

July 14, 2010

Jay King  
DSCA Project Manager

North Carolina Department of Environment and Natural Resources  
Division of Waste Management  
Dry Cleaning Solvent Cleanup Act Program  
401 Oberlin Road, Suite 150  
Raleigh, North Carolina 27605

Subject: Results of Indoor Air & Sub Slab Vapor Analysis  
DSCA #01-0003  
TCBY Store Adjacent to A Cleaner World-Burlington  
2781 South Church Street, Burlington, Alamance County

Dear Mr. King,

In accordance with State Lead Authorization for Work 008 for the subject site, attached are the analytical results for samples of indoor air (IA-1) and sub slab vapor (SSV-2) collected on June 18, 2010 from the tenant space (TCBY frozen yogurt store) that is adjacent to the northern wall of DSCA #01-0003, A Cleaner World. DSCA #01-0003 is an operating dry cleaning plant that uses one perc dry-cleaning machine that is located in the rear or western portion of the facility. A table that includes contact information for the property owner and tenants is attached. The sample locations are shown on the attached map.

The volatile organic compounds (VOCs) tetrachloroethylene ( $875 \mu\text{g}/\text{m}^3$ ) and trichloroethylene ( $4.51 \mu\text{g}/\text{m}^3$ ) were detected in indoor air sample IA-1, which was an eight-hour composite collected from the rear portion of the TCBY store. During the sampling period, the adjacent dry cleaning business ran the dry-cleaning machine five times from 0700 to 1100. According to the attached DSCA Risk Calculator for commercial or industrial sites, these values translate to a cumulative IELCR of  $4.17 \times 10^{-4}$  and a Hazard Index of 0.07.

A sub-slab gas sample (SSV-1) was collected in the back portion of the TCBY store, in close proximity to the indoor air sampling location. Analysis of sub slab vapor sample SSV-1 revealed the presence of tetrachloroethylene ( $347,301 \mu\text{g}/\text{m}^3$ ) and cis 1,2 dichloroethylene ( $479.74 \mu\text{g}/\text{m}^3$ ).

The indoor air samples were collected during the day time between 0800 and 1600 when the building was occupied by store employees. Given the results of the indoor air analyses, collection of confirmation samples within the TCBY store using longer term Radiello samplers appears to be warranted. In addition, the sub-slab vapor results for the TCBY store were above 10x the Tier 1 Indoor Air RSBL for PCE. Therefore, the indoor air and sub-slab gas at the immediately adjacent space to the north of the TCBY store, which is currently vacant, should also be sampled.

We appreciate the opportunity to be of service to the DSCA program. Should you have any questions regarding the contents of this submittal, please do not hesitate to contact me at 910-256-9277.

Sincerely,

**WITHERS & RAVENEL**

  
Brian J. Bellis, P.G.  
Project Manager



Attachments: Sample Location Map, Summary Tables, DSCA Risk Calculator, Indoor Air Survey Form, Photo documentation, Laboratory Report

