

# Appendix J

## Dioxin Congener Profile Charts

Appendix J presents two series of color charts that provide, for each sample, a visual display of the relative amount of each individual dioxin congener present in that sample. These visual displays are referred to as "congener profiles". Refer to Page 10 of the Phase II Final Report for a discussion of the term "congener".

Each chart consists of a series of multi-color bars. Each multi-color bar represents an individual soil sample. The soil sample label is presented along the left border of the chart. Each color on the multi-color bar represents an individual dioxin congener. A color key is presented at the bottom of the each page. The amount of a color on a multi-color bar directly relates to the amount of the corresponding dioxin congener that is present in the sample. Congener profile charts have been prepared for Phase II soil (including chicken eggs), Phase I soil, Sediment Study, and U.S. Army Corps of Engineers (USACE) sediment data.

Two sets of congener profile charts are included in Appendix J:

- **Part A-Concentration Profiles** were generated using the actual concentration of dioxin congeners that were identified in the sample. These charts can be used to evaluate the percentage of the total dioxin concentration that is made up by specific dioxin congeners.
- **Part B-TEQ Profiles** were generated using the total toxic equivalence (TEQ) that the concentration of dioxin congeners in the soil represents. The TEQ Profiles were developed to provide a visual representation of the toxic contribution of the dioxin congener relative to the total dioxin toxicity contained in the sample.

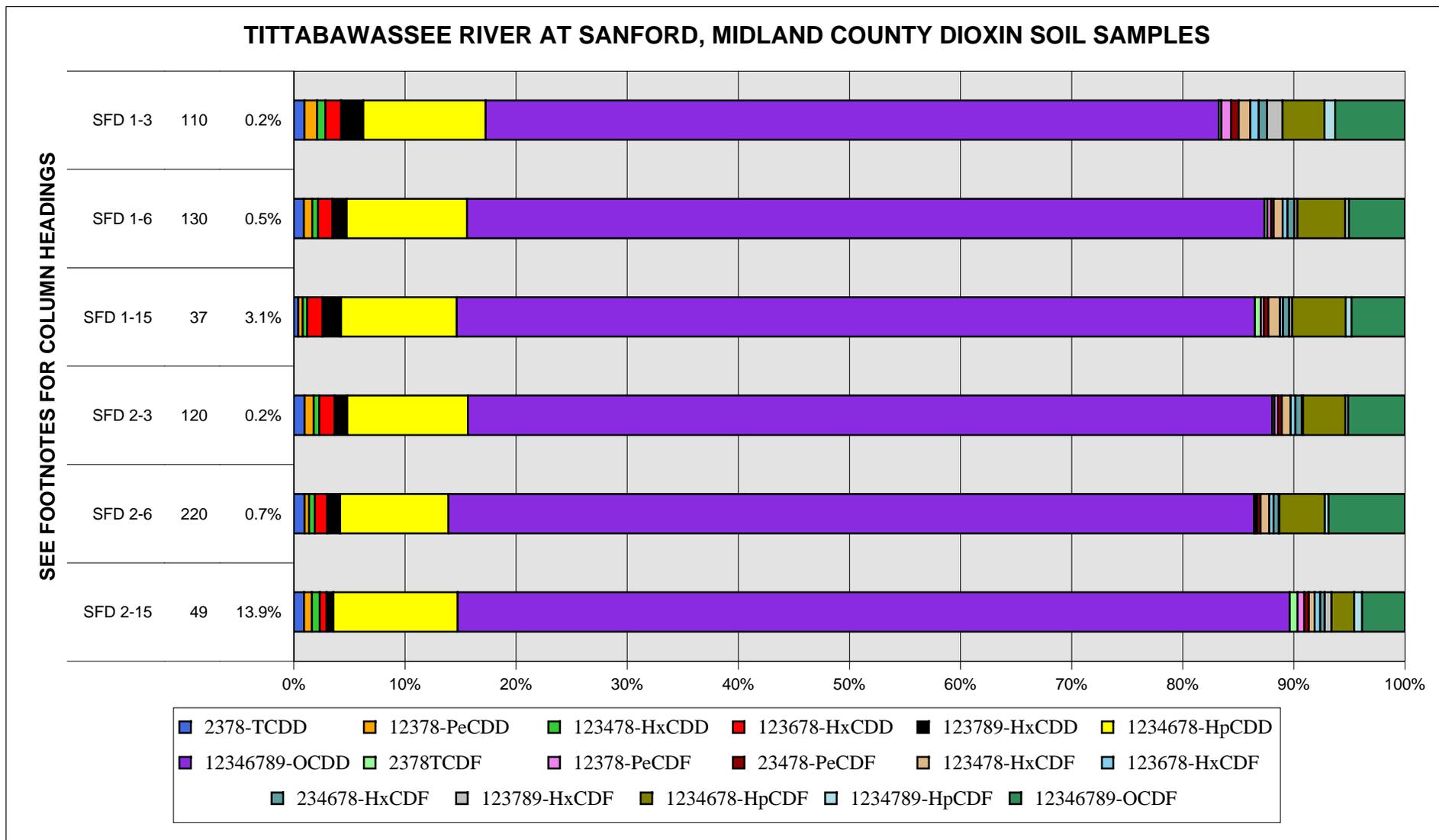
It is the intent of the DEQ that presenting congener profiles based on both soil concentration and TEQ will assist in understanding the similarities and differences among the sample locations.

A variety of methods are available to graphically display dioxin congener data, although there is no accepted best practice. The DEQ recognizes that all graphical techniques have certain strengths and weaknesses. The charts contained in this appendix are most useful for providing a general understanding of the makeup of each sample in terms of the most prevalent congener(s), and the congeners(s) that are most toxic. However, similarities and differences among the congeners that make up only a small percentage of the total may not be readily discernable in these charts.

The DEQ is continuing to analyze the Phase II data to better understand the dioxin contamination that has been identified. Patterns observed in these congener profile charts may be used to help direct this ongoing effort and to help formulate a more rigorous quantitative analysis of the patterns observed.

# CONCENTRATION PROFILES

## TITTABAWASSEE RIVER AT SANFORD, MIDLAND COUNTY DIOXIN SOIL SAMPLES



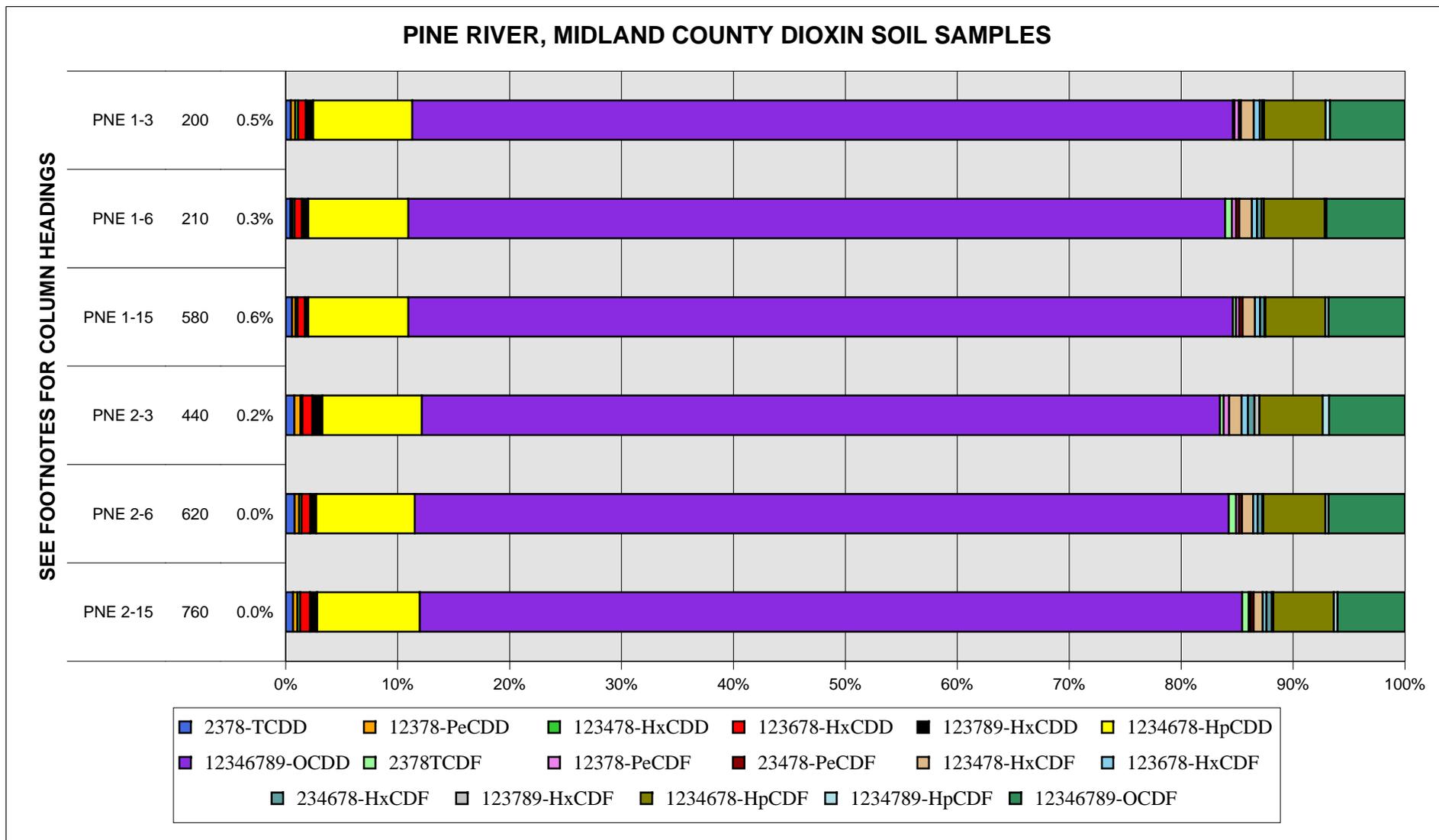
**Column 1** - Sample Location

**Column 2** - Total Concentration: This value does not represent toxicity and should not be compared to Part 201 criteria. All total concentrations represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

# CONCENTRATION PROFILES

## PINE RIVER, MIDLAND COUNTY DIOXIN SOIL SAMPLES



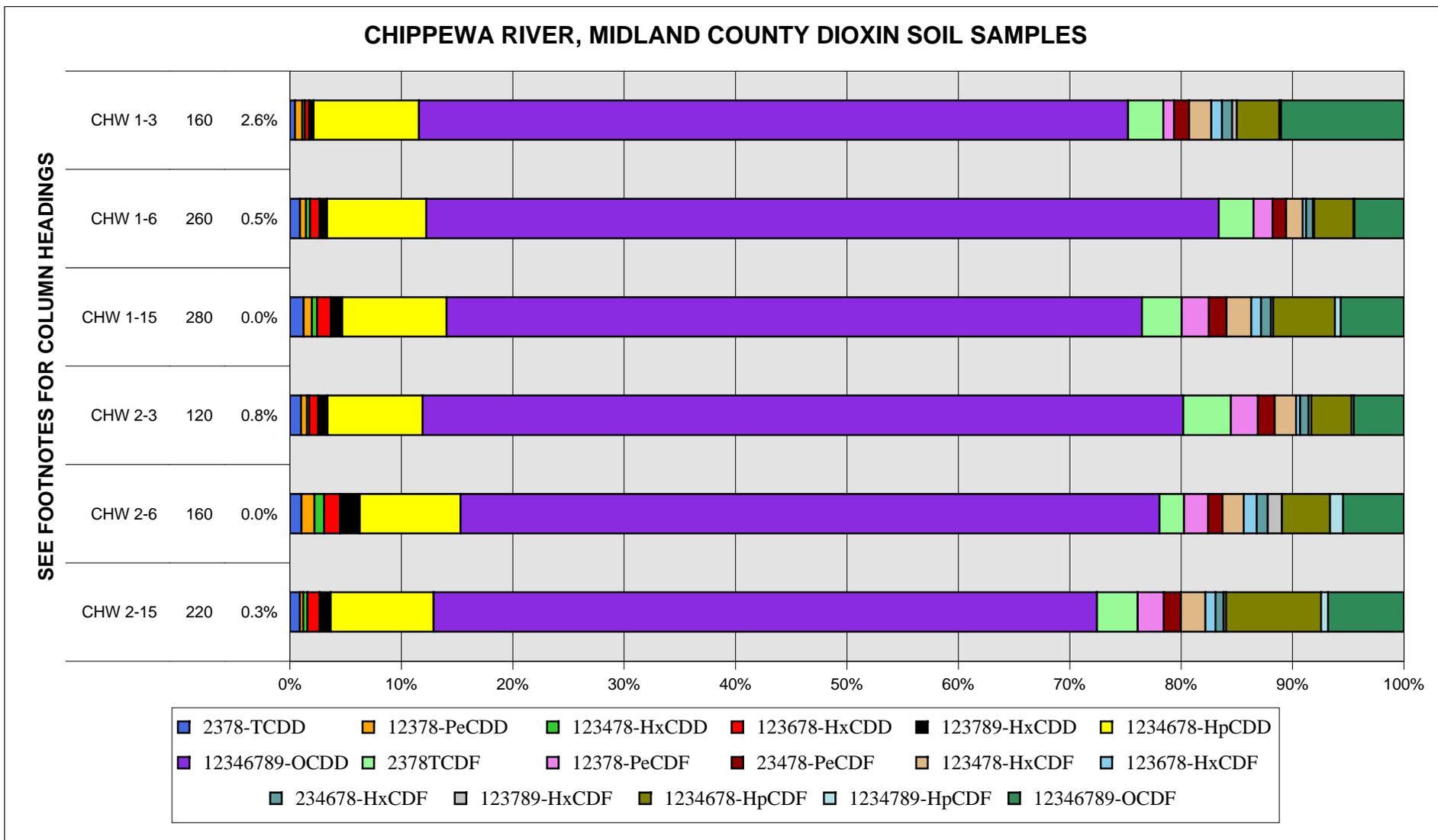
**Column 1** - Sample Location

**Column 2** - Total Concentration: This value does not represent toxicity and should not be compared to Part 201 criteria. All total concentrations represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

# CONCENTRATION PROFILES

## CHIPPEWA RIVER, MIDLAND COUNTY DIOXIN SOIL SAMPLES



**Column 1** - Sample Location

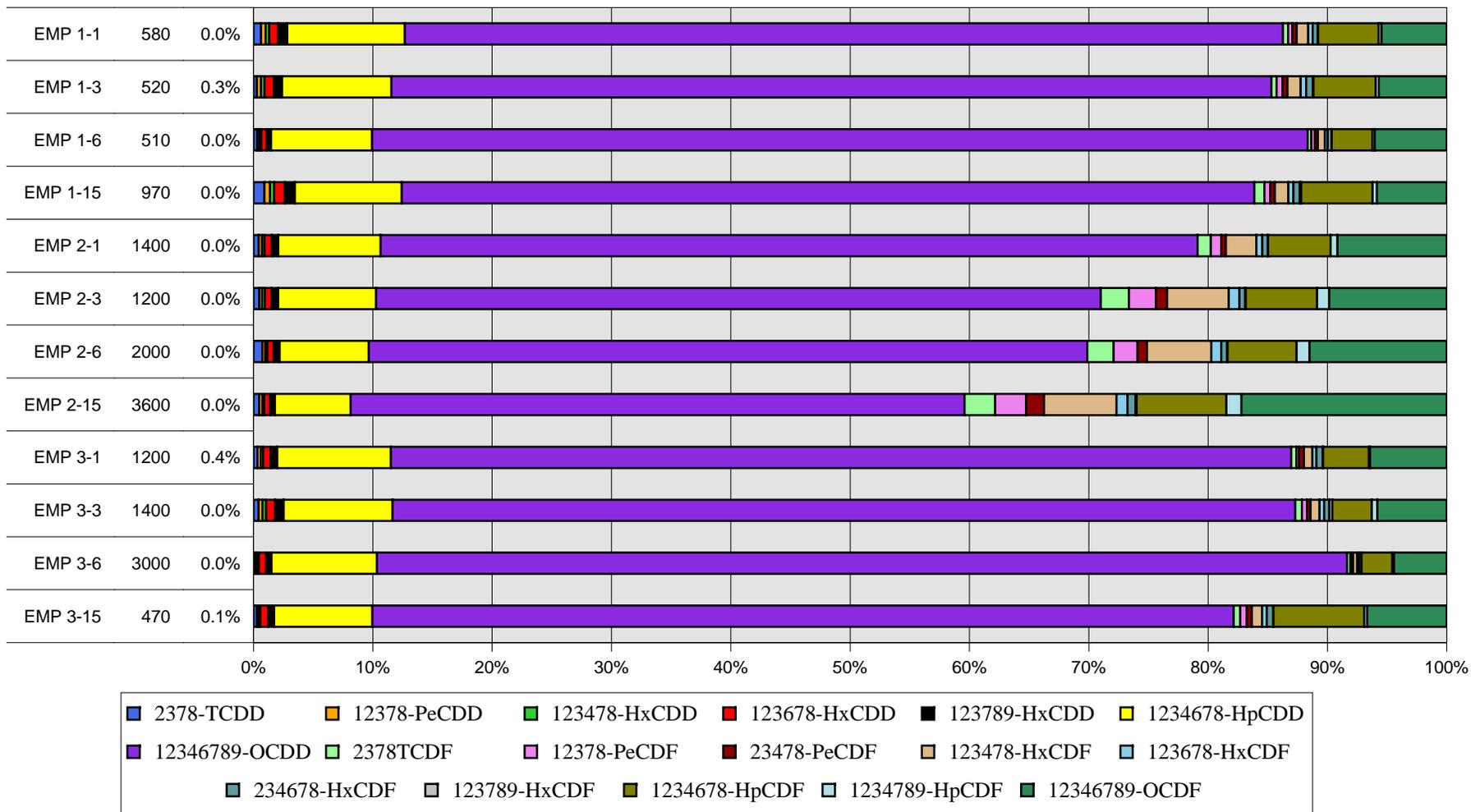
**Column 2** - Total Concentration: This value does not represent toxicity and should not be compared to Part 201 criteria. All total concentrations represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

# CONCENTRATION PROFILES

## EMERSON PARK, MIDLAND COUNTY DIOXIN SOIL SAMPLES

SEE FOOTNOTES FOR COLUMN HEADINGS



**Column 1** - Sample Location

**Column 2** - Total Concentration: This value does not represent toxicity and should not be compared to Part 201 criteria. All total concentrations represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

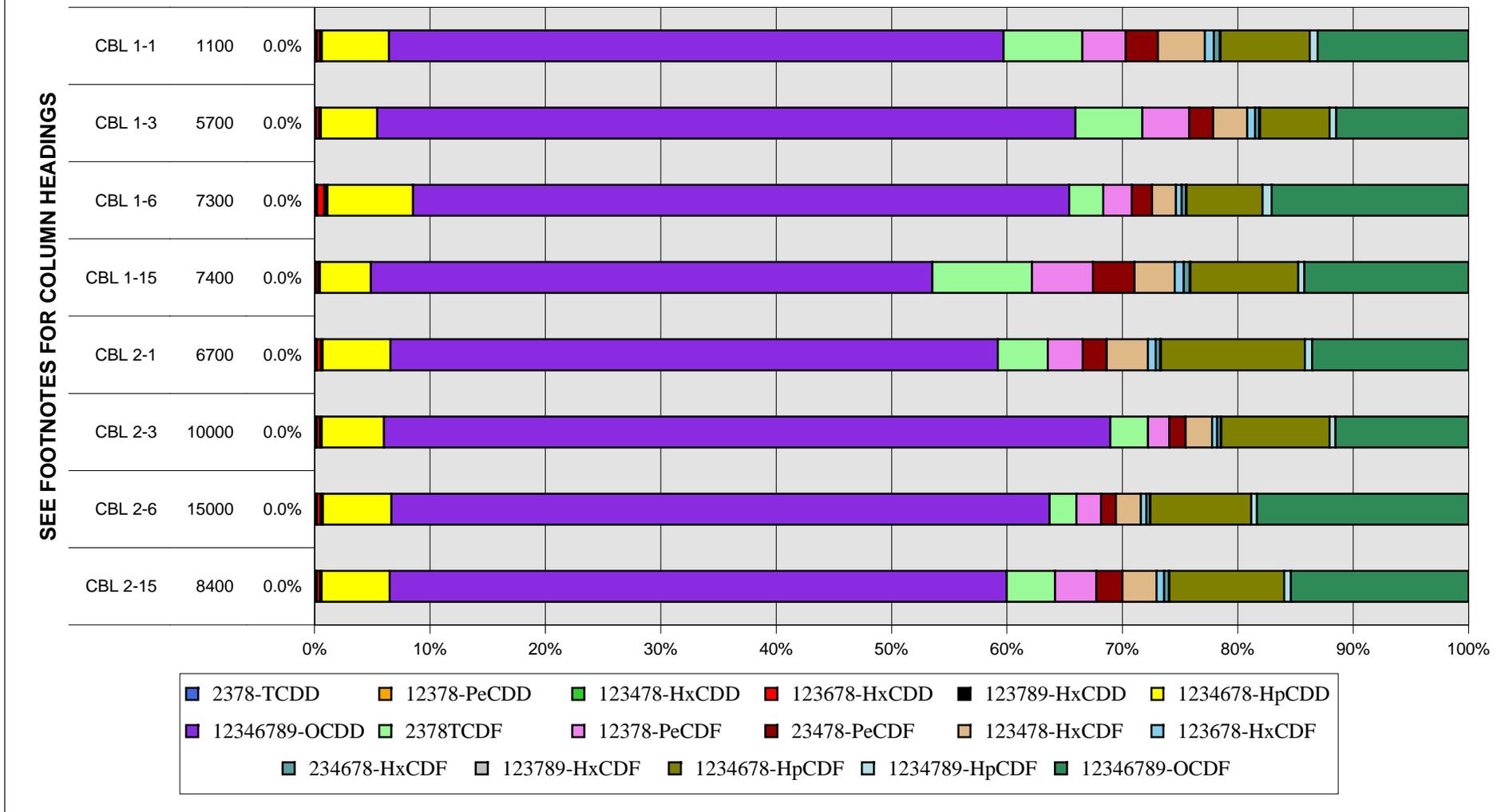
**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

