VOLUNTARY INVESTIGATION AND REMEDIATON PLAN

TARA SHOPPING CENTER
8564 TARA BOULEVARD
JONESBORO, GEORGIA
HSI# 10798

Prepared For:

ASHLAND

Dublin, Ohio

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TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

ACRONYMS

Ashland	Ashland Inc.
bgs	below ground surface
cis-1,2-DCE	cis-1,2-dichloroethene
CAP	Corrective Action Plan
COC	Constituent of Concern
CSM	Conceptual Site Model
CSR	Compliance Status Report
ECOSAR	Ecological Structure Activity Relationships
EDR	Environmental Data Resources
EHS Support	EHS Support, Inc.
EPD	Georgia Environmental Protection Division
ERH	electric resistive heating
ESA	Environmental Site Assessment
ET-DSP™	Electro Thermal Dynamic Stripping Process
ft	feet
GAC	granular activated carbon
HSI	Hazard Site Inventory
ISCO	in-situ chemical oxidation
$KMnO_4$	potassium permanganate
lbs	pounds
LDA	large diameter auger
MCL	maximum contaminant level
mg/kg	milligram per kilogram
mg/L	milligram per liter
MNA	monitored natural attenuation
MPE	multi-phase extraction
MSL	mean sea level
NOM	natural occurring matter
NPL	National Priorities List
ORP	oxygen reduction potential
PCE	tetrachloroethene
PRE	Preliminary Risk Evaluation
PRZ	Permeable Reactive Zone
RCRA	Resource Conservation Recovery Act
RRS	risk reduction standard
Site	Tara Shopping Center

S/S	solidification/stabilization
Tara Retail	Tara Retail Holdings, LLC
TCE	trichloroethene
µg/L	micrograms per liter
USDA	Unites States Department of Agriculture
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound

STATEMENT OF LIMITATIONS

This document is intended for the sole use of Ashland Inc. (Ashland). The scope of services performed during this investigation may not be appropriate to satisfy the needs of other users, and any use or re-use of this document or of the findings, conclusions, or recommendations presented herein is at the sole risk of said user.

Background information, design bases, and other data have been furnished to EHS Support, Inc. (EHS Support) by Ashland and/or third parties, which are used in preparing this document. EHS Support has relied on this information as furnished, and where applicable has made an attempt to confirm the accuracy of laboratory data based on available raw data reports.

Opinions presented herein apply to the existing and reasonably foreseeable site conditions at the time of our assessment. They cannot apply to site changes of which EHS Support is unaware and has not had the opportunity to review. Changes in the condition of this property may occur with time due to natural processes or works of man at the site or on adjacent properties. Changes in applicable standards may also occur as a result of legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond our control.

1.0 INTRODUCTION

This Voluntary Investigation and Remediation Plan (VRP application) is being submitted on behalf of Ashland for the former dry cleaner facility at the Tara Shopping Center in Jonesboro, Clayton County, Georgia (Site). The location of the Site is shown on **Figure 1-1**. An aerial photograph of the Site is provided as **Figure 1-2**. The VRP Application Form and Checklist is provided in **Appendix A**. The application fee is provided as a separate attachment. The tax parcel number for the Site is 13242D B001, 4th District. The Tax map and warranty deed information for the Site are included in **Appendix B**.

The structure of this document is designed to comply with Georgia Environmental Protection Division (EPD) VRP application requirements. Due to limitations on the number of figures that should be included within this application, figures supporting the preliminary Conceptual Site Model (CSM) including surface and subsurface setting, the known or suspected source(s) of contamination, contaminant migration, and potential human health and ecological receptors have been included in **Appendix D** of this document. A discussion of the preliminary CSM, including the complete or incomplete exposure pathways that may exist at the Site is discussed in Section 3.0.

1.1 Purpose

The purpose of this VRP application is to provide the information required in Item #5 of the VRP application form and provides all reasonably available information for the Site including historical analytical data, a preliminary CSM with three-dimensional aids, and a preliminary remediation plan for source area remediation and groundwater delineation.

1.2 Property Eligibility

The Site meets the eligibility criteria set forth in the attached VRP application form. A release of a regulated substance(s) on the Site was confirmed in 2005. The Site is not listed on the National Priorities List (NPL), is not currently undergoing response activities required by an order of the Regional Administrator of the United States Environmental Protection Agency (USEPA), and is not required to have a permit under Code Section 12-8-66. Qualifying the Site under the VRP would not violate the terms and conditions under which the division operates and administers remedial programs by delegation or be similar authorization from the USEPA. To the best of Ashland's knowledge, there are no, and never have been, any outstanding liens filed against the Site pursuant to Code Sections 12-8-96 and 13-13-12.

1.3 Participant Eligibility

Ashland is not the owner of the Site but is the VRP applicant overseeing remediation activities at the Site. Ashland has entered into a Remediation Agreement with the Site owner, Tara Retail Holdings, LLC (Tara Retail), which authorizes Ashland to investigate and remediate the Site on behalf of Tara Retail. A copy of the Remediation Agreement is provided as **Appendix C**. To the best of Ashland's knowledge, neither Tara Retail nor Ashland is in violation of any order, judgment, statute, rule, or regulation subject to the enforcement authority of the Director of the Georgia EPD.

1.4 Document Organization

This document is organized into eight sections as follows:

- Section 1: Introduction
- Section 2: Site Background and History
- Section 3: Preliminary Conceptual Site Model
- Section 4: Groundwater Corrective Action Investigation
- Section 5: Proposed Cleanup Standards
- Section 6: Evaluation of Remedial Technologies
- Section 7: Projected Milestone Schedule
- Section 8: References

2.0 SITE BACKGROUND AND HISTORY

The Site as presently configured is approximately a 6.9-acre shopping center known as Tara Shopping Center located between 8554-8600 Tara Boulevard, Jonesboro, Clayton County, Georgia. The shopping center is comprised of two multi-tenant commercial buildings and surrounding parking areas to the west. Dry cleaning operations were conducted between 1970 and 2005 (35 years) by a tenant in the southernmost unit of the west facing multi-tenant building (8564 Tara Boulevard). Historic ownership and operator information were previously provided in historical environmental reports. The Tara Shopping Center is surrounded to the north, west and south by commercial and retail properties, many of which are currently vacant; and, to the east by Fayetteville Road (State Highway 54) and residential properties. The Tara Shopping Center and the location of dry cleaner facility are depicted on **Figure 2-1**.

2.1 Site Development and Dry Cleaner Operational History

The Tara Shopping Center was constructed in the late 1960s. Prior to that time, the property was undeveloped. Historical city directories indicate dry cleaning operations had been present at the property since 1970. The addresses for dry cleaning operations have been identified as 8564 Tara Boulevard and 8564 South Expressway. The dry cleaning facility utilized tetrachloroethene (PCE) in machinery. Reclamation and disposal procedures and processes for spent solvents over the 35 year operational history are unknown. In 2006, residual product drums and dry cleaning equipment were removed and the space was temporarily used as a drop off location for dry cleaning with no on-site processing. To the best of Ashland's knowledge, the dry cleaning facility has been vacant since 2007.

2.2 Regulatory History

A Phase I Environmental Site Assessment (ESA) of the Dunkin Donuts property (8560 Tara Boulevard) immediately south of the Tara Shopping Center was completed in August 2004(Qore, 2004). The Dunkin Donuts property is identified as Site #15 on **Figure 1-2**. The Phase I report identified the Tara Shopping Center dry cleaning facility as a recognized environmental condition and a limited site investigation of the Dunkin Donuts property was completed in September 2004. PCE and trichloroethene (TCE) were identified in groundwater above Georgia EPD Maximum Contaminant Levels (MCLs) for drinking water. The owner of the Dunkin Donuts property submitted a Release Notification/Reporting Form to the Georgia EPD Hazardous Sites Response Program in November 2004 and the Dunkin Donuts property was subsequently listed on the Georgia EPD Hazardous Site Index (HSI # 10798).

In late 2004, Georgia EPD speculated that releases from Tara Shopping Center dry cleaning facility were the probable source of impacts to the Dunkin Donuts property and concluded that releases of regulated substances had occurred at dry cleaning facility. The Tara Shopping Center was subsequently co-listed on HSI #10798 (Georgia EPD letter dated April 26, 2005).

As a result, Alterman Enterprises, Ltd (former property owner of Tara Shopping Center and referred to as Alterman) identified Mr. Kenneth Babb, the owner of the dry cleaning facility, as a responsible person under the Hazardous Site Response Act (HSRA) to Georgia EPD. In turn, Mr. Babb identified Ashland as a supplier of PCE as a dry cleaning solvent, and alleged that, on one or more occasions, a spill of PCE had occurred in connection with Ashland's delivery of PCE to the dry cleaning facility. However, only one documented release from the delivery of the PCE to the dry cleaners has been verified to date (<2 gallons). As a result of this contention, Ashland was also identified by Georgia EPD as a responsible party under HSRA.

2.3 Sources of Release

Results of subsurface investigations indicate that releases of regulated substances to soil and groundwater, specifically PCE, have occurred at the dry cleaning facility at levels above the Georgia EPD Risk Reductions Standards (RRSs) for Type 1 (Residential) and Type 3 (Non-Residential) scenarios under HSRA Environmental Rule 391-3-19-.07. Releases of PCE were reported to have occurred at the back (east) door of the dry cleaning facility in 1994 and two releases to the sewer drain in 1996 and another date unknown. Such releases were discussed in the Site's initial Compliance Status Report, dated October 18, 2006 (URS Corporation [URS], 2006a).

2.4 History of Environmental Assessments

Environmental assessments have been completed by Ashland and by the property owners of the Tara Shopping Center (Alterman and now Tara Retail) to delineate the horizontal and vertical extent of PCE impacts to soil and groundwater, including PCE degradation products trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE) and to a lesser extent vinyl chloride. A summary of environmental investigation reports currently available for the Site are listed below:

Alterman Investigation

- Limited Phase II Environmental Site Assessment, Tara Plaza Shopping Center, Dry Cleaner Location, 8564 Tara Boulevard, Jonesboro, Georgia 30236. July 11, 2005. (Environmental Planning Specialists, Inc. [EPS], 2005)

Ashland Investigation

- Compliance Status Report, Tara Shopping Center, 8564 Tara Boulevard, Jonesboro, Georgia, October 18, 2006 (URS, 2006a.
- Revised Compliance Status Report, Tara Shopping Center, 8564 Tara Boulevard, Jonesboro, Georgia, November 30, 2006 (URS, 2006b).
- Groundwater Corrective Action Plan, Tara Shopping Center, Jonesboro, Georgia, March 20, 2009 (URS, 2009a).
- In-Situ Remediation Pilot Test Workplan, Jonesboro, Georgia, August 10, 2009 (URS, 2009b).
- Groundwater Corrective Action Plan Addendum for Tara Shopping Center, Jonesboro, Georgia, September 28, 2009 (URS, 2009c).
- PRZ Pilot Test Progress Report, Tara Shopping Center, January 18, 2010 (URS, 2010a).
- PRZ Pilot Test Progress Report, Tara Shopping Center, April 21, 2010 (URS, 2010b).
- 3rd PRZ Pilot Test Progress Report, Tara Shopping Center, August 6, 2010 (URS, 2010c).

- Surface Water Quality letter report, Tara Shopping Center, September 17, 2010 (URS Corporation).
- Proposed Surface Water Monitoring Plan, Tara Shopping Center, 8564 Tara Boulevard, Jonesboro, Georgia, February 3, 2011 (EHS Support Inc. [EHS, 2011a).
- Surface Water Monitoring Report, Tara Shopping Center, 8564 Tara Boulevard, Jonesboro, Georgia, May 23, 2011 (EHS, 2011b.).
- Pilot Test Effectiveness Report and Groundwater Corrective Action Investigation Workplan, Tara Shopping Center, 8564 Tara Boulevard, Jonesboro, Georgia, July 8, 2011 (EHS, 2011c).
- Surface Water Monitoring Report, Tara Shopping Center, 8564 Tara Boulevard, Jonesboro, Georgia, December 21, 2011 (EHS, 2011d).

Tara Retail Investigation

- Phase Soil Treatment Design for Areas 2 and 3, Tara Shopping Center, Jonesboro, Clayton County, Georgia, December 2010 (Peachtree Environmental, Inc.).
- Remedial Design Report, In-Situ Thermal Treatment of the Tara Shopping Center, Jonesboro, Georgia, Final Version, December 7, 2010 (Peachtree Environmental, Inc.).

Analytical data from investigations completed as part of investigation of dry cleaning operations are provided in this VRP application. This data was used to develop the preliminary CSM presented in Section 3.0, proposed groundwater investigation activities in Section 4.0 and Source Area remediation presented in Section 5.0. The following table **(Table 2-1)** presents a chronological summary of the investigations conducted at the Site to date along with the historical documents associated with each investigation.

Table 2-1: Chronology of Investigation Activities

Date/Party	Task	Report
2005 Alterman Enterprises, Ltd.	Alterman Enterprises, Ltd completed a Limited Phase II ESA at the Tara Shopping Center in June 2005. Two sub-slab soil samples were collected beneath dry cleaning facility (**SB-1 and SB-2**) and a surface soil sample and a grab groundwater sample were collected immediately south of the dry cleaning facility from temporary monitoring well **TMW-1**. • PCE was detected in soil beneath the dry cleaning facility at a concentration of 15 milligrams per kilogram (mg/kg). • PCE was detected in subsurface soil south of the dry cleaning facility at a concentration of 1,200 mg/kg. • PCE was detected in groundwater at a concentration of 48,000 microgram per liter (µg/L) between 28 and 32 feet below ground surface (ft bgs) from a temporary monitoring well (TMW-1). Soil boring locations are identified on **Figure 2-2**. A summary of the analytical results is provided in **Table 2-2.**	*Limited Phase II Environmental Site Assessment* dated July 11, 2005 (EPS, 2005)
2006 Ashland	Ashland initiated soil investigation activities in March 2006. Seventy-two soil samples were collected from 22 soil borings (**SB-1 through SB-22**). • Four borings were completed inside the dry cleaning facility in the vicinity of the dry cleaning machine (SB-19 through SB-22). • Six borings were completed outside the dry cleaner facility, along the south and east exterior walls (SB-1 through SB-6). • Twelve borings were completed cross-gradient, and downgradient of the dry cleaning facility at the Tara Shopping Center, the Lumsden Property (Prax Air), and at the intersection of Tara Boulevard and Fayetteville Road (SB-7 through SB-18). PCE, TCE, and cis-1, 2-DCE were detected in 13 of the 22 soil borings installed during the investigation. Soil boring locations are identified on **Figure 2-2**. A summary of the analytical results is provided in **Table 2-2.**	Compliance Status Report, Tara Shopping Center, October 18, 2006 (URS, 2006a) Revised Compliance Status Report, November 30, 2006 (URS, 2006b)

	Ashland installed 16 monitoring wells (**MW-1A through MW-9A and MW-1B through MW-9B**) to further delineate the horizontal and vertical extent of the groundwater impacts. Three vertical zones were designated as Upper Residuum (A-Zone), Lower Residuum (B-Zone), and Upper Bedrock (C-Zone). The highest concentration of VOCs was detected immediately adjacent to the dry cleaning facility in upper residuum monitoring well MW-2A. The PCE concentration in this well was 51,000 µg/L (total VOCs 56,300 µg/L). Monitoring well locations are identified on **Figure 2-2**. **Table 2-3** presents the monitoring well construction details. A summary of the groundwater analytical results is provided in **Table 2-4**.	
2007-2008 Tara Retail	In 2007, Alterman Enterprises, Ltd sold the Tara Shopping Center to Tara Retail. Tara Retail submitted a *Prospective Purchaser Corrective Action Plan* (PPCAP) to Georgia EPD to address impacted soils at the Site. Between 2007 and 2008, Tara Retail conducted soil sampling for VOC analyses and synthetic precipitation leaching potential (SPLP) testing (**P-1 through P-60**). Soil sampling was focused on delineating the soil impacts associated with the dry cleaning facility. The SPLP results were submitted to Georgia EPD and a RRS of 2 mg/kg for PCE was approved. Soil boring locations and analytical results are identified on **Figure D-17 (Appendix D).**	*Not Available.*
2008 Ashland	In 2008, Ashland completed Phase III Investigation activities to further evaluate the horizontal and vertical extent of groundwater impacts. Investigation activities were conducted in three separate events between March 2008 and December 2008. Twenty-two wells were installed and included: • Six bedrock monitoring wells (**MW-1C, MW-2C, MW-5C, MW-7C, MW-8C, MW-9C)**; • Three on-site well clusters to the southwest (**MW-10A,B,C and MW-11A,B,C**) and south of the building (**MW-12A**); • Three off-site downgradient well clusters **MW-13A,B,C, MW-15A/B and MW-16A/B/C**;	Groundwater Corrective Action Plan, March 20, 2009 (URS, 2009a) Groundwater Corrective Action Plan Addendum, September 28, 2009 (URS, 2009c)

	and • One on-site upgradient well **MW-14A**. Monitoring well locations are identified on **Figure 2-2**. **Table 2-3** presents the monitoring well construction details. A summary of the groundwater analytical results is provided in **Table 2-4**. Ten soil borings (**SB-23 through SB-32**) were installed west of the former dry cleaners along the west side of Tara Boulevard. Groundwater was not encountered in soil borings SB-23 through SB-25 due to shallow bedrock; however, groundwater was encountered in SB-26 through SB-32. Therefore, groundwater samples were collected from these borings and analyzed for VOCs. Straddle packer groundwater sampling and geophysical logging were completed on bedrock well MW-16C and a full round of groundwater samples was collected from the monitoring well network. In December 2008, six additional soil borings (**SB-33 through SB-38**) were drilled and sampled below the water table to characterize groundwater in the Source Area. Soil samples were collected on 10-foot centers using a direct push macro-core sampler starting at the water table. Four groundwater samples were collected from each location from a depth of 28 to 57 ft bgs. The soil samples and groundwater sample were analyzed for VOCs. Soil boring locations are identified on **Figure 2-2**. A summary of the analytical results is provided in **Table 2-2.**	
2009-2011 Ashland	A pilot test for in-situ chemical oxidation (ISCO) was proposed at the downgradient boundary approximately 150 ft downgradient of the Source Area. A permeable reactive zone (PRZ) was proposed to intercept the migrating groundwater plume while actively treating groundwater migrating off-site. The objective of the ISCO Pilot Test was to determine the effectiveness of potassium permanganate (KMnO4) in reducing concentrations of Site VOCs in groundwater to below their respective RRSs and to determine the effectiveness of utilizing soil fracturing in the upper and lower residuum to enhance the permeability of the low permeability soils at the Site and allowing the KMnO4 slurry to more fully disperse aerially and thus increasing mass destruction.	In-Situ Remediation Pilot Test Workplan, August 10, 2009 (URS, 2009b) PRZ Pilot Test Progress Report, January 18, 2010 (URS, 2010a) PRZ Pilot Test Progress Report, April 21, 2010 (URS, 2010b) 3rd PRZ Pilot Test

	Routine groundwater sampling was completed to monitor concentrations of VOCs and water quality parameters from designated well clusters **MW-2A/B/C, MW-8A/B/C, MW-10A/B/C, and MW-11A/B/C**, as well as from newly installed monitoring well **MW-17A.** The results of routine sampling were provided in three PRZ Pilot Test Progress Reports and the final Pilot Test Effectiveness Report. Monitoring well locations are identified on **Figure 2-2**. A summary of the groundwater analytical results is provided in **Table 2-4.** A summary of geochemical parameters for these wells is provided in **Table 2-5.**	Progress Report, August 6, 2010 (URS, 2010c) Pilot Test Effectiveness Report and Groundwater Corrective Action Investigation Workplan, July 8, 2011 (EHS, 2011c)
	A total of 12 surface water samples have been collected and analyzed for VOCs from the unnamed creek downgradient of the Tara Shopping Center between October 2009 and November 2011. Surface water sample locations are depicted on **Figure D-26 (Appendix D).** A comprehensive summary of surface water analytical results is provided as **Table 2-6.**	Surface Water Quality letter report, September 17, 2010 (URS, 2010d) Proposed Surface Water Monitoring Plan, February 3, 2011 (EHS, 2011a) Surface Water Monitoring Report, May 23, 2011 (EHS, 2011b) Surface Water Monitoring Report, December 21, 2011 (EHS, 2011d)

3.0 PRELIMINARY CONCEPTUAL SITE MODEL

The preliminary CSM is intended to establish a common knowledge base about the Site and its environmental condition, to facilitate the development of basic remedial action objectives appropriate for the Site, and to allow informed decisions regarding possible corrective action measures for the Site. Figures presenting the preliminary CSM are included in **Appendix D** and have been referenced as **Figure D-1 through D-26**).

3.1 Topography

Based on a review of the United States Department of Agriculture (USDA), Soil Conservation Service (SCS), Soil Survey of Clayton County, Georgia (issued 1979); the soils beneath the Site are classified as Urban Land. The landscape in which this soil unit is found primarily consists of ridges and hillsides associated with drainage ways and flood plains. The soil unit consists mainly of areas of soils that have been altered by cutting, filling, and shaping during preparation for construction and paving. Urban land mainly includes business districts, shopping centers, parking lots, motels, industries, and housing developments.

Review of the topographic map for the Site indicated that the shopping center property is located at or near a topographic high point. The shopping center property is approximately 900 ft above mean seal level (**Figure 1-1**). The northern half of the shopping center property appears to slope generally to the north-northwest. The southern half of the shopping center property (including the area of the dry cleaning facility) appears to slope generally to the south-southeast and south-southwest. Drainage for the area is directed to the Flint River and its tributaries west of the Site. The Flint River is located approximately one mile west of the Site **(Figure D-1).**

Surface water runoff from, and in the immediate vicinity of, the shopping center property is complex. Because the property is located at a topographic high, radial surface sheet flow is suspected, with the majority of runoff directed towards Tara Boulevard. At the front entrance of the property (west), surface runoff is to the west and southwest toward Tara Boulevard. At the rear entrance of the shopping center (east) in the area of the subject dry cleaner, sheet flow is directed south and southeast toward Fayetteville Road. Stormwater is captured at Fayetteville Road and Tara Boulevard by open drainage ditches and directed to catchment basins and storm sewers **(Figure D-2).**

3.2 Regional Geology

The Site is located in the Piedmont Physiographic Province. The portion of the Piedmont located within Clayton County is characterized by broad convex ridge tops dissected by many drainage ways. Slopes are gentle to strong, except near major streams where slopes may be short and steep. The surrounding area exhibits a moderate relief with gently rolling hills **(Figures D-3 and D-4).**

The Piedmont Province is underlain by a complex sequence of igneous and metamorphic rocks. The metamorphic rocks consist mainly of regionally metamorphosed older sedimentary sequences and igneous rocks, which have been subsequently folded and intruded by younger materials. The metamorphic sequences are the predominant rock type in the Piedmont. Most of Clayton County is underlain by non-porphyritic granite that has been subject to geologic erosion and generally is deeply weathered. The weathering has resulted in a relatively thick layer of saprolite (unconsolidated, weathered rock) and soil beneath the ground surface. Based on review of the Geologic Map of Georgia (Georgia Department of Natural Resources, 1976), the area around the Site is underlain by non-porphyritic granite.

3.3 Site Hydrogeology

The geology of the Site consists of fill ranging from 4 to 8 ft which is characterized by varying proportions of sand, silt, and clay with gravel. Below the fill is a residuum of primarily red brown sandy silt and clay. The residuum grades downward with a coarsening sequence of less fines. Saprolitic (highly weathered granitic bedrock) conditions exist within about 10 to 15 ft of the top of bedrock. Saprolite typically has a higher transmissivity for groundwater flow, however in some instances the upper residuum with a localized more permeable layer may have a greater permeability compared to the saprolite. Bedrock was encountered (auger refusal) between 40 and 50 ft bgs at the Site. However, depth to bedrock varied across the investigation area from approximately 25 to 60 ft bgs.

The cross section location map (**Figure D-5)** provides the location of three cross sections that illustrate the hydrogeology of the Site. Cross sectional information is provided on **Figure D-6.** Cross section A-A' illustrates a cross-section from north to south from Fayetteville Road at the midpoint of the shopping center, south along Tara Boulevard at the Citgo gas station. Cross section A-A' shows that the bedrock drops in elevation from MW-1C to MW-6B, which is similar to the decrease in ground surface elevation. Cross section B-B', is oriented form northeast to southwest across the Site and illustrates that the depth to bedrock decreases from east to west. Cross-section C-C' trends east-west across the Prax Air property (formerly Pye Barker) located south of the Site and illustrates a decrease in depth to bedrock from east to west. A block diagram of the Site hydrogeology is shown in **Figure D-7**.

Groundwater occurs in the residuum above the bedrock under unconfined conditions and is hydraulically connected to the upper bedrock through fractures. Groundwater flow across the Site is generally toward the southwest. In May 2011 (latest comprehensive monitoring event), groundwater was encountered at 26.32 ft bgs at MW-10A to 20.46 ft bgs at MW-9A approximately 120 ft downgradient of the former dry cleaners. Groundwater contour maps for the Upper and Lower Residuum and Bedrock Aquifer based on the May 2011 gauging data is provided as **Figures D-8 through D-10,** respectively.

Provided below is a summary on regional groundwater flow regimes and hypothetical local groundwater flow settings used to establish the preliminary CSM for groundwater at the Site.

3.4 Aquifer Systems

There are eight major aquifer systems in the state of Georgia (**Figure D-3**). The Site, located just south of greater Atlanta, is underlain by a surficial aquifer mostly composed of clay-rich saprolitic sediments which is in-place weathered residuum of the crystalline bedrock. The crystalline bedrock is part of the regional Piedmont aquifer system (Piedmont and Blue Ridge Provinces). The bedrock underneath the Site area is granite and amphibolite with fracture development closer to the bedrock surface (URS, 2009a). The idealized hydrology of the Piedmont aquifer system as conceptualized by Miller (1990) and Legrand (2004) from an original framework published by Toth (1963) and is illustrated in **Figure D-4.** In the Piedmont aquifer system, the groundwater flow domain is localized to watershed scales. The characteristics of a groundwater setting within a small drainage basin are as follows:

- The watershed boundary at the ridgeline generally coincides with groundwater flow divides.
- Groundwater within the watershed naturally flows to surface drainage.
- Groundwater in the residuum (soil, alluvium, and saprolite) is locally recharged from precipitation, exhibits inter-granular flow and discharges to nearby perennial streams.
- Groundwater in the bedrock is recharged through leakage from the overlying residuum and discharges to nearby perennial streams. In this regard, groundwater in the bedrock and the residuum share common hydrologic boundaries. Groundwater flows through interconnected fractures and may be more circuitous than those in the residuum.
- The potentiometric surfaces of both the residuum and the bedrock generally mimic a subdued expression of land surface topography (in the absence of major groundwater withdrawals).

3.5 Groundwater Flow Domain

Based on the hydrologic characteristics of the Piedmont aquifer system, the groundwater flow domain surrounding the Site area can be conceptualized by watershed boundaries (**Figure D-1**). The Site is situated within the watershed to the headwaters of the Flint River. The watershed boundaries which follow topographic ridgelines coincide with a natural groundwater divide that defines the flow regime. Therefore, groundwater is contained within each watershed and discharges to perennially flowing surface drainage that intercept the water table. Additionally, groundwater cannot cross watershed boundaries.

On this basis, the hydraulic upgradient regions at the Site are to the east and the south-southeast where the watershed boundary generally delineates the groundwater divides between the current watershed and the Upper Little Cotton Indian Creek watershed (east) and the Murphy Creek-Flint River watershed (south-southeast).

In the Site area, all possible and potential downgradient discharge boundaries for groundwater are the surface drainage features including the previously identified intermittent stream (i.e., unnamed creek) located immediately west of Tara Boulevard that discharges to the unnamed tributary northwest of the Site and ultimately discharges to the Flint River west of the Site **(Figure D-2).** Of these, the unnamed creek is considered to be a discharge boundary to off-site groundwater mostly because of its proximity – it is closest to the Site.

The extent and magnitude of the unnamed creek as a receptor to groundwater flow in the residuum and the bedrock are currently not well understood. There are, however, some incomplete lines of evidences that support groundwater contribution to the unnamed creek. The following section summarizes some of these characteristics based on flow characteristics, surface topography, bedrock structure and surface water quality.

3.6 Local Groundwater Flow Setting

Site specific field data (i.e., groundwater elevations, gradients, etc.) between 2008 through 2011 were used to assist in estimating the local groundwater flow setting discussed below. **Figure D-2** displays surface water drainage and land topography in the Site area.

Groundwater Flow Directions and Plume(s) Migration Pathways
The primary migration pathways of the groundwater plume exiting the Site is oriented towards the unnamed creek west of Tara Boulevard inferring possible groundwater discharge to this surface drainage. This is displayed by the potentiometric surfaces of the upper and lower residuum and bedrock aquifer units (**Figures D-8 through D-10**). The unnamed creek is a 3rd order (Strahler classification) drainage feature that connects to an unnamed tributary to its north flowing west into the Flint River (**Figure D-2**).

Creek Topography
The unnamed creek is approximately 2,300 ft long. The estimated elevations from the creek's headwater to its downriver confluence with the unnamed tributary are approximately 880 ft, Mean Sea Level (ft, MSL) to less than 820 ft, MSL (**Figure D-2**). This relatively large elevation range indicates that the unnamed creek could intercept nearby groundwater. For instance, based on twelve measurements between 2008 and 2010, the average groundwater elevation at well MW-15B, approximately 200 ft east of the creek headwater is 868.04 ft, MSL. Applying an average groundwater gradient of 0.0067 ft/ft (between MW-2B and MW-15B), the estimated groundwater elevation is 5 ft higher than the creek where its streambed is approximately 860 ft, MSL. The relationship suggests the creek does intercept the water table relatively close to its headwater.

Vertical Flow Relationships near a Discharge Boundary
Figure D-11 illustrates an idealized groundwater flow in the vicinity of surface water drainage. Both conceptualizations portray the vertical flow domain longitudinal (parallel) to the surface water flow direction. In the first conceptualization, the streambed is incised into the residuum **Figure D-11 (left**). The head equipotentials and groundwater streamlines illustrate conditions for vertical flow. Where the water table is high, there is a vertical separation of groundwater heads and the head gradient is positive with depth – groundwater heads decrease with increasing depth. Therefore, the net groundwater flow direction is primarily downward.

A reversed condition is shown approaching the stream headwater. There is a vertical separation of groundwater heads and the head gradient is negative with depth – groundwater heads increase with decreasing depth. Therefore, the net groundwater flow direction is primarily upward and groundwater in the residuum and bedrock discharges to the stream when heads exceed the surface water elevation at the stream bank.

A variation to this conceptualization is displayed in **Figure D-11 (right)**. The negative hydraulic gradient approaching the stream headwater does not extend into the bedrock and hence, groundwater discharge occurs in the residuum only. In this event, bedrock groundwater flows further downstream and is discharged when its head is greater than the surface water elevation and typically where the streambed is incised into bedrock or very close to the bedrock surface.

In order to evaluate for similar characteristics, the vertical relationships of groundwater heads were evaluated for each well nest in the monitoring network. **Figure D-12** presents average groundwater head differences (in ft) between monitoring wells screened in the upper residuum and the lower residuum.

A negative value indicates the groundwater head in the lower residuum is greater than the upper residuum indicating an upward flow. A positive value indicates the reverse condition and vertical flow is downward.

As shown, the vertical head differences within the Site are positive indicating downward flow. In the off-site region monitored by monitoring wells MW-15 A/B and MW-16 A/B, the head differences are reversed inferring an upward flow direction. Additionally, there is a recognizable trend in the magnitude of the head differences as shown in the dashed regions. These characteristics suggest that groundwater flow in the residuum (upper and lower) likely will discharge into the unnamed creek.

Figure D-13 presents average groundwater head differences (in ft) between monitoring wells screened in the bedrock and the lower residuum. Unlike groundwater in the residuum, the vertical head differences are all positive, initially suggesting an area-wide downward flow. Additionally, the magnitude of the head differences varies widely– some monitoring wells showing unusually large vertical head separations.

