

FINAL REMOVAL SITE EVALUATION

NATIONAL PETROLEUM PACKERS MATTHEWS, UNION COUNTY, NORTH CAROLINA NCD986205060

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1.0 INTRODUCTION

The U.S. Environmental Protection Agency (EPA) tasked the T N & Associates, Inc., (TN&A) Superfund Technical Assessment and Response Team (START) to perform activities in support of a Removal Site Evaluation (RSE) at the National Petroleum Packers (NPP) Site (site) located in Matthews, North Carolina (NC), under Contract Number (No.) EP-W-05-053, Technical Direction Document (TDD) No. TNA-05-003-0041. The general purpose of a RSE is to collect information on current site conditions which will identify the nature and extent of contamination and determine the need for federal intervention under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986 (Ref. 1).

Specifically, START was tasked to conduct the following activities:

- Obtain, review, and summarize previous investigations conducted at the site including relevant Sampling and Analysis (S&A) data;
- Develop a site-specific Health and Safety Plan (HASP) prior to the site visit (Ref. 2);
- Develop and implement a Sampling and Analysis Plan (SAP) to identify the nature and extent of contamination, which would be used to help determine the need for federal intervention under CERCLA;
- Perform field investigation activities including air monitoring, soil and groundwater sampling; and hazard categorization, inventory, and sampling of drum, above ground storage tanks (AST), and other miscellaneous storage containers; and
- Provide photographic and written documentation of all field activities.

This comprehensive RSE Report documents file review and sampling activities conducted in June, July, and August 2007 by START in execution of this TDD, and summarizes the findings. All activities and procedures described in this report were performed in accordance with the EPA Region 4 *Environmental Investigation Standard Operating Procedures and Quality Assurance Manual* (EISOPQAM), and the TN&A Quality Assurance Project Plan (QAPP) (Refs. 3, 4).

The following sections provide the details of this RSE Report:

- Section 2 – Describes the site and previous investigations.
- Section 3 – Describes the field investigation activities.
- Section 4 – Describes the analytical results of field samples.
- Section 5 – Provides the summary and conclusion.

Figures and tables are provided in Appendices A and B, respectively. References are cited throughout the RSE Report to substantiate site-specific statements. A reference list is provided at the end of the text.

2.0 SITE BACKGROUND

This section discusses the site characteristics, site history, and previous investigations conducted at the site.

2.1 SITE DESCRIPTION

The site is located approximately 15 miles southeast of Charlotte, NC in the Stallings Industrial Park at 3501 Gribble Road, Matthews, Union County, NC (see Figure 1, Appendix A). The site is geographically positioned at latitude 35.8431 North and longitude 80.67862 West. It is bordered to the north-northeast by active railroad tracks and the railroad right-of-way; to the east by ITC Millwork, LLC, a customized molding and door manufacturer; to the south by Gribble Road beyond which is Duke Energy; and to the west by Sweep-a-lot, a commercial, industrial parking lot cleaning service. The Union County Tax Assessors office lists the 2.99-acre NPP property zoned for heavy Industry.

According to topographic data, the site is located approximately 725 feet above mean sea level (msl). Surface water is inferred to flow in a southern direction towards South Fork Crooked Creek, an intermittent stream located approximately one-half mile south of the site.

Approximately one-half of the site is covered with either a structure or concrete with gravel or vegetation covering the remainder of the property. It consists of three buildings (one warehouse and two utility sheds), 27 ASTs, and a glycol recycling processor (see Figure 2, Appendix A). The warehouse is a 10,000 square foot (200-by-50 foot), single story, corrugated steel building with concrete foundation that occupies the southeastern portion of the property. The two cinderblock utility sheds occupy the northeastern portion of the property and are 300 square feet and 4,800 square feet, respectively.

The Natural Resource Conservation Service soil survey lists the soil type at the site as Appling-Urban land (AuB) with a two to eight percent slope. The report also lists the mean annual precipitation to be from 37 to 60 inches, and the mean annual air temperature to be 59 degrees Fahrenheit (° F) to 66° F. The parent soil material is saprolite derived from granite and gneiss or schist, and is a considered a well

drained soil. The typical profile is listed as zero to nine inches sandy loam underlined by clay or sandy clay loam. Typical water table is greater than 80 inches below ground surface (bgs). The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (37179C0015 D) does not identify the site in a flood zone.