Date: 7/30/2003

Data Subject to Revisions and/or Updates

# CONCENTRATION PROFILES

## CALDWELL BOAT LAUNCH, MIDLAND COUNTY DIOXIN SOIL SAMPLES



**Column 1** - Sample Location

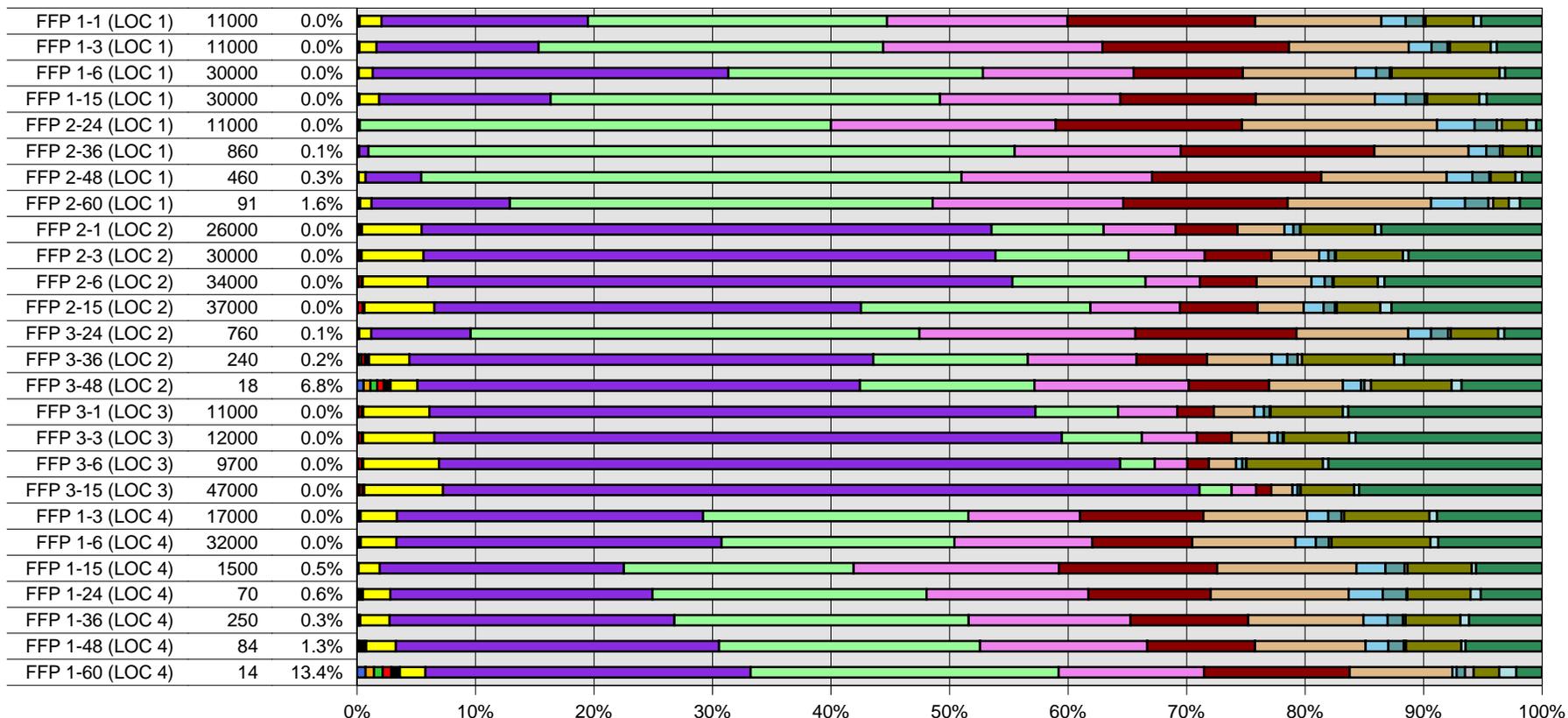
**Column 2** - Total Concentration: This value does not represent toxicity and should not be compared to Part 201 criteria. All total concentrations represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

# CONCENTRATION PROFILES

## FREELAND FESTIVAL PARK, SAGINAW COUNTY DIOXIN SOIL SAMPLES

SEE FOOTNOTES FOR COLUMN HEADINGS



**Column 1** - Sample Location

**Column 2** - Total Concentration: This value does not represent toxicity and should not be compared to Part 201 criteria. All total concentrations represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

Date: 7/30/2003

Data Subject to Revisions and/or Updates

# CONCENTRATION PROFILES

## LIVESTOCK FARM, SAGINAW COUNTY DIOXIN SOIL SAMPLES



**Column 1** - Sample Location

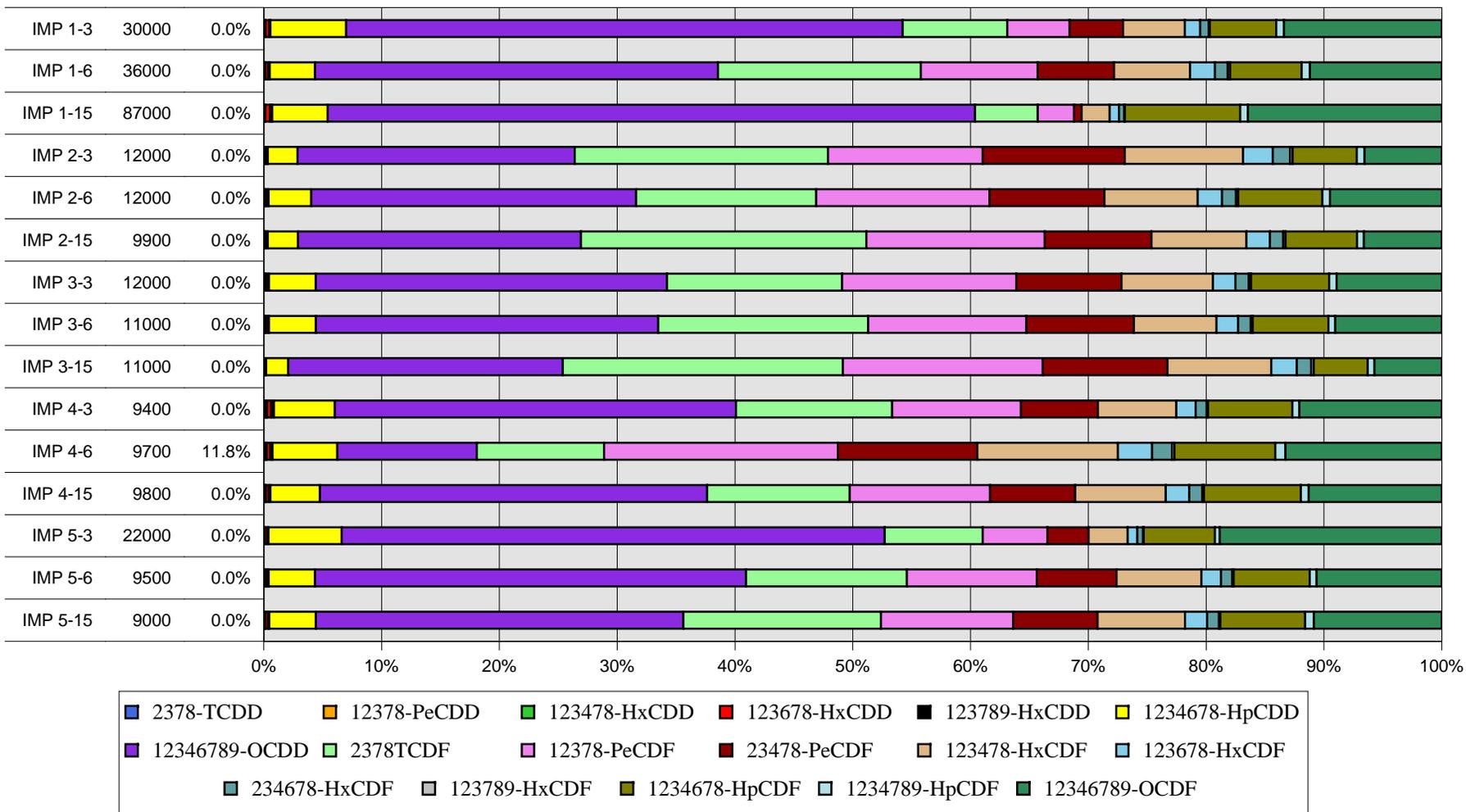
**Column 2** - Total Concentration: This value does not represent toxicity and should not be compared to Part 201 criteria. All total concentrations represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

# CONCENTRATION PROFILES

## IMERMAN PARK, SAGINAW COUNTY, DIOXIN SOIL SAMPLES 1 - 5

SEE FOOTNOTES FOR COLUMN HEADINGS



**Column 1** - Sample Location

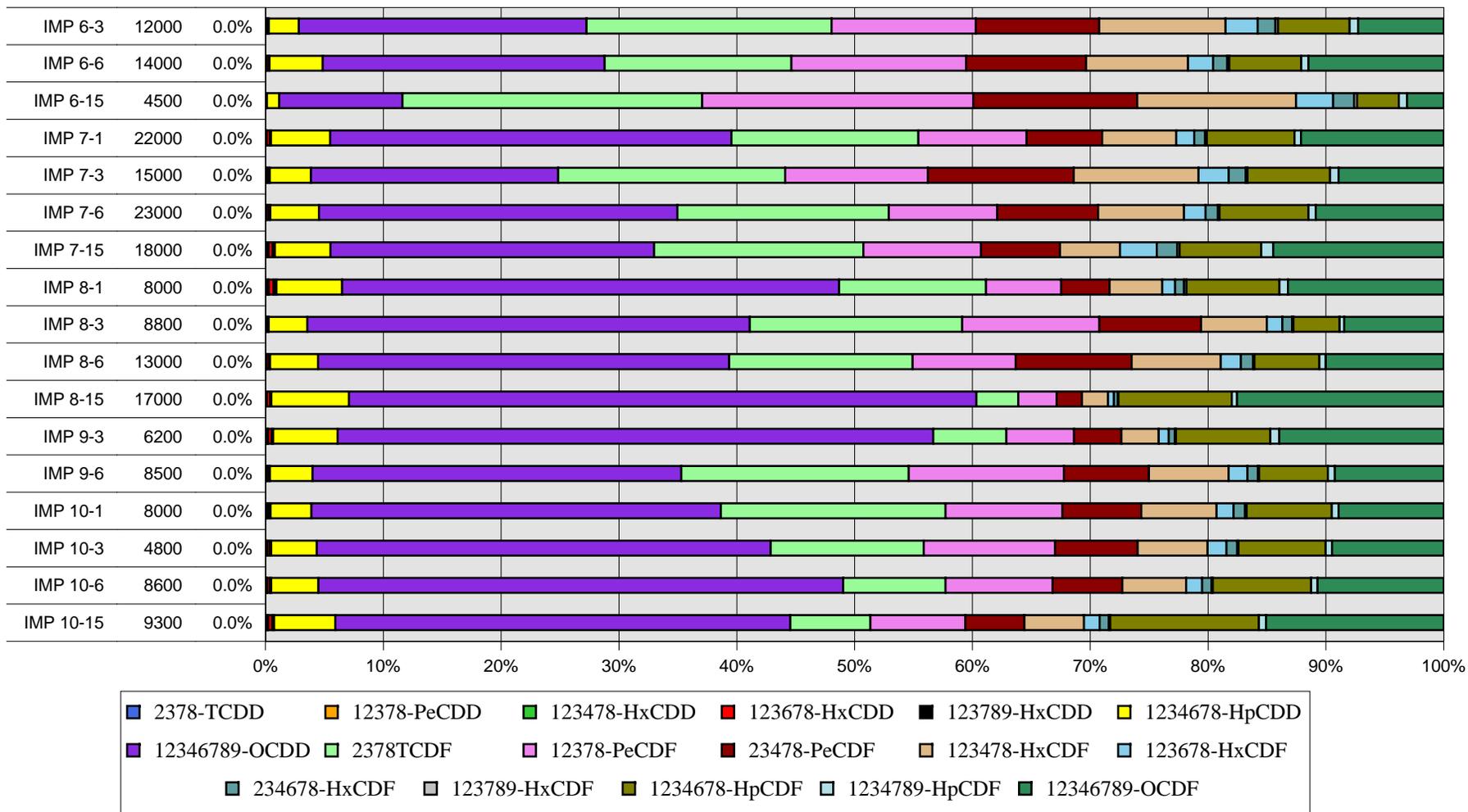
**Column 2** - Total Concentration: This value does not represent toxicity and should not be compared to Part 201 criteria. All total concentrations represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

# CONCENTRATION PROFILES

## IMERMAN PARK , SAGINAW COUNTY, DIOXIN SOIL SAMPLES 6 - 10

SEE FOOTNOTES FOR COLUMN HEADINGS



**Column 1** - Sample Location

**Column 2** - Total Concentration: This value does not represent toxicity and should not be compared to Part 201 criteria. All total concentrations represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

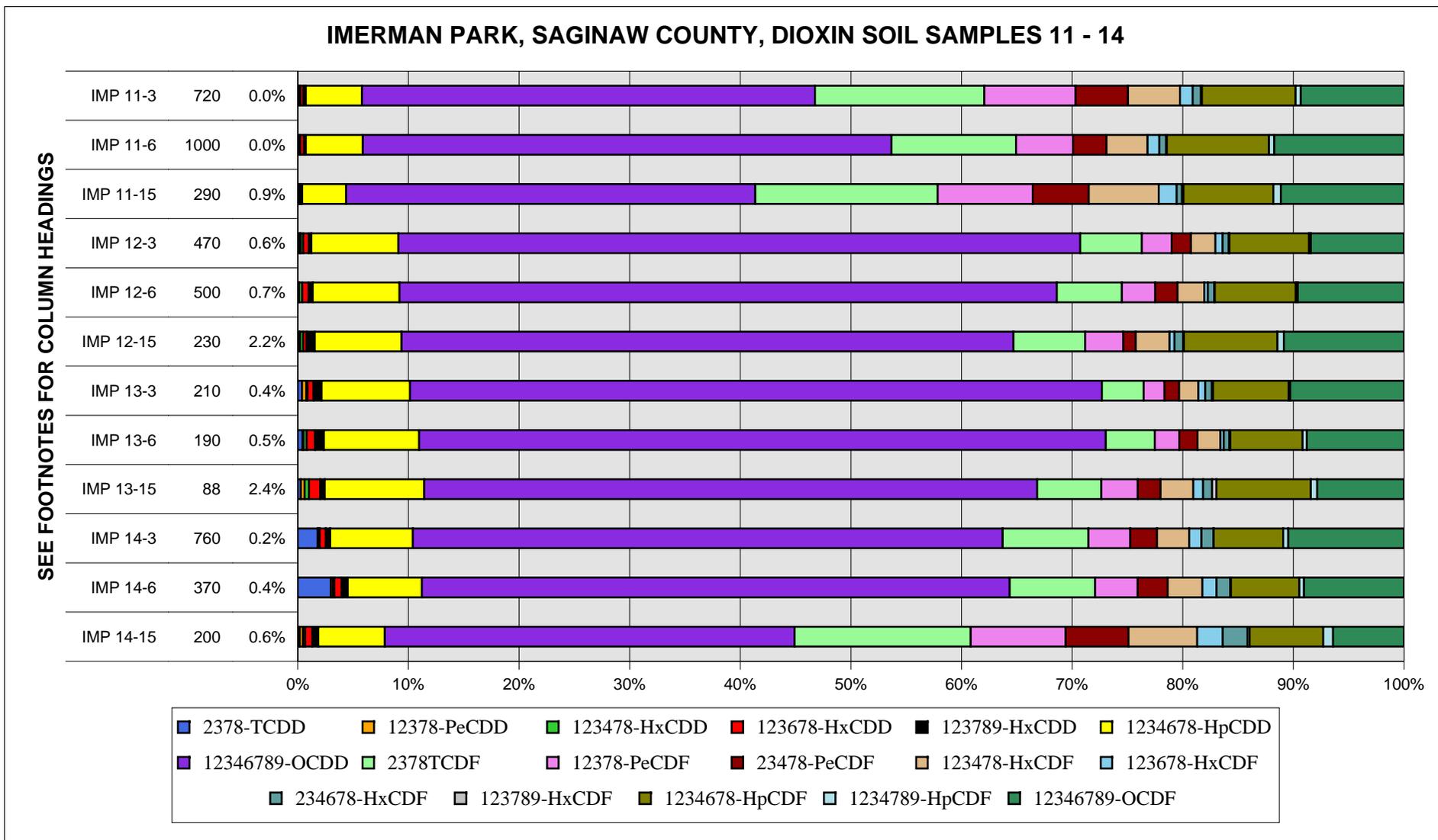
**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

Date: 7/30/2003

Data Subject to Revisions and/or Updates

# CONCENTRATION PROFILES

## IMERMAN PARK, SAGINAW COUNTY, DIOXIN SOIL SAMPLES 11 - 14



**Column 1** - Sample Location

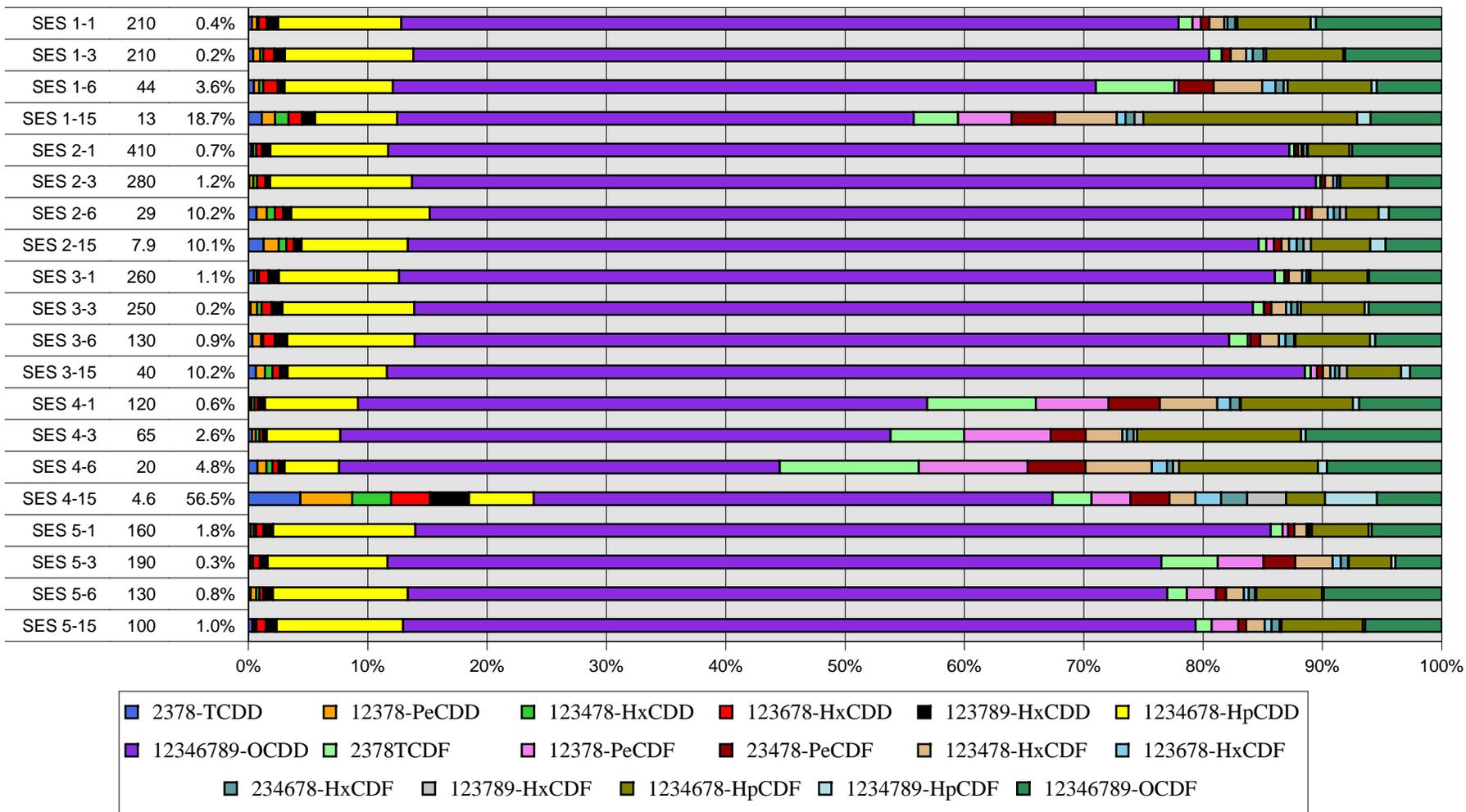
**Column 2** - Total Concentration: This value does not represent toxicity and should not be compared to Part 201 criteria. All total concentrations represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

# CONCENTRATION PROFILES

## SHIELDS ELEMENTARY SCHOOL, SAGINAW COUNTY DIOXIN SOIL SAMPLES

SEE FOOTNOTES FOR COLUMN HEADINGS



**Column 1** - Sample Location

**Column 2** - Total Concentration: This value does not represent toxicity and should not be compared to Part 201 criteria. All total concentrations represent those dioxins and furans with known TEFs and include non-detects valued at ½ of the detection level.

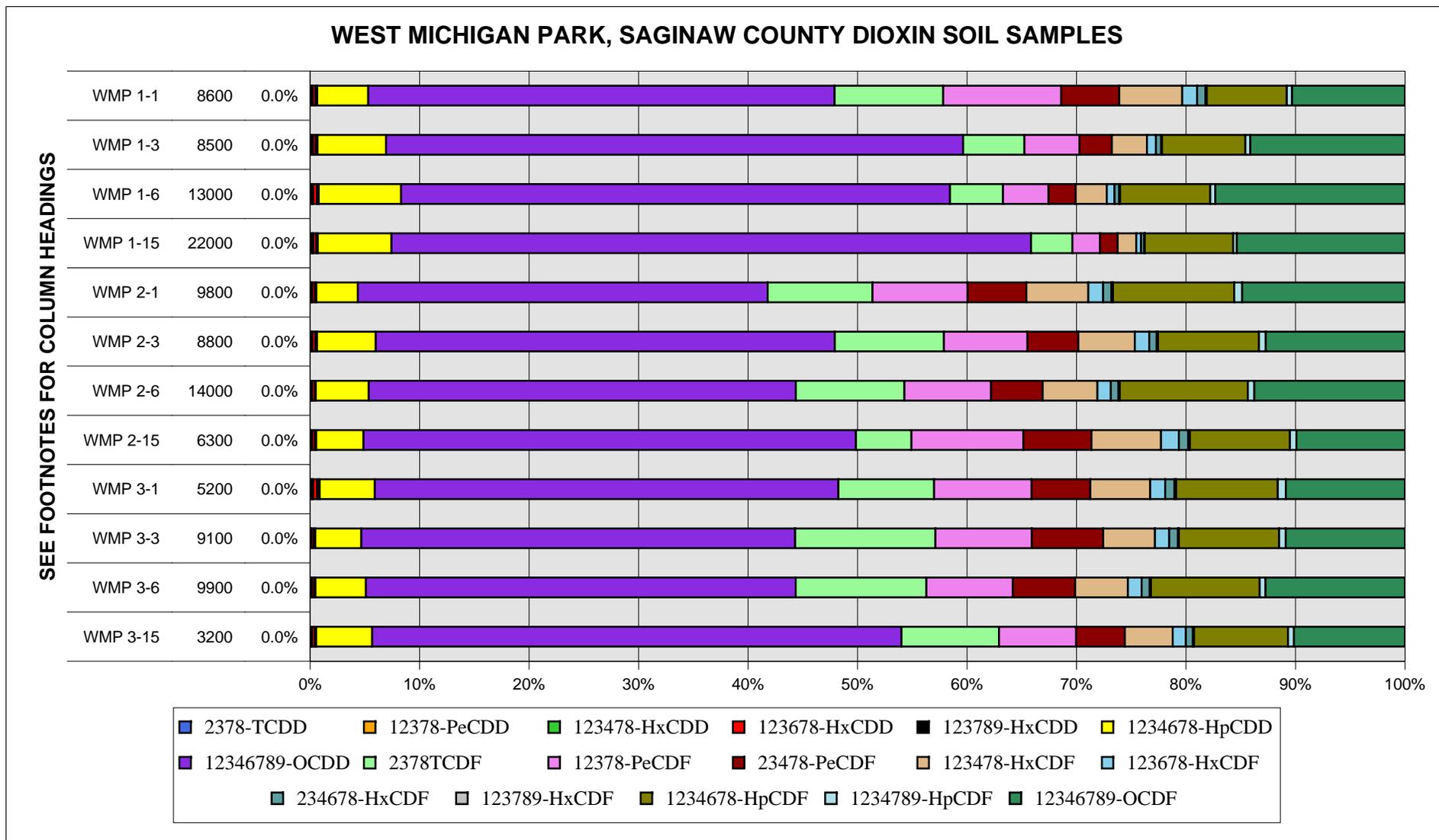
**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