# WITHERS & RAVENEL

ENGINEERS | PLANNERS | SURVEYORS

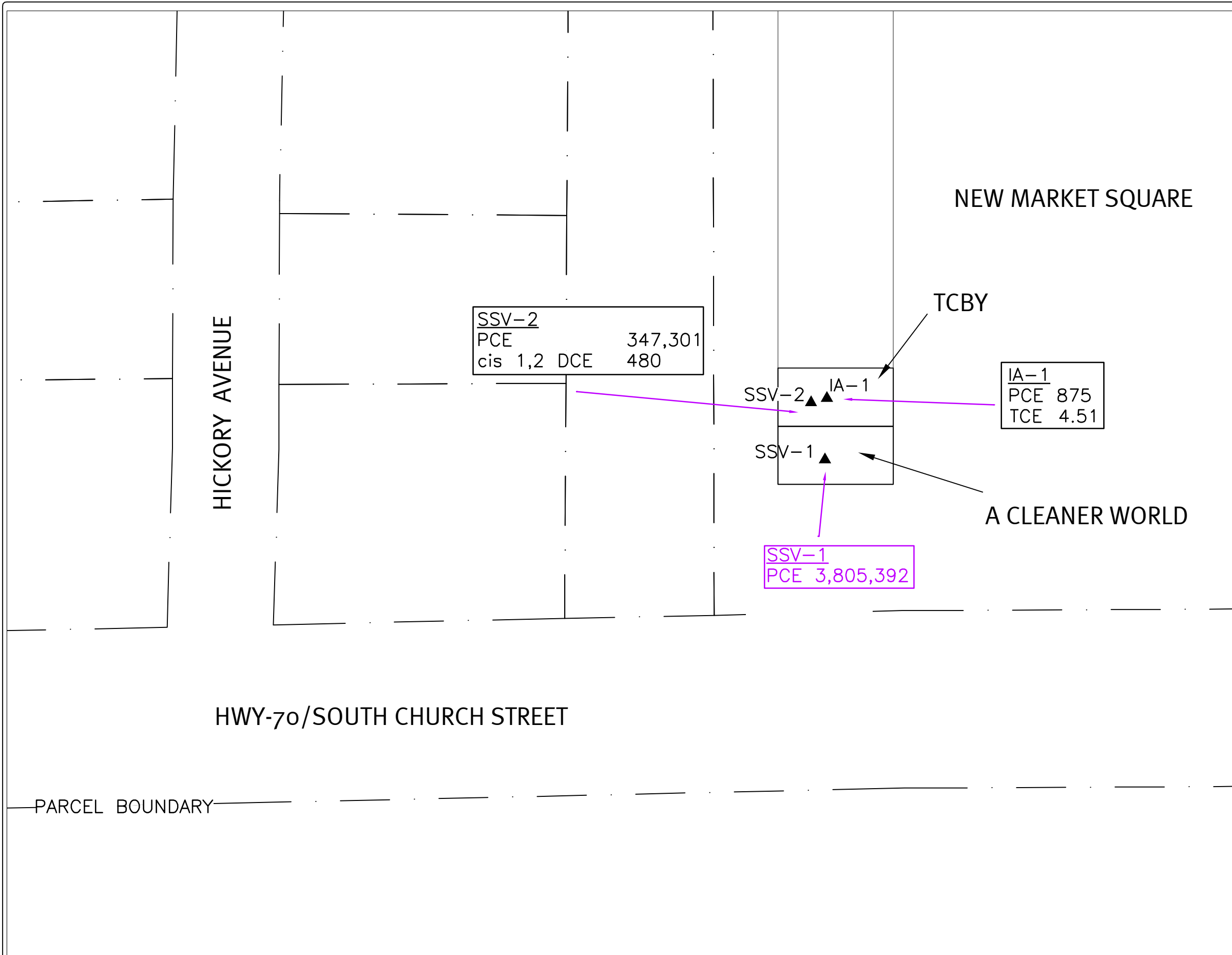
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| Name of Business                  | Business Address                               | Owner Address   | Contact Information                   |
|-----------------------------------|--|---|---------------------------------------|
| New Market Square Shopping Center | 2753 South Church Street, Burlington, NC 27215 | Newmarket-Burlington, LLC 6525 Morrison Blvd., Charlotte, NC 28211  | Mary Ann Richard<br>(704) 366-7337    |
| A Cleaner World Store #180        | 2781 South Church Street, Burlington, NC 27215 | ACW Management PO Box 6535, High Point, NC 27262                    | Sonia Locklear<br>(336) 584-1850      |
| TCBY                              | 2779 South Church Street, Burlington, NC 27215 | J & J Ventures, Inc. 2779 South Church Street, Burlington, NC 27215 | Stephanie Henderson<br>(336) 584-2660 |

111 MacKenan Drive | Cary, NC 27511 | tel: 919.469.3340 | fax: 919.467-6008 | [www.withersravenel.com](http://www.withersravenel.com)

1410 Commonwealth Drive | Suite 101 | Wilmington, NC 28403 | tel: 910.256.9277 | fax: 910.256.2584

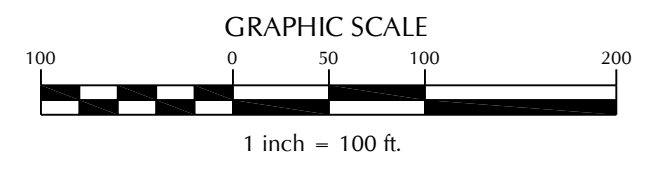
416 D Gallimore Dairy Road | Greensboro, NC 27409 | tel: 336.993.5504 | fax: 919.467.6008



LEGEND

- SSV-1  
▲ SUB-SLAB VAPOR SAMPLE LOCATION  
(CONCENTRATIONS IN  $\mu\text{g}/\text{m}^3$ )
  - IA-1  
▲ INDOOR AIR SAMPLE LOCATION  
(CONCENTRATION IN  $\mu\text{g}/\text{m}^3$ )
  - EXTERIOR BUILDING WALLS  
(APPROXIMATE LOCATION)
  - - - PARCEL BOUNDARY
- PCE: Tetrachloroethylene  
TCE: Trichloroethylene  
CIS: cis-1,2-Dichloroethylene  
TRANS: trans-1,2-Dichloroethylene  
VC: Vinyl chloride

NOTES: SSV-1 WAS COLLECTED ON FEBRUARY 24, 2010  
SSV-2 and IA-1 WERE COLLECTED ON JUNE 16, 2010



| Table 10: Analytical Data for Sub-slab Gas |                          |                            |                          |                     |                            |                   |                |            |
|--|--------------------------|----------------------------|--------------------------|---------------------|----------------------------|-------------------|----------------|------------|
| DSCA ID M01-0003                           |                          |                            |                          |                     |                            |                   |                |            |
| Sample ID                                  | Sampling Date (mm/dd/yy) | Sample Duration (in Hours) | cis-1,2-Dichloroethylene | Tetrachloroethylene | trans-1,2-Dichloroethylene | Trichloroethylene | Vinyl chloride | 2-Propanol |
|  |                          |                            | (µg/m <sup>3</sup> )     |                     |                            |                   |                |            |
| SSV-1                                      | 2/24/10                  | NA                         | <10190                   | <b>3,805,392</b>    | <19590                     | <13810            | <6570          | <12140     |
| SSV-2                                      | 6/18/10                  | 0.5                        | <b>479.74</b>            | <b>347,301</b>      | <317                       | <430              | <205           | <197       |

