

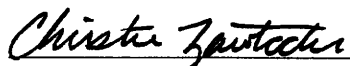
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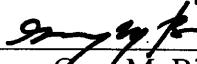
**PRELIMINARY SITE ASSESSMENT
BELCROSS BAKERY
267 EAST US HIGHWAY 158
CAMDEN COUNTY, NORTH CAROLINA
STATE PROJECT NO. 8.T020401 (R-2414B)**

**Prepared for:
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1.0 INTRODUCTION

The NCDOT is planning improvements to U.S. Highway 158 in Camden County which will require acquiring property for new highway construction. On September 26, 2001, Solutions Industrial & Environmental Services, Inc. (Solutions-IES) submitted proposal NC01892P to the NCDOT for conducting preliminary site assessments (PSAs) on seven parcels of land sited within the planned construction area along U.S. Highway 158 in Camden, North Carolina. This report summarizes the results of file review and field activities conducted for one of the parcels, Belcross Bakery, located at 267 East U.S. Highway 158, Camden County, Camden, NC.

2.0 BACKGROUND

The Belcross Bakery is located at 267 East U.S. Highway 158 in Camden, NC (Figure 1). Previous investigation activities have been conducted at the site, as summarized below. Due to the extent of previous investigations on the property, Solutions-IES' investigation was limited in extent and focused on only the portions of the property that NCDOT intends to acquire.

As shown on Figure 2, the site is located on the east side of U.S. Highway 158. The site is currently a bakery. The site was formerly R & T Grocery and was used as a gasoline station at one time. One underground storage tank (UST) was apparently located in front of the building at the site. This UST was removed around 1987 and replaced with a newer 1,000-gallon UST. Two additional 1,000-gallon USTs were installed on the southern side of the site around 1989. In 1994, all three USTs were permanently removed. There are currently no known USTs located at the site.

3.0 PREVIOUS INVESTIGATIONS

Solutions-IES obtained copies of previous investigation reports for the Belcross Bakery property from the Washington Regional Office of the North Carolina Department of Environment and Natural Resources (NCDENR). Copies of the reports reviewed by Solutions-IES are provided in Appendix A. Based on our review of the Comprehensive Site Assessment (CSA) and Corrective Action Plan (CAP) prepared by PetroChem Recovery Services (PetroChem, 1995a, 1995b), the USTs were closed and removed from the

site in September 1994. As part of the UST closure, one soil sample was collected from below each UST and petroleum-impacted soils were discovered around UST #1 located in front of the building.

The CSA consisted of installing six monitoring wells around the former UST area, collecting soil samples during well installation, and collecting groundwater samples from the wells. The analytical results indicated detectable concentrations of petroleum hydrocarbons in three of the soil samples collected near former UST #1. Based on these results, approximately 300 cubic yards of soil appeared to be affected. Detectable concentrations of benzene, toluene, ethylbenzene, xylenes, and MTBE were detected in all six monitoring wells, isopropyl ether was detected in five monitoring wells, and lead was detected in four monitoring wells. The groundwater concentrations were highest near former UST #1. The groundwater plume appeared to extend below U.S. 158 to the west and beneath the building to the east (PetroChem 1995a).

According to information provided in the CAP, a CSA addendum was prepared in July 1995 which included five additional groundwater sampling locations to delineate the horizontal and vertical extent of impacted groundwater. The CAP proposed excavation of impacted soils at the site and monitored natural attenuation (MNA) to address the groundwater plume (PetroChem, 1995b).

A copy of the Fourth Quarter 1998 Groundwater Monitoring Report for the site is also provided in Appendix A. This report indicated concentrations of benzene, ethylbenzene, toluene, xylenes, and/or MTBE above the NC groundwater quality standards in three wells at the site (Jones Technologies, 1999). The impacted groundwater appears to be limited to the area in front of the building and appears to extend under U.S. Highway 158.

4.0 FIELD ACTIVITIES

Due to the extent of previous investigation activities conducted at the site, field activities were limited to collecting and field-screening soil samples from areas within the proposed highway expansion area. The field activities were conducted by Solutions-IES on October 10, 2001. Photographs were taken to document site conditions during the assessment activities. The site photographs are included in Appendix B.

