

**COMPETITIVE BID SOLICITATION  
FIXED-PRICE DEFINED SCOPE OF WORK TO COMPLETE SITE  
CLOSURE ACTIVITIES**

**Tic Toc Food Mart #104  
1001 Mount Jackson Road  
New Castle, North Beaver Township, Lawrence County, Pennsylvania 16102  
PaDEP Facility ID # 37-05179; USTIF Claim # 1997-0086(M)**

**June 6, 2012**

The Pennsylvania Underground Storage Tank Indemnification Fund (USTIF), on behalf of the claimant, Mr. Tom Pitzer, who hereafter is referred to as the Client or Solicitor, is providing this Request for Bid (RFB) to prepare and submit a fixed-price proposal for a defined scope of work (SOW) to complete additional site characterization activities and site closure activities at the Tic Toc Food Mart #104 facility located in North Beaver Township, Lawrence County, Pennsylvania.

Corrective action under Chapter 245 is being conducted in response to a confirmed petroleum release at the Tic Toc Food Mart #104 property in 1997. Harrison Hydrosiences (Harrison) conducted site characterization and remedial activities, beginning in January of 1997. Harrison installed a groundwater recovery and treatment system at the site in 1997 and operated it until late 2005. This system, which contained an air stripper and vapor treatment component, was modified several times by Harrison and was modified again by Letterle & Associates, LLC (Letterle) when they were retained by Tic Toc Food Marts, Inc. (Tic Toc) in August of 2004 to continue with ongoing remedial activities and quarterly groundwater monitoring at the site. A Revised Remedial Action Plan (RAP) was submitted to the PaDEP by Letterle in September of 2005 and the Revised RAP was approved by the PaDEP in October 2005. The Revised RAP specified In-Situ Submerged Oxygen Curtain (iSOC<sup>®</sup>) as the selected remedial technology to meet the Statewide Health Standard (SHS) for soil and groundwater at the site. In October of 2005, the groundwater recovery system was shut down in order to implement the iSOC<sup>®</sup> technology at the site, in accordance with the approved Revised RAP. In January of 2006, Letterle installed a soil vapor extraction (SVE) well adjacent to monitoring well MW-1, inside the remediation shed, and the well was connected to the vapor extraction portion of the groundwater recovery and treatment system.

The remedial activities detailed in the Revised RAP were conducted by Letterle under a Pay-For-Performance contract entered into on April 22, 2005 between Tic-Toc and Letterle. This remediation was conducted pursuant to the approved Revised RAP dated October 12, 2005, and revised remedial activities began in January 2006. The contract was structured such that the consultant believed the site would attain the Statewide Health Standard (SHS) within four years. The remedial activities following groundwater recovery have included soil vapor extraction, enhanced aerobic bioremediation facilitated by the introduction of oxygen into the groundwater using iSOC<sup>®</sup> technology, and the periodic use of total fluid extraction using vacuum trucks. Remedial Action Progress Reports (RAPRs) have been submitted by Letterle to the Pennsylvania Department of Environmental Protection (PaDEP) and these reports indicate that remediation has not progressed in a manner that will achieve the stated goal of the SHS in a reasonable period of time.

Groundwater Sciences Corp. (GSC), on behalf of ICF and the USTIF, sent correspondence to the PaDEP in November of 2011 requesting that the PaDEP allow Tic Toc to suspend remedial activities at the site until such time as additional site characterization can be conducted to determine whether the source(s) of the groundwater impacts at the site have been fully delineated, a conceptual site model formulated, and the need to continue active remediation at the site can be evaluated. The SOW for this RFB includes the activities necessary to identify the source(s) and more fully delineate the groundwater impacts at the site and to formulate a conceptual site model. Also, the SOW in this RFB has been developed with the assumption that current soil and groundwater data will show that continued active remediation will not be necessary. The SOW for this RFB was sent to the PaDEP via electronic mail on March 12, 2012 for review. The PaDEP responded to GSC via electronic mail on April 18, 2012 stating that the PaDEP had reviewed the SOW for this RFB and the PaDEP had no comments.

The general SOW for this RFB is to install additional monitoring wells to further delineate the groundwater plume, advance soil borings to delineate impacts to soil and to demonstrate soil attainment, assess the potential for vapor intrusion, conduct a professional site survey, conduct quarterly groundwater attainment monitoring and reporting, and prepare and submit a Remedial Action Completion Report (RACR) in accordance with Pennsylvania Code Title 25, Chapter 245.313.

The SOW for this RFB does not include active remediation. In the event that the additional soil, soil vapor and groundwater characterization data collected by the selected bidder as part of Milestone A (see Page 10) shows that 1) concentrations are greater than the SHS, 2) the proposed natural attenuation approach specified in the SOW for this RFB is not viable, and 3) active remediation should be implemented to achieve the SHS for the site, then any active remedial activities will not be included in the scope of this RFB and the subsequent Remediation Agreement. Upon receipt of all additional site characterization data collected from the Milestone A tasks, the selected bidder, the Technical Contact, ICF and the USTIF will evaluate the data and determine whether active remediation would be necessary to achieve the SHS for the site and, if so, how to address the out-of-scope activities.

The Solicitor, Tic Toc, has an open claim (claim number referenced above) with the USTIF and the corrective action work will be completed under this claim. Reimbursement of Solicitor-approved, reasonable, necessary, and appropriate costs up to claim limits for the continuing corrective action work described in this RFB will be provided by the USTIF. Costs for work to complete site closure activities, including costs for the completion of work described in this RFB, will be reimbursed by the USTIF at 100%. To date, more than sufficient claim funds remain to reimburse reasonable, necessary and appropriate costs to complete the SOW described in this RFB.

Should your company elect to respond to this RFB Solicitation, to be considered for selection, **one hard copy of the signed bid package and one electronic copy (one PDF file on a compact disk (CD) included with the hard copy) must be provided directly to the Fund's third party administrator, ICF International (ICF), to the attention of Deb Cassel, Contracts Administrator, by the time and date shown below.** She will be responsible for opening the bids and providing copies to the Technical Contact and the Solicitor. Bid responses will only be accepted from those firms who attended the mandatory pre-bid site meeting. **The ground address for overnight/next-day deliveries is ICF International, 4000 Vine Street, Middletown, PA 17057, Attention: Deb Cassel. The outside of the shipping package containing the bid response must be clearly marked and labeled with "Bid – Claim #1997-0086(M).** Please note that the use of U.S. Mail, FedEx, UPS, or other delivery method does not

guarantee delivery to this address by the due date and time listed below for submission. Firms mailing bid responses should allow adequate delivery time to ensure timely receipt of their bid package.

**The bid response must be received by 3:00 PM, on Friday, July 27, 2012.** Bids will be opened immediately after the 3:00 PM deadline on the due date. Any bid packages received after this due date and time will be time-stamped and returned. If, due to inclement weather, natural disaster, or any other cause, the Fund's third party administrator, ICF's office is closed on the bid response due date, the deadline for submission will automatically be extended to the next business day on which the office is open. The Fund's third party administrator, ICF, may notify all firms who attended the mandatory site meeting of an extended due date. The hour for submission of bid responses shall remain the same. Submitted bid responses are subject to Pennsylvania Right-to-Know Law.

Bid evaluation will consider, among other factors, estimated total cost, unit costs, schedule, discussion of technical and regulatory approach, qualifications, and contract terms and conditions. The cost will be the most heavily weighted evaluation criteria. The Solicitor (via the Technical Contact) will inform the successful bidder by email. The unsuccessful bidders will be informed by email and by posting the name of the successful bidder on the USTIF's website, following the full execution of the Remediation Agreement by the Solicitor and the successful bidder.

**A. SOLICITOR, ICF CLAIMS HANDLER, AND TECHNICAL CONTACT INFORMATION**

<u>Solicitor</u>	<u>ICF Claims Handler</u>	<u>Technical Contact</u> <sup>1</sup>
Mr. Tim Pitzer Tic Toc Food Marts, Inc. One Center 60 547 Mt. Jackson Road New Castle, PA 16102	Mr. Jack Bilder ICF International, Inc. 4000 Vine Street Middletown, PA 17057 jbilder@icfi.com Cc: dcassel@icfi.com	David L. Reusswig, P.G. Groundwater Sciences Corporation 2601 Market Place Street Suite 310 Harrisburg, PA 17110 Phone: (717) 901-8183 Fax: (717) 657-1611 dreusswig@groundwatersciences.com

**NOTE:** All questions regarding this RFB Solicitation and the subject site conditions must be directed via e-mail to the Technical Contact identified above with the understanding that all questions and answers will be provided to all bidders. The email subject line must be "Tic Toc Food Mart #104 1997-0086(M) – RFB QUESTION". Bidders must neither contact nor discuss this RFB Solicitation with the Solicitor, USTIF, PaDEP, or ICF unless approved by the Technical Contact. Bidders may discuss this RFB Solicitation with subcontractors and vendors to the extent required for preparing the bid response. **All questions must be received by close of business on Friday, July 20, 2012.**

**B. ATTACHMENTS TO THIS RFB SOLICITATION**

The following attachments have been provided electronically with this RFB to assist in bid preparation:

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<sup>1</sup> Subcontractor to ICF.

**ATTACHMENT 1: SUPPORTING DATA, REPORTS, AND CORRESPONDENCE**

Attachment 1a: Initial Assessment Report (Harrison; March 1997)

Attachment 1b: Supplemental Assessment Report (Harrison; June 1997)

Attachment 1c: Proposed Remedial System Design Report (D.A. Johnson & Assoc.; July 21, 1997)

Attachment 1d: UST Closure Report (A. Graziani & Co.; March 1999)

Attachment 1e: Revised Remedial Action Plan (Letterle; September 14, 2005)

Attachment 1f: Fourth Quarter 2011 and First Quarter 2012 Remedial Action Progress Reports  
(Letterle; January and April 2012)

Attachment 1g: PaDEP Correspondence

Attachment 1h: Well Logs for MW-18, MW-19 and MW-20

**ATTACHMENT 2: STANDARDIZED BID COST SPREADSHEET**

**ATTACHMENT 3: SAMPLE REMEDIATION AGREEMENT**

**C. SITE SETTING AND BACKGROUND INFORMATION**

The following figures, found at the end of this RFB document, have been prepared by the Technical Contact based on information provided by Letterle and others and collected by the Technical Contact:

Figure 1: Site Location Map Showing Surrounding Private Water Supply Wells

Figure 2: Aerial Map Showing Site and Surrounding Properties

Figure 3: Site Plan

Figure 4: Dissolved-Phase Benzene Concentration Contour Map; November 8, 2011

Figure 5: Dissolved-Phase Ethylbenzene Concentration Contour Map; November 8, 2011

Figure 6: Dissolved-Phase Naphthalene Concentration Contour Map; November 8, 2011

Figure 7: Dissolved-Phase Benzene Concentration Contour Map; February 16, 2012

Figure 8: Dissolved-Phase Ethylbenzene Concentration Contour Map; February 16, 2012

Figure 9: Dissolved-Phase Naphthalene Concentration Contour Map; February 16, 2012

Figure 10: Groundwater Elevation Contour Map; September 23, 2011

Figure 11: Groundwater Elevation Contour Map; February 16, 2012

Figure 12: Proposed Groundwater Monitoring Well and Soil Vapor Monitoring Point Locations

Figure 13: Soil Characterization and Systematic Random Attainment Boring/Sampling Plan

The following information summarizes, and is derived from, relevant information provided in previous environmental reports, including the reports attached to this RFB. If there is any conflict between the summary provided herein and the source documents, the bidder should defer to the source documents.

**Site Name/Address**

The Tic Toc Food Mart #104; 1001 Mt. Jackson Road, New Castle, North Beaver Township, Lawrence County, Pennsylvania 16102 (Figure 1).

## **USTIF Eligibility**

Following the documented release from the unleaded gasoline UST system in 1997, the Solicitor filed a claim with the USTIF and eligibility was granted under USTIF Claim No. 1997-0086(M). The Solicitor has selected the Statewide Health Standard (SHS) using the Residential, Used Aquifer Medium-Specific Concentrations (MSCs) for soil and the Residential, Used Aquifer Soil-to-Groundwater MSCs for groundwater as the remedial goal to be pursued to obtain Relief from Liability (RfL) from the PaDEP, and USTIF has agreed to 100% reimbursement of Solicitor-approved reasonable and necessary costs up to claim limits for the corrective action work described in this RFB.