It is concluded the water level data set for the bedrock wells may exhibit artifacts that bias their interpretation. **Figure D-14** displays some of these artifacts. In the figure, the groundwater hydrographs to four monitor well nests are presented. Idealistically, the groundwater trends in all water bearing depths (upper/ lower residuum and bedrock) should track together – representing a highly connected groundwater system. This characteristic is displayed by the hydrographs to monitoring wells MW-11 A/B/C showing a relatively consistent head separation between the bedrock and the lower residuum (average 0.59 ft).

However, the hydrographs to monitoring wells MW-8C and MW-2C exhibit water level trends characteristic of induced drawdown with very slow bore-hole recovery. Since the bedrock aquifer is not pumped in the region, it is believed the drawdown at these wells were likely induced from heat pulse flow testing for aquifer characterization (October 2008) and contributed further by subsequent groundwater sampling that were relatively frequent between October 2009 and August 2010. In either case, at well MW-8C, it is shown that the resulting lowered water level did not fully recover since after the August 19, 2009 water level survey. The water level is about half-way to static conditions after 3 months between sampling events.

The water level trends at some of the bedrock wells show that aquifer transmissivity in the fractured media is significantly variable and in some areas, extremely small. Additionally, the induced water level trends represent a localized condition in the immediate region of the well and may not be representative of the formation head. The phenomenon is similar to well loss effects during pump tests (water loss primarily in the bore-hole but not in the immediate formation) followed by very slow seepage of formation water back into the bore-hole.

This phenomenon may also apply to water level trends at monitoring well MW-16C (**Figure D-15)**. The first two water level measurements at MW-16C on October 2008 resulted in bedrock heads that were greater than groundwater heads at wells MW-16A and MW-16B (average head separation 0.2 ft). The next two measurements (August 2009; October 2009) exhibited significantly lowered water levels in the bedrock well that did not follow trends observed at MW-16A and MW-16B. If the water level trends at well MW-16C is an induced artifact (such as well purging during groundwater sampling or heat pulse flow tests), its groundwater elevations may be misleading – especially in the evaluation of vertical head separation to demonstrate groundwater discharge.

Conceptualized Groundwater Flow Paths

Based on the limited evaluation of lateral groundwater flow, vertical head separation and surface topography of the unnamed creek, some generalizations are made for possible discharge scenarios. In **Figure D-15**, it is conceptualized that groundwater in the residuum (upper and lower) could discharge to the unnamed creek. Based on average groundwater heads at wells MW15A/B and MW-16A/B and hydraulic gradients, it is anticipated that groundwater seepage could occur relatively nearby the headwater area of the creek where the streambed elevation is less than approximately 865 ft, MSL (**Figure D-15, path "A"**).

The anticipated discharge scenario for the bedrock is relatively complex due to the bedrock structure. The bedrock surface exhibits signs of structural deformation in the area – likely due to faulting. This rationale is based on bedrock surface elevations (at least within the area shown in **Figure D-15**).

From south to north, the bedrock surface elevations at monitoring wells MW-16C, MW-15C and MW-8C are very similar (837 ft, MSL to 839 ft, MSL). At well MW-7C, the bedrock surface is at least 25 ft higher (864 ft, MSL). Additionally, five soil borings drilled north of well MW-15B (dashed in the figure) were dry and shallow bedrock was encountered. This area is also coincident with near right-angle land topographic contours exhibited by the 880 ft, MSL and the 890 ft, MSL contours. These characteristics cumulatively suggest faulted bedrock within the area. The structural setting and groundwater flow can be visualized in the illustration presented in Figure 2 – showing a water body on top of a fault with the up-thrown block ("U") forming one river bank and the down-thrown block ("D") on the opposite river bank.

In this conceptualized setting, bedrock groundwater in the southern bank of the unnamed creek (**Figure D-15, path "B"**) flows parallel to the unnamed creek until bedrock surface is encountered further downgradient – estimated where the streambed is less than 840 ft, MSL. In the northern bank of the unnamed creek (**Figure D-15, path "C"**), the bedrock groundwater discharge is relatively inconclusive- either discharging near outcrop areas that may occur closer to the headwater of the creek or further downgradient. Additionally, it is noted that groundwater north of wells MW-15 A/B may primarily occur in the bedrock since the residuum was unsaturated due to the bedrock structure.

3.7 Contaminants of Concern

The primary contaminants of concern (COCs) are PCE and its degradation products, TCE, and cis-1,2-dichoroethene (cis-1, 2-DCE) and to limited extent vinyl chloride. The highest concentrations of PCE have been detected in soil and groundwater beneath and in the immediate vicinity of the former dry cleaners. This area of principal contamination is hereinafter referred to as the Source Area and consists of 5 subareas: Area 1, Area 1a, Area 1b, Area 2, and Area 3 which were developed for the purposes of calculating mass in place and developing source area remedial options (**Figure D-16**).

This VRP application outlines the options to remediate PCE (and its degradation products) in the Source Area at the Site, discusses previous successes and challenges with prior remedy selection, and discusses additional investigation which needs to be performed in order to evaluate a remedy for the downgradient groundwater plume. The extent of known impacts and the proposed media delineation standards are discussed below.

3.8 Media Delineation Standards

The following sections identify the standards that have been used historically and will continue to be used for the investigation and delineation of impacts in soil, groundwater, and surface water both on and off-site.

3.8.1 Soil and Groundwater Delineation Standards

Under HSRA, Ashland and Tara Retail are required to demonstrate compliance with corrective action requirements set forth in Georgia EPD Risk Reduction Standards (391-3-19-.07). Ashland and Tara Retail have submitted individual corrective action plans proposing RRSs for the Site. The Georgia EPD approved Site specific RRS for soil and groundwater in their technical response documents dated March 11, 2008, September 28, 2008, and June 26, 2009. In December 2009, Georgia EPD adopted amendments to HSRA and established Type 1/Type III RRSs for cis-1,2-DCE. Provided below are current RRSs for the primary COCs at the Site.

Soil Risk Reduction Standards	**mg/kg**	**RRS**[1]
PCE	2	Type 1/Type 3 Alternate (Unsaturated[2]/Saturated Soil[3])
TCE	0.5	Type 1/Type 3[4]
cis-1,2-DCE	7.0	Type 1/Type 3[5]
Vinyl Chloride	0.2	Type 1/Type 3[5]

Note: mg/kg = milligram per kilogram

[1] *Type 1 Residential RRS(s) equals Type 3 Non-residential RRS(s).*
[2] *EPD letter, September 28, 2008*
[3] *EPD letter, June 26, 2009*
[4] *EPD letter, March 11, 2008.*
[5] Based on Hazardous Site Response Rules adopted in December 2009.

Groundwater Risk Reduction Standards	**g/L**	**RRS[1]**
PCE	5.0	Type 1/Type 3[4]
TCE	5.0	Type 1/Type 3[4]
cis-1,2-DCE	1,022	Type 4 [3]
Vinyl Chloride	2.0	Type 1/Type 3[5]

Note: g/L = milligram per liter

The soil RRS for cis-1,2-DCE is based on the RRS adopted in December 2009. In addition, Ashland has included the RRS for vinyl chloride. Although vinyl chloride is not prevalent in soil and groundwater, it is a degradation byproduct of PCE. Therefore, there is the potential for vinyl chloride to be produced through natural attenuation and reductive dechlorination processes at the Site.

3.8.2 Surface Water Delineation Standards

The USEPA Region IV Freshwater Surface Water Screening Values were identified by Georgia EPD as the screening values for surface water within the unnamed creek downgradient of the Site. However, there are no published USEPA Region IV Freshwater Surface Water Screening Values for TCE, cis-1,2-DCE, and vinyl chloride. To facilitate screening assessment of the data, the concentrations of TCE and vinyl chloride were compared against the USEPA Region V RCRA Ecological Screening Levels (2003).

As there is no USEPA Region V RCRA Ecological Screening Level (2003) for cis-1,2-DCE, the USEPA Region IV Freshwater Surface Water Screening Value for trans-1,2-DCE (1,350 µg/L) was used as an alternative.

To determine if the value for trans-1,2- DCE could be applied to cis-1,2-DCE, a structural activity relationship (SAR) was conducted using the Ecological Structure Activity Relationships (ECOSAR) Class Program (version 1.0), available through EPI Suite 4.0, and developed for the USEPA. ECOSAR was used to model cis-1,2-DCE and trans-1,2-DCE, and to estimate the chemical aquatic toxicity based on the structure of the chemical by comparing the chemical to similar chemicals with similar toxicological reactive structures and for which aquatic toxicological data is available. Both cis-1,2-DCE and trans-1,2-DCE has similar structures and fall within the vinyl/allyl halides ECOSAR classification. The predicted aquatic toxicity for this classification is similar or greater than the USEPA Region IV screening level for trans-1,2-DCE of 1,350 µg/L. Based on the structural similarity of these to constituents, the application of the trans-1,2-DCE screening level to the cis-1,2- DCE data is appropriate. A summary of screening values are summarized below.

Surface Water Delineation Standards	**Surface Water Delineation Standard (µg/L)**	**Screening Value**
PCE	84	USEPA Region IV Freshwater Surface Water Chronic Screening Values
TCE	47	USEPA Region V RCRA Ecological Screening Levels (2003)
cis-1,2-DCE	1,350	USEPA Region IV Freshwater Surface Water Screening Value for trans-1,2-DCE
Vinyl Chloride	930	USEPA Region V RCRA Ecological Screening Levels (2003)

3.9 Extent of COCs in Soil

The soils beneath the Site area are typical of the Piedmont with primarily low permeability silts and clays. The release of PCE at the dry cleaners entered the unsaturated soil and moved downward to the water table. The unsaturated soils (above the water table) were investigated by both Ashland and Tara Retail with direct push borings. Soil boring locations and soil analytical results collected by Tara Retail are shown on **Figure D-17**. A summary of the Ashland direct push soil analytical data is presented in **Table 2-2** and the boring locations are shown on **Figure D-18**.

On-site concentrations of PCE are above RRS of 2 mg/kg to a depth of approximately 30 ft bgs in soils directly beneath the dry cleaning building and immediately to the south and east of the building. Soils beneath the building and outside the rear entrance (to the east) have been delineated vertically to top of bedrock as borings were sampled to refusal. Tara Retail soil borings have delineated the soils laterally away from the building to below the RRSs (**Figures D-19 through D-22**).

3.10 Extent of COCs in Groundwater

Between 2006 and 2011, Ashland collected more than 14 analytical data sets for volatile organic compounds (VOCs) to evaluate the vertical and horizontal distribution of VOCs in groundwater beneath and west and south of the Site. The results of field screening and analytical testing provide information about aquifer conditions and groundwater quality beneath and adjacent to the Site. Analytical results for VOCs are tabulated on **Table 2-4**. A summary of additional water quality parameters (i.e., pH, conductivity, temperature, turbidity, etc.) for those wells monitored during the pilot study (MW-2, MW-8, MW-10, and MW-11 clusters) are tabulated on **Table 2-5**. Total VOC isoconcentration contours from the May 2011 groundwater sampling event for the Upper Residuum, Lower Residuum, and the Bedrock Aquifer are provided on **Figures D-23**, **D-24**, and **D-25**, respectively.

As identified in Section 3.8, the Type 3 Non-Residential RRSs for PCE and TCE is 5 µg/L. Delineation of both COCs in the groundwater close or below the RRSs has been completed both east (upgradient), and north and south (side gradient) of the Site. At the downgradient property line for the Site (Tara Boulevard), MW-8A and MW-8B currently exceed the RRSs as well as wells on the west side of Tara Boulevard (MW15A/B and MW16A/B). Bedrock well MW-8C is below the RRSs for PCE and TCE.

3.11 Extent of COCs in Surface Water

As described in the hydrogeologic model above, groundwater in both the overburden and bedrock units discharge to surface water. Surface water sampling has detected the presence of PCE and TCE in surface water collected near the upper reaches of the unnamed creek (SS-1 and SS-2) in four events between October 2009 and November 2011 above the Surface Water Delineation Standard. The downgradient sites were sampled in March 2011 for the purposes of delineation (T-1 through T-4) and were non-detect at T-2 through T-4. **Figure D-26** presents the approximate locations of the surface water sampling. The surface water analytical results are summarized in **Table 2-6**.

Based on the March 2011 sampling results, the PCE concentrations progressively decreased from the headwater of the unnamed creek to its confluence with the unnamed tributary. This suggests localized entry of impacted water near the headwater of the unnamed creek and dilution effects downstream. Whether the dilution effects are solely due to baseflow conditions (groundwater) or contributed by surface run-off/stormwater discharge is inconclusive. There is some evidence showing stormwater contribution to dilution effects.

3.12 Fate and Transport

The analysis of the fate and transport of Site COCs is critical to the evaluation of risk and the development of potential remedial alternatives. PCE is the most widespread COC detected at the Site, occurring in soil, groundwater, and off-site surface water. This section has been prepared to focus on the factors affecting the migration and fate of PCE, the potential routes of migration, the likelihood for natural attenuation of the contamination, and an evaluation of potential routes of exposure and potential receptors.

3.12.1 Potential Routes of PCE Migration

Understanding how PCE may have migrated in the subsurface is instrumental to understanding how PCE is currently affecting potential receptors and/or how it may potentially affect such receptors in the future. As discussed in Section 2.3, PCE was released from the dry cleaning facility during active operations primarily as a result of leaks at the dry cleaning machine and potential additional contributions from a documented release during delivery to the dry cleaner.

These incidental releases of PCE over time resulted in PCE entering unsaturated soils and subsequently migrating downward towards the water table as a dense non-aqueous phase liquid (DNAPL). While PCE potentially migrated as DNAPL to the water table and both soil and groundwater concentrations under the dry cleaners are indicative of DNAPL, there have been no observations of DNAPL accumulations in wells. Further both soil and groundwater concentrations indicate that the majority of mass is still at or above the water table with concentrations rapidly declining with depth below the water table.

On the basis of field data, the DNAPL at the Site appears to be trapped and immobilized within the soil pore spaces in the unsaturated soils above the water table and potentially in a localized area just below the groundwater surface immediately adjacent to the building. The water table is currently present at a depth of over 27 ft bgs. Elevated VOC concentrations in the groundwater are typically observed in the upper 10 ft of the residuum aquifer, except at MW-2 Cluster near the Source Area.

The presence of residual DNAPL impacts in the unsaturated zone in and around the dry cleaners reflects the low permeability of soils and the limited infiltration that is occurring within the area. All areas with soil impacts are covered with either buildings and/or pavement.
Dissolution of PCE into the residuum aquifer has created a groundwater plume that extends approximately 700 ft southwest from the Source Area(s) in the direction of groundwater flow with the highest concentrations detected in the upper part of the residuum aquifer. Concentrations decrease significantly (by orders of magnitude) with depth and are lowest within the competent bedrock which is tight and exhibits a low degree of fracturing.

Groundwater flow directions from the Site are generally oriented toward the unnamed creek located west of the Site and Tara Boulevard. The extent and magnitude of the unnamed creek as a receptor to groundwater flow in the residuum and the bedrock is currently not well understood but initial surface water monitoring results have determined that impacted groundwater is discharging to surface water.

Moderate dissolved oxygen concentrations, less than neutral pH, and low total organic carbon in the residuum limits the biodegradation of PCE in groundwater. This limited biodegradation is reflected in the low concentrations of breakdown (daughter) products relative to the concentrations of PCE observed in groundwater. However attenuation of chlorinated compounds may be occurring within the distal portions of the plume (immediately adjacent to the streams) where alluvial modified sediments and detritus are providing organic rich soils and low REDOX conditions conducive to biodegradation.

Based on the existing and historical analytical data over the past three years, the plume in the Source Area appears to be stable.

3.12.2 Potential Exposure Pathways and Receptors

A full evaluation of potential exposure pathways and receptors will be performed as part of the forthcoming Site-wide Corrective Action Plan which will propose final remedies for all impacted media at the Site.

Currently potential exposure to soil, groundwater and vapor impacts at the Site are limited. All areas of soil impact are covered within either buildings or pavement and groundwater is not be utilized in the immediate vicinity of the site. In addition, the former dry cleaning building and a number of adjacent buildings and structures are vacant and as a result, potential exposures to subsurface vapors are also limited.

Pursuant to a request by Georgia EPD, in their letter dated November 3, 2010, Ashland performed a PRE for aquatic impacts. Surface water quality results were compared with the USEPA Region IV Freshwater Surface Water Screening Values and alternate screening values as described in Section 3.8.2 above. In general surface water conditions indicated PCE was not detected above the USEPA Region IV Freshwater Surface Water Screening Values in any of the surface water samples collected during the March 2011 sampling event. TCE, cis1,2-DCE, and vinyl chloride were not detected above the alternate screening values in any of the surface water samples collected during the March 2011 sampling event. Based on the surface water quality results, aquatic impacts are not anticipated.

4.0 CORRECTIVE ACTION INVESTIGATION

This section of the VRP application discusses the proposed scope of work to further delineate groundwater impacts migrating from the Tara Shopping Center (former dry cleaner site) and assess long term remedial options.

Ashland has completed pilot testing of In-situ Chemical Oxidation as a remedial technology for the dilute groundwater plume (groundwater impacts down-gradient of the source area). However this technology has not proved successful at reducing the mass of contaminants in the groundwater. The low permeability of the site soils (despite the use of hydraulic fracturing in the pilot tests) has been identified as a key constraint on remedial success at this site. On this basis, alternative remedial options are being assessed for groundwater with the supplemental investigation program discussed below integral to this evaluation process.

4.1 Groundwater Delineation Workplan

Based on the result of the preliminary CSM for groundwater, Ashland has determined there is insufficient data to select a preferred remedial alternative for downgradient groundwater at this time. The technology evaluations completed to date indicate that under current conditions (prior to application of the source remedy):

- In situ chemical oxidation is ineffective at treating the dissolved phase groundwater downgradient of the Source Area.
- Reductive dechlorination processes are not occurring in the Source Area due to redox conditions within the aquifer and the absence of electron donors. This is reflected in the site geochemistry and the absence of daughter products in groundwater.
- Insufficient data is currently available to assess natural attenuation processes in off-site groundwater. Off-site geochemical conditions are likely to be more conducive to reductive de-chlorination, especially in areas of adjacent to the streams where natural organic materials are present.

While a remedy is not currently being proposed for off-site groundwater, the on-site source remedy (which involves aggressive treatment of the Source Area) will provide significant benefits, reducing mass flux from the Source Area to downgradient areas and reducing the longevity of groundwater impacts. The aggressive nature of the proposed source remedies is considered to improve the viability of MNA (if potential risks and exposures are acceptable) as an off-site groundwater remedy.

The primary data gaps identified in the existing data sets are the lack of water level, bedrock structural and unknown water quality conditions in three off-site areas shown in **Figure 4-1**. These areas include the bedrock at wells MW-15 A/B; residuum, bedrock and surface water near the headwater of the unnamed creek; and the residuum and bedrock south-southwest from wells MW-16 A/B/C. To provide sufficient data to facilitate the detailed assessment of remedial alternatives for groundwater, the following scope of work has been proposed to assess groundwater downgradient of the Site:

1. Installation of 10 monitoring wells (access dependent) to further evaluate the presence of VOCs in groundwater downgradient of the Site (A zone wells indicate upper residuum, B zone wells indicate lower residuum and C zone indicate upper bedrock):
   - MW-15C
   - MW-18 A/B/C
   - MW-19A/B/C
   - MW-20 A/B/C

   The rationalization for these monitoring wells was described in the *Final Pilot Test Report and Groundwater Corrective Action Investigation Workplan* (EHS, 2011c).
2. Installation of two staff gauges in the unnamed creek west of the Site.

   As noted in Section 3.0, surface water elevation, streambed elevation, surface water flow and water quality are needed to complete the groundwater flow conceptualization. It is recommended that surface water gauge SG-1 be located as close as possible to monitoring wells MW-19A/B/C and MW-20A/B/C for accurate hydraulic gradient evaluations. Surface water gage SG-2 is proposed near the previous surface water sampling site T-1 or immediately upstream from the confluence of the unnamed creek with the unnamed tributary (**Figure 4-2**). It is recommended that stormwater discharging to the unnamed creek be sampled for water quality analysis when feasible.
3. Completion of robust groundwater monitoring event including monitored natural attenuation (MNA) parameters to better understand the fate and transport of contaminants in groundwater off-site
4. Completion of Fate and Transport modeling to assess the long-term stability of groundwater impacts, the potential effects of source remediation and allow quantitative evaluation of remedial alternatives in terms of predicted benefits to groundwater concentrations, plume extent and plume longevity.

A general discussion of the methodologies is provided in the *Final Pilot Test Report and Groundwater Corrective Action Investigation Workplan* (EHS, 2011c).

4.2 Potable Well Search

Ashland will complete a well search to determine the current status of the wells identified south and southwest of the Site. The findings from this search will be provided in a supplemental document to Georgia EPD.

5.0 PROPOSED CLEANUP STANDARDS

Delineation for soil and groundwater (both on and off-site) is based on Type 1 through 4 RRSs presented in Section 3.8. Under the VRP program, Ashland is proposing that the Source Area be remediated to meet the Type 5 RRS for soil and groundwater. Pursuant to 391-3-19-.07 (10), Type 5 standards allow the use of engineering controls such as a fence, placement of a cap, installation of a slurry wall, or stabilization/ solidification/fixation of the waste or waste residues. Under Type 5 RRSs removal, decontamination, or treatment are used where appropriate to remove the principal threats at a site. Further, it is understood that compliance with Type 5 standards also requires the following:

1. Long-term monitoring and maintenance, as appropriate for implemented remedial measures, plus a restrictive covenant provided in accordance with Rule 391-3-19-.08(7);
2. Type 1, 2, 3, or 4 risk reduction standards, as applicable, be met beyond the boundary of the area for which compliance with Type 5 standards are sought whenever implementation of remedial measures is complete; and
3. Remedial measures designed to achieve compliance with Type 5 standards shall be consistent with the general requirements of Rule 391-3-19-.07(10)(a) and meet all the performance criteria set forth in subparts 10(d)1 through 5.

Ashland proposed Site-specific cleanup standards will be developed following Source Area remediation and will be based upon direct exposure factors for surficial soils within two ft of land surface, construction worker exposure factors for subsurface soils to a specified construction depth, and soil concentrations for protection of groundwater criteria at an established point of exposure for groundwater for soils situated above the uppermost groundwater zone. Ashland will also propose continuing actions and controls necessary to maintain compliance with Type 5 RRS and to prevent any unacceptable exposure from contamination at the Site. If necessary, institutional controls for soil, groundwater and/or soil vapor will be implemented in compliance with Georgia EPD environmental standards.

Ashland understands that as the responsible party it has the burden of being able to demonstrate to the satisfaction of the Georgia EPD that the particular mix of removal, decontamination, treatment and/or control measures is appropriate to eliminate or abate present and future threats to human health and the environment and that institutional controls should not be substituted for active remedial measures unless such active measures are determined not to be practicable.
Section 6.0 describes the remedial alternatives Ashland is currently evaluating for the Source Area remediation.

6.0 EVALUATION OF REMEDIAL TECHNOLOGIES

A preliminary evaluation of remedial options for the source area identified the following candidate technologies:

- In-situ Electrical Resistive Heating (ERH)
- Soil excavation and off-site disposal
- In-situ Solidification/Stabilization (S/S) utilizing large diameter auger (LDA)

Electro Thermal Dynamic Stripping Process (ET-DSP™), also referred to as ERH, was previously approved by the Georgia EPD in late 2010 with Tara Retail as the lead for Source Area remediation. In 2011, disagreements within Tara Retail lead to the postponement of remediation activities and in December 2011, Ashland signed a Remediation Agreement with Tara Retail and assumed lead remediation oversight at the Site. Additional technologies are being evaluated to determine which technology is likely to be most effective in treating the Source Area, most implementable, and most cost effective. Once the final technology is selected, Ashland will submit a detailed Final Remediation Plan and implementation schedule. A brief summary of each technology is provided below.

6.1 Electrical Resistive Heating

ET-DSP™ /ERH may be used in combination with a vapor extraction system for remediation of the Source Area. The approach is based upon the success of other ET-DSP™ projects in conjunction with Site-specific data. The goal of the ERH remediation system is to efficiently heat up the defined treatment area; maintain a temperature of 100°C or the azeotropic boiling point of PCE, whichever is greater; create sufficient steam for thorough dynamic stripping; and extract enough liquids and vapors to maintain hydraulic and pneumatic control during contaminant recovery without removing excessive energy from the subsurface. A vapor cap, in the form of the existing concrete and asphalt surfaces will be used around the perimeter to increase vapor recovery, maximize thermal efficiency, and optimize the well-field geometry.

The thermal remediation approach includes ET-DSP™ electrode wells, multi-phase extraction (MPE) wells and Temperature Sensor Wells. The ET-DSP™ electrodes will increase the temperature in the subsurface through the heat transfer mechanisms associated with conduction, convection, and electrical heating. This remediation technology, therefore, has many beneficial effects that will aid in the removal of the primary COCs at the Site.

The boiling point of a compound is the temperature at which the compounds' vapor pressure is equal to atmospheric pressure. Thus, by increasing the temperature of the subsurface using ET-DSP™ the vapor pressure of the contaminants increases. Consequently, by heating the subsurface the volatility of the VOCs increase, which increases their removal efficiency via soil vapor extraction.

The MPE wells will be used to extract VOCs in both vapor and liquid phases. Each MPE well will have a drop tube or pneumatic pump for liquid extraction. A trailer mounted skid system will be used for treatment and extraction process. The MPE well will be connected to a vacuum blower. The resulting vacuum in the MPE well will be the driving force for extraction of soil vapors and VOCs.

The treatment system is designed to process two flow streams; (1) vapors and entrained liquids and (2) groundwater. Discharge of contaminants that have been removed from the subsurface will be controlled primarily with carbon absorption. A secondary method used to control emissions will be vacuum capture of fugitive emissions from treatment system vessels. The vapor control system has been designed with both regenerative and sacrificial carbon adsorption systems. The regenerative carbon will be regenerated using steam and associated wastewater treated using the groundwater treatment system as described above in the process groundwater treatment and DNAPL (recovered as part of the regenerative process) will be separated and containerized prior to treatment of the groundwater stream.

It is estimated that 90% to 95% of the mass removed from the subsurface will be in the vapor stream. The total subsurface mass estimate in the treatment area is approximately 7,375 pounds (lbs). Approximately 6,638 to 7,006 lbs will be in the vapor phase and will be removed with the two vapor-phase granular activated carbon (GAC) vessels. Therefore, approximately 520 gallons (~7,000 lbs) of PCE will be removed and sent off-site for disposal. Removal efficiency for these vessels will be at least 95%. Therefore, total mass released to the atmosphere from the vapor phase is estimated to be less than 350 lbs over the duration of the project.

6.2 Excavation and Off-Site Disposal

The excavation and off-site disposal option would involve the removal of unsaturated source soils to a depth of 25 ft bgs in Areas 1A and 1B and saturated source soils to a depth of approximately 35 ft bgs in Area 1 (**Figure D-17**). In addition unsaturated source soils within Areas 2 and 3 that are likely to be a continuing source of dissolution to groundwater would also be excavated. Approximately 27,000 tons of soils potentially will be excavated and transported off-site to an authorized disposal facility under proper waste manifests. The excavation will be backfilled with certified clean material in accordance with local and state regulations. The area would be restored to pre-excavation conditions.

This remedial option would potentially involve the demolition and removal of buildings to facilitate the excavation or sheetpiling and shoring to enable excavation close to the building. The presence of buildings and utilities (both private and public) is a significant impediment to the performance of this remedial option.

6.3 In-situ Treatment with a Large Diameter Auger

In-situ Treatment using LDA typically includes the term "solidification/stabilization" (S/S) and refers to a general category of processes used to treat a wide variety of wastes, including solids and liquids. Solidification and stabilization are each distinct technologies.

- Solidification refers to processes that encapsulate a waste to form a solid material and to restrict contaminant migration by decreasing the surface area exposed to leaching and/or by coating the waste with low-permeability materials. Solidification can be accomplished by mechanical processes or by a chemical reaction between a waste and binding (solidifying) reagents, such as cement, kiln dust, or lime/fly ash. Solidification of fine waste particles is referred to as microencapsulation, while solidification of a large block or container of waste is referred to as macroencapsulation.

- Stabilization refers to processes that involve chemical reactions that reduce the leach-ability of a waste. Stabilization chemically immobilizes hazardous materials or reduces their solubility through a chemical reaction. The physical nature of the waste may or may not be changed by this process.

In-situ stabilization typically involves the addition of binding agents to an area of sludge or soils and addition of water where necessary, followed by repeated in-place mixing with the bucket of a back or track hoe to mix and stabilize the sludges or soils in place. A growing method of in situ S/S involves the use of very large flighted rotary augers, 6 to 8 or more ft in diameter, capable of injecting slurry chemicals and water through the auger flights. The auger bores and mixes a large-diameter "plug" of the contaminated material. During augering, stabilization chemicals and water (if needed) are injected into the soils. After thorough mixing, the auger is removed and the setting slurry is left in place. The auger is advanced to overlap the last plug slightly, and the process is repeated until the contaminated area is completed.

As conventional S/S does not remove or destroy the contaminants present, the selection of binders must address (1) compatibility between the binders and the materials being treated, (2) the presence of chemicals that interfere with the setting and durability of the product, and (3) anticipated ground and groundwater conditions over the long term. Because of the variable nature of contaminated soil encountered, bench-scale testing to evaluate the effectiveness of potential binder systems is an essential prerequisite to S/S in the field. The nature of contaminants may vary across a site requiring remediation, which means that more than one binder formulation may be required for use during an S/S operation. Furthermore, the effects of otherwise unforeseen contaminant/binder interactions can be identified during treatability studies.

The efficiency of S/S treatment of organic contaminants can be improved by using adsorbents for the organic components. The adsorbents can be incorporated as additives in the cement mix or used as a pretreatment prior to conventional cement-based solidification. Many of these additives are waste products of industrial processes. Additives such as activated carbon, shredded tire particles, and organoclays (sorbents) can increase the chemical containment of the contaminant. Additives such as silica fume and fly ash can improve the physical containment of organic compounds by reducing waste form porosity and permeability.

Immobilization of organic compounds in a cement matrix, with or without adsorbent, is mainly a result of physical entrapment. For better long-term effectiveness, a more desirable process would be to transform the organic wastes to less hazardous constituents. Degradative S/S is a novel remediation technology that combines the immobilization and degradation of contaminants. Cement slurries containing ferrous oxide have been tested on PCE, effectively reducing the chlorinated compound to non-chlorinated byproducts. In such a system, the contaminants can be retained in the system until enough time has elapsed for degradation to occur, thereby preventing any environmental releases.

S/S using LDA will utilize 6-ft, 8-ft, or 10-ft diameter augers to mix soils in situ at the Site (See Picture below). This technology will solidify and stabilize unsaturated source soils to a depth of 25 ft bgs in Areas 1A and 1B and saturated source soils to a depth of approximately 35 ft bgs in Area 1 (**Figure D-17**). Unsaturated source soils within Areas 2 and 3 are likely to be a continual source of dissolution to groundwater and therefore, will also be solidified and stabilized.

Picture of LDA

Solidification and stabilization of the impacted soils would most likely be achieved using a 5% cement addition and a 1%-2% activated carbon addition. However, a treatability study would need to be performed on the soils to determine the actual type and quantity of reagents. A treatability study would involve collecting and reviewing key geotechnical and analytical data including, but not limited to, soil types, density, compressive strength, permeability, levels of contamination, odor issues, water table/perched water issues, potential subsurface obstructions, etc. After remediation is complete, the area will be restored to pre-remediation conditions.

This remedial option would potentially involve the demolition and removal of buildings to facilitate the treatment of soils under the former dry cleaning building. The presence of buildings and utilities (both private and public) is a significant impediment to the design and implementation of this remedial option.

6.4 Remedial Alternative Selection

Prior to selecting one of the technologies referenced above, Ashland will first complete a treatability study to further evaluate the LDA technology as well as further evaluate costs associated with potential soil excavation described above. It is anticipated the treatability study will take 60-90 days to complete. The results of the treatability study and excavation cost bidding will be compared to the previously approved ERH technology so that Ashland can determine which technology is likely to be most effective in treating the Source Area, most implementable, and most cost effective. As noted above, once the final technology is selected, Ashland will submit a detailed Final Remediation Plan and implementation schedule. A projected milestone schedule is provided in Section 7.0.

