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July 12, 2010

Ms. Carolyn Minnich, Brownfields Project Manager  
North Carolina Department of Environment and Natural Resources  
Division of Waste Management  
Brownfields Program  
1646 Mail Service Center  
Raleigh, North Carolina 27699-1646

**Subject: Transmittal Letter  
Revised Work Plan for Indoor Air Assessment  
Former Universal Stainless Facility  
10801 Nations Ford Road  
Charlotte, North Carolina  
Brownfields Project Number: 09048-05-60  
MACTEC Project: 6228-10-5195**

Dear Ms. Minnich:

On behalf of ADH Properties, MACTEC Engineering and Consulting, Inc. (MACTEC) is pleased to present this revised Work Plan to the North Carolina Department of Environment and Natural Resources (NCDENR) relating to the scope of services to be performed at the Former Universal Stainless Facility located in Charlotte, North Carolina (subject property).

We appreciate your review of this revised Work Plan. Please contact the undersigned at (704) 357-8600 if you have questions.

Sincerely,

MACTEC ENGINEERING AND CONSULTING, INC.

Andrew J. Frantz, A.E.P.  
Staff Environmental Scientist



Robert C. Foster, L.G.  
Principal Geologist

Enclosures

MACTEC Engineering and Consulting, Inc.

2801 Yorkmont Road, Suite 100 • Charlotte, NC 28208 • Phone: 704.357.8600 • Fax: 704.357.8638

License Number: F-0653

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# **REVISED WORK PLAN FOR INDOOR AIR ASSESSMENT**

## **FORMER UNIVERSAL STAINLESS FACILITY**

**10801 Nations Ford Road  
Charlotte, North Carolina**

**Prepared for:**

### **ADH PROPERTIES**

**Care of Ms. Amanda Short  
McGuireWoods, LLP  
201 North Tryon Street, Ste. 3000  
Charlotte, North Carolina 28202**

**Prepared By:**

**MACTEC ENGINEERING AND CONSULTING, INC.  
2801 YORKMONT ROAD, SUITE 100  
CHARLOTTE, NORTH CAROLINA 28208**

**JULY 12, 2010**

**MACTEC PROJECT: 6228-10-5195**





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ADH Properties  
Care of Ms. Amanda Short  
McGuireWoods, LLP  
201 North Tryon Street, Suite 2900  
Charlotte, North Carolina 28202

Subject: **Revised Work Plan for Indoor Air Assessment  
Former Universal Stainless Facility  
10801 Nations Ford Road  
Charlotte, North Carolina  
Brownfields Project Number: 09048-05-60  
MACTEC Project: 6228-10-5195**

Dear Ms. Short:

MACTEC Engineering and Consulting, Inc. (MACTEC) is pleased to submit this *Revised Work Plan for Indoor Air Assessment*. This revised work plan includes a description of the procedures of the field work and sampling for approval by the NCDENR Brownfield Program prior to conducting field work.

MACTEC appreciates the continued opportunity to provide our environmental consulting services. If you have questions concerning this report or this project, please contact us at 704-357-8600.

Sincerely,

**MACTEC ENGINEERING AND CONSULTING, INC.**

A handwritten signature in black ink, appearing to read "Andrew J. Frantz".

Andrew J. Frantz, A.E.P.  
Staff Environmental Scientist

A handwritten signature in black ink, appearing to read "Robert C. Foster".

Robert C. Foster, L.G.  
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## **1. SITE HISTORY AND CHARACTERIZATION**

The 8.132-acre subject property (site) is located at 10801 Nations Ford Road in Charlotte, North Carolina and consists of Mecklenburg County Tax Parcel 205-141-09. The subject property contains an approximately 78,612-square foot, one-story building that was constructed in 1969. The warehouse portion of the building encompasses approximately 72,080 square feet with about 6,532 square feet of office space. Remaining portions of the site are asphalt-paved driveway and parking areas and grass covered areas. The site is currently occupied by the Mecklenburg Lumber Company. A topographic map, aerial photograph and site plan are provided as **Figures 1, 2 and 3**, respectively.

