

Location	Address	City	UTM X	UTM Y
401	5221 Linda Vista Dr	Charleston	432342	4254199
402	1008 Washington Ave	Nitro	426368	4250859
403	132 Ridgeview Dr	Scott Depot	423030	4258916
404	110b Winfield Rd	Saint Albans	425261	4250518
405	1419 Sattes Cir	Nitro	427251	4249850
406	14 Presidio Pointe	Cross Lanes	431646	4252803
407	4923 Dempsey Dr	Charleston	432704	4251817
408	127 Robin Rd	Nitro	428294	4251975
409	1 Central Ave	Saint Albans	425125	4249333
410	123 Riverview Dr	Saint Albans	424683	4249744
411	520 Barrett St	Saint Albans	425860	4248486
412	466 Blue Lick Rd	Winfield	423993	4261986
413	136 Cross Lanes Dr	Nitro	430090	4250479
414	5009 Tipperary St	Cross Lanes	431749	4252974
415	1278 Poca River Rd N	Poca	430560	4257928
416	5016 Kilarney Way	Charleston	431732	4252851
417	45 Janette Dr	Poca	429444	4258550
418	199 Skyline Dr	Scott Depot	422552	4257937
419	209 Virginia Ave N	Saint Albans	425398	4251001
420	97 Richard Dr	Poca	429421	4259508
421	157 Shawnee Est	Winfield	426308	4262088
422	23 Log Gdns	Nitro	426249	4252280
423	5272 Claybank Rd	Charleston	433233	4255907
424	450 Poplar Fork Rd	Scott Depot	421440	4251255
425	1108 Crossroads Vlg	Nitro	426237	4251429
426	14 Hardwood Dr	Charleston	432940	4254549
427	41 Evergreen Cir	Poca	429625	4257306
428	408 Dupont Ave	Nitro	426274	4251295
429	31 1/2 Willis Ln	Saint Albans	424987	4251095
430	209 Hillside Dr Apt C	Nitro	427447	4250162
431	160 Kilgore Rd	Scott Depot	421866	4258276
432	5208 Monta Vista Dr	Charleston	433261	4254138
433	186 Spruce Ln	Poca	429880	4257807
434	5406 Bailey Rd	Cross Lanes	432814	4255620
435	67 Kanawha Ter	Saint Albans	426846	4248879
436	5206 Nesting Way	Charleston	432034	4254113
437	2935 Poca River Rd N	Poca	429599	4258581
438	212 Brookhaven Dr	Nitro	429803	4254239
439	120 Oakland Dr	Cross Lanes	430382	4252318
440	121 Oakmont Dr	Poca	430157	4257604
441	811 1st Ave S	Nitro	428103	4249667
442	102 Juniper St	Nitro	426586	4250774
443	5258 Bailey Rd	Charleston	432865	4254571
444	108 Hillside Dr	Nitro	427283	4250303
445	120 Ranch Lake Blvd	Scott Depot	423046	4258590
446	109 Fairland Dr	Nitro	430118	4252803
447	58 Haning Dr	Poca	430060	4258609
448	402 3rd Ave	Saint Albans	427277	4249214
449	105 Seven Oaks Dr	Scott Depot	422615	4256849
450	4500 1st Ave Trlr 3	Nitro	428217	4255606

Table 2 (cont.). UTM coordinates, consistent with the NAD83 Zone 17N datum, for potential interior dust sampling locations shown in Figure 2; addresses for sampling candidates are also given.

**ATTACHMENT B**

**TENCON, INC. SOIL SAMPLING PROTOCOL FOR DIOXIN  
IN THE NITRO WEST VIRGINIA AND SURROUNDING AREA**

### **1.0 BACKGROUND AND BASIS**

Soil samples are to be collected from residential properties located in and around Nitro West Virginia. The purpose of the soil sampling is to representatively define the surficial extent of dioxin contamination in the soil at selected locations in and around Nitro West Virginia. These locations were developed as a part of an overall sampling plan prepared by Dr. George C. Flowers (the PLAN) and provided to TENCON by Carpenter Environmental Associates in conjunction with The Calwell Group PLLC. Copy of the PLAN is attached.

### **2.0 LOCATION, QUANTITY AND RANDOMIZATION OF SAMPLING POINTS**

An initial evaluation of the sampling locations indicates that the majority of the identified sampling points are within the Saint Albans, Bancroft and Scott Depot quadrants of the USGS Topological maps. These locations are identified by UTM coordinates which have been provided to TENCON as a part of the above mentioned sampling plan. In the field, a hand held GPS (UTM coordinate capable) unit will be used to locate the predefined sampling points, and to re-locate sample sites, if necessary. A total of 100 sample points have been defined in the PLAN. Of these, TENCON is to collect 70 split soil samples.

It is our understanding that sampling points have been randomized as a part of the preparation of the sampling PLAN, but that the order of points given in the PLAN is not necessarily the collection order. This will allow for some economy of labor in the sample collection process. Samples will be split at time of collection for analysis by TENCON into two sample jars. One of the sample jars will be provided to a representative of Monsanto and the other will be sent to lab for analysis as directed by Carpenter Environmental in conjunction with the Calwell Group.

### **3.0 SAMPLE COLLECTION**

One soil sample will be collected from each location (up to 70) specified in the PLAN and split into two containers. One of the split sample containers will be given to the Monsanto representative from each PLAN location sampled.

The following factors may cause a sample location to be deemed uncollectable:

- The presence of any unique topographic or other physical features at the sampling location, such as the presence of a steep hillside or cliff, a lake or pond, concrete or asphalt paving, barbed wire or electrified fences, etc.
- Any specific physical hazard such as the presence of vicious animals, poisonous plants, or unsafe physical location issues, etc.
- Any location where there is no prior agreement by the owner or occupant to allow entry or where the owner or occupant refuses entry, or exhibits aggressive or otherwise threatening behavior.

The Calwell Group is responsible for coordinating with landowners and occupants and for coordinating the entry access agreements for each of the sampling locations in the PLAN.

The PLAN specifies that the soil is to be collected from the top two centimeters of the soil at the locations specified and analyzed by USEPA method 4435. Based on the PLAN's specified laboratory analytical method (XDS-Calux) and the limit of detection specified by the Calwell Group's toxicologist (10 parts per trillion), the lab has specified a minimum sample size of 1 gram per sample. Due to the split sample, it will be necessary to collect 20 grams of soil in a given sample. This is a physical sample of approximately 5" x 5" to a depth of 2 centimeters of soil.

#### **4.0 SOIL SAMPLING PROTOCOL AT EACH LOCATION**

- 4.1. Prior to sampling, assemble the sampling components for the specific site: cleaned metal (chrome or stainless) sampling auger, metal pan for compositing soil sample, non-powdered latex gloves, stainless steel trowel or spoon, two 4 ounce amber jars with Teflon lined lids, labels, chain of custody.
- 4.2. Vegetative cover will be removed to ground level prior to sample collection. Once the site is located, record the UTM coordinates on the sampling log for that sample number. Open that sampling kit. The metal pan will be used as a compositing surface.
- 4.3. Using the soil auger, four soil cores two centimeters deep will be outlined and manually removed to the compositing pan using the metal auger and collection trowel. It is anticipated that four adjacent 2 1/2" wide auger holes to a depth of 2 centimeters are necessary at each location to provide a sufficient quantity of soil to collect the minimum of 20 grams (10 grams each jar) for analysis.
- 4.4. Prior to filling the two jars, soil from the multiple auger holes will be composited and homogenized in the foil lined metal pan using the collection trowel. The composited sample will be divided in half and each half placed in a labeled sample jar.
- 4.5. Any soil remaining after all sample jars are filled is placed back into the auger holes at the end of sample collection activities. The hand auger and other site specific supplies are placed in a bag to be decontaminated prior to reuse. Gloves are placed in a bag for disposal.
- 4.6. Prior to leaving the specific sample location, the soil type, unusual characteristics of the sample location and time of collection are recorded as field notes. Soil samples are packed in a secure container and kept under lock prior to transport to the analytical lab for analysis of dioxin.

This procedure is repeated for each sample depth at all sample locations.

The above procedure is in compliance with commonly acceptable soil sampling methods as outlined in EPA SW 846.

## **5.0 SPECIFIED ANALYTICAL LABORATORY**

Soil samples to be sent for dioxin analysis (USEPA Method 4435) to

Zenobiotic Detection Systems  
1601 East Geer Street, Suite S  
Durham, North Carolina 27704

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# **TENCON, INC. PROCEDURE FOR COLLECTION OF SPLIT INDOOR DUST SAMPLES FROM HOUSEHOLD SURFACES FOR DIOXIN ANALYSIS USING AN OMEGA VACUUM CLEANER**

## **1.0 BACKGROUND AND BASIS**

Household dust samples are to be collected from residential properties located in and around Nitro West Virginia. The purpose of the dust sampling is to representatively define the surficial extent of dioxin contamination in the dust inside residences at selected locations in and around Nitro West Virginia. These locations were developed as a part of an overall sampling plan prepared by Dr. George C. Flowers (the PLAN) and provided to TENCON by Carpenter Environmental Associates in conjunction with The Calwell Group PLLC. A copy of the PLAN is attached.

The collection of indoor dust samples requires a systematic and regimented collection and handling protocol. This sampling method defines the fundamental techniques used to obtain representative and defensible indoor dust samples to support an environmental project or study effort. TENCON recognizes that there may be site-specific circumstances that necessitate deviation from the standard protocol described in this sample collection procedure. Any such deviation will be fully documented and such information provided prior to conclusion of the sampling event so allow an alternate site to be selected as needed.

## **2.0 LOCATION, QUANTITY AND RANDOMIZATION OF SAMPLING POINTS**

Initially the sampling locations will be plotted on the appropriate quadrants of the USGS Topological maps. It is anticipated that the majority of the identified sampling points will be within the Saint Albans, Bancroft and Scott Depot quadrants of the USGS Topological maps. These locations will be identified by specific street addresses which are provided to TENCON as a part of the PLAN. A total of 350 possible sample points have been defined in the PLAN. Of these, TENCON is to collect 200 (divided between parties to 100 each) dust samples.

It is our understanding that sampling addresses have been randomized as a part of the preparation of the sampling PLAN, but that the order of addresses given in the PLAN is not necessarily the collection order. This will allow for some economy of labor in the sample collection process.

Two (duplicate) samples will be collected for analysis by TENCON at each location. One of these samples cassettes will be sealed, labeled and provided to a representative of Monsanto and the other will be sealed, labeled and sent to lab for analysis as directed by Carpenter Environmental in conjunction with the Calwell Group.

### 3.0 METHOD SUMMARY

Sample collection uses a vacuum with a nozzle/cartridge collection device attached to the end of the vacuum hose. This nozzle is equipped with an integral cartridge that acts as the actual collection surface. The procedure focuses on maximization of sample mass and collection of unbiased split samples, while preventing any cross-contamination through the use of a new nozzle/cartridge system for each sample location.

The vacuum selected is the Omega Vacuum by Atrix Technologies. This vacuum is equipped with a high-efficiency particulate air (HEPA) filter. The vacuum will be used to collect sample mass in the duplicate nozzle/cartridge assemblies from representative areas containing settled dust throughout the study homes. Surfaces to be sampled include tops of curtains, window ledges, door jambs, ceiling fans and air filters.

Recoverable sample material includes dust and particulate matter having cross-sectional dimensions of approximately 0.3 micrometers ( $\mu\text{m}$ ) and larger.

Samples will be simultaneously collected in two nozzle/cartridge assemblies. Each cartridge is lined with a permeable collection bag capable of capturing particulate matter having cross-sectional dimensions of approximately 0.3 micrometers ( $\mu\text{m}$ ) and larger. The two cartridges will be fitted to the end of a T-type splitter which is attached to the Omega Vacuum. The cartridges will be used for simultaneous collection of the two samples. Nozzle/cartridge assemblies are then removed, labeled, sealed in foil in a non conductive bag, and stored in a secure shipping container.

Primary sample areas will target living areas in which residents are most likely to spend proportionately longer amounts of time, i.e. family rooms, bedrooms, etc. Tops of ceiling fan blades, tops of draperies, tops of windows and doors, tops of pictures, and window ledges will also be considered primary sample locations because of their propensity to capture dust.

Because the target detection limit is relatively low (10 parts per trillion), the target mass for each cartridge will be 1.0 gram. Consequently, in instances where study homes are relatively small or when extracted dust mass from primary target living areas is not likely to be sufficient to support the detection limit, secondary target areas including hallways and/or additional bedrooms may be systematically sampled to increase the total mass of the dust sample acquired. In extreme cases, it may be necessary to vacate the study home and consider an alternative study home.

At the end of the sampling event, the result will be two sample masses collected in two unique nozzle/cartridge assemblies. One sample nozzle/cartridge will be sealed, stored in foil in a non-conductive plastic bag, logged in the field log, placed in a controlled container, and subsequently provided to a representative of the Monsanto party. The second sample cartridge will be sealed, stored in foil in a non-conductive plastic bag, logged in the field log, placed in a controlled container and subsequently shipped to Xenobiotic Detection Systems in North Carolina, USA for analysis utilizing EPA Method 4435 with a minimum target detection level of 10 parts per trillion (ppt).

#### **4.0 EQUIPMENT/MATERIALS REQUIRED**

The following materials will be required to conduct the indoor dust samples. Both disposable and reusable sampling equipment is required.