Date: 7/30/2003

Data Subject to Revisions and/or Updates

# CONCENTRATION PROFILES

## WEST MICHIGAN PARK, SAGINAW COUNTY DIOXIN SOIL SAMPLES



**Column 1** - Sample Location

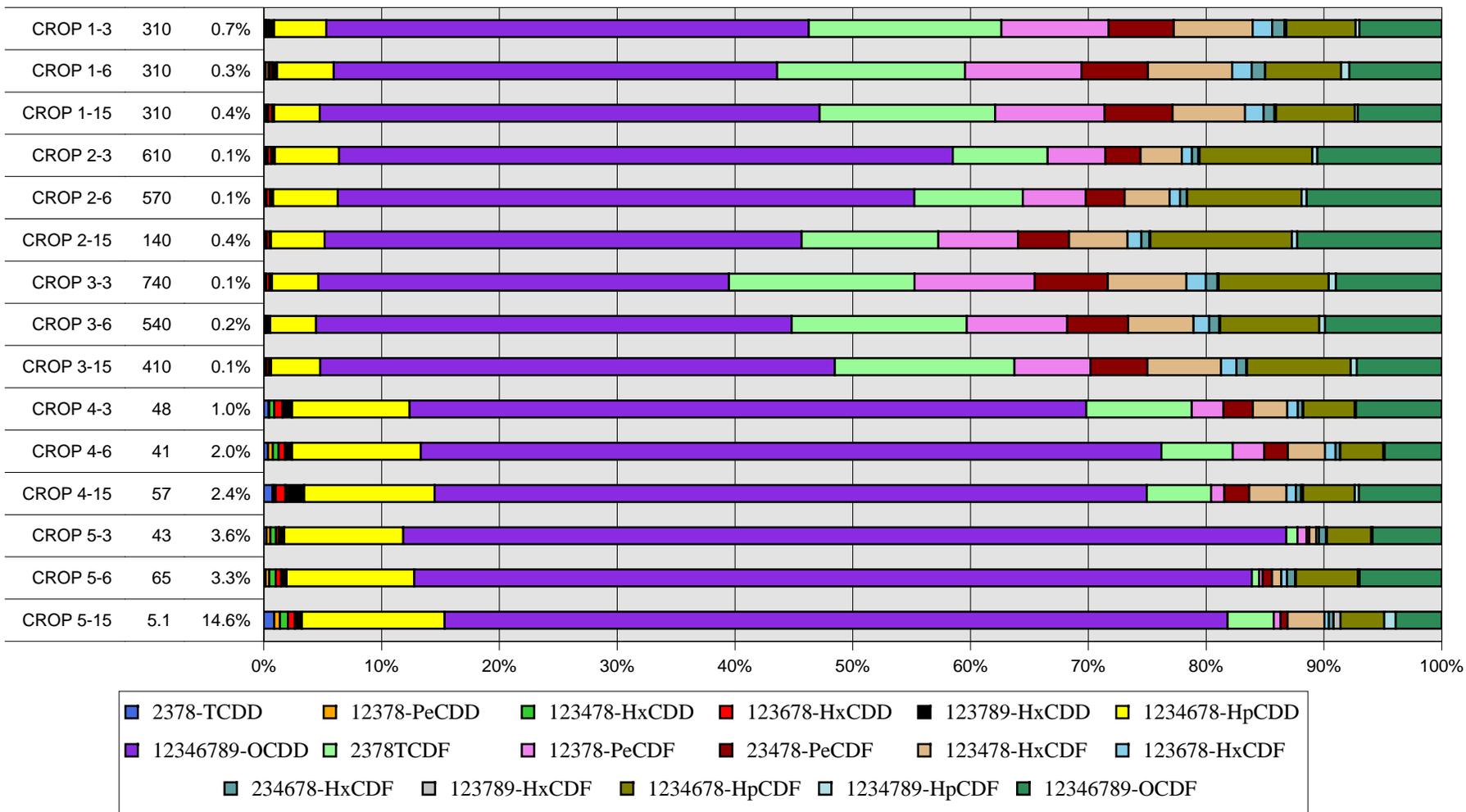
**Column 2** - Total Concentration: This value does not represent toxicity and should not be compared to Part 201 criteria. All total concentrations represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

# CONCENTRATION PROFILES

## CROPLAND, SAGINAW COUNTY DIOXIN SOIL SAMPLES

SEE FOOTNOTES FOR COLUMN HEADINGS



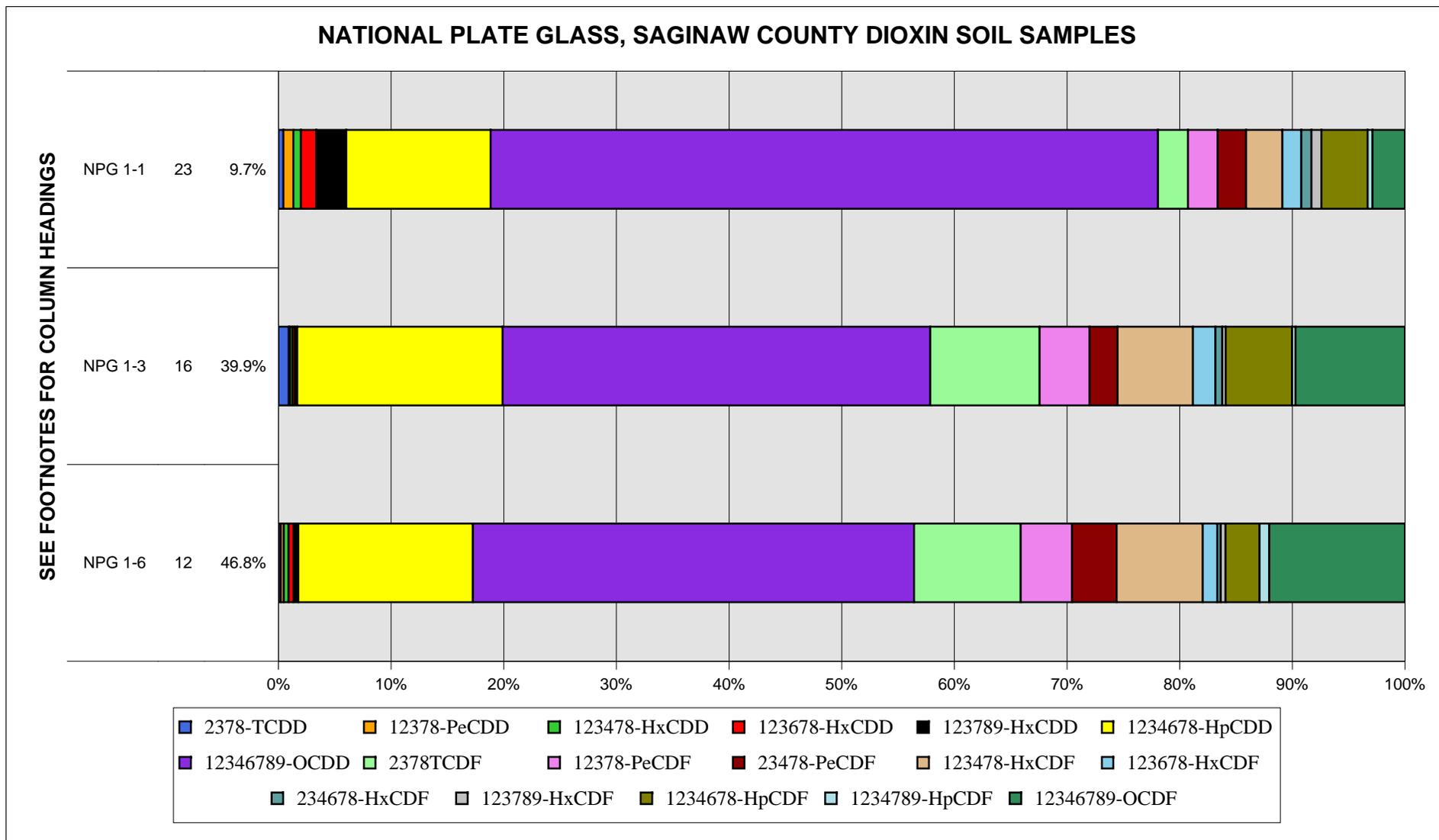
**Column 1** - Sample Location

**Column 2** - Total Concentration: This value does not represent toxicity and should not be compared to Part 201 criteria. All total concentrations represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

# CONCENTRATION PROFILES

## NATIONAL PLATE GLASS, SAGINAW COUNTY DIOXIN SOIL SAMPLES



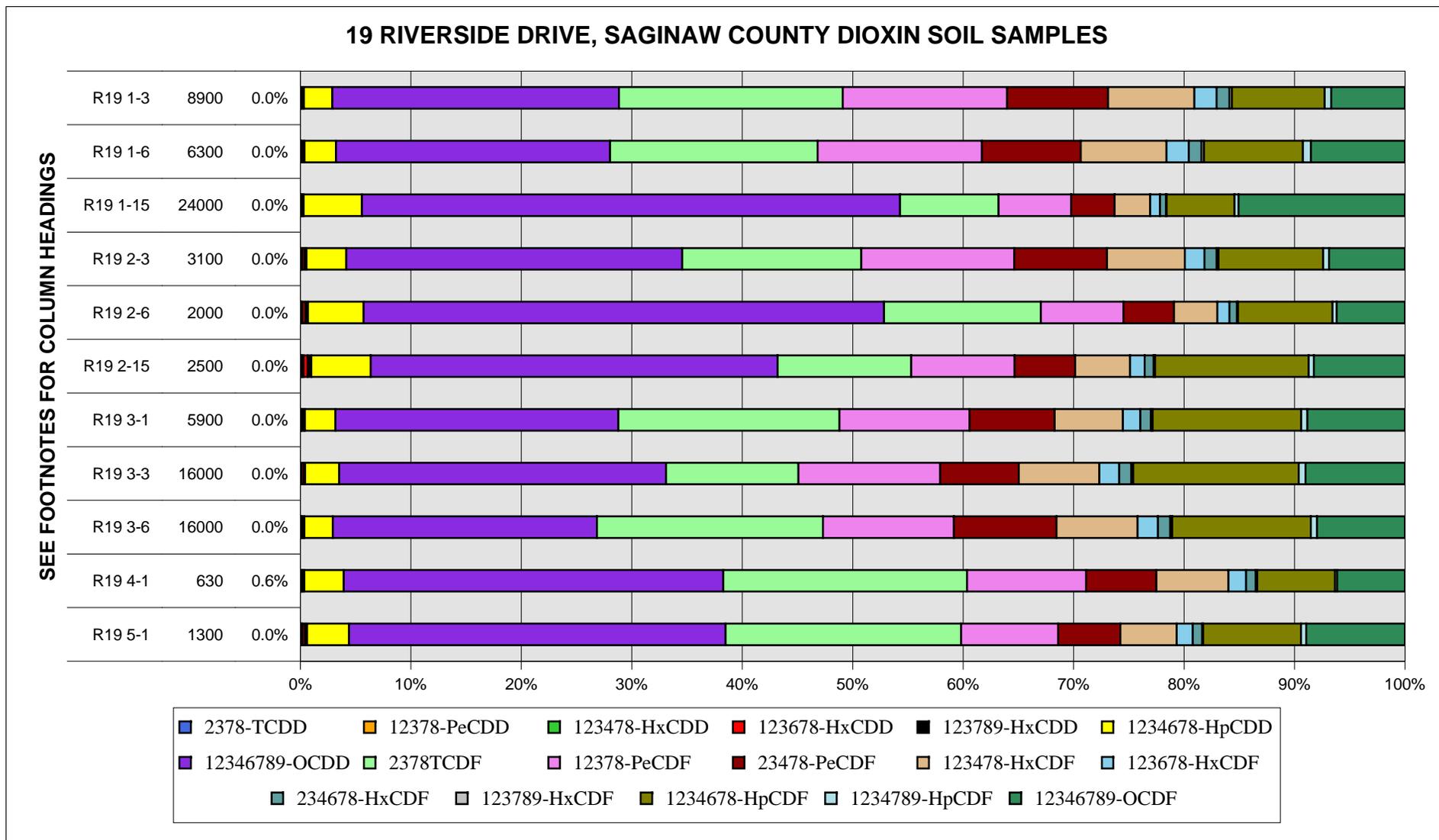
**Column 1** - Sample Location

**Column 2** - Total Concentration: This value does not represent toxicity and should not be compared to Part 201 criteria. All total concentrations represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

# CONCENTRATION PROFILES

## 19 RIVERSIDE DRIVE, SAGINAW COUNTY DIOXIN SOIL SAMPLES



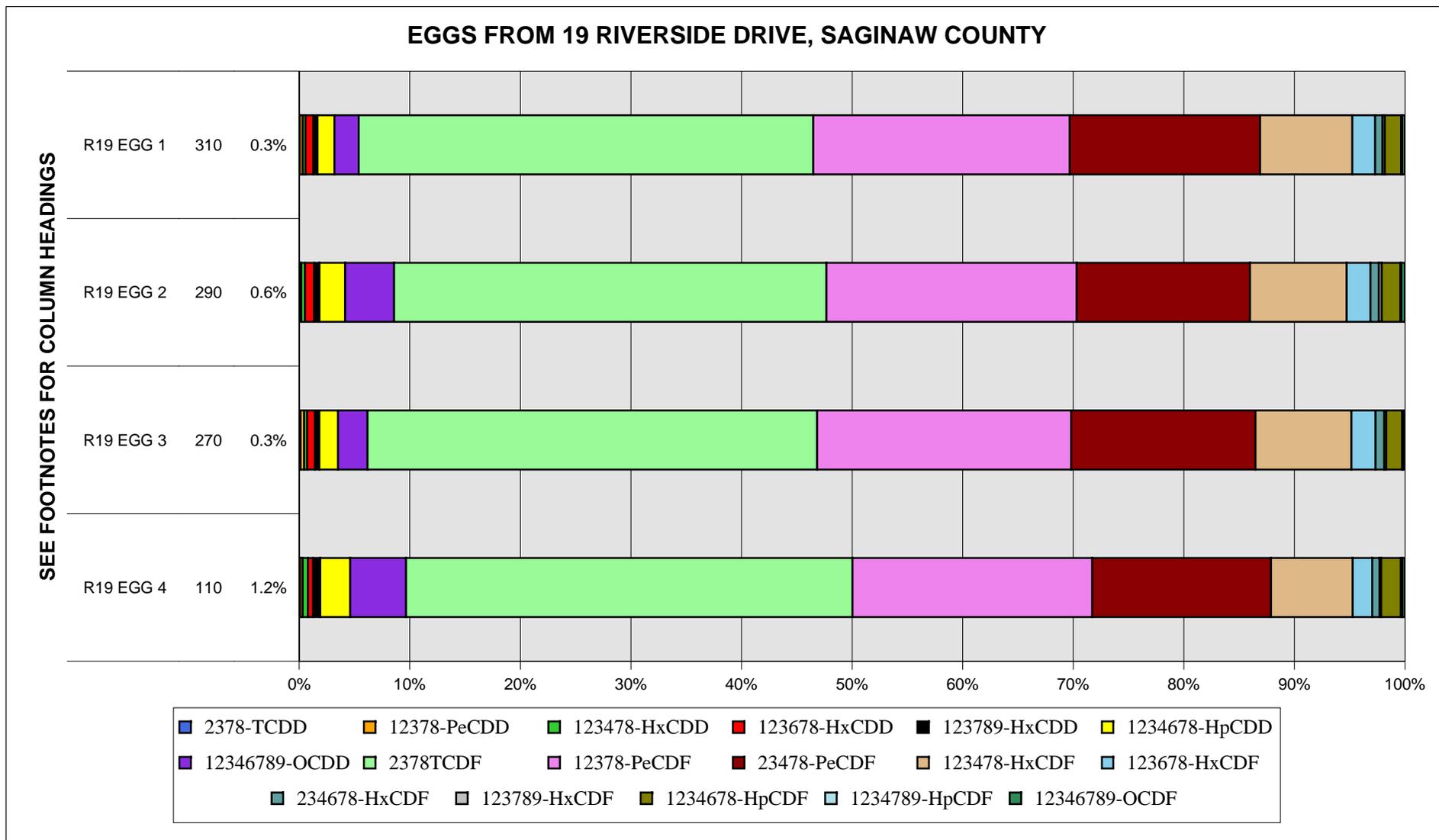
**Column 1** - Sample Location

**Column 2** - Total Concentration: This value does not represent toxicity and should not be compared to Part 201 criteria. All total concentrations represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

# CONCENTRATION PROFILES

## EGGS FROM 19 RIVERSIDE DRIVE, SAGINAW COUNTY



**Column 1** - Sample Location

**Column 2** - Total Concentration: This value does not represent toxicity and should not be compared to Part 201 criteria. All total concentrations represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

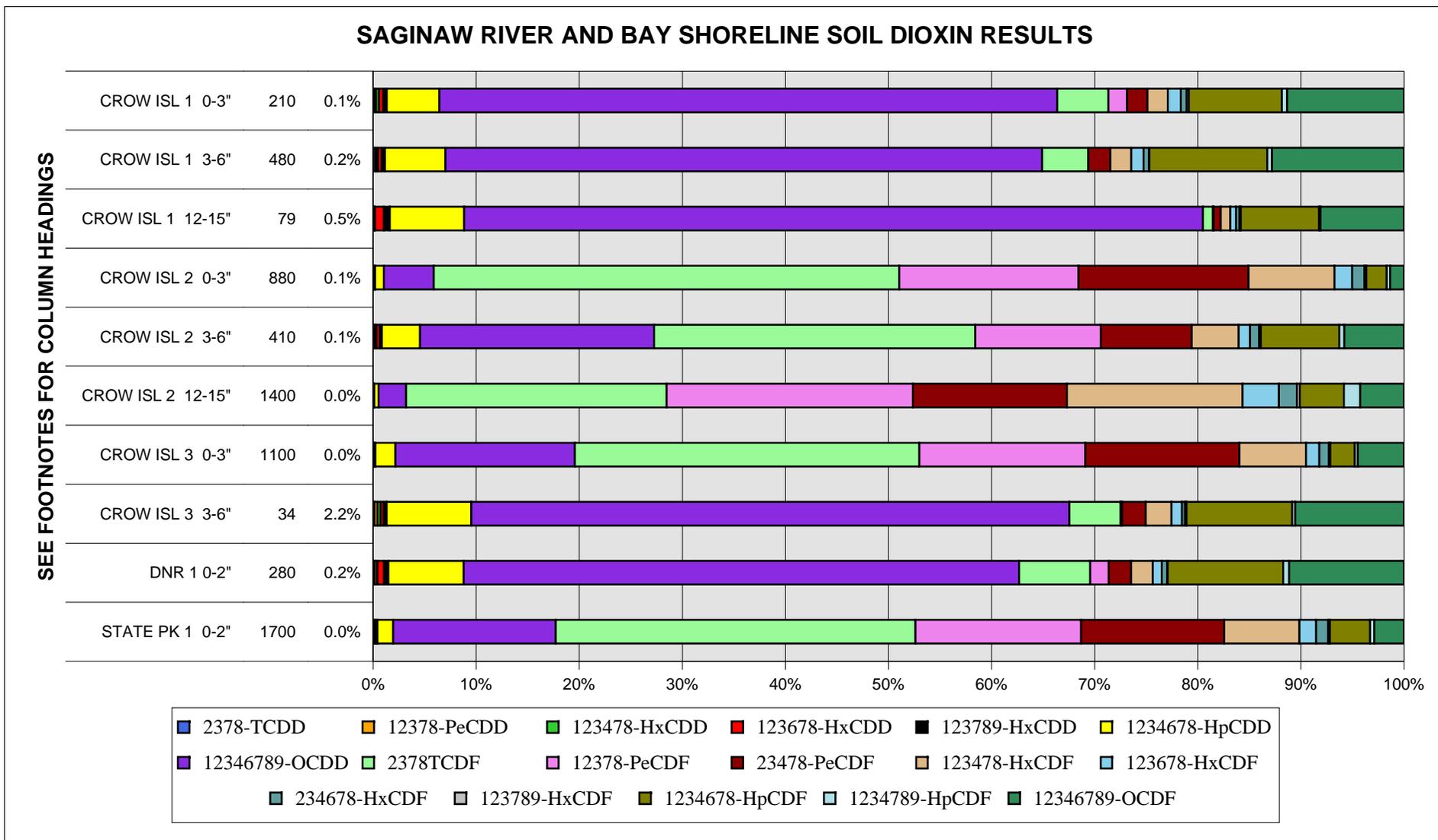
**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

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# CONCENTRATION PROFILES

## SAGINAW RIVER AND BAY SHORELINE SOIL DIOXIN RESULTS



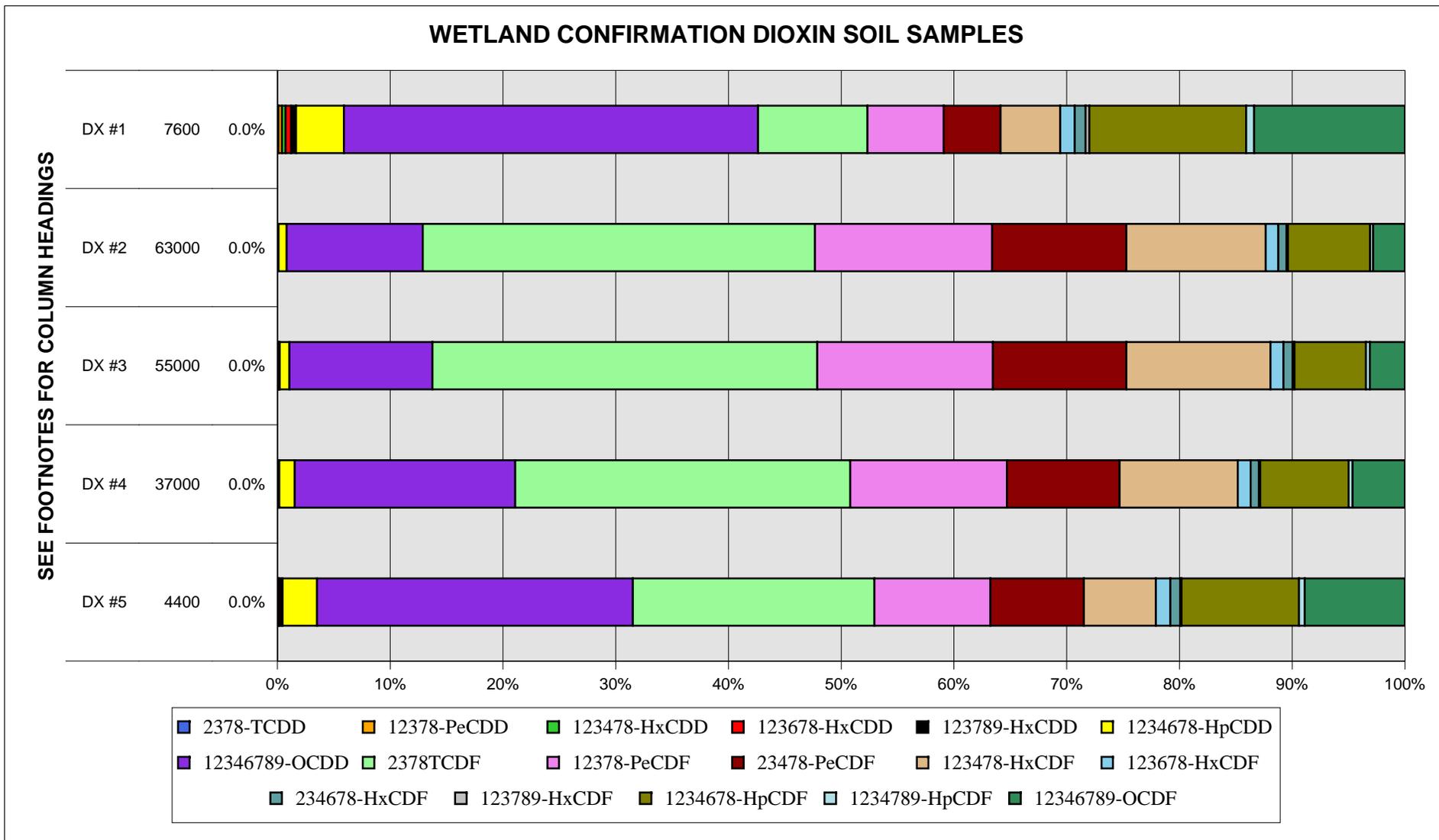
**Column 1** - Sample Location

**Column 2** - Total Concentration: This value does not represent toxicity and should not be compared to Part 201 criteria. All total concentrations represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