Industrial activities have reportedly occurred at the site since 1969. Former occupants include: Hayes Albion Corporation (textile equipment manufacturing and metal fabrication), Kelwood, Inc. (producer of bed linens), Bonded Fiber Products (batting material manufacturer), Wellman, Inc., and Universal Stainless. Potential on-site environmental concerns include: a “degreaser pit” located on the interior of the building and utilized by former tenants; the former use of vinyl acetate, machine lubricants, and other chemicals at the site; floor drains and sumps which discharged to an underground wastewater vault; and oil staining previously observed at the site.

The subject property is located within the Charlotte Belt of the Piedmont Physiographic Province. Based on a review of the Geologic Map of North Carolina (1985), the site is underlain by granite-mica schist.

The Soil Survey of Mecklenburg County indicates that soils at the subject property are classified as Urban. Urban soils consist of areas where more than 85 percent of the surface area is covered with asphalt, concrete, buildings or other impervious cover.

Based on the USGS topographic map, the elevation of the subject property ranges from approximately 600 to 610 feet above mean sea level. Surface drainage patterns within the Piedmont typically indicate the direction contaminants would be transported by surface water or groundwater. Based on our interpretation of the topographic map and on-site observations, surface water on the property would primarily be expected to flow east-southeast.

The direction and movement of groundwater through soil is dependent on soil type and the presence of relict structures and textures of the underlying rock. Fractures, faults, folds and foliation planes affect the migration of groundwater in rock. Since no significant geologic

features were identified on the site, it is reasonable to assume that the direction of groundwater flow under static conditions (no pumping interference) approximates the surface topography of the site. Groundwater at the property would be expected to flow east-southeast.

## **2. HISTORICAL ENVIRONMENTAL ASSESSMENT INFORMATION**

During the Phase II Assessment activities conducted by Buxton Environmental, Inc. in March and April 2005, Total Petroleum Hydrocarbons (TPH), Oil and Grease was detected above North Carolina (NC) General Action Level in soil samples collected along the railroad spur adjacent to the building and near the air compressor area where staining was observed. TPH, Oil and Grease, Tetrachloroethene (PCE), and Trichloroethene (TCE) were detected above action levels in a soil sample collected at the “degreaser pit”. Additional Volatile Organic Compounds (VOCs) including chloroform, 1,1,2-TCA, PCE, and TCE were detected above NC Groundwater Quality Standards in groundwater samples collected from three temporary monitoring wells (one located near the wastewater vault and two located along the railroad spur).

In April and May 2007, ERM NC, PC completed a Sensitive Receptor Survey. Their report concluded that ten water supply wells were identified within the study area. Four water supply wells were observed within a one-half mile radius of the subject property, with the nearest supply well located approximately 2,020 feet south-southwest (hydraulically cross-gradient) of the subject property.

In March 2010, MACTEC conducted an environmental assessment at the subject property which included sub-slab soil-gas sampling and groundwater sampling. MACTEC collected five sub-slab soil-gas samples and three groundwater samples from the subject property. The locations of the sub-slab soil-gas samples were as follows: one location was installed in the addition of the on-site building (SG-1), one location was installed near the former floor-drain (SG-2), one location was installed near the air compressors (SG-3), one location was installed near the former degreaser pit (SG-4) and one location was installed near the loading dock (SG-5). The sub-slab soil-gas samples were submitted for laboratory analysis of volatile organic compounds (VOCs) by EPA Method TO-15. The results of the sub-slab soil-gas analysis identified PCE in soil-gas samples SG-2 and SG-5 at concentrations which exceeded the IHSB Industrial/Commercial Acceptable Soil-Gas Concentration of 210  $\mu\text{g}/\text{m}^3$ .

In March 2010, MACTEC collected groundwater samples from the three existing monitoring wells (TW-1, TW-2 and TW-3) located at the subject property. The groundwater samples were submitted for laboratory analysis of VOCs by EPA Method 8260, SVOCs by EPA Method 8270 and TPH, Oil and Grease by EPA Method 9071. The results of the groundwater analysis identified TCE concentrations in wells TW-2 and TW-3, a PCE concentration in well TW-2, and

cis-1,2-dichloroethene concentration in well TW-2 which increased since the 2005 sampling event. However, the PCE concentration in well TW-3 decreased since the 2005 sampling event.