Sub-slab gas samples were collected in one liter summa canisters

| Table 11: Analytical Data for Indoor Air |                          |                            |                                     |                              |                     |                            |                   |                |
|--|--------------------------|----------------------------|-------------------------------------|------------------------------|---------------------|----------------------------|-------------------|----------------|
|  |                          |                            |                                     |                              |                     |                            |                   | ADT 2          |
| DSCA ID: 01-0003                         |                          |                            |                                     |                              |                     |                            |                   |                |
| Sample ID                                | Sampling Date (mm/dd/yy) | Sample Duration (in Hours) | Dry-Cleaning Loads/ Sampling Period | cis-1,2-Dichloroethylene     | Tetrachloroethylene | trans-1,2-Dichloroethylene | Trichloroethylene | Vinyl chloride |
|  |                          |                            |                                     | ( $\mu\text{g}/\text{m}^3$ ) |                     |                            |                   |                |
| IA-1                                     | 6/18/10                  | 7.67                       | 5                                   | <2.74                        | <b>875</b>          | <2.74                      | <b>4.51</b>       | <1.76          |

Indoor air sample was collected in a six liter summa canister  
The facility currently operates one perc dry-cleaning machine

**DSCA Indoor Air Risk Calculator - Table 2: Cumulative Risk for Industrial Worker**

DSCA ID No: 001-0002

Name/Address of Sample Location: 2781 South Church Street, Burlington, North Carolina

Have multiple sampling events been conducted at this location:  Yes  No

If yes, how many: \_\_\_\_\_ Sample ID: IA-1

| Cumulative Risk Calculation for Indoor Air Pathway (Industrial)   |                   |                   |                |         |              |             |      |  |  |  |  |  |
|---|-------------------|-------------------|----------------|---------|--------------|-------------|------|--|--|--|--|--|
|   | Tetrachloroethene | Trichloroethylene | Vinyl Chloride | Benzene | Ethylbenzene | Naphthalene | MTBE |  |  |  |  |  |
| Maximum Concentration Detected ( $\mu\text{g}/\text{m}^3$ )   | 875               | 4.51              |                |         |              |             |      |  |  |  |  |  |
| EPA Regional Screening Level (RSL) for Industrial Air (carcinogenic target risk = $1\text{E-}06$ ) $\mu\text{g}/\text{m}^3$ | 2.10              | 6.10              | 2.8            | 1.6     | 4.9          | 0.36        | 47   |  |  |  |  |  |
| Ratio = Max Concentration $\div$ EPA RSL  | 416.67            | 0.74              | 0.00           | 0.00    | 0.00         | 0.00        | 0.00 |  |  |  |  |  |

**CUMULATIVE RISK (sum of ratios  $\times 10^{-6}$ )** **4.17E-04**

| Cumulative Hazard Index (HI) Calculation for Indoor Air Pathway (Industrial)                                   |                   |                   |                |         |         |              |               |             |        |  |  |  |
|--|-------------------|-------------------|----------------|---------|---------|--------------|---------------|-------------|--------|--|--|--|
|  | Tetrachloroethene | trans - 1,2 - DCE | Vinyl Chloride | Benzene | Toluene | Ethylbenzene | Total Xylenes | Naphthalene | MTBE   |  |  |  |
| Maximum Concentration Detected   | 875               |                   |                |         |         |              |               |             |        |  |  |  |
| EPA Regional Screening Level (RSL) for Industrial Air [noncancer Hazard Index (HI)=1] $\mu\text{g}/\text{m}^3$ | 12000             | 260               | 440            | 130     | 22000   | 4400         | 440           | 13          | 13000  |  |  |  |
| Ratio = Max Concentration $\div$ EPA RSL   | 0.0729            | 0.0000            | 0.0000         | 0.0000  | 0.0000  | 0.0000       | 0.0000        | 0.0000      | 0.0000 |  |  |  |

**CUMULATIVE HI (sum of ratios)** **0.07**

- Notes:**
- RSLs available at: [http://www.epa.gov/reg3hwmd/risk/human/rb-concentration\\_table/Generic\\_Tables/index.htm](http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm)
  - Cis-1,2-DCE, trans-1,2-DCE, toluene and xylenes were not included in the cumulative risk calculation since they currently have no carcinogenic EPA RSLs.
  - Trichloroethylene and cis-1,2-DCE were not included in cumulative HI calculation since they currently have no noncancer EPA RSLs.

