

March 16, 2011

Mr. Al Chapman
State of North Carolina
Department of Environment and Natural Resources
Division of Waste Management, Superfund Section
401 Oberlin Road, Suite 150
Raleigh, North Carolina 27605

RE: Risk Management Plan
Former Deluxe Cleaners Site
Village Plaza Shopping Center
227 South Elliot Road
Chapel Hill, Orange County, NC
W&R Project No. 02060496.08
DSCA Site Identification No. 68-0003

Dear Mr. Chapman:

Withers & Ravenel is pleased to submit the enclosed Risk Management Plan (RMP) for the above referenced site. The results of a previous Tier 2 Evaluation indicated that contaminant concentrations at the site do not pose an unacceptable risk. The primary purpose of this RMP is to ensure that the assumptions made during the risk assessment remain valid in the future. Based on the documentation outlined in this report, Withers & Ravenel recommends issuance of a No Further Action letter for the site.

If you have questions or require additional information, please do not hesitate to contact me at (910) 256-9277.

Sincerely,
Withers & Ravenel, Inc.




Brian J. Bellis, P.G.
Project Manager

**RISK MANAGEMENT PLAN
FORMER DELUXE CLEANERS SITE
VILLAGE PLAZA SHOPPING CENTER
227 SOUTH ELLIOT RD
CHAPEL HILL, ORANGE COUNTY, NORTH CAROLINA
W&R PROJECT NO. 02060496.08
DSCA SITE IDENTIFICATION NO. 68-0003
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Risk Management Plan
Former Deluxe Cleaners Site
Village Plaza Shopping Center
227 South Elliot Rd
Chapel Hill, Orange County, North Carolina
W&R Project No. 02060496.08
DSCA Site Identification No. 68-0003

Submitted To:

**North Carolina Department of Environment
and Natural Resources**
Division of Waste Management
Superfund Section – DSCA Program
401 Oberlin Road, Suite 150
Raleigh, North Carolina 27605

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March 16, 2011

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1.0 INTRODUCTION

Withers & Ravenel has prepared this Risk Management Plan (RMP) for the Former Deluxe Cleaners site on behalf of the North Carolina Drycleaning Solvent Cleanup Act (DSCA) Program. The site is located at 227 South Elliot Road in Chapel Hill, Orange County, North Carolina. This RMP is intended to comply with the requirements of the DSCA (N.C.G.S. 143-215.104A *et seqs*) and promulgated rules, and follows the outline provided in the DSCA Program's risk-based corrective action (RBCA) guidance.

2.0 OBJECTIVES OF RMP

W&R completed a Tier 1 Evaluation for the Deluxe Cleaners site on May 29, 2008. The results of the Tier 1 indicated that the site-wide risks exceeded target risk levels for tetrachloroethane (PCE) in surficial soils within the on-site exposure unit. A Tier II Risk Assessment was subsequently completed on November 17, 2008 to evaluate whether the PCE concentrations would exceed the Target Risk Levels for Potential Carcinogenic and Non-carcinogenic Health Effects. Cumulatively, the site did not exceed the limits of 1.0×10^{-5} for Individual Excessive Lifetime Cancer Risk (IELCR) or 1.0 for Hazard Index (HI). Site-specific parameters were used in the Tier II Risk Assessment. The objective of the Risk Management Plan is to ensure that these assumptions remain valid in the future.

3.0 SUMMARY OF APPROVED RISK ASSESSMENT REPORT

The Tier I and Tier II risk assessments completed by W&R, included development of an exposure model, calculation of site-specific representative concentrations (RCs) for each exposure domain, and comparison of Risk-Based Screening Levels (RBSLs) with the RCs. The exposure model evaluation indicated the following complete exposure pathways for the site:

- On-site non-residential worker – indoor inhalation of vapors from subsurface soil.
- On-site construction worker - combined pathways for soil up to depth of construction.

In addition to the above referenced pathways, W&R also evaluated the Protection of Groundwater Use and the Protection of Surface Water pathways. Quarterly monitoring of groundwater quality in the vicinity of the source area over a one year period did not identify the presence of groundwater contamination as defined by 15A NCAC 2L. Therefore the Groundwater Use and Protection of Surface Water pathways are considered to be incomplete and further evaluation of these pathways is not warranted. However, because the RC for source area soil exceeds the Tier 1 RBSL Protective of Groundwater Use, it is recommended that as a precaution, the use of groundwater at the site be restricted through institutional controls. The results of the risk assessments indicated that the cumulative site risk does not exceed the 1×10^{-5} IELCR or HI of 1.0.

4.0 RMP COMPONENTS

4.1 Summary of Prior Assessment and Interim Actions

Dry cleaning operations involving the use of PCE were performed at the facility from May 1993 to December 2006. According to available Chapel Hill City Directories, the property on which Deluxe Cleaners was located has been occupied by an active dry cleaning facility since 1994. The tenant space no longer serves as a dry cleaner and is currently occupied by a coffee shop. The site was accepted into the DSCA Program in July 2003.