### **3. INDOOR AIR SAMPLING AND ANALYSIS PLAN**

The office portion of the existing building encompasses less than 10 percent of the total area and is situated hydraulically upgradient from the affected area of the site. The office space dimensions are approximately 200 feet by 33 feet. The windows in this part of the building are sealed. Four ventilation ports were observed on the roof of the office area. The property owner, Mr. Allen Holcomb, could not provide information relative to the designed exhaust ventilation flow rate for this area. Mr. Holcomb was not aware of a “makeup air” source at the site. The office space is heated by natural gas heaters and cooled by an electric air conditioning system.

The warehouse portion of the existing building is separated from the offices by a wall with two doors. The warehouse space dimensions are approximately 225 feet by 320 feet and encompass more than 90 percent of the total area. The warehouse space is equipped with four garage doors on the eastern wall and two access doors on the western wall. The warehouse space is not heated or cooled. Consequently, during warm weather, the four garage doors are opened and approximately 10 five-foot diameter electric fans are used to facilitate air movement within the warehouse. In addition, nine roof-mounted vents were observed over the warehouse area. According to Mr. Holcomb, these vents are not equipped with mechanical fans. Mr. Holcomb could not provide information relative to the designed exhaust ventilation flow rate for this area.

MACTEC proposes to collect four indoor air samples inside the warehouse space and one outdoor air sample. No air samples are proposed for the office space. This sampling scope includes the following items:

- Select the indoor air sample locations based on accessibility, previous assessment results and known site activities;
- Each sample shall be collected from the normal breathing level, two to five feet above the floor;
- The samples shall be collected over an 8-hour time period outside of normal business hours to ensure windows and doors at the facility remain closed during sample collection;
- Each sample shall be collected into a Summa canister at a flow rate of approximately 12.5 mL/min (8-hour sample time) and submitted to a North Carolina certified laboratory for analysis;
- The outdoor air sample will be collected upwind of the on-site building and will be used as a background sample.

- The outdoor air sample will be collected over the same 8-hour time period into a Summa canister at a flow rate of approximately 12.5 mL/min.
- The Summa canisters shall be submitted to a laboratory for analysis of VOCs via EPA Method TO-15;

#### **4. QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES**

The following Quality Assurance/Quality Control Procedures shall be implemented:

- Collect at least one duplicate and one trip blank per sample event per each medium;
- Maintain samples under a manually-prepared chain-of-custody record;
- Non-dedicated sampling equipment shall be decontaminated between sample locations.

