamma percentile (KM)	0.463

**The following statistics are computed using gamma distribution and KM estimates**

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.315	0.334	95% Approx. Gamma UPL	0.232	0.239
95% KM Gamma Percentile	0.22	0.225	95% Gamma USL	0.422	0.465

**Lognormal GOF Test on Detected Observations Only**

Shapiro Wilk Test Statistic	0.97	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk Critical Value	0.937	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.0868	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.148	Detected Data appear Lognormal at 10% Significance Level

**Detected Data appear Lognormal at 10% Significance Level**

**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**

Mean in Original Scale	0.0799	Mean in Log Scale	-3.009
SD in Original Scale	0.0978	SD in Log Scale	1
95% UTL95% Coverage	0.454	95% BCA UTL95% Coverage	0.462
95% Bootstrap (%) UTL95% Coverage	0.462	95% UPL (t)	0.277
90% Percentile (z)	0.178	95% Percentile (z)	0.256
99% Percentile (z)	0.505	95% USL	0.768

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-3.039	95% KM UTL (Lognormal)	95% Coverage	0.507
KM SD of Logged Data	1.063	95% KM UPL (Lognormal)		0.3
95% KM Percentile Lognormal (z)	0.275	95% KM USL (Lognormal)		0.885

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.0798	Mean in Log Scale	-3.062
SD in Original Scale	0.098	SD in Log Scale	1.155
95% UTL	95% Coverage	95% UPL (t)	0.344
90% Percentile (z)	0.205	95% Percentile (z)	0.312
99% Percentile (z)	0.686	95% USL	1.113

**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**

**Nonparametric Distribution Free Background Statistics**

**Data appear to follow a Discernible Distribution**

**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**

Order of Statistic, r	30	95% UTL with 95% Coverage	0.462
Approx, f used to compute achieved CC	1.579	Approximate Actual Confidence Coefficient achieved by UTL	0.785
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.394
95% USL	0.462	95% KM Chebyshev UPL	0.506

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Benzo(k)fluoranthene (a)****General Statistics**

Total Number of Observations	30	Number of Missing Observations	0
Number of Distinct Observations	28		
Number of Detects	27	Number of Non-Detects	3
Number of Distinct Detects	26	Number of Distinct Non-Detects	2
Minimum Detect	0.00317	Minimum Non-Detect	0.00244
Maximum Detect	0.126	Maximum Non-Detect	0.00264
Variance Detected	8.6571E-4	Percent Non-Detects	10%
Mean Detected	0.0278	SD Detected	0.0294
Mean of Detected Logged Data	-3.99	SD of Detected Logged Data	0.937

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.22	d2max (for USL)	2.745
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.689	<b>Shapiro Wilk GOF Test</b>
1% Shapiro Wilk Critical Value	0.894	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.241	<b>Lilliefors GOF Test</b>
1% Lilliefors Critical Value	0.194	Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level****Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.0253	KM SD	0.0284
95% UTL95% Coverage	0.0884	95% KM UPL (t)	0.0744
90% KM Percentile (z)	0.0617	95% KM Percentile (z)	0.0721
99% KM Percentile (z)	0.0915	95% KM USL	0.103

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.0252	SD	0.029
95% UTL95% Coverage	0.0896	95% UPL (t)	0.0753
90% Percentile (z)	0.0624	95% Percentile (z)	0.0729
99% Percentile (z)	0.0927	95% USL	0.105

**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons****Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	0.505	<b>Anderson-Darling GOF Test</b>
5% A-D Critical Value	0.766	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.126	<b>Kolmogorov-Smirnov GOF</b>
5% K-S Critical Value	0.172	Detected data appear Gamma Distributed at 5% Significance Level

**Detected data appear Gamma Distributed at 5% Significance Level****Gamma Statistics on Detected Data Only**

k hat (MLE)	1.364	k star (bias corrected MLE)	1.237
Theta hat (MLE)	0.0204	Theta star (bias corrected MLE)	0.0225
nu hat (MLE)	73.65	nu star (bias corrected)	66.8
MLE Mean (bias corrected)	0.0278		
MLE Sd (bias corrected)	0.025	95% Percentile of Chisquare (2kstar)	6.881

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00317	Mean	0.0261
Maximum	0.126	Median	0.0168
SD	0.0284	CV	1.089
k hat (MLE)	1.379	k star (bias corrected MLE)	1.263
Theta hat (MLE)	0.0189	Theta star (bias corrected MLE)	0.0206
nu hat (MLE)	82.71	nu star (bias corrected)	75.77
MLE Mean (bias corrected)	0.0261	MLE Sd (bias corrected)	0.0232
95% Percentile of Chisquare (2kstar)	6.975	90% Percentile	0.0567
95% Percentile	0.072	99% Percentile	0.107

**The following statistics are computed using Gamma ROS Statistics on Imputed Data**

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.0966	0.101	95% Approx. Gamma UPL	0.0726	0.0738
95% Gamma USL	0.127	0.138			

**Estimates of Gamma Parameters using KM Estimates**

Mean (KM)	0.0253	SD (KM)	0.0284
Variance (KM)	8.0838E-4	SE of Mean (KM)	0.00529
k hat (KM)	0.792	k star (KM)	0.735
nu hat (KM)	47.54	nu star (KM)	44.12
theta hat (KM)	0.0319	theta star (KM)	0.0344
80% gamma percentile (KM)	0.0415	90% gamma percentile (KM)	0.0628
95% gamma percentile (KM)	0.0846	99% gamma percentile (KM)	0.137

**The following statistics are computed using gamma distribution and KM estimates**

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.101	0.109	95% Approx. Gamma UPL	0.0747	0.0772
95% KM Gamma Percentile	0.0708	0.0727	95% Gamma USL	0.136	0.152

**Lognormal GOF Test on Detected Observations Only**

Shapiro Wilk Test Statistic	0.964	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk Critical Value	0.935	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.0955	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.153	Detected Data appear Lognormal at 10% Significance Level

**Detected Data appear Lognormal at 10% Significance Level**

**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**

Mean in Original Scale	0.0253	Mean in Log Scale	-4.204
SD in Original Scale	0.0289	SD in Log Scale	1.102
95% UTL95% Coverage	0.173	95% BCA UTL95% Coverage	0.121
95% Bootstrap (%) UTL95% Coverage	0.126	95% UPL (t)	0.1
90% Percentile (z)	0.0613	95% Percentile (z)	0.0916
99% Percentile (z)	0.194	95% USL	0.308

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-4.193	95% KM UTL (Lognormal)	95% Coverage	0.16
KM SD of Logged Data	1.063	95% KM UPL (Lognormal)		0.0948
95% KM Percentile Lognormal (z)	0.0868	95% KM USL (Lognormal)		0.28

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.0252	Mean in Log Scale	-4.26
SD in Original Scale	0.029	SD in Log Scale	1.209
95% UTL	95% Coverage	95% UPL (t)	0.114
90% Percentile (z)	0.0666	95% Percentile (z)	0.103
99% Percentile (z)	0.235	95% USL	0.391

**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**

**Nonparametric Distribution Free Background Statistics**

**Data appear to follow a Discernible Distribution**

**Nonparametric Upper Limits for BTVs (no distinction made between detects and nondetects)**

Order of Statistic, r	30	95% UTL with 95% Coverage	0.126
Approx, f used to compute achieved CC	1.579	Approximate Actual Confidence Coefficient achieved by UTL	0.785
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.12
95% USL	0.126	95% KM Chebyshev UPL	0.151

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

Benzo(k)fluoranthene (b)

General Statistics			
Total Number of Observations	30	Number of Missing Observations	0
Number of Distinct Observations	29		
Number of Detects	28	Number of Non-Detects	2
Number of Distinct Detects	27	Number of Distinct Non-Detects	2
Minimum Detect	0.00456	Minimum Non-Detect	0.00258
Maximum Detect	0.484	Maximum Non-Detect	0.00262
Variance Detected	0.00904	Percent Non-Detects	6.667%
Mean Detected	0.0581	SD Detected	0.0951
Mean of Detected Logged Data	-3.46	SD of Detected Logged Data	1.044

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.22	d2max (for USL)	2.745
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.51	<b>Shapiro Wilk GOF Test</b>
1% Shapiro Wilk Critical Value	0.896	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.313	<b>Lilliefors GOF Test</b>
1% Lilliefors Critical Value	0.191	Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level****Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.0544	KM SD	0.0913
95% UTL95% Coverage	0.257	95% KM UPL (t)	0.212
90% KM Percentile (z)	0.171	95% KM Percentile (z)	0.205
99% KM Percentile (z)	0.267	95% KM USL	0.305

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.0544	SD	0.0929
95% UTL95% Coverage	0.261	95% UPL (t)	0.215
90% Percentile (z)	0.173	95% Percentile (z)	0.207
99% Percentile (z)	0.27	95% USL	0.309

**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons****Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	1.272	<b>Anderson-Darling GOF Test</b>
5% A-D Critical Value	0.776	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.192	<b>Kolmogorov-Smirnov GOF</b>
5% K-S Critical Value	0.171	Data Not Gamma Distributed at 5% Significance Level

**Data Not Gamma Distributed at 5% Significance Level****Gamma Statistics on Detected Data Only**

k hat (MLE)	0.944	k star (bias corrected MLE)	0.867
Theta hat (MLE)	0.0616	Theta star (bias corrected MLE)	0.0671
nu hat (MLE)	52.89	nu star (bias corrected)	48.56
MLE Mean (bias corrected)	0.0581		
MLE Sd (bias corrected)	0.0624	95% Percentile of Chisquare (2kstar)	5.465

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00456	Mean	0.0549
Maximum	0.484	Median	0.0275
SD	0.0926	CV	1.685
k hat (MLE)	0.919	k star (bias corrected MLE)	0.849
Theta hat (MLE)	0.0598	Theta star (bias corrected MLE)	0.0647
nu hat (MLE)	55.11	nu star (bias corrected)	50.93
MLE Mean (bias corrected)	0.0549	MLE Sd (bias corrected)	0.0596
95% Percentile of Chisquare (2kstar)	5.391	90% Percentile	0.132
95% Percentile	0.174	99% Percentile	0.275