## **Site Use Description**

The site is currently an active retail petroleum dispensing facility and convenient store. Reportedly, the site has operated as a retail petroleum dispensing facility with USTs for several decades. An aerial photo and a site plan showing pertinent features of the site (since major renovations in 2004) and surrounding properties are included as Figures 2 and 3, respectively.

## **USTs and ASTs on Site**

Older gasoline USTs were removed in 1985 and replaced with two 8,000-gallon steel unleaded gasoline USTs. The 8,000-gallon USTs were removed on December 22-23, 1998 and replaced in the same location with the current UST system configuration (Figure 3), which consists of one 10,000-gallon fiberglass unleaded gasoline UST system and one 4,000-gallon fiberglass unleaded gasoline UST system. There is also a 1,000-gallon fiberglass kerosene UST, installed in November of 1994, that is located approximately twenty feet northeast of the kerosene dispenser.

There are no petroleum aboveground storage tanks (ASTs) located at the site.

## **Site Description**

The site is located at the northwest intersection of Route 108 and Route 317 in New Castle, Pennsylvania (Figure 1). Reportedly, the site has been used as an active retail petroleum dispensing facility for several decades and continues to be an active retail petroleum dispensing facility. The site underwent major renovations in 2004 following the purchase and demolition of the adjacent Gleghorn property. The layout of the site prior to 2004 is shown on the sketches included in **Attachment 1b**. The current layout of the site is shown on Figure 3. Currently, there is a one-story convenient store located on the property. The petroleum dispensers are located beneath a canopy between the convenient store and Route 317, within the eastern portion of the property. The petroleum USTs are located within the northeastern portion of the site and to the north of the dispensers. The entire Tic Toc property, with the exception of the area west of the convenience store building (which is covered by gravel), is covered by concrete.

There are commercial and residential properties in the immediate area surrounding the Tic Toc property. A commercial property (currently occupied by Kissling accounting firm) is located immediately east of the site across Route 317 (Edinburgh Road). A commercial property (currently vacant) is located immediately southwest of the site across the

intersection. Residential properties are located immediately south (across Route 108), west and north of the site property. An outdated property owner map is included in Harrison's supplemental site assessment report provided as **Attachment 1b**.

The site and surrounding properties are currently supplied by private water supply wells. The site and surrounding properties are currently supplied by private septic systems, although tax assessor records indicate that the commercial property occupied by Kissling is currently connected to public sanitary sewer. According to a Pennsylvania Groundwater Information System search, there are a total of fourteen private water supply wells within a one-mile radius of the site, in addition to the on-site water supply well. The closest private water supply well is the on-site water supply well, located within the southwestern portion of the site (Figure 3), and the next-closest private water supply well is the Lumley well located approximately 500 feet northwest and upgradient of the site (Figure 1).

### **Current and Historical Constituents of Concern**

The constituents of concern (COCs) at this site, for which a RfL will be necessary, are the substances on the PaDEP's Old Shortlist for unleaded gasoline (benzene, toluene, ethylbenzene, total xylenes, cumene, methyl tert-butyl ether (MTBE) and naphthalene). The three constituents present in groundwater at concentrations greater than the RUA SHS during the two most recent quarters are benzene, ethylbenzene and naphthalene. Dissolved-phase benzene, ethylbenzene and naphthalene concentration contour maps for the Fourth Quarter 2011 and the First Quarter 2012 are included as Figures 4 through 9.

### **Site Topography**

The site is situated at approximately 1,165 feet above mean sea level (Figure 1). Topography is primarily flat across the site. To the west of the site, topography slopes towards the west and towards Hickory Run which flows in a meander that lies at approximately 1,000 feet above mean seal level. Hickory Run lies approximately 1,500 feet to the southwest of the Tic Toc property.

### **Site Geology**

Based on drilling logs provided by Harrison (**Attachment 1b**), fill material consisting of gravel, ash and orange brick fragments was encountered up to five feet below grade (fbg) in some soil borings advanced by Harrison. Based on drilling logs provided by Letterle (**Attachment 1h**), soil from the surface (or below fill) was generally described in well logs as silty sand. Soil beneath the silty sand was generally described as silt and/or clay, which was underlain by a grey or yellowish orange sand. Bedrock was not encountered in any soil borings, the deepest of which was drilled to a depth of approximately twenty fbg.

### **Site Hydrogeology**

Based on water level measurements collected from the monitoring wells by Letterle (see groundwater elevation table in **Attachment 1f**), depth-to-groundwater (water table) at the site ranges from approximately 11 to 16 fbg. The soil groundwater flow direction at the site has a southerly component (refer to Figures 10 and 11 for the Third Quarter 2011 (September 23, 2011) and the First Quarter 2012 (February 16, 2012) groundwater elevation contour maps).

## **Nature of Confirmed Releases and Subsequent Activities**

The following information is based on documents submitted to the PaDEP by previous consultants, some of which are included as attachments to this RFB. The information associated with activities not conducted by GSC has not been independently verified by ICF or the Technical Contact.

### **1997 Reportable Release**

In 1997 a release of unleaded gasoline was reported to the PaDEP following the detection of a leaking connection to a sump in the UST tank pad during a UST tightness test. The tightness test was initiated as a result of a complaint by the owner of the former adjacent property (Gleghorn property) of gasoline odors in their private water supply. The release was reported to the PaDEP and, in correspondence dated February 4, 1997 (**Attachment 1g**), the PaDEP confirmed the release based on review of the leak detection results and analytical evidence of dissolved-phase gasoline in the nearby residential well. The leaking sump connection was repaired. The UST systems at the site were replaced on December 22-23, 1998. A UST Closure Report detailing the UST replacement activities is provided as **Attachment 1d**. A copy of the report for the most recent inspection of the UST systems is provided in **Attachment 1g**.

### **Subsequent Corrective Action Activities**

In response to the 1997 release, Harrison carried out the following site characterization and remedial activities since January of 1997:

- Installation of a treatment system for an off-site impacted private water supply well (Gleghorn property) in April of 1997;
- Installation of sixteen monitoring wells (MW-1 through MW-16);
- Installation of a new water supply well at the Gleghorn property in September of 1997;
- Installation of a groundwater recovery and treatment system at the site in November of 1997; and,
- Soil and groundwater sampling and analysis (1998 - 2004)

Harrison submitted a Proposed Assessment Report to the PaDEP in March of 1997 (**Attachment 1a**). Harrison submitted a Site Characterization Report (SCR) to the PaDEP on May 29, 1997, although this report was not found as part of a PaDEP file review conducted by GSC on January 20, 2012. In correspondence dated June 2, 1997, the PaDEP acknowledged receipt of the report and concluded that groundwater contamination was not adequately defined and, therefore, additional groundwater characterization was necessary. Harrison conducted supplemental site characterization activities that included the advancement and sampling of seven soil groundwater monitoring wells (MW-1 through MW-7; Figure 3 in **Attachment 1i**). A report entitled "Supplemental Report on Hydrocarbon Contamination" was submitted to the PaDEP in June of 1997 (**Attachment 1b**), however, a PaDEP letter in response to the report submittal was not found during the January 20, 2012 PaDEP file review. Harrison also installed a groundwater recovery and treatment system at the site in 1997. Subsequent investigations were conducted by Harrison and additional soil groundwater monitoring

wells were installed (MW-8 through MW-16) and sampled, and numerous quarterly remedial action progress reports were submitted by Harrison.

The remedial system that Harrison installed in 1997 involved the extraction of groundwater from recovery wells MW-1, MW-3 and MW-4 using 1/3-horsepower peristaltic pumps, and from recovery well MW-16 using an electric submersible pump. Soil vapor was extracted using a 1.5-horsepower regenerative blower. The groundwater was treated with an air stripper (aeration tank), while the soil vapor was treated with activated carbon. The treated groundwater was discharged into a storm drain under a National Pollutant Discharge Elimination System (NPDES) permit while treated soil vapor was discharged to the atmosphere under an exemption-from-permit by the PaDEP. A copy of the proposed system design report prepared by D.A. Johnson & Associates, Inc. (dated July 21, 1997) is provided in **Attachment 1c**.

Letterle was retained by Tic Toc in August of 2004 to continue with ongoing corrective action activities and quarterly monitoring at the site. At the time Letterle took over corrective action at the site, the remedial system that Harrison had installed and maintained was not operating, and how long the system was not operating is unknown. However, Letterle performed system maintenance and adjustments, reactivated the system in 2004, and operated the system until October of 2005.

From May 31, 2005 through June 7, 2005, Letterle supervised the installation of three soil borings (SB-18, SB-19 and SB-20) and subsequent completion of the soil borings into groundwater monitoring wells MW-18, MW-19 and MW-20. The three wells were drilled to a depth of twenty fbg. Well construction logs for these wells are provided in **Attachment 1h**.

Letterle entered into a *Pay For Performance* (PFP) contract with Tic Toc on April 22, 2005. The PFP contract established milestones for which regulatory closure of the site would eventually be achieved using the Residential, Used Aquifer (RUA) Statewide Health Standard (SHS) as the remedial goal for the site. The activities conducted under the PFP were outlined in the revised Remedial Action Plan (RAP), dated October 12, 2005, that was submitted by Letterle and approved by the PaDEP in correspondence dated October 12, 2005. The revised remedial activities, initiated by Letterle in January of 2006 following the deactivation of the groundwater recovery and treatment system, have included SVE, enhanced aerobic bioremediation facilitated by the introduction of oxygen into the groundwater using iSOC® (in situ Submerged Oxygen Curtain) technology, and the periodic use of total fluid extraction using vacuum trucks. The contract was structured such that the consultant believed the site would attain the RUA SHS within four years. Remedial Action Progress Reports (RAPRs) have been submitted to the PaDEP by Letterle and these reports indicated that the RUA SHS was not achieved in the timeframe specified under the PFP contract. The USTIF put the remainder of the corrective action activities under this claim out for competitive bid.

Letterle has continued quarterly groundwater monitoring and reporting at the site since the termination of the PFP contract. The most recent quarterly RAPRs (Fourth Quarter 2011 and First Quarter 2012) for the site are provided in **Attachment 1f**. Dissolved-phase concentration contour maps for benzene, ethylbenzene, and naphthalene, the three constituents that have continued to exhibit concentrations greater than the RUA SHS during the Fourth Quarter 2011 and the First Quarter 2012, are provided as Figures

4 through 9. Groundwater elevation contour maps for the Third Quarter 2011 and the First Quarter 2012 are provided as Figures 10 and 11, respectively.

### **Separate-Phase Liquid**

Separate-phase liquid (SPL) has not been detected in any monitoring wells at the site.

## **D. OBJECTIVE / SCOPE OF WORK**

This RFB Solicitation is a defined SOW type where a specific SOW is presented to the bidders who prepare their bids on the basis of that scope. In the case of this RFB solicitation, the defined SOW was submitted to the PaDEP for review and the PaDEP provided no comments. The SOW is designed to obtain regulatory closure of the site and Relief from Liability with respect to the 1997 petroleum release at the site. For the purposes of this SOW, the “Site” is defined as the Tic Toc #104 property and all properties affected by the release from the Tic Toc #104 property. The SOW is designed to delineate current impacts to soil, complete a soil vapor assessment at the site, delineate the current lateral extent of the groundwater plume, conduct ongoing quarterly groundwater monitoring and reporting to demonstrate groundwater attainment at the site, and submit a Remedial Action Completion Report (RACR) for the site.

The SOW has been prepared using the guidelines of Pennsylvania Code Title 25, Chapter 245 (The Storage Tank and Spill Prevention Program) and applicable Chapter 250 (The Land Recycling Program). There are several key elements that must be completed in order for the approach outlined in this RFB to be successful. The critical elements and general sequence of events for completion of the work specified in this RFB are:

- Completion of site characterization activities (installation, development, and sampling of groundwater monitoring wells; drilling and sampling of soil borings; vapor intrusion evaluation; professional site survey)
- Continued quarterly groundwater sampling and reporting;
- Soil attainment sampling;
- Preparation of an RACR.