- 4.1 Omega Vacuum by Atrix Technologies (vacuum cleaner)
- 4.2 Omega Vacuum Six Foot Flexible Hose
- 4.3 T-Type PVC Vacuum Hose Splitter Attachment
- 4.4 Unique, pre-tared Nozzle Attachment with Semi-Permeable Collection Cartridge
- 4.5 Non powdered latex Gloves
- 4.6 Gram Scale (minimum 50 x .01g)
- 4.7 Labels and ballpoint pen or pencil (NO MARKER)
- 4.8 Teflon Tape
- 4.9 Static-Shielding recloseable bags
- 4.10 Methanol
- 4.11 Distilled water

#### **5.0 SAMPLE PROCEDURES**

- 5.1 Review field data sheets, and documentation materials to confirm adequate and appropriate field supplies, and sample locations.
- 5.2 Upon arrival at the sampling location, document field conditions per the field log forms and record all requested general information. Don appropriate field sampling apparel. Take extra latex gloves in the house for subsequent use. (Observe study home for apparent level of indoor settled dust and overall cleanliness. If it appears that study home will not provide an adequate sample mass, it may be prudent to vacate the sample home and seek an alternative location.)
- 5.3 Survey primary and secondary target sample areas and take note in the field log.

At a minimum, primary sample areas will target living areas in which residents are most likely to spend proportionately longer amounts of time, i.e. in a family room, bedrooms, etc. In addition, air filters, tops of ceiling fan blades, draperies, and window ledges will also be considered primary sample target locations because of the propensity to capture settling dust inside the home. Record additional information required on the field log forms, as appropriate.

- 5.4 Assemble the Omega Vacuum
  - 5.4.1 Ensure that the HEPA filter and catch basin are securely in place
  - 5.4.2 Attach the vacuum hose to the vacuum unit and check fit for tightness
  - 5.4.3 Attach the T-type splitter to the vacuum hose and check fit for tightness



- 5.4.4 Weigh two plastic dust collection cartridges independently and note the weight in tenths of a gram in the field log
  - 5.4.5 Mark the top and bottom cartridge plugs on the two plastic dust collection cartridges appropriately such that they might be replaced in their original position once the sampling has been completed.
  - 5.4.6 Attach a plastic dust collection cartridge to each end of the T-type splitter and check fit for tightness.
- 5.5 The intent is to collect representative dust samples from a given surface by leading first with the left collection nozzle and then with the right collection nozzle. Identify the type of sample area and begin sample collection per the following guidance:
- 5.5.1 Door frames, tops of windows, tops of curtain areas – start at the farthest end of the left side and move towards the center of the “ledge”. Then start at the farthest end of the right side and move towards the center of the ledge. Repeat as needed.
  - 5.5.2 Tops of shelves - start at the back left corner of the left side and move towards the center of the shelf. Then start at the back right corner of the shelf and move towards the center. Advance the width of the nozzle and repeat as needed.
  - 5.5.3 Fronts of draperies or cabinets. Move the vacuum head slowly and deliberately down in strips the width of the two vacuum heads, then shift to the left or right side to catch the next adjacent surface. Pass the vacuum head down over each strip until it is believed that the sample area is exhausted.
  - 5.5.4 Prior to beginning any new surface, lift the vacuum heads and turn off the vacuum in order to minimize the risk of biasing the split-samples.
  - 5.5.5 TENCON recognizes that there may be site-specific circumstances that necessitate deviation from the standard protocol described in this sample collection procedure. In such case, documentation and record-keeping diligence is of utmost importance.
- Continue this process until both plastic dust collection cartridges have collected a visually estimated 1.0 grams of sample mass.
- 5.6 Remove the nozzle from the T-type splitter. Visually inspect the plastic dust collection nozzle/cartridge for integrity. Replace the inlet plug and weigh the nozzle/cartridge assembly. Record the weight on the label.
  - 5.7 Replace the bottom plug in the nozzle assembly.
  - 5.8 Wrap each cartridge with Teflon tape such that each plug is held firmly in place

- 5.9 Complete the label on each cartridge containing the sample ID#, the start time, the end time, etc. Record this information in the field log along with the final net weight of the nozzle assembly in tenths of a gram.
- 5.10 Place each cartridge in foil and then in a static-shielding baggie and seal. Log any final the observations in the field log.
- 5.11 Provide one of the cartridges to the representative from Monsanto and have them initial the field log, acknowledging receipt of the split-sample.
- 5.11 The remaining cartridge will be shipped to Xenobiotic Detection Systems (XDS) in North Carolina, USA for analysis utilizing EPA Method 4435 with a minimum target detection level of 10 parts per trillion (ppt).

## **6.0 CONTINGENCY SAMPLE MEASURES**

No contingency sample protocol is in place. In the event that an adequate sample is not reasonably collectable, the study house is to be vacated and an alternative study house will be selected.

## **7.0 OMEGA VACUUM DECONTAMINATION**

This sample collection protocol utilizes a vacuum as a sample collection unit with the sampling medium located at the inlet of the vacuum train. Because of this, any contamination collected in the vacuum hose, the vacuum unit, or the unit's HEPA filter will not contaminate the sampling medium. Also, the HEPA filter will prevent any material that is in the vacuum from becoming airborne in subsequent sampling locations. HEPA filters will be inspected nightly as a part of clean up and prep for the next days sampling.

Decontamination of the interior of the sampling equipment prior to each sampling event would constitute an unnecessary time expense and is not recommended as part of this protocol. Units will be surface wiped after to leaving the home and prior to starting the next sampling procedure.

## **8.0 QUALITY ASSURANCE/QUALITY CONTROL**

There are no specific quality assurance activities which apply to the implementation of these procedures. However, the following general QA procedures apply:

1. All data and observations must be documented in the field logbooks.
2. All instruments must be operated in accordance with operating instructions as supplied by the manufacturer, unless otherwise specified in the work plan.

## **9.0 DATA VALIDATION**

For every 20 samples collected, a second set of duplicate samples will be collected in that home to serve as a lab duplicate if desired. In addition, a nozzle/cartridge assembly field blank will be submitted for every 100 samples.

## **10.0 HEALTH AND SAFETY PRECAUTIONS**

Field crews reserve the right to refuse to sample a location due to concern for their physical well being due to animals, or threatening behavior of the occupants, if encountered.

TENCON's Health and Safety plan as required by the PLAN will be distributed prior to sampling and must be observed and implemented prior to dust sample collection. Chemical exposures are not anticipated, and physical or mechanical hazards are only those that would be found in any typical household environment.

## **TENCON, INC. PROCEDURE FOR COLLECTION OF SPLIT INDOOR DUST SAMPLES FROM HOUSEHOLD SURFACES FOR DIOXIN ANALYSIS USING AN OMEGA VACUUM CLEANER**

### **1.0 BACKGROUND AND BASIS**

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### **2.0 LOCATION, QUANTITY AND RANDOMIZATION OF SAMPLING POINTS**

Initially the sampling locations will be plotted on the appropriate quadrants of the USGS Topological maps. It is anticipated that the majority of the identified sampling points will be within the Saint Albans, Bancroft and Scott Depot quadrants of the USGS Topological maps. These locations will be identified by specific street addresses which are provided to TENCON as a part of the PLAN. A total of 350 possible sample points have been defined in the PLAN. Of these, TENCON is to collect 200 (divided between parties to 100 each) dust samples.

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Recoverable sample material includes dust and particulate matter having cross-sectional dimensions of approximately 0.3 micrometers ( $\mu\text{m}$ ) and larger.

Samples will be simultaneously collected in two nozzle/cartridge assemblies. Each cartridge is lined with a permeable collection bag capable of capturing particulate matter having cross-sectional dimensions of approximately 0.3 micrometers ( $\mu\text{m}$ ) and larger. The two cartridges will be fitted to the end of a T-type splitter which is attached to the Omega Vacuum. The cartridges will be used for simultaneous collection of the two samples. Nozzle/cartridge assemblies are then removed, labeled, sealed in foil in a non conductive bag, and stored in a secure shipping container.

Primary sample areas will target living areas in which residents are most likely to spend proportionately longer amounts of time, i.e. family rooms, bedrooms, etc. Tops of ceiling fan blades, tops of draperies, tops of windows and doors, tops of pictures, and window ledges will also be considered primary sample locations because of their propensity to capture dust.

Because the target detection limit is relatively low (10 parts per trillion), the target mass for each cartridge will be 1.0 gram. Consequently, in instances where study homes are relatively small or when extracted dust mass from primary target living areas is not likely to be sufficient to support the detection limit, secondary target areas including hallways and/or additional bedrooms may be systematically sampled to increase the total mass of the dust sample acquired. In extreme cases, it may be necessary to vacate the study home and consider an alternative study home.

At the end of the sampling event, the result will be two sample masses collected in two unique nozzle/cartridge assemblies. One sample nozzle/cartridge will be sealed, stored in foil in a non-conductive plastic bag, logged in the field log, placed in a controlled container, and subsequently provided to a representative of the Monsanto party. The second sample cartridge will be sealed, stored in foil in a non-conductive plastic bag, logged in the field log, placed in a controlled container and subsequently shipped to Xenobiotic Detection Systems in North Carolina, USA for analysis utilizing EPA Method 4435 with a minimum target detection level of 10 parts per trillion (ppt).

#### **4.0 EQUIPMENT/MATERIALS REQUIRED**

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- 4.5 Non powdered latex Gloves
- 4.6 Gram Scale (minimum 50 x .01g)
- 4.7 Labels and ballpoint pen or pencil (NO MARKER)
- 4.8 Teflon Tape
- 4.9 Static-Shielding recloseable bags
- 4.10 Methanol
- 4.11 Distilled water

#### **5.0 SAMPLE PROCEDURES**

- 5.1 Review field data sheets, and documentation materials to confirm adequate and appropriate field supplies, and sample locations.
- 5.2 Upon arrival at the sampling location, document field conditions per the field log forms and record all requested general information. Don appropriate field sampling apparel. Take extra latex gloves in the house for subsequent use. (Observe study home for apparent level of indoor settled dust and overall cleanliness. If it appears that study home will not provide an adequate sample mass, it may be prudent to vacate the sample home and seek an alternative location.)
- 5.3 Survey primary and secondary target sample areas and take note in the field log.

At a minimum, primary sample areas will target living areas in which residents are most likely to spend proportionately longer amounts of time, i.e. in a family room, bedrooms, etc. In addition, air filters, tops of ceiling fan blades, draperies, and window ledges will also be considered primary sample target locations because of the propensity to capture settling dust inside the home. Record additional information required on the field log forms, as appropriate.

- 5.4 Assemble the Omega Vacuum
  - 5.4.1 Ensure that the HEPA filter and catch basin are securely in place
  - 5.4.2 Attach the vacuum hose to the vacuum unit and check fit for tightness
  - 5.4.3 Attach the T-type splitter to the vacuum hose and check fit for tightness

- 5.4.4 Weigh two plastic dust collection cartridges independently and note the weight in tenths of a gram in the field log
- 5.4.5 Mark the top and bottom cartridge plugs on the two plastic dust collection cartridges appropriately such that they might be replaced in their original position once the sampling has been completed.
- 5.4.6 Attach a plastic dust collection cartridge to each end of the T-type splitter and check fit for tightness.
- 5.5 The intent is to collect representative dust samples from a given surface by leading first with the left collection nozzle and then with the right collection nozzle. Identify the type of sample area and begin sample collection per the following guidance:
  - 5.5.1 Door frames, tops of windows, tops of curtain areas – start at the farthest end of the left side and move towards the center of the “ledge”. Then start at the farthest end of the right side and move towards the center of the ledge. Repeat as needed.
  - 5.5.2 Tops of shelves - start at the back left corner of the left side and move towards the center of the shelf. Then start at the back right corner of the shelf and move towards the center. Advance the width of the nozzle and repeat as needed.
  - 5.5.3 Fronts of draperies or cabinets. Move the vacuum head slowly and deliberately down in strips the width of the two vacuum heads, then shift to the left or right side to catch the next adjacent surface. Pass the vacuum head down over each strip until it is believed that the sample area is exhausted.
  - 5.5.4 Prior to beginning any new surface, lift the vacuum heads and turn off the vacuum in order to minimize the risk of biasing the split-samples.
  - 5.5.5 TENCON recognizes that there may be site-specific circumstances that necessitate deviation from the standard protocol described in this sample collection procedure. In such case, documentation and record-keeping diligence is of utmost importance.

Continue this process until both plastic dust collection cartridges have collected a visually estimated 1.0 grams of sample mass.
- 5.6 Remove the nozzle from the T-type splitter. Visually inspect the plastic dust collection nozzle/cartridge for integrity. Replace the inlet plug and weigh the nozzle/cartridge assembly. Record the weight on the label.
- 5.7 Replace the bottom plug in the nozzle assembly.
- 5.8 Wrap each cartridge with Teflon tape such that each plug is held firmly in place

- 5.9 Complete the label on each cartridge containing the sample ID#, the start time, the end time, etc. Record this information in the field log along with the final net weight of the nozzle assembly in tenths of a gram.
- 5.10 Place each cartridge in foil and then in a static-shielding baggie and seal. Log any final the observations in the field log.
- 5.11 Provide one of the cartridges to the representative from Monsanto and have them initial the field log, acknowledging receipt of the split-sample.
- 5.11 The remaining cartridge will be shipped to Xenobiotic Detection Systems (XDS) in North Carolina, USA for analysis utilizing EPA Method 4435 with a minimum target detection level of 10 parts per trillion (ppt).

## **6.0 CONTINGENCY SAMPLE MEASURES**

No contingency sample protocol is in place. In the event that an adequate sample is not reasonably collectable, the study house is to be vacated and an alternative study house will be selected.