7.0 PROJECTED MILESTONE SCHEDULE

A Projected Milestone Schedule, showing estimated timelines for the following items, is included in **Appendix E**.

- Proposed Groundwater Corrective Action Investigation
- Source Area Treatability Test
- Updated CSM Submittal
- Final Source Area Remediation Plan and Preliminary Cost Estimate Submittal
- Implementation of Source Area Remedy
- Final Off-site Groundwater Remediation Plan and Preliminary Cost Estimate Submittal
- Implementation of Off-site Groundwater Remedy
- Semi-Annual Progress Report Submittals
- Compliance Status Report (CSR) Submittal

8.0 REFERENCES

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TABLES

Table 2-2
Summary of Historical Soil Analytical Summary
Tara Shopping Center
Jonesboro, GA

	Date Collected	PID	Tetrachloroethene (PCE)		Trichloroethene (TCE)		cis-1,2-Dichloroethene (cis-1,2-DCE)		Report
Sample ID									
Soil boring (depth)		ppm	ug/kg	mg/kg	ug/kg	mg/kg	ug/kg	mg/kg	
SB-1 (3-4)*	9-Jun-05	NA	ND	-	24	0.024	300	0.30	EPS, 2005
SB-2 (1-2)*	9-Jun-05	NA	15,000	15	8.2	0.0082	3,600	3.60	EPS, 2005
TMW-1 (0-4)*	9-Jun-05	NA	1,200,000	1,200	ND	-	2,400	2.4	EPS, 2005
SB-1 (0-2)	28-Mar-06	689.0	<4.8		<4.8		<4.8		URS, 2006a
SB-1 (2-6)	28-Mar-06	401.0	78	0.078	5.9	0.006	<5		URS, 2006a
SB-1 (6-10)	28-Mar-06	220.0	99	0.099	6.8	0.007	<5.5		URS, 2006a
SB-1 (10-14)	28-Mar-06	7.0	10	0.01	<5.7		<5.7		URS, 2006a
SB-1 (14-18)	28-Mar-06	8.1	<5.8		<5.8		<5.8		URS, 2006a
SB-2 (2-6)	29-Mar-06	1,027.0	6,000	6.0	<1100		15,000	15	URS, 2006a
SB-2 (6-10)	29-Mar-06	78.9	2,700	2.7	270	0.270	1,800	1.80	URS, 2006a
SB-2 (10-14)	29-Mar-06	1,698.0	7,400	7.4	590	0.590	2,100	2.10	URS, 2006a
SB-2 (14-18)	29-Mar-06	350.0	1,300	1.3	<260		670	0.67	URS, 2006a
SB-2 (18-22)	29-Mar-06	506.0	9,900	9.9	830	0.830	2,000	2.00	URS, 2006a
SB-3 (0-2)	29-Mar-06	150.0	37,000	37	3,800	3.8	3,600	3.60	URS, 2006a
SB-3 (2-6)	29-Mar-06	1,725.0	44,000	44	<2400		2,500	2.50	URS, 2006a
SB-3 (6-10)	29-Mar-06	191.0	9,800	10	<510		3,300	3.30	URS, 2006a
SB-3 (10-14)	29-Mar-06	3,094.0	65,000	65	<2700		<2700		URS, 2006a
SB-3 (14-18)	29-Mar-06	373.0	4,900	4.9	330	0.330	1,100	1.1	URS, 2006a
SB-3 (18-22)	29-Mar-06	264.0	33,000	33	<1700		3,700	3.7	URS, 2006a
SB-4 (0-2)	28-Mar-06	820.0	26,000	26	<2400		<2400		URS, 2006a
SB-4 (2-6)	28-Mar-06	2,810.0	2,400	2.4	<2300		44,000	44.0	URS, 2006a
SB-4 (6-10)	28-Mar-06	1,155.0	18,000	18	<2000		11,000	11.0	URS, 2006a
SB-4 (10-14)	28-Mar-06	1,558.0	5,900	5.9	<1200		2,500	2.5	URS, 2006a
SB-4 (14-18)	28-Mar-06	NM	12,000	12	660	0.660	2,400	2.4	URS, 2006a
SB-4 (18-22)	28-Mar-06	512.0	30,000	30	<1700		3,700	3.7	URS, 2006a
SB-5 (0-2)	29-Mar-06	829.0	6,500	6.5	10,000	10.0	<530		URS, 2006a
SB-5 (2-6)	29-Mar-06	6,036.0	2,400,000	2,400	<90000		<90000		URS, 2006a
SB-5 (6-10)	29-Mar-06	3,875.0	11,000,000	11,000	<500000		<500000		URS, 2006a
SB-5 (10-14)	29-Mar-06	2,569.0	2,000,000	2,000	<500000		<500000		URS, 2006a
SB-5 (14-18)	29-Mar-06	561.0	2,900,000	2,900	<160000		<160000		URS, 2006a
SB-5 (18-22)	29-Mar-06	1,706.0	17,000	17	1,200	1.2	2,100	2.1	URS, 2006a
SB-6 (0-2)	29-Mar-06	21.7	3,000	3	2,800	2.8	4,300	4.3	URS, 2006a
SB-6 (2-6)	29-Mar-06	306.0	1,100,000	1,100	<49000		<49000		URS, 2006a
SB-6 (6-10)	29-Mar-06	96.3	12,000	12	1,800	1.8	5,100	5.1	URS, 2006a
SB-6 (10-14)	29-Mar-06	83.6	540,000	540	<25000		<25000		URS, 2006a
SB-6 (14-18)	29-Mar-06	22.3	29,000	29	2,400	2.4	4,000	4.0	URS, 2006a
SB-6 (18-22)	29-Mar-06	263.0	14,000	14	1,500	1.5	2,700	2.7	URS, 2006a
SB-7 (6-10)**	30-Mar-06	9,999.0	<4.4		<4.4		<4.4		URS, 2006a
SB-8 (0-2)	29-Mar-06	34.3	<5.0		<5.0		9.6	0.0	URS, 2006a
SB-8 (2-6)	29-Mar-06	56.2	160	0.16	<5.4		<5.4		URS, 2006a
SB-8 (6-10)	29-Mar-06	41.1	90	0.09	<5.6		<5.6		URS, 2006a
SB-8 (10-14)	29-Mar-06	239.0	920	0.92	<210		<210		URS, 2006a
SB-8 (14-18)	29-Mar-06	110.0	2,400	2.4	<280		<280		URS, 2006a
SB-8 (18-22)	29-Mar-06	15.4	2,500	2.5	<270		<270		URS, 2006a
SB-9 (10-14)**	30-Mar-06	9,999.0	15	0.015	<4.9		<4.9		URS, 2006a
SB-9 (14-18)**	30-Mar-06	9,999.0	45	0.045	<6.0		<6.0		URS, 2006a
SB-10 (2-6)	30-Mar-06	4.5	<5.4		<5.4		<5.4		URS, 2006a
SB-11 (14-18)	30-Mar-06	6.8	18	0.018	<7.3		<7.3		URS, 2006a
SB-12 (6-10)	30-Mar-06	14.1	<5.5		<5.5		<5.5		URS, 2006a
SB-13 (14-18)	30-Mar-06	28.0	<5.3		<5.3		<5.3		URS, 2006a
SB-14 (18-22)	3-Apr-06	4.7	<5.4		<5.4		<5.4		URS, 2006a
SB-15 (0-2)	3-Apr-06	10.8	<5.6		<5.6		<5.6		URS, 2006a
SB-16 (2-6)	3-Apr-06	304.0	<5.9		<5.9		<5.9		URS, 2006a
SB-17 (0-2)**	3-Apr-06	NM	<5.5		<5.5		<5.5		URS, 2006a
SB-18 (0-3)**	3-Apr-06	NM	<6.2		<6.2		<6.2		URS, 2006a
SB-19 (0-1)	29-Mar-06	NM	370,000	370	<14,000		<14,000		URS, 2006a
SB-19 (1-5)	31-Mar-06	71.3	2,900	2.9	<500		10,000	10.0	URS, 2006a
SB-19 (5-9)	31-Mar-06	406.0	3,400	3.4	430	0.430	5,400	5.4	URS, 2006a

Table 2-2
Summary of Historical Soil Analytical Summary
Tara Shopping Center
Jonesboro, GA

	Date Collected	PID	Tetrachloroethene (PCE)		Trichloroethene (TCE)		cis-1,2-Dichloroethene (cis-1,2-DCE)		Report
Sample ID									
Soil boring (depth)		ppm	ug/kg	mg/kg	ug/kg	mg/kg	ug/kg	mg/kg	
SB-19 (9-13)	31-Mar-06	788.0	3,900	3.9	550	0.550	2,200	2.2	URS, 2006a
SB-19 (13-17)	31-Mar-06	721.0	1,900	2	250	0.250	1,200	1.2	URS, 2006a
SB-19 (17-21)	31-Mar-06	1,489.0	10,000	10	1,100	1.10	2,700	2.7	URS, 2006a
SB-20 (1-5)	31-Mar-06	4,405.0	6,300,000	6,300	<280000		<280000		URS, 2006a
SB-20 (5-9)	31-Mar-06	3,617.0	3,600,000	3,600	<260000		<260000		URS, 2006a
SB-20 (9-13)	31-Mar-06	4,086.0	14,000	14	<610		1,800	1.8	URS, 2006a
SB-20 (13-17)	31-Mar-06	6,503.0	23,000	23	<1200		2,900	2.9	URS, 2006a
SB-20 (17-21)	31-Mar-06	4,129.0	17,000	17	1,600	1.60	3,800	3.8	URS, 2006a
SB-21 (1-5)	31-Mar-06	2,233.0	38,000	38	62,000	62.00	32,000	32.0	URS, 2006a
SB-21 (5-9)	31-Mar-06	482.0	28,000	28	2,400	2.40	10,000	10.0	URS, 2006a
SB-21 (9-13)**	31-Mar-06	9,999.0	3,300	3.3	380	0.380	1,700	1.7	URS, 2006a
SB-21 (13-17)	31-Mar-06	598.0	2,300	2.3	300	0.30	1,200	1.2	URS, 2006a
SB-21 (17-21)	31-Mar-06	98.6	5,800	5.8	570	0.570	2,000	2.0	URS, 2006a
SB-22 (1-5)	31-Mar-06	495.0	63,000	63	4,400	4.40	3,900	3.9	URS, 2006a
SB-22 (5-9)	31-Mar-06	1,413.0	13,000	13	<1000		3,300	3.3	URS, 2006a
SB-22 (9-13)	31-Mar-06	246.0	720	0.7	<270		740	0.7	URS, 2006a
SB-22 (13-17)	31-Mar-06	341.0	3,900	3.9	560	0.560	1,600	1.6	URS, 2006a
SB-22 (17-21)	31-Mar-06	978.0	19,000	19	2,000	2.0	3,800	3.8	URS, 2006a
SB-33 (28-30)	10-Dec-08	NM	27,000	27	<2,600		<2,600		URS, 2009a
SB-33 (38-40)	10-Dec-08	NM	<5.9		<5.9		<5.9		URS, 2009a
SB-33 (48-50)	10-Dec-08	NM	<6.1		<6.1		<6.1		URS, 2009a
SB-33 (56-58)	10-Dec-08	NM	<5.7		<5.7		<5.7		URS, 2009a
SB-34 (28-30)	10-Dec-08	NM	3,000	3	<580		<580		URS, 2009a
SB-34 (38-40)	10-Dec-08	NM	44	0	<6.2		<6.2		URS, 2009a
SB-34 (48-50)	10-Dec-08	NM	<5.7		<5.7		<5.7		URS, 2009a
SB-34 (54-56)	10-Dec-08	NM	<5.6		<5.6		<5.6		URS, 2009a
SB-35 (28-30)	10-Dec-08	NM	5,700	5.7	<460		<460		URS, 2009a
SB-35 (38-40)	10-Dec-08	NM	26	0.03	<7.1		<7.1		URS, 2009a
SB-35 (48-50)	10-Dec-08	NM	38	0.04	<6.5		<6.5		URS, 2009a
SB-35 (55-57)	10-Dec-08	NM	60	0.06	<5.7		<5.7		URS, 2009a
SB-36 (28-30)	10-Dec-08	NM	1,100,000	1,100	<120,000		<120,000		URS, 2009a
SB-36 (38-40)	10-Dec-08	NM	150	0	<6.9		<6.9		URS, 2009a
SB-36 (48-50)	10-Dec-08	NM	21	0.02	<6.5		<6.5		URS, 2009a
SB-36 (54-56)	10-Dec-08	NM	20	0.02	<5.3		<5.3		URS, 2009a
SB-37 (28-30)	11-Dec-08	NM	8,300	8.3	480	4.8	670	0.67	URS, 2009a
SB-37 (38-40)	11-Dec-08	NM	<6.7		<6.7		<6.7		URS, 2009a
SB-37 (48-50)	11-Dec-08	NM	<6.9		<6.9		<6.9		URS, 2009a
SB-37 (54-56)	11-Dec-08	NM	21	0	<5.1		<5.1		URS, 2009a
SB-38 (28-30)	11-Dec-08	NM	1,700	1.7	<240		<240		URS, 2009a
SB-38 (38-40)	11-Dec-08	NM	59	0.059	<5.9		<5.9		URS, 2009a
SB-38 (48-50)	11-Dec-08	NM	<6.7		<6.7		<6.7		URS, 2009a
SB-38 (54-56)	11-Dec-08	NM	<9.4		<9.4		<9.4		URS, 2009a
MW-13B (15-17)	27-Feb-08	NM	<5.7		<5.7		40	0.040	URS, 2009a
MW-13B (20-22)	27-Feb-08	NM	120	0.12	93	0.093	750 D	0.750 D	URS, 2009a

Notes:
ug/kg - microgram per kilogram; mg/kg milligrams per kilogram
Colored areas greater than PCE RRS of 2,000 ug/kg (2 mg/kg)
*Trans-1,2-dichloroethane: SB-1 (7.9 ug/kg), SB-2 (2,300 ug/kg); TMW-1 (20,000 ug/kg).
** Moisture prevented accurate PID reading.
NA: Not Available.
ND/<: Not detected above laboratory detection limit (EPS, 2005).
NM - Not measured due to malfunction of the PID.

Table 2-3 - Summary of Monitoring Well Construction Details
Tara Shopping Center
Jonesboro, Georgia
HSI 10798

Well Identification	Date Installed	Well Casing Diameter (in.)	Total Depth of Well (ft. bgs)	Total Depth of Boring (ft. bgs)	Depth of Bedrock (ft. bgs)	Construction Material	6-inch dia. Steel Casing Depth (ft)	Well Completion	Screen Interval (ft. bgs)	Top of Casing Elevation (ft. above MSL)	Ground Surface Elevation (ft. above MSL)
Shallow Residuum											
MW-1A	04/25/06	2-IN.	25	25	NE	PVC	n/a	FM	15-25	898.81	899.14
MW-2A	04/25/06	2-IN.	25	25	NE	PVC	n/a	FM	15-25	896.63	896.90
MW-3A	05/03/06	2-IN.	25	25	NE	PVC	n/a	FM	15-25	892.26	892.51
MW-4A	04/28/06	2-IN.	25	25	NE	PVC	n/a	FM	15-25	884.52	884.82
MW-5A	05/01/06	2-IN.	25	25	NE	PVC	n/a	FM	15-25	883.40	883.61
MW-6A	05/02/06	2-IN.	25	25	NE	PVC	n/a	FM	15-25	881.31	881.73
MW-8A	07/26/06	2-IN.	32.5	32.5	NE	PVC	n/a	FM	22.5-32.5	895.17	895.23
MW-9A	07/25/06	2-IN.	32.5	32.5	NE	PVC	n/a	FM	22.5-32.5	891.59	891.07
MW-10A	02/19/08	2-IN.	37	38	NE	PVC	n/a	FM	27 - 37	896.85	897.08
MW-11A	02/20/08	2-IN.	30	30	NE	PVC	n/a	FM	20 - 30	893.92	894.19
MW-12A	02/20/08	2-IN.	30	30	NE	PVC	n/a	FM	20 - 30	891.16	891.29
MW-13A	03/27/08	2-IN.	24	24	NE	PVC	n/a	FM	14 - 24	880.99	881.25
MW-14A	02/20/08	2-IN.	35	35	NE	PVC	n/a	FM	25 - 35	899.66	899.94
MW-15A	09/12/08	2-IN.	37.7	37.7	NE	PVC	n/a	FM	27- 37	887.96	888.20
MW-16A	09/12/08	2-IN.	32.5	32.5	NE	PVC	n/a	FM	22 - 32	879.36	880.00
MW-17A	03/30/11	2-IN.	30	30	NE	PVC	n/a	FM	20 - 30	NS	NS
MW-18A	**Proposed**	2-IN.	TBD	TBD	TBD	PVC	n/a	TBD	TBD	NS	NS
MW-19A	**Proposed**	2-IN.	TBD	TBD	TBD	PVC	n/a	TBD	TBD	NS	NS
MW-20A	**Proposed**	2-IN.	TBD	TBD	TBD	PVC	n/a	TBD	TBD	NS	NS
Deep Residuum											
MW-2B	04/26/06	2-IN.	60	60	60	PVC	n/a	FM	50-60	896.51	896.83
MW-3B	05/03/06	2-IN.	55	55	55	PVC	n/a	FM	45-55	892.39	892.52
MW-4B	04/28/06	2-IN.	60	60	60	PVC	n/a	FM	50-60	884.55	884.82
MW-5B	05/01/06	2-IN.	46	46	46	PVC	n/a	FM	36-46	883.35	883.63
MW-6B	05/02/06	2-IN.	67	67	67	PVC	n/a	FM	57-67	881.42	881.67
MW-7B	07/27/06	2-IN.	33	33	33	PVC	n/a	FM	23-33	896.96	897.11
MW-8B	07/26/06	2-IN.	57	57	57	PVC	n/a	FM	47-57	895.04	895.19
MW-9B	07/25/06	2-IN.	62	62	62	PVC	n/a	FM	52-62	892.02	892.05
MW-10B	02/19/08	2-IN.	50	50	N/A	PVC	n/a	FM	40 - 50	896.73	896.97
MW-11B	02/20/08	2-IN.	56	56	57	PVC	n/a	FM	46 - 56	893.84	894.15
MW-13B	03/27/08	2-IN.	72	72	72	PVC	n/a	FM	62 -72	881.00	881.20
MW-15B	09/12/08	2-IN.	43	44	49	PVC	n/a	FM	34 - 44	888.07	888.30
MW-16B	09/12/08	2-IN.			41	PVC	n/a	FM	31 - 41	879.50	880.00
MW-18B	**Proposed**	2-IN.	TBD	TBD	TBD	PVC	n/a	TBD	TBD	NS	NS
MW-19B	**Proposed**	2-IN.	TBD	TBD	TBD	PVC	n/a	TBD	TBD	NS	NS
MW-20B	**Proposed**	2-IN.	TBD	TBD	TBD	PVC	n/a	TBD	TBD	NS	NS

Table 2-3 - Summary of Monitoring Well Construction Details
Tara Shopping Center
Jonesboro, Georgia
HSI 10798

Well Identification	Date Installed	Well Casing Diameter (in.)	Total Depth of Well (ft. bgs)	Total Depth of Boring (ft. bgs)	Depth of Bedrock (ft. bgs)	Construction Material	6-inch dia. Steel Casing Depth (ft)	Well Completion	Screen Interval (ft. bgs)	Top of Casing Elevation (ft. above MSL)	Ground Surface Elevation (ft. above MSL)
Bedrock											
MW-1C	04/09/08	2-IN.	98	99	64	PVC	69	FM	83 - 98	898.94	899.19
MW-2C	04/10/08	2-IN.	91	101	67	S.S.	71	FM	76 -91	896.72	896.69
MW-5C	04/10/08	2-IN.	90	94	59	PVC	64	FM	75 - 90	883.52	883.76
MW-7C	04/10/08	2-IN.	62	68	33	PVC	38	FM	52 - 62	896.95	897.18
MW-8C	04/11/08	2-IN.	85	93	58	PVC	63	FM	70 - 85	895.04	895.32
MW-9C	04/11/08	2-IN.	100	111	76	PVC	81	FM	85 - 100	891.83	892.01
MW-10C	04/11/08	2-IN.	90	99	64	PVC	69	FM	75 - 90	896.82	897.01
MW-11C	04/10/08	2-IN.	88	92	57	PVC	62	FM	73 -88	894.07	894.32
MW-13C	10/16/08	2-IN.	89	105	71	PVC	75	FM	78 - 89	881.00	881.20
MW-15C	**Proposed**	2-IN.	TBD	TBD	TBD	PVC	TBD	TBD	TBD	NS	NS
MW-16C	10/16/08	2-IN.	68	74.5	41	PVC	44.6	FM	58 - 68	878.82	879.00
MW-18C	**Proposed**	2-IN.	TBD	TBD	TBD	PVC	TBD	TBD	TBD	NS	NS
MW-19C	**Proposed**	2-IN.	TBD	TBD	TBD	PVC	TBD	TBD	TBD	NS	NS
MW-20C	**Proposed**	2-IN.	TBD	TBD	TBD	PVC	TBD	TBD	TBD	NS	NS

Notes:
Depth to bedrock in Deep Residuum - auger refusal
ft. bgs = feet below ground surface
MSL = Mean Sea Level
FM = Flush Mount
NI = Not installed
NM = Not measured
NE = Not encountered
TBD = To Be Determined. Information based in field conditions during installation. Depth to bedrock varies across the investigation area.
NS = Not Surveyed. Proposed well location will be surveyed during next phase of investigation.

Table 2-4
Summary Historical Groundwater Analytical Results, 2006 through 2011
Tara Shopping Center
Jonesboro, Georgia

Well ID	Sample Date	Tetrachloroethene (PCE)	Trichloroethene (TCE)	cis-1,2-Dichloroethene (cis-1, 2 DCE)	Vinyl Chloride	Chloroform	Total VOCs
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Type 3 RRS (*Type 4 RRS)		5	5	1,022*	2	80	
TMW-1*	9-Jun-06	48,000	2,400	3,400	2.3	NA	NA
MW-1A	11-May-06	4.3	<1.0	<1.0	<1.0	<1.0	4.3
MW-1A	20-Oct-08	DRY	DRY	DRY	DRY	DRY	-
MW-1A	20-Aug-09	DRY	DRY	DRY	DRY	DRY	-
MW-1A	16-May-11	DRY	DRY	DRY	DRY	DRY	-
MW-1C(73-83)	8-Apr-08	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-1C (86-B)	8-Apr-08	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-1C	21-Oct-08	<1.0	<1.0	<1.0	NA	<1.0	0
MW-1C	24-Aug-09	<1.0	<1.0	<1.0	<10	<1.0	0
MW-1C	18-May-11	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-2A	11-May-06	51,000	2,800	2,500	<50	<50.0	56,300
MW-2A	20-Oct-08	DRY	DRY	DRY	DRY	DRY	0
MW-2A	20-Aug-09	DRY	DRY	DRY	DRY	DRY	0
MW-2A	25-Feb-10	110,000	5,100	5,900	<50	<2,000	121,000
MW-2A	23-Mar-10	98,000	4,600	5,300	<1000	<1,000	107,900
MW-2A	27-Apr-10	89,000	5,000	5,000	<1000	<1000	99,000
MW-2A	25-May-10	100,000	5,800	5,600	<1000	<1000	111,400
MW-2A	27-Aug-10	DRY	DRY	DRY	DRY	DRY	0
MW-2A	31-Mar-11	DRY	DRY	DRY	DRY	DRY	0
MW-2A	18-May-11	DRY	DRY	DRY	DRY	DRY	0
MW-2B	5-Mar-08	4,800	300	220	<50	<50.0	5,320
MW-2B	22-Oct-08	4,500	170	150	<50	<50.0	4,820
MW-2B	24-Aug-09	3,200	120	78	<20	< 20	3,398
MW-2B	16-Oct-09	3,400	97	76	<50	< 50	3,573
MW-2B	13-Nov-09	2,000	60	26	<20	< 20	2,086
MW-2B	17-Dec-09	830	30	13	<10	< 50	873
MW-2B	29-Jan-10	1,400	91	35	<20	< 50	1,526
MW-2B	25-Feb-10	500	24	8.7	<1.0	<10	533
MW-2B	23-Mar-10	350	9	4.8	<2.0	<1.0	364
MW-2B	27-Apr-10	390	39	17	<4.0	<4.0	446
MW-2B	25-May-10	280	14	9.3	<4.0	<4.0	303
MW-2B	27-Aug-10	1,500	65	73	<10	<4.0	1,638
MW-2B	31-Mar-11	230	18	20	<2.0	<2.0	268
MW-2B	23-May-11	88	11	26	<1.0	<1.0	125
MW-2C (70-80)	8-Apr-08	190	16	16	<1.0	3.6	226
MW-2C (84-B)	8-Apr-08	320	32	38	<2.0	8.4	398
MW-2C	22-Oct-08	160	23	27	<1.0	2.3	212
MW-2C	24-Aug-09	55	8.1	2.1	<1.0	< 1.0	65
MW-2C	16-Oct-09	140	15	13	<1.0	2.0	170
MW-2C	13-Nov-09	160	19	13	<1.0	2.3	194
MW-2C	17-Dec-09	78	9.8	7.6	<1.0	1.4	97
MW-2C	29-Jan-10	110	13	11	<1.0	1.7	136
MW-2C	25-Feb-10	29	3.1	2.8	<1.0	<1.0	35
MW-2C	23-Mar-10	51	5.8	4.9	<1.0	<1.0	62
MW-2C	27-Apr-10	51	6.2	4.8	<1.0	<1.0	62
MW-2C	25-May-10	9	<1.0	<1.0	<1.0	<1.0	9
MW-2C	27-Aug-10	21	2.1	<1.0	<1.0	1.6	25
MW-2C	31-Mar-11	6.2	<2.0	<2.0	<2.0	<2.0	6
MW-2C	23-May-11	3.2	<1.0	<1.0	<1.0	<1.0	3
MW-3A	9-May-06	14	<1.0	<1.0	<1.0	<1.0	14
MW-3A	5-Mar-08	20	<1.0	<1.0	<1.0	<1.0	20
MW-3A	20-Oct-08	64	<1.0	<1.0	<1.0	<1.0	64
MW-3A	20-Aug-09	38	<1.0	<1.0	<1.0	<1.0	38
MW-3A	17-May-11	42	<1.0	<1.0	<1.0	<1.0	42
MW-3B	10-May-06	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-3B	5-Mar-08	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-3B	20-Oct-08	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-3B	20-Aug-09	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-3B	17-May-11	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-4A	10-May-06	4.7	<1.0	<1.0	<1.0	<1.0	5
MW-4A	5-Mar-08	5.9	<1.0	<1.0	<1.0	<1.0	6
MW-4A	22-Oct-08	33	<1.0	<1.0	<1.0	<1.0	33
MW-4A	24-Aug-09	3.6	<1.0	<1.0	<1.0	<1.0	4

Table 2-4
Summary Historical Groundwater Analytical Results, 2006 through 2011
Tara Shopping Center
Jonesboro, Georgia

Well ID	Sample Date	Tetrachloroethene (PCE)	Trichloroethene (TCE)	cis-1,2-Dichloroethene (cis-1, 2 DCE)	Vinyl Chloride	Chloroform	Total VOCs
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Type 3 RRS (*Type 4 RRS)		5	5	1,022*	2	80	
MW-4A	23-May-11	8.6	<1.0	<1.0	<1.0	<1.0	9
MW-4B	10-May-06	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-4B	5-Mar-08	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-4B	22-Oct-08	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-4B	24-Aug-09	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-4B	23-May-11	1.2	<1.0	<1.0	<1.0	<1.0	1
MW-5A	10-May-06	3.9	1.8	4.0	<1.0	<1.0	10
MW-5A	5-Mar-08	59	41	110	4.7	<1.0	215
MW-5A	21-Oct-08	30	19	63	NA	<1.0	112
MW-5A	24-Aug-09	6.5	6.5	14	<4.0	<1.0	27
MW-5A	23-May-11	4.3	5.0	15	<1.0	<1.0	24
MW-5B	9-May-06	4,300	1,900	3,800	<50	<5.0	10,000
MW-5B	5-Mar-08	540	420	1,100	<10	<10	2,060
MW-5B	21-Oct-08	130	99	300	NA	<5.0	529
MW-5B	21-Oct-08	350	290	740	<5.0	5.8	1,386
MW-5B	23-May-11	450	370	1,600	<20	<20	2,420
MW-5C (63-73)	10-Apr-08	140	5.5	5.2	<1.0	<1.0	151
MW-5C (82-B)	10-Apr-08	120	5.1	5.1	<2.0	<1.0	130
MW-5C	21-Oct-08	11	1.1	72	NA	<1.0	84
MW-5C	24-Aug-09	15	1.6	12	<1.0	<1.0	29
MW-5C	23-May-11	4.1	1.4	28	<1.0	<1.0	34
MW-6A	9-May-06	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-6A	5-Mar-08	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-6A	20-Oct-08	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-6A	21-Aug-09	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-6A	16-May-11	NM	NM	NM	NM	NM	0
MW-6B	9-May-06	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-6B	5-Mar-08	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-6B	20-Oct-08	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-6B	21-Aug-09	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-6B	16-May-11	NM	NM	NM	NM	NM	0
MW-7B	2-Aug-06	3.5	<1.0	<1.0	<1.0	<1.0	4
MW-7B	5-Mar-08	2.4	<1.0	<1.0	<1.0	<1.0	2
MW-7B	20-Oct-08	3.1	<1.0	<1.0	<1.0	<1.0	3
MW-7B	20-Aug-09	2.3	<1.0	<1.0	<1.0	<1.0	2
MW-7B	16-May-11	8.5	<1.0	<1.0	<1.0	<1.0	9
MW-7C (54-B)	9-Apr-08	1.7	<1.0	<1.0	<1.0	<1.0	2
MW-7C	20-Oct-08	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-7C	20-Aug-09	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-7C	19-May-11	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-8A	2-Aug-06	550	58	25	<5.0	<1.0	633
MW-8A	5-Mar-08	710	91	35	<5.0	<5.0	836
MW-8A	27-Oct-08	490	56	25	<4.0	<5.0	571
MW-8A	20-Aug-09	760	83	30	<4.0	4.2	877
MW-8A	16-Oct-09	750	64	26	<5.0	<5.0	840
MW-8A	12-Nov-09	850	69	24	<5.0	<5.0	943
MW-8A	17-Dec-09	910	60	27	<5.0	<5.0	997
MW-8A	29-Jan-10	84	6.4	3.1	<1.0	<1.0	94
MW-8A	25-Feb-10	930	53	24	<1.0	1.2	1,008
MW-8A	23-Mar-10	840	31	8.9	<1.0	1.3	881
MW-8A	27-Apr-10	760	<10.0	<10.0	<10	<10.0	760
MW-8A	25-May-10	600	<10.0	<10.0	<10	<10.0	600
MW-8A	26-Aug-10	DRY	DRY	DRY	DRY	DRY	0
MW-8A	31-Mar-11	DRY	DRY	DRY	DRY	DRY	0
MW-8A	18-May-11	630	17	<10	<10	<10	647
MW-8B	2-Aug-06	86	7.7	3.6	<1.0	<1.0	97
MW-8B	5-Mar-08	140	10	5.4	<1.0	<1.0	155
MW-8B	16-Oct-08	75	4.4	2.7	<1.0	<1.0	82
MW-8B	19-Aug-09	98	5.9	2.7	<1.0	<1.0	107
MW-8B	16-Oct-09	150	7.0	3.7	<1.0	<1.0	161
MW-8B	12-Nov-09	190	9.2	3.3	<2.0	<2.0	203
MW-8B	17-Dec-09	220	11	4.8	<2.0	<2.0	236
MW-8B	29-Jan-10	180	8.8	4.3	<2.0	<2.0	193