2.2 SITE HISTORY

A review of the files provided by the North Carolina Department of Environment and Natural Resources (NCDENR) Division of Waste Management (DWM) and Division of Air Quality (DAQ) indicated that the former NPP facility operated as a recycler of antifreeze and other glycol-related waste products from 1993 to 1998, when the facility shut-down due to a slow-down in business. During its operational history, the facility processed approximately 60,000 liters of waste glycol daily. In May 2000, the facility was purchased at auction by Boulos Family Properties, LLC; however, operations at the facility were never resumed. Previous investigations have noted the presence of numerous drums, AST, and other miscellaneous chemical containers located on-site.

Historically, Summit Resource Management, Inc. occupied both 3501 Gribble Road (the site) and 3481 Gribble Road. Products including antifreeze, brake fluid, and windshield wiper fluid were produced at 3501 Gribble Road and distributed through 3481 Gribble Road. In 1993, the property at 3501 Gribble Road was leased to Mr. Chegade Boulos and it became NPP. Based on a NC Superfund Site Inspection dated 1995 and a search of the Integrated Compliance Information System (ICIS), a removal action was performed at the 3481 Gribble Road facility from September 1993 to May 1994 as part of an EPA Superfund Formal Enforcement. The NC Superfund Site Inspection indicated that the NPP property was in operation and appeared to be in good condition.

In July 2007, START conducted a deed search in the Records of Deed in Monroe, Union County, NC. According to Record of Deeds, Book 1390 Page 118, the site was purchased by the Boulos Family Properties, LLC of 18 Lumsbury Court, Chapel Hill, NC during a courthouse auction on May 3, 2000. Specifically, Mr. Chegade Boulos is listed in the state deed files as the owner/operator of the site. Prior to the property falling into default and being sold at auction, Mr. Robert Schory and Mr. Jerome Dubow owned the site. Mr. Chegade Boulos leased and operated it from 1993 to 1998. Prior to 1993, the property was operated by Summit Resources Management Inc.

2.3 REGULATORY AND RELEASE HISTORY

In August 2007, a search of the NC regulatory database indicated that no active permits existed for the facility, no known or listed underground storage tanks (UST) were present, and the facility is listed as an “inactive hazardous waste site” under the Summit Resource Management, Inc name.

During its operational history, NPP operated under NC Air Quality State Permit Number 6640. The first of nine annual state air permits was issued to the facility in February 1993. In June 1994, the facility had its first state recorded air complaint. In May 1995, the director of NCDENR DAQ fined the facility owners over \$10,000 in civil penalties and investigative costs for odorous emission violations occurring on June 29, 1994, January 12, 1995, March 22, 1995, March 23, 1995, April 19, 1995, and April 21, 1995. NPP entered into a Special Order by Consent (SOC) with the state and were ordered to install air emissions control equipment. Follow-up investigations conducted by DAQ indicated that NPP was non-compliant with some of the “terms and conditions” of the SOC. During one of the subsequent on site visits by the DAQ, Mr. Miller, a full time employee and maintenance supervisor of the facility, informed the DAQ that as of July 1996, the glycol processor was not in operation and that the facility was only buying bulk product and repackaging it for retail use. In October 2001, the air permit was terminated due to a lack of payment. Documents detailing NPP air permits, notices of violation (NOV), and enforcement actions are provided as Appendix C.

NPP also operated as a conditionally exempt small quantity generator (CESQG) under the Resource Conservation and Recovery Act (RCRA) permit ID NCD986205060. A search of the EPA Enforcement and Compliance History Online (ECHO) database shows that from July 2004 to June 2007, the facility was in RCRA compliance and compliance shutdown for air status.

2.4 PREVIOUS INVESTIGATIONS

In 2005, the NC Superfund Division received a report that the site was not secure and had fallen into disrepair. There was concern that the rusted storage tanks and tanker trucks on-site were at risk of breaching and that the product/waste remaining would be released into the environment and pose a serious threat to human health and the environment. NC Superfund Division contacted the site owners, and the site was secured; however, there was no attempt to repair the deteriorating tanks.