Previous environmental investigative work was performed at the site in July 2001 by Clark Environmental Services, PC. One soil boring was advanced adjacent to the existing dry cleaning unit. Laboratory analysis of two soil samples collected from the boring detected PCE concentrations of 0.067 mg/kg (1.5 feet below land surface (bls)) and 0.046 mg/kg (4 feet bls). Both concentrations are below the Tier 1 RBSL's for Non-Residential Workers (3.19 mg/kg for surficial soils via the combined pathway, and 0.18 mg/kg for subsurface soils via the indoor inhalation of vapors pathway. Additionally, a trichloroethene concentration of 0.006 mg/kg was detected in the sample collected from 4 feet bls. This trichloroethene concentration is below the Tier 1 RBSL of 0.0154 mg/kg for subsurface soils via the indoor inhalation of vapors pathway.

A Prioritization Assessment Report was prepared by Withers & Ravenel in May 2007. As part of this assessment sixteen soil borings were advanced in the outside area near the dry cleaner (GW-1 through GW-12 and WR-1 through WR-4), and twelve groundwater samples were collected from nine temporary wells (GW-3, GW-4, GW-6 through GW-12). Three surface water samples were collected from Booker Creek (SW-1 through SW-3) and seven shallow soil samples were collected beneath the floor slab of the dry cleaning space (DCU-1 through DCU-4, BR-1 and BR-2, and Filter Storage).

Laboratory analysis of the four soil samples collected from near the then existing dry cleaning unit (DCU-1 through DCU-4) and the sample from the filter storage area identified detectable concentrations PCE. Concentrations ranged from 0.0016 mg/kg (DCU-2) to 50 mg/kg (DCU-4). The PCE concentration reported for the sample from DCU-4 is the only location where the 3.19 mg/kg Tier 1 RBSL for surficial soils via the combined pathway was exceeded. PCE was not detected in any of the remaining soil samples collected from various locations near the dry cleaning facility. Trichloroethene (TCE) was detected at a concentration of 0.0062 mg/kg in the soil sample from DCU-1, which is below the 4.09 mg/kg Tier 1 RBSL for surficial soil via the combined pathway. TCE was also identified in the subsurface soil sample from boring WR-3, which was located in the parking lot behind the dry cleaning facility. The detected TCE concentration of 0.0019 mg/kg is below the Tier 1 RBSL of 0.573 mg/kg for subsurface soil via the outdoor inhalation of vapor pathway.

Laboratory analysis of the groundwater samples identified a trace concentration of PCE in only one of the groundwater samples (GW-4: 0.31 µg/L estimated). This concentration is below the North Carolina Groundwater Standard of 0.7 µg/L for PCE, and below the Tier 1 RBSLs for all groundwater exposure pathways. Withers & Ravenel subsequently installed three shallow groundwater monitoring wells (MW-1, MW-2, and MW-3) at locations proximal to borings GW-12, GW-4, and GW-3 respectively. Samples from these wells were collected and analyzed for volatile organic compounds on a quarterly basis for a one year duration. PCE was not identified in any of the groundwater samples obtained during the one year quarterly monitoring period, nor were other volatile organic compounds identified at concentrations that exceeded North Carolina groundwater standards established in 15A NCAC 2L.

In 2010, Withers & Ravenel collected a sub slab vapor sample from the room that formerly contained the dry cleaning machine, and an eight-hour composite indoor air sample from the approximate center of the former dry cleaning tenant space. A low concentration of PCE (0.399 mg/m³) was identified in the sub slab vapor sample. However, no detectable concentrations of PCE or its daughter products were identified in the indoor air sample. Therefore the cumulative site risk for the former dry cleaning space described in Section 3 of this Risk Management Plan does not change, and does not exceed the 1×10^{-5} IELCR or HI of 1.0.

4.2 Remedial Action

According to the DSCA Program's RBCA guidance, no remedial action is necessary if four site conditions are met. Each of these conditions and their applicability to the subject site are addressed below.

Condition 1: The dissolved plume is stable or decreasing.

Quarterly groundwater monitoring was conducted at the site during the year 2009, during which groundwater samples were collected from each of the three existing monitoring wells (MW-1 through MW-3). The only volatile organic compound identified during the four quarterly sampling events was methyl-tertiary butyl ether (MTBE) in the February 2009 sample from MW-3 at a concentration of 0.0014 mg/L. MTBE is not a compound that is associated with dry cleaning operations that use PCE solvent and the detected concentration is well below the North Carolina Groundwater Standard of 0.200 mg/L.

Based on these data, W&R concludes groundwater contamination associated with dry cleaning activities does not currently exist at this site. Documentation of the absence of groundwater contamination, including a figure showing monitoring well locations, and a table showing historical groundwater analytical data is included in *Appendix A*.

Condition 2: The maximum concentration within the exposure domain for every complete exposure pathway of any COC is less than ten times the RC of that COC.

W&R evaluated the RCs calculated during the Tier 1 and Tier II risk assessments and found that this condition has been met for all COCs and exposure pathways.