Table 2-4
Summary Historical Groundwater Analytical Results, 2006 through 2011
Tara Shopping Center
Jonesboro, Georgia

Well ID	Sample Date	Tetrachloroethene (PCE)	Trichloroethene (TCE)	cis-1,2-Dichloroethene (cis-1, 2 DCE)	Vinyl Chloride	Chloroform	Total VOCs
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Type 3 RRS (*Type 4 RRS)		5	5	1,022*	2	80	
MW-8B	25-Feb-10	290	13	4.5	<2.0	<2.0	308
MW-8B	23-Mar-10	260	12	4.4	<2.0	<2.0	276
MW-8B	27-Apr-10	200	8.2	3.2	<2.0	<2.0	211
MW-8B	25-May-10	180	5	2.0	<2.0	<2.0	187
MW-8B	26-Aug-10	240	13	5.3	<2.0	<2.0	258
MW-8B	31-Mar-11	220	<2.0	<2.0	<2.0	<2.0	220
MW-8B	18-May-11	170	<2.0	<2.0	<2.0	<2.0	170
MW-8C (62-72)	11-Apr-08	<1.0	1.9	<1.0	<1.0	99.0	101
MW-8C (76-B)	11-Apr-08	<2.0	<2.0	<2.0	<1.0	58.0	58
MW-8C	16-Oct-08	<1.0	<1.0	<1.0	<1.0	50.0	50
MW-8C	19-Aug-09	<1.0	<1.0	<1.0	<1.0	7.1	7
MW-8C	16-Oct-09	<1.0	<1.0	<1.0	<1.0	6.9	7
MW-8C	12-Nov-09	<1.0	<1.0	<1.0	<1.0	7.1	7
MW-8C	17-Dec-09	<1.0	<1.0	<1.0	<1.0	9.6	10
MW-8C	29-Jan-10	<1.0	<1.0	<1.0	<1.0	9.7	10
MW-8C	25-Feb-10	<1.0	<1.0	<1.0	<1.0	5.3	5
MW-8C	23-Mar-10	<1.0	<1.0	<1.0	<1.0	3.7	4
MW-8C	27-Apr-10	<1.0	<1.0	<1.0	<1.0	3.5	4
MW-8C	25-May-10	<1.0	<1.0	<1.0	<1.0	4.2	4
MW-8C	26-Aug-10	<1.0	<1.0	<1.0	<1.0	1.9	2
MW-8C	31-Mar-11	<2.0	<2.0	<2.0	<2.0	1.0	1
MW-8C	18-May-11	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-9A	2-Aug-06	1,000	15	<10	<10	<1.0	1,015
MW-9A	5-Mar-08	110	3.8	<1.0	<1.0	<1.0	114
MW-9A	20-Oct-08	75	3.5	<1.0	<1.0	<1.0	79
MW-9A	20-Aug-09	240	25	3.1	<1.0	<1.0	268
MW-9A	18-May-11	790	48	<10	<10	<10	838
MW-9B	2-Aug-06	4.7	1.0	<1.0	<1.0	<1.0	6
MW-9B	5-Mar-08	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-9B	20-Oct-08	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-9B	20-Aug-09	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-9B	18-May-11	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-9C (79-89)	11-Apr-08	<1.0	<1.0	<1.0	<1.0	28	28
MW-9C	20-Oct-08	<1.0	<1.0	<1.0	<1.0	42	42
MW-9C	20-Aug-09	<1.0	<1.0	<1.0	<1.0	2.5	3
MW-9C	18-May-11	<1.0	<1.0	<1.0	<1.0	4.9	5
MW-10A	5-Mar-08	670	110	46	<5.0	12	838
MW-10A	22-Oct-08	1,700	250	83	<20	37	2,070
MW-10A	21-Aug-09	770	94	49	<5.0	21	934
MW-10A	16-Oct-09	800	85	35	<5.0	18	938
MW-10A	13-Nov-09	570	64	25	<5.0	14	673
MW-10A	17-Dec-09	650	75	34	<5.0	14	773
MW-10A	28-Jan-10	180	12	6.1	<2.0	7.8	206
MW-10A	25-Feb-10	260	18	8.5	<2.0	6.1	293
MW-10A	23-Mar-10	290	23	10	<2.0	5.9	329
MW-10A	27-Apr-10	360	29	14	<2.0	8.3	411
MW-10A	25-May-10	360	29	13	<2.0	9.4	411
MW-10A	27-Aug-10	770	83	31	<5.0	16	900
MW-10A	31-Mar-11	590	79	32	<5.0	12	713
MW-10A	16-May-11	380	64	42	<5.0	9.2	495
MW-10B	5-Mar-08	2.6	<1.0	<1.0	<1.0	<1.0	3
MW-10B	22-Oct-08	3.4	<1.0	<1.0	<1.0	<1.0	3
MW-10B	21-Aug-09	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-10B	16-Oct-09	2.0	<1.0	<1.0	<1.0	<1.0	2
MW-10B	13-Nov-09	1.0	<1.0	<1.0	<1.0	<1.0	1
MW-10B	17-Dec-09	1.2	<1.0	<1.0	<1.0	<1.0	1
MW-10B	28-Jan-10	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-10B	25-Feb-10	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-10B	23-Mar-10	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-10B	27-Apr-10	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-10B	25-May-10	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-10B	27-Aug-10	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-10B	31-Mar-11	3.3	<1.0	<1.0	<1.0	<1.0	3

Table 2-4
Summary Historical Groundwater Analytical Results, 2006 through 2011
Tara Shopping Center
Jonesboro, Georgia

Well ID	Sample Date	Tetrachloroethene (PCE)	Trichloroethene (TCE)	cis-1,2-Dichloroethene (cis-1, 2 DCE)	Vinyl Chloride	Chloroform	Total VOCs
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Type 3 RRS (*Type 4 RRS)		5	5	1,022*	2	80	
MW-10B	18-May-11	1.2	<1.0	<1.0	<1.0	<1.0	1
MW-10C (76-86)	11-Apr-08	<1.0	<1.0	<1.0	<1.0	73.0	73
MW-10C (90-B)	11-Apr-08	<1.0	<1.0	<1.0	<1.0	78.0	78
MW-10C	22-Oct-08	<1.0	<1.0	<1.0	<1.0	34.0	34
MW-10C	21-Aug-09	<1.0	<1.0	<1.0	<1.0	16.0	16
MW-10C	16-Oct-09	<1.0	<1.0	<1.0	<1.0	9.6	10
MW-10C	13-Nov-09	<1.0	<1.0	<1.0	<1.0	1.2	1
MW-10C	17-Dec-09	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-10C	28-Jan-10	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-10C	25-Feb-10	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-10C	23-Mar-10	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-10C	27-Apr-10	2.7	<1.0	<1.0	<1.0	<1.0	3
MW-10C	25-May-10	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-10C	27-Aug-10	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-10C	31-Mar-11	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-10C	19-May-11	1.1	<1.0	<1.0	<1.0	<1.0	1
MW-11A	5-Mar-08	5,100	100	80	<50	<50.0	5,280
MW-11A	17-Oct-08	2,600	67	53	<50	<50	2,720
MW-11A	20-Aug-09	4,700	100	71	<50	<50	4,871
MW-11A	5-Oct-09	6,500	82	89	<50	<50	6,671
MW-11A	13-Nov-09	6,000	110	65	<50	<50	6,175
MW-11A	17-Dec-09	5,400	89	69	<50	<50	5,558
MW-11A	29-Jan-10	2,700	61	<50	<50	<50	2,761
MW-11A	25-Feb-10	3,300	62	39	<20	<20	3,401
MW-11A	23-Mar-10	3,000	53	51	<50	<50	3,104
MW-11A	27-Apr-10	2,700	65	<50	<50	<50	2,765
MW-11A	25-May-10	2,900	61	<50	<50	<50	2,961
MW-11A	27-Aug-10	3,800	72	69	<50	<50	3,941
MW-11A	31-Mar-11	3,300	74	54	<50	<50	3,428
MW-11A	16-May-11	DRY	DRY	DRY	DRY	DRY	0
MW-11B	5-Mar-08	3.2	<1.0	<1.0	<1.0	<1.0	3
MW-11B	16-Oct-08	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-11B	20-Aug-09	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-11B	5-Oct-09	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-11B	13-Nov-09	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-11B	17-Dec-09	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-11B	29-Jan-10	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-11B	25-Feb-10	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-11B	23-Mar-10	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-11B	27-Apr-10	<200	<200	<200	<200	<200	0
MW-11B	25-May-10	<200	<200	<200	<200	<200	0
MW-11B	27-Aug-10	<200	<200	<200	<200	<200	0
MW-11B	31-Mar-11	140	<50	<50	<50	<50	140
MW-11B	19-May-11	NS	NS	NS	NS	NS	0
MW-11C (62-72)	7-Apr-08	1.1	<1.0	<1.0	<1.0	1.2	2
MW-11C (76 - B)	7-Apr-08	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-11C	16-Oct-08	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-11C	20-Aug-09	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-11C	5-Oct-09	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-11C	13-Nov-09	<50	<50	<50	<50	<50	0
MW-11C	17-Dec-09	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-11C	29-Jan-10	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-11C	25-Feb-10	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-11C	23-Mar-10	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-11C	27-Apr-10	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-11C	25-May-10	1.1	<1.0	<1.0	<1.0	<1.0	1
MW-11C	27-Aug-10	1.6	<1.0	<1.0	<1.0	<1.0	2
MW-11C	31-Mar-11	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-11C	17-May-11	<1.0	<1.0	<1.0	<1.0	<1.0	0
MW-12A	5-Mar-08	12	<1.0	<1.0	<1.0	<1.0	12
MW-12A	20-Oct-08	23	<1.0	1.0	<1.0	<1.0	24
MW-12A	20-Aug-09	22	<1.0	<1.0	<1.0	<1.0	22
MW-12A	17-May-11	18	<1.0	<1.0	<1.0	<1.0	18

Table 2-4
Summary Historical Groundwater Analytical Results, 2006 through 2011
Tara Shopping Center
Jonesboro, Georgia

Well ID	Sample Date	Tetrachloroethene (PCE)	Trichloroethene (TCE)	cis-1,2-Dichloroethene (cis-1, 2 DCE)	Vinyl Chloride	Chloroform	Total VOCs
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Type 3 RRS (*Type 4 RRS)		5	5	1,022*	2	80	
MW-13A	5-Mar-08	1,400	640	1,300	31	<20	3,371
MW-13A	21-Oct-08	1,100	500	1,300	NA	<10	2,900
MW-13A	21-Oct-08	1,200	840	2,300	NA	< 20	4,340
MW-13A	24-Aug-09	1,200	840	2,300	79	<20	4,419
MW-13A	23-May-11	1,200	800	2,300	71	<25	4,371
MW-13B	5-Mar-08	17	2.2	9.1	<1.0	<1.0	28
MW-13B	21-Oct-08	4.1	<1.0	3.1	NA	<1.0	7
MW-13B	24-Aug-09	14	5.4	12	<1.0	<1.0	31
MW-13B	23-May-11	20	5.5	21	<1.0	<1.0	47
MW-13C	15-Oct-08	93	7.3	28	<1.0	1.9	130
MW-13C	20-Oct-08	19	1.1	5.3	NA	<1.0	25
MW-13C	24-Aug-09	21	3.7	24	<1.0	<1.0	49
MW-13C	23-May-11	39	8.1	62	<1.0	<1.0	109
MW-14A	5-Mar-08	2.2	<1.0	<1.0	<1.0	<1.0	2
MW-14A	21-Oct-08	4.6	<1.0	<1.0	NA	<1.0	5
MW-14A	21-Aug-09	3.5	<1.0	<1.0	<1.0	<1.0	4
MW-14A	19-May-11	5.9	<1.0	<1.0	<1.0	<1.0	6
MW-15A	17-Oct-08	750	31	<10	<10	<10	781
MW-15A	21-Aug-09	1,300	55	10	<10	<10	1,365
MW-15A	20-May-11	350	<100	<100	<100	<100	350
MW-15B	17-Oct-08	150	2.1	<2.0	<2.0	<2.0	152
MW-15B	21-Aug-09	130	2.3	<2.0	<2.0	<2.0	132
MW-15B	20-May-11	98	4.5	1.1	<1.0	<1.0	104
MW-16A	17-Oct-08	620	87	98	<10	<10	805
MW-16A	21-Aug-09	1,000	220	200	<10	<10	1,420
MW-16A	23-May-11	930	110	200	<10	<10	1,240
MW-16B	16-Oct-08	510	35	49	<1.0	<1.0	594
MW-16B	21-Aug-09	760	84	96	<5.0	<5.0	940
MW-16B	23-May-11	1,200	100	210	<10	<10	1,510
MW-16C (41 - 56)	14-Oct-08	830	63	71	<1.0	<10.0	964
MW-16C (56 - 74)	14-Oct-08	820	64	63	<1.0	<10.0	947
MW-16C	16-Oct-08	640	49	65	<1.0	<10	754
MW-16C	21-Aug-09	540	55	37	<5.0	<5	632
MW-16C	20-May-11	780	61	62	<5.0	<5.0	903
MW-17A	31-Mar-11	950	<10	<10	<10	<10	<10
MW-17A	19-May-11	350	<2.0	<2.0	<2.0	2.1	352

Note:
NR - Not Recorded
NM - Not Measured
Total VOCs - total volatile organic compounds
DO - dissolved oxygen
ORP - oxidation reduction potential
Shading - Concentrations exceeds Type 3 Risk Reduction Standard (RRS).
< Value - Concentration was not detected above the method detection limit.
*Trans-1,2-dichloroethane: TMW-1 (2,300 ug/l). 1,2-dichloroethene: TMW-1 (5.5 ug/l).

Table 2-5
Summary of Historical Groundwater Geochemical Results, October 2008 through May 2011
Tara Shopping Center
Jonesboro, Georgia

Well ID	Sample Date	pH	Dissolved Oxygen (mg/L)	Conductivity (ms/cm)	Temperature (Celsius)	ORP (mV)	Turbidity (NTU)	Observations (i.e., color)
MW-2A	24-Aug-09	DRY						
MW-2A	17-Dec-09	DRY						
MW-2A	28-Jan-10	DRY						
MW-2A	25-Feb-10	5.38	2.32	0.116	20.59	292	530	-
MW-2A	23-Mar-10	5.18	1.67	0.077	21.94	510	660	-
MW-2A	27-Apr-10	4.99	2.40	0.066	21.00	477	421	-
MW-2A	25-May-10	4.85	1.40	0.050	23.77	438	>1000	-
MW-2A	27-Aug-10	DRY						
MW-2A	31-Mar-11	DRY						
MW-2A	16-May-11	DRY						
MW-2B	22-Oct-08	5.06	2.43	0.142	20.80	164	89.5	-
MW-2B	24-Aug-09	7.49	3.06	0.115	22.57	150	21.3	-
MW-2B	16-Oct-09	NA	NA	NA	NA	NA	NA	-
MW-2B	13-Nov-09	NA	NA	NA	NA	NA	NA	-
MW-2B	17-Dec-09	6.20	7.07	0.156	17.32	333	390	-
MW-2B	28-Jan-10	7.25	6.19	0.166	16.31	204	>1000	-
MW-2B	25-Feb-10	7.11	2.66	0.132	19.04	207	828	-
MW-2B	23-Mar-10	6.27	1.70	0.198	21.66	449	77.8	-
MW-2B	27-Apr-10	6.95	3.70	0.173	20.00	350	116	-
MW-2B	25-May-10	6.15	1.53	0.152	22.62	263	263	-
MW-2B	27-Aug-10	6.19	8.09	0.121	24.20	479	146	-
MW-2B	31-Mar-11	5.27	1.86	0.143	19.35	549	NA	-
MW-2B	16-May-11	5.56	0.77	0.109	21.85	243	NA	-
MW-2C	22-Oct-08	9.16	2.22	0.777	20.40	-62*	162	-
MW-2C	24-Aug-09	13.37	4.72	1.140	23.89	-135*	13.8	-
MW-2C	16-Oct-09	NA	NA	NA	NA	NA	NA	-
MW-2C	13-Nov-09	NA	NA	NA	NA	NA	NA	-
MW-2C	17-Dec-09	5.76	6.11	0.817	17.25	260	245	-
MW-2C	28-Jan-10	7.93	3.02	0.900	16.23	128	330	-
MW-2C	25-Feb-10	8.91	2.63	0.782	18.10	151	554	-
MW-2C	23-Mar-10	8.61	1.36	0.898	22.03	224	645	-
MW-2C	27-Apr-10	8.46	2.20	0.875	20.00	253	219	-
MW-2C	25-May-10	7.96	2.55	0.552	24.41	217	274	-
MW-2C	27-Aug-10	8.59	1.06	0.654	25.60	209	76.1	-
MW-2C	31-Mar-11	8.34	0.52	0.425	19.36	260	NA	-
MW-2C	16-May-11	8.35	0.66	0.388	22.42	126	7.99	-
MW-8A	27-Oct-08	4.94	1.79	0.065	20.90	251	18	-
MW-8A	19-Aug-09	5.35	0.31	0.075	24.08	77	39.7	-
MW-8A	16-Oct-09	NA	NA	NA	NA	NA	NA	-
MW-8A	12-Nov-09	NA	NA	NA	NA	NA	NA	-
MW-8A	17-Dec-09	6.28	5.50	0.090	19.33	98	276	-
MW-8A	28-Jan-10	5.78	3.79	0.079	18.62	173	177	-
MW-8A	25-Feb-10	6.30	2.02	0.088	21.02	249	490	-
MW-8A	23-Mar-10	5.81	1.47	0.075	22.09	470	222	-

Table 2-5
Summary of Historical Groundwater Geochemical Results, October 2008 through May 2011
Tara Shopping Center
Jonesboro, Georgia

Well ID	Sample Date	pH	Dissolved Oxygen (mg/L)	Conductivity (ms/cm)	Temperature (Celsius)	ORP (mV)	Turbidity (NTU)	Observations (i.e., color)
MW-8A	27-Apr-10	6.31	2.37	0.100	20.00	453	73	-
MW-8A	25-May-10	5.79	1.10	0.079	22.96	531	648	-
MW-8A	25-May-10	DRY						
MW-8A	31-Mar-11	DRY						
MW-8A	18-May-11	DRY						
MW-8B	16-Oct-08	5.30	5.17	0.390	24.20	274	238	-
MW-8B	19-Aug-09	5.63	3.25	0.115	27.75	261	14.6	-
MW-8B	16-Oct-09	NA	NA	NA	NA	NA	NA	-
MW-8B	12-Nov-09	NA	NA	NA	NA	NA	NA	-
MW-8B	17-Dec-09	7.08	7.57	0.149	18.52	245	678	-
MW-8B	29-Jan-10	7.20	6.12	0.129	18.08	231	202	-
MW-8B	25-Feb-10	6.06	4.89	0.111	19.90	502	155	-
MW-8B	23-Mar-10	6.56	3.69	0.132	21.83	510	130	-
MW-8B	27-Apr-10	5.51	5.53	0.119	23.00	585	90	-
MW-8B	25-May-10	5.41	3.50	0.113	25.87	624	154	-
MW-8B	26-Aug-10	5.47	4.15	0.135	23.00	191	39	-
MW-8B	31-Mar-11	4.73	4.74	0.127	21.54	792	11	-
MW-8B	18-May-11	5.46	4.73	0.110	20.90	63	131	-
MW-8C	16-Oct-08	10.33	2.80	0.654	25.40	-208*	105	-
MW-8C	19-Aug-09	11.12	0.36	0.928	27.55	-128*	6.6	-
MW-8C	16-Oct-09	NA	NA	NA	NA	NA	NA	-
MW-8C	12-Nov-09	NA	NA	NA	NA	NA	NA	-
MW-8C	17-Dec-09	9.06	5.00	0.777	17.66	48	730	-
MW-8C	28-Jan-10	9.08	4.80	0.620	17.30	107	>1000	-
MW-8C	25-Feb-10	9.77	3.66	0.543	19.26	80	833	-
MW-8C	23-Mar-10	9.42	9.58	0.516	21.50	241	263	-
MW-8C	27-Apr-10	6.17	3.54	0.475	20.00	264	181	-
MW-8C	25-May-10	9.03	1.86	0.432	23.66	261	504	-
MW-8C	26-Aug-10	9.35	2.82	0.426	26.00	-58*	83.8	-
MW-8C	31-Mar-11	8.68	5.20	0.247	23.92	303	27.9	-
MW-8C	18-May-11	6.59	2.87	0.196	20.50	525	7.6	-
MW-10A	22-Oct-08	4.53	4.40	0.081	25.10	374	115	-
MW-10A	21-Aug-09	6.47	4.32	0.067	22.57	270	337	-
MW-10A	16-Oct-09	NA	NA	NA	NA	NA	NA	-
MW-10A	13-Nov-09	NA	NA	NA	NA	NA	NA	-
MW-10A	17-Dec-09	5.08	7.18	0.076	19.17	407	870	-
MW-10A	28-Jan-10	5.48	7.81	0.078	20.50	258	900	-
MW-10A	25-Feb-10	5.28	3.73	0.073	19.84	253	950	-
MW-10A	23-Mar-10	5.30	9.38	0.074	18.89	419	820	-
MW-10A	27-Apr-10	5.23	5.70	0.080	21.00	309	491	-
MW-10A	25-May-10	5.16	2.47	0.072	22.45	194	1,000	-
MW-10A	27-Aug-10	5.27	8.28	0.070	23.90	186	781	-
MW-10A	31-Mar-11	4.51	4.65	0.071	21.54	630	NA	-
MW-10A	19-May-11	7.28	4.50	0.130	22.85	259	7	-

Table 2-5
Summary of Historical Groundwater Geochemical Results, October 2008 through May 2011
Tara Shopping Center
Jonesboro, Georgia

Well ID	Sample Date	pH	Dissolved Oxygen (mg/L)	Conductivity (ms/cm)	Temperature (Celsius)	ORP (mV)	Turbidity (NTU)	Observations (i.e., color)
MW-10B	22-Oct-08	5.54	4.61	0.175	24.70	351	32.5	-
MW-10B	21-Aug-09	7.42	5.00	0.155	21.97	184	44.6	-
MW-10B	16-Oct-09	NA	NA	NA	NA	NA	NA	-
MW-10B	13-Nov-09	NA	NA	NA	NA	NA	NA	-
MW-10B	17-Dec-09	5.85	8.33	0.219	18.91	329	160	-
MW-10B	28-Jan-10	6.03	7.45	0.160	19.45	196	49.8	-
MW-10B	25-Feb-10	6.27	3.87	0.162	18.80	150	46	-
MW-10B	23-Mar-10	6.22	9.73	0.170	17.96	370	31.6	-
MW-10B	27-Apr-10	6.24	5.70	0.177	20.00	250	345	-
MW-10B	25-May-10	5.91	2.46	0.169	22.66	117	76.2	-
MW-10B	27-Aug-10	6.13	6.39	0.151	23.58	119	27.1	-
MW-10B	31-Mar-11	5.45	4.30	0.160	21.31	548	NA	-
MW-10B	19-May-11	8.55	4.81	0.181	22.80	214	30.9	-
MW-10C	22-Oct-08	7.17	2.35	0.368	22.40	-174*	183	-
MW-10C	21-Aug-09	11.42	0.42	0.441	29.81	-401*	33.2	-
MW-10C	16-Oct-09	NA	NA	NA	NA	NA	NA	-
MW-10C	13-Nov-09	NA	NA	NA	NA	NA	NA	-
MW-10C	17-Dec-09	5.77	5.30	0.134	17.92	245	450	-
MW-10C	28-Jan-10	6.25	4.85	0.138	19.16	-46*	405	-
MW-10C	25-Feb-10	7.11	1.59	0.230	16.76	253	367	-
MW-10C	23-Mar-10	7.38	2.66	0.218	17.07	228	834	-
MW-10C	27-Apr-10	6.86	1.30	0.275	19.00	83*	168	-
MW-10C	25-May-10	6.99	2.10	0.231	21.92	15*	926	-
MW-10C	27-Aug-10	6.95	1.13	0.241	21.99	109	194	-
MW-10C	31-Mar-11	9.37	1.83	0.312	21.27	143	9.17	-
MW-10C	19-May-11	8.83	0.03	0.231	23.10	274	18	-
MW-11A	17-Oct-08	4.16	0.74	0.072	24.50	274	238	-
MW-11A	20-Aug-09	4.03	0.23	0.036	25.14	359	60.1	-
MW-11A	5-Oct-09	NA	NA	NA	NA	NA	NA	-
MW-11A	13-Nov-09	NA	NA	NA	NA	NA	NA	-
MW-11A	17-Dec-09	4.74	5.01	0.049	19.80	501	1,000	-
MW-11A	28-Jan-10	4.75	3.11	0.053	20.22	425	240	-
MW-11A	25-Feb-10	4.79	1.98	0.051	20.44	614	716	-
MW-11A	23-Mar-10	4.74	1.79	0.050	21.65	695	310	-
MW-11A	27-Apr-10	4.67	1.30	0.059	22.00	640	204	-
MW-11A	25-May-10	4.23	0.58	0.051	24.92	705	748	-
MW-11A	27-Aug-10	4.91	1.42	0.047	24.10	679	485	-
MW-11A	31-Mar-11	4.65	0.37	0.045	23.64	615	5.59	-
MW-11A	16-May-11	DRY						
MW-11B	16-Oct-08	5.19	4.74	0.145	23.40	348	180	-
MW-11B	20-Aug-09	5.37	2.55	0.105	26.54	271	181	-
MW-11B	5-Oct-09	NA	NA	NA	NA	NA	NA	-
MW-11B	13-Nov-09	NA	NA	NA	NA	NA	NA	-
MW-11B	17-Dec-09	5.92	8.11	0.920	18.46	518	195	-

Table 2-5
Summary of Historical Groundwater Geochemical Results, October 2008 through May 2011
Tara Shopping Center
Jonesboro, Georgia

Well ID	Sample Date	pH	Dissolved Oxygen (mg/L)	Conductivity (ms/cm)	Temperature (Celsius)	ORP (mV)	Turbidity (NTU)	Observations (i.e., color)
MW-11B	28-Jan-10	6.19	5.70	0.187	17.90	438	37.2	-
MW-11B	26-Feb-10	6.19	4.10	0.172	20.30	599	127	vivid purple
MW-11B	23-Mar-10	6.47	4.21	0.228	21.08	690	33.5	dark purple
MW-11B	27-Apr-10	5.99	4.90	0.637	21.00	711	6.2	v. dark purple
MW-11B	25-May-10	5.88	3.14	0.456	25.88	674	76.8	purple
MW-11B	27-Aug-10	5.59	8.27	2.540	24.72	749	35.5	v. dark purple
MW-11B	31-Mar-11	5.26	5.83	0.410	22.96	806	5.59	-
MW-11B	19-May-11	NS	NS	NS	NS	NS	NS	Blockage in well
MW-11C	16-Oct-08	6.76	3.40	0.344	23.20	156	67	-
MW-11C	20-Aug-09	6.25	1.79	0.222	26.31	184	10	-
MW-11C	5-Oct-09	NA	NA	NA	NA	NA	NA	-
MW-11C	13-Nov-09	NA	NA	NA	NA	NA	NA	-
MW-11C	17-Dec-09	5.80	6.90	0.287	18.06	554	59.9	-
MW-11C	29-Jan-10	6.03	4.87	0.213	17.40	199	38	-
MW-11C	25-Feb-10	6.74	3.74	0.218	19.06	304	97	-
MW-11C	23-Mar-10	6.79	2.49	0.224	20.45	362	39.7	-
MW-11C	27-Apr-10	6.15	1.50	0.224	21.00	269	3.6	-
MW-11C	25-May-10	6.25	2.17	0.238	25.60	235	34	-
MW-11C	27-Aug-10	6.42	2.71	0.184	25.60	533	17.1	purple
MW-11C	31-Mar-11	6.64	2.91	0.216	20.29	593	5.59	-
MW-11C	17-May-11	6.61	5.52	0.260	19.50	279	7.9	-

Notes:
NA: Not Available. NS: Not Sampled.
Baseline groundwater sampling completed the week of August 17, 2009.
Potassium permanganate slurry injection completed the week of August 24, 2009.
Injection completed upgradient of MW-11 cluster at injection points IW-1A, IW-1B, and IW-2.
*: Value may be erroneous and may not represent actual aquifer conditions at the time of the monitoring event.

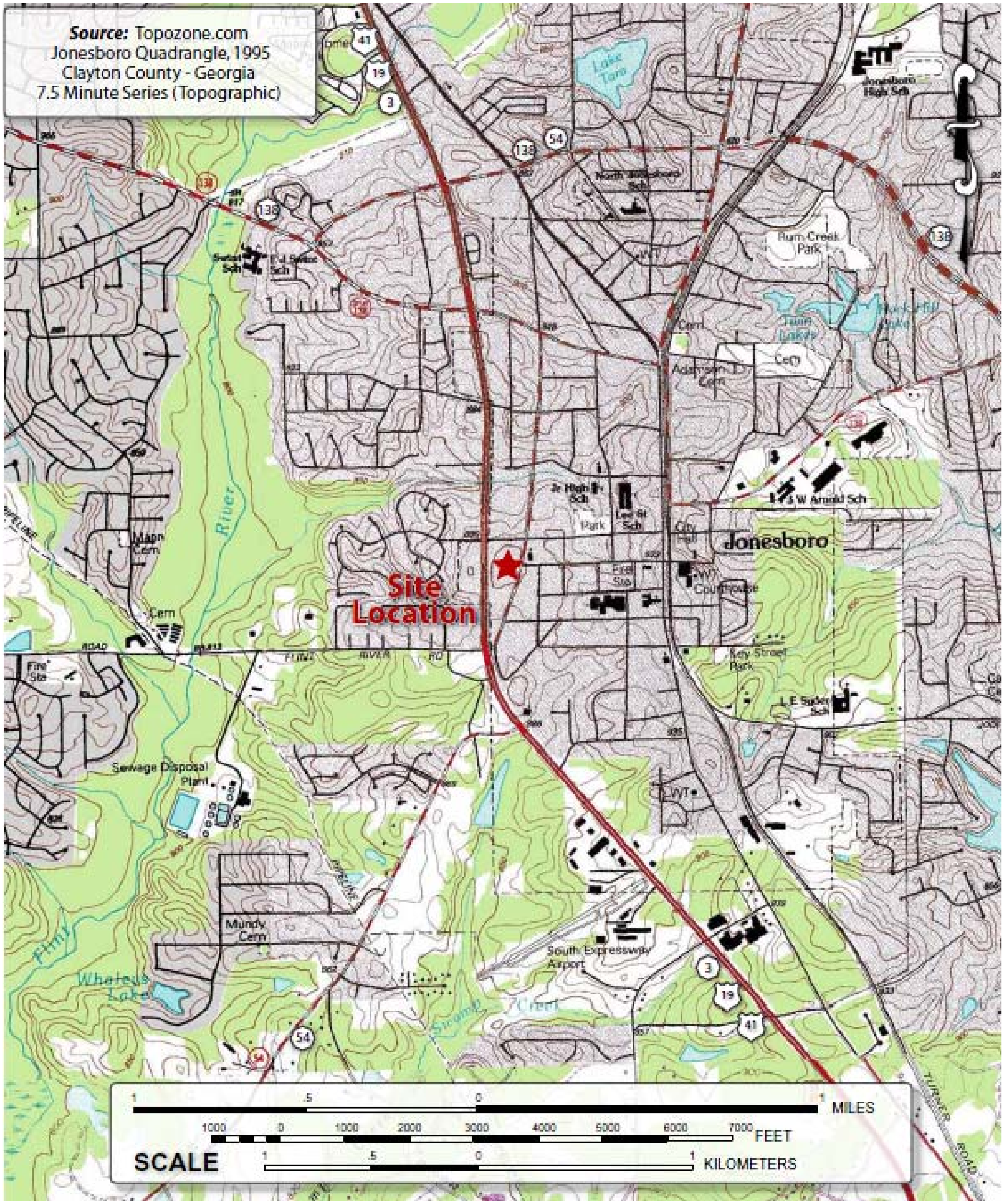
Table 2-6
Summary of Surface Water Analytical Results
Tara Shopping Center
Jonesboro, Georgia

Sample ID	Sample Date	PCE	TCE	cis-1, 2 DCE	Vinyl Chloride
USEPA Region IV Freshwater Surface Water Chronic Screening Values[1] (mg/L)		**84**	**47[2]**	**1,350[3]**	**930[2]**
SS-1	10/5/2009	16	1.2	1.9	<1.0
	8/27/2010	170	15	9.8	<1.0
	3/31/2011	33	24	2.0	<1.0
	11/2/2011	52	3.7	5.6	<1.0
SS-2	10/5/2009	22	<1.0	1.0	<1.0
	8/27/2010	81	5.9	6.5	<1.0
	3/31/2011	12	<1.0	<1.0	<1.0
	11/2/2011	4.0	<1.0	<1.0	<1.0
T-1	3/31/2011	1.3	<1.0	<1.0	<1.0
T-2	3/31/2011	<1.0	<1.0	<1.0	<1.0
T-3	3/31/2011	<1.0	<1.0	<1.0	<1.0
T-4	3/31/2011	<1.0	<1.0	<1.0	<1.0
EB-2011	11/2/2011	<1.0	<1.0	<1.0	<1.0
Tripblank	11/2/2011	<1.0	<1.0	<1.0	<1.0

Notes:
1. Source: http://www.epa.gov/region4/waste/ots/ecolbul.html#tbl1
2. No USEPA Region IV Freshwater criteria. USEPA Region V RCRA Ecological Screening Levels (2003) used as an alternative. Source: http://www.epa.gov/reg5rcra/
3. Value equal to USEPA Region IV Freshwater criteria for trans-1,2-DCE based on ECOSAR evaluation

PCE - Tetrachloroethene
TCE - Trichloroethene
cis-1,2-DCE - cis-1,2-Dichloroethene
mg/L - micrograms per liter
Shading - Concentrations exceeds standard.