The following statistics are computed using Gamma ROS Statistics on Imputed Data

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.235	0.24	95% Approx. Gamma UPL	0.169	0.167
95% Gamma USL	0.322	0.342			

**Estimates of Gamma Parameters using KM Estimates**

Mean (KM)	0.0544	SD (KM)	0.0913
Variance (KM)	0.00833	SE of Mean (KM)	0.017
k hat (KM)	0.356	k star (KM)	0.342
nu hat (KM)	21.34	nu star (KM)	20.54
theta hat (KM)	0.153	theta star (KM)	0.159
80% gamma percentile (KM)	0.0859	90% gamma percentile (KM)	0.158
95% gamma percentile (KM)	0.238	99% gamma percentile (KM)	0.445

The following statistics are computed using gamma distribution and KM estimates

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.238	0.249	95% Approx. Gamma UPL	0.17	0.171
95% KM Gamma Percentile	0.16	0.16	95% Gamma USL	0.329	0.358

**Lognormal GOF Test on Detected Observations Only**

Shapiro Wilk Test Statistic	0.968	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk Critical Value	0.936	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.103	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.151	Detected Data appear Lognormal at 10% Significance Level

Detected Data appear Lognormal at 10% Significance Level

**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**

Mean in Original Scale	0.0545	Mean in Log Scale	-3.623
SD in Original Scale	0.0928	SD in Log Scale	1.182
95% UTL95% Coverage	0.369	95% BCA UTL95% Coverage	0.484
95% Bootstrap (%) UTL95% Coverage	0.484	95% UPL (t)	0.206
90% Percentile (z)	0.122	95% Percentile (z)	0.187
99% Percentile (z)	0.418	95% USL	0.686

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-3.627	95% KM UTL (Lognormal)	95% Coverage	0.358
KM SD of Logged Data	1.171	95% KM UPL (Lognormal)		0.201
95% KM Percentile Lognormal (z)	0.182	95% KM USL (Lognormal)		0.661

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.0544	Mean in Log Scale	-3.673
SD in Original Scale	0.0929	SD in Log Scale	1.292
95% UTL	95% Coverage	95% UPL (t)	0.237
90% Percentile (z)	0.133	95% Percentile (z)	0.213
99% Percentile (z)	0.513	95% USL	0.881

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

**Nonparametric Distribution Free Background Statistics**

Data appear to follow a Discernible Distribution

**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**

Order of Statistic, r	30	95% UTL with 95% Coverage	0.484
Approx, f used to compute achieved CC	1.579	Approximate Actual Confidence Coefficient achieved by UTL	0.785
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.347
95% USL	0.484	95% KM Chebyshev UPL	0.459

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.



**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

Chrysene (a)

General Statistics			
Total Number of Observations	30	Number of Missing Observations	0
Number of Distinct Observations	29		
Number of Detects	29	Number of Non-Detects	1
Number of Distinct Detects	28	Number of Distinct Non-Detects	1
Minimum Detect	0.00318	Minimum Non-Detect	0.00264
Maximum Detect	0.266	Maximum Non-Detect	0.00264
Variance Detected	0.00407	Percent Non-Detects	3.333%
Mean Detected	0.0487	SD Detected	0.0638
Mean of Detected Logged Data	-3.606	SD of Detected Logged Data	1.116

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.22	d2max (for USL)	2.745
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.63	<b>Shapiro Wilk GOF Test</b>
1% Shapiro Wilk Critical Value	0.898	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.3	<b>Lilliefors GOF Test</b>
1% Lilliefors Critical Value	0.189	Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level****Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.0472	KM SD	0.0622
95% UTL95% Coverage	0.185	95% KM UPL (t)	0.155
90% KM Percentile (z)	0.127	95% KM Percentile (z)	0.15
99% KM Percentile (z)	0.192	95% KM USL	0.218

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.0472	SD	0.0633
95% UTL95% Coverage	0.188	95% UPL (t)	0.156
90% Percentile (z)	0.128	95% Percentile (z)	0.151
99% Percentile (z)	0.194	95% USL	0.221

**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons****Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	0.679	<b>Anderson-Darling GOF Test</b>
5% A-D Critical Value	0.775	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.168	<b>Kolmogorov-Smirnov GOF</b>
5% K-S Critical Value	0.168	Data Not Gamma Distributed at 5% Significance Level

**Detected data follow Appr. Gamma Distribution at 5% Significance Level****Gamma Statistics on Detected Data Only**

k hat (MLE)	0.989	k star (bias corrected MLE)	0.91
Theta hat (MLE)	0.0492	Theta star (bias corrected MLE)	0.0535
nu hat (MLE)	57.39	nu star (bias corrected)	52.79
MLE Mean (bias corrected)	0.0487		
MLE Sd (bias corrected)	0.0511	95% Percentile of Chisquare (2kstar)	5.638

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00318	Mean	0.0474
Maximum	0.266	Median	0.0309
SD	0.0631	CV	1.33
k hat (MLE)	0.98	k star (bias corrected MLE)	0.904
Theta hat (MLE)	0.0484	Theta star (bias corrected MLE)	0.0525
nu hat (MLE)	58.79	nu star (bias corrected)	54.24
MLE Mean (bias corrected)	0.0474	MLE Sd (bias corrected)	0.0499
95% Percentile of Chisquare (2kstar)	5.614	90% Percentile	0.112
95% Percentile	0.147	99% Percentile	0.23

The following statistics are computed using Gamma ROS Statistics on Imputed Data

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.203	0.215	95% Approx. Gamma UPL	0.147	0.15
95% Gamma USL	0.276	0.304			

**Estimates of Gamma Parameters using KM Estimates**

Mean (KM)	0.0472	SD (KM)	0.0622
Variance (KM)	0.00387	SE of Mean (KM)	0.0116
k hat (KM)	0.576	k star (KM)	0.54
nu hat (KM)	34.54	nu star (KM)	32.42
theta hat (KM)	0.082	theta star (KM)	0.0874
80% gamma percentile (KM)	0.0777	90% gamma percentile (KM)	0.126
95% gamma percentile (KM)	0.176	99% gamma percentile (KM)	0.3

The following statistics are computed using gamma distribution and KM estimates

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.202	0.216	95% Approx. Gamma UPL	0.146	0.15
95% KM Gamma Percentile	0.138	0.141	95% Gamma USL	0.276	0.307

**Lognormal GOF Test on Detected Observations Only**

Shapiro Wilk Test Statistic	0.971	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk Critical Value	0.937	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.1	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.148	Detected Data appear Lognormal at 10% Significance Level

Detected Data appear Lognormal at 10% Significance Level

**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**

Mean in Original Scale	0.0472	Mean in Log Scale	-3.699
SD in Original Scale	0.0633	SD in Log Scale	1.21
95% UTL95% Coverage	0.363	95% BCA UTL95% Coverage	0.266
95% Bootstrap (%) UTL95% Coverage	0.266	95% UPL (t)	0.2
90% Percentile (z)	0.117	95% Percentile (z)	0.181
99% Percentile (z)	0.413	95% USL	0.685

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-3.683	95% KM UTL (Lognormal)	95% Coverage	0.328
KM SD of Logged Data	1.156	95% KM UPL (Lognormal)		0.185
95% KM Percentile Lognormal (z)	0.168	95% KM USL (Lognormal)		0.601

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.0472	Mean in Log Scale	-3.706
SD in Original Scale	0.0633	SD in Log Scale	1.228
95% UTL	95% Coverage	95% UPL (t)	0.205
90% Percentile (z)	0.118	95% Percentile (z)	0.185
99% Percentile (z)	0.427	95% USL	0.714

**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**

**Nonparametric Distribution Free Background Statistics**

**Data appear to follow a Discernible Distribution**

**Nonparametric Upper Limits for BTVs (no distinction made between detects and nondetects)**

Order of Statistic, r	30	95% UTL with 95% Coverage	0.266
Approx, f used to compute achieved CC	1.579	Approximate Actual Confidence Coefficient achieved by UTL	0.785
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.259
95% USL	0.266	95% KM Chebyshev UPL	0.323

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

Chrysene (b)

General Statistics			
Total Number of Observations	30	Number of Missing Observations	0
Number of Distinct Observations	30		
Number of Detects	29	Number of Non-Detects	1
Number of Distinct Detects	29	Number of Distinct Non-Detects	1
Minimum Detect	0.00817	Minimum Non-Detect	0.00279
Maximum Detect	1.17	Maximum Non-Detect	0.00279
Variance Detected	0.0495	Percent Non-Detects	3.333%
Mean Detected	0.122	SD Detected	0.222
Mean of Detected Logged Data	-2.819	SD of Detected Logged Data	1.117

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.22	d2max (for USL)	2.745
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.474	<b>Shapiro Wilk GOF Test</b>
1% Shapiro Wilk Critical Value	0.898	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.352	<b>Lilliefors GOF Test</b>
1% Lilliefors Critical Value	0.189	Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level**

**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.118	KM SD	0.216
95% UTL95% Coverage	0.597	95% KM UPL (t)	0.491
90% KM Percentile (z)	0.395	95% KM Percentile (z)	0.473
99% KM Percentile (z)	0.62	95% KM USL	0.711

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.118	SD	0.22
95% UTL95% Coverage	0.605	95% UPL (t)	0.497
90% Percentile (z)	0.399	95% Percentile (z)	0.479
99% Percentile (z)	0.629	95% USL	0.721

**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons**

**Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	1.401	<b>Anderson-Darling GOF Test</b>
5% A-D Critical Value	0.781	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.222	<b>Kolmogorov-Smirnov GOF</b>
5% K-S Critical Value	0.169	Data Not Gamma Distributed at 5% Significance Level