Condition 3: Adequate assurance is provided that the land-use assumptions used in the DSCA Program's RBCA process are not violated for current or future conditions.

The Tier 1 and Tier II evaluations for the site were based on the reasonable assumption that land-use conditions of the property where the dry cleaner was situated will remain commercial/industrial and that groundwater will not be utilized on the property. As discussed in Section 6.0, land-use restrictions (LUR) will be implemented for the property to ensure that future property owners are aware of soil contamination that exists beneath the former dry cleaning facility, and that groundwater beneath the property should not be utilized.

Condition 4: There are no ecological concerns at the site.

W&R completed a Level 1 Ecological Risk Assessment for the site in accordance with the DSCA Program's RBCA guidance. The results of the evaluation indicate that the release does not pose an unacceptable ecological risk. The completed Level 1 Ecological Risk Assessment Checklists A and B and associated attachments are included in **Appendix B**.

The site's compliance with the four above referenced conditions confirms that the contaminant concentrations are not likely to pose an unacceptable risk either at present or in the future. Existing soil contamination is contained to a relatively small area and is expected to naturally attenuate over time. The appropriate remedial action is therefore to implement land-use restrictions on the site property.

5.0 DATA COLLECTED DURING RMP IMPLEMENTATION

Further sampling or other data collection activities are not proposed for the site.

6.0 LAND-USE RESTRICTIONS (LUR)

The Tier 1 and Tier II evaluations for the site were based on assumptions that usage of the site property will remain commercial/industrial and that groundwater will not be utilized on the property. LURs are implemented for the site property to ensure that land-use conditions are maintained and monitored until the LUR is no longer required for the site. A Notice of Dry-Cleaning Solvent Remediation (NDCSR) was prepared for the site to comply with the LUR requirement. The NDCSR is included in *Appendix C*. A plat showing the locations and types of dry-cleaning solvent contamination on the property is included as an exhibit to the NDCSR. The locations of dry-cleaning solvent contamination are where contaminants have been detected above unrestrictive use standards.

7.0 LONG-TERM STEWARDSHIP PLAN

The NDCSR contains a clause which requires that the owner of the site submit notarized “Annual DSCA Land Use Restrictions Certification” to NCDENR on an annual basis certifying that the NDCSR remains recorded with the Register of Deeds and that land-use conditions have not changed. An example of such a notice is included in *Appendix D*. Documents relating to this site will be maintained by NCDENR and available for public access.

8.0 RMP IMPLEMENTATION SCHEDULE

Since the contamination is stable and will be confined to the site property, and possible exposure to the contamination is managed through the NDCSR and LURs, no additional site remediation activities are required to implement the RMP. A 30-day public comment period will be held to allow the community an opportunity to comment on the proposed strategy. *Appendix E* includes

example documents that will be used to announce the public comment period in the local newspaper, and to inform local officials, nearby property owners, and interested parties. Upon completion of the public comment period and final approval of the RMP, the NDCSR will be filed with the Orange County Register of Deeds and will complete the RMP schedule.

9.0 CRITERIA FOR DEMONSTRATING RMP SUCCESS

The RMP will be successfully implemented once the required LURs have been executed and recorded with the Orange County Register of Deeds. The NDCSR may, at the request of the owner of the property, be canceled by DENR after the risk to public health and the environment associated with the dry-cleaning solvent contamination and any other contaminants included in the dry-cleaning solvent assessment and remediation agreement has been eliminated as a result of remediation of the property. If DENR is notified of a change in site conditions, per the notification requirements detailed in the NDCSR, the RMP will be reviewed to determine if the site conditions have impacted the requirements set forth in the NDCSR and LUR and if changes are required. Enforcement of the RMP will be maintained through receipt of the “Annual DSCA Land-Use Restrictions Certification” from the property owner as part of the NDCSR and LUR requirements.

10.0 CONTINGENCY PLAN IF RMP FAILS

As discussed above, unless the DSCA Program is notified of a change in land-use conditions at the site, per the notification requirements detailed in this plan, the RMP will remain in effect until the RMP has met its objectives and is considered a success. Pursuant to N.C.G.S. 143-215.104K, if any of the LURs set out in the NDCSR are violated, the owner of the site property at the time the LURs are violated, the owner’s successors and assigns, and the owner’s agents who direct or contract for alteration of the site in violation of the LURs, shall be held liable for the remediation of all contaminants to unrestricted use standards.

11.0 CONCLUSIONS AND RECOMMENDATIONS

W&R has prepared this RMP for the above referenced site on behalf of the NC DSCA Program. The results of a previous Tier II Evaluation indicated that contaminant concentrations at the site do not pose an unacceptable risk. Quarterly groundwater monitoring conducted during the year 2009 did not identify detectable concentrations of dry cleaning solvents. This RMP specifies that the NDCSR and LUR requirements provide notification that land-use conditions observed during the risk assessment evaluation remain valid in the future. Based on the documentation contained in this report, W&R recommends issuance of a “No Further Action” letter.