FIGURES



EHS Support consider it done
www.ehs-support.com

FIGURE 1-1

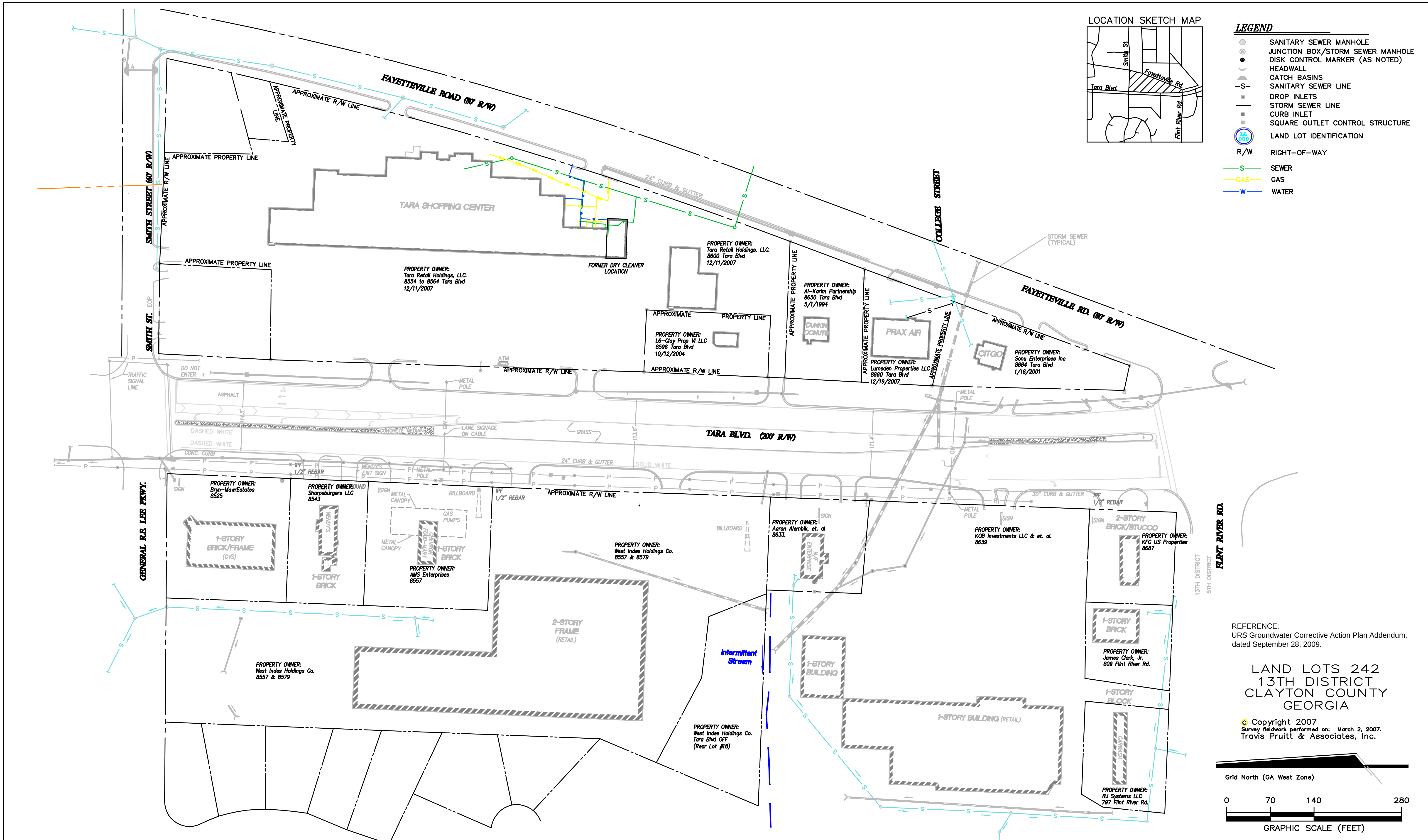
SITE LOCATION MAP

JONESBORO, GEORGIA

CLIENT: Ashland Alterman Enterprises	TITLE: Aerial Site Plan
PROJECT: Parcel ID 13242DB001, Tara Plaza, 8564 Tara Blvd, Jonesboro, GA	
DATE: January 2006	
SCALE: Unknown	
FILE: H:\proj\AshlandAltermanEnt\Figure 4.ai	

FIGURE 1-2

Reference: Original Document created by URS Corporation, January 2006



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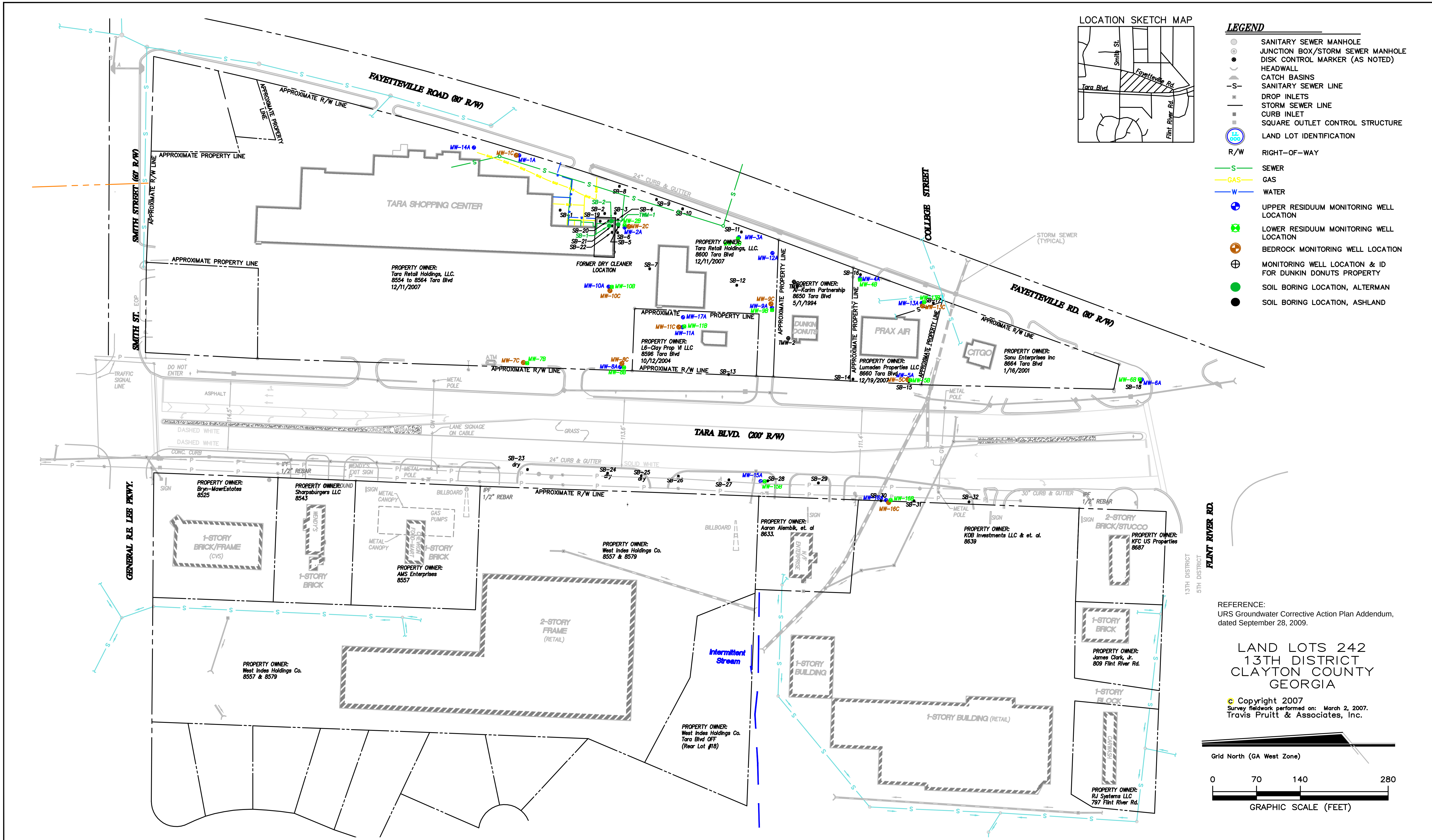
REVISIONS			
Rev.	By:	Disc.:	Date:
Rev.	By:	Disc.:	Date:
Rev.	By:	Disc.:	Date:
Rev.	By:	Disc.:	Date:

ASHLAND INC.
TARA HOLDINGS
8564 TARA BOULEVARD
JONESBORO, GEORGIA

FIGURE 2-1
SITE LAYOUT AND PROPERTY OWNERSHIP MAP

Drawn By:	MDO	Date Drawn:	01/05/2012
Reviewed By:	MN	Date Reviewed:	01/2012
Scale:	1" = 140'	Plot Date:	01/2012
Project Number.:			



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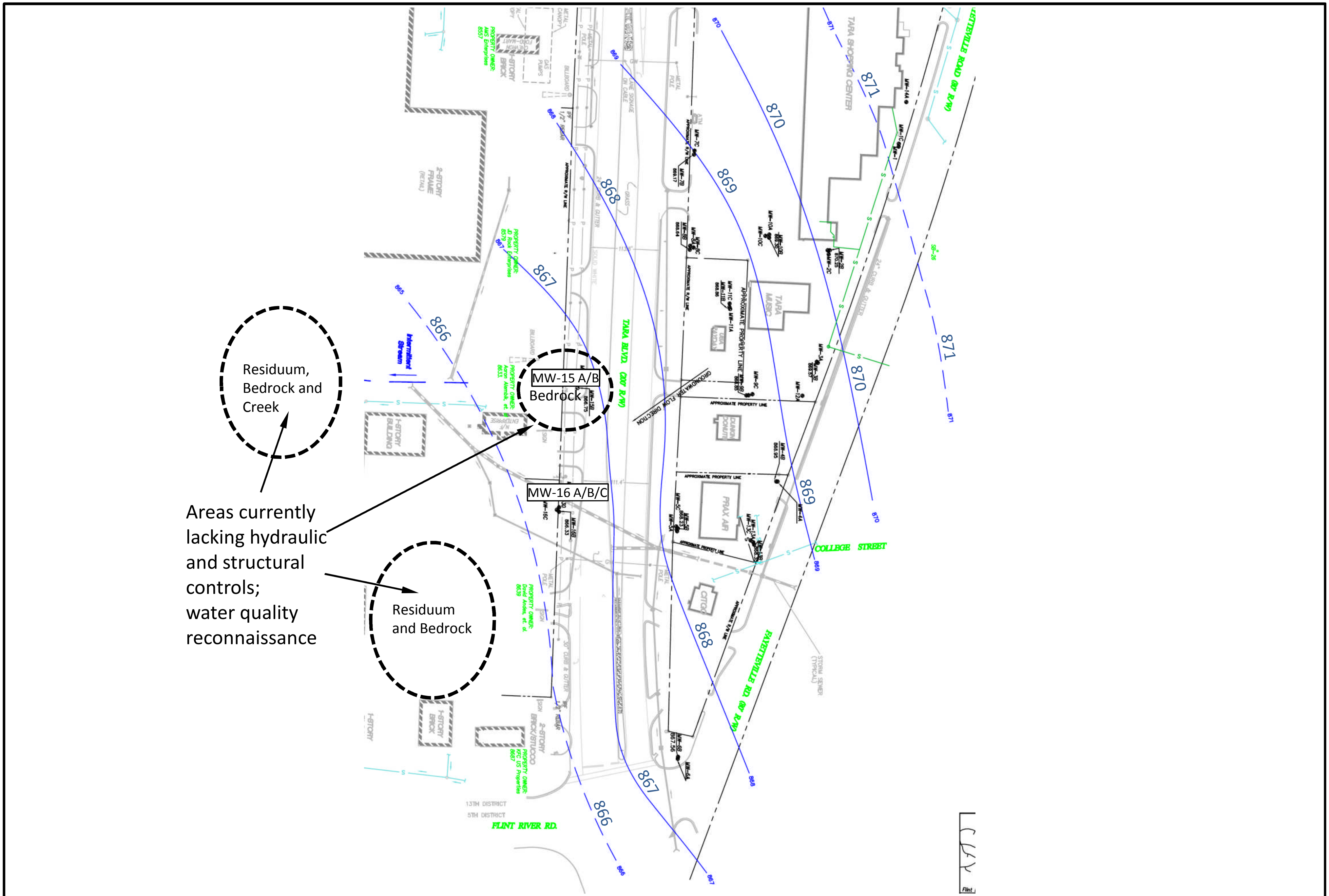
Rev.		By:	Disc.:	Date:	
Rev.		By:	Disc.:	Date:	
Rev.		By:	Disc.:	Date:	

ASHLAND INC.
TARA HOLDINGS
8564 TARA BOULEVARD
JONESBORO, GEORGIA

FIGURE 2-2
HISTORICAL SOIL BORING LOCATIONS AND MONITORING WELL LOCATIONS

Drawn By:	MDO	Date Drawn:	12/06/2012
Reviewed By:	MN	Date Reviewed:	12/2012
Scale:	1" = 140'	Plot Date:	12/2012
Project Number.:			



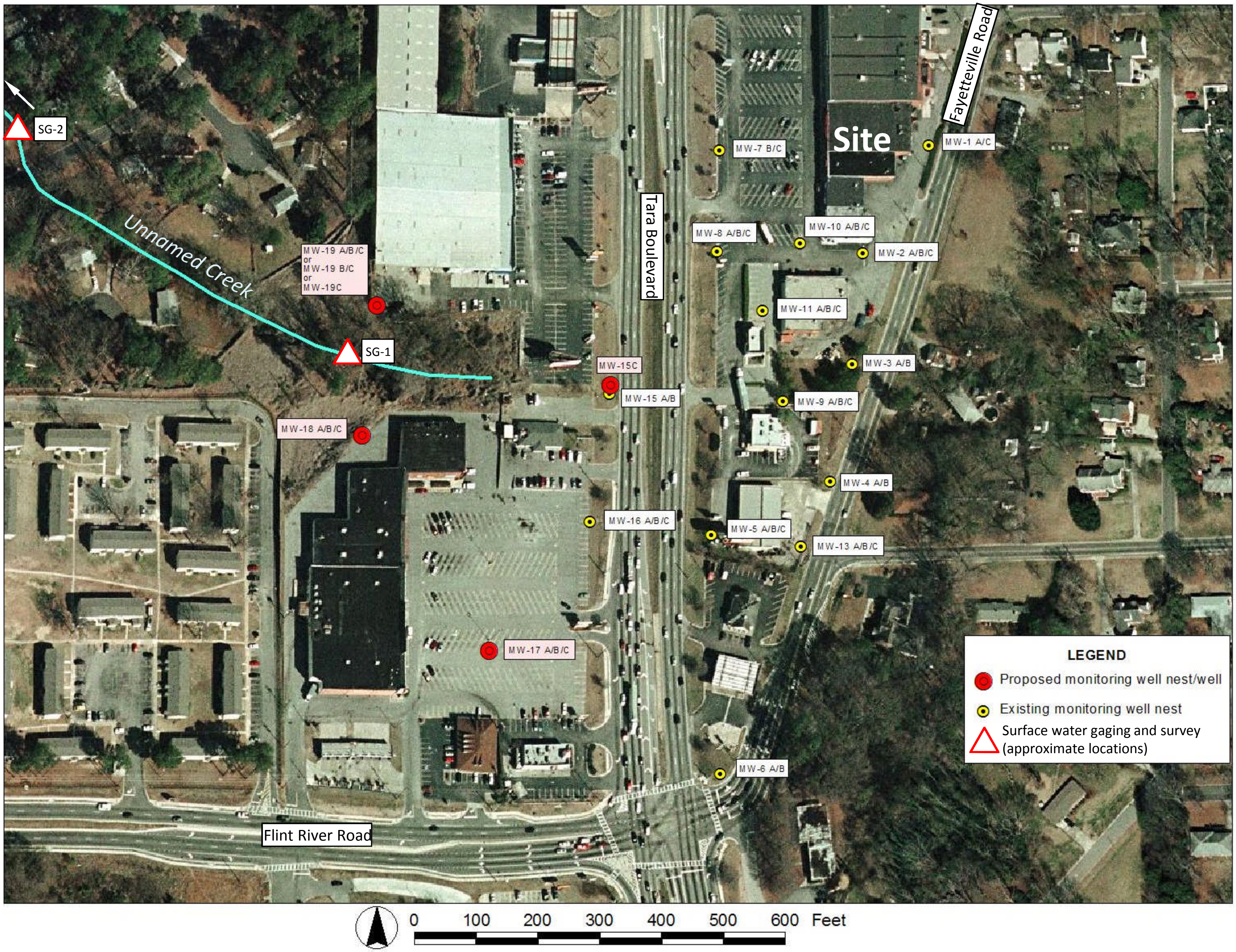
TARA SHOPPING CENTER
JONESBORO, GEORGIA

EHS Support

May, 2011

POTENTIOMETRIC SURFACE CONTOURS OF THE LOWER RESIDUUM – AUGUST 19, 2009 AND OFF-SITE REGIONS REQUIRING HYDRAULIC CONTROLS AND WATER QUALITY RECONNAISSANCE

FIGURE 4-1



TARA SHOPPING CENTER JONESBORO, GEORGIA EHS Support May, 2011	PROPOSED OFF-SITE MONITORING WELL NEST/WELL	FIGURE 4-2

APPENDIX A

Voluntary Investigation and Remediation Plan Application Form and Checklist

Voluntary Investigation and Remediation Plan Application Form and Checklist

VRP APPLICANT INFORMATION					
COMPANY NAME	Ashland Inc.				
CONTACT PERSON/TITLE	Michael Dever, Remediation Project Manager				
ADDRESS	5200 Blazer Parkway, DS-4, Dublin, OH 43017				
PHONE	614-790-3915	FAX	614-790-6232	E-MAIL	mbdever@ashland.com

GEORGIA CERTIFIED PROFESSIONAL GEOLOGIST OR PROFESSIONAL ENGINEER OVERSEEING CLEANUP					
NAME	Kristin A. VanLandingham			GA PE/PG NUMBER	PE035825
COMPANY	EHS Support, Inc.				
ADDRESS	5976 Thornton Lane				
PHONE	850-251-0582	FAX	412-774-2990	E-MAIL	k.vanlandingham@ehs-support.com

APPLICANT'S CERTIFICATION

In order to be considered a qualifying property for the VRP:

(1) The property must have a release of regulated substances into the environment;
(2) The property shall not be:
- (A) Listed on the federal National Priorities List pursuant to the federal Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. Section 9601.
- (B) Currently undergoing response activities required by an order of the regional administrator of the federal Environmental Protection Agency; or
- (C) A facility required to have a permit under Code Section 12-8-66.

(3) Qualifying the property under this part would not violate the terms and conditions under which the division operates and administers remedial programs by delegation or similar authorization from the United States Environmental Protection Agency.
(4) Any lien filed under subsection (e) of Code Section 12-8-96 or subsection (b) of Code Section 12-13-12 against the property shall be satisfied or settled and released by the director pursuant to Code Section 12-8-94 or Code Section 12-13-6.

In order to be considered a participant under the VRP:
- (1) The participant must be the property owner of the voluntary remediation property or have express permission to enter another's property to perform corrective action.
- (2) The participant must not be in violation of any order, judgment, statute, rule, or regulation subject to the enforcement authority of the director.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

I also certify that this property is eligible for the Voluntary Remediation Program (VRP) as defined in Code Section 12-8-105 and I am eligible as a participant as defined in Code Section 12-8-106.

APPLICANT'S SIGNATURE	Karen T Murphy		
APPLICANT'S NAME/TITLE (PRINT)	Karen T. Murphy, Vice President EH&S Ashland Inc.	DATE 1/9/12	

GRA

QUALIFYING PROPERTY INFORMATION (For additional qualifying properties, please refer to the last page of application form)			
HAZARDOUS SITE INVENTORY INFORMATION (if applicable)			
HSI Number	10798	Date HSI Site listed	04/26/05
HSI Facility Name	Tara Shopping Center	NAICS CODE	-
PROPERTY INFORMATION			
TAX PARCEL ID	13242D B001, 4th District	PROPERTY SIZE (ACRES)	6.9
PROPERTY ADDRESS	8554-8600 Tara Boulevard		
CITY	Jonesboro	COUNTY	Clayton
STATE	Georgia	ZIPCODE	30236
LATITUDE (decimal format)	33.518611° North	LONGITUDE (decimal format)	81.362778° West
PROPERTY OWNER INFORMATION			
PROPERTY OWNER(S)	Tara Retail Holdings, LLC Represented by: Mr. W. Scott Laseter Kazmarek Geiger & Laseter LLP	PHONE # (404) 812-0844	
MAILING ADDRESS	Rep: 3490 Piedmont Road, N.E., Suite 350		
CITY	Atlanta	STATE/ZIPCODE Georgia 30305	

ITEM #	DESCRIPTION OF REQUIREMENT	Location in VRP (i.e. pg., Table #, Figure #, etc.)	For EPD Comment Only (Leave Blank)
1.	**$5,000 APPLICATION FEE** IN THE FORM OF A CHECK PAYABLE TO THE GEORGIA DEPARTMENT OF NATURAL RESOURCES. (PLEASE LIST CHECK DATE AND CHECK NUMBER IN COLUMN TITLED "LOCATION IN VRP." PLEASE DO NOT INCLUDE A SCANNED COPY OF CHECK IN ELECTRONIC COPY OF APPLICATION.)	**Check #20060413** **Date 12/21/2011**	
2.	**WARRANTY DEED(S)** FOR QUALIFYING PROPERTY.	**Appendix B**	
3.	**TAX PLAT** OR OTHER FIGURE INCLUDING QUALIFYING PROPERTY BOUNDARIES, ABUTTING PROPERTIES, AND TAX PARCEL IDENTIFICATION NUMBER(S).	**Appendix B**	
4.	**ONE (1) PAPER COPY AND TWO (2) COMPACT DISC (CD) COPIES** OF THE VOLUNTARY REMEDIATION PLAN IN A SEARCHABLE PORTABLE DOCUMENT FORMAT (PDF).	**Attached**	
5.	The VRP participant's initial plan and application must include, using all reasonably available current information to the extent known at the time of application, a graphic three-dimensional preliminary conceptual site model (CSM) including a preliminary remediation plan with a table of delineation standards, brief supporting text, charts, and figures (no more than 10 pages, total) that illustrates the site's surface and subsurface setting, the known or suspected source(s) of contamination, how contamination might move within the environment, the potential human health and ecological receptors, and the complete or incomplete exposure pathways that may exist at the site; the preliminary CSM must be updated as the investigation and remediation progresses and an up-to-date CSM must be included in each semi-annual status report submitted to the director by the participant; a **PROJECTED**	***CSM*** **Section 3.0, Appendix D** ***Schedule*** **Appendix E**	

	annual status report to the director describin[illegible]plementation of the plan during the preceding period. A Gantt chart format is preferred for the milestone schedule. The following four (4) generic milestones are required in all initial plans with the results reported in the participant's next applicable semi-annual reports to the director. The director may extend the time for or waive these or other milestones in the participant's plan where the director determines, based on a showing by the participant, that a longer time period is reasonably necessary:		
5.a.	Within the first 12 months after enrollment, the participant must complete horizontal delineation of the release and associated constituents of concern on property where access is available at the time of enrollment;	**Appendix E**	
5.b.	Within the first 24 months after enrollment, the participant must complete horizontal delineation of the release and associated constituents of concern extending onto property for which access was not available at the time of enrollment;	**Appendix E**	
5.c.	Within 30 months after enrollment, the participant must update the site CSM to include vertical delineation, finalize the remediation plan and provide a preliminary cost estimate for implementation of remediation and associated continuing actions; and	**Appendix E**	
5.d.	Within 60 months after enrollment, the participant must submit the compliance status report required under the VRP, including the requisite certifications.	**Appendix E**	
6.	**SIGNED AND SEALED PE/PG CERTIFICATION** AND SUPPORTING DOCUMENTATION: "I certify under penalty of law that this report and all attachments were prepared by me or under my direct supervision in accordance with the Voluntary Remediation Program Act (O.C.G.A. Section 12-8-101, et seq.). I am a professional engineer/professional geologist who is registered with the Georgia State Board of Registration for Professional Engineers and Land Surveyors/Georgia State Board of Registration for Professional Geologists and I have the necessary experience and am in charge of the investigation and remediation of this release of regulated substances. Furthermore, to document my direct oversight of the Voluntary Remediation Plan development, implementation of corrective action, and long term monitoring, I have attached a monthly summary of hours invoiced and description of services provided by me to the Voluntary Remediation Program participant since the previous submittal to the Georgia Environmental Protection Division. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." Kristin A. VanLandingham PE035825 Printed Name and GA PE/PG Number 1/6/12 Date Signature and Stamp GEORGIA REGISTERED No. PE035825 PROFESSIONAL ENGINEER KRISTIN A. VANLANDINGHAM		

ADDITIONAL QUALIFYING PROPERTIES (COPY THIS PAGE AS NEEDED)

PROPERTY INFORMATION			
TAX PARCEL ID		PROPERTY SIZE (ACRES)	
PROPERTY ADDRESS			
CITY		COUNTY	
STATE		ZIPCODE	
LATITUDE (decimal format)		LONGITUDE (decimal format)	
PROPERTY OWNER INFORMATION			
PROPERTY OWNER(S)		PHONE #	
MAILING ADDRESS			
CITY		STATE/ZIPCODE	

PROPERTY INFORMATION			
TAX PARCEL ID		PROPERTY SIZE (ACRES)	
PROPERTY ADDRESS			
CITY		COUNTY	
STATE		ZIPCODE	
LATITUDE (decimal format)		LONGITUDE (decimal format)	
PROPERTY OWNER INFORMATION			
PROPERTY OWNER(S)		PHONE #	
MAILING ADDRESS			
CITY		STATE/ZIPCODE	

PROPERTY INFORMATION			
TAX PARCEL ID		PROPERTY SIZE (ACRES)	
PROPERTY ADDRESS			
CITY		COUNTY	
STATE		ZIPCODE	
LATITUDE (decimal format)		LONGITUDE (decimal format)	
PROPERTY OWNER INFORMATION			
PROPERTY OWNER(S)		PHONE #	
MAILING ADDRESS			
CITY		STATE/ZIPCODE	

APPENDIX B

Tax Map and Warranty Deed

PREVIOUS PARCEL | NEXT PARCEL

NEW SEARCH

CLAYTON COUNTY PROPERTY CARD FOR YEAR 2011

TARA RETAIL HOLDINGS LLC
5887 GLENRIDGE DR NE
SUITE 275

ATLANTA, GA 30328

PARCEL ID . . 13242D B001
LOCATION . . 8600 TARA BLVD
DEED YEAR 2007 BOOK 9320 PAGE 519 OWNER ID . . . R387933

LEGAL DESC . DISTRICT 4 JONESBORO
AREA. . . . . .111 C & I APPRAISER AREA 1
NBRHOOD

DESCRIPTION ALL UTILITIES
DESCRIPTION PAVED ROAD
ROAD FRONT . . . 620.0 900.0
PARCEL STATUS . . ACTIVE

SHOPPING CENTER-LARGE

******* CURRENT YR APV/LUV VALUE OVERRIDE EXISTS FOR: . . . LAND IMPROVEMENTS

SALES HISTORY

DEED BOOK	PAGE	SALE DATE	SALES INSTRUMENT	DISQUALIFIED	SALE AMT	TRANS TYPE	DEED NAME
9320	519	12/11/07	WARRANTY DEED	DOES NOT REFLEC	500,000	XFR	TARA RETAIL HOLDINGS LLC
1352	804	1/01/86	WARRANTY DEED	.		XFR	ALTERMAN ENTERPRISES LTD

LAND SEGMENTS

LND#	ZONE	STRAT CODE	LAND TYPE/CODE	LAND QTY	LAND RATE	DPT%	SHP%	LOC%	SIZ%	OTH%	TOP%	TOT ADJ	CURRENT FMV
1	GB	C4	SF *OVR*	302,306.000	2.50	.00	.00	.00	.00	.00	.00	.00	756,000

MAP ACRES . . 6.940 TOTAL LAND FMV 756,000

IMPROVEMENT # 1 MISC IMPR-Y

MAIN FIN AREA . .
STRAT C1

ACT/EFF YR/AGE . . 1983 28
DESCRIPTION . . . .VARIOUS

	% COMP	UNITS	STR#	COST
BUILDINGS	100	71732.00		

FMV 1,494,000

IMPROVEMENT # 2 MISC IMPR-Y

MAIN FIN AREA . .
STRAT C1

ACT/EFF YR/AGE . .
DESCRIPTION . . . .LH - JACKSON HEWITT

	% COMP	UNITS	STR#	COST
LEASEHOLD ACCT #	100	950437.00		

FMV 892

IMPROVEMENT # 4 MISC IMPR-Y

MAIN FIN AREA . .
STRAT C1

ACT/EFF YR/AGE . .
DESCRIPTION . . . .LH - HAIRLINES

	% COMP	UNITS	STR#	COST
LEASEHOLD ACCT #	100	771266.00		

FMV 681

IMPROVEMENT # 6 MISC IMPR-Y

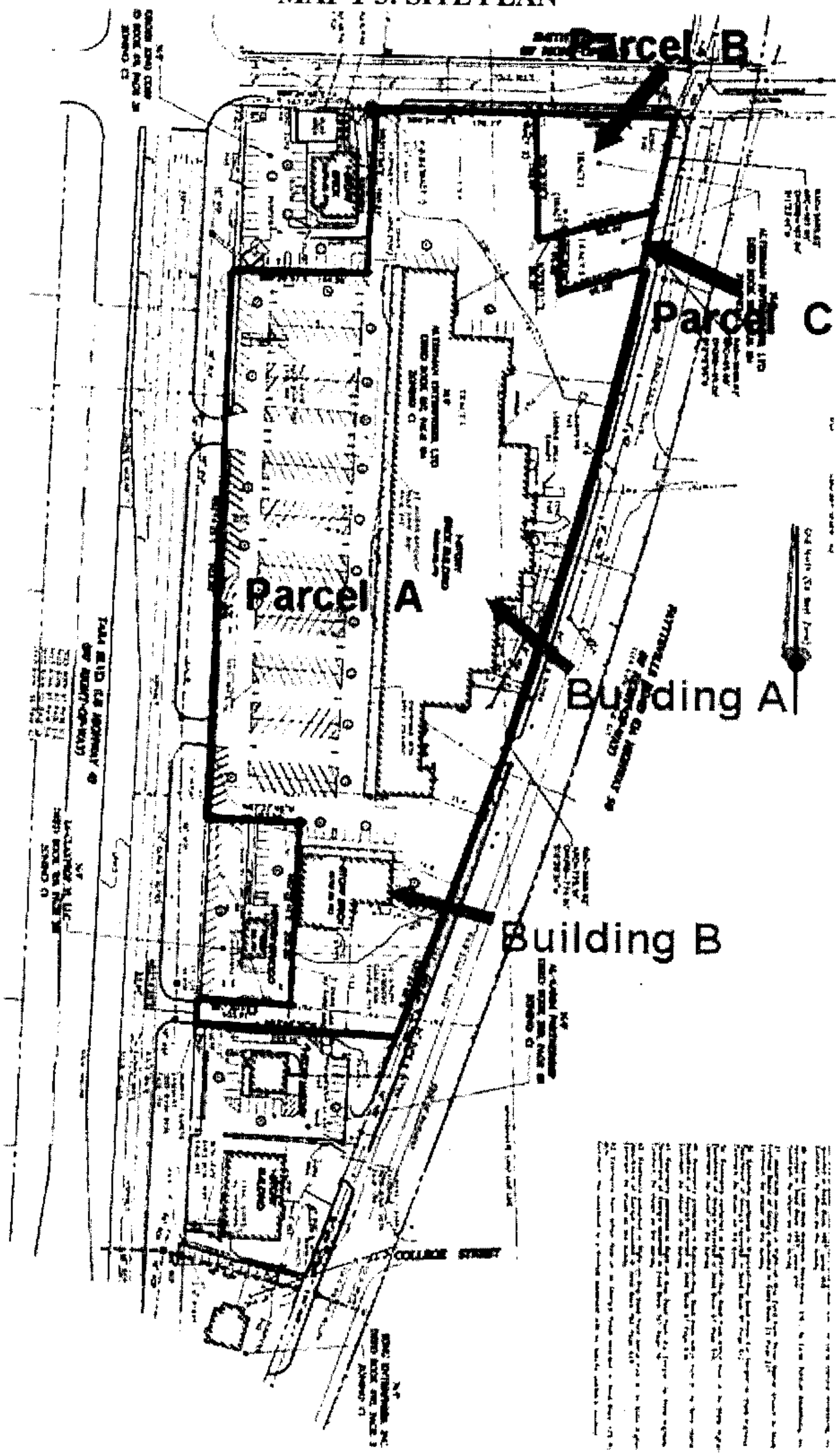
MAIN FIN AREA . .
STRAT C1

ACT/EFF YR/AGE . .
DESCRIPTION . . . .LH - FARMERS FURNITURE

	% COMP	UNITS	STR#	COST
LEASEHOLD ACCT #	100	30016.00		

FMV 104,825

MAP 1-3: SITE PLAN



After recording please return to:
WEENER & NATHAN LLP
5887 Glenridge Drive, NE
Suite 275
Atlanta, Georgia 30328
Attn: Eric J. Nathan

Clayton County, Georgia
Real Estate Transfer Tax
Paid 500.00
Date 2007 Dec 12
Linda T. Miller
Clerk, Superior Court

FILED
CLAYTON CO., GA
2007 DEC 12 PM 4:47
LINDA T. MILLER
CLERK SUPERIOR COURT
60202

LIMITED WARRANTY DEED

THIS INDENTURE, made and entered into as of the 11th day of ~~June~~ December, 2007, by and between **ALTERMAN ENTERPRISES, LLC**, a Georgia limited liability company (successor by change in form of entity from Alterman Enterprises, Ltd.) (hereinafter referred to as "Grantor"), and **TARA RETAIL HOLDINGS LLC**, a Georgia limited liability company (hereinafter referred to as "Grantee") (the words "Grantor" and "Grantee" to include their respective heirs, legal representatives, successors and assigns where the context requires or permits);

WITNESSETH, THAT:

GRANTOR, for and in consideration of the sum of TEN AND NO/100 DOLLARS ($10.00) and other good and valuable consideration, in hand paid at and before the sealing and delivery of these presents, the receipt whereof is hereby acknowledged, has granted, bargained, sold, aliened, conveyed and confirmed, and by these presents does grant, bargain, sell, alien, convey and confirm unto said Grantee, all those tracts or parcels of land lying and being located in Clayton County, Georgia, and being more particularly described in Exhibit "A" attached hereto and incorporated herein by this reference (hereinafter referred to as the "Property").