## **7.0 OMEGA VACUUM DECONTAMINATION**

This sample collection protocol utilizes a vacuum as a sample collection unit with the sampling medium located at the inlet of the vacuum train. Because of this, any contamination collected in the vacuum hose, the vacuum unit, or the unit's HEPA filter will not contaminate the sampling medium. Also, the HEPA filter will prevent any material that is in the vacuum from becoming airborne in subsequent sampling locations. HEPA filters will be inspected nightly as a part of clean up and prep for the next days sampling.

Decontamination of the interior of the sampling equipment prior to each sampling event would constitute an unnecessary time expense and is not recommended as part of this protocol. Units will be surface wiped after to leaving the home and prior to starting the next sampling procedure.

## **8.0 QUALITY ASSURANCE/QUALITY CONTROL**

There are no specific quality assurance activities which apply to the implementation of these procedures. However, the following general QA procedures apply:

1. All data and observations must be documented in the field logbooks.
2. All instruments must be operated in accordance with operating instructions as supplied by the manufacturer, unless otherwise specified in the work plan.



## **9.0 DATA VALIDATION**

For every 20 samples collected, a second set of duplicate samples will be collected in that home to serve as a lab duplicate if desired. In addition, a nozzle/cartridge assembly field blank will be submitted for every 100 samples.

## **10.0 HEALTH AND SAFETY PRECAUTIONS**

Field crews reserve the right to refuse to sample a location due to concern for their physical well being due to animals, or threatening behavior of the occupants, if encountered.

TENCON's Health and Safety plan as required by the PLAN will be distributed prior to sampling and must be observed and implemented prior to dust sample collection. Chemical exposures are not anticipated, and physical or mechanical hazards are only those that would be found in any typical household environment.

# Sampling Report for the Monsanto Dioxin Site in Nitro, West Virginia

Prepared For:

The Calwell Practice, PLLC

By

George C. Flowers, Ph.D.

July 14, 2009



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# Sampling Report for the Monsanto Dioxin Site in Nitro, West Virginia

## Introduction

A sampling plan, *Sampling Plan for the Monsanto Dioxin Site in Nitro, West Virginia* dated May 11, 2009, (Flowers, 2009), was generated at the request of Stuart Calwell, Esq., of the Calwell Practice, PLLC. A total of 99 living-area dust samples and 77 soil samples were collected within the Class Area as defined in West Virginia County Civil Action No. 04-C-465, *Virdie Allen et al. v. Monsanto Company, et al.* In the case of soil sampling stations, the Sampling Design Tool for ArcGIS developed by the NOAA Center for Coastal Monitoring and Assessment (CCMA) was used to generate NAD83 UTM Zone 17N coordinates for potential sampling stations using a simplified, random design (Flowers, 2009). In the event that the generated soil sample locations were inaccessible due to physical/geographical conditions or on private property, soil samples were taken along the roadway in the vicinity of selected stations. Stations were chosen in order to provide good geographic coverage of the Class Area. For dust samples in residences, potential sampling stations were chosen by first selecting residences within the boundary of Zone 2 in the Class Area as defined by Dr. Kirk Brown in his 2008 affidavit submitted in the case cited above (Brown, 2008). A subset of 350 residences distributed within Zones 2, 3, and 4 was drawn from this selection. There were limitations in sampling homes due to owners not being interested or willing to participate in the study. As a result, additional contacts were made with home owners in the Class Area to obtain the requisite number of samples.

## Sampling Campaign

### *Soil Samples*

Approximately twenty grams of sample from the top 2 cm of soil were collected from 77 locations in the Class Area as shown on Figure 1 at the coordinates provided in Table 1. As required by field conditions, sample locations were moved and substitute locations sampled as described in the Sampling Plan using the protocols developed by Tencon, Inc. Soils were placed in laboratory supplied glass vials with PTFE/Teflon-lined caps. Samples were collected in accordance with United States Environmental Protection Agency and West Virginia Department of Environmental Protection protocols and procedures. Ten grams of the sampled soil were made available to the Defendant as split samples. All samples were submitted to Xenobiotic Detection Systems (XDS) in Durham, North Carolina, to be analyzed by EPA Method 4435 for dioxin and PCB TEQ.

### *Dust Samples*

Bulk dust samples from living areas of 99 houses in the Class Area were collected in accordance with protocols developed by Tencon, Inc. and the Sampling Plan. Sampling locations are given in Figs. 2-4 and Table 2. Living-area bulk dust samples were collected using a handheld vacuum

sampler with a filter cartridge at the suction tip. Sample collection focused on accumulated dust on heating, ventilation, and air conditioning filters, fan blades, door frames, other elevated surfaces, and other areas where dust may accumulate. These surfaces represent areas where suspended particles would be deposited from ambient living area air. Attempts were made to collect at least 2 grams of sample to provide sample splits to the Defendant's on-site representatives. Although the majority of homes fall into Brown's Zones 2, 3, and 4, two samples were taken outside these zones but within the Class Area. Dust samples were submitted to XDS for analysis by EPA Method 4435 for dioxin and PCB TEQ. In addition, blank cartridges were also submitted for analysis as quality control.

#### *Sample Analysis*

Soil and dust samples were submitted to Xenobiotic Detection Systems located in Durham, North Carolina to determine dioxin and PCB TEQs using EPA Method 4435, "Method for Toxic Equivalents (TEQs) Determinations for Dioxin-Like Chemical Activity with the CALUX ® Bioassay." Method 4435 sample processing procedures and use of an affinity column will be employed so that polychlorinated biphenyls (PCBs) will be separated from the chlorinated dioxins and dibenzofurans to determine the TEQ associated with dioxin. Chain of custody forms for all samples acquired during the sampling campaign are reproduced in the Appendix.

#### **References**

- Brown, Kirk W., 2008, Affidavit in the matter of Viridie Allen *et al.* versus Monsanto Company, *et al.*: Putnam County Civil Action No. 04-C-465, Figure 5, p. 14.
- Flowers, George C., 2009, Sampling Plan for the Monsanto Dioxin Site in Nitro, West Virginia: A report prepared for the Calwell Practice, PLLC, 35 p.
- National Oceanic and Atmospheric Administration, Sampling Tool for ArcGIS,  
<http://ccmaserver.nos.noaa.gov/products/biogeography/sampling/welcome.html>

**ATTACHMENT A**

Figures

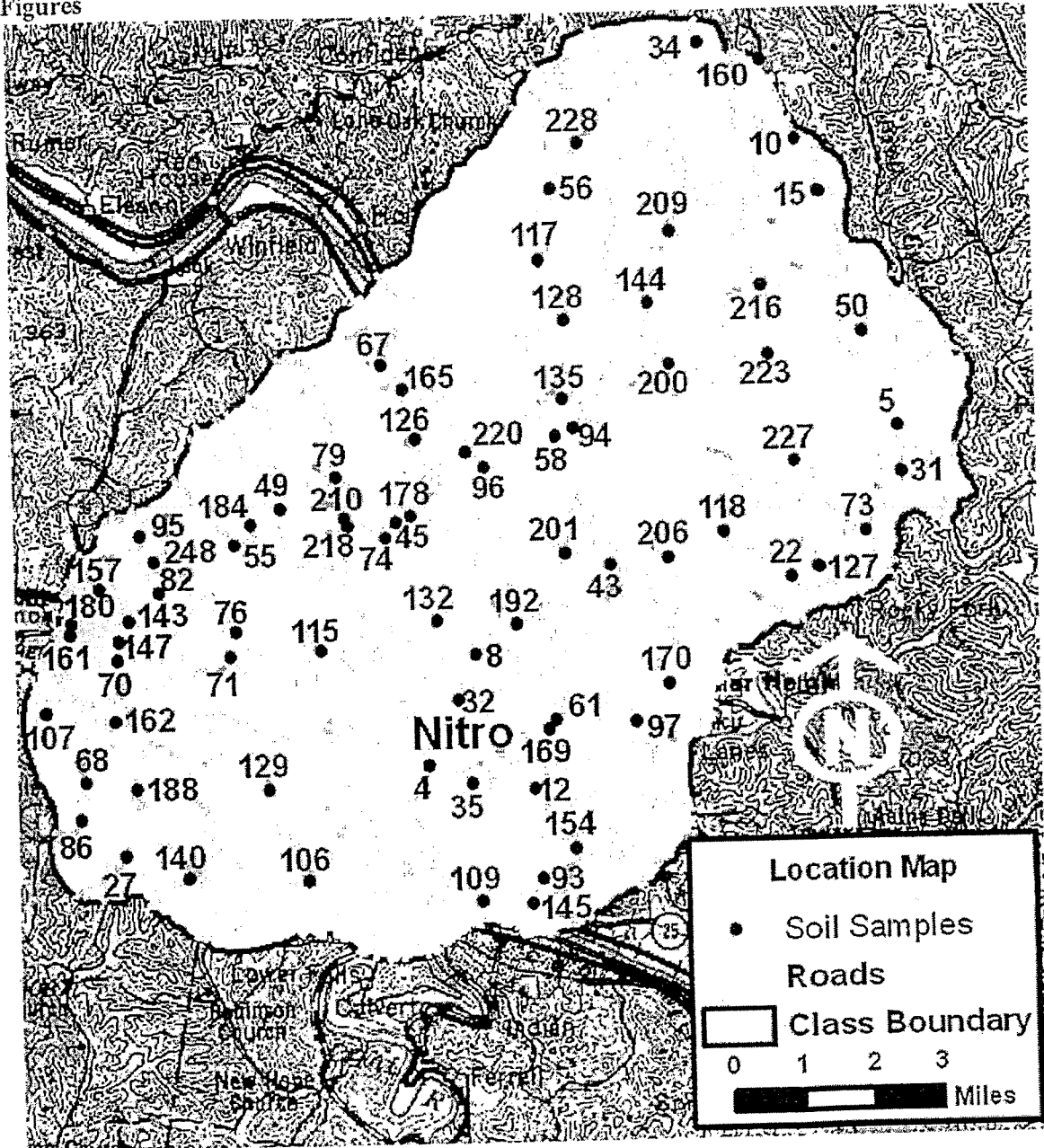


Figure 1. Location map for soil samples taken in the Class Area. Station labels correspond to sample identifications given in Table 1.

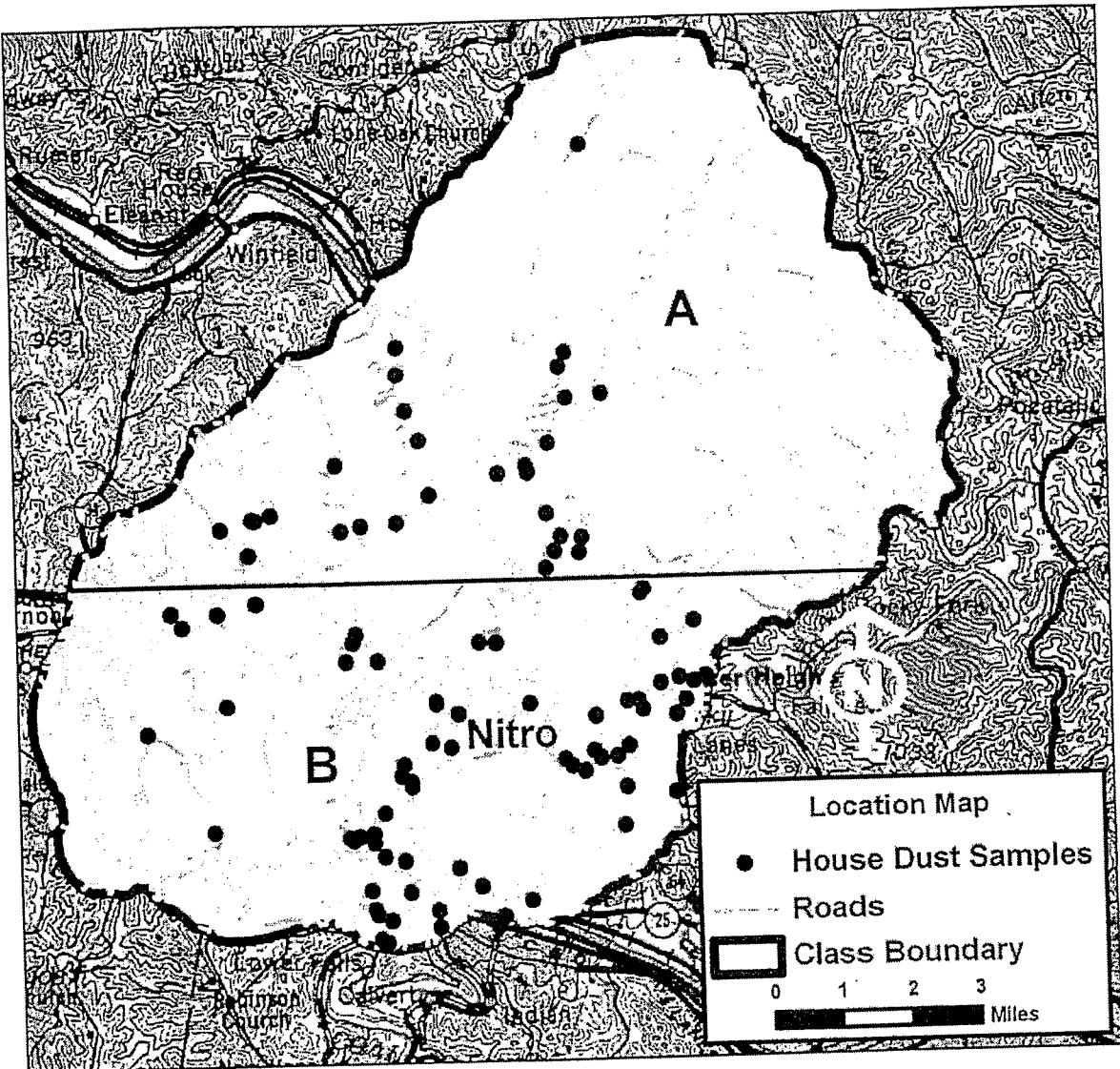


Figure 2. Location map showing interior dust samples taken in the Class Area. Portions of the map indicates by areas A and B are enlarged with station numbers in Figs. 3 and 4.