The submitted bid shall follow the task format outlined herein. Bids shall include a detailed description of the fixed-price costs for each task including labor rates, time requirements, and equipment costs. A Standardized Bid Cost Spreadsheet, to be completed and attached to the bid, is included as **Attachment 2**. The fixed-price cost for each of the tasks detailed below shall include all costs for preparation of any pertinent project guidance documents in accordance with Chapter 245 (e.g., health and safety plan, field sampling/analysis plan and quality assurance/quality control plan, etc.), for utility clearance (both coordination of Pennsylvania One-Call and conducting physical utility clearance using soft dig techniques if deemed necessary, and project management, scheduling and project coordination time deemed necessary to complete each task.

#### **Milestone A: Additional Site Characterization Activities**

Milestone A1: Installation of Soil Borings and Soil Sampling for Additional Soil Characterization

Milestone A2: Monitoring Well Installation, Development and Initial Round of Sampling

Milestone A3: Vapor Intrusion Assessment

Milestone A4: Licensed Professional Land Survey and Base Map Preparation

Milestones B1 - B8: Eight Consecutive Quarters of Comprehensive Groundwater Gauging, Sampling, and Reporting

Milestone C: Soil Attainment Sampling

Milestone D: Preparation and Submittal of a RACR

## **MILESTONE A: ADDITIONAL SITE CHARACTERIZATION ACTIVITIES**

**NOTE: The area in which soil borings, groundwater monitoring wells, and soil vapor monitoring points shall be installed under this Milestone is covered with concrete. Additionally, given the proximity of the proposed soil borings, soil vapor monitoring points and groundwater monitoring wells to existing underground utilities and UST systems, soft-digging using an air knife shall be used to a minimum of four fbg to ensure that all borings are clear of utilities. Bidder's fixed-price cost for the intrusive tasks under this milestone (as well as under Milestone C - Soil Attainment Sampling) should incorporate appropriate costs to account for these factors.**

### Task A1: Installation of Soil Borings for Additional Soil Characterization

Soil boring installation and soil sampling shall be conducted to delineate the impacts to soil on the Tic Toc property, particularly in the vicinity of the former gasoline dispenser island and the current UST well pad, to determine if a continuing source, in the form of soil impacts above the RUA Soil-to-Groundwater MSCs, remains at the site.

For the purposes of this RFB, bidders should assume that ten soil borings (SB-101 through SB-110; Figure 13) shall be advanced. The borings shall be advanced to a depth of twenty fbg and continuous geological logs should be prepared by a Professional Geologist licensed in the Commonwealth for each boring using a standard and consistent classification system procedure (i.e., Modified Burmister or USCS). Soil samples should be screened at two-foot intervals with a PID (using headspace measurements).

For each soil boring, discrete soil samples shall be collected from the depth interval representing the highest PID response and at the depth coincident with the water table. In the absence of PID responses, a soil sample shall be collected at the depth coincident with the water table. However, bidders should assume for the purpose of this RFB that a total of twenty soil samples will be collected (2 soil samples from each of the ten soil borings).

Soil samples shall be collected in laboratory-provided containers in accordance with EPA Method 5035 and analyzed for the substances described in Section C (Current and Historical Constituents of Concern) by EPA Method SW846 8260 by a PADEP-certified laboratory.

### Task A2: Monitoring Well Installation, Development and Initial Round of Sampling

This task includes the installation, development and initial sampling of three groundwater monitoring wells (MW-21, MW-22 and MW-23). The locations of the proposed groundwater monitoring wells are shown on Figure 12.

Groundwater monitoring wells shall be constructed in a manner similar to the groundwater monitoring wells previously installed by Letterle, with a maximum depth of approximately 20 fbg. For the purpose of this RFB, bidders should assume that the groundwater monitoring wells will be installed with the following characteristics:

- a. Continuous soil/overburden characterization shall be conducted and a soil boring log shall be prepared using an appropriate soil classification system (i.e., Modified Burmister or USCS);
- b. The groundwater monitoring well shall be constructed of two-inch diameter, threaded, flush-joint, schedule 40 PVC riser and 0.010- or 0.020-inch slot width well screen;
- c. The groundwater monitoring well shall be drilled and installed into the soil saturated zone to a maximum depth of 20 fbg.<sup>2</sup>
- d. The groundwater monitoring well screen shall straddle the unsaturated/saturated zone interface;
- e. The groundwater monitoring well screen shall be entirely in soil;
- f. A sand filter pack of appropriate grain size shall be placed in the annulus from the bottom of the borehole to not more than two feet above the screened interval and hydrated bentonite chips or bentonite grout shall be used to seal the annulus (between the PVC and the borehole wall) above the sand pack up to grade;
- g. The groundwater monitoring well shall be completed at the surface with a securable manhole, set in concrete flush with the ground surface. A locking, pressure fit, watertight cap shall be used to prevent the infiltration of surface runoff and rainwater and to restrict access by unauthorized individuals; and,
- h. A construction log shall be prepared that illustrates and describes the construction details of the groundwater monitoring well.

Following the installation of the above-referenced groundwater monitoring wells, the selected bidder shall develop and sample the newly installed wells in accordance with generally accepted practices as outlined in the PaDEP's Groundwater Monitoring Guidance Manual, dated December 1, 2001 (Document # 383-3000-001).

### Task A3: Vapor Intrusion Assessment

A soil vapor assessment shall be conducted to determine whether soil vapor intrusion into the occupied buildings on- and off-site is an issue. Five soil vapor monitoring points (SVP-1 through SVP-5) shall be installed at the locations shown on Figure 12. The five soil vapor monitoring points shall be installed to a depth of five fbg. Each point shall

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<sup>2</sup> For cost estimation purposes, Bidder shall assume that each well shall be installed by hollow stem auger to a depth of 20 feet below grade, which is the maximum depth of previously installed wells at the site.

have one soil vapor collection point with a screened interval not to exceed six inches (from 5 to 4.5 fbg). One soil vapor sample shall be collected from each soil vapor monitoring point during each of two sampling events. Soil vapor point installation, sampling and analyses shall be conducted in accordance with the PaDEP's *Technical Guidance Manual - Section IV.A.4. Vapor Intrusion into Buildings from Groundwater and Soil under Act 2 Statewide Health Standard (January 24, 2004)*.

The soil vapor samples shall be analyzed for the PaDEP's Old Shortlist of unleaded gasoline constituents including benzene, toluene, ethylbenzene, total xylenes, cumene, MTBE and naphthalene using EPA Method TO15. The above-mentioned PaDEP guidance shall be used to assist in evaluating the soil vapor sample results. The guidance specifies that soil vapor shall be compared to 100 times the Residential Indoor Air Medium-Specific Concentrations (MSCs) to account for attenuation effects.

Details of the vapor intrusion assessment, including analytical results and a detailed evaluation of the vapor intrusion potential, shall be included in both the RAPR for the quarter in which this task was completed as well as in the RACR.

#### Task A4: Licensed Professional Land Survey and Base Map Preparation

The successful bidder shall conduct a professional survey of the site by a Pennsylvania-licensed land surveyor. The survey should include all principal site features (e.g., buildings, property boundaries, dispensers, paved/gravel/concrete areas, conveyance lines (if known), soil borings, soil vapor monitoring points, groundwater monitoring wells). The base map shall show uses of adjoining properties and include the locations and elevations of soil borings and the tops of casing of the monitoring wells.

Upon receipt of the data collected from all of the tasks (Tasks A1 through A4) conducted under Milestone A, the selected bidder shall submit all of the data to the Technical Contact for evaluation. The selected bidder, along with the Technical Contact, ICF Claims Handler and the USTIF will evaluate the data to determine whether active remediation is necessary. In the event it is determined that active remediation is necessary to achieve the SHS for the site, any additional tasks proposed by the selected bidder and agreed upon by the Technical Contact, ICF and the USTIF to be warranted, but are not considered part of the SOW for this RFB, would be addressed as "out-of-scope" tasks. Any "out-of-scope" tasks, as well as any revised timeframes for completing Milestones B through D as a result of carrying out the "out-of-scope" tasks, would likely be addressed as an amendment to the Remediation Agreement.

#### **MILESTONES B1 – B8: Eight Consecutive Quarters of Comprehensive Groundwater Gauging, Sampling, and Reporting**

The successful bidder shall conduct eight consecutive quarters of comprehensive groundwater elevation gauging and sampling following the installation and development of the monitoring wells described in Task A2.

Prior to sample collection, the selected bidder shall gauge all site wells. Depth-to-water measurements shall be completed using a probe capable of distinguishing water and/or the presence or absence of SPL to the nearest 0.01 feet. The depth to water shall be recorded and then used to determine the water level elevations within each well.

Historically, SPL has not been detected at the site so there should not be a need for groundwater elevations to be corrected for product thickness.

Each of the eight sampling events described in this Milestone shall include gauging and sampling of soil monitoring wells MW-1, MW-2, MW-3, MW-4, MW-6, MW-7, MW-9, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, MW-18, MW-19, MW-20, MW-21, MW-22, and MW-23 (Figure 12). [Please note: monitoring wells MW-5 and MW-8 were inadvertently destroyed during the 2004 site renovation activities and there was never a well designated as MW-17].

Groundwater elevation gauging, purging, sampling, and analysis shall be conducted in accordance with generally accepted practices as outlined in the PaDEP's Groundwater Monitoring Guidance Manual, dated December 1, 2001 (Document # 383-3000-001).

Following each of the comprehensive quarterly sampling events, the successful bidder shall prepare quarterly Remedial Action Progress Reports (RAPRs) for submission to the PaDEP. Each quarterly RAPR shall include a description of all tasks performed during the quarter, a groundwater elevation data table, a groundwater chemistry data table, a groundwater elevation contour map, and groundwater concentration contour maps for those dissolved-phase constituents that show concentrations at the site greater than the RUA MSCs, and any additional data (e.g., wells logs, soil vapor data, soil sample data) collected during the quarter. The first RAPR shall include the soil boring logs, construction logs for the new groundwater monitoring wells and soil vapor monitoring points, and the professional survey map described in Milestones A and D, respectively. ICF and the Technical Contact shall be copied on each of the quarterly RAPRs.

In the event that attainment cannot be achieved for groundwater at the end of the eighth quarter of groundwater attainment monitoring, and fate and transport analysis demonstrates that additional attainment sampling is reasonable, the language in the Remediation Agreement will allow for up to four additional quarterly groundwater attainment monitoring events at the same quarterly fixed price established for Milestones B1 through B8, in order to demonstrate groundwater attainment at the site.

### **MILESTONE C: Soil Attainment Sampling**

Soil attainment sampling/demonstration in the area of the UST pad, shown on Figure 13, is still required. The bidder's proposed soil attainment demonstration for this area shall include the estimated volume of soil for which the RUA SHS is to be demonstrated, along with a description of the general systematic random approach to selecting soil sampling locations. For the purpose of this bid, bidders should assume that a total of twelve soil attainment samples will be collected to demonstrate soil attainment in this area.

All soil attainment samples shall be analyzed for the PaDEP's Old Shortlist of unleaded gasoline parameters.

## **MILESTONE D: PREPARATION AND SUBMITTAL OF RACR**

The selected bidder shall prepare a RACR in accordance with 25 Pa Code §245.313. The RACR shall be a stand alone document with comprehensive data tables and figures. All files used in the preparation of this RFB, including CAD files, will be available to the successful bidder. The selected bidder shall prepare the RACR in draft form for review and comment by the Solicitor and the USTIF. The bidders' schedules shall provide two weeks for this review. The selected bidder shall address all of the comments received by the Solicitor and the USTIF before submission to the PaDEP.