In March 2007, NCDENR referred the site to EPA for a removal evaluation.

3.0 FIELD INVESTIGATION ACTIVITIES

START conducted field investigation activities at the site in June, July, and August 2007 to characterize site conditions. Specifically, multimedia screening and sampling events were conducted on June 27 to June 30, 2007, July 10 to July 12, 2007, and August 22 to August 28, 2007. The following sections describe air monitoring; hazard categorization, inventory, and sampling of drums and AST; and soil and groundwater sampling conducted during the field investigations. All sample collection activities and procedures were performed in accordance with the EISOPQAM.

3.1 AIR MONITORING

Real-time air monitoring was performed inside the permanent structures on site and around AST to determine the environmental health risks and the level of personal protection equipment (PPE) required to complete the field investigations safely. START used several portable instruments to check the air quality in and around the work areas at the beginning of each workday and during all sampling activities. Specifically, START utilized a toxic vapor analyzer (TVA) 1000 equipped with a photo-ionization detector (PID)/flame ionization detector (FID) to measure organic vapor concentrations; a four-gas meter to measure oxygen (O₂), carbon monoxide (CO), and hydrogen sulfide (H₂S) levels and percent lower explosive limit (LEL); and a cyanide gas meter to measure hydrogen cyanide concentrations. These instruments were also used to check for potential containment releases and ensure adequate level of PPE when opening each closed container.

3.2 CONTAINER INVENTORY AND SAMPLING

START conducted an inventory of approximately 500 55-gallon drums, 27 AST, three 300-gallon totes, and several tanker trucks stored on site. Many of the drums were either unlabeled or poorly labeled. In order to help identify the contents and any hazards associated with these containers, hazard categorization was conducted using a HazCat[®] kit. The HazCat[®] kit is a portable chemistry lab used in the field to identify properties of an unknown or potentially hazardous waste material. The properties tested were air reactivity, radiation, water solubility, hexane solubility, peroxide solubility, chloride detection, flammability, and pH. A total of 89 55-gallon drums, three 300-gallon totes, 25 AST, and two tanker trucks were sampled and screened using the HazCat[®] kit. Drum and tote samples were collected using a Composite Liquid Waste Sampling Apparatus (coliwasa) while ASTs were sampled from the base valve

at each tank or from the top by dropping a coliwasa down one of the hatches. Container HazCat[®] Logs are provided as Appendix D and the associated HazCat[®] results are presented in the logbook notes provided as Appendix E.

Two-hundred and fifty-two drums, 25 AST, three 300-gallon totes, and two carbon filters were also sampled for laboratory analysis. Samples were submitted to PEL Laboratories (PEL) in Tampa, Florida for target analyte list (TAL) total metals analysis by SW846 Method 6010B/7470; target compound list (TCL) volatile organic compounds (VOC) analysis by SW846 Method 8260B; TCL semi-volatile organic compounds (SVOC) analysis by SW846 Method 8270; and polychlorinated biphenyl (PCB) analysis by SW846 Method 8082.

Prior to opening containers such as the 55-gallon drums, air monitoring using the TVA 1000, four-gas meter, and cyanide gas meter was performed inside the warehouse building. Measurements were taken within the breathing zone of a typical person and in places likely to have trapped air pockets or dense air. The readings did not exceed level D standards identified in the site-specific HASP (Ref. 2).

On July 23, 2007, START measured the secondary containment units for the ASTs. Not all ASTs were located within a secondary containment structure. These measurements were used to compare containment capacities to AST storage capacities. Tables 1 and 2 in Appendix B present the measured capacities for the containers and secondary containment areas identified on-site. The total AST capacity is approximately 470,000 gallons which includes the three semi-trailers parked on site. The on-site secondary containment capacity is approximately 120,000 gallons. Overall, only 26 percent of the fluid capacity in the ASTs could be contained in the event of a total release.