## **5. REPORT AND FIGURES**

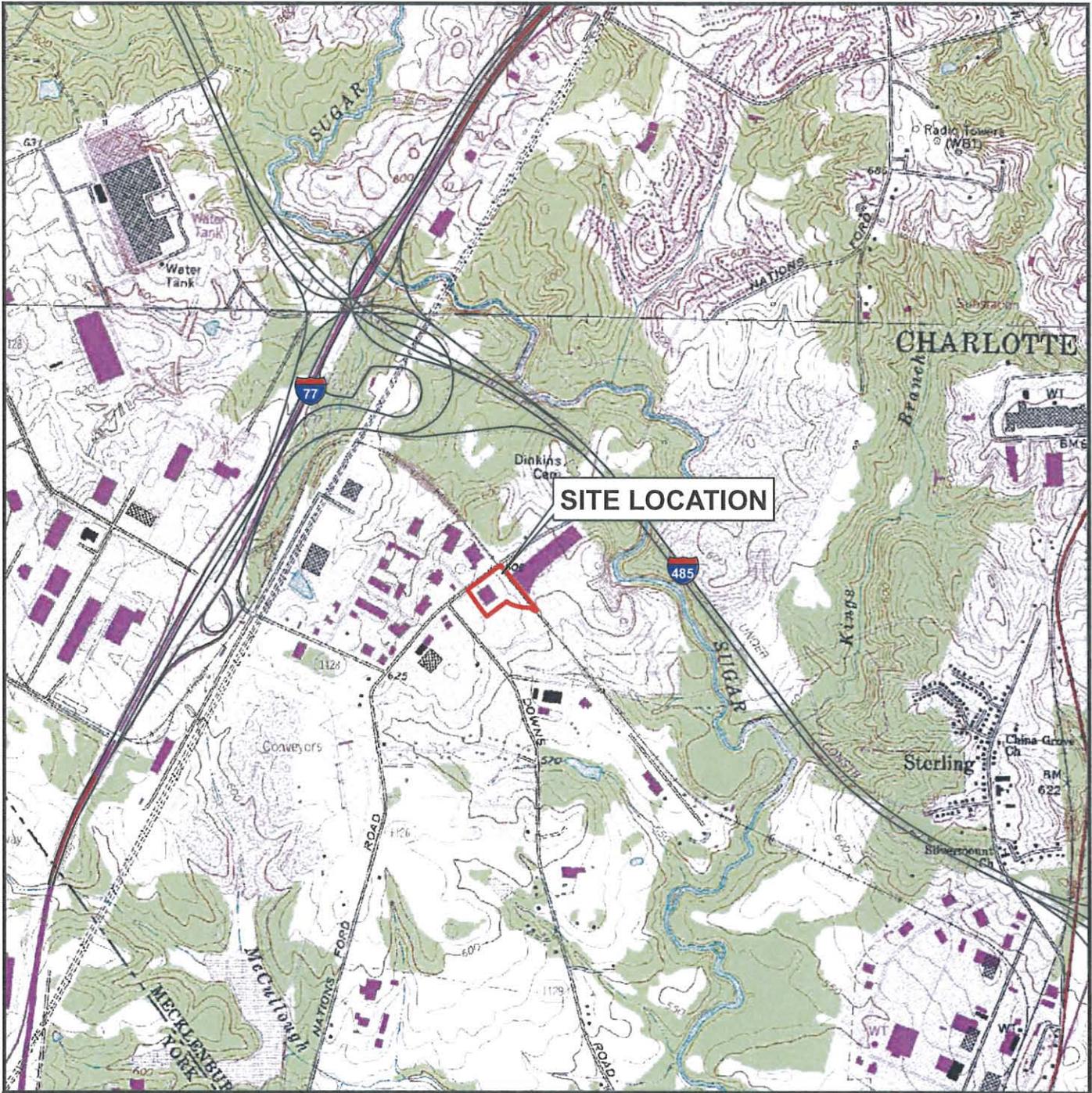
MACTEC will describe the field activities, present the results of the indoor air sampling as tabulated data, and submit the laboratory data packet in a suitable report format for submittal to the NCDENR Brownfields Program. The report will include a site plan with current and estimated previous sampling locations and current site structures. Concentration map(s) for contaminants detected above applicable standards will be provided. The report will summarize the data collected and/or generated and provide recommendations for additional assessment, if necessary.

## **6. SCHEDULE**

MACTEC anticipates the coordination and implementation of the field activities can be completed within ten days of NCDENR approval, assuming sampling locations are readily accessible. Laboratory analysis is expected to be completed on a standard turnaround time of ten business days. A final report can be submitted to the NCDENR within approximately 10 business days of receiving the final laboratory data.