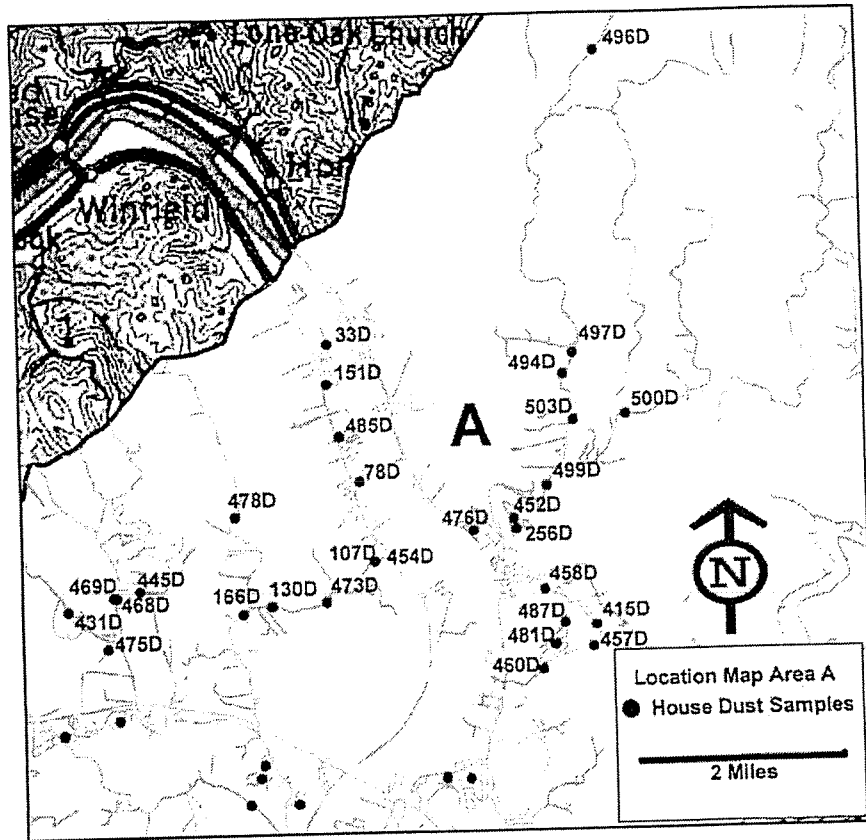


Figure 3. Sample stations for interior dust samples in Area A as shown in Fig. 2.

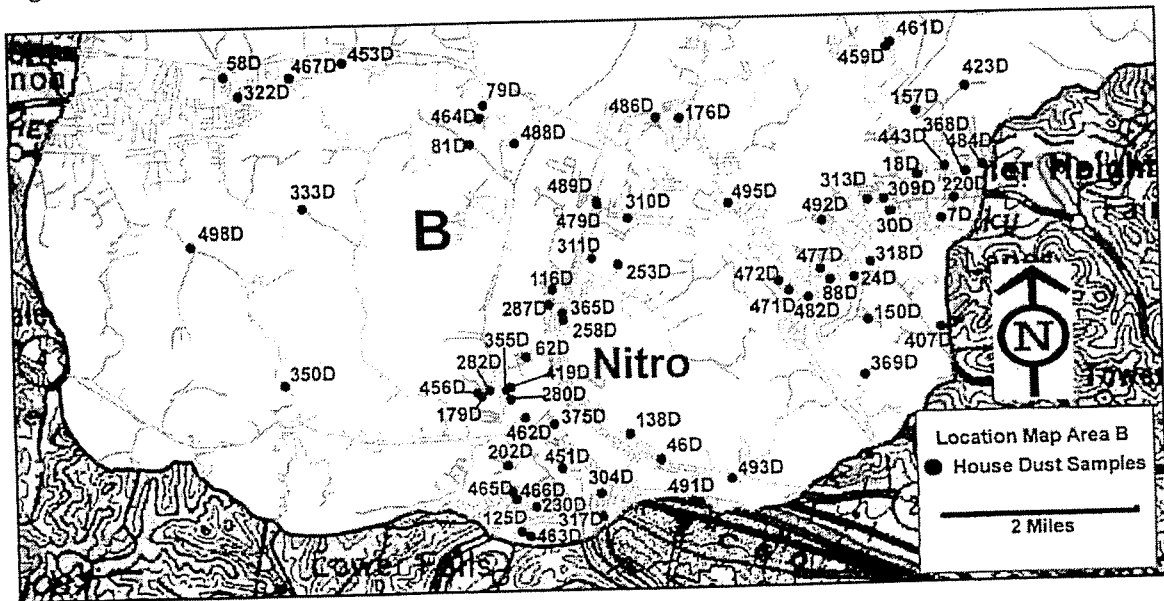


Figure 4. Sample stations for interior dust samples in Area B as shown in Fig. 2.

## Tables

ID	UTM X	UTM Y	Date
4	426733	4252750	5/19/2009
5	437829	4260430	5/20/2009
8	427854	4255301	5/27/2009
10	435593	4267071	5/28/2009
12	429224	4252176	5/19/2009
15	436098	4265869	5/28/2009
22	435356	4256954	5/20/2009
27	419569	4250793	5/29/2009
31	437885	4259329	5/20/2009
32	427448	4254252	5/19/2009
34	433394	4269354	5/27/2009
35	427711	4252341	5/27/2009
43	431110	4257296	5/28/2009
45	426029	4258393	5/21/2009
49	423366	4258720	5/26/2009
50	437029	4262592	5/29/2009
55	422263	4257929	5/26/2009
56	429859	4266043	5/27/2009
58	429859	4260294	5/27/2009
61	429770	4253775	5/19/2009
67	425747	4262017	5/29/2009
68	418672	4252504	5/28/2009
70	419469	4255311	5/26/2009
71	422089	4255325	5/26/2009
73	437042	4258001	5/20/2009
74	425783	4258022	5/21/2009
76	422234	4255903	5/26/2009
79	424673	4259467	5/21/2009
82	420451	4256825	5/26/2009
86	418517	4251658	5/28/2009
93	429357	4250110	5/19/2009
94	430318	4260496	5/27/2009
95	420034	4258146	5/26/2009
96	428156	4259643	5/27/2009

Table 1. NAD83 UTM Zone 17N coordinates for soil samples taken along the right of way within the class area on the date specified.

ID	UTM X	UTM Y	Date
97	431632	4253680	5/20/2009
106	423854	4250125	5/28/2009
107	417755	4254103	5/29/2009
109	427907	4249595	5/19/2009
115	424259	4255436	5/27/2009
117	429570	4264394	5/27/2009
118*	433786	4258022	5/20/2009
126	426559	4260301	5/21/2009
127	435971	4257163	5/20/2009
128	430121	4262991	5/27/2009
129	422966	4252262	5/27/2009
132	426979	4256097	5/27/2009
135	430066	4261162	5/27/2009
140	421035	4250245	5/28/2009
143	419760	4256211	5/26/2009
144	432092	4263360	5/28/2009
145	429126	4249533	5/19/2009
147	419479	4255725	5/26/2009
154	430179	4250776	5/19/2009
157	419074	4256953	5/26/2009
160	434804	4268957	5/28/2009
161	418353	4255920	5/26/2009
162	419392	4253910	5/29/2009
165	426252	4261465	5/21/2009
169	429592	4253560	5/19/2009
170	432433	4254531	5/20/2009
178	426388	4258528	5/21/2009
180	418388	4256160	5/26/2009
184	422655	4258386	5/26/2009
188	419845	4252334	5/29/2009
192	428873	4255978	5/28/2009
200	432552	4261922	5/28/2009
201	430055	4257596	5/28/2009
206	432447	4257449	5/20/2009

\* Approximate Coordinates

Table 1 (cont.). NAD83 UTM Zone 17N coordinates for soil samples taken along the right of way within the class area on the date specified.

<b>ID</b>	<b>UTM X</b>	<b>UTM Y</b>	<b>Date</b>
209	432640	4265019	5/28/2009
210	424875	4258472	5/21/2009
216	434753	4263719	5/28/2009
218	424935	4258308	5/21/2009
220	427722	4259977	5/27/2009
223	434904	4262089	5/28/2009
227	435462	4259621	5/20/2009
228	430521	4267069	5/27/2009
248	420357	4257572	5/29/2009

**Table 1 (cont.). NAD83 UTM Zone 17N coordinates for soil samples taken along the right of way within the class area on the date specified.**

ID	UTM X	UTM Y	ADDRESS	CITY	DATE
107D	426898	4259016	242 Bills Creek Rd	Winfield	5/27/2009
116D	426148	4252631	1327 Park Ave	Nitro	5/29/2009
125D	425514	4248512	529 Fairview Dr	Saint Albans	6/3/2009
130D	425204	4258308	1371 Bills Creek Rd	Winfield	6/2/2009
138D	427446	4250167	206 Hillside Dr	Nitro	5/29/2009
150D	431541	4252008	19 Cedar View Dr	Cross Lanes	6/3/2009
151D	426161	4261898	221 Shawnee Estates	Winfield	5/20/2009
157D	432417	4255512	5403 Brookview Dr	Cross Lanes	6/3/2009
166D	424736	4258190	1680 Bills Creek Rd	Winfield	6/1/2009
176D	428425	4255478	434 Woodland Dr	Nitro	6/2/2009
179D	424890	4250855	1 Altamont Ave	Saint Albans	5/20/2009
18D	432420	4254437	5305 Linda Vista Dr	Cross Lanes	5/29/2009
202D	425297	4249672	1195 Rosedale Dr	Saint Albans	6/3/2009
220D	433010	4254028	5293 Big Tyler Rd	Cross Lanes	5/21/2009
230D	425773	4248951	332 Birch St	Saint Albans	5/29/2009
24D	431327	4252733	163 Lake Shore Dr	Cross Lanes	5/20/2009
253D	427312	4253027	2192 N 21st St	Nitro	6/2/2009
256D	429275	4259502	133 Pine Dr	Poca	5/26/2009
258D	426324	4252121	603 6th St	Nitro	5/29/2009
280D	425392	4250795	314 Kentucky Ave	Saint Albans	5/21/2009
282D	425030	4250951	14 Orchard Ave	Saint Albans	6/3/2009
287D	426082	4252371	1123 W 11th St	Nitro	5/19/2009
304D	426913	4249168	106 5th Ave	Saint Albans	5/29/2009
309D	431868	4254037	5234 Glow Dr	Cross Lanes	5/20/2009
30D	431964	4253830	5411 Karen Cir	Cross Lanes	6/2/2009
310D	427498	4253812	3956 39th St E	Nitro	5/21/2009
311D	426854	4253139	2438 3rd Ave	Nitro	5/21/2009
313D	431597	4254030	5337 Glow Dr	Cross Lanes	5/20/2009
317D	426938	4248770	911 Pennsylvania Ave Apt 1	Saint Albans	5/27/2009
318D	431613	4252979	5009 Frederick Dr	Cross Lanes	5/20/2009
322D	420889	4255994	15-A Saunders St	Scott Depot	6/3/2009
333D	421947	4254078	238 Joyce Rd	Scott Depot	6/3/2009
33D	426176	4262557	208 Cannery Lane	Winfield	5/20/2009
350D	421576	4251112	460 Poplar Fork	Scott Depot	6/5/2009
355D	425320	4250955	208 Kentucky Ave	Saint Albans	6/2/2009

Table 2. NAD83 UTM Zone 17N coordinates, street address, city, and collection date for interior dust samples taken in the Class Area.

