T N & Associates, Inc.
Engineering and Science

June 5, 2007

Ms. Leigh Vorreuter
On Scene Coordinator
U.S. Environmental Protection Agency
61 Forsyth Street, SW 11th Floor
Atlanta, Georgia 30303

Subject: Acknowledgement of Completion Letter
McCullough Oil
EPA Project ID: A4KLRV00
EPA Contract No.EP-W-05-053 (START 3)
Task Order No. TNA-05-001-0016

Dear Ms. Vorreuter:

The T N & Associates, Inc. (TN&A) Superfund Technical Assessment and Response Team (START) is submitting the Acknowledgement of Completion Letter for the McCullough Oil Company Site located in Verbena, Chilton County, Alabama. Please review the letter and provide comment if needed.

Please contact me if you have any questions.

Sincerely,

Greg Kowalski

Enclosure

Cc: Katrina Jones, Project Officer, USEPA
Darryl Walker, Project Officer, USEPA

FINAL REMOVAL ACTION REPORT

McCULLOUGH OIL
VERBENA, CHILTON COUNTY, ALABAMA

TDD: TNA-05-001-0016

Revision 0

Prepared for:

U.S. ENVIRONMENTAL PROTECTION AGENCY
Region 4
61 Forsyth Street
Atlanta, Georgia 30303

Prepared by:

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Contract No.	:	EP-W-05-053
TDD Number	:	TNA-05-001-0016
Date Submitted	:	June 05, 2007
EPA OSC	:	Leigh Vorreuter
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APPENDICES

1.0 INTRODUCTION

The U.S. Environmental Protection Agency (EPA) has tasked the T N & Associates, Inc., (TN&A) Superfund Technical Assessment and Response Team (START) to perform oversight for a Removal Action at the McCullough Oil site in Verbena, Alabama, under Contract No. EP-W-05-053, Technical Direction Document (TDD) No. TNA-05-001-0016. The overall scope of this removal action was to provide technical assistance for the removal activities at the McCullough Oil site.

Specific tasks outlined in the TDD include:

- Obtain, review, and summarize relevant background data and file material.
- Develop a site specific Health and Safety Plan (HASP) prior to the site visit.
- Develop and implement, in coordination with the response contractor, a waste sampling and characterization plan to identify the nature and extent of contamination and determine the removal requirements under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 and the Superfund Amendments and Reauthorization Act (SARA) of 1986.
- Conduct oversight and air monitoring during sampling activities.
- Maintain written (logbook) and photographic documentation of site activities.
- Sample of drums and other containers in accordance with the EPA Environmental Investigations Standard Operating Procedures and Quality Assurance Manual, and the TN&A Quality Assurance Program Plan (Refs. 1, 2).
- Conduct Hazard Characterization (HazCat) of samples.
- Containerize, package, and ship waste samples to the laboratory for analysis.
- Conduct Level B/C entries as required.

This report documents the findings and activities of the sampling events and removal conducted from November 7 – 9, 2006, January 9 – February 17, 2007, and March 1, 2007 at the McCullough Oil site. EPA Region 4 provided the historical data used within this report from the Tetra Tech EMI CERCLA Removal Action Report submitted September 30, 2005 (Ref. 3).

2.0 SITE BACKGROUND

This section discusses the site characteristics, previous investigations, environmental setting, and geology of the area.

2.1 SITE DESCRIPTION

McCullough Oil is a former waste oil storage facility located at 148 County Road 523 in Verbena, Alabama. The site was formerly known as Central Alabama Oil and Pollution Control. Very little information is available about the history of the site regarding waste generators or handling and disposal practices. Previous investigations identified the presence of approximately 114 drums and 20 above ground storage tanks (AST) on the property.