The selected bidder shall prepare a RACR that documents and discusses the data obtained and the conclusions drawn from the completion of the work contained within this RFB. Tables, figures, and other attachments that support the text shall include but not be limited to the following:

- Updated comprehensive historical groundwater elevation data;
- Updated comprehensive historical groundwater analytical data;
- Site map (showing appropriately surveyed site boundaries and pertinent site features);
- Monitoring well, soil vapor monitoring point, and soil boring location maps (showing existing and new locations);
- Soil groundwater elevation contour maps including but not limited to the most recent quarter up to the submission of the RACR;
- Groundwater isoconcentration contour (plume) maps for each constituent found to be above the SHS MSC including but not limited to the most recent quarter up to the submission of the RACR;
- Laboratory analytical reports for groundwater and soil with chains of custody documentation;
- Soil boring logs for new soil borings and well construction logs for new groundwater monitoring wells; and
- Soil vapor data and a detailed evaluation of the potential for vapor intrusion into on- and off-site occupied buildings to determine whether the potential for a complete exposure pathway for vapor intrusion exists for on- and off-site occupied buildings. This evaluation shall be conducted by comparing the soil, soil vapor and groundwater data collected as part of the SOW to the PaDEP's Vapor Intrusion Guidance; and

## **ADDITIONAL REQUIREMENTS**

In addition to the specific tasks listed above, the selected consultant shall also:

- Complete necessary, reasonable, and appropriate project planning and management activities until the SOW specified in the executed Remediation Agreement has been completed. Such activities would be expected to include client communications/updates, meetings, record keeping, subcontracting, personnel and subcontractor management, quality assurance/quality control, scheduling, and other activities. Project planning and management activities will also include preparing and implementing any plans required by regulations or that may be necessary and appropriate to complete the SOW. This may include health and safety plans, waste management plans, field sampling and analysis

plans, and/or access agreements. Project management costs shall be included in the fixed prices quoted for Milestones A through D, as appropriate.

- Be responsible for coordinating, managing, and completing the proper management, characterization, handling, treatment, and/or disposal of all investigation-derived wastes in accordance with standard industry practices and applicable laws, regulations, guidance and PaDEP directives. Include these costs in Milestones A1 - A3, B1 - B8, and C as appropriate. Waste handling documentation shall be maintained and provided to the Solicitor upon request and should be included as an appendix to the respective quarterly RAPR.
- Be responsible for providing the Solicitor and adjacent property owners with adequate advance notice prior to each visit to the property. The purpose of this notification is to coordinate appropriate access to the areas of the Site necessary to complete the SOW.

All work shall be conducted in accordance with standard industry practices, and be consistent with the applicable PaDEP laws, regulations, and guidelines.

Each bidder should carefully review the existing site information provided in the attachments to this RFB and seek out other appropriate sources of information to develop a cost estimate and schedule for the SOW. There is no prequalification process for bidding. Therefore, bids that demonstrate an understanding of existing site information and standard industry practices will be regarded as responsive to this solicitation.

## **E. TYPE OF CONTRACT/PRICING**

The Solicitor wishes to execute a mutually agreeable Fixed-Price Defined SOW contract (Remediation Agreement). A Sample Remediation Agreement is included as **Attachment 3** to this RFB Solicitation. This sample agreement contains standard language that has been previously employed by other Solicitors on other USTIF-funded claims. The bidder must identify in the bid response and document any modifications that they wish to propose to the Remediation Agreement language in **Attachment 3** other than obvious modifications to fit this RFB (e.g., names, dates and descriptions of milestones). The number and scope of any modifications to the standard agreement language will be one of the criteria used to evaluate the bid. **Any bid response that does not clearly and unambiguously state whether the bidder accepts the Remediation Agreement language in Attachment 3 "as is", or that does not provide a cross-referenced list of requested changes to this agreement, will be considered non-responsive.** This statement should be made in a Section entitled "Remediation Agreement". Any proposed changes to the agreement should be specified in the bid response, however, these changes will need to be reviewed and agreed upon by both the Solicitor and the USTIF.

The Remediation Agreement fixed costs shall be based on unit prices for labor, equipment, materials, subcontractors/vendors and other direct costs. The total cost quoted by the selected bidder will be the maximum amount to be paid by the Solicitor unless a change in scope is authorized and determined to be reasonable and necessary. There may be deviations from and modifications to this SOW during the project. The Remediation Agreement states that any significant changes to the SOW will require approval by the Solicitor, USTIF, and PaDEP.

The bidder shall provide its bid using the Standard Bid Cost Spreadsheet included as **Attachment 2** with descriptions for each task provided in the body of the bid document. In

addition to **Attachment 2**, the bidder shall provide a unit rate schedule that will be used for any out-of-scope work on this project.

**Please note that the total fixed-price bid must include all costs, including those cost items that the bidder may regard as “variable”. These variable cost items will not be handled outside of the total fixed price quoted for the SOW. Any bid response that disregards this requirement will be considered non-responsive to the bid requirements and, as a result, will be rejected and will not be evaluated.**

The selected bidder’s work under the USTIF claim will be subject to ongoing review by the Solicitor and USTIF or its representatives to assess whether the work has been completed and the associated incurred costs are reasonable and necessary.

In order to facilitate USTIF’s review and reimbursement of invoices submitted under this claim, the Solicitor requires that project costs be invoiced by the milestone tasks identified in the bid. The standard practice of tracking total cumulative costs by bid task will also be required to facilitate invoice review.

Each bid package received will be assumed to be valid for a period of up to 120 days after receipt unless otherwise noted. The costs quoted in the bid and the rate schedule will be assumed to be valid for the contract.

## **F. BID RESPONSE DOCUMENT**

Each bid response document must include at least the following:

1. Demonstration of the bidder’s understanding of the site information provided in this RFB, standard industry practices, and objectives of the project.
2. Fixed-price bid pricing using the Standardized Bid Cost Spreadsheet (**Attachment 2**) and a unit rate schedule for any out-of-scope work. The following information must be provided in the detailed costing spreadsheet and discussed in the body of the bid document:
  - a. The bidder’s proposed unit cost rates for each expected labor category, subcontractors, other direct costs, and equipment;
  - b. The bidder’s proposed markup on other direct costs and subcontractors (if any);
  - c. The bidder’s estimated total cost by task consistent with the proposed SOW identifying all level-of-effort and costing assumptions.
3. Documentation of the bidder’s level of insurance consistent with the levels listed in **Attachment 3**<sup>3</sup>.

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<sup>3</sup> The selected bidder agrees and shall submit evidence to the Solicitor before beginning work that bidder has procured and will maintain Workers Compensation; commercial general and contractual liability; commercial automobile liability; and professional liability insurance commensurate with the level stated in the Remediation Agreement and commensurate with industry standards for the work to be performed.

4. The names and brief resumes of the proposed project team for the key project staff, including the proposed Professional Geologist of Record who will be responsible for overseeing the work and applying a professional seal to the project deliverables.
5. Responses to the following specific questions:
  - a. Does your company employ a Pennsylvania-licensed Professional Geologist that is designated as the proposed project manager? How many years of experience does this person have?
  - b. How many Chapter 245 projects is your company currently consultant for in the PaDEP Northwest Region of Pennsylvania? Please list up to five projects.
  - c. How many Chapter 245 Corrective Action projects involving an approved SCR, RAP and RACR in the State has your company and/or the Pennsylvania-licensed Professional Geologist closed (i.e., obtained RfL from the PaDEP) using any standard?
  - d. Has your firm ever been a party to a terminated USTIF-funded Fixed-Price (FP) or Pay-for-Performance (PFP) contract without attaining all of the Milestones? If so, please explain, including whether the conditions of the FP or PFP contract were met.
6. Sufficient description of subcontractor involvement by task.
7. Detailed schedule of activities for completing the proposed SOW.
8. Description of how the Solicitor, ICF and the USTIF will be kept informed as to project progress and developments, and how the Solicitor (or designee) will be informed of and participate in evaluating technical issues that may arise during this project.
9. Key assumptions made in formulating the proposed cost estimate. The use of overly narrow assumptions will negatively impact the bid.
10. Exceptions or special conditions applicable to the proposed SOW.
11. Quotations from major subcontractors.

#### **G. MANDATORY SITE VISIT**

**THERE WILL BE A MANDATORY SITE MEETING ON THURSDAY, JUNE 28, 2012, STARTING AT 1:00 PM.** The Solicitor, the Technical Contact, or their designee will be at the site between 1:00 PM and 2:00 PM to answer questions and conduct a site tour for one participant per firm. This meeting is mandatory for all bidders – no exceptions. This meeting will allow each bidding firm to inspect the site and evaluate site conditions. **A CONFIRMATION OF YOUR INTENT TO ATTEND THIS MEETING IS REQUESTED TO BE PROVIDED TO THE TECHNICAL CONTACT VIA E-MAIL BY TUESDAY, JUNE 26, 2012 WITH THE SUBJECT “TIC TOC 1997-0086(M) – SITE MEETING ATTENDANCE CONFIRMATION”.** The name and contact information of the company participant should be included in the body of the e-mail.

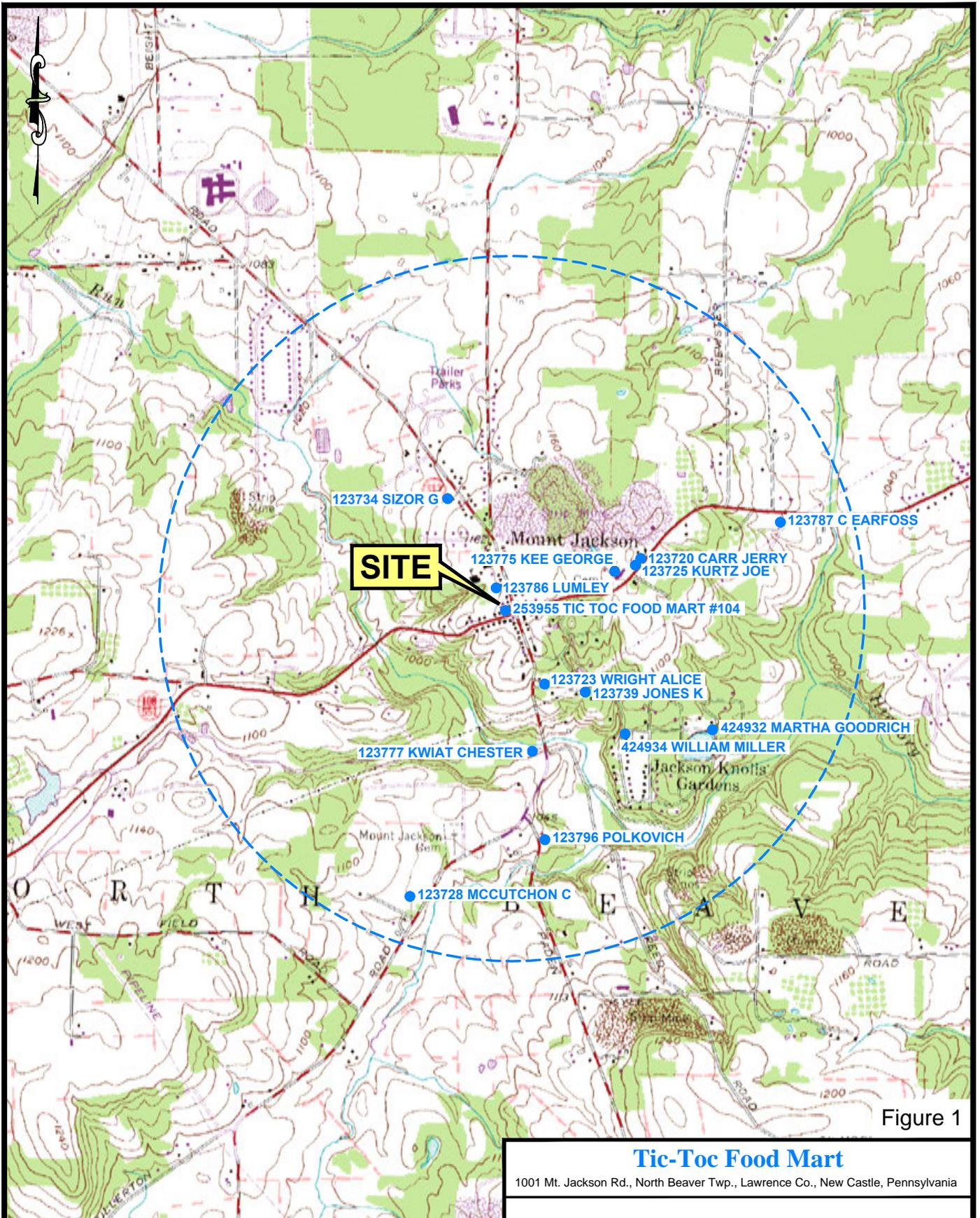


Figure 1

**LEGEND**

- - - - - 1-mile Radii
- 123796 POLKOVICH ● - PA ID no., Well Owner

Source: Portion of the Bessamer, PA  
USGS 7.5-Minute Quadrangle (1958, rev. 1990)



**Tic-Toc Food Mart**  
1001 Mt. Jackson Rd., North Beaver Twp., Lawrence Co., New Castle, Pennsylvania

**Site Location Map Showing Adjacent Wells**

DRAWN BY: MHM	DATE: 1/11/12	DRAWING NO.
CHECKED & APPROVED BY: DLR		tictoc98009-001-A3

**GROUNDWATER SCIENCES CORPORATION**



Figure 2

### Tic-Toc Food Mart

1001 Mt. Jackson Rd., North Beaver Twp., Lawrence Co., New Castle, Pennsylvania

### Aerial Map Showing Site and Surrounding Properties

DRAWN BY: MHM

DATE: 11/2/11

DRAWING NO.