ID	UTM X	UTM Y	ADDRESS	CITY	DATE
365D	426314	4252240	802 8th St	Nitro	5/19/2009
368D	433217	4254469	5215 Swiss Dr	Cross Lanes	6/2/2009
369D	431474	4251085	218 Majestic Dr	Cross Lanes	6/3/2009
375D	426127	4250357	264 Oliver St	Saint Albans	5/27/2009
407D	432735	4251860	4923 Dempsey Dr	Cross Lanes	5/20/2009
415D	430560	4257928	1278 Poca River Rd	Poca	6/1/2009
419D	425398	4251001	209 Virginia Ave	Saint Albans	5/21/2009
423D	433233	4255907	5272 Claybank Rd	Cross Lanes	5/28/2009
431D	421866	4258276	160 Kilgore Rd	Scott Depot	6/5/2009
443D	432865	4254571	5258 Bailey Rd	Saint Albans	6/5/2009
445D	423046	4258590	120 Ranch Lake Blvd	Scott Depot	6/5/2009
451D	426242	4249611	228 Rust St	Saint Albans	5/21/2009
452D	429234	4259662	155 Pine Dr	Poca	5/26/2009
453D	422670	4256513	204 Willow Ridge	Scott Depot	5/26/2009
454D	426886	4259014	240 Bills Creek Rd	Winfield	5/27/2009
456D	424813	4250914	13 Flippin Ave	Saint Albans	5/27/2009
457D	430502	4257578	15 Dairy Rd	Poca	5/27/2009
458D	429727	4258505	183 Silver St	Poca	5/28/2009
459D	431962	4256595	209 Country Rd	Poca	5/28/2009
460D	429681	4257222	152 Dairy Rd	Poca	5/28/2009
461D	432027	4256670	33-A Country Rd	Poca	5/28/2009
462D	425631	4250478	114 Maryland Ave. N	Saint Albans	5/28/2009
463D	425657	4248424	11 Clotine St	Saint Albans	5/28/2009
464D	424966	4255540	142 Poplar Dr	Scott Depot	6/1/2009
465D	425374	4249219	14 Central Ave	Saint Albans	6/1/2009
466D	425437	4249090	104 Central Ave	Saint Albans	6/1/2009
467D	421759	4256291	9 Meadow Wood	Scott Depot	6/1/2009
468D	422675	4258485	171 Rocky Step Rd	Scott Depot	6/1/2009
469D	422612	4258495	174 Rocky Step Rd	Scott Depot	6/1/2009
46D	427967	4249722	727 1st Ave S	Nitro	5/19/2009
471D	430218	4252534	17 Brick Lane	Cross Lanes	6/1/2009
472D	430045	4252694	124 Fairland Dr	Nitro	6/2/2009
473D	426089	4258367	473 Bills Creek Rd	Winfield	6/2/2009
475D	422509	4257665	106-A Kilgore Rd	Scott Depot	6/2/2009
476D	428566	4259487	102 First Ave	Poca	6/2/2009

Table 2 (cont.). NAD83 UTM Zone 17N coordinates, street address, city, and collection date for interior dust samples taken in the Class Area.

ID	UTM X	UTM Y	ADDRESS	CITY	DATE
477D	430768	4252880	170 Circle Dr	Cross Lanes	6/3/2009
478D	424628	4259766	251 Blue Lick Rd	Winfield	6/3/2009
479D	426967	4254110	4107 41st St	Nitro	6/4/2009
481D	429889	4257616	83 Evergreen Circle	Poca	6/4/2009
482D	430544	4252413	153 Brick Lane	Cross Lanes	6/4/2009
484D	433505	4254584	5315 Alpine Dr	Cross Lanes	6/5/2009
485D	426353	4261038	2046 Winfield Rd	Winfield	6/3/2009
486D	428025	4255495	106 Armour Rd	Nitro	6/4/2009
487D	430049	4257964	210 Spruce Lane	Poca	6/4/2009
488D	425564	4255107	108 Spruce Lane	Scott Depot	6/4/2009
489D	426972	4254053	4011 40th St	Nitro	6/4/2009
491D	428496	4248998	121 Carson St	Saint Albans	6/4/2009
492D	430814	4253699	5337 Pioneer Dr	Cross Lanes	6/5/2009
493D	429158	4249373	721 Michigan Ave	Nitro	6/5/2009
494D	430087	4261989	219 Manilla Creek Rd	Nitro	6/4/2009
495D	429223	4254028	420-A Cross Lanes Rd	Nitro	6/4/2009
496D	430723	4267282	Route 1 Box 210-C	Poca	6/11/2009
497D	430255	4262339	Route 1 Box 218	Poca	6/11/2009
498D	420021	4253461	364 Poplar Fork	Scott Depot	6/11/2009
499D	429798	4260193	Route 1 Box 109-K	Poca	6/11/2009
500D	431115	4261330	Route 1 Box 123-C	Poca	6/12/2009
503D	430256	4261244	Route 1 Box 228	Poca	6/12/2009
58D	420641	4256323	706 Poinsetta Dr	Scott Depot	6/3/2009
62D	425665	4251502	111 Charleston St	Saint Albans	5/29/2009
78D	426672	4260312	146 Rolling Acres	Winfield	5/20/2009
79D	425031	4255750	117 Poplar Dr	Scott Depot	5/26/2009
7D	432790	4253690	5120 Hopewell Dr	Cross Lanes	6/5/2009
81D	424790	4255106	304 Scary Rd	Scott Depot	6/5/2009
88D	430923	4252702	332 Goff Mountain Rd	Cross Lanes	6/4/2009

Table 2 (cont.). NAD83 UTM Zone 17N coordinates, street address, city, and collection date for interior dust samples taken in the Class Area.

**APPENDIX: Chain of Custody Forms**



# TENCON SOIL SAMPLE CHAIN OF CUSTODY

Mary A. Malotte

SAMPLED BY: (Print Name) John Diamante Signature [Signature]  
 WITNESSED BY: (Print Name) W. Jeffrey Calender Signature [Signature]

Site No.	LOCATION			DATE	TIME	FIELD NOTES	Initial for split sample receipt	FOR LAB USE		
	PLANNED UTM		ACTUAL UTM							
	Easting	Northing	Easting						Northing	Accuracy
12	✓		429224	4252176	± 79 ft	5/19/09	9:20A	analyses by: 4435	[Signature]	
169	✓		429592	4253560	± 19 ft	5/19/09	10:47A	analyses by: 4435	[Signature]	
32	✓		487448	4251252	± 17 ft	5/17/09	11:20A	analyses by: 4435	[Signature]	
93	✓		429357	4250110	± 57 ft	5/17/09	12:32P	analyses by: 4435	[Signature]	
145	✓		429126	4247329	± 23 ft	5/19/09	1:06P	analyses by: 4435	[Signature]	
109	✓		429107	4247175	± 20 ft	5/14/09	3:17P	analyses by: 4435	[Signature]	
154	✓		430179	4250776	± 28 ft	5/19/09	3:18P	analyses by: 4435 edge of peated property	[Signature]	
4	✓		426733	4252150	± 24 ft	5/19/09	5:02	analyses by: 4435	[Signature]	

RELINQUISHED BY		RECEIVED BY	
Name	Date	Name	Time
John Diamante	5/22/09	George Marrese	9:01PM

678 PM 10

# TENCON SOIL SAMPLE CHAIN OF CUSTODY

SAMPLED BY: (Print Name) J. Diamante

Signature [Signature]

WITNESSED BY: (Print Name) W. JEFFREY CAVALIERO

Signature [Signature]

Site No.	LOCATION				DATE	TIME	FIELD NOTES	Initial for split sample receipt	FOR LAB USE
	PLANNED UTM		ACTUAL UTM						
	Easting	Northing	Easting	Northing					
61	✓		429770	4253775	± 25'	5-19	5:48	EPA method 8435	WJC

RELINQUISHED BY			RECEIVED BY		
Name	Date	Time	Name	Date	Time
<u>[Signature]</u>	5/19/09	9:00pm	<u>George M. Warner</u>	5/20/09	9:01PM

# TENCON SOIL SAMPLE CHAIN OF CUSTODY

SAMPLED BY: (Print Name) Johanna P. DiGregorio Signature [Signature]  
 WITNESSED BY: (Print Name) W. Jeffrey Cavallaro Signature [Signature]

Site No.	LOCATION				DATE	TIME	FIELD NOTES	Initial for split sample receipt	FOR LAB USE
	PLANNED UTM		ACTUAL UTM						
	Easting	Northing	Easting	Northing					
170	✓	432433	4254531	± 21'	5/20	942	Analysis by 4435	MJC	
204	✓	432447	4257449	± 27'	5/20	1034	4435	MJC	
5	✓	437829	4260420	± 20'	5/20	1141	4435	MJC	
31	✓	437885	4259324	± 22'	5/20	1335	4435	MJC	
127	✓	435771	4257163	± 28'	5/20	1400	4435	MJC	
22	✓	435256	4256454	± 34'	5/20	1426	4435	MJC	
118	✓	435389	4256480	NO FIX	5/20	1300	4435	MJC	

RELINQUISHED BY			RECEIVED BY		
Name	Date	Time	Name	Date	Time
Johanna P. DiGregorio	5/20/07	9:10pm	George A. Marnach	5/20/07	9:01PM

# TENCON SOIL SAMPLE CHAIN OF CUSTODY

SAMPLED BY: (Print Name) John P. Diamante Signature [Signature]  
 WITNESSED BY: (Print Name) JEFFREY CAVENGHE Signature [Signature]

Site No.	LOCATION				DATE	TIME	FIELD NOTES	Initial for split sample receipt	FOR LAB USE
	PLANNED UTM		ACTUAL UTM						
	Easting	Northing	Easting	Northing					
227 ✓			4259121	435462	5/20/09	1552	Analysis by 4435	MJC	
73 ✓			4258001	437047	5/20/09	1640	Analysis by 4435	MJC	

RECEIVED BY			
Name	Date	Name	Time
<u>[Signature]</u>	5/20/09	<u>Jeffrey Cavenche</u>	9:01 PM

# TENCON SOIL SAMPLE CHAIN OF CUSTODY

SAMPLED BY: (Print Name) John Diamante

Signature *John P. Diamante*

WITNESSED BY: (Print Name) W. Jeffrey Cavemire

Signature *W. Jeffrey Cavemire*

Site No.	LOCATION				DATE	TIME	FIELD NOTES	Initial for split sample receipt	FOR LAB USE
	PLANNED UTM		ACTUAL UTM						
	Easting	Northing	Easting	Northing					
1165			424252	4261465	± 24'	5/21/09	903	analyze by EPA 4435	MJC
126			424559	4260301	± 20'	5/21/09	926	"	MJC
178			424986	4258528	± 25'	5/21/09	955	"	MJC
45			424629	4258383	± 23'	5/21/09	1016	"	MJC
218			424935	4258308	± 22'	5/21/09	1034	"	MJC
210			424675	4258472	± 17'	5/21/09	1059	"	MJC
79			424673	4259467	± 17'	5/21/09	1125	"	MJC
74			425783	425862	± 21'	5/21/09	1155	"	MJC

RELINQUISHED BY				RECEIVED BY			
Name	Date	Time	Name	Date	Time	Name	Time
<i>John P. Diamante</i>	5-21-09	9:15	<i>Mary C Malotke</i>	5/21/09	9:15		
<i>Mary Malotke</i>	5-22-09	3:00					

# TENCON SOIL SAMPLE CHAIN OF CUSTODY

**SAMPLED BY:** (Print Name) John Diamante Signature [Signature]  
**WITNESSED BY:** (Print Name) Jon Matthee Signature [Signature]

Site No.	LOCATION			DATE	TIME	FIELD NOTES	Initial for split sample receipt	FOR LAB USE	
	PLANNED UTM		ACTUAL UTM						
	Easting	Northing	Easting						
180			418388	425660	±20	5/26/09	12:57	Analysis by EPA 4985	
161			418353	425580	±22	5/26/09	1:09		
147			419479	425525	±21	5/26/09	1:40		
70			419461	425531	±19	5/26/09	2:06		
143			419760	425621	±18	5/26/09	2:28		
71			422089	425535	±18	5/26/09	3:09		
76			422239	425593	±20	5/26/09	3:21		
184			422655	425836	±18	5/26/09	4:07		

RELINQUISHED BY		RECEIVED BY	
Name	Date	Name	Time
John Diamante	5/26/09	George J. Marone II	5/26/09 8:11 PM
Jon Matthee	5/27/09		

# TENCON SOIL SAMPLE CHAIN OF CUSTODY

**SAMPLED BY:** (Print Name) John DiMante / John Mallo's signature  
 Signature [Signature]  
**WITNESSED BY:** (Print Name) Scott Young  
 Signature [Signature]

Site No.	LOCATION				DATE	TIME	FIELD NOTES	Initial for split sample receipt	FOR LAB USE
	PLANNED UTM		ACTUAL UTM						
	Easting	Northing	Easting	Northing					
49			423366	425870	± 22'	5/26/09	4:24	MSY	Analysis by EPA 4935
55			422263	425729	± 23'	5/26/09	4:39	MSY	
95			420034	425814	± 19'	5/26/09	5:25	MSY	
82			420451	425683	± 16'	5/26/09	5:42	MSY	
157			419074	425653	± 17'	5/26/09	6:12	MSY	

RELINQUISHED BY		RECEIVED BY	
Name	Date	Name	Time
<u>[Signature]</u>	5/26/09 8:10 am	<u>George Maravek</u>	8:11 PM
<u>George Maravek</u>	5/27/09 9:05 PM		

# TENCON SOIL SAMPLE CHAIN OF CUSTODY

SAMPLED BY: (Print Name) J. Diamente, J. Malotke Signature [Signature]  
 WITNESSED BY: (Print Name) Scott Young Signature \_\_\_\_\_

Site No.	LOCATION				DATE	TIME	FIELD NOTES	Initial for split sample receipt	FOR LAB USE
	PLANNED UTM		ACTUAL UTM						
	Easting	Northing	Easting	Northing					
220			4259977	±21'	5/27/09	9:20A	analysis by EPA 4/135	MSS	
96			4259643	±17'	5/27/09	9:36		MSS	
58			4260294	±27'	5/27/09	10:05		MSS	
135			4261162	±24'	5/27/09	10:28		MSS	
94			4260496	±17'	5/27/09	10:49		MSS	
8			4255301	±21'	5/27/09	11:28		MSS	
35			4252344	±20'	5/27/09	11:47		MSS	
132			4256097	±25'	5/27/09	12:21	↓	MSS	

RELINQUISHED BY		RECEIVED BY	
Name	Date	Name	Time
<u>[Signature]</u>	5/27/09	<u>George Maronek</u>	5:42PM
<u>George Maronek</u>	5/27/09		9:05PM