THIS CONVEYANCE and the warranties herein contained are expressly made subject to all matters of record, all matters which would be disclosed upon an inspection and accurate survey of the Property and rights of tenants under unrecorded leases.

TO HAVE AND TO HOLD the said described Property, with all and singular the rights, members and appurtenances thereof, to the same being, belonging, or in anywise appertaining, only to the proper use, benefit and behoof of the said Grantee forever in FEE SIMPLE.

AND THE SAID GRANTOR will warrant and forever defend the right and title to the above described Property unto the said Grantee against the claims of all persons and entities owning, holding or claiming by, through or under Grantor, but not otherwise; subject, however, to the matters hereinabove set forth.

Grantee, on behalf of itself and its successors, successors-in-title, successors-in-interest and assigns (collectively, the "Grantee Parties"), acknowledges, agrees and confirms that it has

BK09320PG519

purchased the property conveyed hereby (i) in "AS-IS" condition, with no representation or warranty as to the physical (including environmental) condition of said property, either at, above or below grade, and (ii) after Grantee has performed such examinations and investigations as it has deemed appropriate; and, in furtherance thereof, Grantee, for itself and its successors, successors-in-title, successors-in-interest and assigns, hereby releases Grantor, Grantor's predecessor entity and their members, partners, successors and assigns (except for the Grantee Parties) of all claims, obligations, liabilities, costs or expenses, whether known or unknown, now or hereafter arising, pertaining to the physical condition (including environmental) of the property conveyed hereby. Further, if any corrective action, including investigation and remediation, is required as a direct or indirect result of any application made under O.C.G.A. Section 12-8-200 et. seq. by Grantee or its successors, successors-in-title, successors-in-interest and assigns, including but not limited to any corrective action that might otherwise be required of Grantor under the auspices of O.C.G.A. section 12-8-96 et. seq. or under other environmental laws, Grantee (or such successor or assign) shall complete such corrective action at its sole cost and expense and without any payment or contribution required from Grantor, Grantor's predecessor entity and/or their members, partners, successors and assigns (except for the Grantee Parties). The terms and conditions of this grammatical paragraph shall run with the land.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, Grantor has executed and sealed this Limited Warranty Deed on the day and year first above written.

Signed, sealed and delivered
in the presence of:

Unofficial Witness

Notary Public

My Commission Expires:

(NOTARIAL SEAL)

KEVIN WOOLF
NOTARY PUBLIC
MY COMMISSION EXPIRES AUGUST 26, 2000
DEKALB COUNTY, GEORGIA

GRANTOR:

ALTERMAN ENTERPRISES, LLC,
a Georgia limited liability company

By: ______________(SEAL)
Name: Kusiel Kaplan, General Manager

Signed, sealed and delivered
in the presence of:

Unofficial Witness

Notary Public

My Commission Expires:

(NOTARIAL SEAL)

KEVIN WOOLF
NOTARY PUBLIC
MY COMMISSION EXPIRES AUGUST 26, 2000
DEKALB COUNTY, GEORGIA

By: ______________(SEAL)
Name: Herbert Singer, General Manager

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00522

Signed, sealed and delivered in the presence of:	**TARA RETAIL HOLDINGS LLC,** a Georgia limited liability company
Frank Slover Unofficial Witness	By: ______________ (SEAL) Name: Eric J. Nathan Title: Manager
Notary Public	
My Commission Expires: ______	
[NOTARIAL SEAL]	

KEVIN WOOLF
NOTARY PUBLIC
MY COMMISSION EXPIRES AUGUST 25, 2002
DEKALB COUNTY, GEORGIA

BK09320PG522

EXHIBIT "A"

LEGAL DESCRIPTION

TARA

MAIN TRACT

All that tract or parcel of land lying and being in Land Lots 241-242 of the 13th District of Clayton County, Georgia, as per plat of W. R. Franks, Land Surveyor, dated February 28, 1966, revised February 21, 1967, being more particularly described as follows:

BEGINNING at the intersection formed by the southerly side of the right of way of Smith Street with the easterly side of the right of way of the South Expressway; running thence south along the easterly side of the right of way of the South Expressway 1243.5 feet to an iron pin and the property now or formerly leased to Pure Oil Company; running thence southeasterly along said property line 145.6 feet to an iron pin located on the westerly side of the right of way of Georgia State Highway #54; running thence northeasterly along the westerly side of the right of way of Georgia State Highway #54, 1165.9 feet to an iron pin; running thence west at an interior angle of 77 degrees 30 minutes with the last mentioned call 100 feet to an iron pin; running thence north 181.8 feet to an iron pin located on the southerly side of the right of way of Smith Street; running thence west along the southerly side of the right of way of Smith Street 338.7 feet to the point where the southerly side of the right of way of Smith Street intersects the easterly side of the right of way of the South Expressway and the POINT OF BEGINNING. Said tract containing an aggregate of 9.29 acres according to the above plat.

TARA
WILLIS TRACT

All that tract or parcel of land lying and being in Land Lot 241, of the 13th District, of Clayton County, Georgia, and being more particularly described as follows:

BEGIN at an iron pin on the westerly side of Fayetteville Road (Georgia State Highway #54) 107.9 feet south of the intersection of the westerly side of Fayetteville Road and the southerly side of Smith Street, as measured along the westerly side of Fayetteville Road; run thence south along the westerly side of Fayetteville Road a distance of 65.00 feet to an iron pin; run thence southwest a distance of 95.00 feet to an iron pin; run thence north 81 degrees 15 minutes west forming an interior angle of 68 degrees 41 minutes with the preceding course a distance of 65.00 feet to an iron pin; run thence northeast a distance of 105.00 feet to an iron pin on the westerly side of Fayetteville Road and the Point of Beginning; being more fully shown on survey prepared by Eaton Pendley & Associates, Inc., dated December 18, 1984.

This deed is given subject to all easements and restrictive covenants of record.

[LEGAL CONTINUES ON FOLLOWING PAGE]

BK09320PG523

09320
00524

[CONTINUATION OF TARA LEGAL DESCRIPTION]

TOGETHER WITH:

TARA
COGGINS TRACT

All that tract or parcel of land lying and being in Land Lot 241, of the 13th District, of Clayton County, Georgia, and being more particularly described as follows:

BEGIN at an iron pin at the intersection of the southerly side of Smith Street and the westerly side of Fayetteville Road (Georgia State Highway #54); run thence South along the westerly side of Fayetteville Road a distance of 107.90 feet to an iron pin; run thence South 69 degrees 24 minutes West a distance of 131.38 feet to an iron pin; run thence north along the westerly line of Land Lot 241 forming an interior angle of 74 degrees 18 minutes with the preceding course a distance of 140.88 feet to an iron pin on the southerly side of Smith Street; run thence east along the southerly side of Smith Street a distance of 131.98 feet to an iron pin and the Point of Beginning; being more fully shown on survey prepared by Weston Pendley & Assoc., Inc., dated December 18, 1984.

This deed is given subject to all easements and restrictive covenants of record.

LESS AND EXCEPT any portion(s) of the above-described property that was conveyed to third parties by Grantor or Grantor's predecessor(s) in title.

[END OF LEGAL DESCRIPTION]

BK09320PG524

ATI 32409160.1

APPENDIX C

Remediation Agreement

ASHLAND.

Ashland Inc.
.P.O. Box 2219
Columbus, OH 43216
Tel: (614) 790-3333
www.ashland.com

December 2, 2011

Mrs. Carrie Williams-Welty
Georgia Department of Natural Resources
Response and Remediation Program
2 Martin Luther King, Jr. Drive
S.E. Suite 1462, East Tower
Atlanta, Georgia 30334-9000

Mr. Jason Metzger
Georgia Department of Natural Resources
Response and Remediation Program
2 Martin Luther King, Jr. Drive
S.E. Suite 1462, East Tower
Atlanta, Georgia 30334-9000

RE: Remediation Cooperation Agreement
Tara Shopping Center, HSI Site Number 10798
8564 Tara Boulevard, Jonesboro, Georgia

Dear Mr. Metzger,

We have finally reached an agreement with Tara Retail Holdings, LLC. (Tara) for remediation on the above-referenced property. Enclosed is a copy of the Remediation Cooperation Agreement between Tara and Ashland Inc. (Ashland) for your files. The Scope-of-Work and Escrow Agreements are also included as exhibits to the agreement. We will notify you once the Escrow Account is established. Ashland still intends to submit the Voluntary Remediation Program applications by December 31, 2011.

Should have any questions, comments or concern, please feel free to contact Michael Dever of Ashland at 614-790-1586.

Sincerely,

Michael B. Dever

Michael Dever
Ashland Inc.
Remediation Project Manager

cc: Michael Dever, Ashland Inc.
Rich Williams, Ashland Inc.
Chet Tisdale, King and Spalding
Michelle Nylen-Stayrook, EHS Support

REMEDIATION AGREEMENT

This Remediation Agreement ("Agreement") is made between Ashland Inc., a Kentucky corporation ("Ashland"), and Tara Retail Holdings, LLC, a Georgia Limited Liability Company ("Tara"). This Agreement is effective upon execution by Ashland and Tara.

WHEREAS, Tara owns property located at 8564 Tara Boulevard in Jonesboro, Georgia hereinafter referred to as the "Property" or the "Tara Property".

WHEREAS, The Tara Property is a shopping center. One of the former tenants in the shopping center operated a dry cleaner which used Tetrachloroethylene (PCE) for cleaning. Releases of PCE from the dry cleaning operations contaminated soil and groundwater on the Tara Property and migrated to groundwater on properties downgradient of the Tara Property.

WHEREAS, The Tara Property and downgradient properties to which PCE contamination has migrated from releases on the Tara Property are hereinafter referred to as the "Tara Site" or the "Site".

WHEREAS, The Tara Site is listed on the Georgia Environmental Protection Division ("EPD") list of waste sites for which corrective action is required pursuant to Georgia environmental laws. The Tara Site is listed as # 10798 on the Georgia Hazardous Site Inventory ("HSI") promulgated pursuant to the Georgia Hazardous Sites Response Act ("HSRA").

WHEREAS, The operator of the dry cleaner on the Tara Property is insolvent and cannot pay for the cost of remediation of PCE contamination in soil or groundwater.

WHEREAS, Ashland and Tara have voluntarily agreed to share in the cost of corrective action at the Site pursuant to the provisions of this Agreement.

WHEREAS, The principal PCE contamination on the Tara Property is identified on **Exhibit A** to this Agreement and hereinafter referred to as the Source Area

WHEREAS, Ashland and Tara have agreed to remediate the Source Area pursuant to one of the approaches described in the remediation plan attached as **Exhibit B** to this Agreement.

WHEREAS, Ashland and Tara entered into a Remediation Cooperation Agreement in September of 2010 under which Tara would manage the remediation of the Source Area. As a result of discussions among Ashland, Tara and EPD, Ashland and Tara have agreed to replace the Remediation Cooperation Agreement with the following Remediation Agreement.

NOW, THEREFORE, Ashland and Tara agree to the following:

1. The September 2010 Remediation Cooperation Agreement between Ashland and Tara is hereby terminated. All rights and responsibilities with respect to remediation of the Site, as between Ashland and Tara, shall be governed by this Remediation Agreement.

2. Tara shall pay $954,182.90 (the "Escrow Payment") into an escrow account established pursuant to the Escrow Agreement attached as **Exhibit C** to this Agreement. Provided Tara faithfully makes the Escrow Payment, Ashland shall manage and carryout the remediation of the Source Area in the manner described on **Exhibit B**. Ashland shall be entitled to use the Escrow Payment for remediation of the Source Area as described in **Exhibit B** and for other appropriate corrective action for the Site provided that, in the event Ashland elects to pursue one of the remedial alternatives contemplated under Exhibit B that would require demolition of any structures on the Tara Property, Ashland shall retain in the escrow and make available to Tara the funds called for under Exhibit B for restoration of the buildings. Provided Tara carries out its obligation under this Remediation Agreement, Ashland shall not seek reimbursement from Tara for costs incurred in connection with the Source Area or with investigation or remediation of groundwater contamination, but only to the extent the contamination occurred prior to Tara's purchase of the Tara Property.

3. By December 30, 2011, Ashland shall file an application with EPD placing the Tara Property into the Voluntary Remediation Program ("VRP") pursuant to the Voluntary Remediation Program Act ("VRP Act"). By June 30, 2012, Ashland shall select which one of the remedial approaches described in Exhibit B will be the remedy for the Source Area. Upon approval of the proposed remedy to the extent required by the VRP (and subject to any modifications required by EPD to secure its approval), Ashland shall promptly commence the remedy of the Source Area to meet Type 5 Risk Reduction Standards.

4. Tara agrees to take all other actions reasonably necessary to allow Ashland to have the Tara Property accepted into the VRP. Tara grants Ashland the authority to enter the Property to perform soil and groundwater testing and corrective action on the Tara Property as required by EPD or applicable law. Tara agrees to execute an Environmental Covenant restricting the use of the Tara Property to nonresidential uses to the extent reasonably necessary to comply with the requirements of the VRP Act applicable to a Type 5 Risk Reduction Standard ("RSS") corrective action. Tara agrees to keep in effect and in good condition at its own expense

any institutional or engineering controls on the Tara Property reasonably necessary to comply with the Type 5 RRS requirements pursuant to the VRP Act, (including operation of any vapor mitigation system installed on the Tara Property) provided such engineering controls do not unreasonably interfere with the use of the Tara Property for commercial retail purposes.

5. Ashland and Tara shall cooperate in the implementation of the Source Area remediation and other corrective action required for the Site pursuant to the VRP Act (the "Work"). Ashland and Tara shall seek to minimize the interruption of tenant activities on the Property; however, Tara acknowledges that the corrective action and other work will require some disruption of business on the Property and releases Ashland from liability (including with respect to damages to property or lost rental income) that directly result from Ashland's implementation of the permitted activities on the site. Tara shall remove tenants from areas of the Property to the extent necessary for implementation of the Source Area remediation and other work performed pursuant to this Agreement at Tara's sole cost. Tara shall not unreasonably interfere with Ashland's implementation of the Work. Tara shall execute all documents reasonably requested by Ashland in connection with implementing the Work or otherwise satisfying the EPD's requirements under the VRP program.

6. Nothing in this Agreement shall release or relieve Ashland or Tara from any liability for corrective action on the Tara Property or the Tara Site, to the extent that Ashland and/or Tara are responsible for such corrective action pursuant to applicable law.

7. Ashland shall provide Tara with reasonable notice of all work conducted on the Tara Property to investigate or implement corrective action. Ashland and Tara shall provide each other with the test results of all environmental tests conducted on the Tara Property and the Tara Site.

Ashland Inc., a Kentucky corporation

Date: 11-18-11

By: Karen Murphy
Print Name: Karen Murphy GRA
Title: VP EHS

Tara Retail Holdings, LLC, a Georgia Limited Liability Company

Date: ______________________

By: ______________________
Print Name: ______________________
Title: ______________________

Print Name: ______________________
Title: ______________________

Tara Retail Holdings, LLC, a Georgia Limited Liability Company

Date: 11-30-11

By: ______________________
Print Name: Eric J. Nathan
Title: Manager

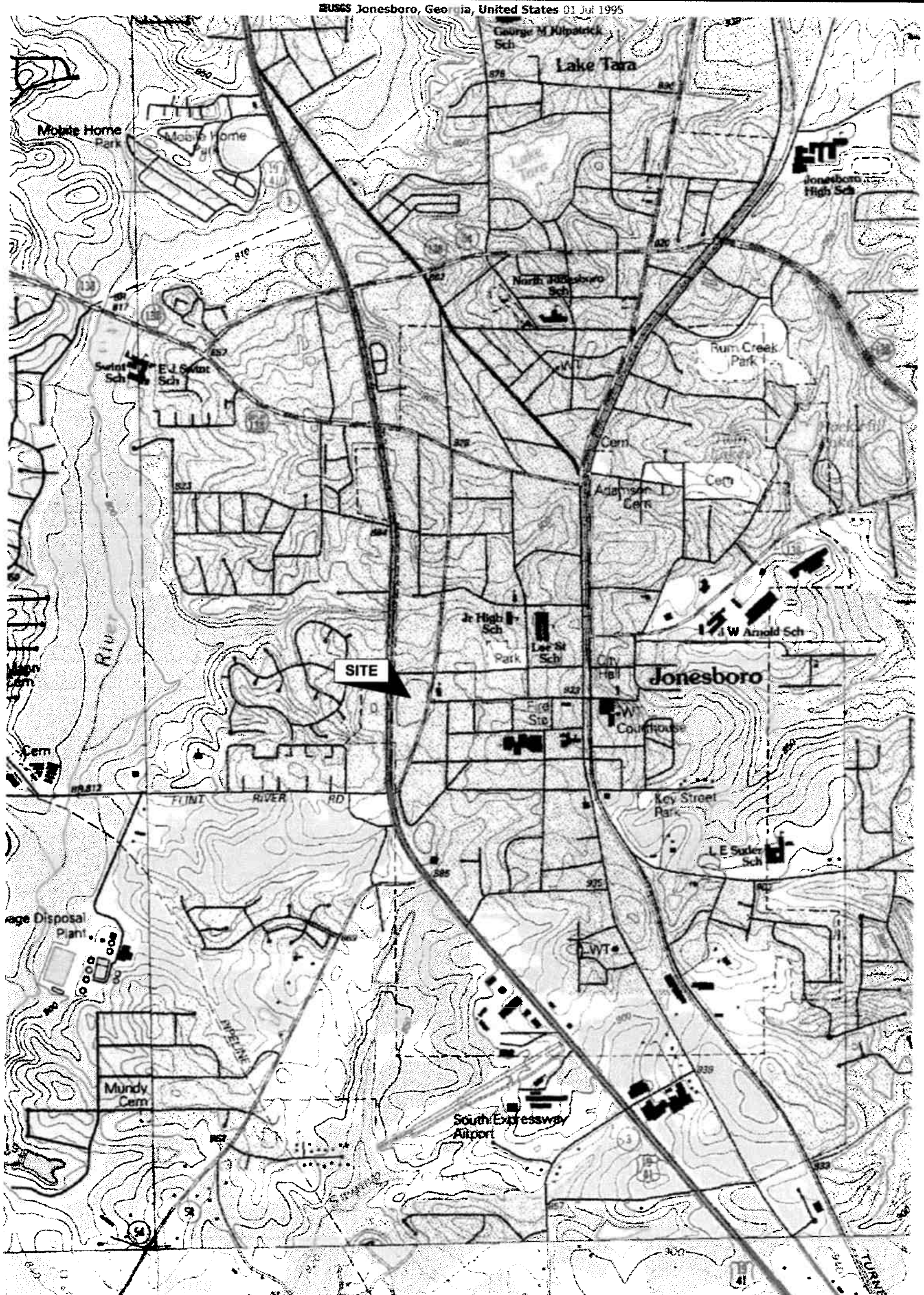
REMEDIATION AGREEMENT

Between Ashland Inc. and Tara Retail Holdings, LLC

EXHIBIT A

Source Area

USGS Jonesboro, Georgia, United States 01 Jul 1995



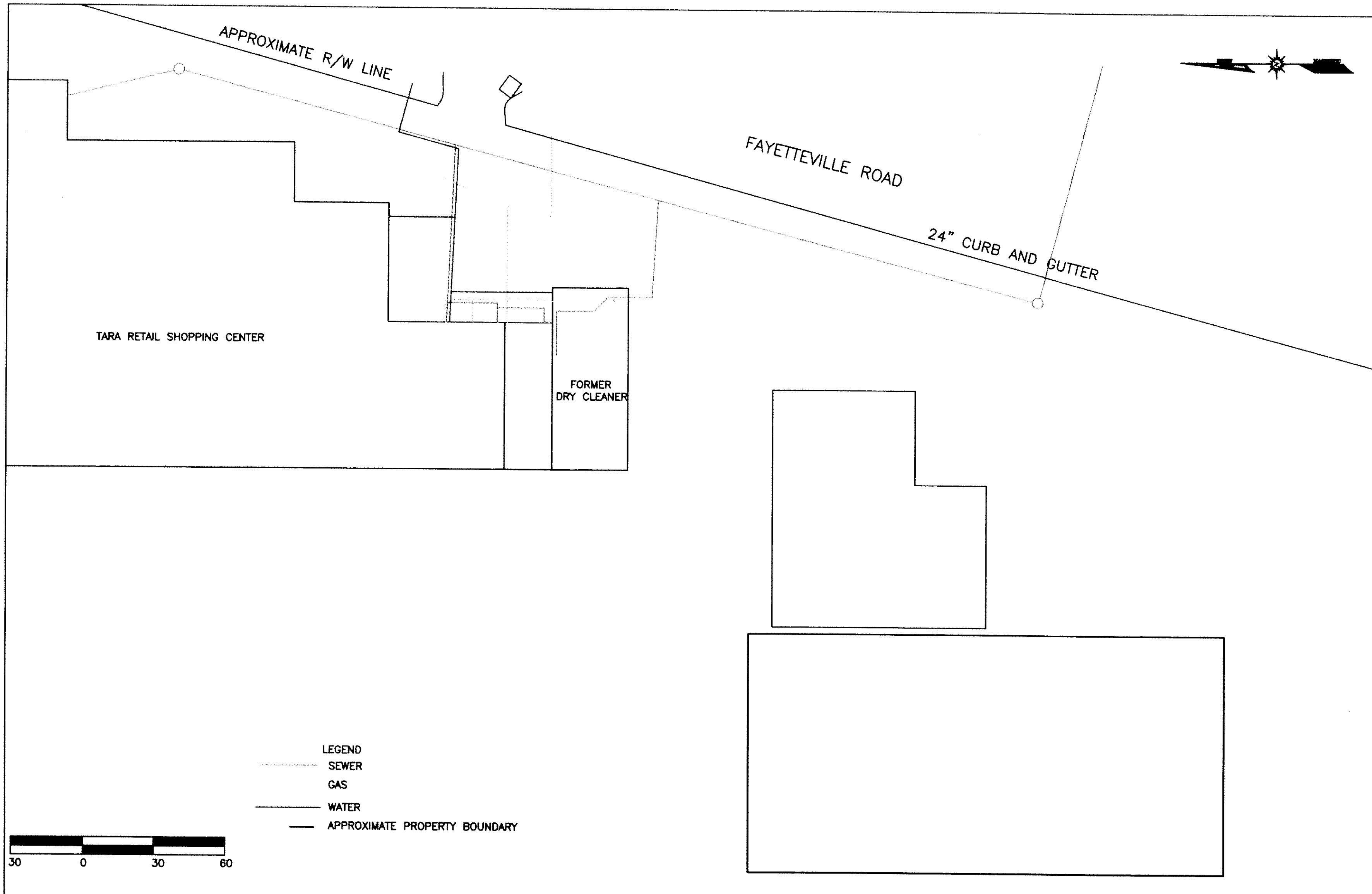
SCALE: AS SHOWN

Peachtree Environmental

TARA BOULEVARD SHOPPING CENTER
JONESBORO, CLAYTON COUNTY, GEORGIA

FIGURE 1
USGS TOPOGRAPHIC SITE LOCATION

QUADRANGLE LOCATION



NOTES
Analytical Results Reported in mg/kg
P21, and P25–P33 Pending Analysis

TARA SHOPPING CENTER
8564 TARA BOULEVARD
JONESBORO, CLAYTON COUNTY, GEORGIA

SITE LAYOUT WITH UTILITY LOCATIONS

FIGURE NO. 2

WH-TARA 3004

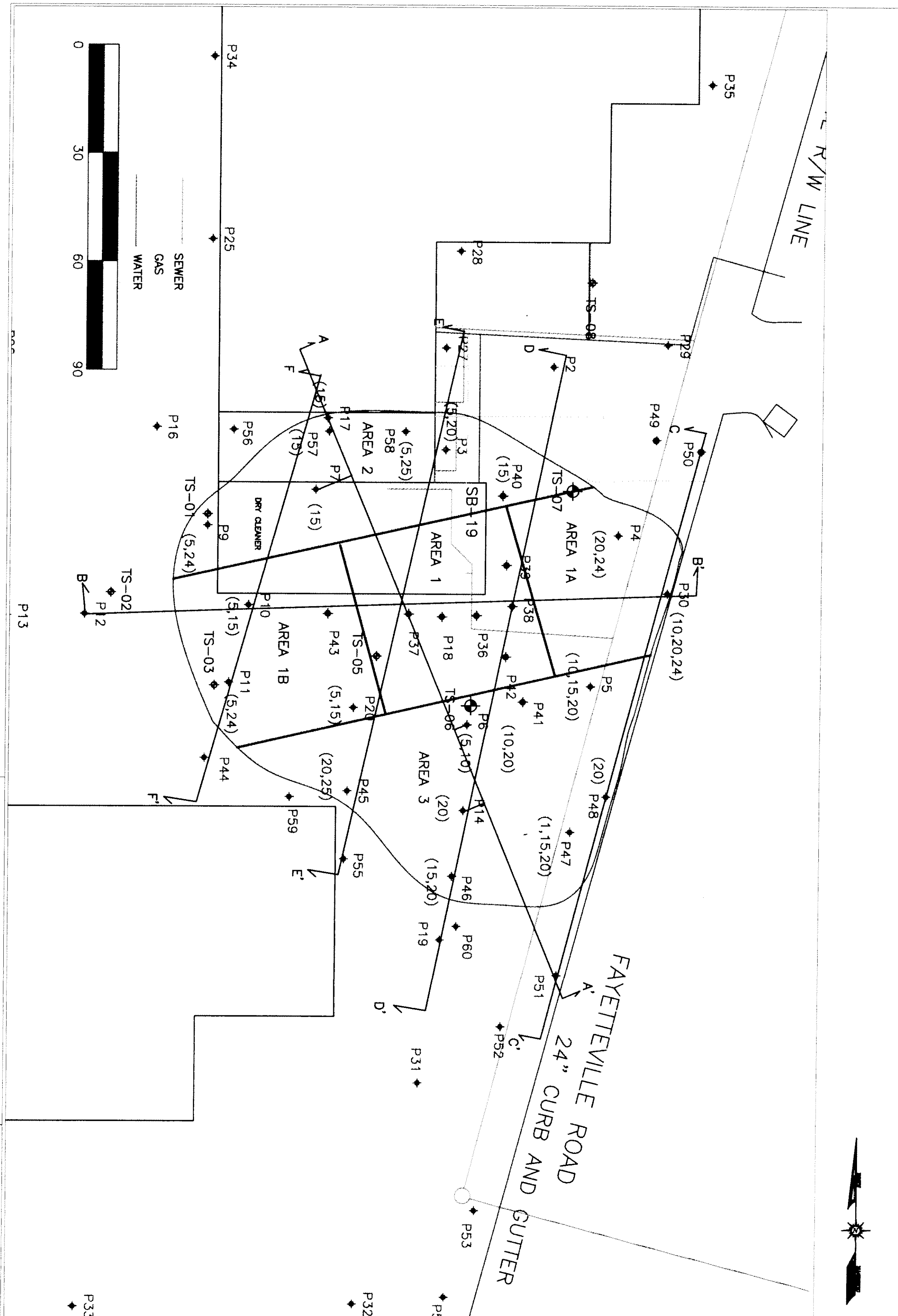
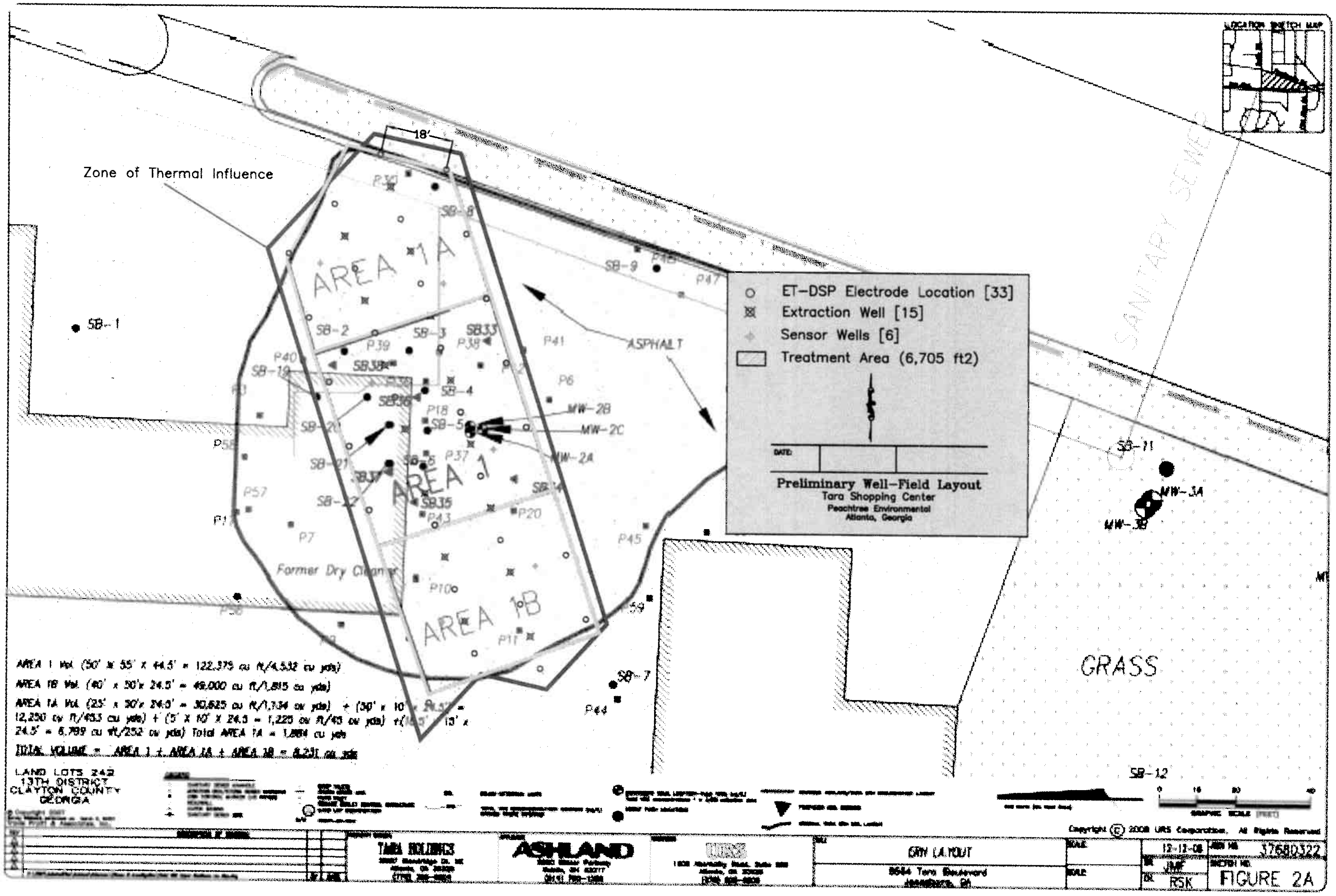