**CONCLUSIONS**

Risk is <  $1\text{E-}06$

Risk is between  $1\text{E-}06$  and  $1\text{E-}05$

Risk is between  $1\text{E-}05$  and  $1\text{E-}04$

Risk is >  $1\text{E-}04$

**RECOMMENDATIONS (check all that apply)**

Collect confirmation samples

Develop long-term monitoring schedule

Evaluate for mitigation

No further action for indoor air

**INDOOR AIR BUILDING SURVEY  
and SAMPLING FORM**

Site Name: TCBY (Adj. Property to ACW) DSCA ID#: 01-0003  
Preparer's name: Chris Fay Date: Jun 16, 2010  
Preparer's affiliation: W&R (DSCA Contractor) Phone #: 910-256-9277

**Part I - Occupants**

Building Address: 2779 S. Church St. Burlington, NC (New Market Square)  
Property Contact: Stephanie Henderson  Owner  Renter  other (specify): TCBY Manager  
Contact's Phone: home \_\_\_\_\_ work (336) 584-2660 cell (336) 684-0862  
# of Building occupants: Children under age 13 0 Children age 13-18 0 Adults 12 employees

**Part II - Building Characteristics**

Building type:  residential  multi-family residential  office  strip mall  commercial  industrial  
Describe building: Frozen Treats Store; shares South wall with ACW Year constructed: \_\_\_\_\_  
Sensitive population:  day care  nursing home  hospital  school  other (specify): \_\_\_\_\_  
Number of floors below grade: 0  full basement  crawl space  slab on grade  
Number of floors at or above grade: 0  
Depth of basement below grade surface (ft): 0 Basement size (ft<sup>2</sup>): 0  
Basement floor construction:  concrete  dirt  floating  stone  other (specify): \_\_\_\_\_  
Foundation walls:  poured concrete  cinder blocks  stone  other (specify): \_\_\_\_\_  
Basement sump present?  N/A pump?  N/A Water in sump?  N/A  
Type of heating system (check all that apply):  
 hot air circulation  hot air radiation  wood  steam radiation  
 heat pump  hot water radiation  kerosene heater  electric baseboard  
 other (specify): \_\_\_\_\_  
Type of ventilation system (check all that apply):  
 central air conditioning  mechanical fans  bathroom ventilation fans  
 individual air conditioning units kitchen range hood fan  outside air intake  
 other (specify): \_\_\_\_\_  
Type of fuel utilized (check all that apply):  
 Natural gas  electric  fuel oil  wood  coal  solar  kerosene

Are the basement walls or floor sealed with waterproof paint or epoxy coatings?



Is there a whole house fan?

Septic system?

Irrigation/private well?

Type of ground cover outside of building:  grass  concrete  asphalt  other (specify): \_\_\_\_\_

Existing subsurface depressurization (radon) system in place?

Sub-slab vapor/moisture barrier in place?  Type of barrier: \_\_\_\_\_

### Part III - Outside Contaminant Sources

Other stationary sources nearby (gas stations, emission stacks, etc.): \_\_\_\_\_

Heavy vehicular traffic nearby (or other mobile sources): \_\_\_\_\_

### Part IV – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

| Potential Sources             | Location(s)                       | Removed<br>(Yes / No / NA) |
|-------------------------------|-----------------------------------|----------------------------|
| Gasoline storage cans         |                                   | N/A                        |
| Gas-powered equipment         |                                   | N/A                        |
| Kerosene storage cans         |                                   | N/A                        |
| Paints / thinners / strippers |                                   | N/A                        |
| Cleaning solvents             |                                   | N/A                        |
| Oven cleaners                 |                                   | N/A                        |
| Carpet / upholstery cleaners  |                                   | N/A                        |
| Other house cleaning products | Ajax and bleach in back near sink | No                         |
| Moth balls                    |                                   | N/A                        |
| Polishes / waxes              |                                   | N/A                        |
| Insecticides                  |                                   | N/A                        |
| Furniture / floor polish      |                                   | N/A                        |
| Nail polish / polish remover  |                                   | N/A                        |
| Hairspray                     |                                   | N/A                        |
| Cologne / perfume             |                                   | N/A                        |
| Air fresheners                |                                   | N/A                        |
| Fuel tank (inside building)   |                                   | N/A                        |
| Wood stove or fireplace       |                                   | N/A                        |
| New furniture / upholstery    |                                   | N/A                        |
| New carpeting / flooring      |                                   | N/A                        |
| Hobbies - glues, paints, etc. |                                   | N/A                        |

Part V – Miscellaneous Items

Do any occupants of the building smoke?  Yes  No How often? Rarely

Last time someone smoked in the building? Never hours N/A days ago

Does the building have an attached garage directly connected to living space?  No  Yes

If so, is a car usually parked in the garage?

Are gas-powered equipment or cans of gasoline/fuels stored in the garage?

Do the occupants of the building have their clothes dry cleaned?  No  Yes

If yes, how often?  weekly  monthly  3-4 times a year

Do any of the occupants use solvents in work?

If yes, what types of solvents are used? \_\_\_\_\_

If yes, are their clothes washed at work?