**APPENDIX A**

**FIGURES**



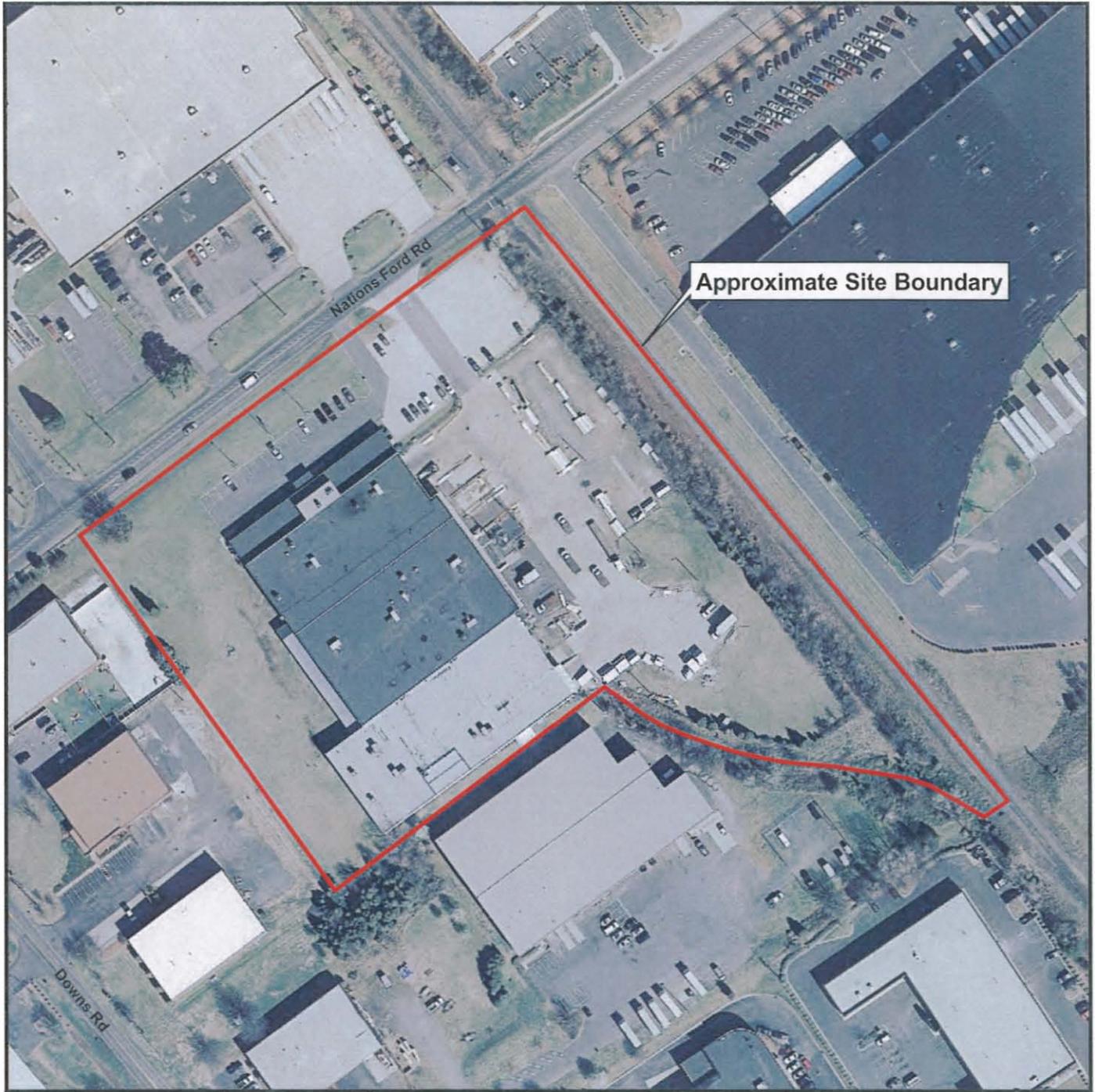
Source: USDA-NRCS Digital Raster Graph Mosaic for Mecklenburg County, North Carolina, dated 2005.

 Site Location



**SITE LOCATION/SURROUNDING PROPERTIES  
FORMER UNIVERSAL STAINLESS FACILITY  
10801 NATIONS FORD ROAD  
CHARLOTTE, NORTH CAROLINA**