# TENCON SOIL SAMPLE CHAIN OF CUSTODY

*John Diarrate*  
 Signature

SAMPLED BY: (Print Name) John Diarrate, Jen Malotte Signature \_\_\_\_\_

WITNESSED BY: (Print Name) Scott Young Signature \_\_\_\_\_

Site No.	LOCATION			DATE	TIME	FIELD NOTES	Initial for split sample receipt	FOR LAB USE
	PLANNED UTM		ACTUAL UTM					
	Easting	Northing	Accuracy					
115	424259	4255434	±23'	5/27/09	12:49 PM	analy by EPA 4435	<i>[Signature]</i>	
129	422966	4252862	±40'	5/27/09	1:15 PM		<i>[Signature]</i>	
128	430121	4262991	±33'	5/27/09	2:51		<i>[Signature]</i>	
117	429570	4264394	±30'	5/27/09	3:07		<i>[Signature]</i>	
56	429859	4266043	±30'	5/27/09	3:29		<i>[Signature]</i>	
228	430521	4267064	±23'	5/27/09	3:43		<i>[Signature]</i>	
34	433394	4269354	±23'	5/27/09	4:05		<i>[Signature]</i>	

RELINQUISHED BY		RECEIVED BY	
Name	Date	Name	Time
<i>[Signature]</i>	5/27/09	Joseph Maronek	5:42 PM
Joseph Maronek	5/27/09		5:42 PM

# TENCON SOIL SAMPLE CHAIN OF CUSTODY

**SAMPLED BY:** (Print Name) John Dammante Signature [Signature]  
**WITNESSED BY:** (Print Name) Scott Young Signature [Signature]

Site No.	LOCATION			DATE	TIME	FIELD NOTES	Initial for split sample receipt	FOR LAB USE		
	PLANNED UTM		ACTUAL UTM							
	Easting	Northing	Easting						Northing	Accuracy
192			428873	4255978	±22'	5/28/09	9:04	analyze per EPA 4435	[Initials]	
201			430055	4257596	±17'	5/28/09	9:31		[Initials]	
43			431110	4257290	±29'	5/28/09	9:49		[Initials]	
144			432092	4263360	±23'	5/28/09	10:28		[Initials]	
200			432552	4261922	±19'	5/28/09	10:57		[Initials]	
223			434904	4262009	±29'	5/28/09	11:58		[Initials]	
216			434753	4263719	±24'	5/28/09	12:26		[Initials]	
15			436098	4265869	±28'	5/28/09	12:47		[Initials]	

RELINQUISHED BY		RECEIVED BY	
Name	Date	Name	Time
<u>[Signature]</u>	5/28/09 5:17	<u>George D. Marone</u>	5/28/09 5:19 PM

# TENCON SOIL SAMPLE CHAIN OF CUSTODY

**SAMPLED BY:** (Print Name) John Diamante Signature [Signature]  
**WITNESSED BY:** (Print Name) Scott Young Signature [Signature]

Site No.	LOCATION				DATE	TIME	FIELD NOTES	Initial for split sample receipt	FOR LAB USE
	PLANNED UTM		ACTUAL UTM						
	Easting	Northing	Easting	Northing					
10			435593	4267071	±40	5/28/09	1:03 PM	analyz by EPA 4935	
100			434804	4268957	±19'	5/28/09	1:03 PM		
209			432640	4265019	±26'	5/28/09	1:48 PM		
106			423854	4250125	±18'	5/28/09	3:23 PM		
140			421035	4250245	±21'	5/28/09	3:37 PM		
86			418517	4251058	±24'	5/28/09	3:56 PM		
68			418672	4252504	±24'	5/28/09	4:12 PM		

RELINQUISHED BY		RECEIVED BY	
Name	Date	Name	Time
<u>[Signature]</u>	5/28/09 5:17	<u>James M. Marouseh</u>	5:41 PM


# TENCON SOIL SAMPLE CHAIN OF CUSTODY

**SAMPLED BY:** (Print Name) John Diamante Signature [Signature]  
**WITNESSED BY:** (Print Name) Scott Young Signature [Signature]

Site No.	LOCATION				DATE	TIME	FIELD NOTES	Initial for split sample receipt	FOR LAB USE
	PLANNED UTM		ACTUAL UTM						
	Easting	Northing	Easting	Northing					
50			437029	426352	±20'	5/29/09	9:31	analysis for EPA 4455	[Initials]
248			420357	425757	±15'	5/29/09	11:04		[Initials]
107			417755	425403	±16'	5/29/09	11:33		[Initials]
162			419392	425396	±24'	5/29/09	11:58		[Initials]
188			419845	425233	±25'	5/29/09	1:08		[Initials]
27			419569	425073	±33'	5/29/09	1:34		[Initials]
67			425747	426207	±22'	5/29/09	2:04		[Initials]




RELINQUISHED BY		RECEIVED BY	
Name	Date	Name	Time
[Signature]	5-29-09 4:55	[Signature]	1545 5/29/09
[Signature]	5/29/09 16:49	[Signature]	5/29/09 4:50 PM

# TENCON DUST SAMPLE CHAIN OF CUSTODY

SAMPLED BY: (Print Name) Ryan Overfield Signature 

WITNESSED BY: (Print Name) \_\_\_\_\_ Signature \_\_\_\_\_

Site No.	LOCATION/ADDRESS	DATE	TIME	FIELD NOTES	FOR LAB USE
460A	727 1st Ave. S.	5/19/09	1621	L- 1.18 (0.88-T, 0.30-M) R- 1.01 (0.72-M, 0.33-T) EPA 4435	
313D	5337 Glow Dr.	5/20/09	938	L- 1.12 M R- 1.32 T EPA 4435	
300D	5234 Glow Dr.	5/20/09	1043	L- 1.06 M R- 1.10 T EPA 4435	
210D	163 Lakeshore Dr.	5/20/09	1434	L- 1.04 T R- 1.08 M EPA 4435	
409D	4923 Demsey Rd.	5/20/09	1646	L- 1.20 M R- 1.08 T EPA 4435	

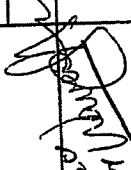
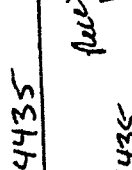
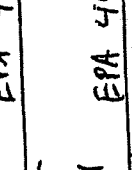
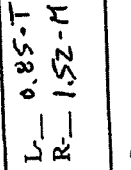
RELINQUISHED BY		RECEIVED BY	
Name	Date	Name	Date
	5/20/09		5/20/09
	5/21/09		


L - refers to left sample R - refers to right sample Enter T for TENCON's sample, use M for Monsanto's sample

# TENCON DUST SAMPLE CHAIN OF CUSTODY

SAMPLED BY: (Print Name) Ryan Overfield Signature 

WITNESSED BY: (Print Name) (WAVEELLY) Signature

Site No.	LOCATION/ADDRESS	DATE	TIME	FIELD NOTES	FOR LAB USE
179D	1 Altamont Ave.	5/21/09	909	L- 1.77-T R- 1.77-M EPA 4435 Received by 	
451D	228 Post St	5/21/09	1044	L- 1.11-T R- 1.05-M EPA 4435 Received by 	
280D	314 Kentucky Ave.	5/21/09	1348	L- 1.02 T R- 1.23 M EPA 4435 Received by 	
419D	209 Virginia Ave	5/21/09	1536	L- 0.85-T/0.43-M R- 1.52-M/0.43-T EPA 4435 Received by 	
				L- R-	
				L- R-	


RELINQUISHED BY		RECEIVED BY	
Name	Date	Name	Time
	5/21/09 1722	Bernard Maravel	5/21/09 1723
Ronald Maravel	5/21/09 1724	Mary C. Malotte	5/21/09 1728
Mary C. Malotte	5/22/09 3:00		

# TENCON DUST SAMPLE CHAIN OF CUSTODY

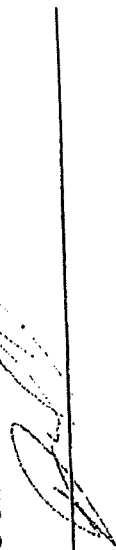
SAMPLED BY: (Print Name) Raymond M. Aronow Signature   
 WITNESSED BY: (Print Name) \_\_\_\_\_ Signature \_\_\_\_\_

Site No.	LOCATION/ADDRESS	DATE	TIME	FIELD NOTES	FOR LAB USE	
					Date	Time
453D	204 Willow Ridge	5/26/09	1522	Received via EPA 4435		
797D	117 Poplar Drive	5/26/09	1709	Received via EPA 4435		
453D	13 Elmer Ave	5/27/09	843	Received via EPA 4435		
797D	264 Olive St	5/27/09	1010	Received via EPA 4435		
377D	911 Pennsylvania Ave #1	5/27/09	1202	Received via EPA 4435		
453D	15 Dury Rd.	5/27/09	1600	Received via EPA 4435		

L - refers to left sample R - refers to right sample Enter T for TENCON's sample, use M for Monsanto's sample

RELINQUISHED BY		RECEIVED BY	
Name	Date	Name	Time
	5/27/09 1827	Raymond M. Aronow	5/27/09 6:28 PM
Raymond M. Aronow	5/27/09 9:05 PM		


# TENCON DUST SAMPLE CHAIN OF CUSTODY

SAMPLED BY: (Print Name) Ryan Overfield Signature 

WITNESSED BY: (Print Name) \_\_\_\_\_ Signature \_\_\_\_\_

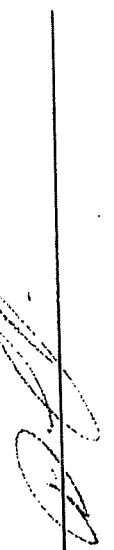
Site No.	LOCATION/ADDRESS	DATE	TIME	FIELD NOTES	FOR LAB USE
<del>473D</del>	<del>5272 Clayton Rd</del>	<del>5/28/09</del>	<del>9:10</del>		
473D	5272 Clayton Rd	5/28/09	9:10	L- 0.95-T R- 1.04-M EPA 4435 Recorded by WAT 5/28/09	
477D	115 Montague Ave N	5/28/09	12:22	L- 0.74-T + 0.59-T R- 0.51-M + 0.63-M EPA 4435 Recorded by WAT 5/28/09	
462D	11 Clinton St.	5/28/09	11:33	L- 0.78-T R- 1.16-M EPA 4435 Recorded by WAT 5/28/09	
200	332 B. Ave St.	5/29/09	8:18	L- 1.26-T R- 1.34-M EPA 4435 Recorded by WAT 5/29/09	
628	111 Charleston St.	5/29/09	10:44	L- 1.23-T R- 1.04-M EPA 4435 Recorded by WAT 5/29/09	
304D	106 5th St.	5/29/09		L- .92-M + .68-M R- .73-T + .71-T EPA 4435 Recorded by WAT 5/29/09	

L - refers to left sample R - refers to right sample Enter T for TENCON's sample, use M for Monsanto's sample

RELINQUISHED BY		RECEIVED BY	
Name	Date	Name	Time
	5/29/09	Henry A. Marone	4:50 PM




# TENCON DUST SAMPLE CHAIN OF CUSTODY


**SAMPLED BY:** (Print Name) Evan Overfield Signature   
**WITNESSED BY:** (Print Name) \_\_\_\_\_ Signature \_\_\_\_\_

Site No.	LOCATION/ADDRESS	DATE	TIME	FIELD NOTES	FOR LAB USE	
					Date	Time
415D	1278 face River Dr.	6/1/09	933	Received by EPA 4435 <del>6/1/09</del>		
416D	49 Meadow Dr.	6/1/09	1031	Received by EPA 4435 <del>6/1/09</del>		
417D	171 Rocky Ste Rd.	6/1/09	1320	Received by EPA 4435 <del>6/1/09</del>		
418D	1571 Bill's Creek Rd.	6/2/09	1043	Received by EPA 4435 <del>6/2/09</del>		
419D	5215 Seward Dr.	6/2/09	1338	Received by EPA 4435 <del>6/2/09</del>		
420D	473 Bill's Creek Dr.	6/2/09	1526	Received by EPA 4435 <del>6/2/09</del>		

L - refers to left sample R - refers to right sample Enter T for TENCON's sample, use M for Monsanto's sample

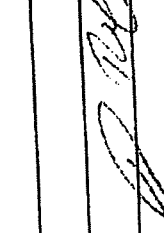
RELINQUISHED BY		RECEIVED BY	
Name	Date	Name	Date
	6/2/09 11:59	Georgi Maronek	6/2/09 16:00

# TENCON DUST SAMPLE CHAIN OF CUSTODY


**SAMPLED BY:** (Print Name) Evan Overfield Signature   
**WITNESSED BY:** (Print Name) \_\_\_\_\_ Signature \_\_\_\_\_

Site No.	LOCATION/ADDRESS	DATE	TIME	FIELD NOTES	FOR LAB USE	
					Date	Time
157D	5403 Brookview Dr.	6/2/09	904	L- 2.50-M R- 1.54-T EPA 4435 Received 6/3/09		
2109D	213 Mesquite Dr.	6/3/09	1138	L- 1.16-M R- 1.63-T EPA 4435 Received 6/3/09		
140D	19 Cedar View Dr.	6/3/09	1339	L- 1.65-T R- 1.17-M EPA 4435 Received 6/3/09		
485D	2046 Windfield Rd.	6/3/09	1538	L- 1.54-M R- 1.79-T EPA 4435 Received 6/3/09		
486D	106 Armoire Rd.	6/4/09	848	L- 1.00-T R- 1.32-M EPA 4435 Received 6/4/09		
490D	21102 Cliff St.	6/4/09	959	L- 1.19-T R- 1.04-M EPA 4435 Received 6/4/09		