2.2 PREVIOUS INVESTIGATIONS

Previous investigations primarily consisted of the CERCLA Removal Action Report submitted by Tetra Tech EMI in September of 2005. Tetra Tech provided technical and sampling assistance during removal assessment activities at the request of EPA from August 22, 2006, through August 24, 2006. Tetra Tech conducted container and drum sampling, field hazard categorization (HazCat) testing, and air monitoring. Findings identified approximately 20 drums contained brown liquid with a pH of 7; roughly five of these drums also contained sludge. Another 10 drums also contained brown liquid, with a pH of 5 to 6. Eight drums contained sludge only, and an additional three drums contained oil-soaked absorbent material. Six of the drums contained clear liquids with a pH of 5 to 6. Many drums contained material that had separated into multiple phases: some contained a liquid with a sludge precipitate, and others contained two separate liquid phases (a water insoluble [lipophilic] layer and a water-soluble [hydrophilic] layer). The contents of many of the sampled drums had similar waste characteristics, which facilitated bulking. There were; however, some notable exceptions identified: four drums contained liquid or precipitate with a pH of 12 or greater; 17 drums contained liquid or precipitate with a pH of 4 or lower, three of which had a pH of 1. Two drums contained flammable liquids, and one drum contained a combustible precipitate. Drum number 38, containing a black sludge with a pH of 14, was the only drum to test positive for the presence of halogens. This drum was separated from the other waste streams.

Eight ASTs contained liquid waste in two separate phases, five ASTs contained liquids with sludge precipitate, and two contained solid material only. Of these 15 ASTs, 10 contained nonflammable material and 5 contained combustible material. One AST (number 11) contained a black flammable liquid phase with a pH of 5.

These findings were used by EPA in the determination of removal activities (Ref. 3).

2.3 ENVIRONMENTAL SETTING

This section describes the climate, adjacent properties, and topography of the region surrounding the site.

2.3.1 Physical Setting

McCullough Oil is located at 148 County Road 523 within the city limits of Verbena, Alabama, and is bounded by residential properties to the north, south, east, and west (see Figure 1, Appendix A).

The city of Verbena lies on the Fall Line (border) between the Coastal Plain Province and the Piedmont Province (Ref. 4). The Coastal Plain Province includes sediments such as interlayered sand, gravel, and clay, as well as chalk and limestone deposited by seas that once covered the southern part of Alabama. Coastal Plain sediments are relatively young compared with the rocks of the other provinces and are mostly unconsolidated, which means they have not been hardened into rocks. The occurrence and availability of groundwater in the Coastal Plain is high; some Coastal Plain wells yield up to several thousand gallons per minute (gpm). In most parts of the Coastal Plain wells yield more than 50 gpm. A well producing 7 to 10 gpm is adequate for most domestic purposes. The Piedmont is the southernmost exposure of the Appalachian Mountains and stretches all the way to Pennsylvania. The ancient crystalline rocks of the Piedmont are igneous and metamorphic. Rocks in the Piedmont do not hold much water compared to the Coastal Plain. Most of the porosity in the Piedmont aquifers is from fractures in the rock. Soil and weathered rock near the surface may also hold water. Water yields from both the fractures and the thin layer of weathered material are low. Generally, wells in the Piedmont yield enough water for domestic use but not enough for large towns or commercial use.

2.3.2 Climate

The climate in Verbena, Alabama is characterized by mild winters and warm to hot summers. The average annual temperature is 63°F with average winter temperatures near 47°F and average summer temperatures around 79°F (Ref. 5). The average annual rainfall for the area is 53.2 inches with the heaviest rainfalls occurring during March.

3.0 ON-SITE ACTIVITIES

On October 24, 2006, TN&A mobilized to McCullough Oil to perform a site visit (Ref. 6). A photographic log can be found in Appendix B, and the written field logbook notes are contained in Appendix C. TN&A START met with the Emergency and Rapid Removal Services (ERRS) contractor, WRS, and EPA OSC to discuss site conditions and the upcoming sampling event. A date of November 7, 2006, was scheduled as the start date for sampling. GIS coordinates for the drums and ASTs located on-site were obtained, and a map of the site was created (see Figure 2).