FIGURE NO. 3 WN-TARA 3004	TARA SHOPPING CENTER 8564 TARA BOULEVARD JONESBORO, CLAYTON COUNTY, GEORGIA PCE CONCENTRATIONS DEPTH INTERVAL CLEANUP >2.0 PPM

REV	DATE	DESCRIPTION	DSN BY	DRN BY	CHK BY	APP BY
DATE OF ISSUE 12/17/08	DSN BY JPC	DRN BY	CHK BY	APP BY		


Zone of Thermal Influence
18'
AREA 1A
AREA 1
AREA 1B
ASPHALT
GRASS
SANITARY SEWER
Former Dry Cleaner
SB-1
SB-2
SB-3
SB-4
SB-5
SB-7
SB-8
SB-9
SB-11
SB-12
SB-19
SB-20
SB-21
SB-22
SB33
SB35
SB36
SB37
SB38
MW-2A
MW-2B
MW-2C
MW-3A
MW-3B
P30
P37
P38
P39
P40
P41
P43
P44
P45
P47
P57
P58
P6
P7
P10
P11
P18
P20
ET-DSP Electrode Location [33]
Extraction Well [15]
Sensor Wells [6]
Treatment Area (6,705 ft2)
Preliminary Well-Field Layout
Tara Shopping Center
Peachtree Environmental
Atlanta, Georgia
AREA 1 Vol. (50' x 55' X 44.5' = 122,375 cu ft/4,532 cu yds)
AREA 1B Vol. (40' x 50'x 24.5' = 49,000 cu ft/1,815 cu yds)
AREA 1A Vol. (25' x 50'x 24.5' = 30,625 cu ft/1,134 cu yds) + (50' x 10' x 24.5' = 12,250 cu ft/453 cu yds) + (5' X 10' X 24.5 = 1,225 cu ft/45 cu yds) +(15.5' x 13' x 24.5' = 6,799 cu ft/252 cu yds) Total AREA 1A = 1,884 cu yds
TOTAL VOLUME = AREA 1 + AREA 1A + AREA 1B = 8,231 cu yds
LAND LOTS 242
13TH DISTRICT
CLAYTON COUNTY
GEORGIA
LOCATION SKETCH MAP
GRAPHIC SCALE (FEET)
TARA HOLDINGS
ASHLAND
URS
GRN LAYOUT
8644 Tara Boulevard
Jonesboro, GA
Copyright © 2008 URS Corporation. All Rights Reserved
12-12-08
JMF
RSK
37680322
FIGURE 2A

REMEDIATION AGREEMENT

Between Ashland Inc. and Tara Retail Holdings, LLC

EXHIBIT B

Remediation Plan

EXHIBIT B

REMEDIATION PLAN FOR THE CONTAMINANT SOURCE AREA AT THE TARA SHOPPING CENTER JONESBORO, CLAYTON COUNTY, GEORGIA

Prepared For:

ASHLAND

5200 Blazer Parkway
Dublin, OH 43017

Tara Retail Holding, LLC
8564 Tara Boulevard
Jonesboro, GA 30236

Prepared By:
EHS Support, Inc.
October 27, 2011

TABLE OF CONTENTS

FIGURES

ACRONYMS

Ashland	Ashland Inc.
bgs	below ground surface
Cis-1,2-DCE	cis-1,2-dichloroethene
COCs	Contaminants of Concerns
DNAPL	Dense Non-Aqueous Phase Liquid
EPD	Georgia Environmental Protection Division
ERH	Electric Resistive Heating
ET-DSP™	Electro-Thermal Dynamic Stripping Process
ft^2	square feet
lbs	pounds
LDA	Large diameter auger
mg/m^3	milligrams per cubic meter
MPE	Multi-Phase Extraction
PCE	Tetrachloroethene
RRS	Risk Reduction Standard
Site	Tara Shopping Center
S/S	Solidification/Stabilization
Tara	Tara Retail Holdings, LLC
TCE	Trichloroethene
VOCs	volatile organic compounds
yd3	Cubic Yards

1.0 INTRODUCTION

The Tara Shopping Center occupies the 6.9-acre tract, located between 8554 and 8600 Tara Boulevard, Jonesboro, Clayton County, Georgia (referred to as the "Property" or "Tara Property" or "Site" or "Tara Site"). The approximate latitude and longitude coordinates of the subject site are 33° 31' 07" north and 84° 21' 46" west, respectively. A Site Location Map is included as **Figure 1**. The Site was originally developed in the late 1960s and is currently comprised of two multi-unit commercial buildings and a paved, asphalt parking area. A dry cleaning facility historically occupied the southernmost unit of the largest building (8654 Tara Boulevard) and is the subject of investigation (**Figure 2**). The tax parcel number for the former dry cleaning facility is 13242D B001, 4th District. Tara Retail Holdings, LLC (Tara) purchased the Site in December 2007 and is the current property owner.

Tetrachloroethene (PCE) has been identified in soil and groundwater at the Site. The primary source of PCE is from former dry cleaning operations at the Site. The highest concentrations of PCE have been detected in soil and groundwater beneath and in the immediate vicinity of the former dry cleaners. This area of principle contamination is hereinafter referred to as the Source Area and is depicted on **Figure 3**. Source Area remediation is necessary so that the Site becomes protective of human health and the environment. This Remediation Plan outlines the approach to remediate PCE (and its degradation products) in the Source Area at the Site.

Tara and Ashland Inc. (Ashland) have agreed to conduct the remediation described in this Remediation Plan. Section 2.0 describes the Source Area. Section 3.0 discussed the remedial approaches. Section 4.0 outlines the remedial objectives.

2.0 SOURCE AREA

The Source Area is approximately 6,827 square feet (ft^2). The area targeted for remediation includes three primary subsections: Areas 1, 1A and 1B (**Figure 3**). The depth of the treatment for Area 1 is 44.5 feet below ground surface (ft bgs). The depth of the treatment for Areas 1A and 1B are 24.5 ft bgs. The total volume is approximately 8,232 cubic yards (yd^3). Fringe areas of the Source Area have been defined with Area 2 and 3 (**Figure 3**).

The primary contaminants of concern (COCs) for treatment are PCE and its degradation products, trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), and vinyl chloride. For the purposes of this remediation, the contaminants are assumed to be distributed evenly throughout the treatment interval. This assumption is only for initial modeling purposes. In practice it is understood that there is not an even distribution.

3.0 DESCRIPTION OF REMEDIAL APPROACH

The Source Area will be remediated using one of the three following technologies:

- In-situ Electrical Resistive Heating (ERH)
- In-situ Solidification/Stabilization (S/S) utilizing large diameter auger (LDA)
- Soil excavation and off-site disposal

These three technologies are being evaluated to determine which technology is likely to be most effective in treating the Source Area, most implementable, and most cost effective. A brief summary of each technology is provided below.

3.1 Electrical Resistive Heating

ElectroThermal Dynamic Stripping Process (ET-DSP™), also referred to as ERH, may be used in combination with a vapor extraction system for remediation of the Site. The approach is based upon the success of other ET-DSP™ projects in conjunction with Site-specific data. This technology was previously approved by the Georgia Environmental Protection Division (EPD) for Site remediation activities.

The goal of the ERH remediation system is to efficiently heat up the defined treatment area; maintain a temperature of 100°C or the azeotropic boiling point of PCE, whichever is greater; create sufficient steam for thorough dynamic stripping; and extract enough liquids and vapors to maintain hydraulic and pneumatic control during contaminant recovery without removing excessive energy from the subsurface. A vapor cap, in the form of the existing concrete and asphalt surfaces will be used around the perimeter to increase vapor recovery, maximize thermal efficiency, and optimize the well-field geometry.

The thermal remediation approach includes ET-DSP™ electrode wells, multi-phase extraction (MPE) wells and Temperature Sensor Wells. A general schematic is provided as **Figure 4**. The ET-DSP™ electrodes will increase the temperature in the subsurface through the heat transfer mechanisms associated with conduction, convection, and electrical heating. This remediation technology, therefore, has many beneficial effects that will aid in the removal of the primary COCs at the Site.

The boiling point of a compound is the temperature at which the compounds' vapor pressure is equal to atmospheric pressure. Thus, by increasing the temperature of the subsurface using ET-DSP™ the vapor pressure of the contaminants increases. Consequently, by heating the subsurface the volatility of the VOCs increase, which increases their removal efficiency via soil vapor extraction.

The MPE wells will be used to extract VOCs in both vapor and liquid phases. Each MPE well will have a drop tube or pneumatic pump for liquid extraction. A trailer mounted skid system will be used for treatment and extraction process. The MPE well will be connected to a vacuum blower. The resulting vacuum in the MPE well will be the driving force for extraction of soil vapors and VOCs.

The treatment system is designed to process two flow streams; (1) vapors and entrained liquids and (2) groundwater. Discharge of contaminants that have been removed from the subsurface will be controlled primarily with carbon absorption. A secondary method used to control emissions will be vacuum capture of fugitive emissions from treatment system vessels. The vapor control system has been designed with both regenerative and sacrificial carbon adsorption systems. The regenerative carbon will be regenerated using steam and associated wastewater treated using the groundwater treatment system as described above in the process groundwater treatment and DNAPL (recovered as part of the regenerative process) will be separated and containerized prior to treatment of the groundwater stream.

It is estimated that 90% to 95% of the mass removed from the subsurface will be in the vapor stream. The total subsurface mass estimate in the treatment area is approximately 7,375 lbs. Approximately 6,638 to 7,006 lbs will be in the vapor phase and will be removed with the two vapor-phase GAC vessels. Therefore, approximately 520 gallons (~7,000 lbs) of PCE will be removed and sent off-site for disposal. Removal efficiency for these vessels will be at least 95%. Therefore, total mass released to the atmosphere from the vapor phase is estimated to be less than 350 lbs over the duration of the project.

3.2 Alternate Remedies

As noted above, the ERH technology was previously approved by the Georgia EPD for Site remediation activities. However, two alternate remedies are being evaluated to determine which technology is likely to be most effective in treating the Source Area, most implementable, and most cost effective. A brief summary of each technology is provided below.

For either of these technologies to be effective, the former dry cleaner and adjoining nail salon will need to be demolished. Utilities and existing monitoring wells located within the work zone will be abandoned and relocated, if necessary.

3.2.1 Excavation and Off-Site Disposal

Excavation and off-site disposal proposes to remove unsaturated source soils to a depth of 25 ft bgs in Areas 1A and 1B and saturated source soils to a depth of approximately 35 ft bgs in Area 1 (**Figure 3**). In addition unsaturated source soils within Areas 2 and 3 that are likely to be a continuing source of dissolution to groundwater will also be excavated. Approximately 27,000 tons of excavated soils will be transported off-site to an authorized disposal facility under proper waste manifests. The excavation will be backfilled with certified clean material in accordance with local and state regulations. The area will be restored to pre-excavation conditions.

3.2.2 In-situ Treatment with a Large Diameter Auger

In-situ Treatment using LDA typically includes the term "solidification/stabilization" (S/S) and refers to a general category of processes used to treat a wide variety of wastes, including solids and liquids. Solidification and stabilization are each distinct technologies.

- Solidification refers to processes that encapsulate a waste to form a solid material and to restrict contaminant migration by decreasing the surface area exposed to leaching and/or by coating the waste with low-permeability materials. Solidification can be accomplished by mechanical processes or by a chemical reaction between a waste and binding (solidifying) reagents, such as cement, kiln dust, or lime/fly ash. Solidification of fine waste particles is referred to as microencapsulation, while solidification of a large block or container of waste is referred to as macroencapsulation.

- Stabilization refers to processes that involve chemical reactions that reduce the leach-ability of a waste. Stabilization chemically immobilizes hazardous materials or reduces their solubility through a chemical reaction. The physical nature of the waste may or may not be changed by this process.

In-situ stabilization typically involves the addition of binding agents to an area of sludge or soils and addition of water where necessary, followed by repeated in-place mixing with the bucket of a back or track hoe to mix and stabilize the sludges or soils in place. A growing method of in situ S/S involves the use of very large flighted rotary augers, 6 to 8 or more feet in diameter, capable of injecting slurry chemicals and water through the auger flights. The auger bores and mixes a large-diameter "plug" of the contaminated material. During augering, stabilization chemicals and water (if needed) are injected into the soils. After thorough mixing, the auger is removed and the setting slurry is left in place. The auger is advanced to overlap the last plug slightly, and the process is repeated until the contaminated area is completed.

As conventional S/S does not remove or destroy the contaminants present, the selection of binders must address (1) compatibility between the binders and the materials being treated, (2) the presence of chemicals that interfere with the setting and durability of the product, and (3) anticipated ground and groundwater conditions over the long term. Because of the variable nature of contaminated soil encountered, bench-scale testing to evaluate the effectiveness of potential binder systems is an essential prerequisite to S/S in the field. The nature of contaminants may vary across a site requiring remediation, which means that more than one binder formulation may be required for use during an S/S operation. Furthermore, the effects of otherwise unforeseen contaminant/binder interactions can be identified during treatability studies.

The efficiency of S/S treatment of organic contaminants can be improved by using adsorbents for the organic components. The adsorbents can be incorporated as additives in the cement mix or used as a pretreatment prior to conventional cement-based solidification. Many of these additives are waste products of industrial processes. Additives such as activated carbon, shredded tire particles, and organoclays (sorbents) can increase the chemical containment of the contaminant. Additives such as silica fume and fly ash can improve the physical containment of organic compounds by reducing waste form porosity and permeability.

Immobilization of organic compounds in a cement matrix, with or without adsorbent, is mainly a result of physical entrapment. For better long-term effectiveness, a more desirable process would be to transform the organic wastes to less hazardous hydrocarbons. Degradative S/S is a novel remediation technology that combines the immobilization and degradation of contaminants. Cement slurries containing ferrous oxide have been tested on PCE, effectively reducing the chlorinated compound to non-chlorinated byproducts. In such a system, the contaminants can be retained in the system until enough time has elapsed for degradation to occur, thereby preventing any environmental releases.

S/S using LDA will utilize 6-ft, 8-ft, or 10-ft diameter augers to mix soils in situ at the Site (See Picture below). This technology will solidify and stabilize unsaturated source soils to a depth of 25 ft bgs in Areas 1A and 1B and saturated source soils to a depth of approximately 35 ft bgs in Area 1 (**Figure 3**). Unsaturated source soils within Areas 2 and 3 are likely to be a continual source of dissolution to groundwater and therefore, will also be solidified and stabilized.

Picture of LDA

Solidification and stabilization of the impacted soils would most likely be achieved using a 5% cement addition and a 1%-2% activated carbon addition. However, a treatability study would need to be performed on the soils to determine the actual type and quantity of reagents. A treatability study would involve collecting and reviewing key geotechnical and analytical data including, but not limited to, soil types, density, compressive strength, permeability, levels of contamination, odor issues, water table/perched water issues, potential subsurface obstructions, etc. After remediation is complete, the area will be restored to pre-remediation conditions.

3.2.3 Demolition/Reconstruction

Oversight of demolition activities will be completed by Ashland. The cost of demolition will be absorbed by Ashland. Planning, coordination and oversight of building reconstruction will be completed by Tara.

In the event that one of the remediation alternatives results in the demolition of any of the buildings in the area of the remediation, Ashland will give Tara a building allowance to enable it to replace the building with a comparable structure. Our understanding is that the cost to construct the shell is approximately $90 per square foot and the cost of build out for a tenant is about \$40 per square foot. Therefore, Ashland is proposing an allowance of \$130 per square foot for the total square feet of buildings that it demolishes during remediation. While the exact timing of construction would depend upon a number of factors, our understanding is that construction of the shell can be completed in 90 to 120 days from the initiation of construction (exclusive of permitting). Build out for the tenant can take another 60 days. Ashland will further take reasonable precautions to assure that the geotechnical characteristics of any fill material following excavation or of the subsurface following any in situ treatment are adequate to allow prompt reconstruction.

4.0 PERFORMANCE OBJECTIVES

The Source Area shall be remediated to meet Type 5 Risk Reduction Standards for soil and groundwater established in Georgia EPD Rule 391-3-19-.07. Site specific cleanup standards developed following the remediation will be based upon direct exposure factors for surficial soils within two feet of land surface, construction worker exposure factors for subsurface soils to a specified construction depth and soil concentrations for protection of groundwater criteria at an established point of exposure for groundwater for soils situated above the uppermost groundwater zone. Following the remediation, Ashland and Tara shall present a description of continuing actions and controls necessary to maintain compliance with Type 5 Risk Reduction Standards and to prevent any unacceptable exposure from contamination at the Site. If necessary, institutional controls for soil, groundwater and/or soil vapor will be implemented in compliance with Georgia EPD environmental standards.

FIGURES

REMEDIATION AGREEMENT
Between Ashland Inc. and Tara Retail Holdings, LLC

Exhibit C

Escrow Agreement

Remediation Agreement Exhibit C

ESCROW AGREEMENT

THIS ESCROW AGREEMENT (hereinafter "Escrow") is made between Ashland Inc., a Kentucky corporation ("Ashland") and Tara Retail Holdings LLC, a Georgia limited liability company ("Tara"). This Escrow is effective upon execution by Ashland and Tara.

1. Tara will contribute the Escrow Payment called for under the Remediation Agreement to which this Escrow Agreement is attached as Exhibit C (the "Remediation Agreement") to be held in an escrow account established and managed by Ashland (the "Escrow Account") for use as described in this Escrow Agreement.

2. Ashland shall use the funds in the Escrow Account solely for the purpose of remediation of the Source Area (as defined under the Remediation Agreement) and other appropriate corrective action on that certain property located at 8564 Tara Boulevard, Jonesboro, Georgia (hereinafter referred to as the "Property" or the "Tara Property"), as provided in the Remediation Agreement.

3. Ashland shall provide Tara with all invoices for remediation or other corrective action work for which funds from the Escrow Account have been disbursed. During the course of the work to remediate the Source Area, Ashland shall provide Tara and Georgia EPD monthly statements listing the amounts paid from the Escrow Account, the payee and the balance of the remaining Escrow Account funds.

4. If there are funds left in the Escrow Account after completion of all corrective action work required for the Tara Site pursuant to the Georgia Voluntary Remediation Program Act and the Georgia Hazardous Sites Response Act, Ashland shall pay Tara the remaining funds from the Escrow Account.

5. Upon reasonable request, Ashland shall provide Tara and/or EPD with an accounting of the funds in the Escrow Account and payments made from the Escrow Account.

6. All notices and other communications required pursuant to this Escrow Agreement shall be sent by email, fax or mail to the following parties:

For Ashland:

Mr. Michael Dever
Remediation Project Manager
Ashland Inc.
5200 Blazer Parkway, DS-4
Dublin, OH 43017
Email: mbdever@ashland.com
Fax: 614-790-4268

Mr. Richmond L. Williams
Chief Counsel, Environmental Litigation
Ashland Inc.
1313 N. Market Street
Wilmington, DE 19894
Email: rlwilliams@ashland.com
Fax: 302-594-7038

For Tara:

Mr. W. Scott Laseter
Kazmarek Geiger & Laseter LLP
3490 Piedmont Road, N.E., Suite 350
Atlanta, Georgia 30305
Email: slaseter@kglattorneys.com
Fax: 404-812-0845

Mr. Eric Nathan
Weener & Nathan LLP
5887 Glenridge Drive, NE, Suite 275
Atlanta, Georgia 30328
Email: nathan@wnllp.com
Fax: 770-522-9004

For EPD:

Mrs. Carrie L. Williams-Welty
Environmental Protection Division

Response and Remediation Program
2 Martin Luther King, Jr. Dr., SE
Suite 1462, East Tower
Atlanta, Georgia 30334
Email: carrie.williams@gaepd.org
Fax: 404-657-0807

Mr. Jason Metzger
Environmental Protection Division
Response and Remediation Program
2 Martin Luther King, Jr. Dr., SE
Suite 1462, East Tower
Atlanta, Georgia 30334
Email: jason.metzger@gaepd.org
Fax: 404-657-0807

This Escrow Agreement may be executed in one or more counterparts, each of which shall for all purposes be deemed to be an original and all of which shall constitute the same instrument. This Escrow Agreement shall be effective upon execution by Ashland and Tara. This Escrow Agreement shall not be amended except by a written amendment executed by Ashland and Tara.

[Signatures on following pages.]

ESCROW AGREEMENT
Ashland Inc., a Kentucky corporation
and
Tara Retail Holdings LLC, a Georgia limited liability company

ASHLAND INC.

Date: 11-18-11

By: Karen Murphy GRA
Print Name: Karen Murphy
Title: VP EHS

[Signatures continued on following page.]

ESCROW AGREEMENT
Ashland Inc., a Kentucky corporation
and
Tara Retail Holdings LLC, a Georgia limited liability company

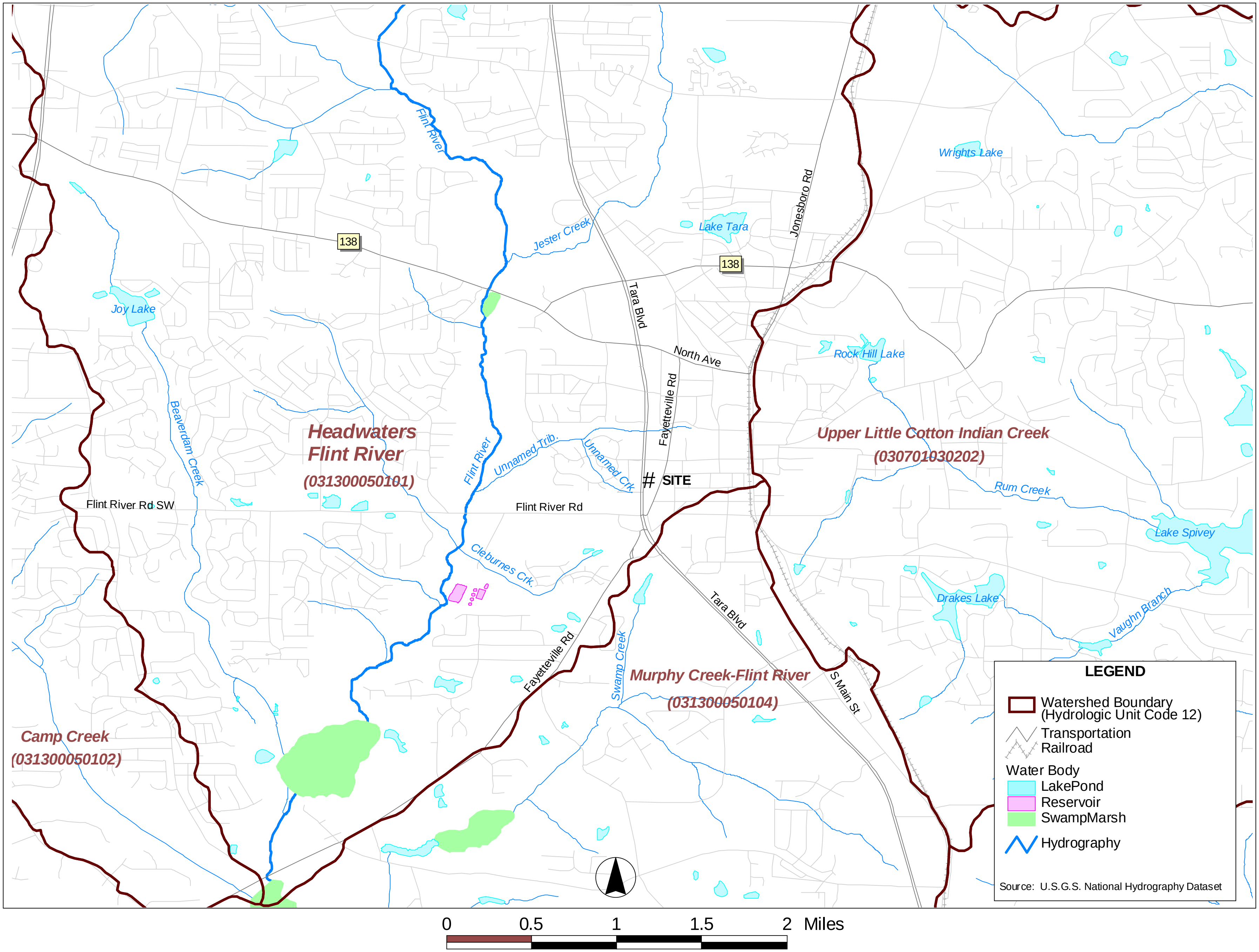
TARA RETAIL HOLDINGS, LLC, a Georgia limited liability company