# CONCENTRATION PROFILES

## WETLAND CONFIRMATION DIOXIN SOIL SAMPLES



**Column 1** - Sample Location

**Column 2** - Total Concentration: This value does not represent toxicity and should not be compared to Part 201 criteria. All total concentrations represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

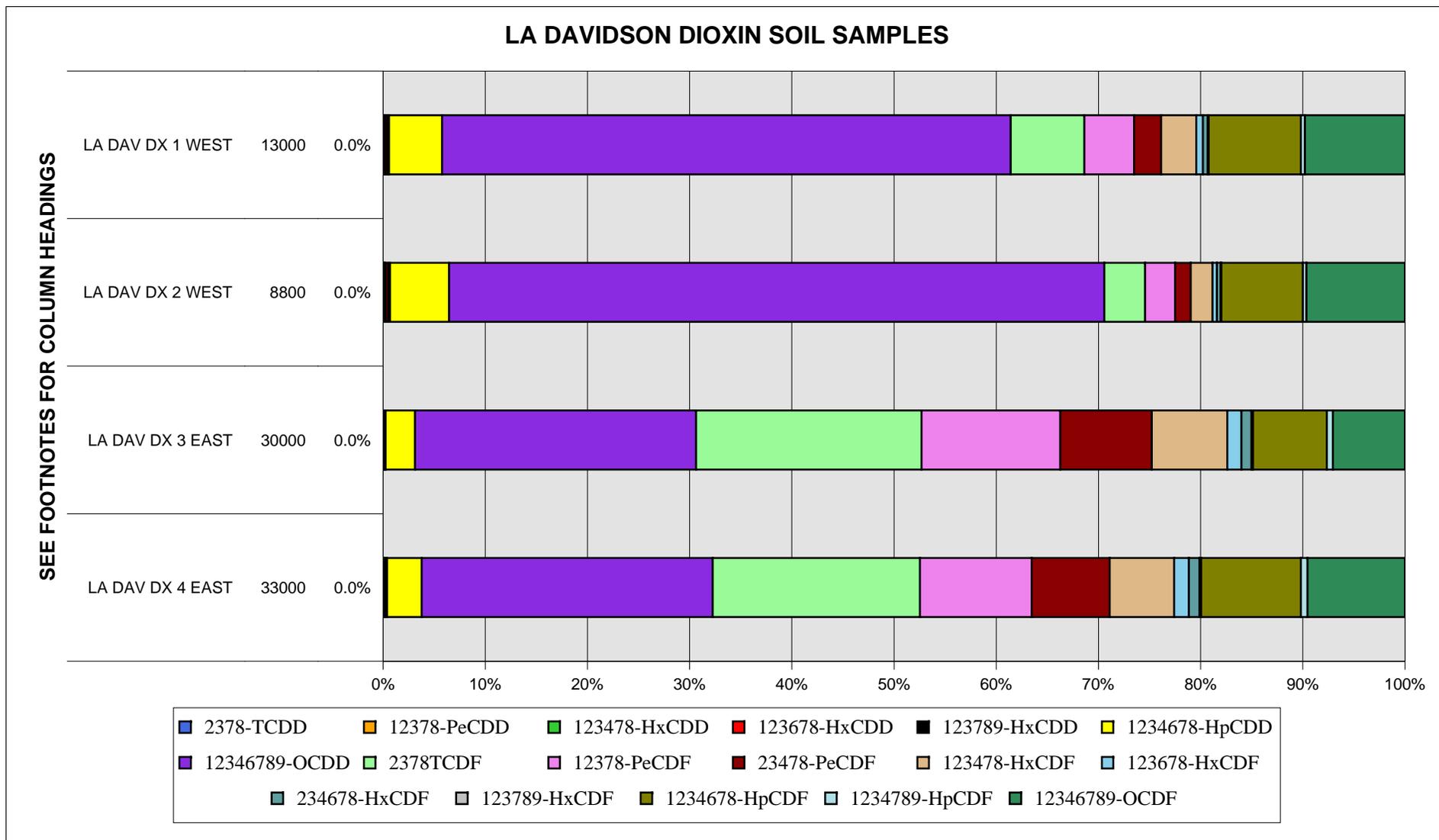
**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

Date: 7/30/2003

Data Subject to Revisions and/or Updates

# CONCENTRATION PROFILES

## LA DAVIDSON DIOXIN SOIL SAMPLES



**Column 1** - Sample Location

**Column 2** - Total Concentration: This value does not represent toxicity and should not be compared to Part 201 criteria. All total concentrations represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

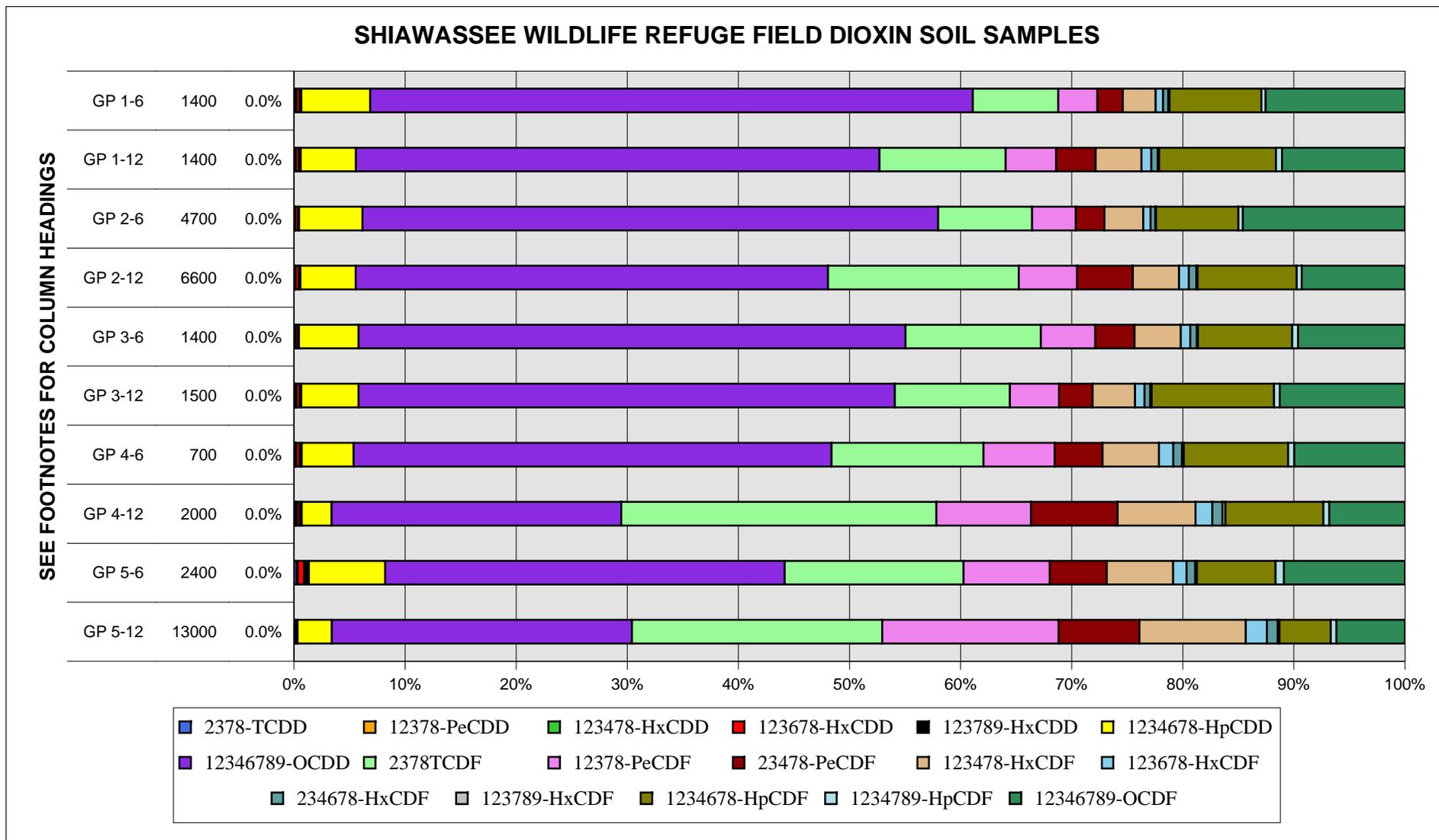
**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

Date: 7/30/2003

Data Subject to Revisions and/or Updates

# CONCENTRATION PROFILES

## SHIAWASSEE WILDLIFE REFUGE FIELD DIOXIN SOIL SAMPLES



**Column 1** - Sample Location

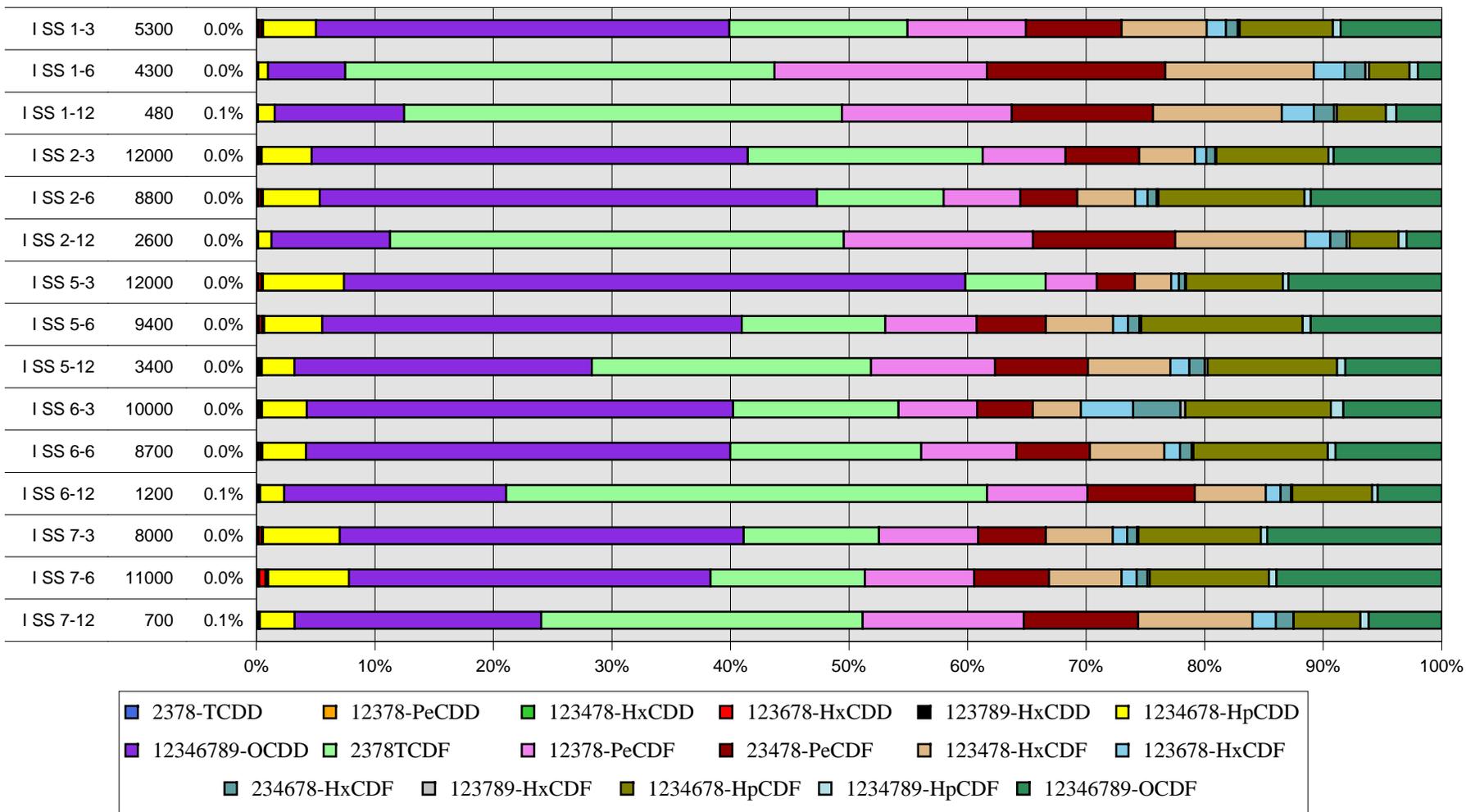
**Column 2** - Total Concentration: This value does not represent toxicity and should not be compared to Part 201 criteria. All total concentrations represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

# CONCENTRATION PROFILES

## SHIAWASSEE WILDLIFE REFUGE FOREST DIOXIN SOIL SAMPLES

SEE FOOTNOTES FOR COLUMN HEADINGS



**Column 1** - Sample Location

**Column 2** - Total Concentration: This value does not represent toxicity and should not be compared to Part 201 criteria. All total concentrations represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

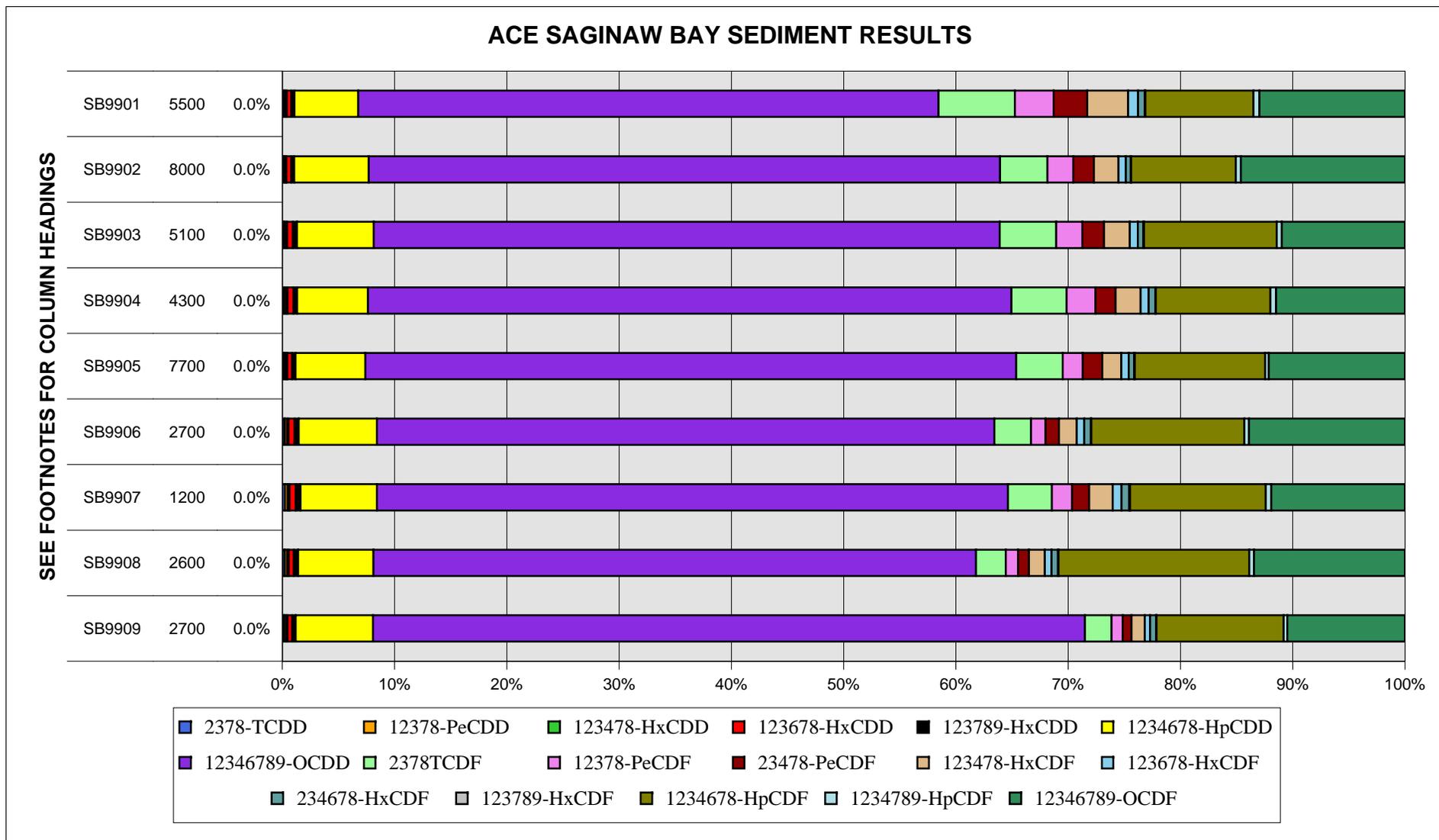
**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

Date: 7/30/2003

Data Subject to Revisions and/or Updates

# CONCENTRATION PROFILES

## ACE SAGINAW BAY SEDIMENT RESULTS



**Column 1** - Sample Location

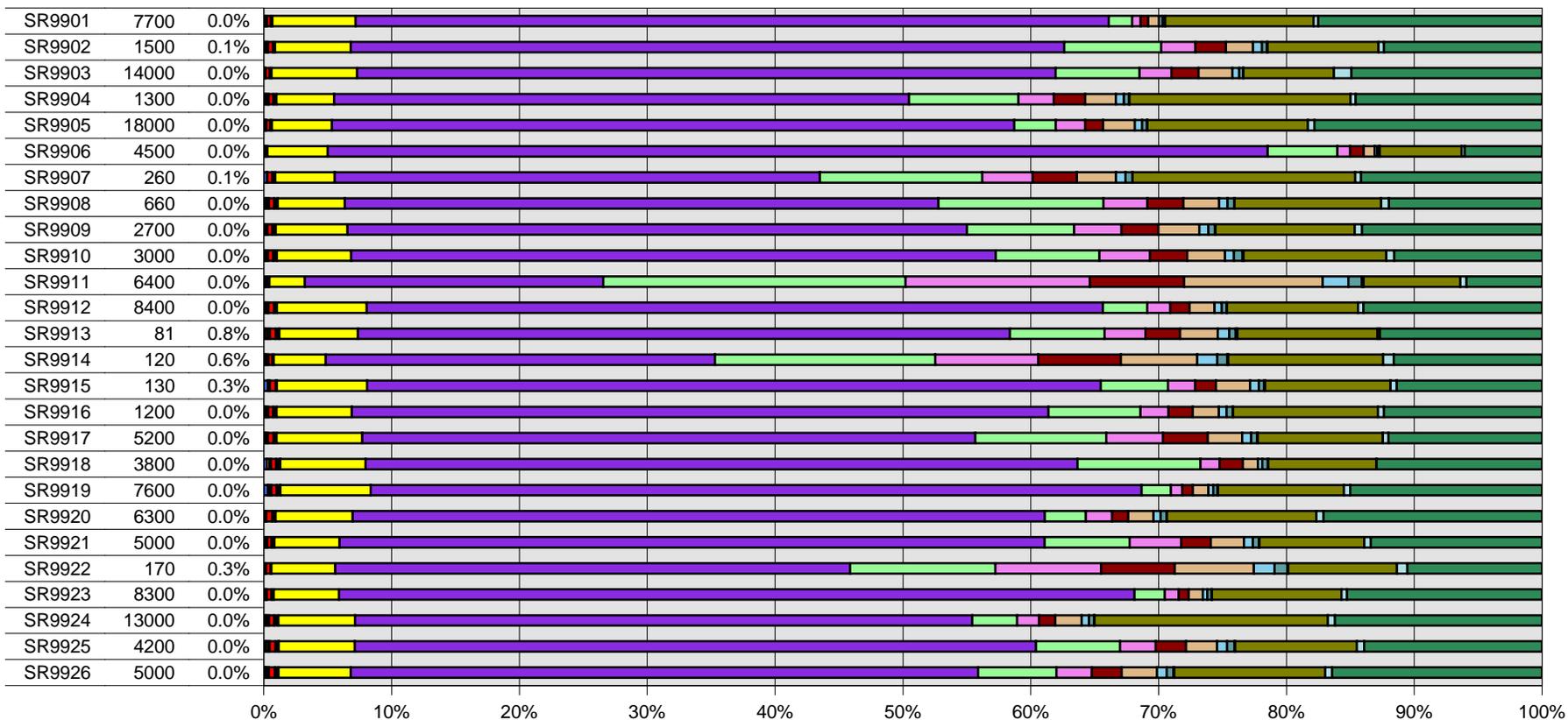
**Column 2** - Total Concentration: This value does not represent toxicity and should not be compared to Part 201 criteria. All total concentrations represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

# CONCENTRATION PROFILES

## ACE SAGINAW RIVER SEDIMENT RESULTS

SEE FOOTNOTES FOR COLUMN HEADINGS



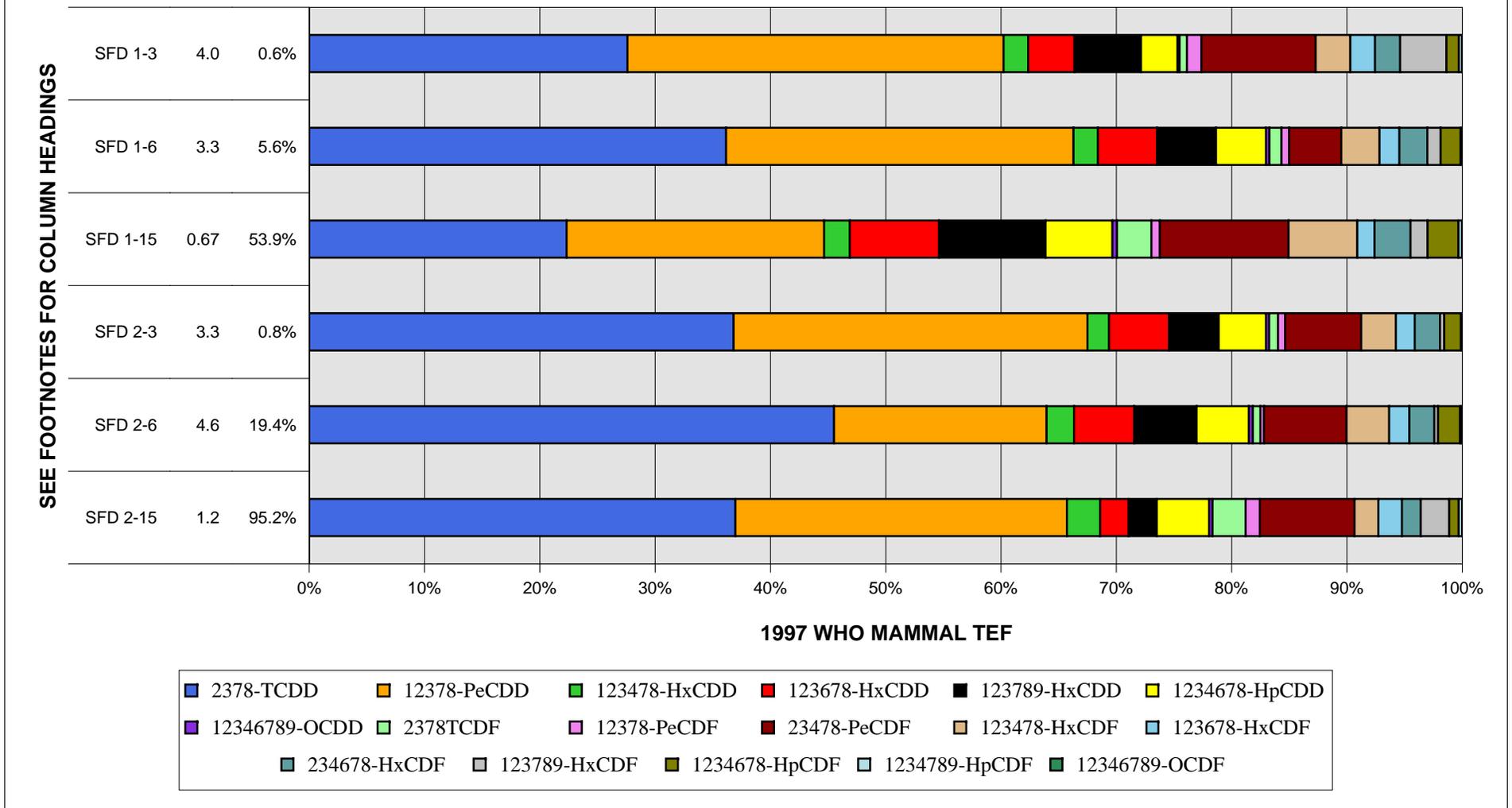
**Column 1** - Sample Location

**Column 2** - Total Concentration: This value does not represent toxicity and should not be compared to Part 201 criteria. All total concentrations represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