CHECKED & APPROVED BY: DLR

tictoc98009-001-A2

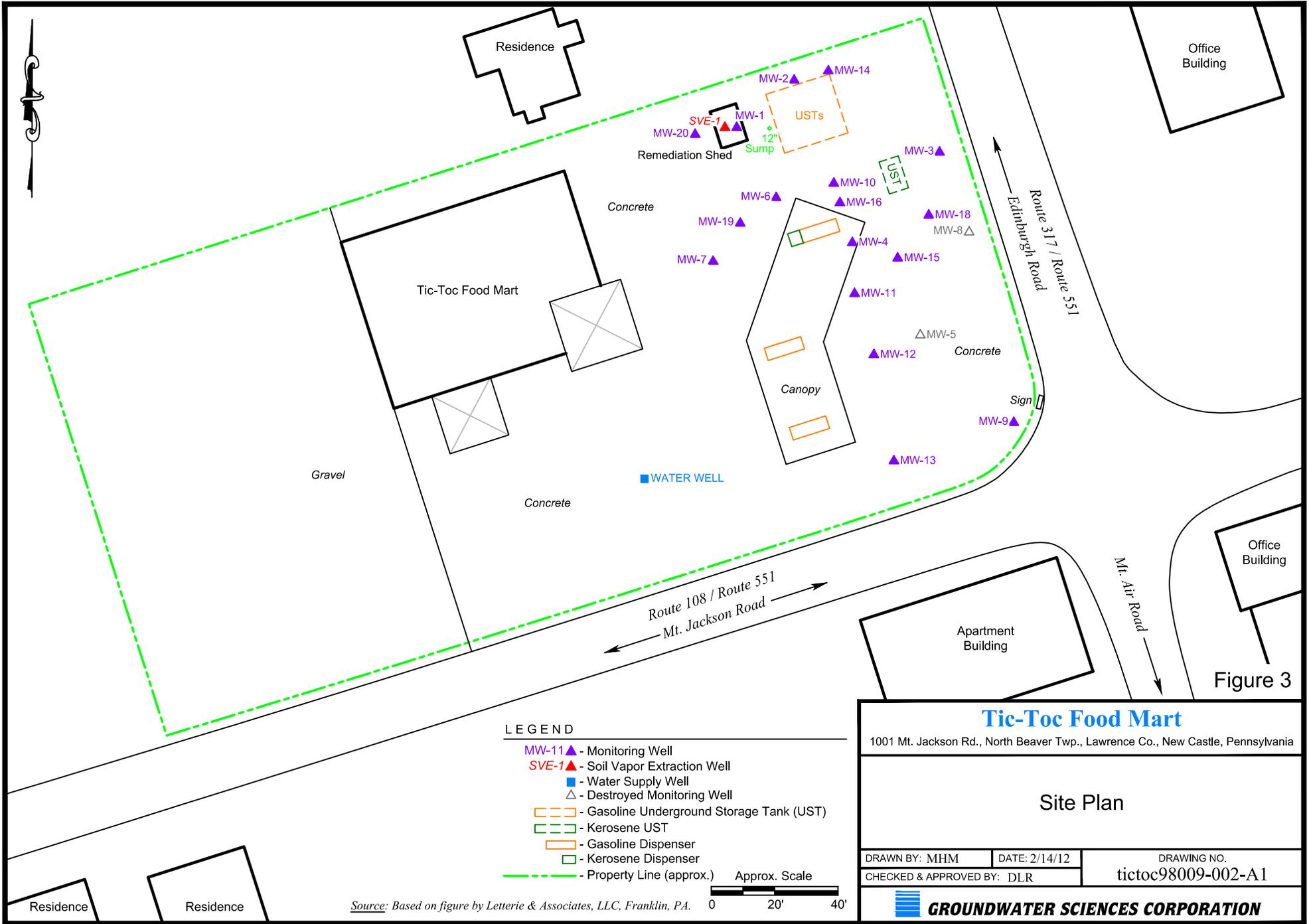


**GROUNDWATER SCIENCES CORPORATION**

Scale

0 50' 100'

Base Map Sources:  
Pennsylvania Spatial Data Access (PASDA)  
PAMAP Program (aerial dated 2006.)



**LEGEND**

- MW-11 ▲ - Monitoring Well
- SVE-1 ▲ - Soil Vapor Extraction Well
- - Water Supply Well
- △ - Destroyed Monitoring Well
- - Gasoline Underground Storage Tank (UST)
- - Kerosene UST
- - Gasoline Dispenser
- - Kerosene Dispenser
- - Property Line (approx.)



Source: Based on figure by Letterie & Associates, LLC, Franklin, PA.

Figure 3

**Tic-Toc Food Mart**

1001 Mt. Jackson Rd., North Beaver Twp., Lawrence Co., New Castle, Pennsylvania

**Site Plan**

DRAWN BY: MHM	DATE: 2/14/12	DRAWING NO.
CHECKED & APPROVED BY: DLR		tictoc98009-002-A1

**GROUNDWATER SCIENCES CORPORATION**

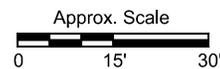


Figure 4

LEGEND

- 5 - Benzene Concentration Contour (µg/l; approximate)
- 22.4 - Benzene Concentration (µg/l)
- NS - Not Sampled
- ▲ MW-11 - Monitoring Well
- △ - Destroyed Monitoring Well
- - Water Supply Well
- Underground Storage Tank (UST)
- Kerosene UST
- Gasoline Dispenser
- Kerosene Dispenser
- Property Line (approx.)
- \* - Dissolved-phase concentrations have historically been Non-Detect or less than Statewide Health Standard

Source: Based on figure by Letterie & Associates, LLC, Franklin, PA.



<b>Tic-Toc Food Mart</b>		
1001 Mt. Jackson Rd., North Beaver Twp., Lawrence Co., New Castle, Pennsylvania		
<b>Dissolved-Phase Benzene Concentration Contour Map</b>		
<b>November 8, 2011</b>		
DRAWN BY: MHM	DATE: 2/15/12	DRAWING NO.
CHECKED & APPROVED BY: DLR		tictoc98009-004-C1
<b>GROUNDWATER SCIENCES CORPORATION</b>		

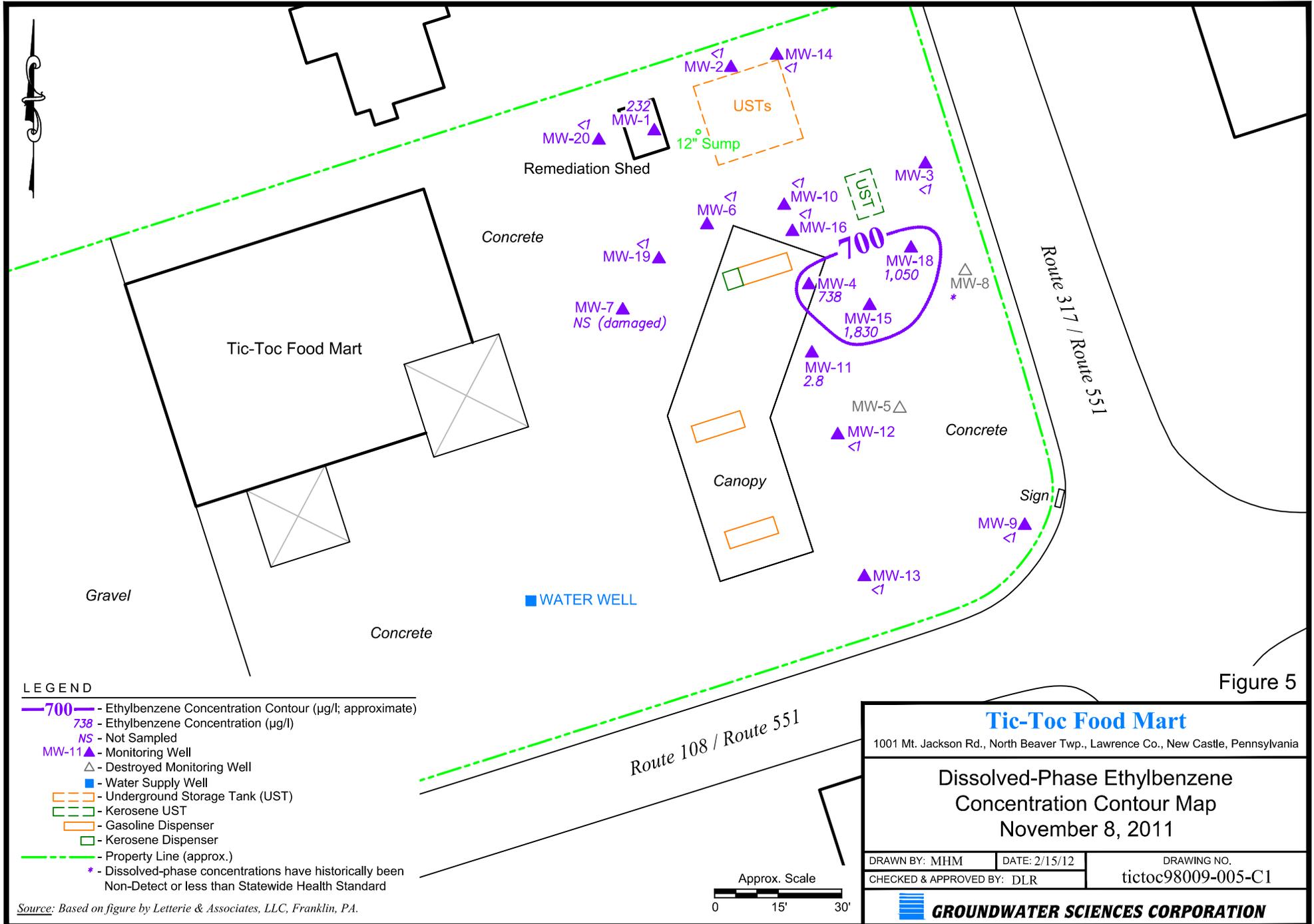
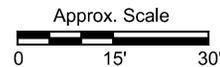


Figure 5

**LEGEND**

- **700** - Ethylbenzene Concentration Contour (µg/l; approximate)
- **738** - Ethylbenzene Concentration (µg/l)
- **NS** - Not Sampled
- ▲ **MW-11** - Monitoring Well
- △ - Destroyed Monitoring Well
- - Water Supply Well
- ▭ - Underground Storage Tank (UST)
- ▭ - Kerosene UST
- ▭ - Gasoline Dispenser
- ▭ - Kerosene Dispenser
- - - - Property Line (approx.)
- \* - Dissolved-phase concentrations have historically been Non-Detect or less than Statewide Health Standard

Source: Based on figure by Letterie & Associates, LLC, Franklin, PA.