**Data Not Gamma Distributed at 5% Significance Level**

**Gamma Statistics on Detected Data Only**

k hat (MLE)	0.828	k star (bias corrected MLE)	0.765
Theta hat (MLE)	0.147	Theta star (bias corrected MLE)	0.159
nu hat (MLE)	48.03	nu star (bias corrected)	44.39
MLE Mean (bias corrected)	0.122		
MLE Sd (bias corrected)	0.139	95% Percentile of Chisquare (2kstar)	5.045

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00817	Mean	0.118
Maximum	1.17	Median	0.0558
SD	0.219	CV	1.859
k hat (MLE)	0.8	k star (bias corrected MLE)	0.742
Theta hat (MLE)	0.148	Theta star (bias corrected MLE)	0.159
nu hat (MLE)	47.99	nu star (bias corrected)	44.53
MLE Mean (bias corrected)	0.118	MLE Sd (bias corrected)	0.137
95% Percentile of Chisquare (2kstar)	4.947	90% Percentile	0.292
95% Percentile	0.393	99% Percentile	0.634

**The following statistics are computed using Gamma ROS Statistics on Imputed Data**

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.53	0.545	95% Approx. Gamma UPL	0.375	0.372
95% Gamma USL	0.736	0.788			

**Estimates of Gamma Parameters using KM Estimates**

Mean (KM)	0.118	SD (KM)	0.216
Variance (KM)	0.0466	SE of Mean (KM)	0.0401
k hat (KM)	0.298	k star (KM)	0.29
nu hat (KM)	17.86	nu star (KM)	17.41
theta hat (KM)	0.396	theta star (KM)	0.406
80% gamma percentile (KM)	0.179	90% gamma percentile (KM)	0.349
95% gamma percentile (KM)	0.545	99% gamma percentile (KM)	1.056

**The following statistics are computed using gamma distribution and KM estimates**

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.526	0.546	95% Approx. Gamma UPL	0.372	0.372
95% KM Gamma Percentile	0.35	0.347	95% Gamma USL	0.732	0.793

**Lognormal GOF Test on Detected Observations Only**

Shapiro Wilk Test Statistic	0.967	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk Critical Value	0.937	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.125	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.148	Detected Data appear Lognormal at 10% Significance Level

**Detected Data appear Lognormal at 10% Significance Level**

**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**

Mean in Original Scale	0.118	Mean in Log Scale	-2.912
SD in Original Scale	0.22	SD in Log Scale	1.21
95% UTL95% Coverage	0.798	95% BCA UTL95% Coverage	0.844
95% Bootstrap (%) UTL95% Coverage	1.17	95% UPL (t)	0.439
90% Percentile (z)	0.256	95% Percentile (z)	0.398
99% Percentile (z)	0.907	95% USL	1.506

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-2.921	95% KM UTL (Lognormal)	95% Coverage	0.793
KM SD of Logged Data	1.211	95% KM UPL (Lognormal)		0.436
95% KM Percentile Lognormal (z)	0.395	95% KM USL (Lognormal)		1.497

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.118	Mean in Log Scale	-2.944
SD in Original Scale	0.22	SD in Log Scale	1.294
95% UTL	95% Coverage	95% UPL (t)	0.492
90% Percentile (z)	0.276	95% Percentile (z)	0.442
99% Percentile (z)	1.069	95% USL	1.838

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

**Nonparametric Distribution Free Background Statistics**

Data appear to follow a Discernible Distribution

**Nonparametric Upper Limits for BTVs (no distinction made between detects and nondetects)**

Order of Statistic, r	30	95% UTL with 95% Coverage	1.17
Approx, f used to compute achieved CC	1.579	Approximate Actual Confidence Coefficient achieved by UTL	0.785
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.772
95% USL	1.17	95% KM Chebyshev UPL	1.075

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Dibenz(a,h)anthracene (a)****General Statistics**

Total Number of Observations	30	Number of Missing Observations	0
Number of Distinct Observations	29		
Number of Detects	24	Number of Non-Detects	6
Number of Distinct Detects	23	Number of Distinct Non-Detects	6
Minimum Detect	0.00228	Minimum Non-Detect	0.00193
Maximum Detect	0.0465	Maximum Non-Detect	0.00211
Variance Detected	8.7048E-5	Percent Non-Detects	20%
Mean Detected	0.00997	SD Detected	0.00933
Mean of Detected Logged Data	-4.904	SD of Detected Logged Data	0.766

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.22	d2max (for USL)	2.745
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.709	<b>Shapiro Wilk GOF Test</b>
1% Shapiro Wilk Critical Value	0.884	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.223	<b>Lilliefors GOF Test</b>
1% Lilliefors Critical Value	0.205	Data Not Normal at 1% Significance Level

Data Not Normal at 1% Significance Level

**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.00836	KM SD	0.00878
95% UTL95% Coverage	0.0279	95% KM UPL (t)	0.0235
90% KM Percentile (z)	0.0196	95% KM Percentile (z)	0.0228
99% KM Percentile (z)	0.0288	95% KM USL	0.0325

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.00818	SD	0.00908
95% UTL95% Coverage	0.0283	95% UPL (t)	0.0239
90% Percentile (z)	0.0198	95% Percentile (z)	0.0231
99% Percentile (z)	0.0293	95% USL	0.0331

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

**Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	0.419	<b>Anderson-Darling GOF Test</b>
5% A-D Critical Value	0.757	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.12	<b>Kolmogorov-Smirnov GOF</b>
5% K-S Critical Value	0.181	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

k hat (MLE)	1.839	k star (bias corrected MLE)	1.637
Theta hat (MLE)	0.00542	Theta star (bias corrected MLE)	0.00609
nu hat (MLE)	88.26	nu star (bias corrected)	78.56
MLE Mean (bias corrected)	0.00997		
MLE Sd (bias corrected)	0.0078	95% Percentile of Chisquare (2kstar)	8.283

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00228	Mean	0.00998
Maximum	0.0465	Median	0.00961
SD	0.00831	CV	0.833
k hat (MLE)	2.265	k star (bias corrected MLE)	2.06
Theta hat (MLE)	0.00441	Theta star (bias corrected MLE)	0.00484
nu hat (MLE)	135.9	nu star (bias corrected)	123.6
MLE Mean (bias corrected)	0.00998	MLE Sd (bias corrected)	0.00695
95% Percentile of Chisquare (2kstar)	9.683	90% Percentile	0.0193
95% Percentile	0.0234	99% Percentile	0.0327

The following statistics are computed using Gamma ROS Statistics on Imputed Data

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.0301	0.0311	95% Approx. Gamma UPL	0.0237	0.0241
95% Gamma USL	0.0381	0.0402			

**Estimates of Gamma Parameters using KM Estimates**

Mean (KM)	0.00836	SD (KM)	0.00878
Variance (KM)	7.7087E-5	SE of Mean (KM)	0.00164
k hat (KM)	0.908	k star (KM)	0.839
nu hat (KM)	54.45	nu star (KM)	50.34
theta hat (KM)	0.00922	theta star (KM)	0.00997
80% gamma percentile (KM)	0.0136	90% gamma percentile (KM)	0.0201
95% gamma percentile (KM)	0.0267	99% gamma percentile (KM)	0.0421

The following statistics are computed using gamma distribution and KM estimates

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.03	0.0312	95% Approx. Gamma UPL	0.0227	0.023
95% KM Gamma Percentile	0.0216	0.0218	95% Gamma USL	0.0394	0.0422

**Lognormal GOF Test on Detected Observations Only**

Shapiro Wilk Test Statistic	0.968	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk Critical Value	0.93	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.0848	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.162	Detected Data appear Lognormal at 10% Significance Level

Detected Data appear Lognormal at 10% Significance Level

**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**

Mean in Original Scale	0.00824	Mean in Log Scale	-5.249
SD in Original Scale	0.00902	SD in Log Scale	0.978
95% UTL95% Coverage	0.0461	95% BCA UTL95% Coverage	0.0465
95% Bootstrap (%) UTL95% Coverage	0.0465	95% UPL (t)	0.0285
90% Percentile (z)	0.0184	95% Percentile (z)	0.0263
99% Percentile (z)	0.0512	95% USL	0.0771



**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-5.173	95% KM UTL (Lognormal)	95% Coverage	0.0382
KM SD of Logged Data	0.86	95% KM UPL (Lognormal)		0.025
95% KM Percentile Lognormal (z)	0.0233	95% KM USL (Lognormal)		0.06

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.00818	Mean in Log Scale	-5.306
SD in Original Scale	0.00908	SD in Log Scale	1.065
95% UTL	95% Coverage	95% UPL (t)	0.0312
90% Percentile (z)	0.0194	95% Percentile (z)	0.0286
99% Percentile (z)	0.0591	95% USL	0.0922

**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**

**Nonparametric Distribution Free Background Statistics**

**Data appear to follow a Discernible Distribution**

**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**

Order of Statistic, r	30	95% UTL with 95% Coverage	0.0465
Approx, f used to compute achieved CC	1.579	Approximate Actual Confidence Coefficient achieved by UTL	0.785
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.0328
95% USL	0.0465	95% KM Chebyshev UPL	0.0473

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

Dibenz(a,h)anthracene (b)

**General Statistics**

Total Number of Observations	30	Number of Missing Observations	0
Number of Distinct Observations	30		
Number of Detects	27	Number of Non-Detects	3
Number of Distinct Detects	27	Number of Distinct Non-Detects	3
Minimum Detect	0.00323	Minimum Non-Detect	0.00207
Maximum Detect	0.143	Maximum Non-Detect	0.0022
Variance Detected	9.6151E-4	Percent Non-Detects	10%
Mean Detected	0.0214	SD Detected	0.031
Mean of Detected Logged Data	-4.371	SD of Detected Logged Data	0.939