# TEQ PROFILES

## TITTABAWASSEE RIVER AT SANFORD, MIDLAND COUNTY DIOXIN SOIL SAMPLES



**Column 1** - Sample Location

**Column 2** - Total TEQ: This value represents the toxicity of the sample and may be compared to Part 201 criteria. All total TEQs represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

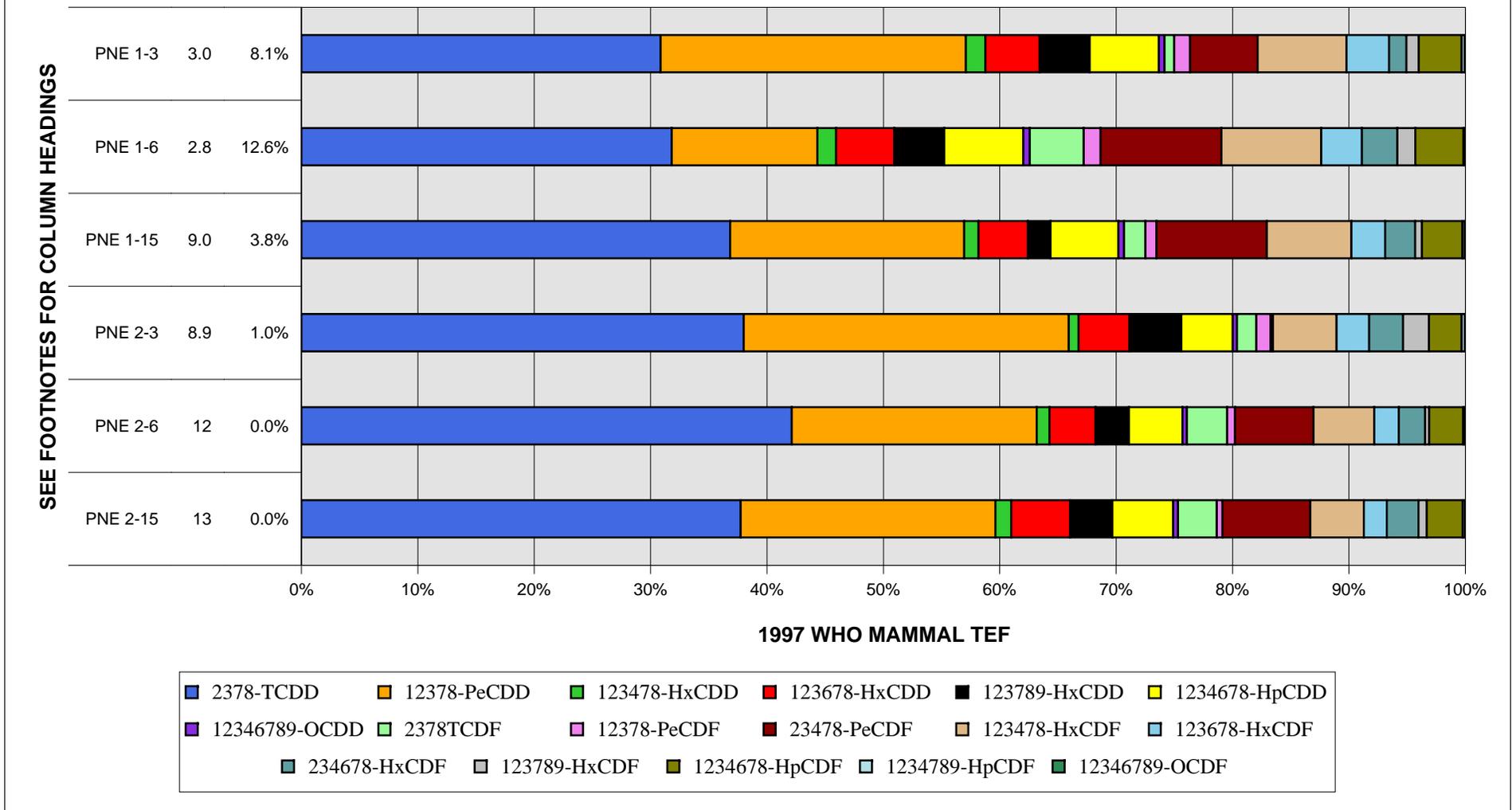
**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

Date: 7/30/2003

Data Subject to Revisions and/or Updates

# TEQ PROFILES

## PINE RIVER, MIDLAND COUNTY DIOXIN SOIL SAMPLES



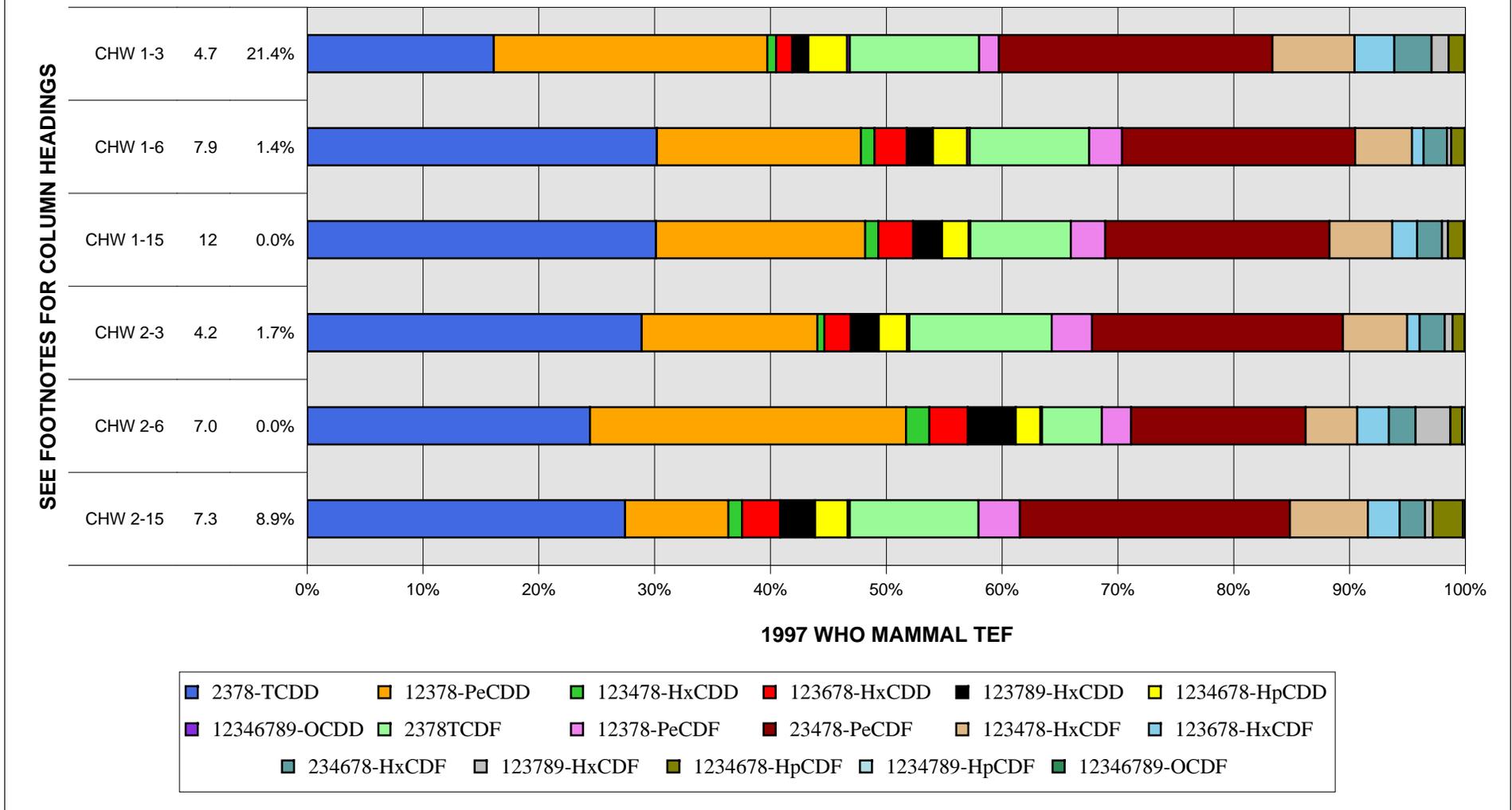
**Column 1** - Sample Location

**Column 2** - Total TEQ: This value represents the toxicity of the sample and may be compared to Part 201 criteria. All total TEQs represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

# TEQ PROFILES

## CHIPPEWA RIVER, MIDLAND COUNTY DIOXIN SOIL SAMPLES



**Column 1** - Sample Location

**Column 2** - Total TEQ: This value represents the toxicity of the sample and may be compared to Part 201 criteria. All total TEQs represent those dioxins and furans with known TEFs and include non-detects valued at ½ of the detection level.

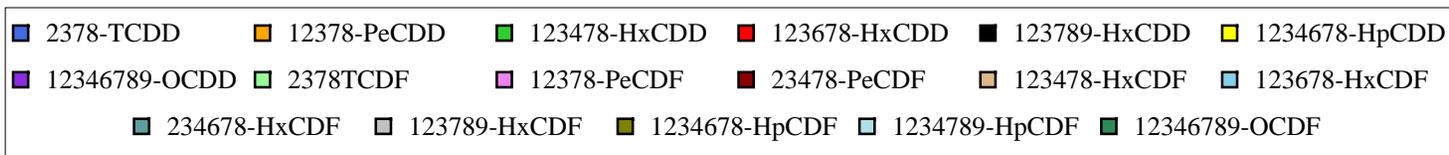
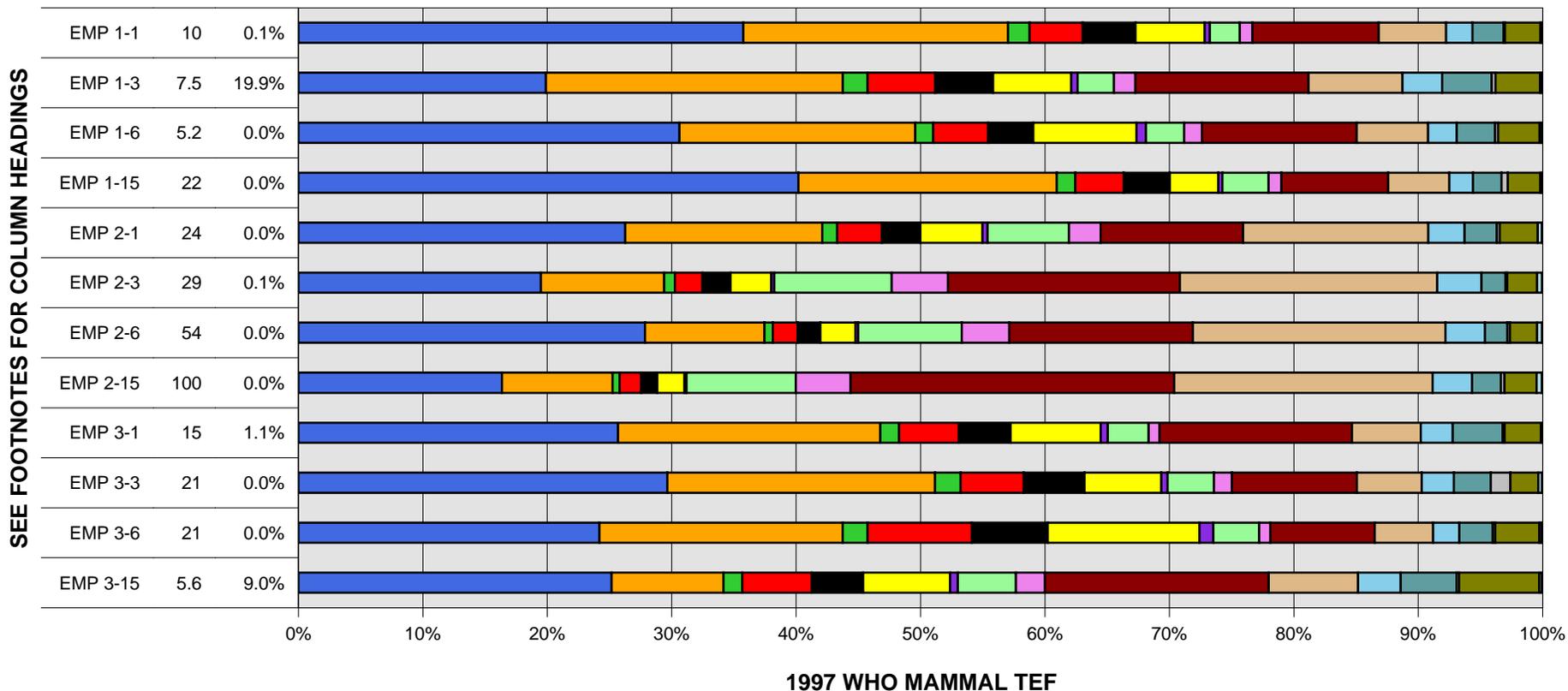
**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

Date: 7/30/2003

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# TEQ PROFILES

## EMERSON PARK, MIDLAND COUNTY DIOXIN SOIL SAMPLES



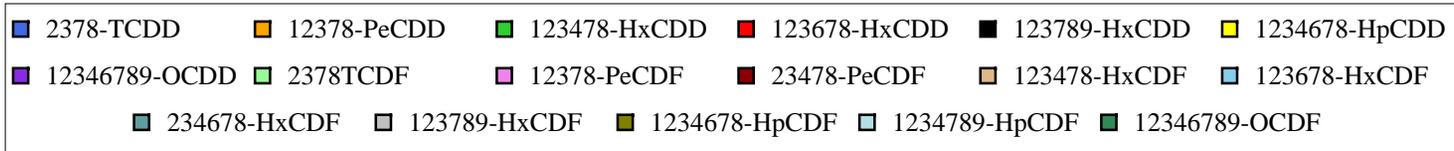
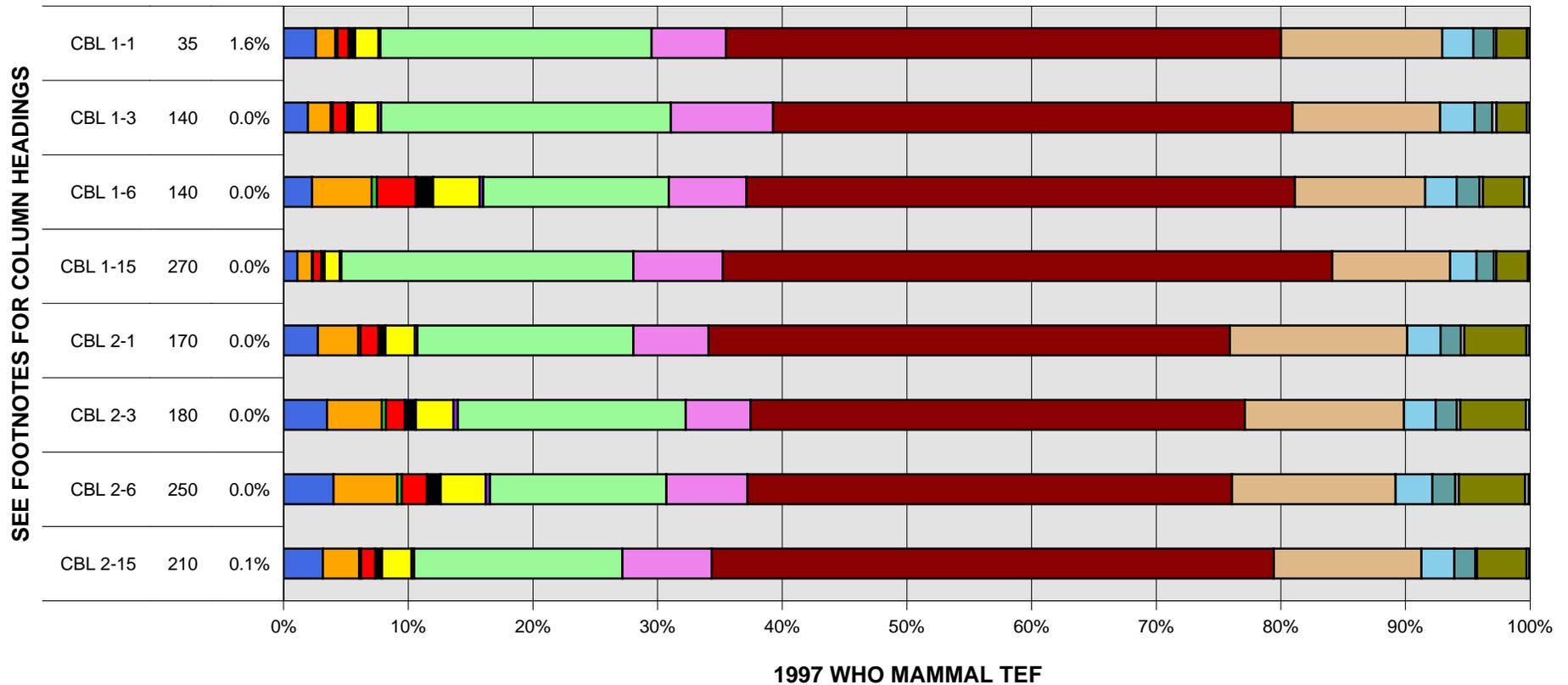
**Column 1** - Sample Location

**Column 2** - Total TEQ: This value represents the toxicity of the sample and may be compared to Part 201 criteria. All total TEQs represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

# TEQ PROFILES

## CALDWELL BOAT LAUNCH, MIDLAND COUNTY DIOXIN SOIL SAMPLES



**Column 1** - Sample Location

**Column 2** - Total TEQ: This value represents the toxicity of the sample and may be compared to Part 201 criteria. All total TEQs represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

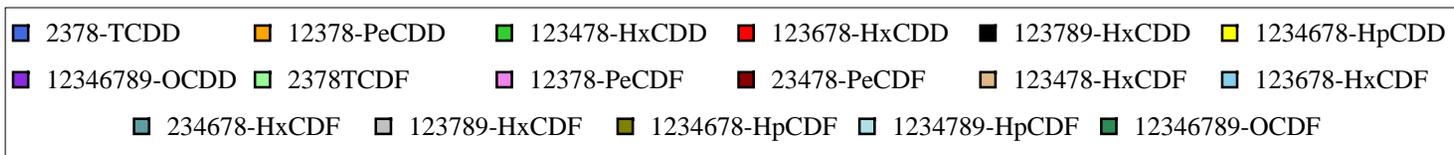
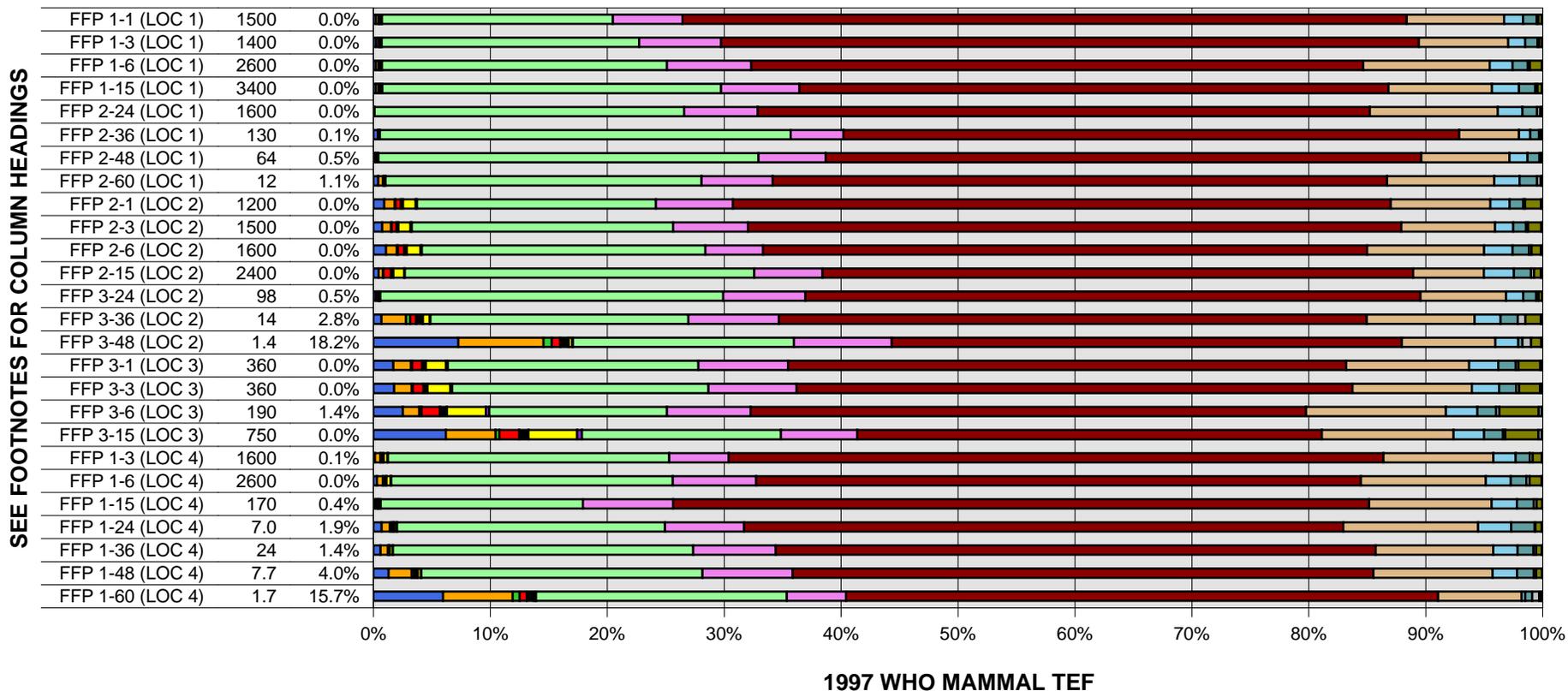
**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