<b>Tic-Toc Food Mart</b>		
1001 Mt. Jackson Rd., North Beaver Twp., Lawrence Co., New Castle, Pennsylvania		
<b>Dissolved-Phase Ethylbenzene Concentration Contour Map</b>		
<b>November 8, 2011</b>		
DRAWN BY: MHM	DATE: 2/15/12	DRAWING NO.
CHECKED & APPROVED BY: DLR		tictoc98009-005-C1
<b>GROUNDWATER SCIENCES CORPORATION</b>		

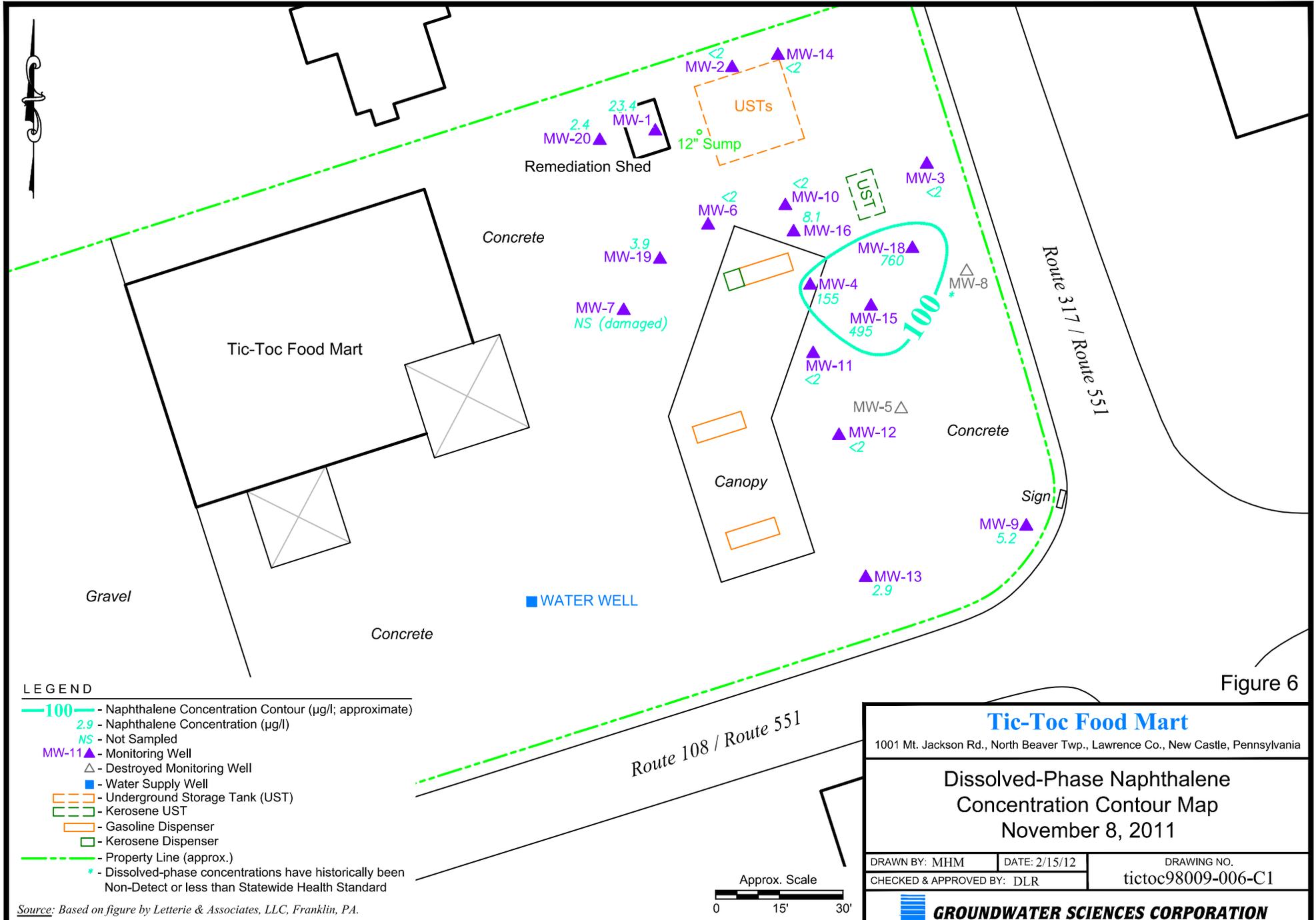


Figure 6

LEGEND

- 100 - Naphthalene Concentration Contour (µg/l; approximate)
- 2.9 - Naphthalene Concentration (µg/l)
- NS - Not Sampled
- ▲ MW-11 - Monitoring Well
- △ - Destroyed Monitoring Well
- - Water Supply Well
- Underground Storage Tank (UST)
- Kerosene UST
- Gasoline Dispenser
- Kerosene Dispenser
- - - - Property Line (approx.)
- \* - Dissolved-phase concentrations have historically been Non-Detect or less than Statewide Health Standard

Source: Based on figure by Letterie & Associates, LLC, Franklin, PA.

<b>Tic-Toc Food Mart</b>		
1001 Mt. Jackson Rd., North Beaver Twp., Lawrence Co., New Castle, Pennsylvania		
<b>Dissolved-Phase Naphthalene Concentration Contour Map November 8, 2011</b>		
DRAWN BY: MHM	DATE: 2/15/12	DRAWING NO.
CHECKED & APPROVED BY: DLR		tictoc98009-006-C1
<b>GROUNDWATER SCIENCES CORPORATION</b>		



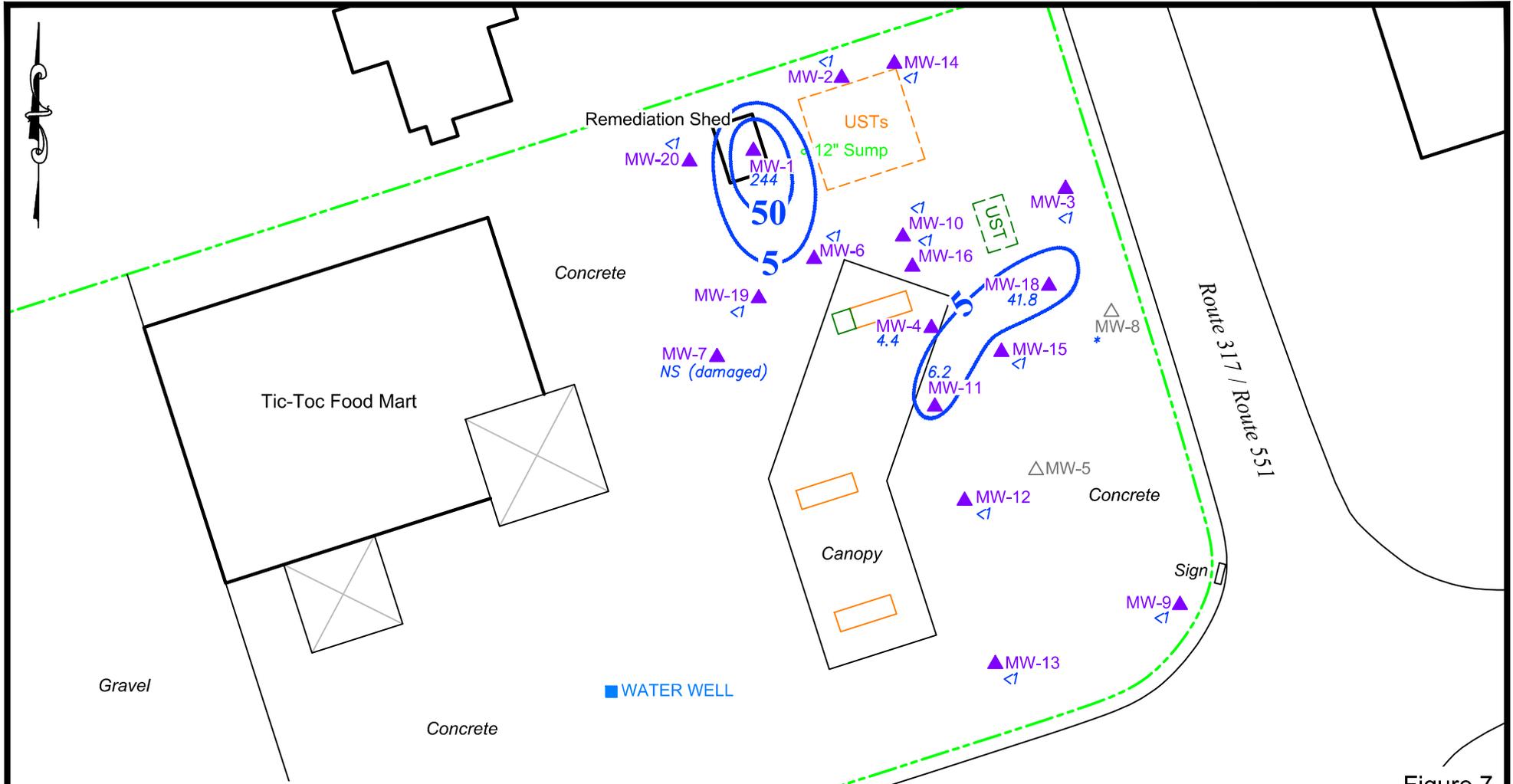
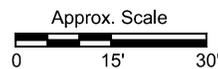


Figure 7

**LEGEND**

- 5 - Benzene Concentration Contour (µg/l; approximate)
- 6.2 - Benzene Concentration (µg/l)
- NS - Not Sampled
- MW-11▲ - Monitoring Well
- △ - Destroyed Monitoring Well
- - Water Supply Well
- ▭ - Underground Storage Tank (UST)
- ▭ - Kerosene UST
- ▭ - Gasoline Dispenser
- ▭ - Kerosene Dispenser
- - Property Line (approx.)
- \* - Dissolved-phase concentrations have historically been Non-Detect or less than Statewide Health Standard

Source: Based on figure by Letterie & Associates, LLC, Franklin, PA.



<b>Tic-Toc Food Mart</b>		
1001 Mt. Jackson Rd., North Beaver Twp., Lawrence Co., New Castle, Pennsylvania		
<b>Dissolved-Phase Benzene Concentration Contour Map</b>		
<b>February 16, 2012</b>		
DRAWN BY: MHM	DATE: 5/22/12	DRAWING NO.
CHECKED & APPROVED BY: DLR		tictoc98009-004-D1
<b>GROUNDWATER SCIENCES CORPORATION</b>		