Have any pesticides/herbicides been applied around the building or in the yard?  No  Yes

If so, when and which chemicals? \_\_\_\_\_

Has there ever been a fire in the building?  No  Yes If yes, when? \_\_\_\_\_

Has painting or staining been done in the building in the last 6 months?  No  Yes

If yes, when \_\_\_\_\_ and where? \_\_\_\_\_

Part VI – Sampling Information

Sample Technician: Withers & Ravenel Phone Number: (910) 256-9277

Sample Source:  Indoor Air  Crawlspace Air  Sub-Slab  Near Slab Soil Gas  Exterior Soil Gas

Sampler Type:  Tedlar bag  Sorbent  Stainless Steel Canister  Other (specify): \_\_\_\_\_

Analytical Method:  TO-15  TO-17  Other: \_\_\_\_\_ Cert. Laboratory: Pace Analytical

Sample locations (floor, room):

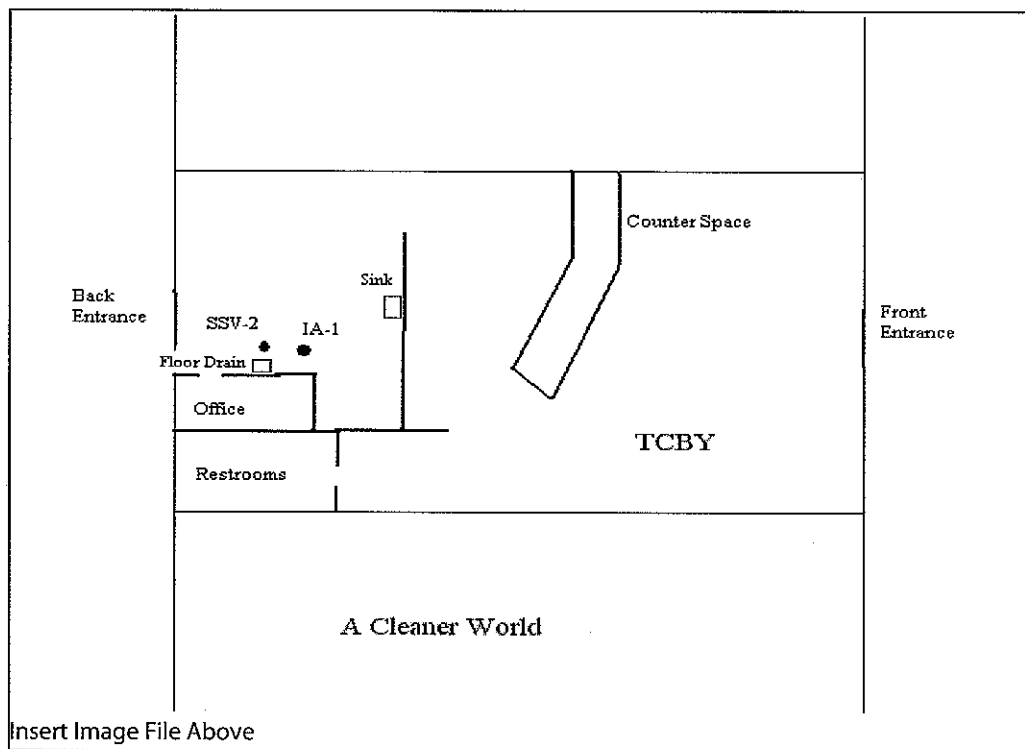
Field ID # IA-1 Indoor Ambient Air (room) Field ID # IA-1 sample time 0820-1600 (25-0)

Field ID # SSV-2 Sub Slab Air (floor) Field ID # SSV-2 sample time 1615-1645 (30-4)

Were "Instructions for Occupants" followed?  No  Yes

If not, describe modifications: \_\_\_\_\_

*Provide Drawing of Sample Location(s) in Building*



Part VII - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event?

No

Describe the general weather conditions:

Slightly Overcast, Humid, Temperatures in the mid 80's

Part VIII – General Observations

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process (e.g., observed that drycleaner operated with door or windows propped open for ventilation).

A Cleaner World (adjacent dry-cleaner) operated during the sampling event with doors propped open. During the sampling event, dry-cleaning operations in the amount of 5 loads from 1 machine using PCE were completed (0700-1100).

(Adapted from the NJDEP Vapor Intrusion Guidance, October 2005)



DSCA #01-0003

Indoor air sampling location on the preparation table in the TCBY.



DSCA #01-0003

The six liter summa canister was positioned at approximate breathing level height.



DSCA #01-0003  
The sub-slab sampling location.



DSCA #01-0003  
The sub-slab sample was collected in a one liter summa canister.

July 13, 2010

Mr. Brian Bellis  
Withers & Ravenel\_Wilmington  
1410 Commonwealth Drive  
Suite 101  
Wilmington, NC 28403

RE: Project: A Cleaner World DSCA 01-0003  
Pace Project No.: 9271846

Dear Mr. Bellis:

Enclosed are the analytical results for sample(s) received by the laboratory on June 18, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

Inorganic Wet Chemistry and Metals analyses were performed at our Pace Asheville laboratory and Organic testing was performed at our Pace Huntersville laboratory unless otherwise footnoted. All Microbiological analyses were performed at the laboratory where the samples were received.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Ashley Nifong

ashley.nifong@pacelabs.com  
Project Manager

Enclosures

cc: Chris Fay, Withers & Ravenel\_Wilmington

## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: A Cleaner World DSCA 01-0003

Pace Project No.: 9271846

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### Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414