Date: 7/30/2003

Data Subject to Revisions and/or Updates

# TEQ PROFILES

## FREELAND FESTIVAL PARK, SAGINAW COUNTY DIOXIN SOIL SAMPLES



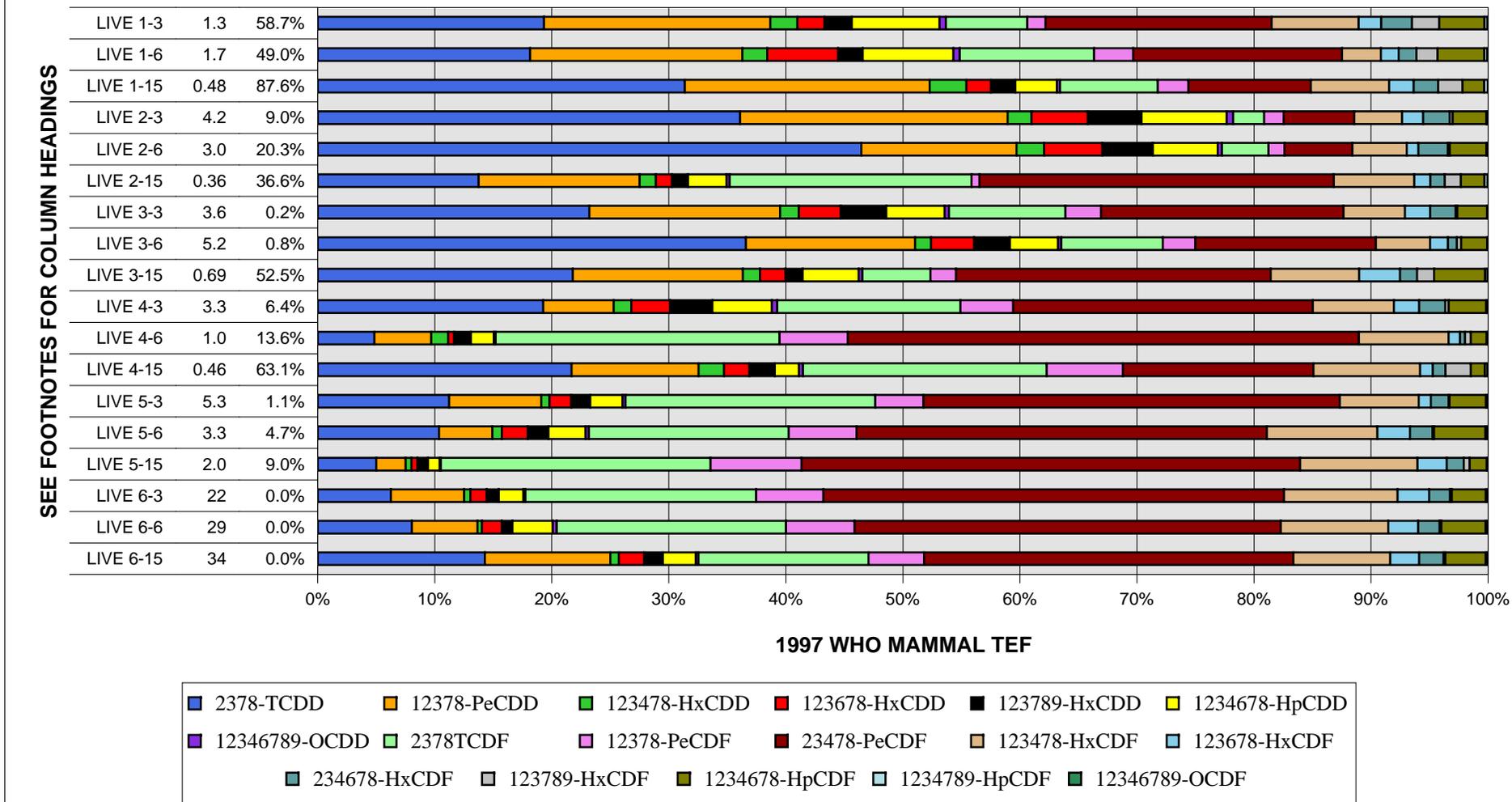
**Column 1** - Sample Location

**Column 2** - Total TEQ: This value represents the toxicity of the sample and may be compared to Part 201 criteria. All total TEQs represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

# TEQ PROFILES

## LIVESTOCK FARM, SAGINAW COUNTY DIOXIN SOIL SAMPLES



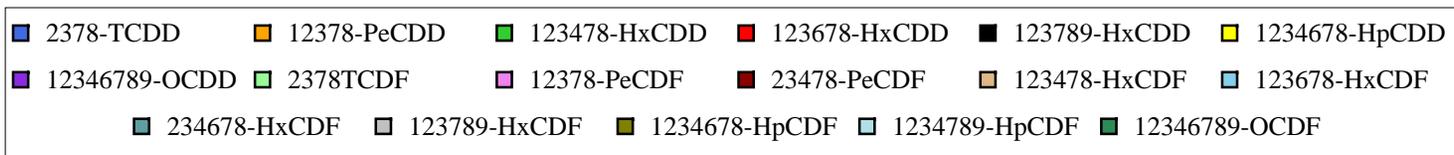
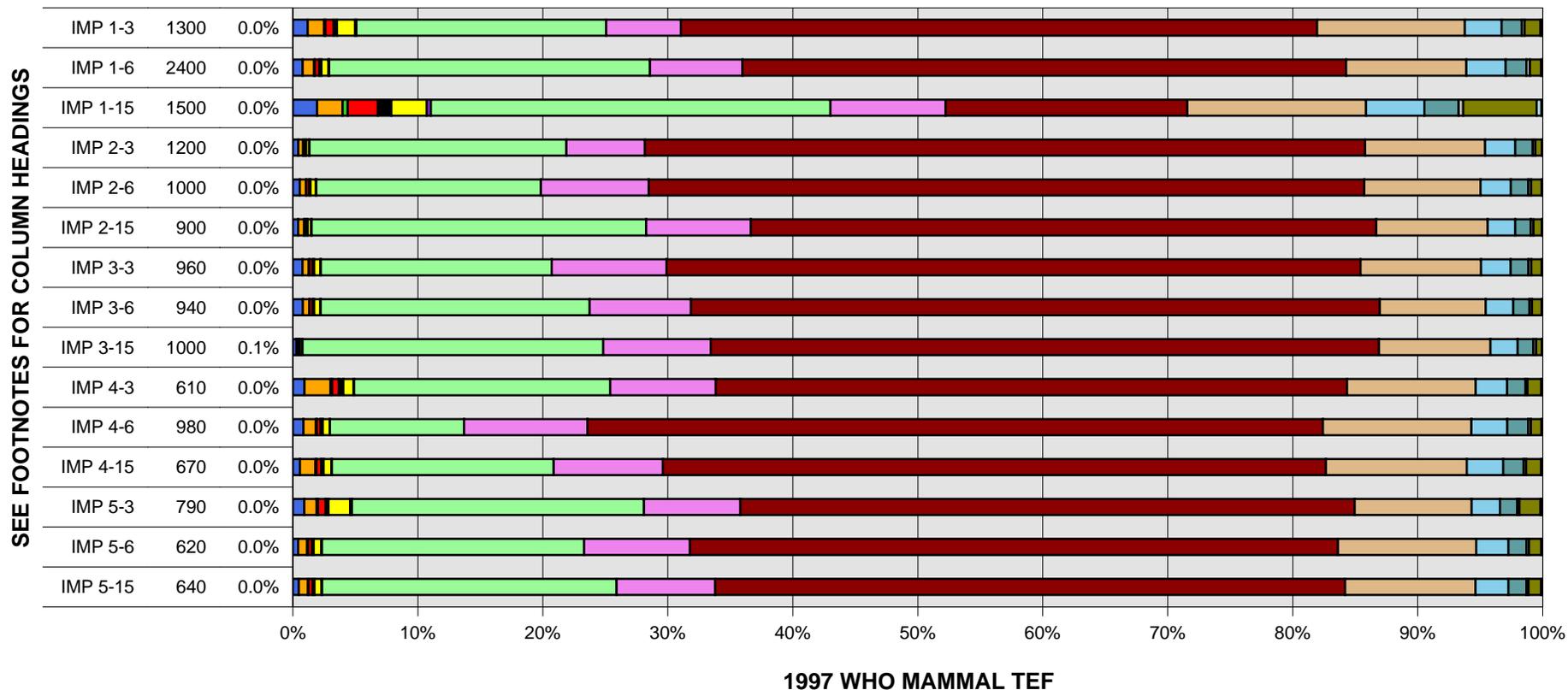
**Column 1** - Sample Location

**Column 2** - Total TEQ: This value represents the toxicity of the sample and may be compared to Part 201 criteria. All total TEQs represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

# TEQ PROFILES

## IMERMAN PARK, SAGINAW COUNTY, DIOXIN SOIL SAMPLES 1 - 5



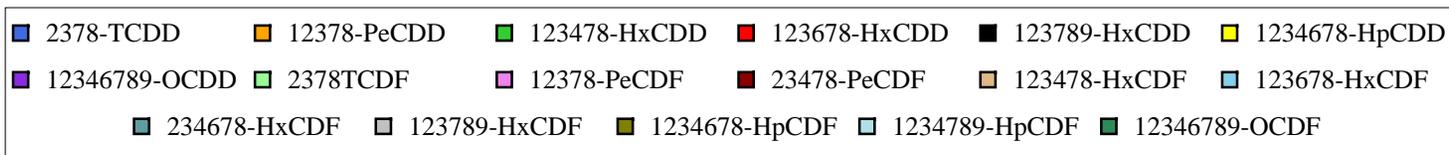
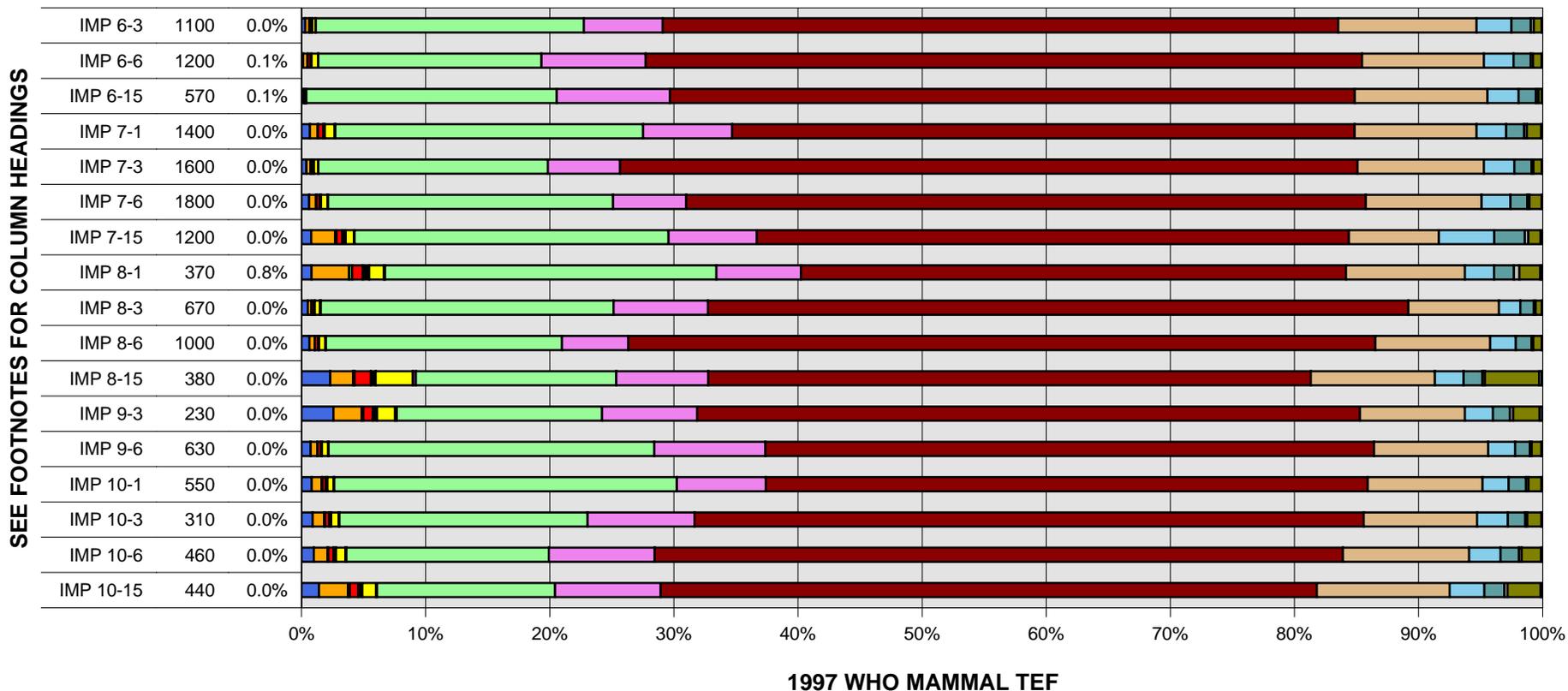
**Column 1** - Sample Location

**Column 2** - Total TEQ: This value represents the toxicity of the sample and may be compared to Part 201 criteria. All total TEQs represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

# TEQ PROFILES

## IMERMAN PARK , SAGINAW COUNTY, DIOXIN SOIL SAMPLES 6 - 10



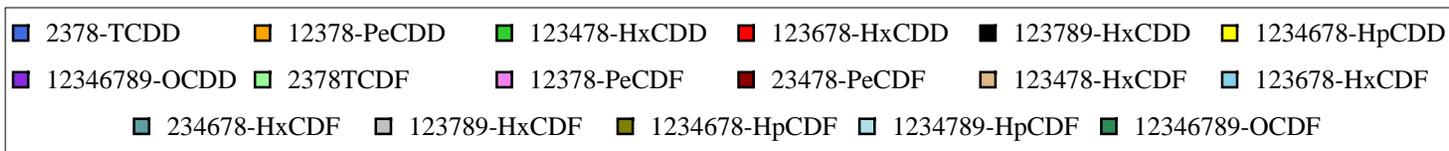
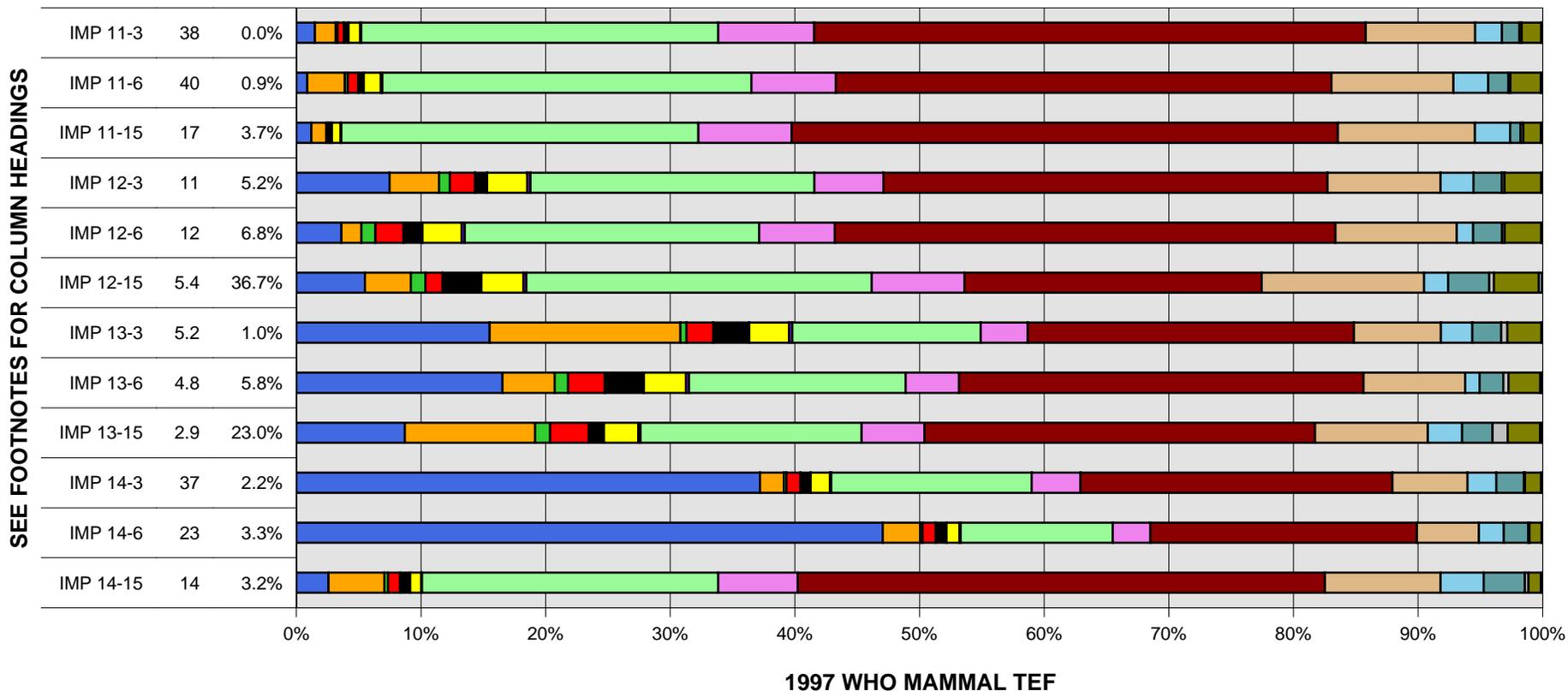
**Column 1** - Sample Location

**Column 2** - Total TEQ: This value represents the toxicity of the sample and may be compared to Part 201 criteria. All total TEQs represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

# TEQ PROFILES

## IMERMAN PARK, SAGINAW COUNTY, DIOXIN SOIL SAMPLES 11 - 14



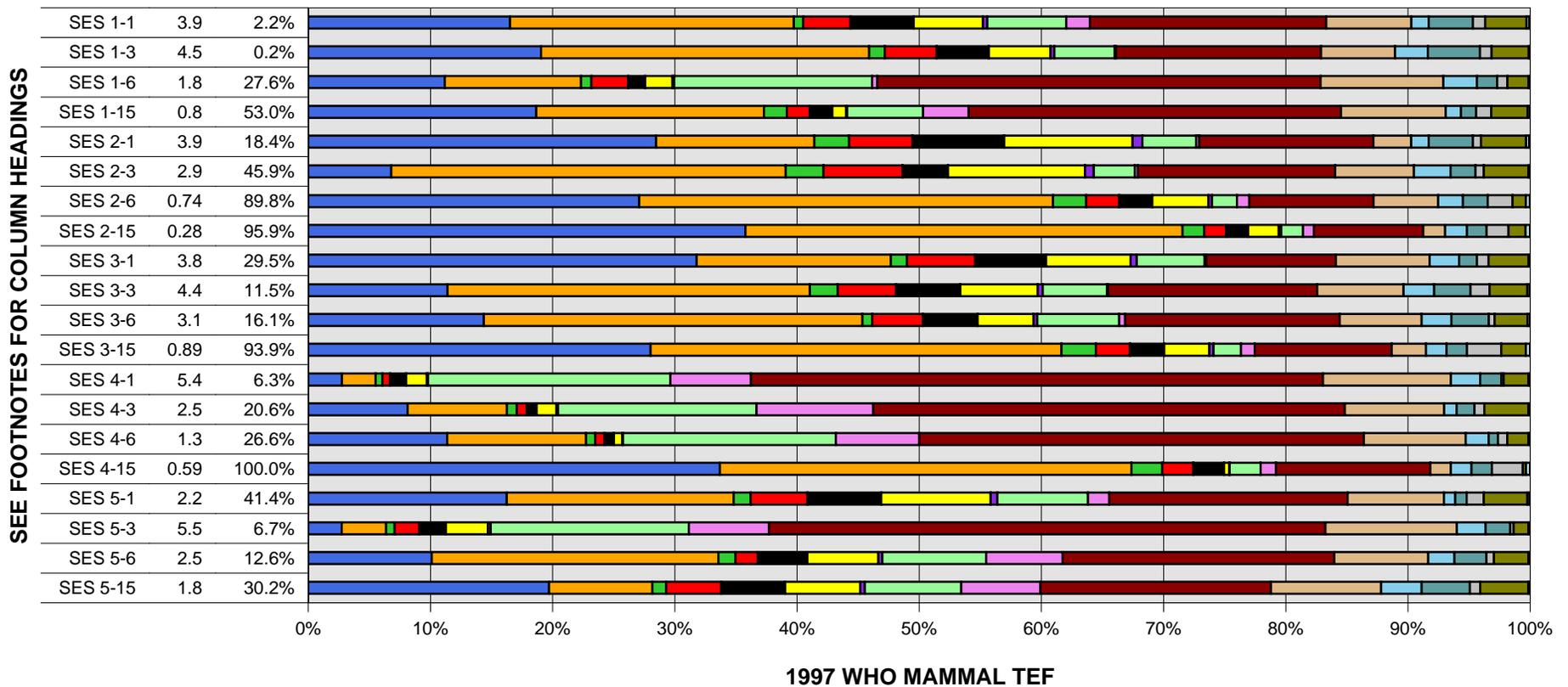
**Column 1** - Sample Location

**Column 2** - Total TEQ: This value represents the toxicity of the sample and may be compared to Part 201 criteria. All total TEQs represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

# TEQ PROFILES

## SHIELDS ELEMENTARY SCHOOL, SAGINAW COUNTY DIOXIN SOIL SAMPLES



**Column 1** - Sample Location

**Column 2** - Total TEQ: This value represents the toxicity of the sample and may be compared to Part 201 criteria. All total TEQs represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

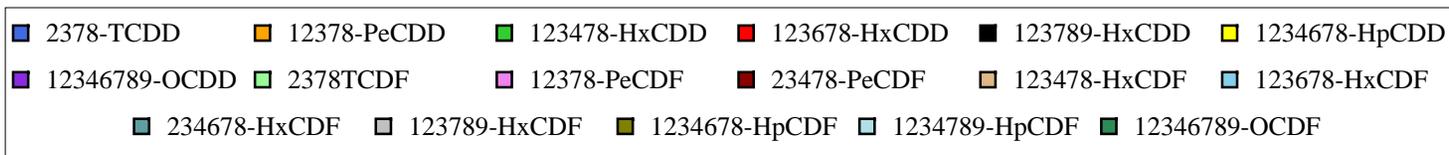
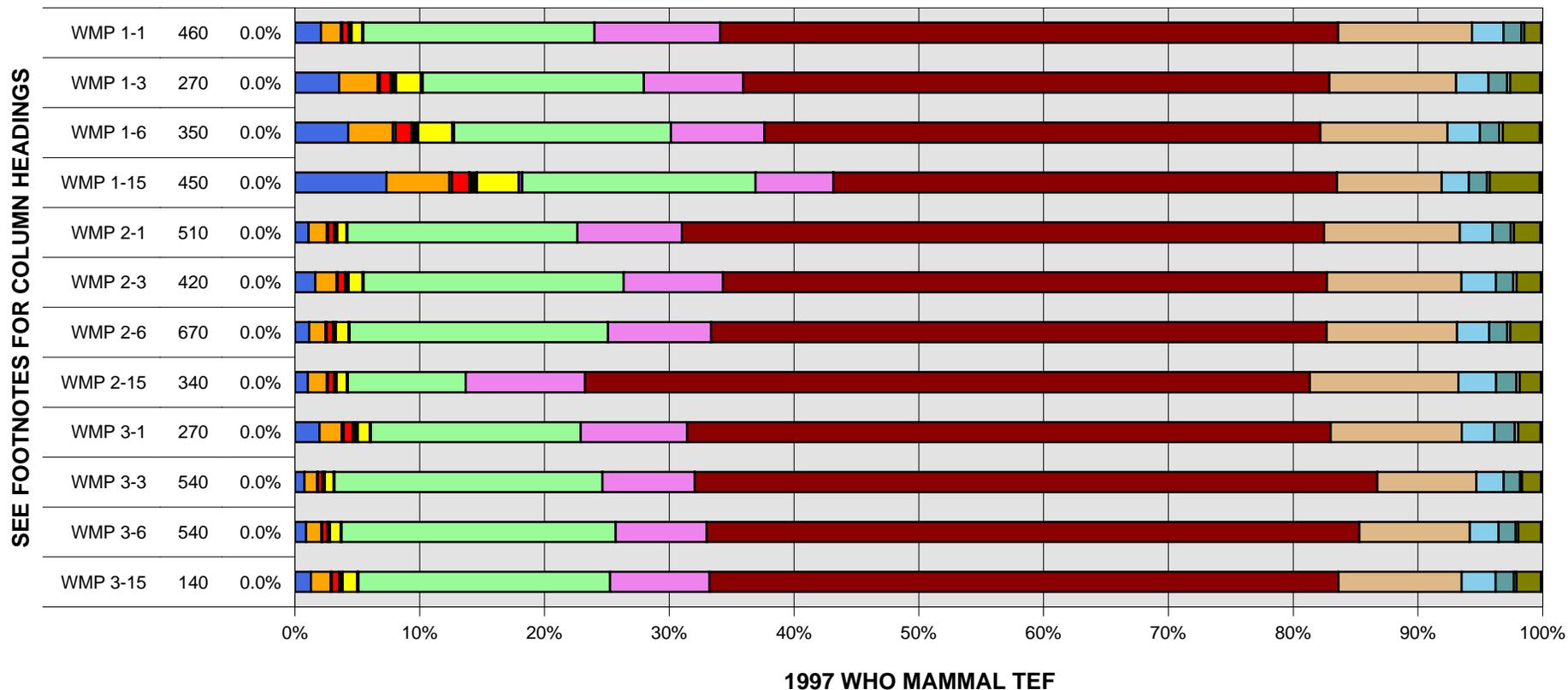
**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