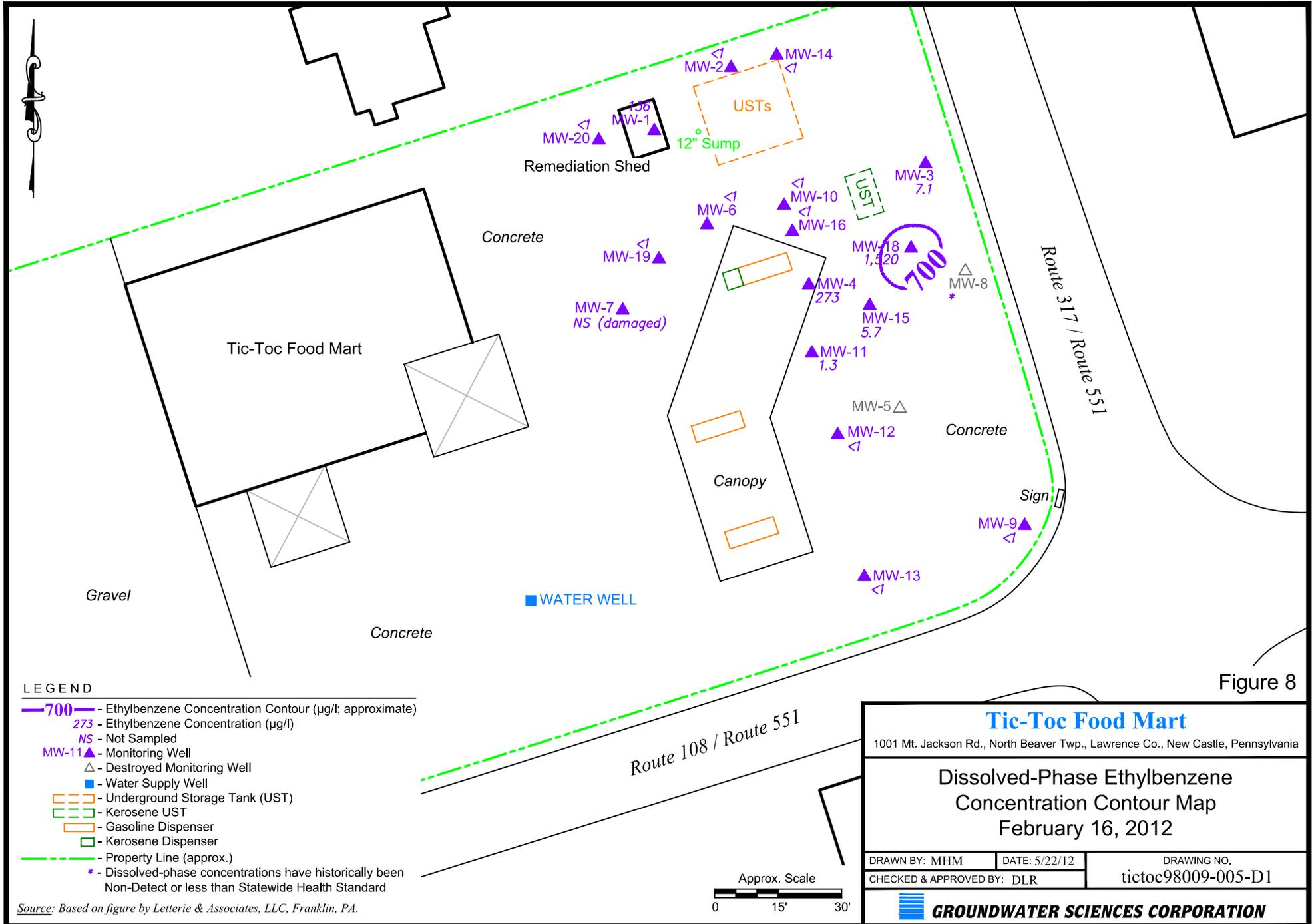
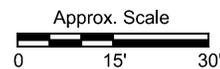
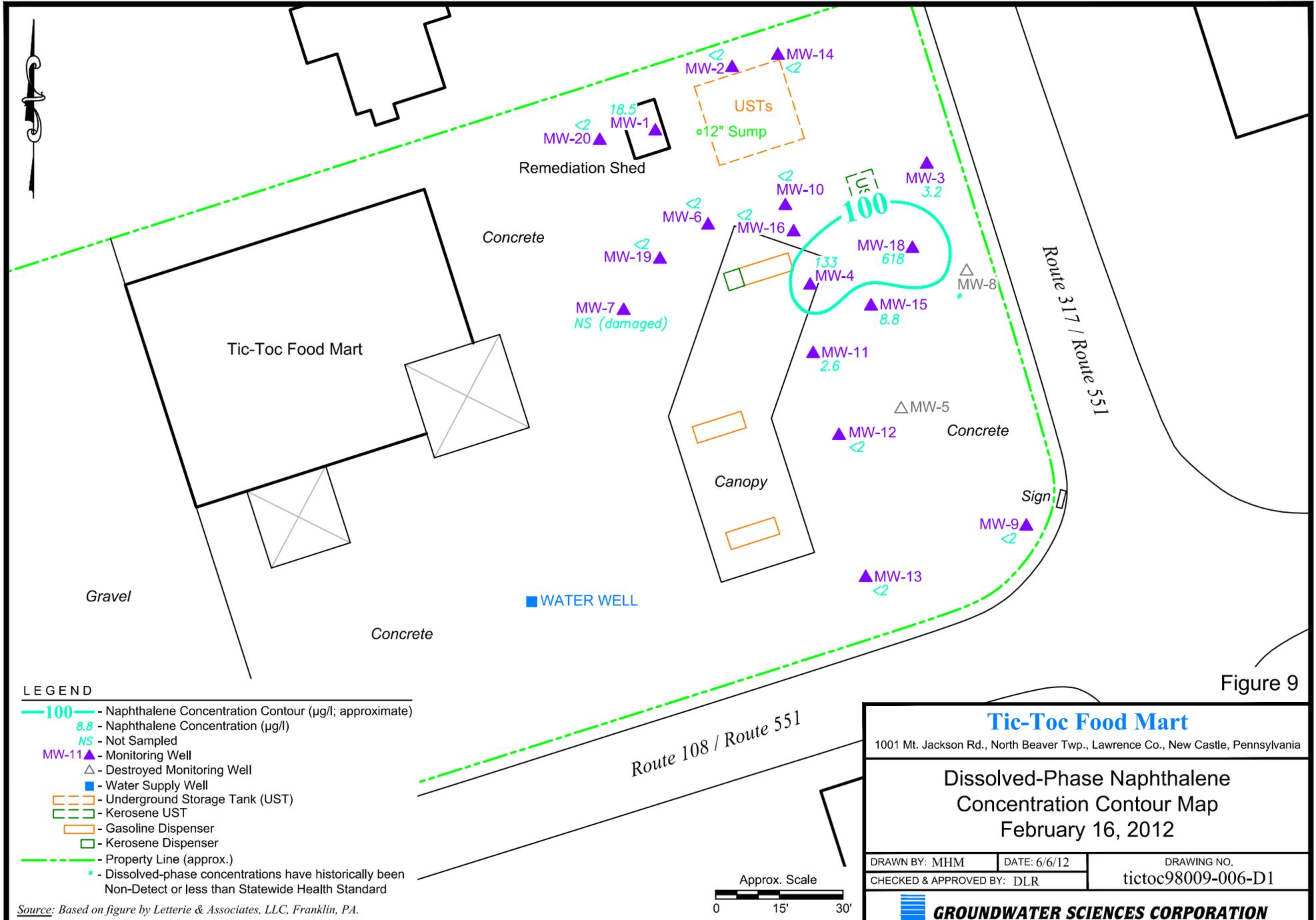


Figure 8

Source: Based on figure by Letterie & Associates, LLC, Franklin, PA.





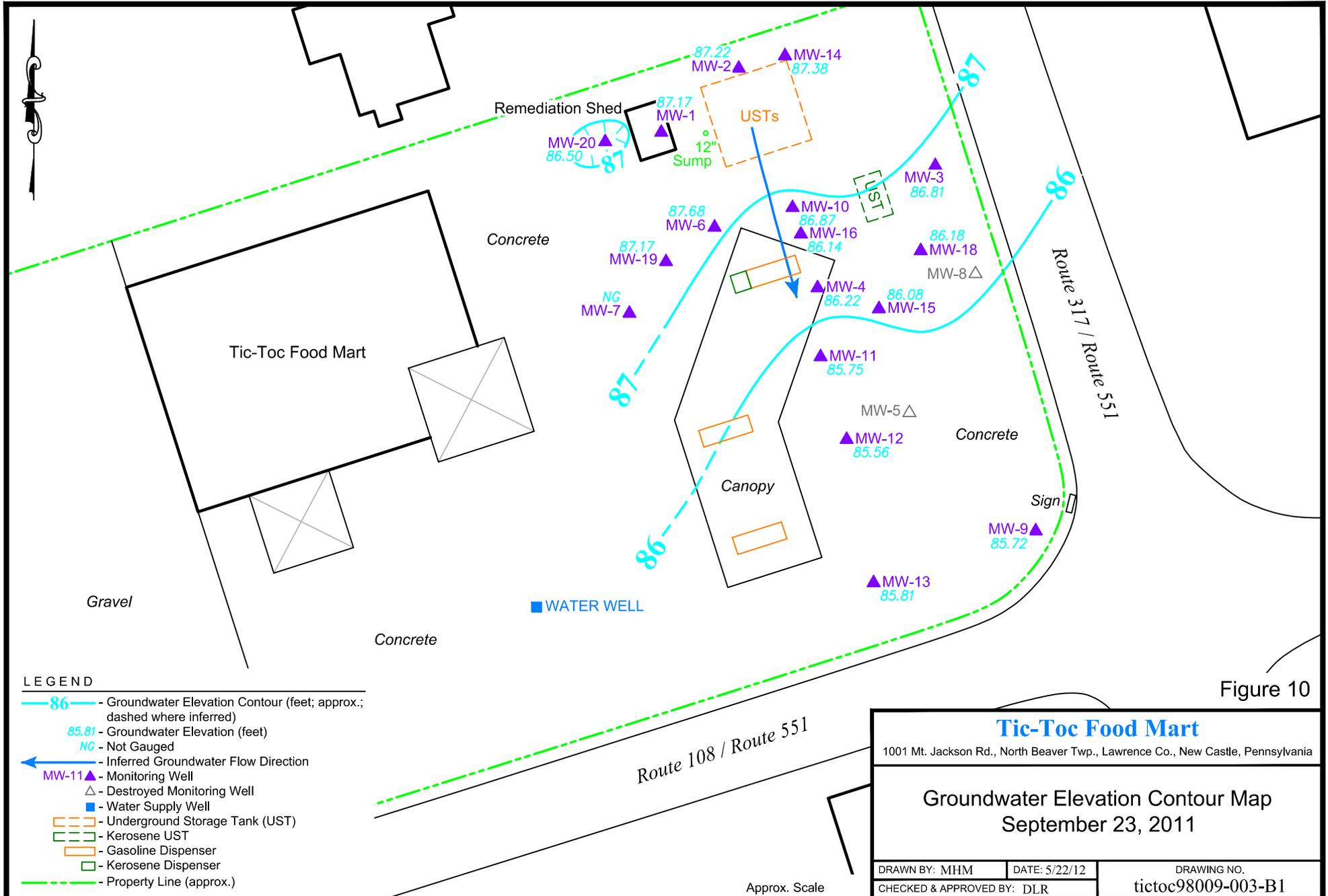


Figure 10

**LEGEND**

- 86 — - Groundwater Elevation Contour (feet; approx.; dashed where inferred)
- 85.81 - Groundwater Elevation (feet)
- NG - Not Gauged
- ← - Inferred Groundwater Flow Direction
- ▲ MW-11 - Monitoring Well
- △ - Destroyed Monitoring Well
- - Water Supply Well
- Underground Storage Tank (UST)
- Kerosene UST
- Gasoline Dispenser
- Kerosene Dispenser
- - - - Property Line (approx.)

Source: Based on figure by Letterie & Associates, LLC, Franklin, PA.



<b>Tic-Toc Food Mart</b>		
1001 Mt. Jackson Rd., North Beaver Twp., Lawrence Co., New Castle, Pennsylvania		
<b>Groundwater Elevation Contour Map</b> September 23, 2011		
DRAWN BY: MHM	DATE: 5/22/12	DRAWING NO.
CHECKED & APPROVED BY: DLR		tictoc98009-003-B1
<b>GROUNDWATER SCIENCES CORPORATION</b>		