Alaska Certification #: UST-078

Alaska Certification #MN00064

Arizona Certification #: AZ-0014

Arkansas Certification #: 88-0680

California Certification #: 01155CA

EPA Region 8 Certification #: Pace

Florida/NELAP Certification #: E87605

Georgia Certification #: 959

Idaho Certification #: MN00064

Illinois Certification #: 200011

Iowa Certification #: 368

Kansas Certification #: E-10167

Louisiana Certification #: 03086

Louisiana Certification #: LA080009

Maine Certification #: 2007029

Maryland Certification #: 322

Michigan DEQ Certification #: 9909

Minnesota Certification #: 027-053-137

Mississippi Certification #: Pace

Montana Certification #: MT CERT0092

Nevada Certification #: MN\_00064

Nebraska Certification #: Pace

New Jersey Certification #: MN-002

New Mexico Certification #: Pace

New York Certification #: 11647

North Carolina Certification #: 530

North Dakota Certification #: R-036

North Dakota Certification #: R-036A

Ohio VAP Certification #: CL101

Oklahoma Certification #: D9921

Oklahoma Certification #: 9507

Oregon Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification

Tennessee Certification #: 02818

Texas Certification #: T104704192

Washington Certification #: C754

Wisconsin Certification #: 999407970

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: A Cleaner World DSCA 01-0003

Pace Project No.: 9271846

| Lab ID     | Sample ID | Matrix | Date Collected | Date Received  |
|------------|-----------|--------|----------------|----------------|
| 9271846001 | IA-1      | Air    | 06/17/10 16:00 | 06/18/10 16:45 |
| 9271846002 | SSV-2     | Air    | 06/17/10 16:45 | 06/18/10 16:45 |

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: A Cleaner World DSCA 01-0003

Pace Project No.: 9271846

| Lab ID     | Sample ID | Method | Analysts | Analytes Reported | Laboratory |
|------------|-----------|--------|----------|-------------------|------------|
| 9271846001 | IA-1      | TO-15  | AEP      | 5                 | PASI-M     |
| 9271846002 | SSV-2     | TO-15  | DB1, SK3 | 5                 | PASI-M     |

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: A Cleaner World DSCA 01-0003

Pace Project No.: 9271846

| Sample: IA-1                          |         | Lab ID: 9271846001 |              | Collected: 06/17/10 16:00 |      | Received: 06/18/10 16:45 |                | Matrix: Air |      |
|---------------------------------------|---------|--------------------|--------------|---------------------------|------|--------------------------|----------------|-------------|------|
| Parameters                            | Results | Units              | Report Limit | MDL                       | DF   | Prepared                 | Analyzed       | CAS No.     | Qual |
| TO15 MSV AIR Analytical Method: TO-15 |         |                    |              |                           |      |                          |                |             |      |
| cis-1,2-Dichloroethene                | ND      | ppbv               | 0.69         | 0.34                      | 1.38 |                          | 07/07/10 23:16 | 156-59-2    |      |
| trans-1,2-Dichloroethene              | ND      | ppbv               | 0.69         | 0.34                      | 1.38 |                          | 07/07/10 23:16 | 156-60-5    |      |
| Tetrachloroethene                     | 129     | ppbv               | 6.9          | 3.4                       | 13.8 |                          | 07/08/10 22:56 | 127-18-4    |      |
| Trichloroethene                       | 0.84    | ppbv               | 0.69         | 0.34                      | 1.38 |                          | 07/07/10 23:16 | 79-01-6     |      |
| Vinyl chloride                        | ND      | ppbv               | 0.69         | 0.34                      | 1.38 |                          | 07/07/10 23:16 | 75-01-4     |      |

| Sample: SSV-2                         |         | Lab ID: 9271846002 |              | Collected: 06/17/10 16:45 |      | Received: 06/18/10 16:45 |                | Matrix: Air |      |
|---------------------------------------|---------|--------------------|--------------|---------------------------|------|--------------------------|----------------|-------------|------|
| Parameters                            | Results | Units              | Report Limit | MDL                       | DF   | Prepared                 | Analyzed       | CAS No.     | Qual |
| TO15 MSV AIR Analytical Method: TO-15 |         |                    |              |                           |      |                          |                |             |      |
| cis-1,2-Dichloroethene                | 121     | ppbv               | 80.0         | 40.0                      | 160  |                          | 07/09/10 02:45 | 156-59-2    |      |
| trans-1,2-Dichloroethene              | ND      | ppbv               | 80.0         | 40.0                      | 160  |                          | 07/09/10 02:45 | 156-60-5    |      |
| Tetrachloroethene                     | 51200   | ppbv               | 2560         | 1280                      | 5120 |                          | 07/09/10 19:28 | 127-18-4    |      |
| Trichloroethene                       | ND      | ppbv               | 80.0         | 40.0                      | 160  |                          | 07/09/10 02:45 | 79-01-6     |      |
| Vinyl chloride                        | ND      | ppbv               | 80.0         | 40.0                      | 160  |                          | 07/09/10 02:45 | 75-01-4     |      |

### QUALITY CONTROL DATA

Project: A Cleaner World DSCA 01-0003  
Pace Project No.: 9271846

QC Batch: AIR/10494 Analysis Method: TO-15  
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR  
Associated Lab Samples: 9271846001