L - refers to left sample R - refers to right sample Enter T for TENCON's sample, use M for Monsanto's sample

RELINQUISHED BY		RECEIVED BY	
Name	Date	Name	Time
	6/4/09		1730

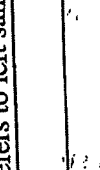
# TENCON DUST SAMPLE CHAIN OF CUSTODY

SAMPLED BY: (Print Name) Ryan Overfield Signature 

WITNESSED BY: (Print Name) \_\_\_\_\_ Signature \_\_\_\_\_

Site No.	LOCATION/ADDRESS	DATE	TIME	FIELD NOTES	FOR LAB USE	
					Date	Time
494D	219 Florida Crest Rd	6/4/09	1116	L- 1.14-N R- 1.17-T EPA 4435 <i>Received by [Signature] 6/5/09</i>		
497D	210 Spruce Lane	6/4/09	1509	L- 0.63-T R- 0.61-M EPA 4435 <i>Received by [Signature] 6/5/09</i>		
492D	5337 Pioneer Dr.	6/5/09	917	L- 1.24-M R- 0.98-T EPA 4435 <i>Received by [Signature] 6/5/09</i>		
495D	721 Paddock Ave	6/5/09	1040	L- 1.02-T R- 1.41-M EPA 4435 <i>Received by [Signature] 6/5/09</i>		
493D	5258 Quail Rd.	6/5/09	1401	L- 1.38-M R- 1.26-T EPA 4435 <i>Received by [Signature] 6/5/09</i>		
				L- R-		

L - refers to left sample R - refers to right sample Enter T for TENCON's sample, use M for Monsanto's sample

RELINQUISHED BY		RECEIVED BY	
Name	Date	Name	Date
	6/5/09 1700		

# TENCON DUST SAMPLE CHAIN OF CUSTODY

SAMPLED BY: (Print Name) GEORGE MAROUSEK Signature *George Marousek*  
 WITNESSED BY: (Print Name) V. RUSTIN ROBERTS Signature *V. Rustin Roberts*  
*Abby Thorsen*

Site No.	LOCATION/ADDRESS	DATE	TIME	FIELD NOTES	FOR LAB USE
287D	1123 11th Street Metro	5/19/09	1:00PM 2:45PM	TENCON L-- R-- EXPONENT  EPA 4435	
365D	802 8th Street Metro	5/19/09	3:05- 4:25	TENCON L-- R-- EXPONENT	
151D	221 SHAWNEE EST WINFIELD	5/20/09	8:15- 9:45	TENCON L-- R-- EXPONENT	
318D	5009 FREDRICH DR CROSS LANES	5/20/09	10:30 12:10	EXPONENT L-- R-- TENCON	
33D	208 CANNERY LANE WINFIELD	5/20/09	1:30- 2:45	EXPONENT L-- R-- TENCON	
48D	146 ROLLING ACRES WINFIELD	5/20/09	3:30-	EXPONENT L-- R-- TE KON	

RELINQUISHED BY		RECEIVED BY	
Name	Date	Name	Time
<u><i>George Marousek</i></u>	<u>5/20/09</u>		

L - refers to left sample R - refers to right sample Enter T for TENCON's sample, use M for Monsanto's sample

# TENCON DUST SAMPLE CHAIN OF CUSTODY

SAMPLED BY: (Print Name) GEORGE MAROUSEK      Signature George Marousek  
 WITNESSED BY: (Print Name) KRISTINA ROSSOCK      Signature Kristall

Site No.	LOCATION/ADDRESS	DATE	TIME	FIELD NOTES	FOR LAB USE	
					Date	Time
220	595293 BIG TYLER RD CROSS LAVER	5/21/09	8:15 - 9:55	TENCON EXPONENT analogy by EPA 4435		
310D	3956 39th Street East, Milled	5/21/09	10:21 - 12:11	EXPONENT TENCON		
311D	2438 3rd AVE NITRO	5/21/09	1:11 -	TENCON EXPONENT		

L - refers to left sample R - refers to right sample Enter T for TENCON's sample, use M for Monsanto's sample

RELINQUISHED BY		RECEIVED BY	
Name	Date	Name	Time
George Marousek	5/21/09 17:23	Mary C. Malotke	5/21/09 17:24
Mary C. Malotke	5/28/09 3:00		

# TENCON DUST SAMPLE CHAIN OF CUSTODY

SAMPLED BY: (Print Name) GEORGE MAROUSEK

Signature *George Marousek*

WITNESSED BY: (Print Name) \_\_\_\_\_  
 Signature \_\_\_\_\_

Site No.	LOCATION/ADDRESS	DATE	TIME	FIELD NOTES	FOR LAB USE
452	155 PINE DRIVE POCA, WV	5/26/09	12:50 2:35	L- EXPONENT R- TENCON EPA 4435 5/26/09	
256	133 PINE DRIVE POCA, WV	5/26/09	3:04 4:30	L- TENCON R- EXPONENT EPA 4435 5/26/09	
107	242 BILLS CREEK RD, WINFIELD	5/27/09	7:50 9:45	L- TENCON R- EXPONENT EPA 4435 5/27/09	
454	240 BILLS CREEK RD, WINFIELD	5/27/09	10:00 11:50	L- EXPONENT R- TENCON EPA 4435 5/27/09	
455	23 A STREET ST. ALBANS	5/27/09		L- R- <i>Cancelled</i>	
B1	BLANK	5/27/09	1:35- 1:40	L- R-	

RELINQUISHED BY		RECEIVED BY	
Name	Date	Name	Time
<i>George Marousek</i>	5/27/09		9:05 PM

# TENCON DUST SAMPLE CHAIN OF CUSTODY

SAMPLED BY: (Print Name) GEORGE MAROUSEK Signature *George Marousek*

WITNESSED BY: (Print Name) \_\_\_\_\_ Signature \_\_\_\_\_

Site No.	LOCATION/ADDRESS	DATE	TIME	FIELD NOTES	FOR LAB USE
BA D	BLANK	5/27/09	1:40 -1:45		
				L- R-	
				L- R-	
				L- R-	
				L- R-	
				L- R-	
				L- R-	

L - refers to left sample R - refers to right sample Enter T for TENCON's sample, use M for Monsanto's sample

RELINQUISHED BY		RECEIVED BY	
Name	Date	Name	Time
<u><i>George Marousek</i></u>	5/27/09		9:05AM

# TENCON DUST SAMPLE CHAIN OF CUSTODY

SAMPLED BY: (Print Name) GEORGE MAROUZEK Signature *George Marouzek*

Signature \_\_\_\_\_

WITNESSED BY: (Print Name) \_\_\_\_\_

Site No.	LOCATION/ADDRESS	DATE	TIME	FIELD NOTES	FOR LAB USE
458 D	183 SILVER ST POCA	5/28/09	7:55 -9:15	L- EXPONENT R- TENCON WAT 5/28/09	
459 D	209 COUNTRY RD POCA	5/28/09	10:05 -10:41	L- EXPONENT R- TENCON WAT 5/28/09	
460 D	152 DAIRY ROAD POCA	5/28/09	12:55 -2:15	L- EXPONENT R- TENCON WAT 5/28/09	
461 D	33 A COUNTY RD POCA	5/28/09	2:45 3:55	L- TENCON R- EXPONENT WAT 5/29/09	
116 D	1327 PARK AVE NUTRO	5/29/09	7:55 -9:15	L- EXPONENT R- TENCON WAT 5/29/09	
258 D	603 6TH STREET NUTRO	5/29/09	9:30 -10:35	L- EXPONENT R- TENCON WAT 5/29/09	

L - refers to left sample R - refers to right sample Enter T for TENCON's sample, use M for Monsanto's sample

RELINQUISHED BY		RECEIVED BY	
Name	Date	Name	Date
<u>George Marouzek</u>	<u>5/28/09 5:15 PM</u>		



# TENCON DUST SAMPLE CHAIN OF CUSTODY

SAMPLED BY: (Print Name) GEORGE MAROUSEK Signature *George Marousek*

WITNESSED BY: (Print Name) \_\_\_\_\_ Signature \_\_\_\_\_

Site No.	LOCATION/ADDRESS	DATE	TIME	FIELD NOTES	FOR LAB USE	
					Date	Time
138	206 HILLSIDE DRIVE	5/29/09	12:59 2:15	L- TENCON R- EXPERIMENT YAK 5/29/09		
180	5305 LINDA VISTA DRIVE	5/29/09	2:50- 4:20	L- EXPERIMENT YAK 5/29/09 R- TENCON		
				L- R-		
				L- R-		
				L- R-		
				L- R-		

Enter T for TENCON's sample, use M for Monsanto's sample

RELINQUISHED BY		RECEIVED BY	
Name	Date	Name	Date
<i>George Marousek</i>	5/29/09		
<i>George Marousek</i>	5/29/09		

# TENCON DUST SAMPLE CHAIN OF CUSTODY

SAMPLED BY: (Print Name) GEORGE MAROUSEK Signature *George Marousek*  
 WITNESSED BY: (Print Name) \_\_\_\_\_ Signature \_\_\_\_\_

Site No.	LOCATION/ADDRESS	DATE	TIME	FIELD NOTES	FOR LAB USE
464 D	142 POPLAR AVE SCOTT DEPOT	6/1/09	8:04 -9:30	L--TENCON R--EXPONENT WAT 6/1/09 received	
37 D	500 FAIRVIEW DR ST ALBANS	6/1/09	---	L-- R--Cancelled by owner	
465 D	14 CENTRAL AVE ST ALBANS	<del>6/1/09</del> 6/1/09	13:00 -2:30	L--EXPONENT WAT 6/1/09 Rnd R--TENCON	
466 D	104 CENTRAL AVE ST ALBANS	6/1/09	2:40 3:45	L--EXPONENT WAT 6/1/09 Rnd R--TENCON TENCON	
47a D	124 FAIRLAND DR NUTRO	6/2/09	7:55 -9:00	L--TENCON R--EXPONENT CBW 6/2/09	
176 D	434 WOODLAND DR NUTRO	6/2/09	9:10 -10:15	L--TENCON R--EXPONENT CBW 6/2/09	

L - refers to left sample R - refers to right sample Enter T for TENCON's sample, use M for Monsanto's sample

RELINQUISHED BY		RECEIVED BY	
Name	Date	Name	Time
<u>George Marousek</u>	6/2/09		5:45PM

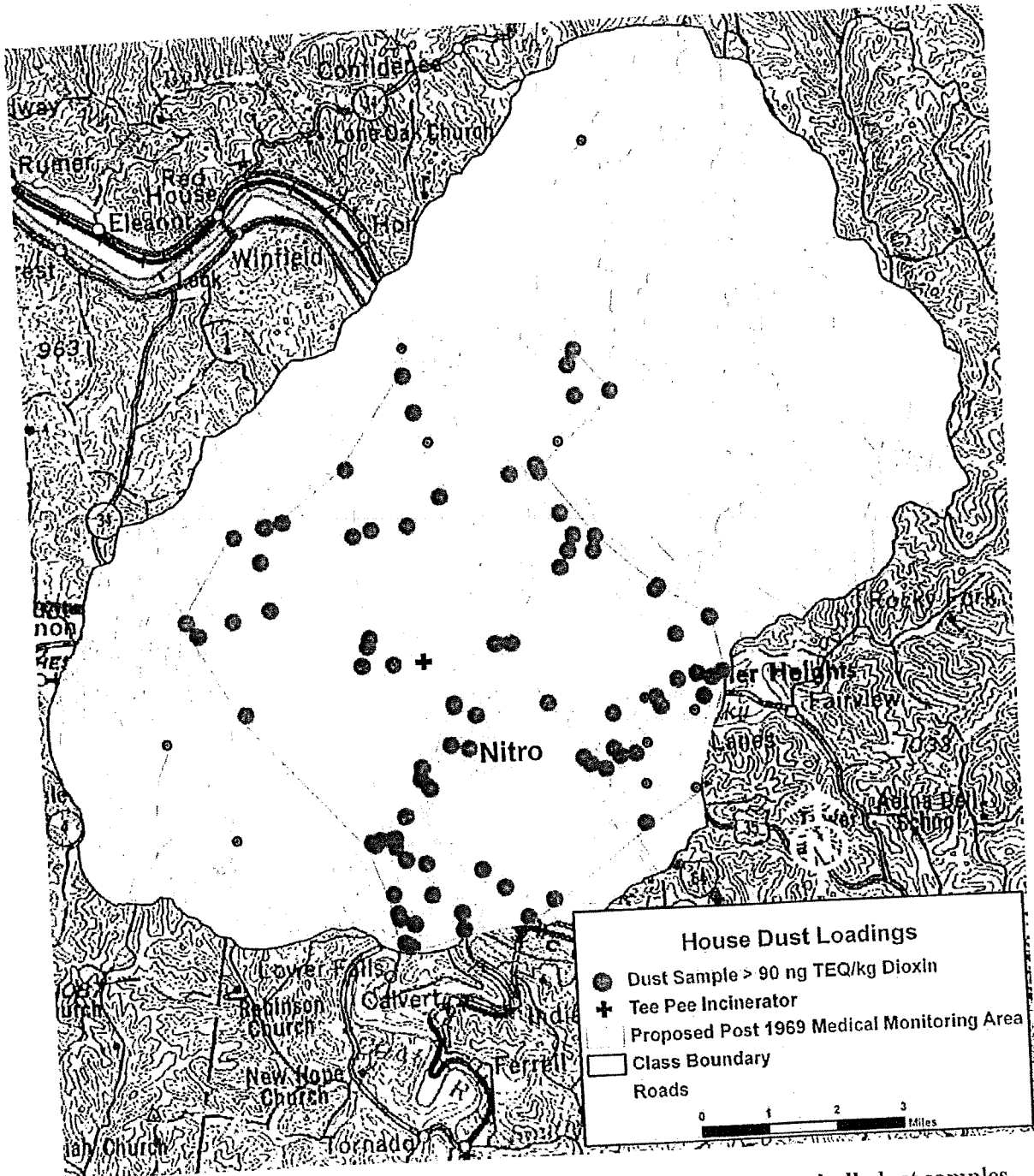


Figure 15. Proposed Post 1969 Area for Medical Monitoring based on bulk dust samples with dioxin loadings in excess of 90 ng TEQ/kg.