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.22	d2max (for USL)	2.745
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.556	<b>Shapiro Wilk GOF Test</b>
1% Shapiro Wilk Critical Value	0.894	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.32	<b>Lilliefors GOF Test</b>
1% Lilliefors Critical Value	0.194	Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level****Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.0195	KM SD	0.0294
95% UTL95% Coverage	0.0848	95% KM UPL (t)	0.0703
90% KM Percentile (z)	0.0572	95% KM Percentile (z)	0.0679
99% KM Percentile (z)	0.088	95% KM USL	0.1

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.0194	SD	0.03
95% UTL95% Coverage	0.086	95% UPL (t)	0.0712
90% Percentile (z)	0.0578	95% Percentile (z)	0.0687
99% Percentile (z)	0.0892	95% USL	0.102

**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons****Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	1.533	<b>Anderson-Darling GOF Test</b>
5% A-D Critical Value	0.772	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.215	<b>Kolmogorov-Smirnov GOF</b>
5% K-S Critical Value	0.173	Data Not Gamma Distributed at 5% Significance Level

**Data Not Gamma Distributed at 5% Significance Level****Gamma Statistics on Detected Data Only**

k hat (MLE)	1.084	k star (bias corrected MLE)	0.989
Theta hat (MLE)	0.0197	Theta star (bias corrected MLE)	0.0217
nu hat (MLE)	58.56	nu star (bias corrected)	53.39
MLE Mean (bias corrected)	0.0214		
MLE Sd (bias corrected)	0.0215	95% Percentile of Chisquare (2kstar)	5.947

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00323	Mean	0.0203
Maximum	0.143	Median	0.0105
SD	0.0296	CV	1.458
k hat (MLE)	1.146	k star (bias corrected MLE)	1.054
Theta hat (MLE)	0.0177	Theta star (bias corrected MLE)	0.0192
nu hat (MLE)	68.76	nu star (bias corrected)	63.22
MLE Mean (bias corrected)	0.0203	MLE Sd (bias corrected)	0.0198
95% Percentile of Chisquare (2kstar)	6.198	90% Percentile	0.0461
95% Percentile	0.0596	99% Percentile	0.091

**The following statistics are computed using Gamma ROS Statistics on Imputed Data**

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.0794	0.0802	95% Approx. Gamma UPL	0.0585	0.0577
95% Gamma USL	0.107	0.111			

**Estimates of Gamma Parameters using KM Estimates**

Mean (KM)	0.0195	SD (KM)	0.0294
Variance (KM)	8.6699E-4	SE of Mean (KM)	0.00548
k hat (KM)	0.438	k star (KM)	0.416
nu hat (KM)	26.27	nu star (KM)	24.97
theta hat (KM)	0.0445	theta star (KM)	0.0468
80% gamma percentile (KM)	0.0316	90% gamma percentile (KM)	0.0546
95% gamma percentile (KM)	0.0798	99% gamma percentile (KM)	0.143

**The following statistics are computed using gamma distribution and KM estimates**

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.0811	0.0834	95% Approx. Gamma UPL	0.0587	0.0585
95% KM Gamma Percentile	0.0554	0.0549	95% Gamma USL	0.111	0.118

**Lognormal GOF Test on Detected Observations Only**

Shapiro Wilk Test Statistic	0.936	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk Critical Value	0.935	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.129	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.153	Detected Data appear Lognormal at 10% Significance Level

**Detected Data appear Lognormal at 10% Significance Level**

**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**

Mean in Original Scale	0.0194	Mean in Log Scale	-4.584
SD in Original Scale	0.03	SD in Log Scale	1.102
95% UTL95% Coverage	0.118	95% BCA UTL95% Coverage	0.143
95% Bootstrap (%) UTL95% Coverage	0.143	95% UPL (t)	0.0685
90% Percentile (z)	0.0419	95% Percentile (z)	0.0625
99% Percentile (z)	0.133	95% USL	0.21

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-4.552	95% KM UTL (Lognormal)	95% Coverage	0.104
KM SD of Logged Data	1.029	95% KM UPL (Lognormal)		0.0624
95% KM Percentile Lognormal (z)	0.0573	95% KM USL (Lognormal)		0.178

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.0194	Mean in Log Scale	-4.619
SD in Original Scale	0.03	SD in Log Scale	1.167
95% UTL	95% Coverage	95% UPL (t)	0.0741
90% Percentile (z)	0.044	95% Percentile (z)	0.0673
99% Percentile (z)	0.149	95% USL	0.243

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

**Nonparametric Distribution Free Background Statistics**

Data appear to follow a Discernible Distribution

**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**

Order of Statistic, r	30	95% UTL with 95% Coverage	0.143
Approx, f used to compute achieved CC	1.579	Approximate Actual Confidence Coefficient achieved by UTL	0.785
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.119
95% USL	0.143	95% KM Chebyshev UPL	0.15

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Fluoranthene (a)**

General Statistics			
Total Number of Observations	30	Number of Missing Observations	0
Number of Distinct Observations	30		
Number of Detects	29	Number of Non-Detects	1
Number of Distinct Detects	29	Number of Distinct Non-Detects	1
Minimum Detect	0.00558	Minimum Non-Detect	0.00258
Maximum Detect	0.78	Maximum Non-Detect	0.00258
Variance Detected	0.0259	Percent Non-Detects	3.333%
Mean Detected	0.102	SD Detected	0.161
Mean of Detected Logged Data	-2.979	SD of Detected Logged Data	1.181

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.22	d2max (for USL)	2.745
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.56	<b>Shapiro Wilk GOF Test</b>
1% Shapiro Wilk Critical Value	0.898	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.316	<b>Lilliefors GOF Test</b>
1% Lilliefors Critical Value	0.189	Data Not Normal at 1% Significance Level

Data Not Normal at 1% Significance Level

**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.099	KM SD	0.157
95% UTL95% Coverage	0.447	95% KM UPL (t)	0.37
90% KM Percentile (z)	0.3	95% KM Percentile (z)	0.357
99% KM Percentile (z)	0.463	95% KM USL	0.529

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.0989	SD	0.159
95% UTL95% Coverage	0.453	95% UPL (t)	0.374
90% Percentile (z)	0.303	95% Percentile (z)	0.361
99% Percentile (z)	0.47	95% USL	0.536

DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons

**Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	0.934	<b>Anderson-Darling GOF Test</b>
5% A-D Critical Value	0.78	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.187	<b>Kolmogorov-Smirnov GOF</b>
5% K-S Critical Value	0.168	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

**Gamma Statistics on Detected Data Only**

k hat (MLE)	0.843	k star (bias corrected MLE)	0.779
Theta hat (MLE)	0.121	Theta star (bias corrected MLE)	0.131
nu hat (MLE)	48.89	nu star (bias corrected)	45.16
MLE Mean (bias corrected)	0.102		
MLE Sd (bias corrected)	0.116	95% Percentile of Chisquare (2kstar)	5.101

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00558	Mean	0.0992
Maximum	0.78	Median	0.0537
SD	0.159	CV	1.604
k hat (MLE)	0.818	k star (bias corrected MLE)	0.759
Theta hat (MLE)	0.121	Theta star (bias corrected MLE)	0.131
nu hat (MLE)	49.11	nu star (bias corrected)	45.53
MLE Mean (bias corrected)	0.0992	MLE Sd (bias corrected)	0.114
95% Percentile of Chisquare (2kstar)	5.018	90% Percentile	0.244
95% Percentile	0.328	99% Percentile	0.527

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.451	0.475	95% Approx. Gamma UPL	0.32	0.324
95% Gamma USL	0.625	0.687			

**Estimates of Gamma Parameters using KM Estimates**

Mean (KM)	0.099	SD (KM)	0.157
Variance (KM)	0.0245	SE of Mean (KM)	0.0291
k hat (KM)	0.399	k star (KM)	0.382
nu hat (KM)	23.97	nu star (KM)	22.9
theta hat (KM)	0.248	theta star (KM)	0.259
80% gamma percentile (KM)	0.159	90% gamma percentile (KM)	0.282
95% gamma percentile (KM)	0.418	99% gamma percentile (KM)	0.762

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.448	0.476	95% Approx. Gamma UPL	0.318	0.324
95% KM Gamma Percentile	0.299	0.302	95% Gamma USL	0.623	0.692

**Lognormal GOF Test on Detected Observations Only**

Shapiro Wilk Test Statistic	0.973	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk Critical Value	0.937	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.099	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.148	Detected Data appear Lognormal at 10% Significance Level

Detected Data appear Lognormal at 10% Significance Level

**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**

Mean in Original Scale	0.099	Mean in Log Scale	-3.078
SD in Original Scale	0.159	SD in Log Scale	1.28
95% UTL95% Coverage	0.79	95% BCA UTL95% Coverage	0.649
95% Bootstrap (%) UTL95% Coverage	0.78	95% UPL (t)	0.42
90% Percentile (z)	0.238	95% Percentile (z)	0.378
99% Percentile (z)	0.906	95% USL	1.548

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-3.078	95% KM UTL (Lognormal)	95% Coverage	0.755
KM SD of Logged Data	1.26	95% KM UPL (Lognormal)		0.406
95% KM Percentile Lognormal (z)	0.366	95% KM USL (Lognormal)		1.464

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.0989	Mean in Log Scale	-3.102
SD in Original Scale	0.159	SD in Log Scale	1.34
95% UTL	95% Coverage	95% UPL (t)	0.455
90% Percentile (z)	0.251	95% Percentile (z)	0.408
99% Percentile (z)	1.017	95% USL	1.782

DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.