METHOD BLANK: 819717 Matrix: Air  
Associated Lab Samples: 9271846001

| Parameter                | Units | Blank Result | Reporting Limit | Analyzed       | Qualifiers |
|--------------------------|-------|--------------|-----------------|----------------|------------|
| cis-1,2-Dichloroethene   | ppbv  | ND           | 0.50            | 07/07/10 16:58 |            |
| Tetrachloroethene        | ppbv  | ND           | 0.50            | 07/07/10 16:58 |            |
| trans-1,2-Dichloroethene | ppbv  | ND           | 0.50            | 07/07/10 16:58 |            |
| Trichloroethene          | ppbv  | ND           | 0.50            | 07/07/10 16:58 |            |
| Vinyl chloride           | ppbv  | ND           | 0.50            | 07/07/10 16:58 |            |

LABORATORY CONTROL SAMPLE: 819718

| Parameter                | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|--------------------------|-------|-------------|------------|-----------|--------------|------------|
| cis-1,2-Dichloroethene   | ppbv  | 10          | 9.3        | 93        | 67-131       |            |
| Tetrachloroethene        | ppbv  | 10          | 9.3        | 93        | 68-136       |            |
| trans-1,2-Dichloroethene | ppbv  | 10          | 12.1       | 121       | 69-131       |            |
| Trichloroethene          | ppbv  | 10          | 8.9        | 89        | 75-147       |            |
| Vinyl chloride           | ppbv  | 10          | 9.9        | 99        | 66-125       |            |

SAMPLE DUPLICATE: 820018

| Parameter                | Units | 10131561001 Result | Dup Result | RPD | Max RPD | Qualifiers |
|--------------------------|-------|--------------------|------------|-----|---------|------------|
| cis-1,2-Dichloroethene   | ppbv  | ND                 | ND         |     | 30      |            |
| Tetrachloroethene        | ppbv  | 8.9                | 8.1        | 9   | 30      |            |
| trans-1,2-Dichloroethene | ppbv  | ND                 | ND         |     | 30      |            |
| Trichloroethene          | ppbv  | ND                 | 1.0J       |     | 30      |            |
| Vinyl chloride           | ppbv  | ND                 | ND         |     | 30      |            |

### QUALITY CONTROL DATA

Project: A Cleaner World DSCA 01-0003

Pace Project No.: 9271846

QC Batch: AIR/10504

Analysis Method: TO-15

QC Batch Method: TO-15

Analysis Description: TO15 MSV AIR

Associated Lab Samples: 9271846002

METHOD BLANK: 820404

Matrix: Air

Associated Lab Samples: 9271846002

| Parameter                | Units | Blank Result | Reporting Limit | Analyzed       | Qualifiers |
|--------------------------|-------|--------------|-----------------|----------------|------------|
| cis-1,2-Dichloroethene   | ppbv  | ND           | 0.50            | 07/08/10 17:50 |            |
| Tetrachloroethene        | ppbv  | ND           | 0.50            | 07/08/10 17:50 |            |
| trans-1,2-Dichloroethene | ppbv  | ND           | 0.50            | 07/08/10 17:50 |            |
| Trichloroethene          | ppbv  | ND           | 0.50            | 07/08/10 17:50 |            |
| Vinyl chloride           | ppbv  | ND           | 0.50            | 07/08/10 17:50 |            |

LABORATORY CONTROL SAMPLE: 820405

| Parameter                | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|--------------------------|-------|-------------|------------|-----------|--------------|------------|
| cis-1,2-Dichloroethene   | ppbv  | 10          | 10.3       | 103       | 67-131       |            |
| Tetrachloroethene        | ppbv  | 10          | 13.4       | 134       | 68-136       |            |
| trans-1,2-Dichloroethene | ppbv  | 10          | 13.0       | 130       | 69-131       |            |
| Trichloroethene          | ppbv  | 10          | 9.9        | 99        | 75-147       |            |
| Vinyl chloride           | ppbv  | 10          | 10.4       | 104       | 66-125       |            |

## QUALIFIERS

Project: A Cleaner World DSCA 01-0003

Pace Project No.: 9271846

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

### LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

### SAMPLE QUALIFIERS

Sample: 9271846002

[1] The sample was analyzed by serial dilution.



# AIR: CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

01866

Page: 1 of 1

|   |  |   |  |  |  |   |  |
|---|--|---|--|--|--|---|--|
| <b>Section A</b><br>Required Client Information:        |  | <b>Section B</b><br>Required Project Information:   |  | <b>Section C</b><br>Invoice Information: |  | Program   |  |
| Company: <b>WITHERS &amp; RAVENEL</b>                   |  | Report To: <b>BRIAN BELLIS</b>                      |  | Attention:                               |  | <input type="checkbox"/> UST <input type="checkbox"/> Superfund <input type="checkbox"/> Emissions <input type="checkbox"/> Clean Air Act<br><input type="checkbox"/> Voluntary Clean Up <input type="checkbox"/> Dry Clean <input type="checkbox"/> RCRA <input type="checkbox"/> Other <b>PSA</b> |  |
| Address: <b>1410 COMMONWEALTH DR 101 WILMINGTON, NC</b> |  | Copy To:  |  | Company Name:                            |  | Location of Sampling by State: <b>NC</b>  |  |
| Email To: <b>BBELLIS@withersravenel.com</b>             |  | Purchase Order No.:                                 |  | Address:                                 |  | Reporting Units<br>ug/m <sup>3</sup> <input checked="" type="checkbox"/> mg/m <sup>3</sup> <input type="checkbox"/><br>PPBV <input type="checkbox"/> PPMV <input type="checkbox"/><br>Other <input type="checkbox"/>  |  |
| Phone:   Fax:   |  | Project Name: <b>DSCA 01-0003 (A CLEANER WORLD)</b> |  | Pace Quote Reference:                    |  | Report Level: II.   III.   IV.   Other  |  |
| Requested Due Date/TAT:                                 |  | Project Number: <b>02080991.01</b>                  |  | Pace Project Manager/Sales Rep.:         |  | Pace Profile #:   |  |