PREPARED BY	DATE	CHECKED BY	DATE	JOB NUMBER	FIGURE
		RUF	7-12-10	6228-10-5195	1



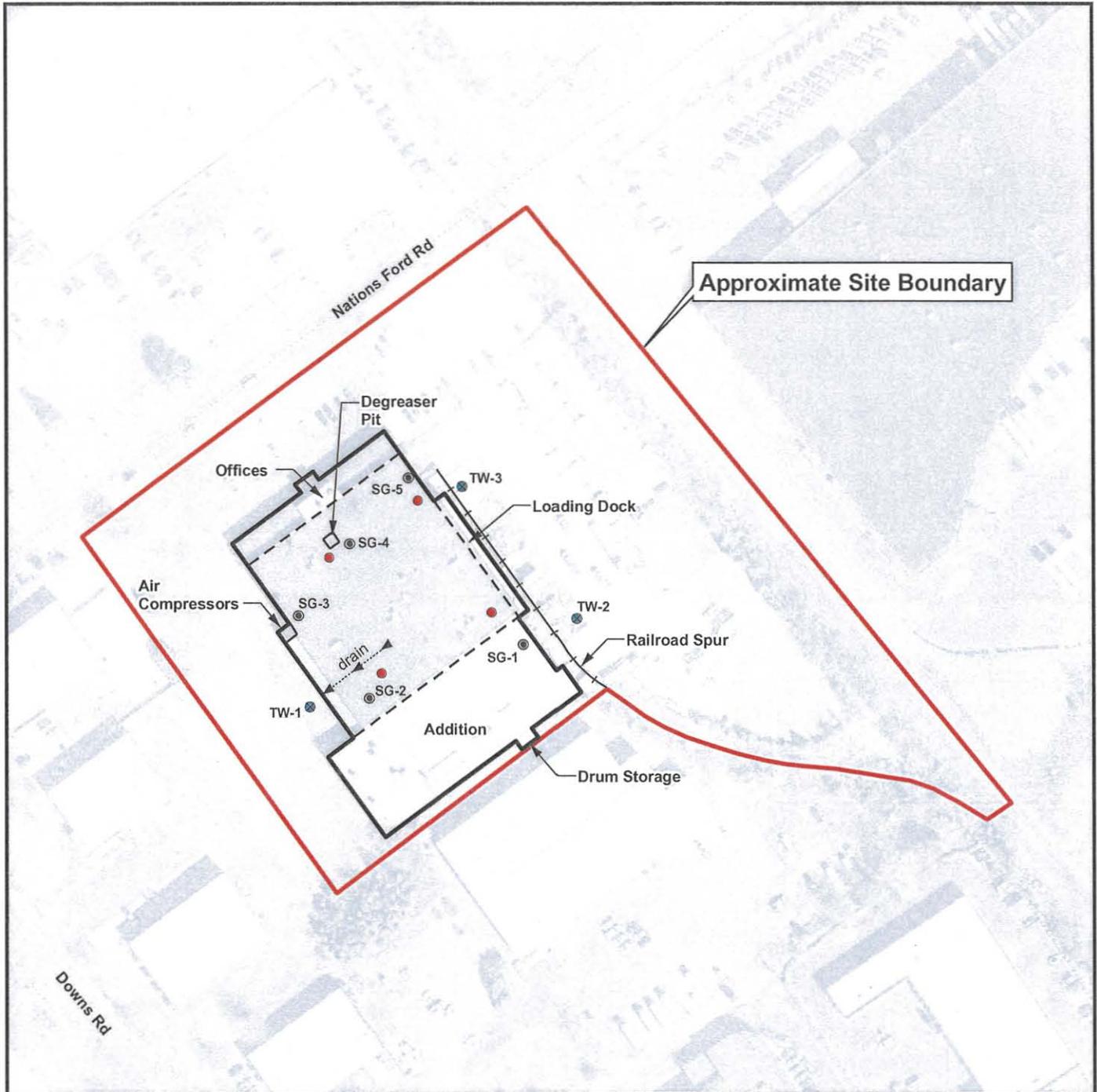
Source: Aerial Photograph provided by Mecklenburg County GIS, North Carolina, dated 2009.

 Approximate Site Boundary



**AERIAL PHOTOGRAPH  
FORMER UNIVERSAL STAINLESS FACILITY  
10801 NATIONS FORD ROAD  
CHARLOTTE, NORTH CAROLINA**

PREPARED BY	DATE	CHECKED BY	DATE	JOB NUMBER	FIGURE
		<i>RCF</i>	7-12-10	6228-10-5195	2



Source: Aerial Photograph provided by Mecklenburg County GIS, North Carolina, dated 2009.

- Approximate Site Boundary
- Proposed Indoor Air Samples
- Soil Gas Sample Locations
- Monitoring Wells



**SITE PLAN**  
**FORMER UNIVERSAL STAINLESS FACILITY**  
**10801 NATIONS FORD ROAD**  
**CHARLOTTE, NORTH CAROLINA**

PREPARED BY	DATE	CHECKED BY	DATE	JOB NUMBER	FIGURE
		RUF	7-12-10	6228-10-5195	3