Figure 5.2

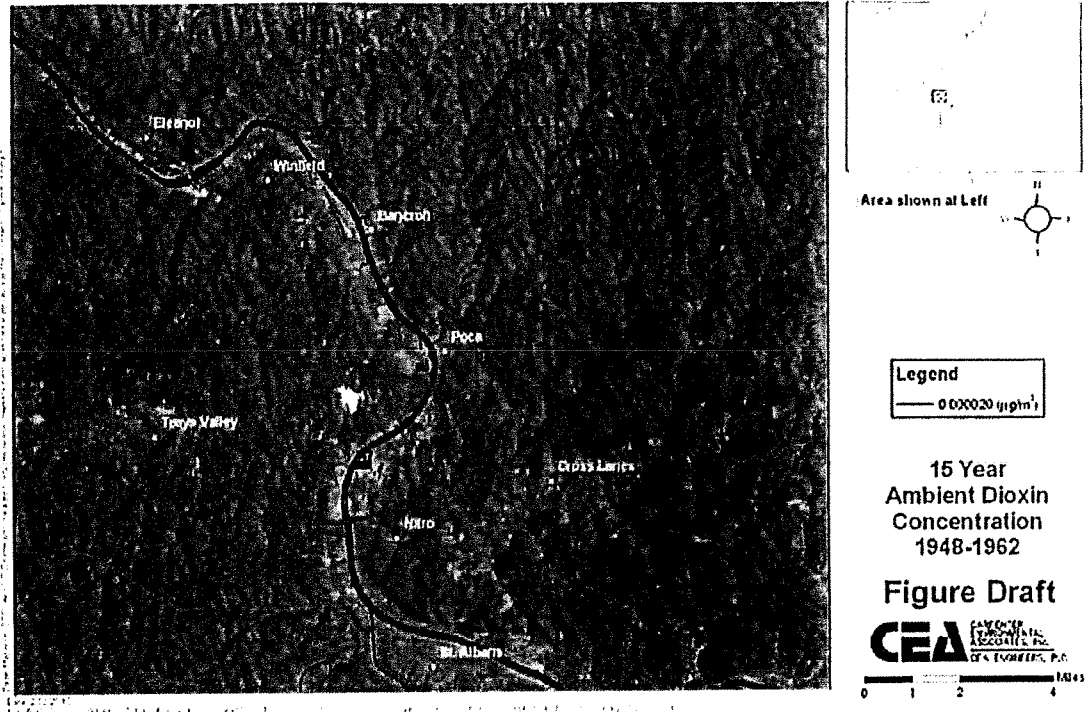


Figure 5.1

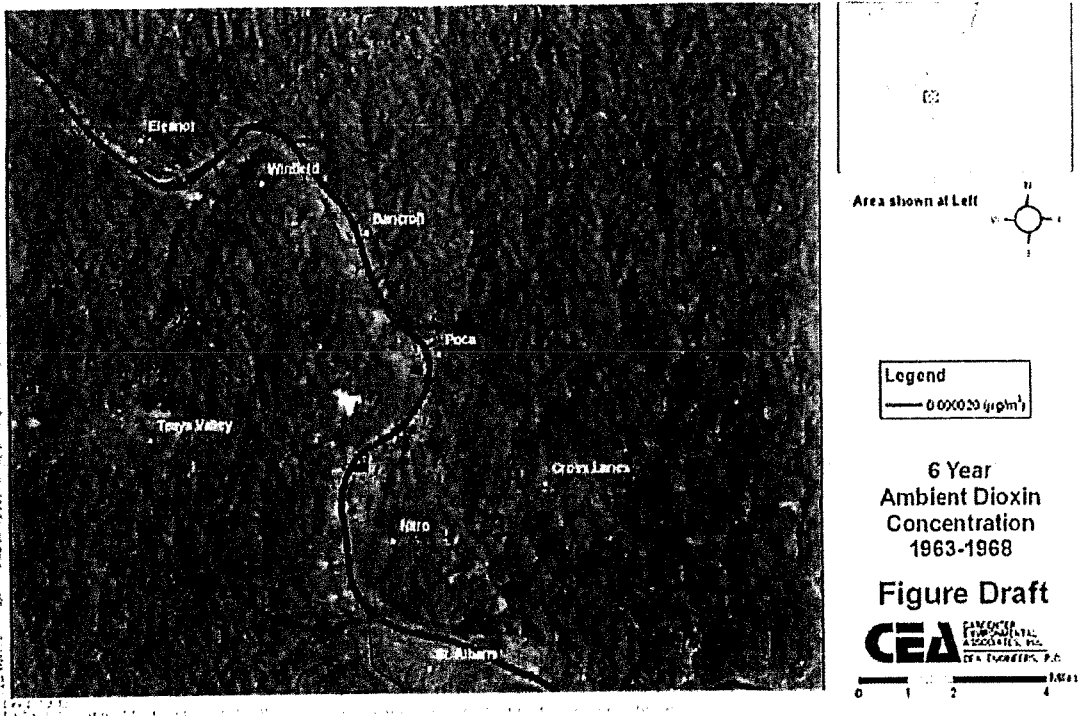
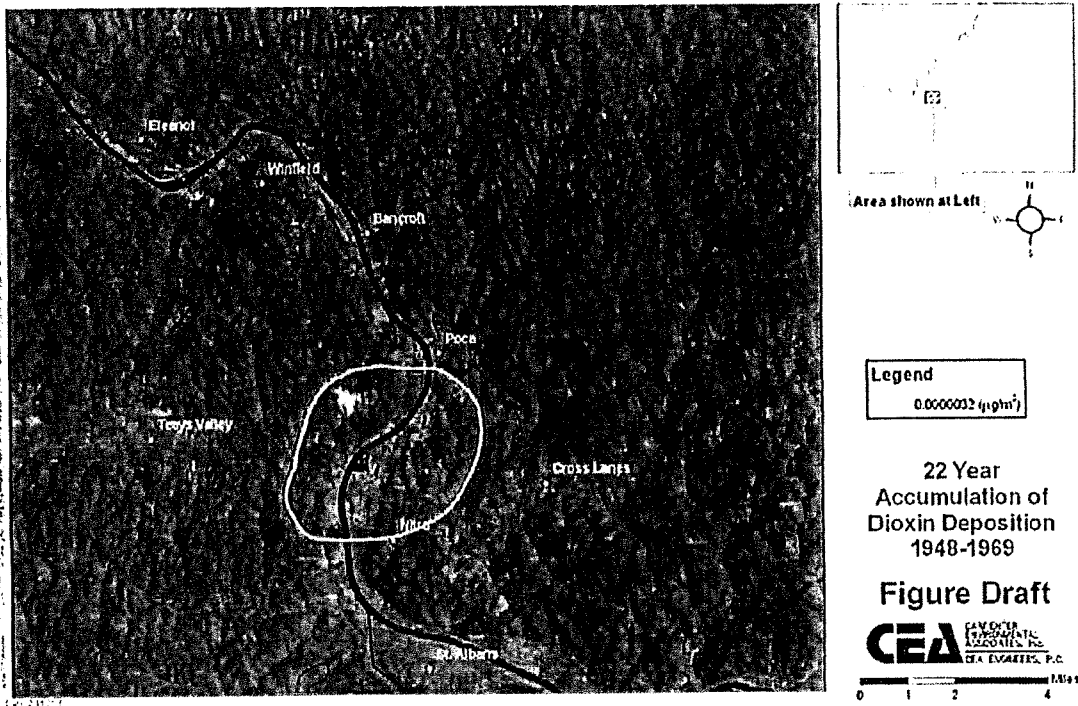


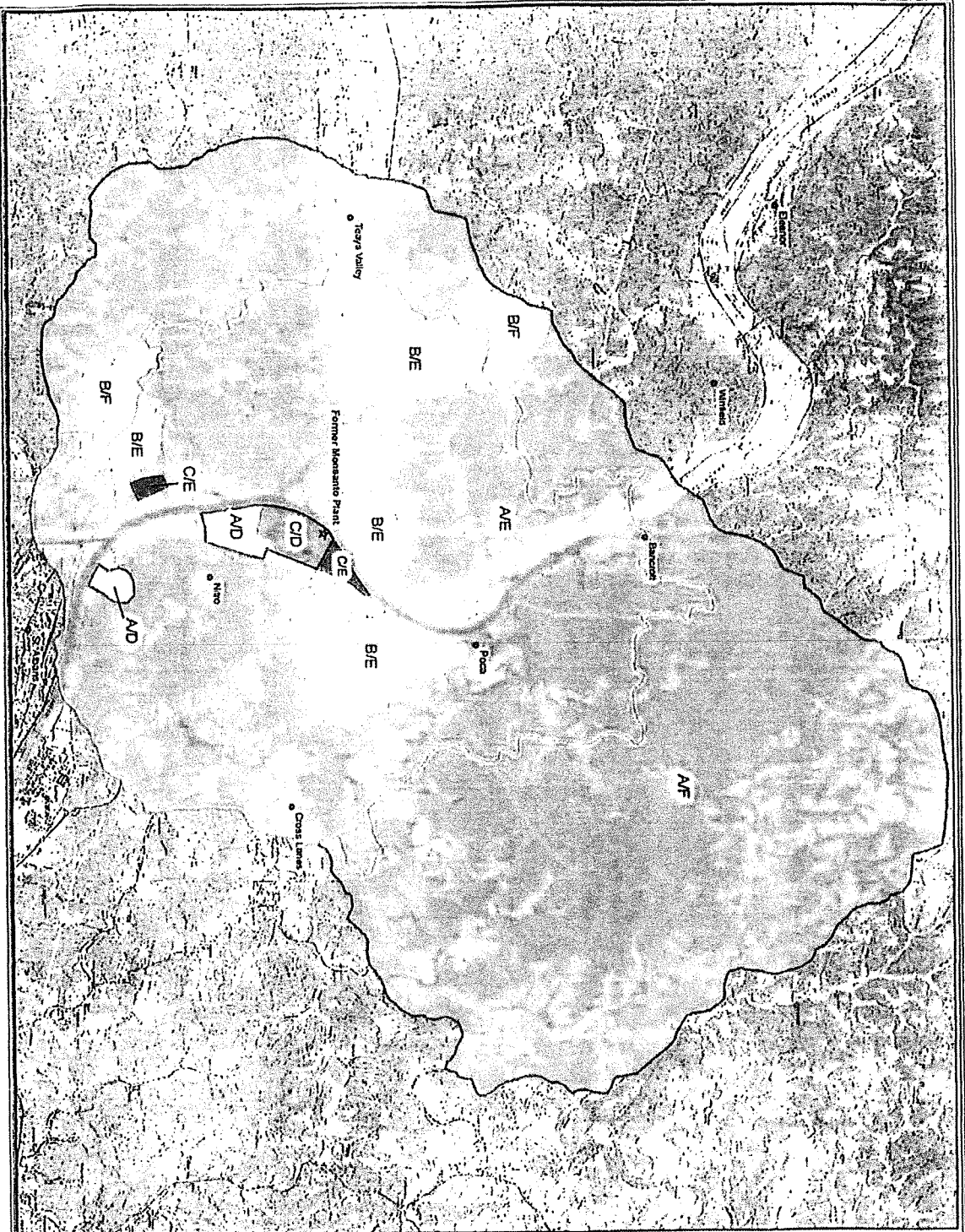
Figure 5.3



EXHIBIT

tabbies

12



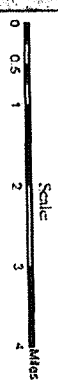
## Class Area Remediation Zones Nitro, West Virginia

### Legend

- Cities
- ★ Former Monsanto Plant Location
- Household Dust Concentration Zone
  - Elevated ( ≤ 90 ng/kg)
  - Chronic ( > 90ng/kg and ≤ 900 ng/kg)
  - Sub Chronic Hazard ( > 900 ng/kg)
- Soil Concentration Zones
  - Elevated ( ≤ 41 ng/kg)
  - High ( > 41ng/kg and ≤ 410 ng/kg)
  - Extreme ( > 410 ng/kg)

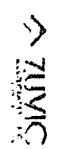
### Remedial Options For Residential and School Properties

- A. No soil remediation
- B. Add 4 inches of topsoil
- C. Remove 6 inches of topsoil and treat/dispose
- D. Purchase property/demol house
- E. Clean house
- F. No dust remediation



Map Prepared January 2010

By:



Data Sources:  
 Ohio Specific Data Zinc Associates, Inc.  
 State Layers: WV GIS Technical Center  
 Parcels & Structures: Obtained By: Applied Geographics, Inc.  
 Figure 5 - Map of Class Area Remediation Zones