3.1 SAMPLING ACTIVITIES

At the request of EPA, TN&A generated a Health and Safety Plan (HASP) and mobilized to Verbena, Alabama on November 7, 2006, in order to provide oversight of sampling and removal activities to be conducted by ERRS (Refs. 6, 7). TN&A START and the ERRS Project Manager conducted the health and safety meeting and addressed initial activities and site access issues. The EPA OSC and START spoke with the neighboring property owner, regarding the use of his property for site activities. START, ERRS, and EPA later met to discuss plans for sample collection, HazCat, and the bulking of drums and other containers on-site.

On November 8, 2006, START, EPA, and ERRS personnel met at McCullough Oil to begin on-site activities. ERRS began clearing and grubbing the site while START calibrated the air monitoring equipment. Once the site was cleared, START began initial air monitoring in the staging area while the drums were being opened for sample collection by ERRS. The equipment utilized for air monitoring included a combustible gas indicator (CGI), a flame ionization detector (FID), and a photo-ionization detector (PID). Level C personal protective equipment (PPE) was donned during the air monitoring activities. The CGI, PID, and FID did not detect any readings above the HASP action guidelines for the breathing zone (Ref. 6). The CGI recorded measurements of non-detect values for LEL, H_2S, and CO throughout the area. The FID/PID recorded measurements ranging from 0.5 parts per million (ppm) to 20 ppm of toxic vapors. ERRS measured AST sample volumes and began drum sampling activities. START continued periodic air monitoring for the duration of daily activities, and no measurements were observed above the HASP action guidelines. By the end of the day, ERRS completed the collection of samples for HazCat testing from the 55-gallon drums and ASTs. The site was secured and START and ERRS departed for the day (see Appendix D for the HazCat forms and drum logs).

On November 9, 2006, START, EPA, and ERRS personnel resumed on-site activities. START measured tank dimensions while ERRS began HazCat testing of the drum and AST samples already collected. START calibrated air monitoring equipment and conducted periodic air monitoring while ERRS conducted drum sampling for the collection of additional sample volume needed for composite samples. No air monitoring results were recorded above the action guidelines. The CGI recorded measurements of 20.9% oxygen and non-detect for LEL, H_2S, and CO in the breathing zone. The FID/PID recorded measurements ranging from 0 ppm to 3 ppm organic vapors. The ERRS chemist bulked the composite samples and prepared them for shipment to an off-site laboratory for analysis. The staged drums were covered with plastic sheeting and duct tape. ERRS and START completed on-site activities and demobilized from site until the analytical sample results were received from the laboratory.

At the request of EPA, START personnel mobilized to the McCullough Oil site on March 1, 2007 to collect confirmation soil samples. A total of five composite samples plus one duplicate sample were collected from the former drum staging area and the process area. The samples were shipped to a non-Contract Laboratory Program (CLP) laboratory for analysis of total petroleum hydrocarbons (TPH) and metals (arsenic, cadmium, chromium, and lead). A summary of the sample results are presented in Table 1 located in Appendix A.

3.2 REMOVAL ACTIVITIES

At the request of EPA on January 9, 2007, START, EPA, and ERRS returned to Verbena, Alabama, to complete the removal of the drums and associated waste from the McCullough Oil site. During the week, ERRS personnel vacuumed out wastes from the drums and ASTs into Vac trucks while START conducted periodic air monitoring of the breathing zone with a FID/PID; no readings above action guidelines were observed. Access was restricted for ASTs 6 and 7; therefore, holes were cut into the tanks to remove the waste. Between January 9 and 11, a total of 24,139 gallons of non-hazardous oil and water was collected in tanker trucks from drums and ASTs and disposed of by EQ at the Echoflow disposal facility.

During the week of January 15, START and ERRS continued removal of wastes from the ASTs. START continued air monitoring of the breathing zone during the removal. A confined space entry was conducted to clean out the filters in one AST that contained a sludge waste. Breathing zone levels reached as high as 100 ppm on the FID, with sustained readings at 35 ppm. Level C PPE was donned and the filters and sludge were subsequently removed from the tank. A hole was cut in AST-5 for access and ventilation, and confined space entry was performed. ERRS continued to pump out and clean the ASTs.