Date: 7/30/2003

Data Subject to Revisions and/or Updates

# TEQ PROFILES

## WEST MICHIGAN PARK, SAGINAW COUNTY DIOXIN SOIL SAMPLES



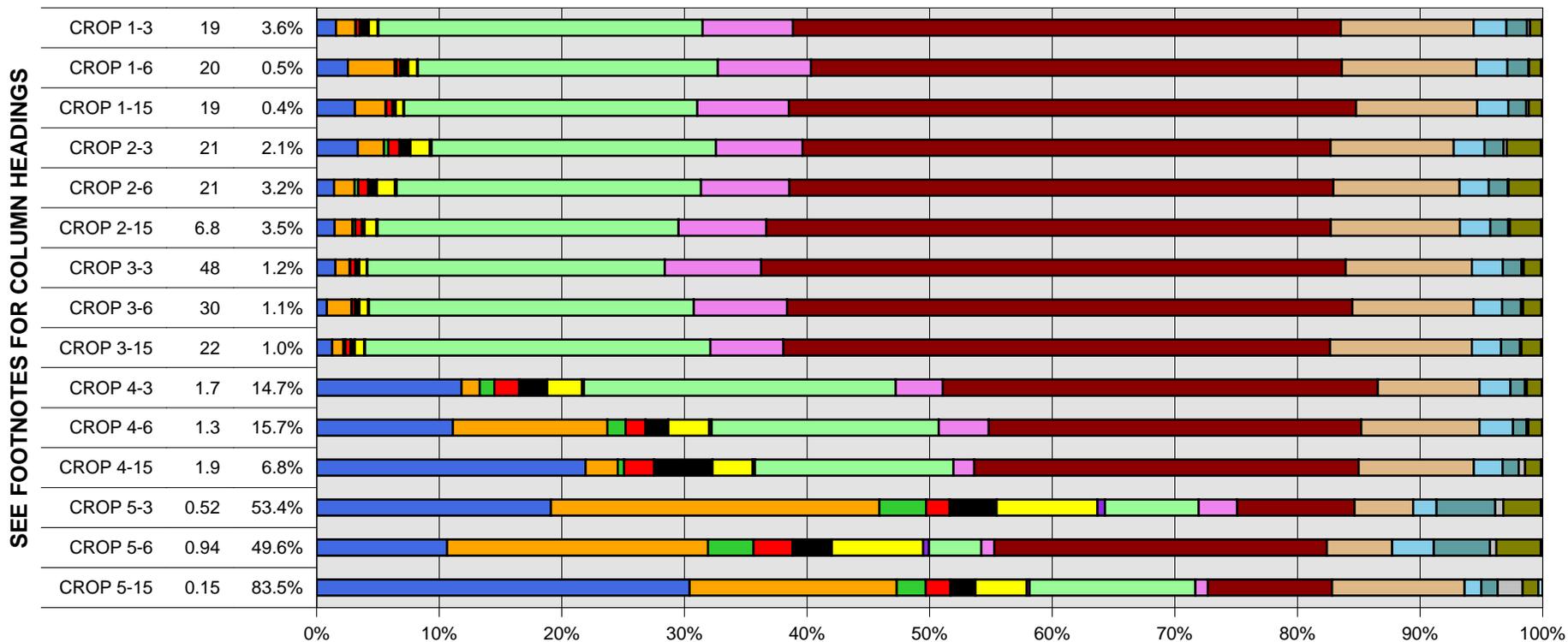
**Column 1** - Sample Location

**Column 2** - Total TEQ: This value represents the toxicity of the sample and may be compared to Part 201 criteria. All total TEQs represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

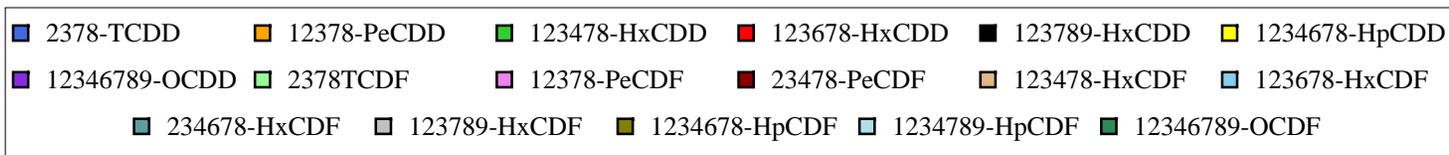
# TEQ PROFILES

## CROPLAND, SAGINAW COUNTY DIOXIN SOIL SAMPLES



SEE FOOTNOTES FOR COLUMN HEADINGS

1997 WHO MAMMAL TEF



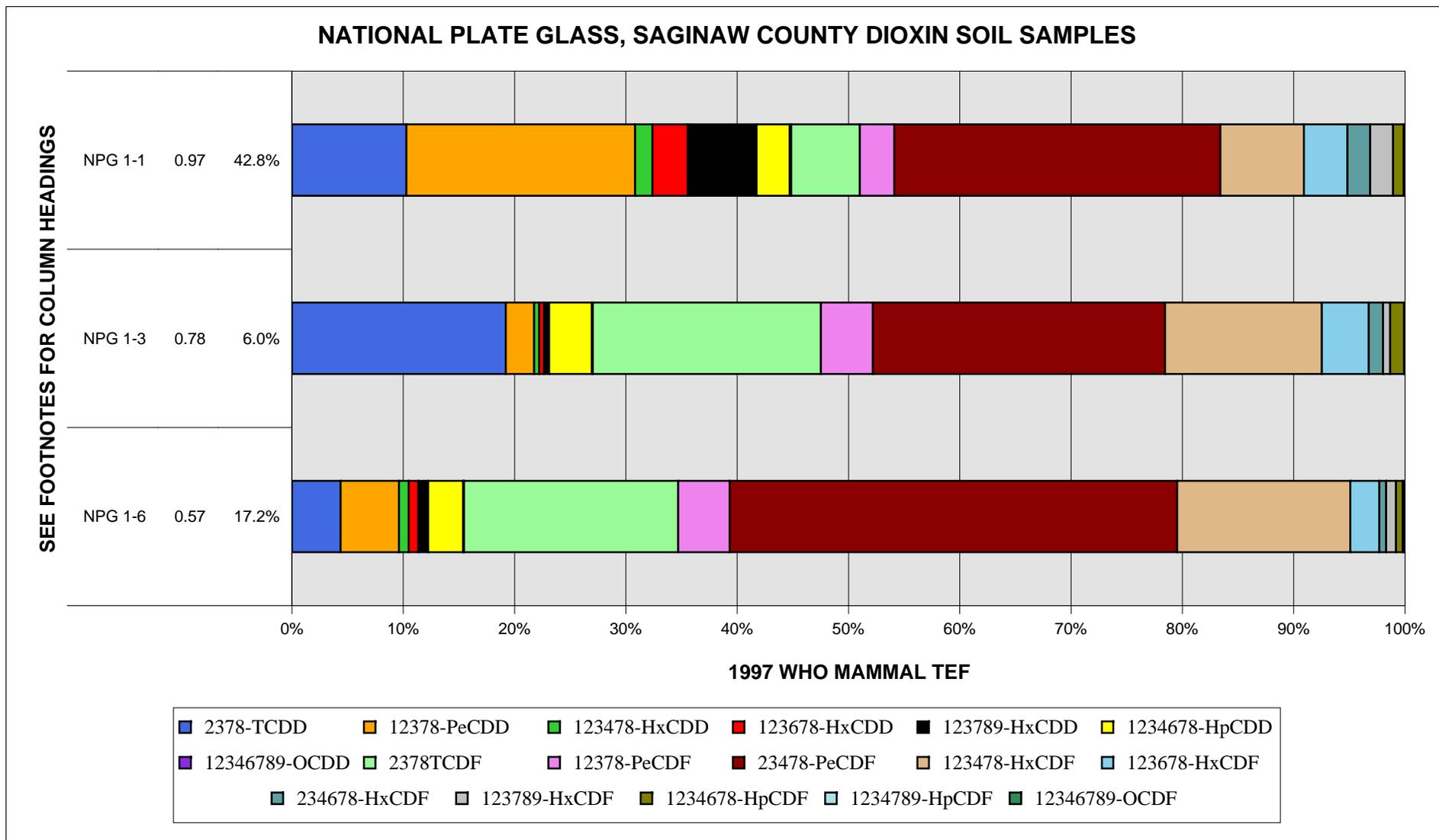
**Column 1** - Sample Location

**Column 2** - Total TEQ: This value represents the toxicity of the sample and may be compared to Part 201 criteria. All total TEQs represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

# TEQ PROFILES

## NATIONAL PLATE GLASS, SAGINAW COUNTY DIOXIN SOIL SAMPLES



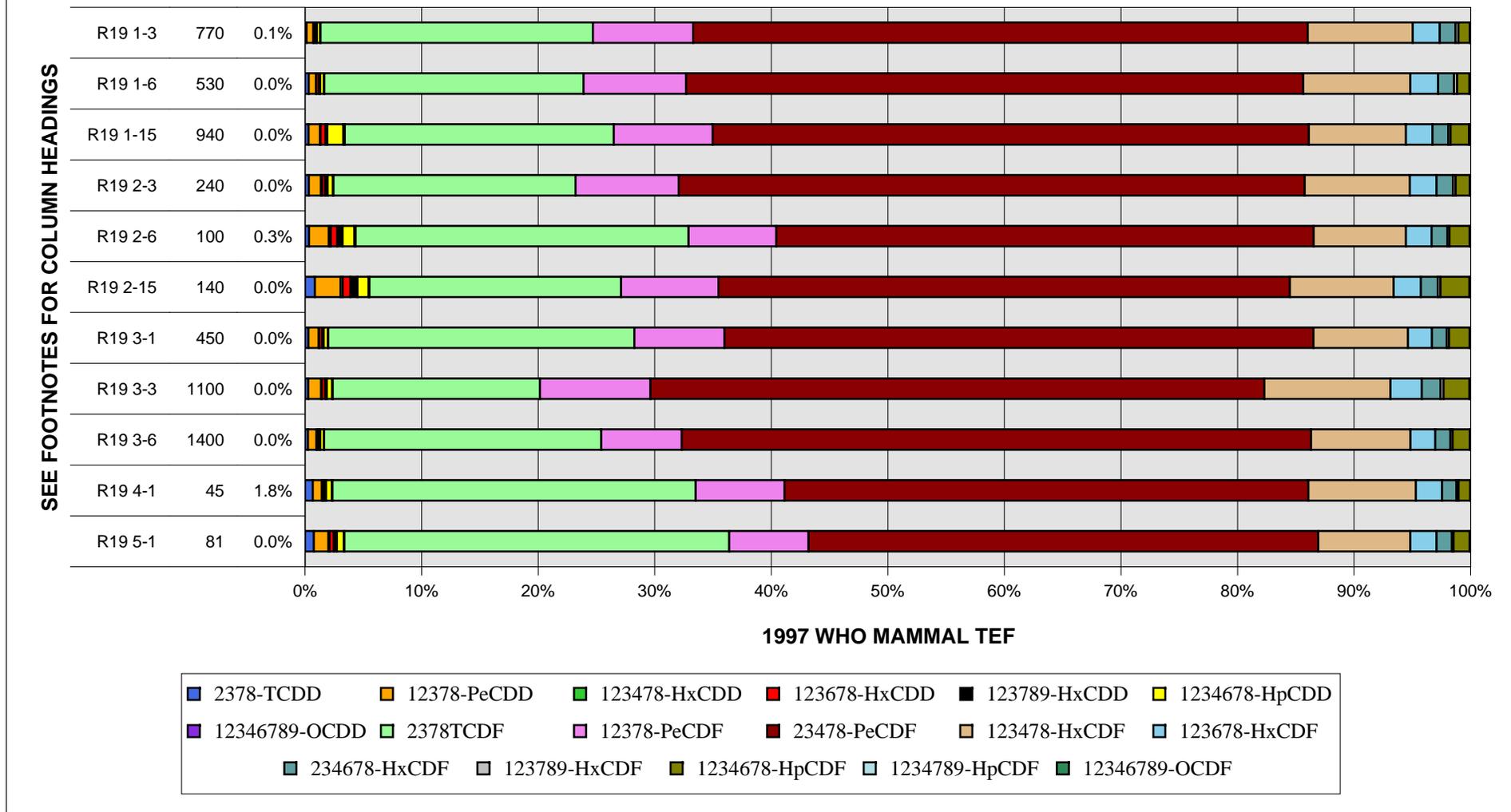
**Column 1** - Sample Location

**Column 2** - Total TEQ: This value represents the toxicity of the sample and may be compared to Part 201 criteria. All total TEQs represent those dioxins and furans with known TEFs and include non-detects valued at ½ of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

# TEQ PROFILES

## 19 RIVERSIDE DRIVE, SAGINAW COUNTY DIOXIN SOIL SAMPLES



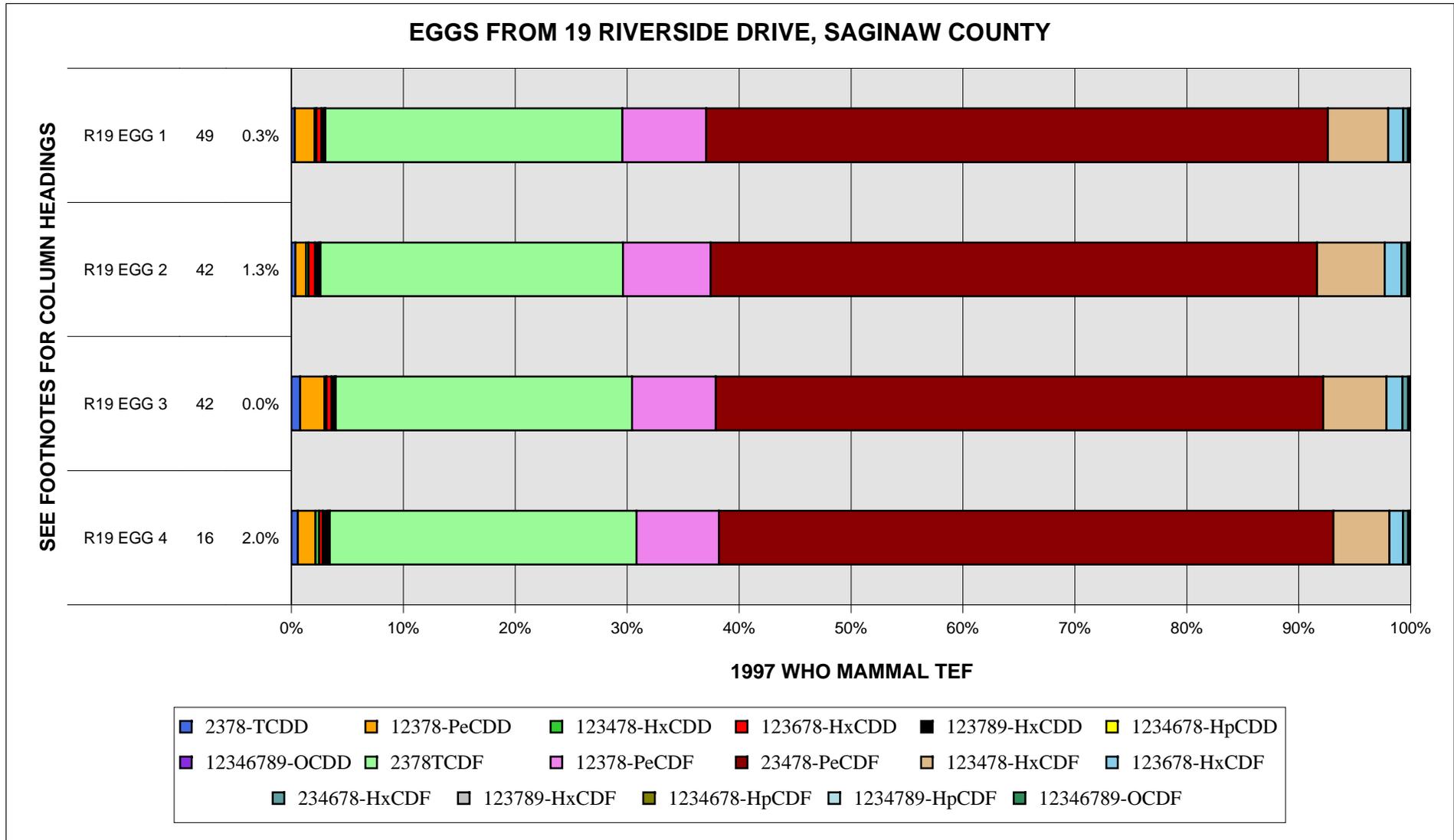
**Column 1** - Sample Location

**Column 2** - Total TEQ: This value represents the toxicity of the sample and may be compared to Part 201 criteria. All total TEQs represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

# TEQ PROFILES

## EGGS FROM 19 RIVERSIDE DRIVE, SAGINAW COUNTY



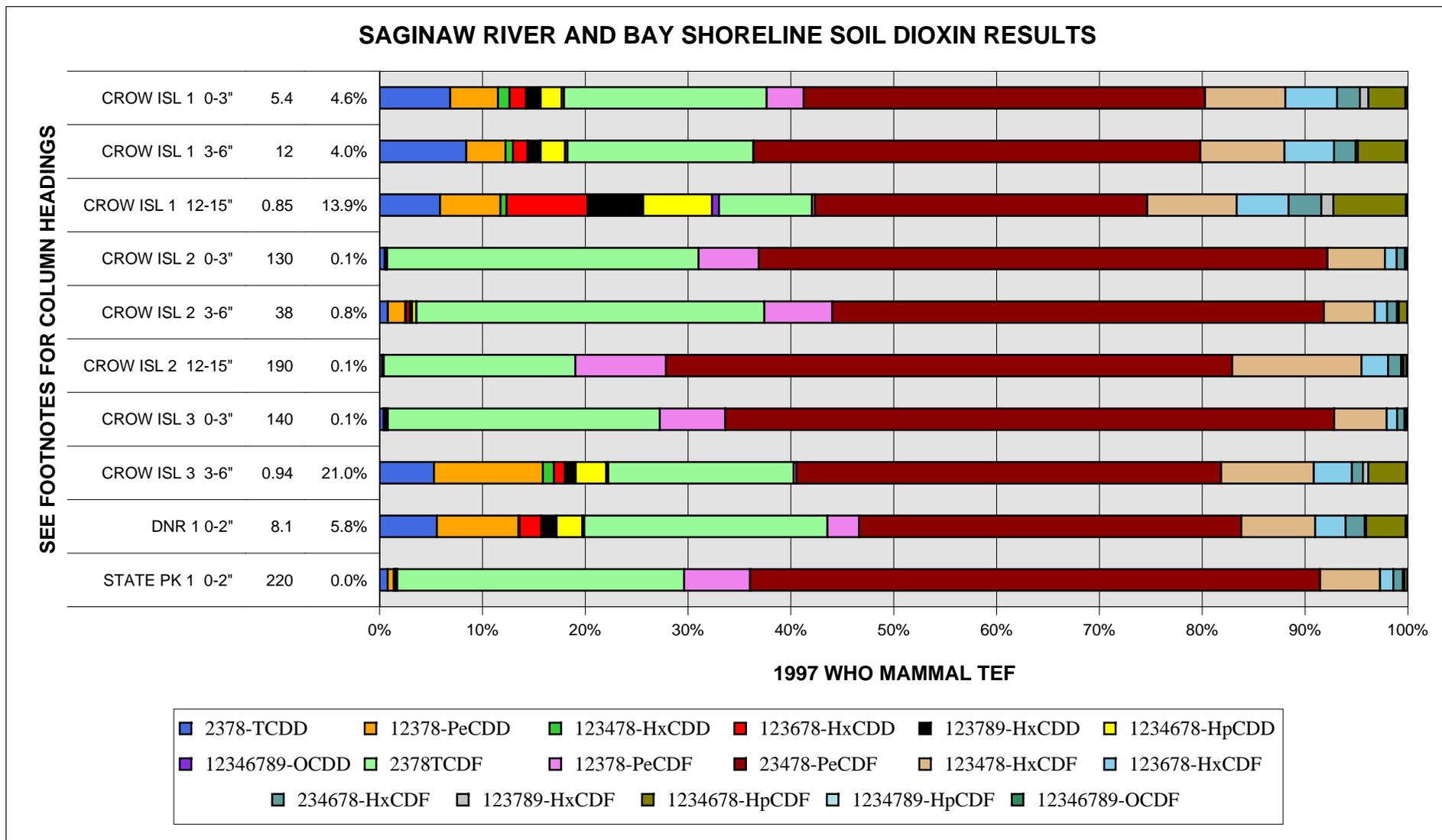
**Column 1** - Sample Location

**Column 2** - Total TEQ: This value represents the toxicity of the sample and may be compared to Part 201 criteria. All total TEQs represent those dioxins and furans with known TEFs and include non-detects valued at ½ of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

# TEQ PROFILES

## SAGINAW RIVER AND BAY SHORELINE SOIL DIOXIN RESULTS



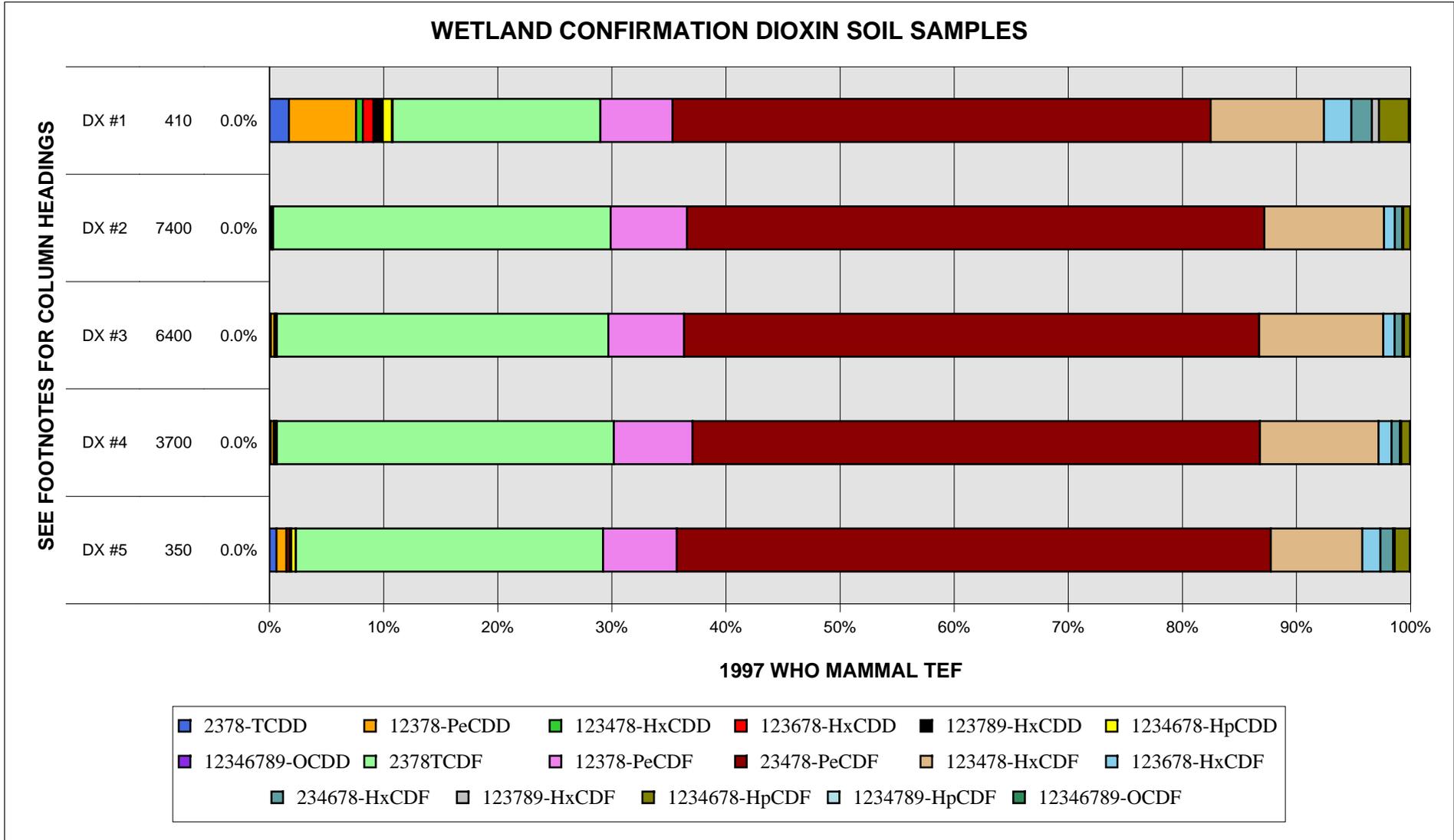
**Column 1** - Sample Location

**Column 2** - Total TEQ: This value represents the toxicity of the sample and may be compared to Part 201 criteria. All total TEQs represent those dioxins and furans with known TEFs and include non-detects valued at ½ of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