**Nonparametric Distribution Free Background Statistics**

Data appear to follow a Discernible Distribution

**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**

Order of Statistic, r	30	95% UTL with 95% Coverage	0.78
Approx, f used to compute achieved CC	1.579	Approximate Actual Confidence Coefficient achieved by UTL	0.785
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.621
95% USL	0.78	95% KM Chebyshev UPL	0.793

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Fluoranthene (b)**

<b>General Statistics</b>			
Total Number of Observations	30	Number of Missing Observations	0
Number of Distinct Observations	30		
Number of Detects	29	Number of Non-Detects	1
Number of Distinct Detects	29	Number of Distinct Non-Detects	1
Minimum Detect	0.0127	Minimum Non-Detect	0.00273
Maximum Detect	2.94	Maximum Non-Detect	0.00273
Variance Detected	0.284	Percent Non-Detects	3.333%
Mean Detected	0.208	SD Detected	0.533
Mean of Detected Logged Data	-2.405	SD of Detected Logged Data	1.087

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.22	d2max (for USL)	2.745
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.319	<b>Shapiro Wilk GOF Test</b>
1% Shapiro Wilk Critical Value	0.898	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.404	<b>Lilliefors GOF Test</b>
1% Lilliefors Critical Value	0.189	Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level**

**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.202	KM SD	0.516
95% UTL95% Coverage	1.348	95% KM UPL (t)	1.094
90% KM Percentile (z)	0.863	95% KM Percentile (z)	1.051
99% KM Percentile (z)	1.403	95% KM USL	1.619

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.202	SD	0.525
95% UTL95% Coverage	1.368	95% UPL (t)	1.109
90% Percentile (z)	0.875	95% Percentile (z)	1.066
99% Percentile (z)	1.424	95% USL	1.644

**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons**

**Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	2.273	<b>Anderson-Darling GOF Test</b>
5% A-D Critical Value	0.787	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.228	<b>Kolmogorov-Smirnov GOF</b>
5% K-S Critical Value	0.169	Data Not Gamma Distributed at 5% Significance Level

**Data Not Gamma Distributed at 5% Significance Level**

**Gamma Statistics on Detected Data Only**

k hat (MLE)	0.719	k star (bias corrected MLE)	0.668
Theta hat (MLE)	0.29	Theta star (bias corrected MLE)	0.312
nu hat (MLE)	41.72	nu star (bias corrected)	38.74
MLE Mean (bias corrected)	0.208		
MLE Sd (bias corrected)	0.255	95% Percentile of Chisquare (2kstar)	4.625



**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.202
Maximum	2.94	Median	0.082
SD	0.525	CV	2.601
k hat (MLE)	0.69	k star (bias corrected MLE)	0.643
Theta hat (MLE)	0.293	Theta star (bias corrected MLE)	0.314
nu hat (MLE)	41.38	nu star (bias corrected)	38.58
MLE Mean (bias corrected)	0.202	MLE Sd (bias corrected)	0.252
95% Percentile of Chisquare (2kstar)	4.513	90% Percentile	0.517
95% Percentile	0.709	99% Percentile	1.169

**The following statistics are computed using Gamma ROS Statistics on Imputed Data**

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.902	0.89	95% Approx. Gamma UPL	0.629	0.6
95% Gamma USL	1.271	1.302			

**Estimates of Gamma Parameters using KM Estimates**

Mean (KM)	0.202	SD (KM)	0.516
Variance (KM)	0.267	SE of Mean (KM)	0.096
k hat (KM)	0.152	k star (KM)	0.159
nu hat (KM)	9.147	nu star (KM)	9.566
theta hat (KM)	1.323	theta star (KM)	1.265
80% gamma percentile (KM)	0.23	90% gamma percentile (KM)	0.602
95% gamma percentile (KM)	1.096	99% gamma percentile (KM)	2.512

**The following statistics are computed using gamma distribution and KM estimates**

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.893	0.891	95% Approx. Gamma UPL	0.622	0.599
95% KM Gamma Percentile	0.583	0.559	95% Gamma USL	1.258	1.307

**Lognormal GOF Test on Detected Observations Only**

Shapiro Wilk Test Statistic	0.941	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk Critical Value	0.937	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.11	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.148	Detected Data appear Lognormal at 10% Significance Level

**Detected Data appear Lognormal at 10% Significance Level**

**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**

Mean in Original Scale	0.202	Mean in Log Scale	-2.493
SD in Original Scale	0.525	SD in Log Scale	1.173
95% UTL95% Coverage	1.117	95% BCA UTL95% Coverage	1.815
95% Bootstrap (%) UTL95% Coverage	2.94	95% UPL (t)	0.627
90% Percentile (z)	0.371	95% Percentile (z)	0.569
99% Percentile (z)	1.265	95% USL	2.067

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-2.521	95% KM UTL (Lognormal)	95% Coverage	1.215
KM SD of Logged Data	1.224	95% KM UPL (Lognormal)		0.665
95% KM Percentile Lognormal (z)	0.601	95% KM USL (Lognormal)		2.311

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.202	Mean in Log Scale	-2.544
SD in Original Scale	0.525	SD in Log Scale	1.314
95% UTL	95% Coverage	95% UPL (t)	0.76
90% Percentile (z)	0.423	95% Percentile (z)	0.682
99% Percentile (z)	1.669	95% USL	2.894

**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**

**Nonparametric Distribution Free Background Statistics**

**Data appear to follow a Discernible Distribution**

**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**

Order of Statistic, r	30	95% UTL with 95% Coverage	2.94
Approx, f used to compute achieved CC	1.579	Approximate Actual Confidence Coefficient achieved by UTL	0.785
Approximate Sample Size needed to achieve specified CC	59	95% UPL	1.565
95% USL	2.94	95% KM Chebyshev UPL	2.49

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

Indeno(1,2,3-c,d)pyrene (a)

**General Statistics**

Total Number of Observations	30	Number of Missing Observations	0
Number of Distinct Observations	30		
Number of Detects	29	Number of Non-Detects	1
Number of Distinct Detects	29	Number of Distinct Non-Detects	1
Minimum Detect	0.00261	Minimum Non-Detect	0.00206
Maximum Detect	0.222	Maximum Non-Detect	0.00206
Variance Detected	0.00186	Percent Non-Detects	3.333%
Mean Detected	0.0398	SD Detected	0.0431
Mean of Detected Logged Data	-3.701	SD of Detected Logged Data	1.065

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.22	d2max (for USL)	2.745
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.718	<b>Shapiro Wilk GOF Test</b>
1% Shapiro Wilk Critical Value	0.898	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.204	<b>Lilliefors GOF Test</b>
1% Lilliefors Critical Value	0.189	Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level****Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.0386	KM SD	0.0422
95% UTL95% Coverage	0.132	95% KM UPL (t)	0.111
90% KM Percentile (z)	0.0927	95% KM Percentile (z)	0.108
99% KM Percentile (z)	0.137	95% KM USL	0.154

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.0385	SD	0.043
95% UTL95% Coverage	0.134	95% UPL (t)	0.113
90% Percentile (z)	0.0936	95% Percentile (z)	0.109
99% Percentile (z)	0.139	95% USL	0.157

**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons****Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	0.217	<b>Anderson-Darling GOF Test</b>
5% A-D Critical Value	0.77	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.0834	<b>Kolmogorov-Smirnov GOF</b>
5% K-S Critical Value	0.167	Detected data appear Gamma Distributed at 5% Significance Level

**Detected data appear Gamma Distributed at 5% Significance Level****Gamma Statistics on Detected Data Only**

k hat (MLE)	1.186	k star (bias corrected MLE)	1.086
Theta hat (MLE)	0.0336	Theta star (bias corrected MLE)	0.0367
nu hat (MLE)	68.76	nu star (bias corrected)	62.98
MLE Mean (bias corrected)	0.0398		
MLE Sd (bias corrected)	0.0382	95% Percentile of Chisquare (2kstar)	6.32

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00261	Mean	0.0388
Maximum	0.222	Median	0.0286
SD	0.0427	CV	1.1
k hat (MLE)	1.175	k star (bias corrected MLE)	1.079
Theta hat (MLE)	0.0331	Theta star (bias corrected MLE)	0.036
nu hat (MLE)	70.48	nu star (bias corrected)	64.77
MLE Mean (bias corrected)	0.0388	MLE Sd (bias corrected)	0.0374
95% Percentile of Chisquare (2kstar)	6.296	90% Percentile	0.0877
95% Percentile	0.113	99% Percentile	0.172

**The following statistics are computed using Gamma ROS Statistics on Imputed Data**

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.155	0.167	95% Approx. Gamma UPL	0.115	0.119
95% Gamma USL	0.208	0.232			

**Estimates of Gamma Parameters using KM Estimates**

Mean (KM)	0.0386	SD (KM)	0.0422
Variance (KM)	0.00178	SE of Mean (KM)	0.00785
k hat (KM)	0.834	k star (KM)	0.773
nu hat (KM)	50.07	nu star (KM)	46.39
theta hat (KM)	0.0462	theta star (KM)	0.0499
80% gamma percentile (KM)	0.0631	90% gamma percentile (KM)	0.0946
95% gamma percentile (KM)	0.127	99% gamma percentile (KM)	0.203

**The following statistics are computed using gamma distribution and KM estimates**

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.156	0.17	95% Approx. Gamma UPL	0.115	0.12
95% KM Gamma Percentile	0.109	0.113	95% Gamma USL	0.21	0.238

**Lognormal GOF Test on Detected Observations Only**

Shapiro Wilk Test Statistic	0.97	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk Critical Value	0.937	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.104	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.148	Detected Data appear Lognormal at 10% Significance Level

**Detected Data appear Lognormal at 10% Significance Level**

**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**

Mean in Original Scale	0.0386	Mean in Log Scale	-3.79
SD in Original Scale	0.043	SD in Log Scale	1.154
95% UTL95% Coverage	0.293	95% BCA UTL95% Coverage	0.222
95% Bootstrap (%) UTL95% Coverage	0.222	95% UPL (t)	0.166
90% Percentile (z)	0.0991	95% Percentile (z)	0.151
99% Percentile (z)	0.331	95% USL	0.536