A total of 9,400 gallons of non-hazardous oil and water was removed from the tanks and disposed of by EQ at the Echoflow disposal facility. On January 19, START Steve Wolfe was relieved by START Lou Von Oldenburg.

During the week of January 22, ERRS continued monitoring and cleaning ASTs and overpacking the remaining on-site drums. Breathing zone air readings were closely monitored by START during all removal activities. Confined space entry was performed on AST-11. Once the ASTs were cleaned, ERRS ripped, cut, and crushed the tanks to prepare them for scrap metal pickup. A total of 10,270 pounds of scrap metal was picked up by J&J Recycling. In addition, 33 cubic yards of oily sludge and solids were collected in rolloff boxes and were disposed of by EQ at the Echoflow disposal facility.

During the week of January 29, ERRS continued to pump, clean, cut, and crush the remaining ASTs while START performed air monitoring. A total of 33 cubic yards of oily sludge and solids were collected in rolloff boxes and were disposed of by EQ at the Echoflow disposal facility. In addition, twelve overpacked drums (a total of 660 gallons) were picked up for disposal on February 1 by EQ. The contents of the overpacked drums were as follows: four drums were combustible liquids (220 gallons), one drum was flammable liquid (55 gallons), five drums were paints (275 gallons), and two drums were basic liquids (110 gallons).

During the week of February 5, START Art Leskowich arrives on-site to relieve START Lou Von Oldenburg. ERRS and START continued to clean, cut, and crush remaining ASTs. START also performed air monitoring. On February 9, a new sludge box was delivered while the existing sludge box, which contained 15 cubic yards of oily sludge and solids, was hauled off-site for disposal by EQ at the Echoflow disposal facility. Old tires were collected from around the site and recycled, and 14,720 pounds of scrap metal, consisting of numerous crushed tanks staged for removal were picked up and removed by J&J Recycling.

During the week of February 12, ERRS continued to clean, cut, and crush remaining ASTs for disposal while START performed air monitoring. Old tires were collected from around the site and recycled. In addition, 30 cubic yards of oily sludge and solids were collected in rolloff boxes and were disposed of by EQ at the Echoflow disposal facility. Before ERRS and START exited the site, approximately 1,000 gallons of water from the containment area was removed and disposed of by EQ and disposed of at Echoflow disposal facility. Upon completion of on-site activities on February 17, 2007, START, EPA, and ERRS demobilized from the site.

4.0 SUMMARY

The McCullough Oil site was an abandoned oil recycling facility. Based on findings from a previous Tetra Tech investigation and TN&A sampling activities, EPA determined that a time-critical removal action was required. EPA removal activities at McCullough Oil occurred between January and February 2007 and are now complete. TN&A performed confirmation sampling on March 01, 2007. The Alabama Department of Environmental Management (ADEM) reviewed the analytical results from the March 2007 sampling and concluded that no further actions are required.

5.0 REFERENCES

1. U.S. Environmental Protection Agency (EPA). Region 4 Science and Ecosystems Support Division. Environmental Investigations Standard Operating Procedures and Quality Assurance Manual. November 2001.

2. T N & Associates, Inc. Quality Assurance Program Plan. January 2006.

3. Tetra Tech EMI. CERCLA Removal Action Report. September 30, 2005.

4. WRKG News 5. Watersheds: The Coastal Connection. Alabama's Groundwater: Part 1. Internet address: http://wkrg.iewatershed.com/?pagename=news_050515_groundwater. No date.

5. Weatherbase. Historical weather for Clanton, Alabama. Internet Address: http://weatherbase.com. Accessed March 22, 2007.

6. T N & Associates, Inc. McCullough Oil Log Notes from Field Investigation. October 24, 2006, through March 1, 2007.

7. T N & Associates, Inc. McCullough Oil Health and Safety Plan. November 6, 2006.