3.3 SURFACE SOIL SAMPLING

On August 27, 2007, START collected nine surface soil samples from zero to 6 inches bgs from historical work areas, near ASTs, and where soil staining was observed. Additionally, one sludge sample was collected from within a secondary containment unit. Figure 3 in Appendix A shows the locations of the surface soil samples. Table 3 in Appendix B provides a summary of the surface soil and sludge samples collected. Samples for VOC analysis were collected using Terracore[®] samplers, while samples for the remaining analysis were collected using a stainless steel spoon, homogenized in a stainless steel bowl, and containerized. All soil samples were submitted to PEL for TAL total metals, TCL VOC, TCL SVOC, and PCB analysis.

3.4 SUBSURFACE SOIL SAMPLING

On July 11, 2007, START collected 11 grab subsurface soil samples from six borings on site. Figure 4 in Appendix A shows the locations for the subsurface soil samples. Table 4 in Appendix B provides a summary of the subsurface samples collected. A track-mounted Geoprobe[®] equipped with a 4-foot acetate-lined MacroCore[™] sampler was used to collect discrete core samples to the water table or a maximum depth of 12-feet bgs. Drilling occurred only after the NC One Call Center was contacted (Ticket No. A071842185). Soil type and descriptions for the soil cores were recorded in boring logs and are presented as Appendix F.

Each 4-foot sleeve was screened for organic vapors using a TVA-1000 PID/FID. Screening was focused on the vadose zone since the suspected contaminants of concern were light non-aqueous phase liquids (L-NAPL) and glycols. Glycol is miscible in water and L-NAPLs travel with the water table. Samples were collected from the 1-foot interval indicating the highest PID/FID reading and/or from the deepest 1-foot depth interval for the boring.

Additionally, on August 28, 2007, based on the results of a geophysical survey conducted by NCDENR, four concrete cores were drilled around the concrete pad supporting the glycol processor. The cores were drilled where ground penetrating radar (GPR) indicated anomalies. One subsurface soil sample was collected using a hand-auger from below the glycol processor concrete pad.

Subsurface soil samples were analyzed for TAL metals, TCL VOC, TCL SVOC, and PCB by PEL. Samples for VOC analysis were collected using Terracore[®] samplers, while samples for the remaining analysis were collected using a stainless steel spoon, homogenized in a stainless steel bowl, and containerized.

3.5 GROUNDWATER SAMPLING

One groundwater sample and a field duplicate were collected from a monitoring well located at 3501 Gribble Road. The shallow well was installed by EPA during the removal action conducted at the adjacent property, 3481 Gribble Road, in the mid-1990s. This well has a depth of 13.5 feet bgs, a water level of approximately seven feet, and an above ground casing of 3.3 feet. START used a 2-inch Teflon

bailer to purge the well dry prior to sample collection. The samples were submitted to PEL for TAL metals, TCL VOC, TCL SVOC, and PCB.

4.0 ANALYTICAL RESULTS

4.1 AIR MONITORING

Overall, the air monitoring readings collected from the breathing zone, in and around 55-gallon drums, and in confined areas (i.e. closets) of the warehouse were within acceptable range levels for Level D PPE. Daily air monitoring results are provided in the logbook notes located in Appendix E. The average recorded ambient air readings from the first day, prior to venting the warehouse with outside ambient air, were as follows:

- FID - 2.1 parts per million (ppm);
- PID - 1.6 ppm;
- LEL, CO, and H₂S were all zero; and
- O₂ - 20.9 percent.

4.2 CONTAINERS

Approximately 20 percent of the smaller containers (those less than 300 gallons) were hazard categorized in the initial sampling round conducted in June 2007. HazCat[®] results indicated that all samples were negative for radiation, peroxide, and flammability; 82 percent were water miscible, and 18 percent were non-miscible. Only six samples appeared to test positive for chloride. The lowest and highest FID readings, taken from within a 55-gallon drum, were non-detect and greater than 1000 ppm, respectively. The drum inventory logs are provided as Appendix D.

Additionally 253 drums, 25 ASTs, three 300-gallon totes, and two tanker trucks were sampled and analyzed by PEL for TAL metals, TCL VOC, TCL SVOC, and PCB. The analytical laboratory report is presented as Appendix G. These samples were collected to assist the EPA in identifying the nature and extent of suspected organic and metal chemical contamination at the site. Laboratory analytical results indicated that all of the metals, 14 SVOC (mostly phenols and naphthalenes), and 31 VOC (mostly benzenes) were detected in at least one container sample. Tables 5 to 8 in Appendix B present a summary by container of the concentration ranges for the compounds detected.