| ITEM # | 'Section D Required Client Information<br>AIR SAMPLE ID<br>Sample IDs MUST BE UNIQUE | Valid Media Codes<br>MEDIA      CODE<br>Tedlar Bag      TB<br>1 Liter Summa Can      1LC<br>6 Liter Summa Can      6LC<br>Low Volume Puff      LVP<br>High Volume Puff      HVP<br>Other      PM10 | MEDIA CODE | PID Reading (Client only) | COLLECTED                   |      |             |      | Canister Pressure (Initial Field - psig) | Canister Pressure (Final Field - psig) | Summa Can Number | Flow Control Number | Method: |                    |      |                 |             |             |       |       | Pace Lab ID |                   |
|--------|--|--|------------|---------------------------|-----------------------------|------|-------------|------|--|--|------------------|---------------------|---------|--------------------|------|-----------------|-------------|-------------|-------|-------|-------------|-------------------|
|        |  |  |            |                           | COMPOSITE START<br>END/GRAB |      | COMPOSITE - |      |  |  |                  |                     | PM10    | 3C - Fixed Gas (%) | TO-3 | TO-3M (Methane) | TO-4 (PCBs) | TO-13 (PAH) | TO-14 | TO-15 |             | TO-15 Short List* |
|        |  |  |            |                           | DATE                        | TIME | DATE        | TIME |  |  |                  |                     |         |                    |      |                 |             |             |       |       |             |                   |
| 1      | IA-1   |  | 6LC        |                           | 17JAN2010                   | 0820 | 17JAN2010   | 1600 | 25                                       | 0                                      | 684              |                     |         |                    |      |                 |             |             |       |       | 001         |                   |
| 2      | SSV-2  |  | 1LC        |                           | 17JAN2010                   | 1615 | 17JAN2010   | 1645 | 30                                       | 4                                      | 1031             |                     |         |                    |      |                 |             |             |       |       | 002         |                   |
| 3      |  |  |            |                           |                             |      |             |      |  |  |                  |                     |         |                    |      |                 |             |             |       |       | 003         |                   |
| 4      |  |  |            |                           |                             |      |             |      |  |  |                  |                     |         |                    |      |                 |             |             |       |       |             |                   |
| 5      |  |  |            |                           |                             |      |             |      |  |  |                  |                     |         |                    |      |                 |             |             |       |       |             |                   |
| 6      |  |  |            |                           |                             |      |             |      |  |  |                  |                     |         |                    |      |                 |             |             |       |       |             |                   |
| 7      |  |  |            |                           |                             |      |             |      |  |  |                  |                     |         |                    |      |                 |             |             |       |       |             |                   |
| 8      |  |  |            |                           |                             |      |             |      |  |  |                  |                     |         |                    |      |                 |             |             |       |       |             |                   |
| 9      |  |  |            |                           |                             |      |             |      |  |  |                  |                     |         |                    |      |                 |             |             |       |       |             |                   |
| 10     |  |  |            |                           |                             |      |             |      |  |  |                  |                     |         |                    |      |                 |             |             |       |       |             |                   |
| 11     |  |  |            |                           |                             |      |             |      |  |  |                  |                     |         |                    |      |                 |             |             |       |       |             |                   |
| 12     |  |  |            |                           |                             |      |             |      |  |  |                  |                     |         |                    |      |                 |             |             |       |       |             |                   |

Comments :

| RELINQUISHED BY / AFFILIATION | DATE    | TIME | ACCEPTED BY / AFFILIATION | DATE    | TIME  | SAMPLE CONDITIONS |                 |                       |                |     |     |     |     |
|-------------------------------|---------|------|---------------------------|---------|-------|-------------------|-----------------|-----------------------|----------------|-----|-----|-----|-----|
| <i>[Signature]</i>            | 6/18/10 | 1615 | <i>[Signature]</i>        | 6/18/10 | 10:15 | Temp in °C        | Received on Ice | Custody Sealed Cooler | Samples Intact | Y/N | Y/N | Y/N | Y/N |
| <i>[Signature]</i>            | 6/18/10 | 1615 | <i>[Signature]</i>        | 6/18/10 | 1645  | Y/N               | Y/N             | Y/N                   | Y/N            | Y/N | Y/N | Y/N | Y/N |

|                            |                            |
|----------------------------|----------------------------|
| SAMPLER NAME AND SIGNATURE |                            |
| PRINT Name of SAMPLER:     |                            |
| SIGNATURE of SAMPLER:      | DATE Signed (MM / DD / YY) |

ORIGINAL