# TEQ PROFILES

## WETLAND CONFIRMATION DIOXIN SOIL SAMPLES



**Column 1** - Sample Location

**Column 2** - Total TEQ: This value represents the toxicity of the sample and may be compared to Part 201 criteria. All total TEQs represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

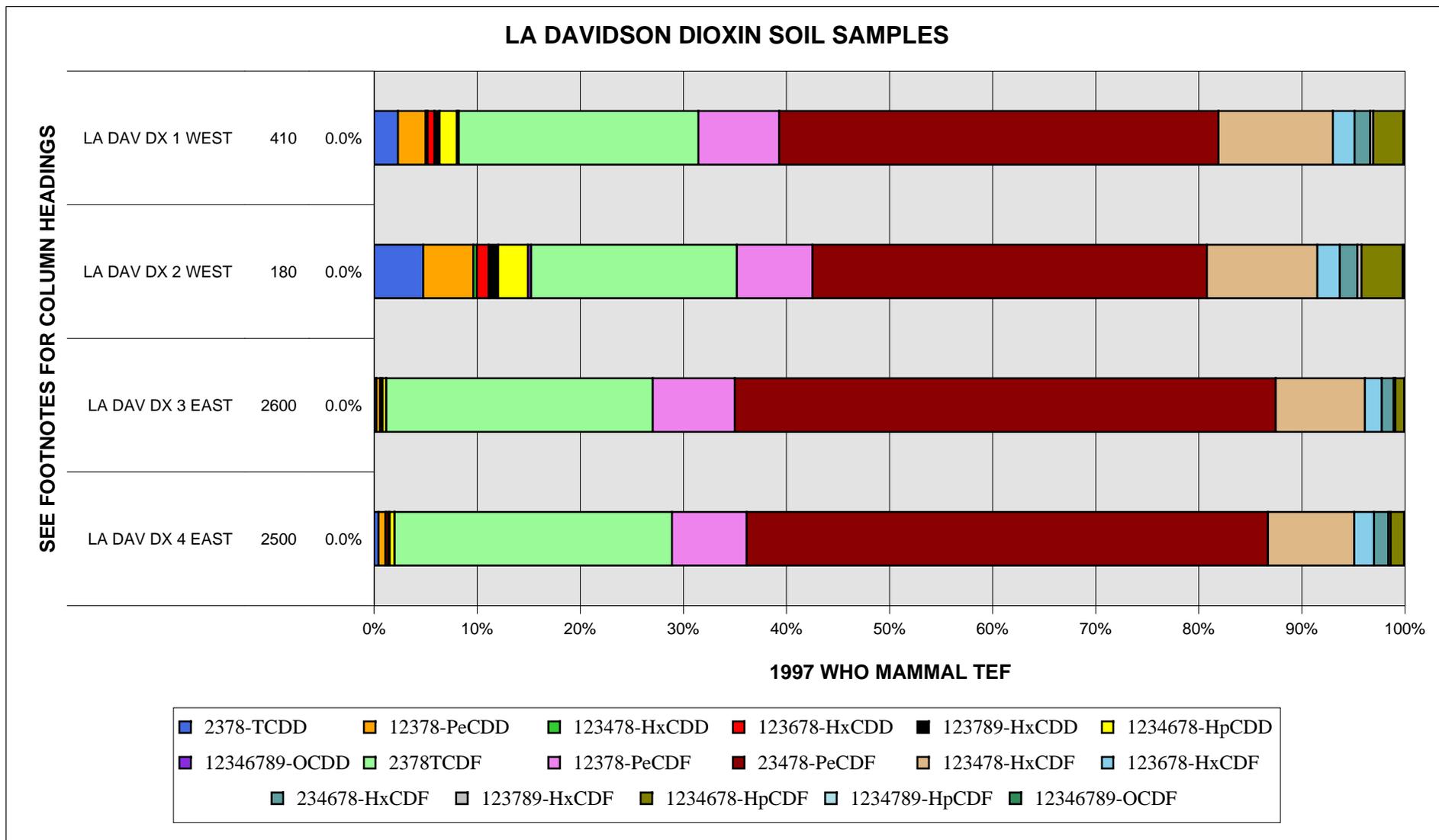
**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

Date: 7/30/2003

Data Subject to Revisions and/or Updates

# TEQ PROFILES

## LA DAVIDSON DIOXIN SOIL SAMPLES



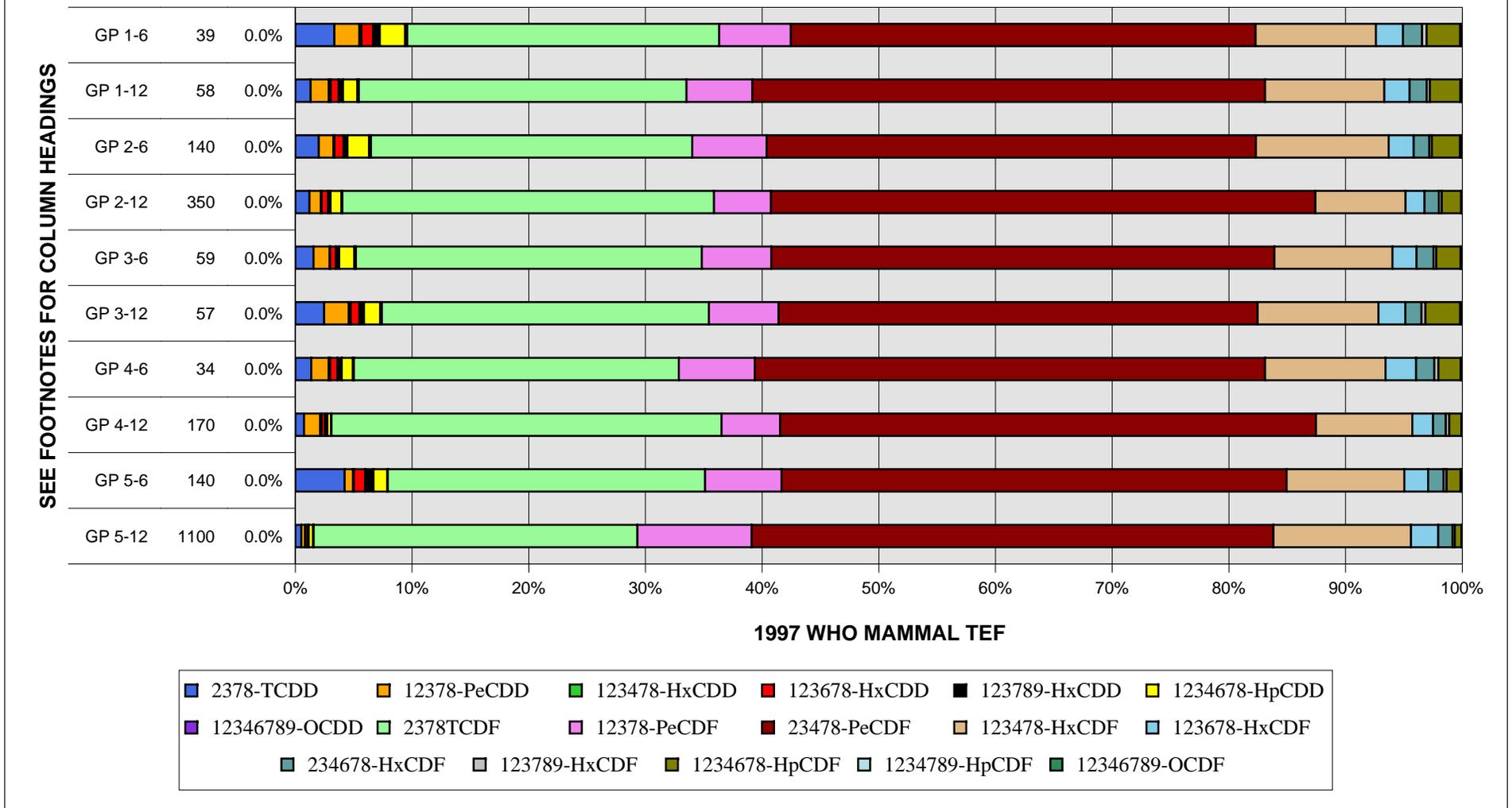
**Column 1** - Sample Location

**Column 2** - Total TEQ: This value represents the toxicity of the sample and may be compared to Part 201 criteria. All total TEQs represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

# TEQ PROFILES

## SHIAWASSEE WILDLIFE REFUGE FIELD DIOXIN SOIL SAMPLES



**Column 1** - Sample Location

**Column 2** - Total TEQ: This value represents the toxicity of the sample and may be compared to Part 201 criteria. All total TEQs represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

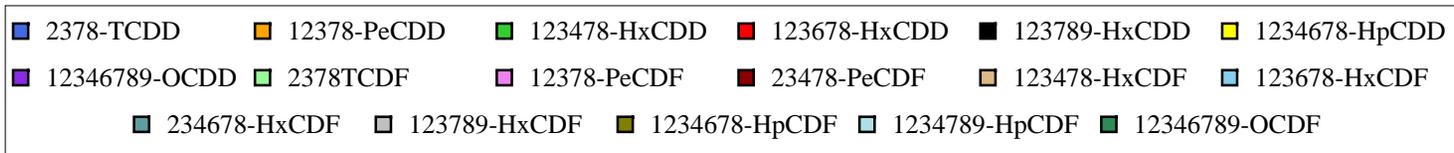
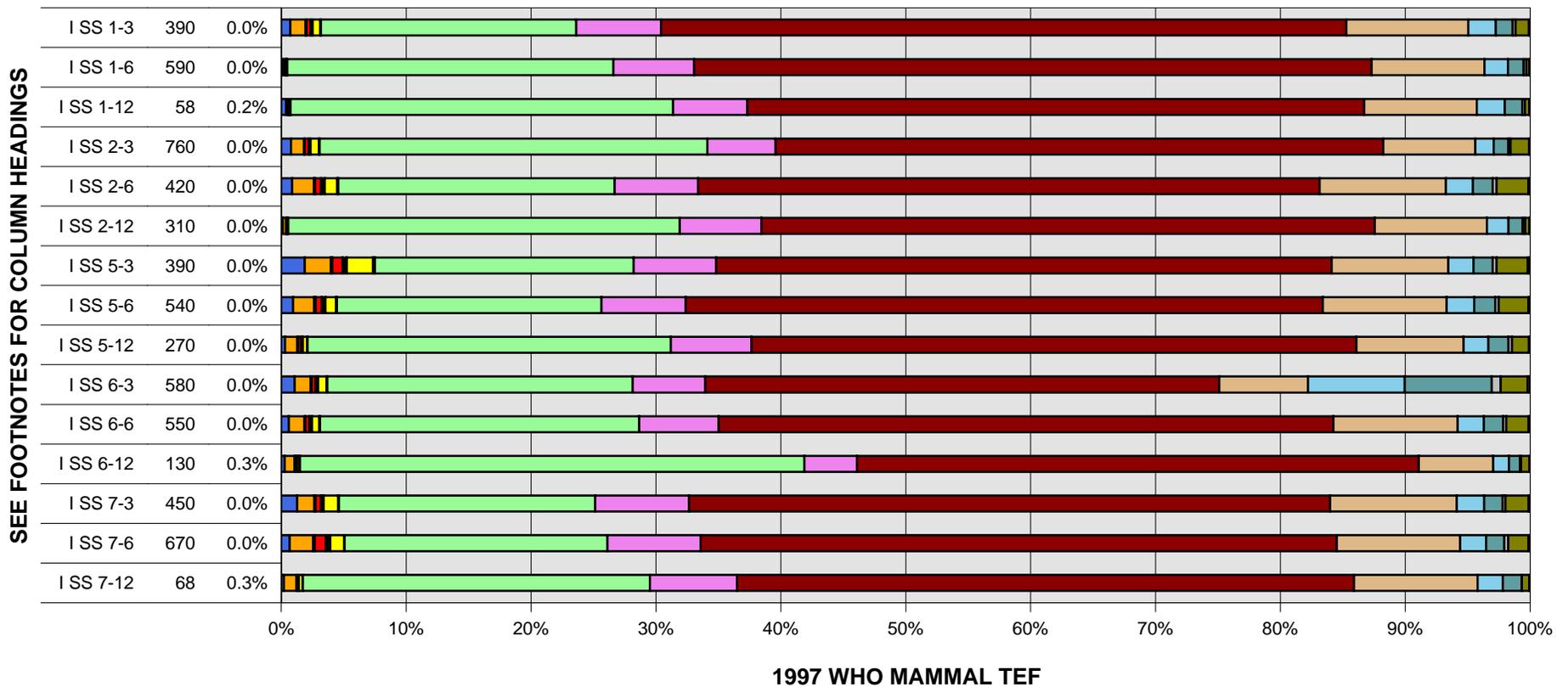
**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

Date: 7/30/2003

Data Subject to Revisions and/or Updates

# TEQ PROFILES

## SHIAWASSEE WILDLIFE REFUGE FOREST DIOXIN SOIL SAMPLES



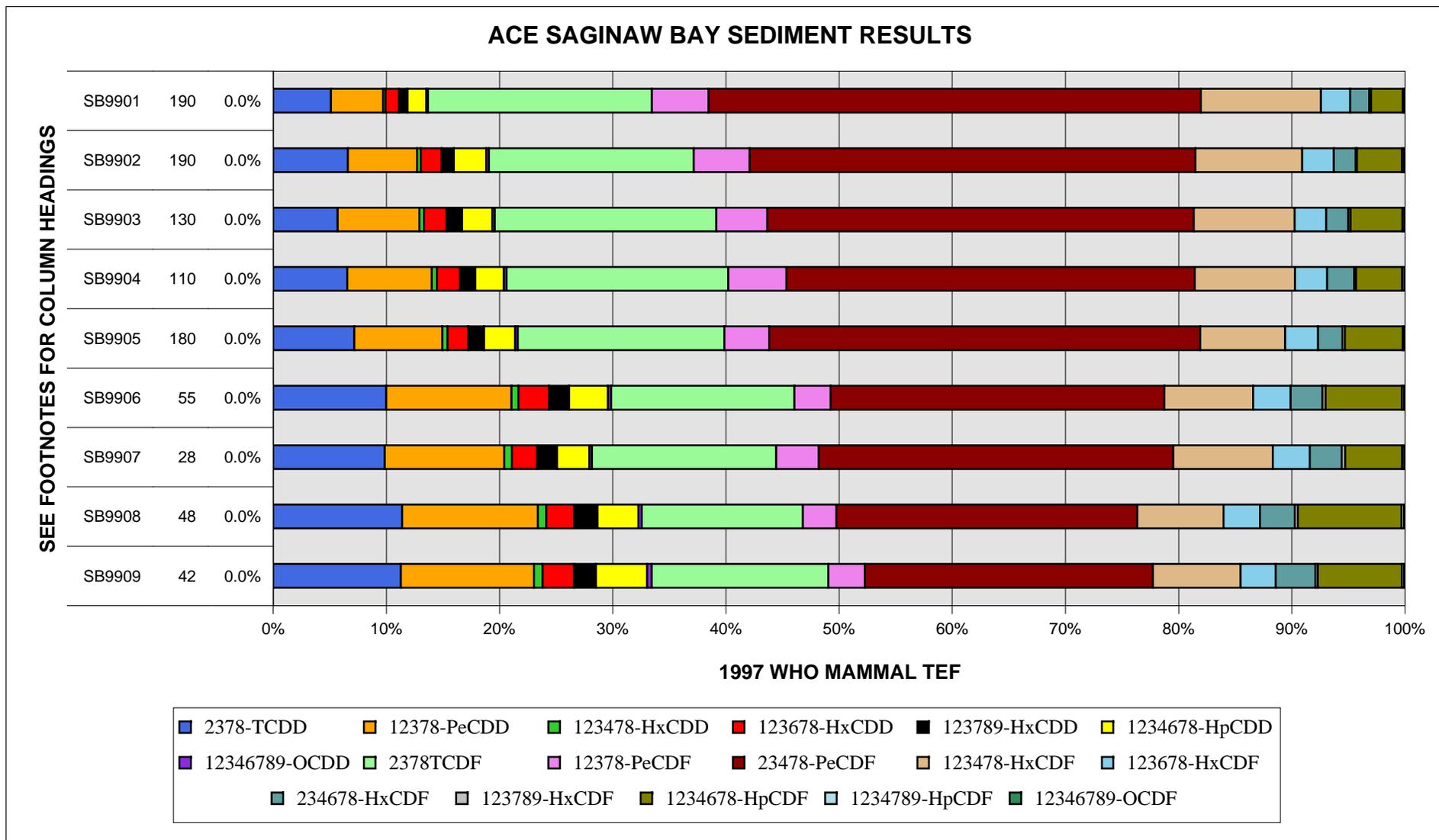
**Column 1** - Sample Location

**Column 2** - Total TEQ: This value represents the toxicity of the sample and may be compared to Part 201 criteria. All total TEQs represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

# TEQ PROFILES

## ACE SAGINAW BAY SEDIMENT RESULTS



**Column 1** - Sample Location

**Column 2** - Total TEQ: This value represents the toxicity of the sample and may be compared to Part 201 criteria. All total TEQs represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

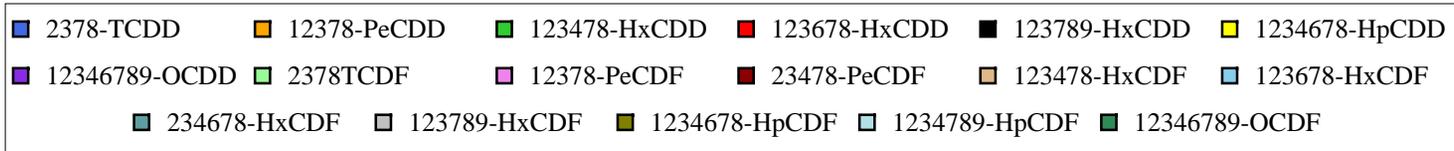
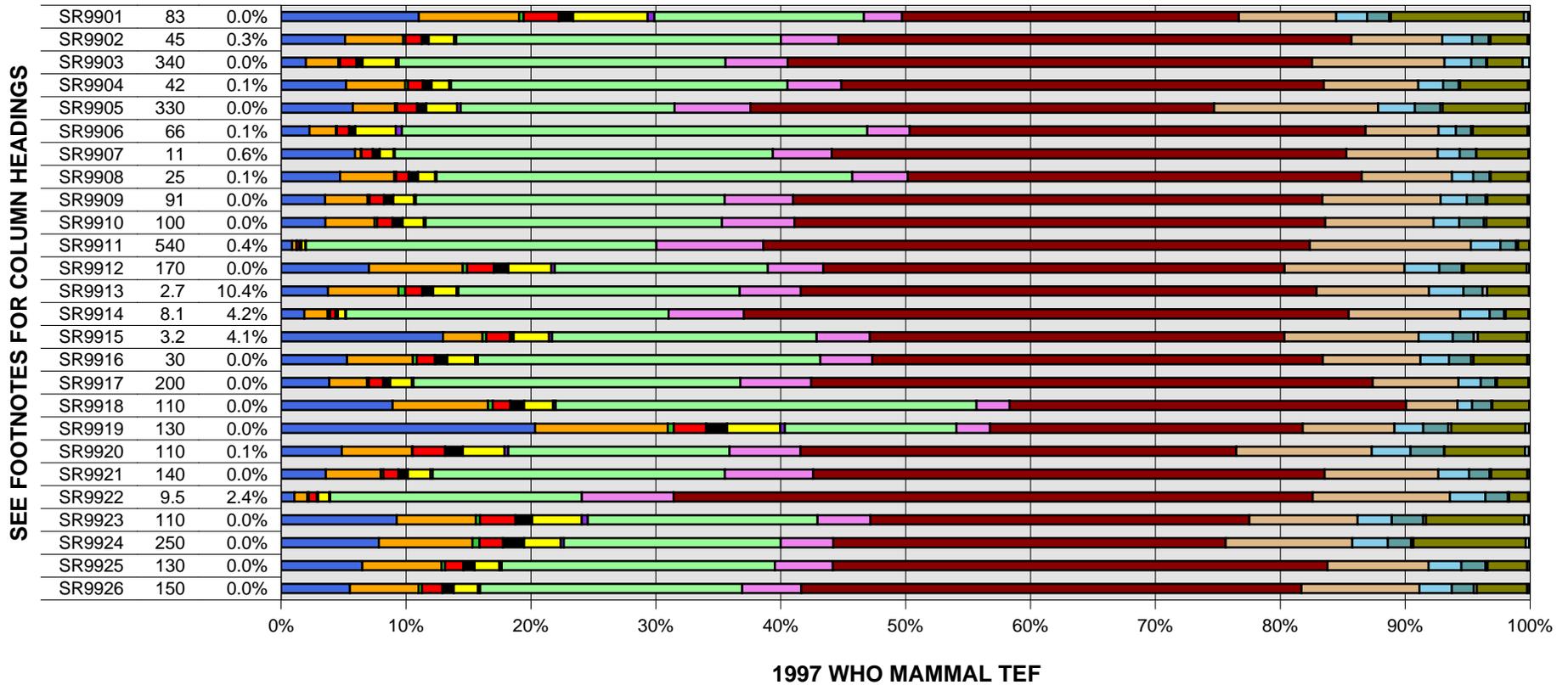
**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.

Date: 7/30/2003

Data Subject to Revisions and/or Updates

# TEQ PROFILES

## ACE SAGINAW RIVER SEDIMENT RESULTS



**Column 1** - Sample Location

**Column 2** - Total TEQ: This value represents the toxicity of the sample and may be compared to Part 201 criteria. All total TEQs represent those dioxins and furans with known TEFs and include non-detects valued at 1/2 of the detection level.

**Column 3** - Percent Non-Detect: The percent value represents the percentage of a sample comprised of non-detects (NDs). A higher percentage composition of NDs (e.g., > 5%) makes it more difficult to visually interpret the profile.