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-3.784	95% KM UTL (Lognormal)	95% Coverage	0.274
KM SD of Logged Data	1.121	95% KM UPL (Lognormal)		0.158
95% KM Percentile Lognormal (z)	0.144	95% KM USL (Lognormal)		0.494

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.0385	Mean in Log Scale	-3.807
SD in Original Scale	0.043	SD in Log Scale	1.196
95% UTL	95% Coverage	95% UPL (t)	0.175
90% Percentile (z)	0.103	95% Percentile (z)	0.159
99% Percentile (z)	0.359	95% USL	0.593

**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**

**Nonparametric Distribution Free Background Statistics**

**Data appear to follow a Discernible Distribution**

**Nonparametric Upper Limits for BTVs (no distinction made between detects and nondetects)**

Order of Statistic, r	30	95% UTL with 95% Coverage	0.222
Approx, f used to compute achieved CC	1.579	Approximate Actual Confidence Coefficient achieved by UTL	0.785
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.154
95% USL	0.222	95% KM Chebyshev UPL	0.226

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

Indeno(1,2,3-c,d)pyrene (b)

**General Statistics**

Total Number of Observations	30	Number of Missing Observations	0
Number of Distinct Observations	30		
Number of Detects	28	Number of Non-Detects	2
Number of Distinct Detects	28	Number of Distinct Non-Detects	2
Minimum Detect	0.00752	Minimum Non-Detect	0.00217
Maximum Detect	0.57	Maximum Non-Detect	0.00221
Variance Detected	0.0167	Percent Non-Detects	6.667%
Mean Detected	0.0908	SD Detected	0.129
Mean of Detected Logged Data	-2.955	SD of Detected Logged Data	1.003

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.22	d2max (for USL)	2.745
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.57	<b>Shapiro Wilk GOF Test</b>
1% Shapiro Wilk Critical Value	0.896	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.334	<b>Lilliefors GOF Test</b>
1% Lilliefors Critical Value	0.191	Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level****Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.0849	KM SD	0.125
95% UTL95% Coverage	0.362	95% KM UPL (t)	0.3
90% KM Percentile (z)	0.245	95% KM Percentile (z)	0.29
99% KM Percentile (z)	0.375	95% KM USL	0.427

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.0848	SD	0.127
95% UTL95% Coverage	0.367	95% UPL (t)	0.304
90% Percentile (z)	0.247	95% Percentile (z)	0.294
99% Percentile (z)	0.38	95% USL	0.433

**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons****Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	1.355	<b>Anderson-Darling GOF Test</b>
5% A-D Critical Value	0.773	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.191	<b>Kolmogorov-Smirnov GOF</b>
5% K-S Critical Value	0.17	Data Not Gamma Distributed at 5% Significance Level

**Data Not Gamma Distributed at 5% Significance Level****Gamma Statistics on Detected Data Only**

k hat (MLE)	1.035	k star (bias corrected MLE)	0.948
Theta hat (MLE)	0.0877	Theta star (bias corrected MLE)	0.0958
nu hat (MLE)	57.95	nu star (bias corrected)	53.08
MLE Mean (bias corrected)	0.0908		
MLE Sd (bias corrected)	0.0932	95% Percentile of Chisquare (2kstar)	5.788

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00752	Mean	0.0854
Maximum	0.57	Median	0.0459
SD	0.127	CV	1.482
k hat (MLE)	0.96	k star (bias corrected MLE)	0.886
Theta hat (MLE)	0.089	Theta star (bias corrected MLE)	0.0964
nu hat (MLE)	57.58	nu star (bias corrected)	53.16
MLE Mean (bias corrected)	0.0854	MLE Sd (bias corrected)	0.0907
95% Percentile of Chisquare (2kstar)	5.542	90% Percentile	0.203
95% Percentile	0.267	99% Percentile	0.418

The following statistics are computed using Gamma ROS Statistics on Imputed Data

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.363	0.376	95% Approx. Gamma UPL	0.262	0.263
95% Gamma USL	0.496	0.533			

**Estimates of Gamma Parameters using KM Estimates**

Mean (KM)	0.0849	SD (KM)	0.125
Variance (KM)	0.0156	SE of Mean (KM)	0.0232
k hat (KM)	0.463	k star (KM)	0.439
nu hat (KM)	27.77	nu star (KM)	26.33
theta hat (KM)	0.183	theta star (KM)	0.193
80% gamma percentile (KM)	0.138	90% gamma percentile (KM)	0.236
95% gamma percentile (KM)	0.341	99% gamma percentile (KM)	0.605

The following statistics are computed using gamma distribution and KM estimates

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.373	0.398	95% Approx. Gamma UPL	0.267	0.273
95% KM Gamma Percentile	0.251	0.256	95% Gamma USL	0.513	0.572

**Lognormal GOF Test on Detected Observations Only**

Shapiro Wilk Test Statistic	0.962	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk Critical Value	0.936	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.121	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.151	Detected Data appear Lognormal at 10% Significance Level

Detected Data appear Lognormal at 10% Significance Level

**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**

Mean in Original Scale	0.085	Mean in Log Scale	-3.111
SD in Original Scale	0.127	SD in Log Scale	1.136
95% UTL95% Coverage	0.554	95% BCA UTL95% Coverage	0.57
95% Bootstrap (%) UTL95% Coverage	0.57	95% UPL (t)	0.317
90% Percentile (z)	0.191	95% Percentile (z)	0.288
99% Percentile (z)	0.626	95% USL	1.006

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-3.167	95% KM UTL (Lognormal)	95% Coverage	0.659
KM SD of Logged Data	1.239	95% KM UPL (Lognormal)		0.358
95% KM Percentile Lognormal (z)	0.323	95% KM USL (Lognormal)		1.263

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.0848	Mean in Log Scale	-3.212
SD in Original Scale	0.127	SD in Log Scale	1.377
95% UTL	95% Coverage	95% UPL (t)	0.435
90% Percentile (z)	0.235	95% Percentile (z)	0.388
99% Percentile (z)	0.992	95% USL	1.766

**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**

**Nonparametric Distribution Free Background Statistics**

**Data appear to follow a Discernible Distribution**

**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**

Order of Statistic, r	30	95% UTL with 95% Coverage	0.57
Approx, f used to compute achieved CC	1.579	Approximate Actual Confidence Coefficient achieved by UTL	0.785
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.507
95% USL	0.57	95% KM Chebyshev UPL	0.638

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.



**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

Pyrene (a)

General Statistics			
Total Number of Observations	30	Number of Missing Observations	0
Number of Distinct Observations	30		
Number of Detects	29	Number of Non-Detects	1
Number of Distinct Detects	29	Number of Distinct Non-Detects	1
Minimum Detect	0.00472	Minimum Non-Detect	0.00227
Maximum Detect	0.607	Maximum Non-Detect	0.00227
Variance Detected	0.016	Percent Non-Detects	3.333%
Mean Detected	0.0854	SD Detected	0.126
Mean of Detected Logged Data	-3.127	SD of Detected Logged Data	1.174

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.22	d2max (for USL)	2.745
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.589	<b>Shapiro Wilk GOF Test</b>
1% Shapiro Wilk Critical Value	0.898	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.324	<b>Lilliefors GOF Test</b>
1% Lilliefors Critical Value	0.189	Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level**

**Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.0826	KM SD	0.123
95% UTL95% Coverage	0.356	95% KM UPL (t)	0.295
90% KM Percentile (z)	0.24	95% KM Percentile (z)	0.285
99% KM Percentile (z)	0.369	95% KM USL	0.42

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.0826	SD	0.125
95% UTL95% Coverage	0.36	95% UPL (t)	0.299
90% Percentile (z)	0.243	95% Percentile (z)	0.288
99% Percentile (z)	0.374	95% USL	0.426

**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons**

**Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	0.766	<b>Anderson-Darling GOF Test</b>
5% A-D Critical Value	0.779	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.183	<b>Kolmogorov-Smirnov GOF</b>
5% K-S Critical Value	0.168	Data Not Gamma Distributed at 5% Significance Level

**Detected data follow Appr. Gamma Distribution at 5% Significance Level**

**Gamma Statistics on Detected Data Only**

k hat (MLE)	0.88	k star (bias corrected MLE)	0.812
Theta hat (MLE)	0.0971	Theta star (bias corrected MLE)	0.105
nu hat (MLE)	51.01	nu star (bias corrected)	47.07
MLE Mean (bias corrected)	0.0854		
MLE Sd (bias corrected)	0.0948	95% Percentile of Chisquare (2kstar)	5.238

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00472	Mean	0.0829
Maximum	0.607	Median	0.0449
SD	0.125	CV	1.507
k hat (MLE)	0.857	k star (bias corrected MLE)	0.794
Theta hat (MLE)	0.0967	Theta star (bias corrected MLE)	0.104
nu hat (MLE)	51.45	nu star (bias corrected)	47.64
MLE Mean (bias corrected)	0.0829	MLE Sd (bias corrected)	0.093
95% Percentile of Chisquare (2kstar)	5.165	90% Percentile	0.202
95% Percentile	0.27	99% Percentile	0.43

The following statistics are computed using Gamma ROS Statistics on Imputed Data

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.372	0.393	95% Approx. Gamma UPL	0.265	0.27
95% Gamma USL	0.513	0.567			

**Estimates of Gamma Parameters using KM Estimates**

Mean (KM)	0.0826	SD (KM)	0.123
Variance (KM)	0.0151	SE of Mean (KM)	0.0229
k hat (KM)	0.451	k star (KM)	0.428
nu hat (KM)	27.08	nu star (KM)	25.71
theta hat (KM)	0.183	theta star (KM)	0.193
80% gamma percentile (KM)	0.134	90% gamma percentile (KM)	0.23
95% gamma percentile (KM)	0.335	99% gamma percentile (KM)	0.597

The following statistics are computed using gamma distribution and KM estimates

Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.371	0.396	95% Approx. Gamma UPL	0.264	0.271
95% KM Gamma Percentile	0.248	0.253	95% Gamma USL	0.513	0.574