Prior to beginning subsurface sampling, Solutions-IES personnel attempted to notify the property owners of the proposed sampling activities, but were unsuccessful. Solutions-IES also contacted Carolina

No-Cuts to identify utilities on the subject property and contracted Taylor Wiseman & Taylor of Raleigh, NC, to also locate utilities and evaluate the area of the site within the proposed right-of-way for the presence of USTs or metal piping. No anomalous signatures or detections were noted within the proposed right-of-way that would suggest the presence of USTs or associated piping.

After clearing the utilities on the property, Solutions-IES collected subsurface samples from the proposed right-of-way area. The samples were collected at three Geoprobe® boring locations, identified as GP-1C, GP-2C, and GP-3C. The locations of the Geoprobe® borings are indicated on Figure 2.

The Geoprobe® borings were advanced to a total depth of 2.4 m (8 feet) below ground surface (bgs), which was below the groundwater table. Continuous soil cores were collected from each boring using a Macro® Sampler. Upon removal from the ground, the cores were cut into 2-foot lengths. Soil from each 2-foot interval was further split into two identical portions. Each portion was placed in a separate resealable plastic bag. One bag was placed on ice for possible laboratory analysis, while the other bag was sealed and placed at ambient temperature for field screening with an organic vapor analyzer (OVA).

The soil samples were examined for soil type and the presence or absence of petroleum staining or odor. After a period of approximately 20 minutes, which allowed for the accumulation of volatile organic compounds (VOCs) in the headspace of the bags, each sealed bag left at ambient temperature was scanned with the OVA. A background reading was taken with the OVA prior to measuring VOC concentrations in the bags. The readings of the VOC concentrations in the headspace were then entered on the boring log along with a soil description and any indications of petroleum staining or odor (Appendix C). The results of the OVA field screenings are summarized on Table 1. Based on the lack of field-observable indications of petroleum hydrocarbons (i.e., staining, odor, or OVA readings above background), soil samples were not submitted for laboratory analysis.

Following completion of the soil sampling activities, the Geoprobe borings were abandoned by completely filling each boring with soil and sand.

5.0 DISCUSSION

Previous reports for the site indicate that a historical release from a former UST impacted a limited area of soil and groundwater in front of the building on the site property. The former UST was removed from the site, and petroleum-contaminated soils were apparently excavated. Affected groundwater appears to

exist from the area in front of the building extending underneath U.S. Highway 158. Available groundwater data collected in December 1998 indicated concentrations of benzene, ethylbenzene, toluene, xylenes, and MTBE at concentrations above the NC groundwater quality standards.

Solutions-IES advanced three soil borings to further assess subsurface conditions at the Belcross Bakery site. The borings were specifically placed in areas of the site that had not been assessed previously and were in the proposed right-of-way. Solutions-IES personnel did not notice any staining or odor in the soil samples collected from the Geoprobe borings, which was consistent with the low OVA readings (less than or equal to 2 ppm). Based on field observations and the extent of previous investigation activities conducted at the site, soil samples were not submitted for laboratory analysis.

6.0 CONCLUSIONS AND RECOMMENDATIONS

This PSA was performed on behalf of the NCDOT for Belcross Bakery located at 267 East U.S. Highway 158, Camden County, North Carolina. Based upon our file review, field observations at the time of our site visit, and laboratory results, we offer the following conclusions:

- A historical release from a former UST impacted a limited area of soil and groundwater (0.6 to 1.8 m bgs) in front of the building on the site property. This area is within the proposed highway expansion area. Affected soils were apparently excavated. Available groundwater data collected in December 1998 indicated concentrations of benzene, ethylbenzene, toluene, xylenes, and MTBE at concentrations above the NC groundwater quality standards within the proposed highway expansion area. Recent data were not available at the Washington Regional Office; therefore, the current extent of affected groundwater could not be assessed.
- Soil samples collected by Solutions-IES from areas within the proposed right-of-way that had not been previously assessed showed no evidence of petroleum impacted soils at the time of our site visit. Therefore, residual soil and groundwater contamination that may be present within the right-of-way construction area appears to be limited to the area in front of the building, as delineated in previous reports.

7.0 REFERENCES

PetroChem Recovery Services (1995a). Comprehensive Site Assessment, R&T Grocery, U.S. Route 158, Belcross, North Carolina. April 1995.

PetroChem Recovery Services (1995b). Corrective Action Plan, R&T Grocery, U.S. Route 158, Belcross, North Carolina. November 1995.

Jones Technologies, Inc. (1999). Groundwater Monitoring Report, Fourth Quarter 1998, R&T Grocery, U.S. Route 158, Belcross, North Carolina. January 1999.