4.3 SURFACE SOIL

Nine surface soil samples and one sludge/muck surface sample were collected at the site and submitted to PEL for TAL total metals, TCL VOC, TCL SVOC, and PCB analysis. The complete analytical laboratory report is presented as Appendix G. Analytical data from PEL was reviewed and validated by a START chemist. The data validation report, including a table of laboratory analytical results, for surface soil samples collected during the RSE investigation field activities are presented as Appendix H.

Analytical results for surface soil samples collected on site indicate that 1,1-dichloroethene, acetone, benzene, ethylbenzene, m,p-xylene, toluene, trichlorofluoromethane, and all analyzed metals were detected in at least one surface soil sample. Table 9 in Appendix B presents a summary of the analytical results that were detected in surface soil samples.

4.4 SUBSURFACE SOIL

Eleven subsurface soil samples were collected at the site and submitted to PEL for TAL total metals, TCL VOC, TCL SVOC, and PCB analysis. The complete analytical laboratory report is presented as Appendix G. Analytical data from PEL was reviewed and validated by a START chemist. The data validation report, including a table of laboratory analytical results, for surface soil samples collected during the RSE investigation field activities are presented as Appendix H.

Analytical results for subsurface soil samples collected on site indicate that bis(2-ethylhexyl) phthalate, acetone, and all metals analyzed for were detected in subsurface soil samples. Table 10 in Appendix B presents a summary of the analytical results that were detected in subsurface soil samples.

4.5 GROUNDWATER

One groundwater sample and a field duplicate were collected from a shallow monitoring well located on the property. The samples were submitted to PEL for TAL total metals, TCL VOC, TCL SVOC, and PCB analysis. The complete analytical laboratory report is presented as Appendix G. Analytical data from PEL was reviewed and validated by a START chemist. The data validation report, including a table of laboratory analytical results, for the groundwater samples collected during the RSE investigation field activities are presented as Appendix H.

Analytical results for the groundwater sample collected indicate that all of the metals analyzed, acetone, and carbon disulfide were detected in the groundwater sample. Table 11 in Appendix B presents a summary of the analytical results that were detected in the groundwater sample.

5.0 CONCLUSIONS

A RSE was conducted at the National Petroleum Packers site located in Matthews, North Carolina to identify conditions that would trigger a removal action by the EPA to remove or minimize potential threats to human health or the environment. Field investigations conducted in support of this RSE included a review of historical documentation; air monitoring; hazard categorization, inventory, and sampling of approximately 500 55-gallon drums, 27 AST, three 300-gallon totes, and several tanker trucks stored on site; and soil and groundwater sampling.

START measured the secondary containment units for the ASTs and determined that secondary containment units on site are inadequate for the on-site tank capacities and current volumes. Additionally, START observed that AST valves were not properly secured.

RSE field investigations determined that there are hazardous materials and hazardous wastes present on site. Historical documentation reviewed indicates that the site is recorded as a conditionally exempt small quantity generator (CESQG); however, based on the calculated volumes of hazardous material on site this category should be revised.

Currently, the site operation is shutdown, and the materials and wastes are contained inside ASTs or 55-gallon drums. The site owner is in the process of removing some or all of the material off site. Additionally, SRS, a division of USI Company, is in the process of purchasing the product (predominantly ethylene glycol and diethylene glycol) contained within the 25 ASTs for recycling. An e-mail sent by SRS on October 23, 2007 reported that, “we only processed on-site with a centrifuge. We did not remove any material and cannot get in contact with [the site owner].”

This report summarizes relevant data and findings of field investigation activities conducted by START in June, July, and August 2007 at the site and provides EPA information to determine whether criteria exists that will trigger a Removal Action. The decision to implement such an action will be determined by the EPA.

APPENDIX A

FIGURES

APPENDIX B

TABLES

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HISTORICAL REGULATORY DOCUMENTATION

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