**Lognormal GOF Test on Detected Observations Only**

Shapiro Wilk Test Statistic	0.976	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk Critical Value	0.937	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.109	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.148	Detected Data appear Lognormal at 10% Significance Level

Detected Data appear Lognormal at 10% Significance Level

**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**

Mean in Original Scale	0.0826	Mean in Log Scale	-3.225
SD in Original Scale	0.125	SD in Log Scale	1.273
95% UTL95% Coverage	0.671	95% BCA UTL95% Coverage	0.607
95% Bootstrap (%) UTL95% Coverage	0.607	95% UPL (t)	0.358
90% Percentile (z)	0.203	95% Percentile (z)	0.323
99% Percentile (z)	0.768	95% USL	1.31

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-3.226	95% KM UTL (Lognormal)	95% Coverage	0.641
KM SD of Logged Data	1.253	95% KM UPL (Lognormal)		0.346
95% KM Percentile Lognormal (z)	0.312	95% KM USL (Lognormal)		1.237

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.0826	Mean in Log Scale	-3.249
SD in Original Scale	0.125	SD in Log Scale	1.333
95% UTL	95% Coverage	95% UPL (t)	0.388
90% Percentile (z)	0.214	95% Percentile (z)	0.348
99% Percentile (z)	0.862	95% USL	1.506

**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**

**Nonparametric Distribution Free Background Statistics**

**Data appear to follow a Discernible Distribution**

**Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)**

Order of Statistic, r	30	95% UTL with 95% Coverage	0.607
Approx, f used to compute achieved CC	1.579	Approximate Actual Confidence Coefficient achieved by UTL	0.785
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.489
95% USL	0.607	95% KM Chebyshev UPL	0.628

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

Pyrene (b)

General Statistics			
Total Number of Observations	30	Number of Missing Observations	0
Number of Distinct Observations	30		
Number of Detects	29	Number of Non-Detects	1
Number of Distinct Detects	29	Number of Distinct Non-Detects	1
Minimum Detect	0.0117	Minimum Non-Detect	0.0024
Maximum Detect	1.89	Maximum Non-Detect	0.0024
Variance Detected	0.117	Percent Non-Detects	3.333%
Mean Detected	0.158	SD Detected	0.342
Mean of Detected Logged Data	-2.547	SD of Detected Logged Data	1.042

**Critical Values for Background Threshold Values (BTVs)**

Tolerance Factor K (For UTL)	2.22	d2max (for USL)	2.745
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**Normal GOF Test on Detects Only**

Shapiro Wilk Test Statistic	0.367	<b>Shapiro Wilk GOF Test</b>
1% Shapiro Wilk Critical Value	0.898	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.344	<b>Lilliefors GOF Test</b>
1% Lilliefors Critical Value	0.189	Data Not Normal at 1% Significance Level

**Data Not Normal at 1% Significance Level****Kaplan Meier (KM) Background Statistics Assuming Normal Distribution**

KM Mean	0.153	KM SD	0.332
95% UTL95% Coverage	0.889	95% KM UPL (t)	0.726
90% KM Percentile (z)	0.578	95% KM Percentile (z)	0.699
99% KM Percentile (z)	0.925	95% KM USL	1.064

**DL/2 Substitution Background Statistics Assuming Normal Distribution**

Mean	0.153	SD	0.337
95% UTL95% Coverage	0.902	95% UPL (t)	0.736
90% Percentile (z)	0.585	95% Percentile (z)	0.708
99% Percentile (z)	0.938	95% USL	1.079

**DL/2 is not a recommended method. DL/2 provided for comparisons and historical reasons****Gamma GOF Tests on Detected Observations Only**

A-D Test Statistic	1.739	<b>Anderson-Darling GOF Test</b>
5% A-D Critical Value	0.78	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.215	<b>Kolmogorov-Smirnov GOF</b>
5% K-S Critical Value	0.168	Data Not Gamma Distributed at 5% Significance Level

**Data Not Gamma Distributed at 5% Significance Level****Gamma Statistics on Detected Data Only**

k hat (MLE)	0.839	k star (bias corrected MLE)	0.775
Theta hat (MLE)	0.189	Theta star (bias corrected MLE)	0.204
nu hat (MLE)	48.64	nu star (bias corrected)	44.94
MLE Mean (bias corrected)	0.158		
MLE Sd (bias corrected)	0.18	95% Percentile of Chisquare (2kstar)	5.085

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Gamma ROS Statistics using Imputed Non-Detects**

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.153
Maximum	1.89	Median	0.0743
SD	0.337	CV	2.2
k hat (MLE)	0.802	k star (bias corrected MLE)	0.744
Theta hat (MLE)	0.191	Theta star (bias corrected MLE)	0.206
nu hat (MLE)	48.09	nu star (bias corrected)	44.62
MLE Mean (bias corrected)	0.153	MLE Sd (bias corrected)	0.178
95% Percentile of Chisquare (2kstar)	4.953	90% Percentile	0.379
95% Percentile	0.511	99% Percentile	0.822

The following statistics are computed using Gamma ROS Statistics on Imputed Data

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.667	0.67	95% Approx. Gamma UPL	0.473	0.461
95% Gamma USL	0.925	0.964			

**Estimates of Gamma Parameters using KM Estimates**

Mean (KM)	0.153	SD (KM)	0.332
Variance (KM)	0.11	SE of Mean (KM)	0.0616
k hat (KM)	0.213	k star (KM)	0.214
nu hat (KM)	12.77	nu star (KM)	12.83
theta hat (KM)	0.719	theta star (KM)	0.716
80% gamma percentile (KM)	0.208	90% gamma percentile (KM)	0.463
95% gamma percentile (KM)	0.775	99% gamma percentile (KM)	1.624

The following statistics are computed using gamma distribution and KM estimates

**Upper Limits using Wilson Hilferty (WH) and Hawkins Wixley (HW) Methods**

	WH	HW		WH	HW
95% Approx. Gamma UTL with 95% Coverage	0.664	0.677	95% Approx. Gamma UPL	0.47	0.463
95% KM Gamma Percentile	0.442	0.433	95% Gamma USL	0.923	0.978

**Lognormal GOF Test on Detected Observations Only**

Shapiro Wilk Test Statistic	0.955	<b>Shapiro Wilk GOF Test</b>
10% Shapiro Wilk Critical Value	0.937	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.107	<b>Lilliefors GOF Test</b>
10% Lilliefors Critical Value	0.148	Detected Data appear Lognormal at 10% Significance Level

Detected Data appear Lognormal at 10% Significance Level

**Background Lognormal ROS Statistics Assuming Lognormal Distribution Using Imputed Non-Detects**

Mean in Original Scale	0.153	Mean in Log Scale	-2.633
SD in Original Scale	0.337	SD in Log Scale	1.126
95% UTL95% Coverage	0.875	95% BCA UTL95% Coverage	1.89
95% Bootstrap (%) UTL95% Coverage	1.89	95% UPL (t)	0.502
90% Percentile (z)	0.304	95% Percentile (z)	0.458
99% Percentile (z)	0.986	95% USL	1.58

**ATTACHMENT C**  
**ProUCL Output Files - BTV Output from ProUCL by BRA**  
Former Houston Wood Preserving Works, Houston, Texas

**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**

KM Mean of Logged Data	-2.663	95% KM UTL (Lognormal)	95% Coverage	0.968
KM SD of Logged Data	1.185	95% KM UPL (Lognormal)		0.54
95% KM Percentile Lognormal (z)	0.49	95% KM USL (Lognormal)		1.803

**Background DL/2 Statistics Assuming Lognormal Distribution**

Mean in Original Scale	0.153	Mean in Log Scale	-2.686
SD in Original Scale	0.337	SD in Log Scale	1.277
95% UTL	95% Coverage	95% UPL (t)	0.618
90% Percentile (z)	0.35	95% Percentile (z)	0.556
99% Percentile (z)	1.328	95% USL	2.266

**DL/2 is not a Recommended Method. DL/2 provided for comparisons and historical reasons.**

**Nonparametric Distribution Free Background Statistics**

**Data appear to follow a Discernible Distribution**

**Nonparametric Upper Limits for BTVs (no distinction made between detects and nondetects)**

Order of Statistic, r	30	95% UTL with 95% Coverage	1.89
Approx, f used to compute achieved CC	1.579	Approximate Actual Confidence Coefficient achieved by UTL	0.785
Approximate Sample Size needed to achieve specified CC	59	95% UPL	1.051
95% USL	1.89	95% KM Chebyshev UPL	1.623

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

**ProUCL Output File**  
**Non-Parametric Methods**

## ATTACHMENT C

## ProUCL Output Files - ProUCL Results Nonparametric Detect Below 50

Former Houston Wood Preserving Works, Houston, Texas

## Nonparametric Background Statistics for Data Sets with Non-Detects

## User Selected Options

Date/Time of Computation ProUCL 5.2 2/28/2025 4:37:41 PM

From File for ProUCL NP only analytes.xls

Full Precision OFF

Confidence Coefficient 95%

Coverage 95%

Different or Future K Observations 1

## 1-Methylnaphthalene

## General Statistics

Total Number of Observations	60	Number of Distinct Observations	46
Number of Detects	10	Number of Non-Detects	50
Number of Distinct Detects	10	Number of Distinct Non-Detects	36
Minimum Detect	0.00598	Minimum Non-Detect	0.00488
Maximum Detect	0.147	Maximum Non-Detect	0.00596
Variance Detected	0.00196	Percent Non-Detects	83.33%
Mean Detected	0.0311	SD Detected	0.0442
Mean of Detected Logged Data	-4.097	SD of Detected Logged Data	1.077

## Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.017	d2max (for USL)	3.027
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## Nonparametric Distribution Free Background Statistics

Data do not follow a Discernible Distribution

## Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

Mean	0.00925	SD	0.0197
95% UTL95% Coverage	0.049	95% KM UPL (t)	0.0425
95% KM Chebyshev UPL	0.0959	90% KM Percentile (z)	0.0345
95% KM Percentile (z)	0.0417	99% KM Percentile (z)	0.0551
95% KM USL	0.069		

## Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	59	95% UTL with 95% Coverage	0.147
Approx, f used to compute achieved CC	1.553	Approximate Actual Confidence Coefficient achieved by UTL	0.808
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.0383
95% USL	0.147	95% KM Chebyshev UPL	0.0959

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.