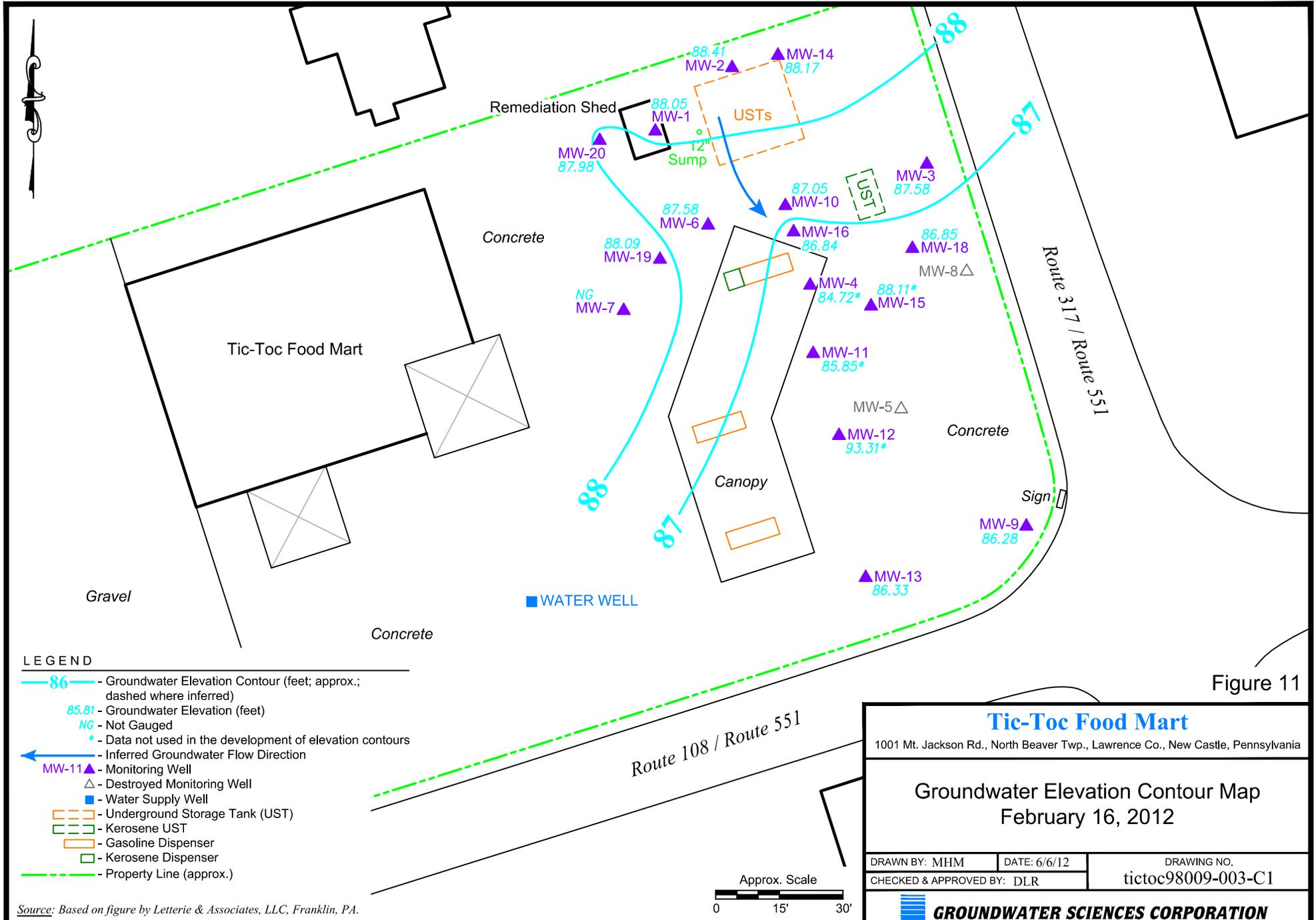


Figure 11

**Tic-Toc Food Mart**  
 1001 Mt. Jackson Rd., North Beaver Twp., Lawrence Co., New Castle, Pennsylvania

**Groundwater Elevation Contour Map**  
 February 16, 2012

DRAWN BY: MHM	DATE: 6/6/12	DRAWING NO.
CHECKED & APPROVED BY: DLR		tictoc98009-003-C1

**GROUNDWATER SCIENCES CORPORATION**

Source: Based on figure by Letterie & Associates, LLC, Franklin, PA.



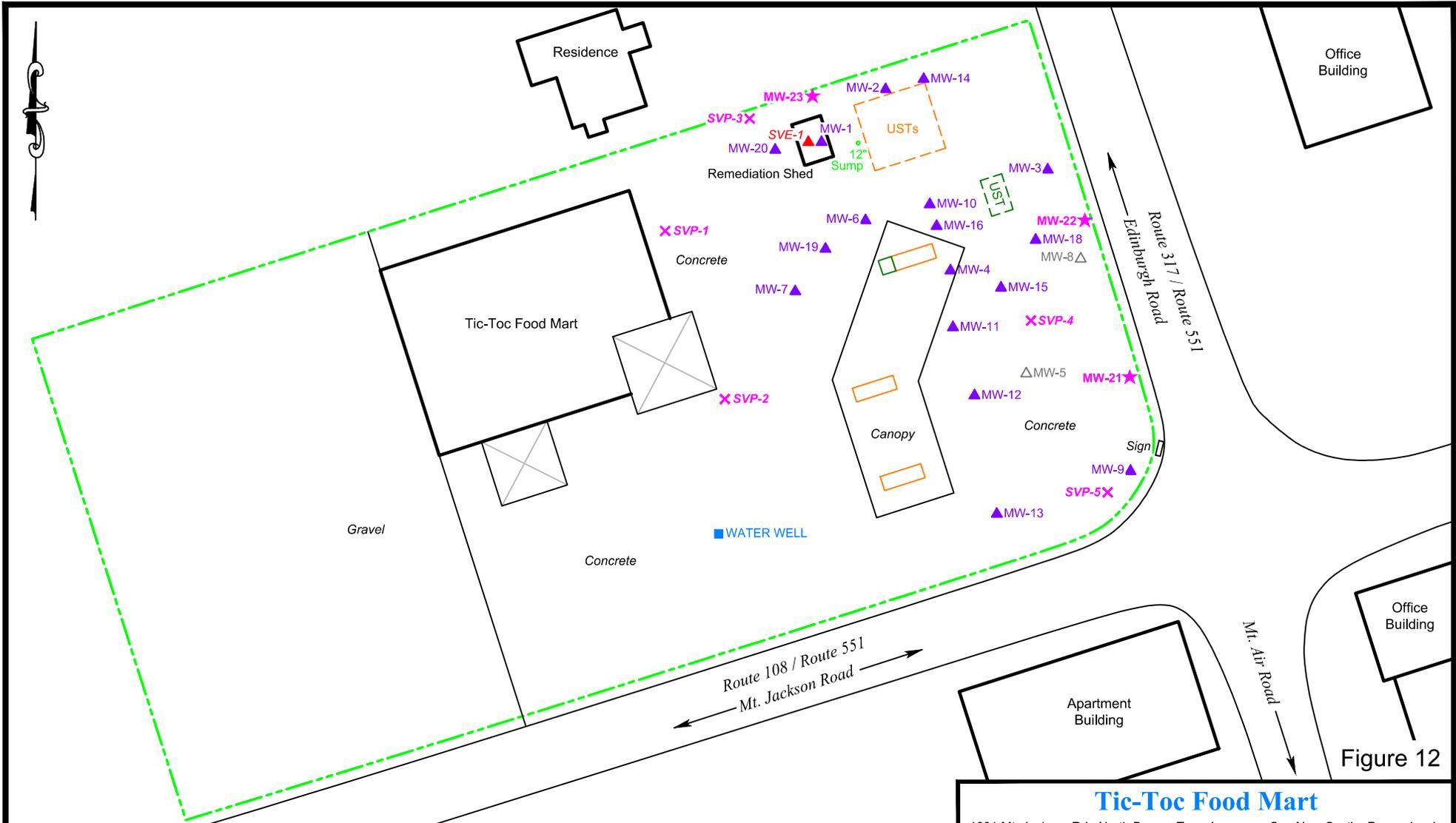
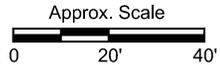


Figure 12

**LEGEND**

- MW-11 ▲ - Monitoring Well
- SVE-1 ▲ - Soil Vapor Extraction Well
- △ - Destroyed Monitoring Well
- - Water Supply Well
- - Property Line (approx.)
- ✕ - Proposed Soil Vapor Monitoring Point
- ★ - Proposed Monitoring Well
- - Underground Storage Tank (UST)
- - Kerosene UST
- - Gasoline Dispenser
- - Kerosene Dispenser



Source: Based on figure by Letterie & Associates, LLC, Franklin, PA.

**Tic-Toc Food Mart**

1001 Mt. Jackson Rd., North Beaver Twp., Lawrence Co., New Castle, Pennsylvania

**Proposed Monitoring Well and Soil Vapor Monitoring Point Locations**

DRAWN BY: MHM DATE: 2/14/12

DRAWING NO.

CHECKED & APPROVED BY: DLR

tictoc98009-002-C1



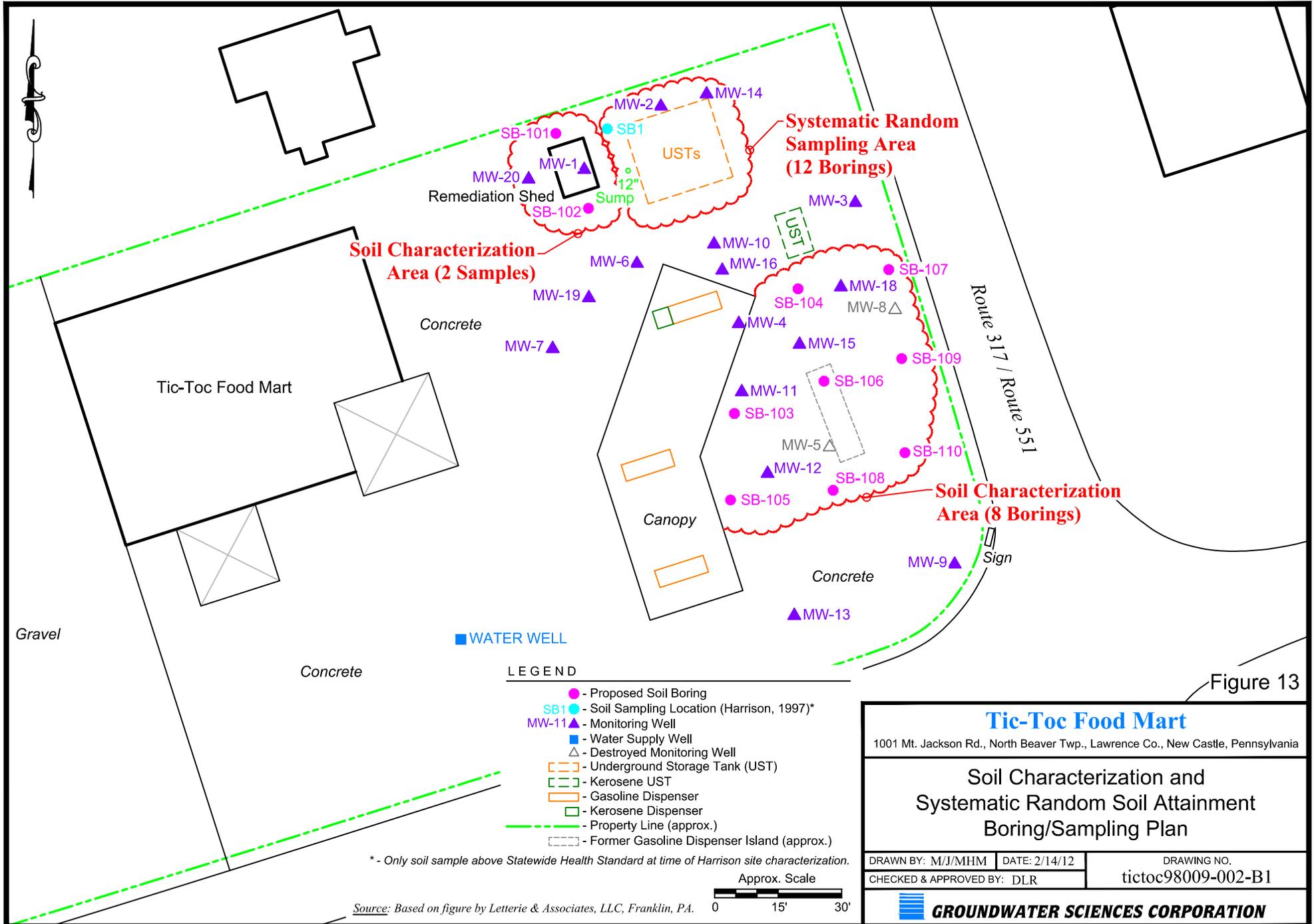


Figure 13

<b>Tic-Toc Food Mart</b>		
1001 Mt. Jackson Rd., North Beaver Twp., Lawrence Co., New Castle, Pennsylvania		
<b>Soil Characterization and Systematic Random Soil Attainment Boring/Sampling Plan</b>		
DRAWN BY: M/J/MHM	DATE: 2/14/12	DRAWING NO.
CHECKED & APPROVED BY: DLR		tictoc98009-002-B1
<b>GROUNDWATER SCIENCES CORPORATION</b>		

\* - Only soil sample above Statewide Health Standard at time of Harrison site characterization.  
 Approx. Scale  
 0 15' 30'  
 Source: Based on figure by Letterie & Associates, LLC, Franklin, PA.