## ATTACHMENT C

## ProUCL Output Files - ProUCL Results Nonparametric Detect Below 50

Former Houston Wood Preserving Works, Houston, Texas

## 2-Methylnaphthalene

## General Statistics

Total Number of Observations	60	Number of Distinct Observations	45
Number of Detects	12	Number of Non-Detects	48
Number of Distinct Detects	12	Number of Distinct Non-Detects	33
Minimum Detect	0.00514	Minimum Non-Detect	0.00464
Maximum Detect	0.448	Maximum Non-Detect	0.00567
Variance Detected	0.0155	Percent Non-Detects	80%
Mean Detected	0.0578	SD Detected	0.125
Mean of Detected Logged Data	-3.927	SD of Detected Logged Data	1.33

## Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.017	d2max (for USL)	3.027
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## Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution

## Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

Mean	0.0153	SD	0.0574
95% UTL95% Coverage	0.131	95% KM UPL (t)	0.112
95% KM Chebyshev UPL	0.268	90% KM Percentile (z)	0.0888
95% KM Percentile (z)	0.11	99% KM Percentile (z)	0.149
95% KM USL	0.189		

## Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	59	95% UTL with 95% Coverage	0.448
Approx, f used to compute achieved CC	1.553	Approximate Actual Confidence Coefficient achieved by UTL	0.808
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.0536
95% USL	0.448	95% KM Chebyshev UPL	0.268

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

## ATTACHMENT C

## ProUCL Output Files - ProUCL Results Nonparametric Detect Below 50

Former Houston Wood Preserving Works, Houston, Texas

## Acenaphthene

## General Statistics

Total Number of Observations	60	Number of Distinct Observations	45
Number of Detects	19	Number of Non-Detects	41
Number of Distinct Detects	19	Number of Distinct Non-Detects	27
Minimum Detect	0.00244	Minimum Non-Detect	0.00224
Maximum Detect	0.0662	Maximum Non-Detect	0.00606
Variance Detected	2.0168E-4	Percent Non-Detects	68.33%
Mean Detected	0.00882	SD Detected	0.0142
Mean of Detected Logged Data	-5.171	SD of Detected Logged Data	0.778

## Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.017	d2max (for USL)	3.027
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## Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution

## Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

Mean	0.00433	SD	0.00836
95% UTL95% Coverage	0.0212	95% KM UPL (t)	0.0184
95% KM Chebyshev UPL	0.0411	90% KM Percentile (z)	0.015
95% KM Percentile (z)	0.0181	99% KM Percentile (z)	0.0238
95% KM USL	0.0296		

## Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	59	95% UTL with 95% Coverage	0.0662
Approx, f used to compute achieved CC	1.553	Approximate Actual Confidence Coefficient achieved by UTL	0.808
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.00996
95% USL	0.0662	95% KM Chebyshev UPL	0.0411

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

## ATTACHMENT C

## ProUCL Output Files - ProUCL Results Nonparametric Detect Below 50

Former Houston Wood Preserving Works, Houston, Texas

## Benzyl butyl phthalate

## General Statistics

Total Number of Observations	60	Number of Distinct Observations	32
Number of Detects	13	Number of Non-Detects	47
Number of Distinct Detects	12	Number of Distinct Non-Detects	20
Minimum Detect	0.0135	Minimum Non-Detect	0.0113
Maximum Detect	14.8	Maximum Non-Detect	0.0598
Variance Detected	16.79	Percent Non-Detects	78.33%
Mean Detected	1.163	SD Detected	4.097
Mean of Detected Logged Data	-3.27	SD of Detected Logged Data	1.859

## Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.017	d2max (for USL)	3.027
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## Nonparametric Distribution Free Background Statistics

Data do not follow a Discernible Distribution

## Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

Mean	0.261	SD	1.893
95% UTL95% Coverage	4.078	95% KM UPL (t)	3.45
95% KM Chebyshev UPL	8.58	90% KM Percentile (z)	2.687
95% KM Percentile (z)	3.374	99% KM Percentile (z)	4.664
95% KM USL	5.99		

## Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	59	95% UTL with 95% Coverage	14.8
Approx, f used to compute achieved CC	1.553	Approximate Actual Confidence Coefficient achieved by UTL	0.808
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.0598
95% USL	14.8	95% KM Chebyshev UPL	8.58

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

## ATTACHMENT C

## ProUCL Output Files - ProUCL Results Nonparametric Detect Below 50

Former Houston Wood Preserving Works, Houston, Texas

## Bis(2-Ethylhexyl) phthalate

## General Statistics

Total Number of Observations	60	Number of Distinct Observations	54
Number of Detects	23	Number of Non-Detects	37
Number of Distinct Detects	23	Number of Distinct Non-Detects	31
Minimum Detect	0.0477	Minimum Non-Detect	0.0453
Maximum Detect	0.389	Maximum Non-Detect	0.243
Variance Detected	0.00693	Percent Non-Detects	61.67%
Mean Detected	0.115	SD Detected	0.0833
Mean of Detected Logged Data	-2.327	SD of Detected Logged Data	0.537

## Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.017	d2max (for USL)	3.027
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## Nonparametric Distribution Free Background Statistics

Data do not follow a Discernible Distribution

## Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

Mean	0.0727	SD	0.0608
95% UTL95% Coverage	0.195	95% KM UPL (t)	0.175
95% KM Chebyshev UPL	0.34	90% KM Percentile (z)	0.151
95% KM Percentile (z)	0.173	99% KM Percentile (z)	0.214
95% KM USL	0.257		

## Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	59	95% UTL with 95% Coverage	0.389
Approx, f used to compute achieved CC	1.553	Approximate Actual Confidence Coefficient achieved by UTL	0.808
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.243
95% USL	0.389	95% KM Chebyshev UPL	0.34

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

## ATTACHMENT C

## ProUCL Output Files - ProUCL Results Nonparametric Detect Below 50

Former Houston Wood Preserving Works, Houston, Texas

## Fluorene

## General Statistics

Total Number of Observations	60	Number of Distinct Observations	43
Number of Detects	16	Number of Non-Detects	44
Number of Distinct Detects	15	Number of Distinct Non-Detects	28
Minimum Detect	0.00271	Minimum Non-Detect	0.0022
Maximum Detect	0.0517	Maximum Non-Detect	0.00272
Variance Detected	2.8382E-4	Percent Non-Detects	73.33%
Mean Detected	0.0125	SD Detected	0.0168
Mean of Detected Logged Data	-4.986	SD of Detected Logged Data	1.013

## Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.017	d2max (for USL)	3.027
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## Nonparametric Distribution Free Background Statistics

Data do not follow a Discernible Distribution

## Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

Mean	0.00495	SD	0.00958
95% UTL95% Coverage	0.0243	95% KM UPL (t)	0.0211
95% KM Chebyshev UPL	0.047	90% KM Percentile (z)	0.0172
95% KM Percentile (z)	0.0207	99% KM Percentile (z)	0.0272
95% KM USL	0.0339		

## Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	59	95% UTL with 95% Coverage	0.0517
Approx, f used to compute achieved CC	1.553	Approximate Actual Confidence Coefficient achieved by UTL	0.808
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.0386
95% USL	0.0517	95% KM Chebyshev UPL	0.047

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.

## ATTACHMENT C

## ProUCL Output Files - ProUCL Results Nonparametric Detect Below 50

Former Houston Wood Preserving Works, Houston, Texas

## Naphthalene

## General Statistics

Total Number of Observations	60	Number of Distinct Observations	47
Number of Detects	12	Number of Non-Detects	48
Number of Distinct Detects	12	Number of Distinct Non-Detects	35
Minimum Detect	0.00482	Minimum Non-Detect	0.00444
Maximum Detect	0.754	Maximum Non-Detect	0.00541
Variance Detected	0.0444	Percent Non-Detects	80%
Mean Detected	0.0943	SD Detected	0.211
Mean of Detected Logged Data	-3.615	SD of Detected Logged Data	1.5

## Critical Values for Background Threshold Values (BTVs)

Tolerance Factor K (For UTL)	2.017	d2max (for USL)	3.027
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## Nonparametric Distribution Free Background Statistics

Data appear to follow a Discernible Distribution

## Kaplan Meier (KM) Background Statistics Assuming Normal Distribution

Mean	0.0224	SD	0.0971
95% UTL95% Coverage	0.218	95% KM UPL (t)	0.186
95% KM Chebyshev UPL	0.449	90% KM Percentile (z)	0.147
95% KM Percentile (z)	0.182	99% KM Percentile (z)	0.248
95% KM USL	0.316		

## Nonparametric Upper Limits for BTVs(no distinction made between detects and nondetects)

Order of Statistic, r	59	95% UTL with 95% Coverage	0.754
Approx, f used to compute achieved CC	1.553	Approximate Actual Confidence Coefficient achieved by UTL	0.808
Approximate Sample Size needed to achieve specified CC	59	95% UPL	0.0742
95% USL	0.754	95% KM Chebyshev UPL	0.449

Note: The use of USL tends to yield a conservative estimate of BTV, especially when the sample size starts exceeding 20.

Therefore, one may use USL to estimate a BTV only when the data set represents a background data set free of outliers and consists of observations collected from clean unimpacted locations.

The use of USL tends to provide a balance between false positives and false negatives provided the data represents a background data set and when many onsite observations need to be compared with the BTV.