Date: 11-30-11

By: ____________________
Print Name: Eric J. Nathan
Title: Manager

APPENDIX D

Conceptual Site Model Figures



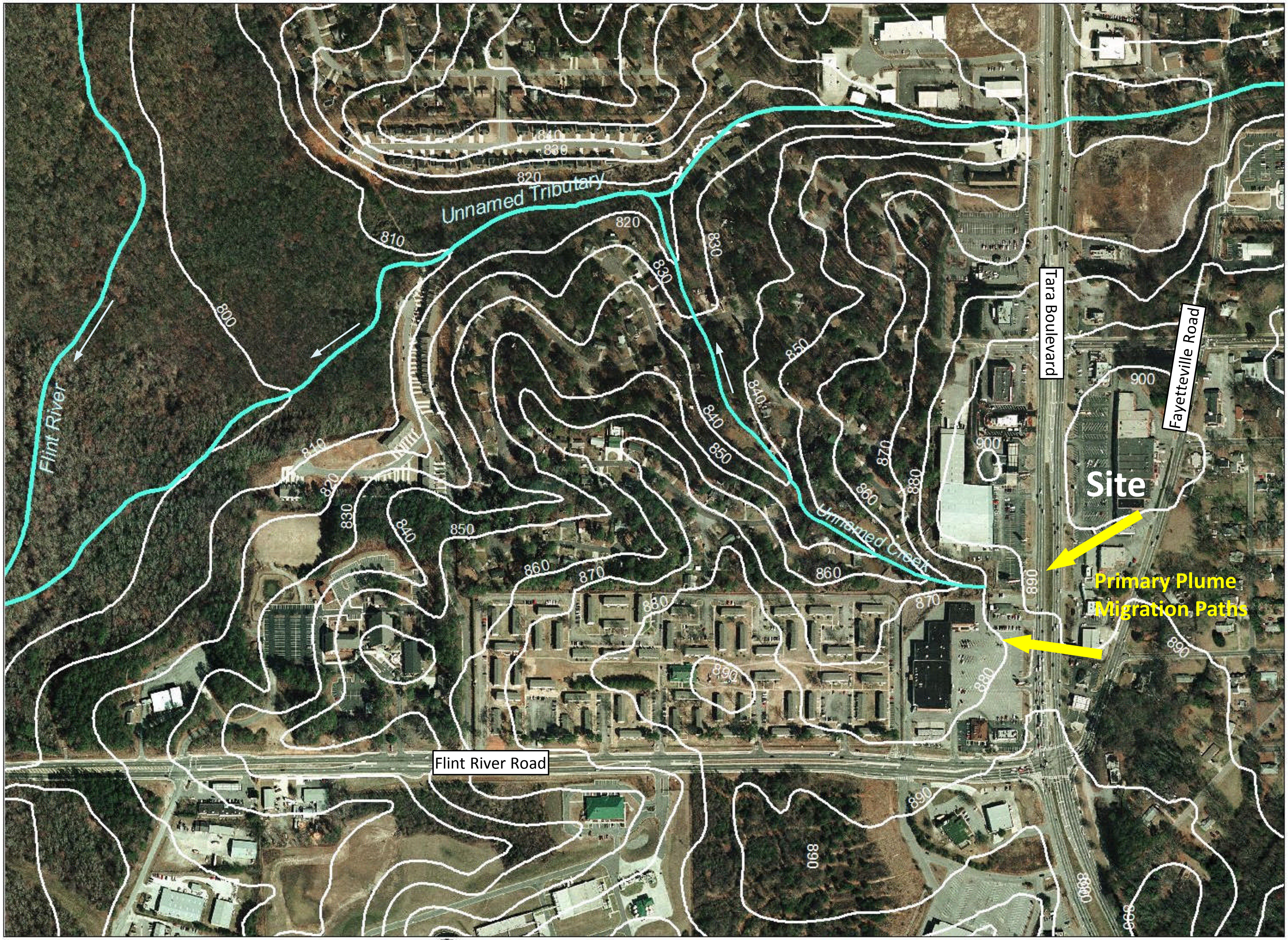
TARA SHOPPING CENTER
JONESBORO, GEORGIA

EHS Support

May, 2011

WATERSHED BOUNDARIES

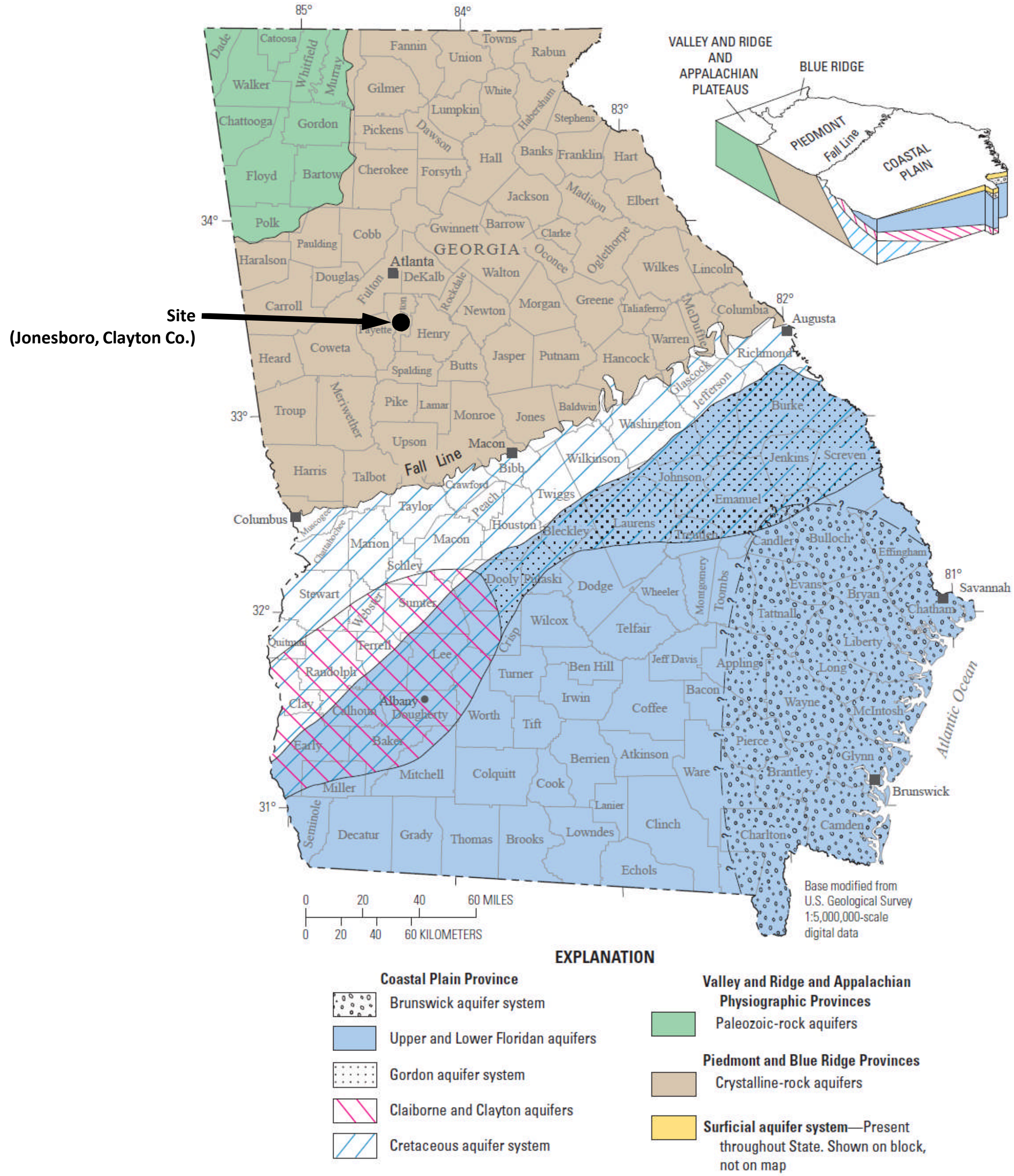
FIGURE D-1



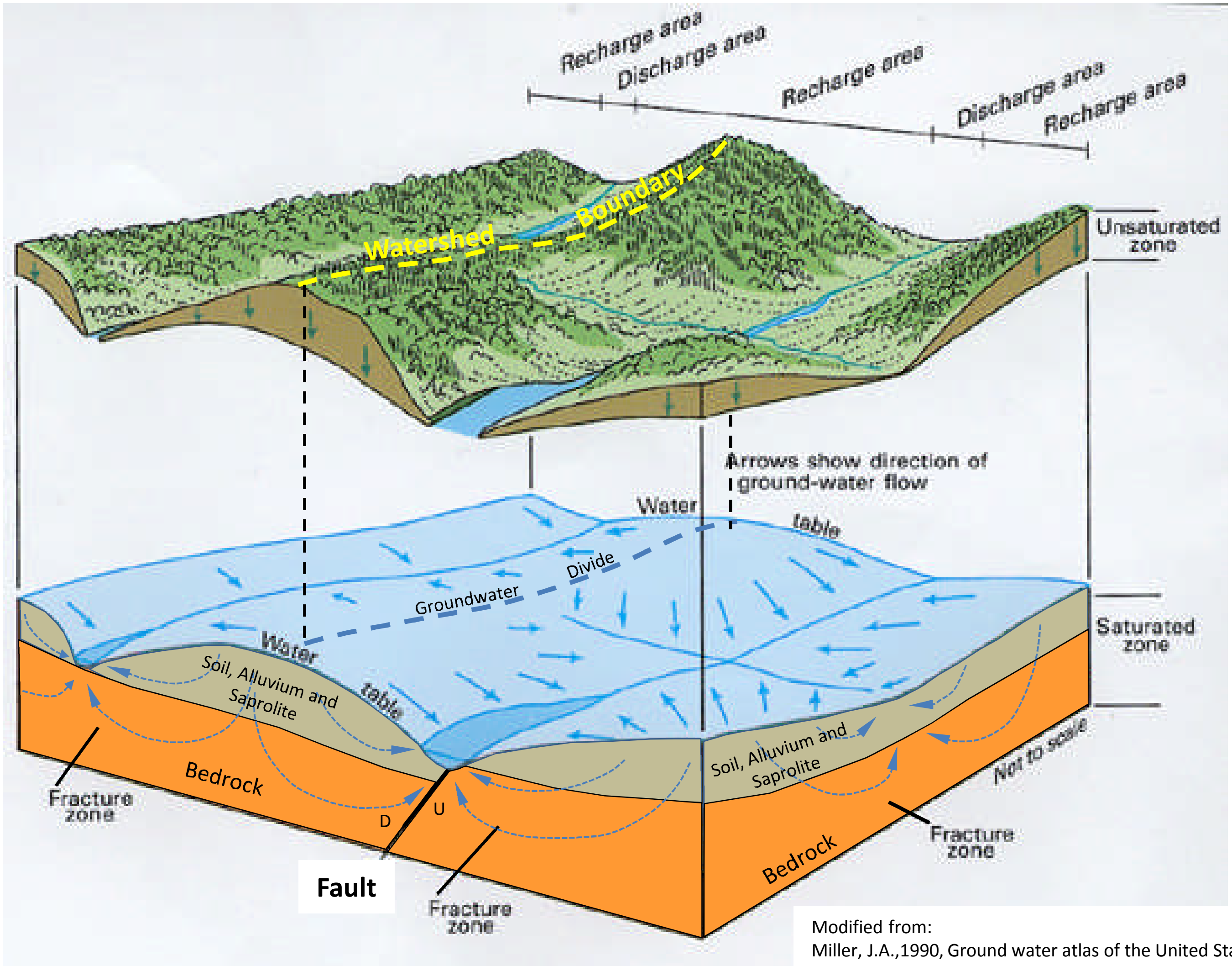
Source: U.S.G.S National Elevation Dataset (1/3 arc-second)
Aerial U.S.G.S. 2008 Atlanta region orthoimagery

0 500 1000 1500 2000 Feet

TARA SHOPPING CENTER JONESBORO, GEORGIA EHS Support May, 2011	LOCAL SURFACE TOPOGRAPHY, DRAINAGE AND PRIMARY PLUME MIGRATION PATHS	FIGURE D-2

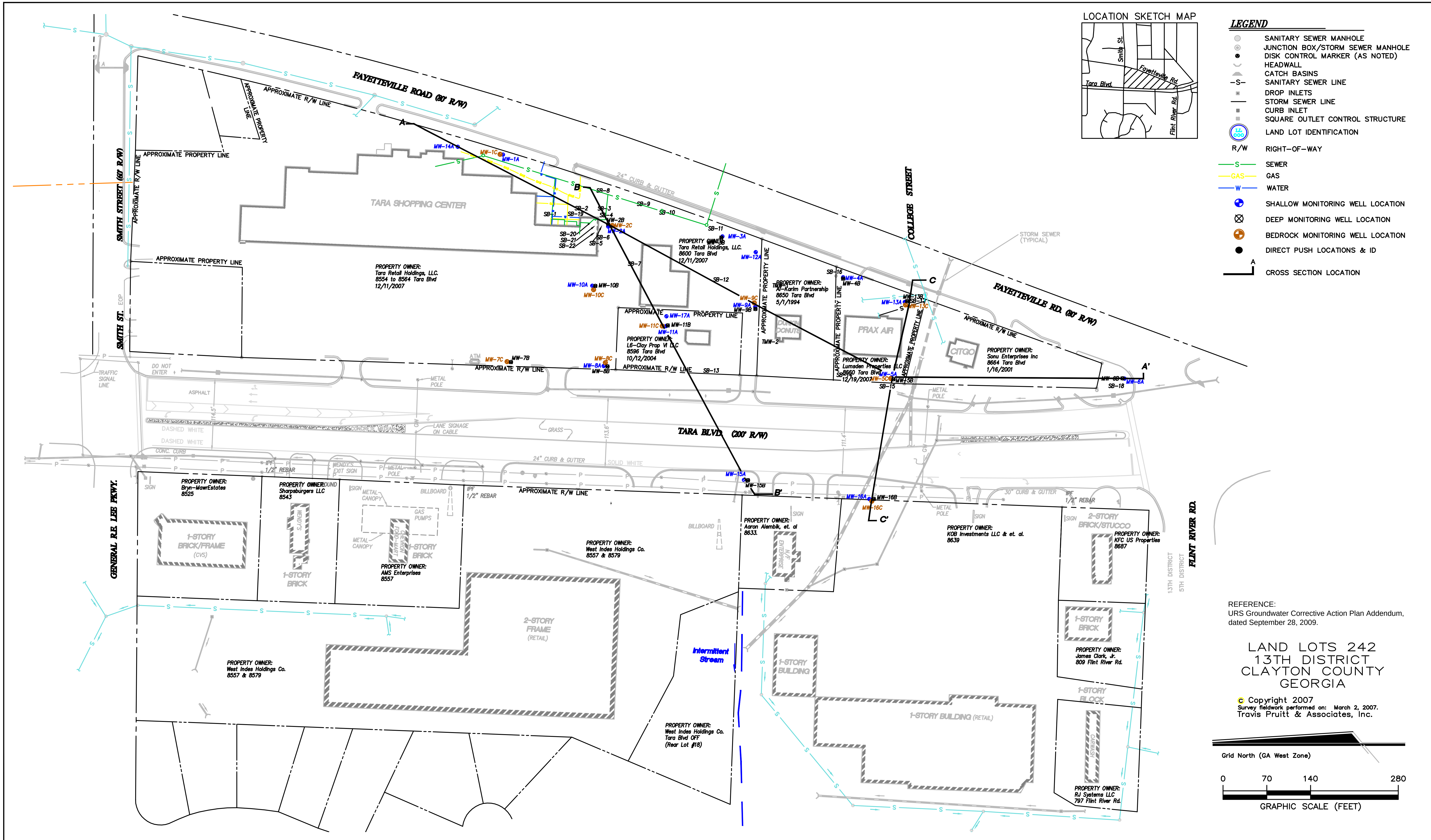


TARA SHOPPING CENTER JONESBORO, GEORGIA EHS Support *May, 2011*	**MAJOR AQUIFERS IN GEORGIA**	**FIGURE D-3**



Modified from:
Miller, J.A.,1990, Ground water atlas of the United States – Piedmont and Blue Ridge aquifers: U.S. Geological Survey HA 730-G; and
Legrand, H.E., 2004, A master conceptual model for hydrogeological site characterization in the Piedmont and Mountain region of North Carolina, A guidance manual: North Carolina Department of Environment and Natural Resources

TARA SHOPPING CENTER JONESBORO, GEORGIA EHS Support May, 2011	CONCEPTUAL VIEW OF GROUNDWATER FLOW IN THE PIEDMONT AQUIFER SYSTEM	FIGURE D-4



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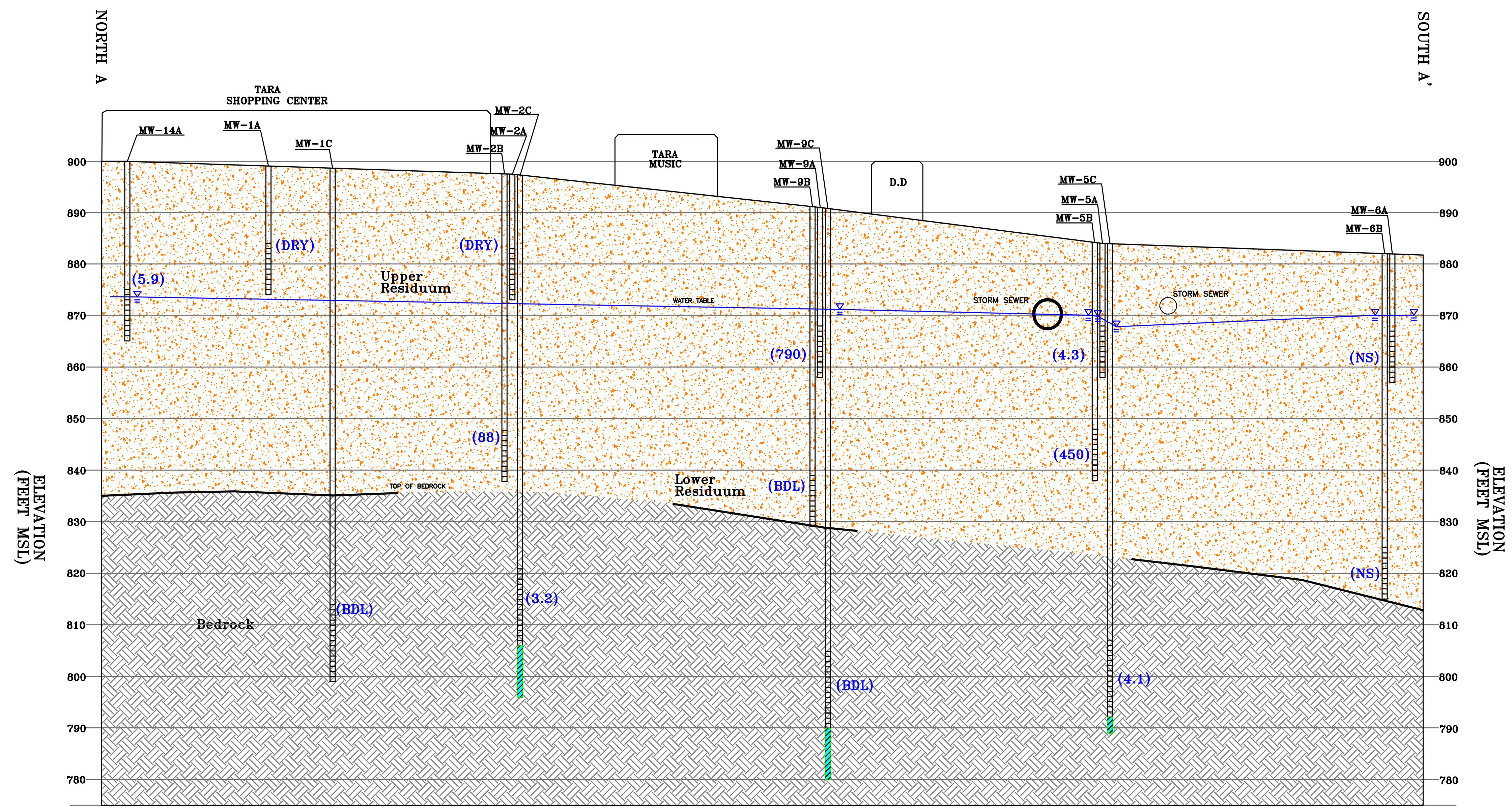
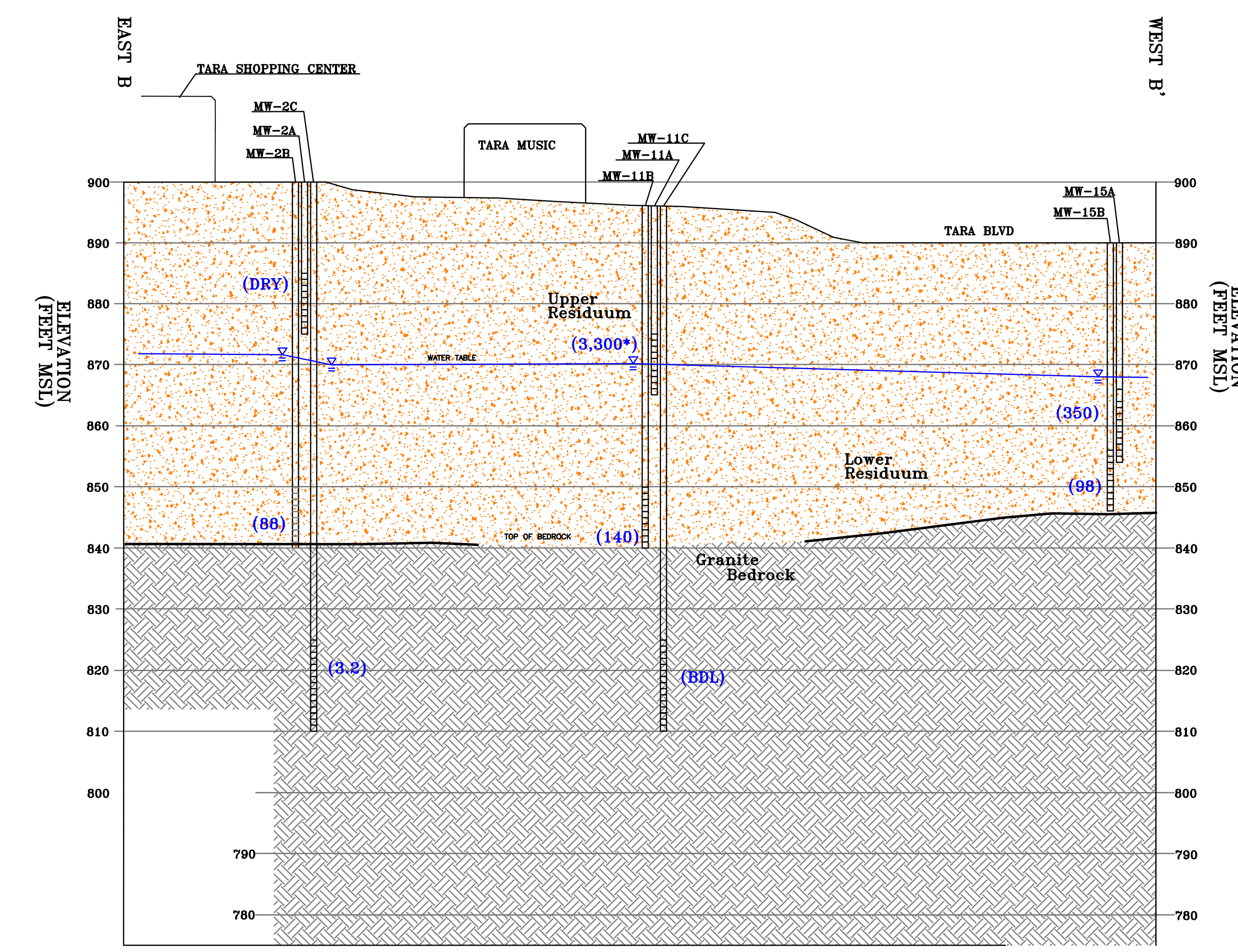
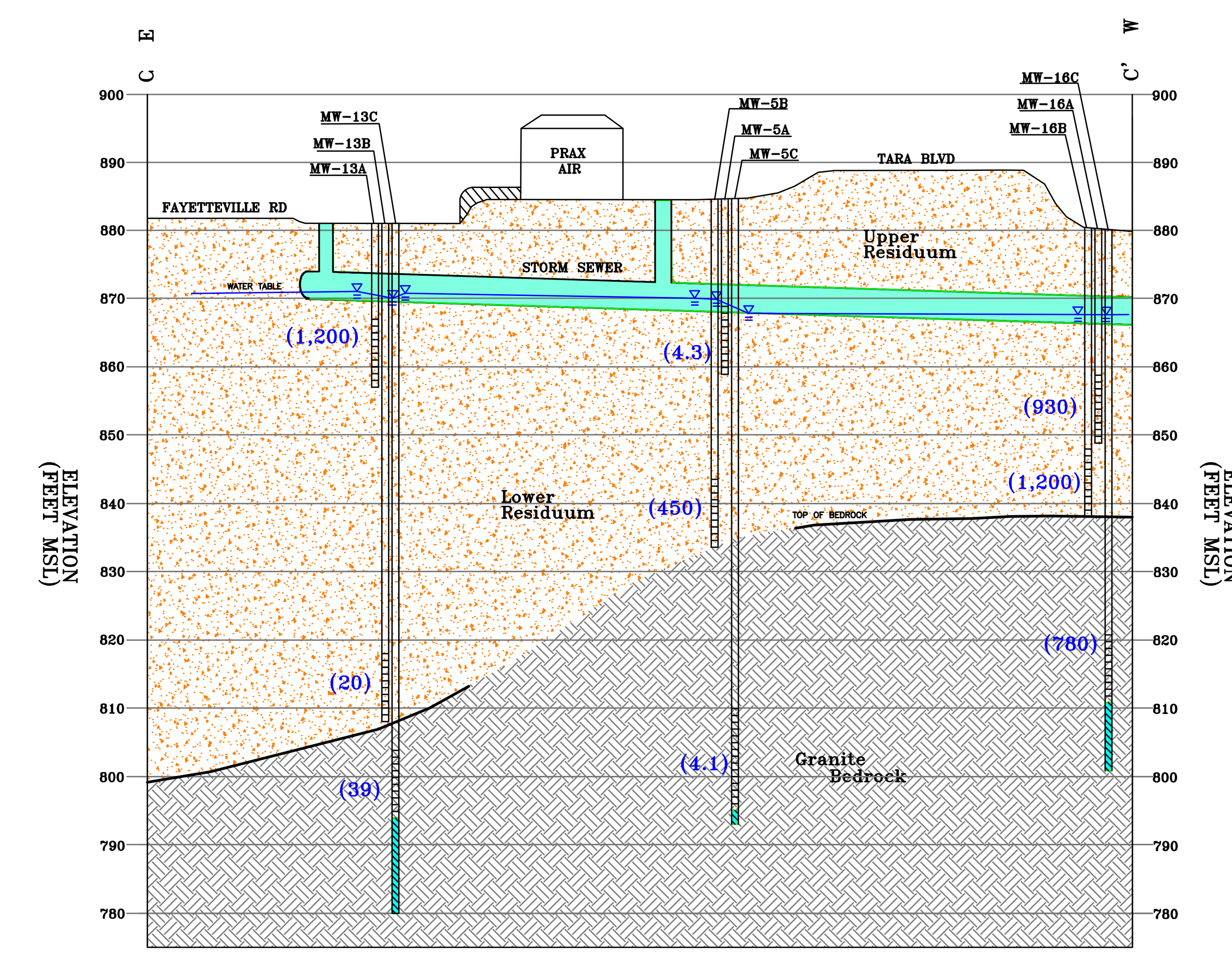
JONESBORO, GEORGIA

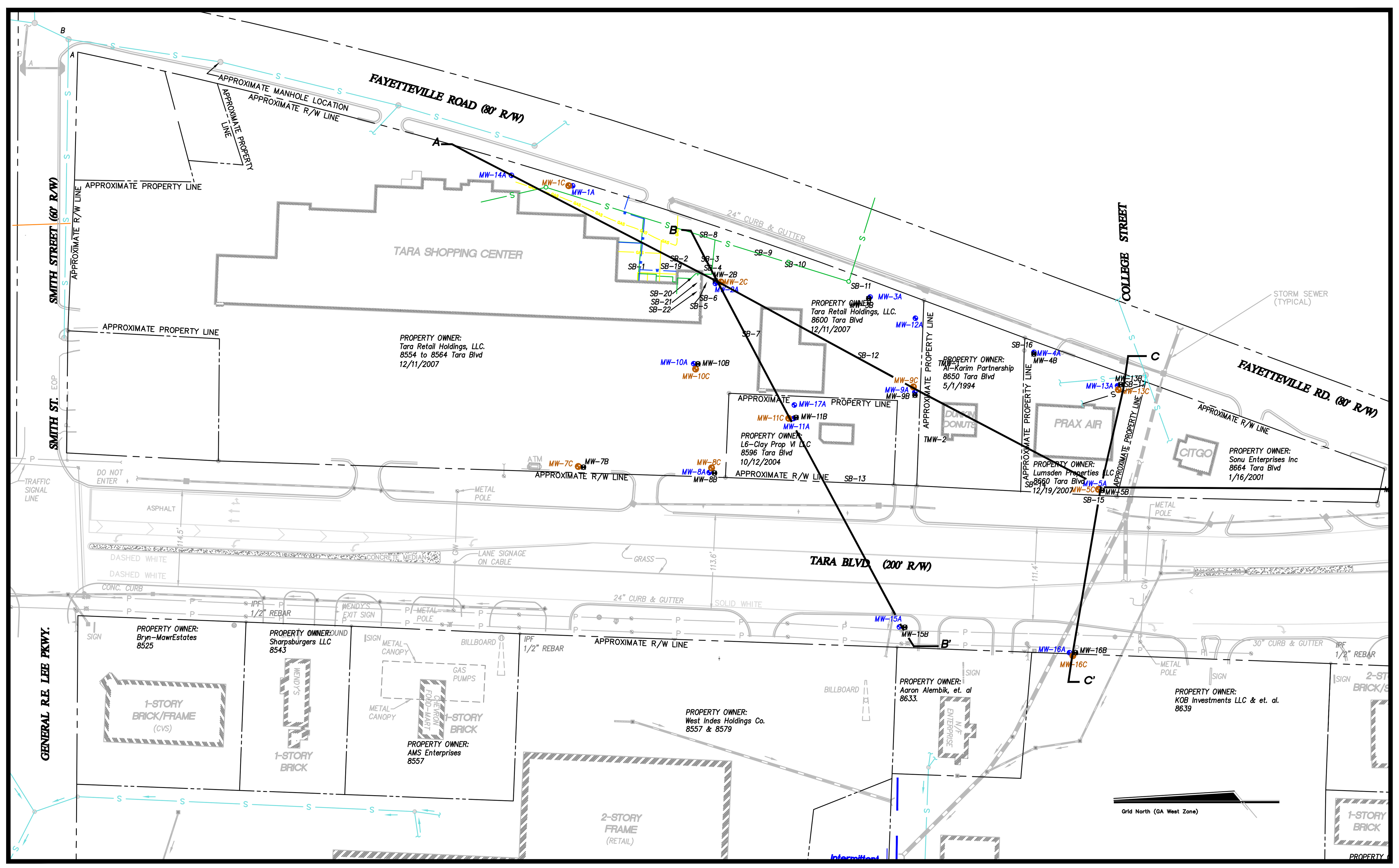
FIGURE D-5
CROSS SECTION LOCATION MAP

Drawn By:	MDO	Date Drawn:	01/05/2012
Reviewed By:	MN	Date Reviewed:	01/2012
Scale:	1" = 140'	Plot Date:	01/2012
Project Number.:	?????????????		









CROSS SECTION LOCATION

0 50 100

GRAPHIC SCALE (FEET)

LEGEND

UPPER RESIDUUM
LOWER RESIDUUM
(Clayey Silt)

BEDROCK

= SCREEN INTERVAL

= BENTONITE

MW = MONITORING WELL

= WATER TABLE

(BDL) = BELOW DETECTION LIMITS

(3,300*) = TOTAL PCE (ug/L) MARCH 2011

(350) = TOTAL PCE (ug/L) MAY 2011

(NS) = NOT SAMPLED

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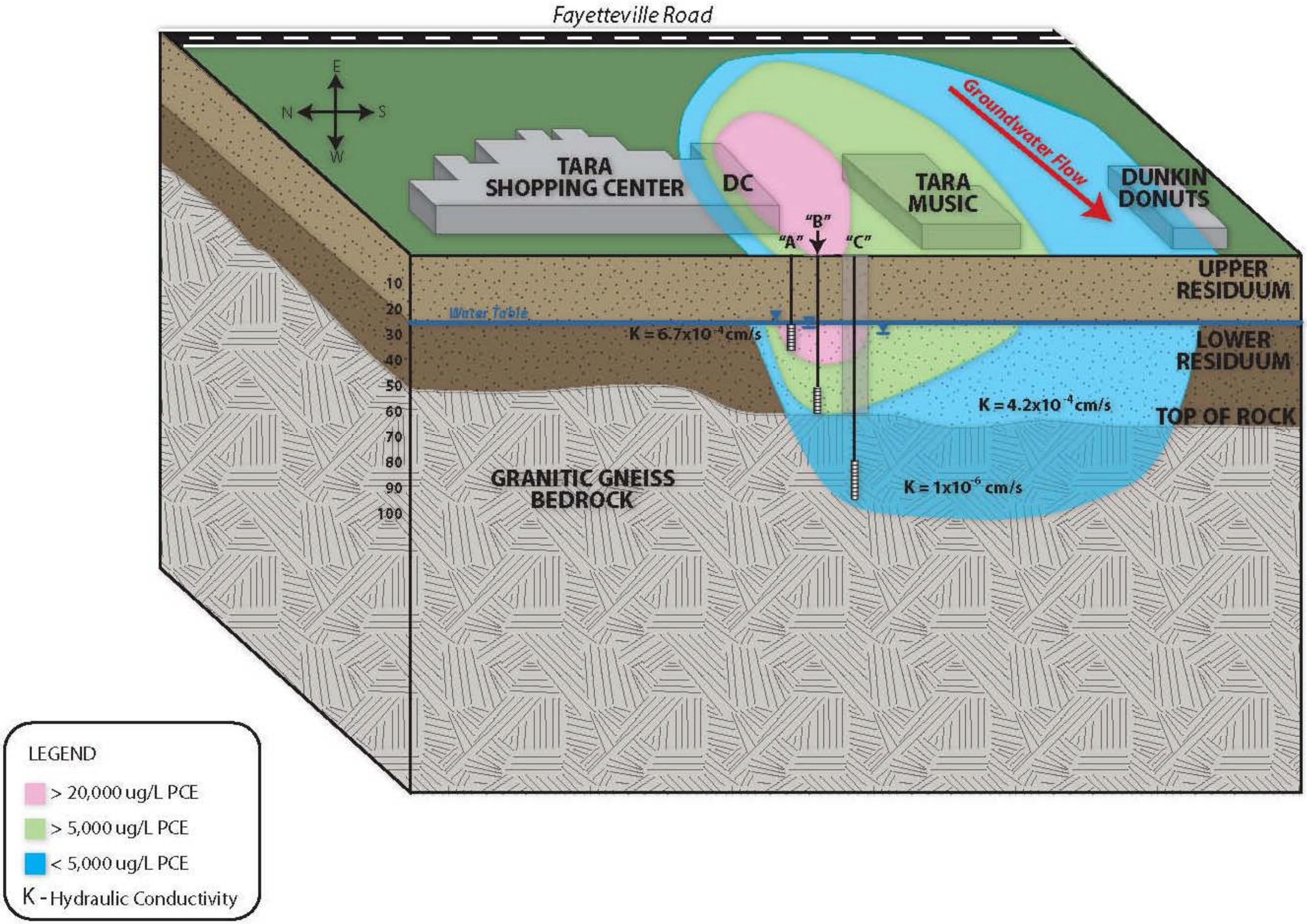
FIGURE D-6
CROSS SECTIONS A-A', B-B' AND C-C'

Drawn By:	MDO	Date Drawn:	01/05/2012
Reviewed By:	MN	Date Reviewed:	01/2012
Scale:	AS SHOWN	Plot Date:	01/2012
Project Number.:			



TARA SHOPPING CENTER JONESBORO, GEORGIA EHS Support May, 2011	CONCEPTUAL SITE MODEL BLOCK DIAGRAM	FIGURE D-7

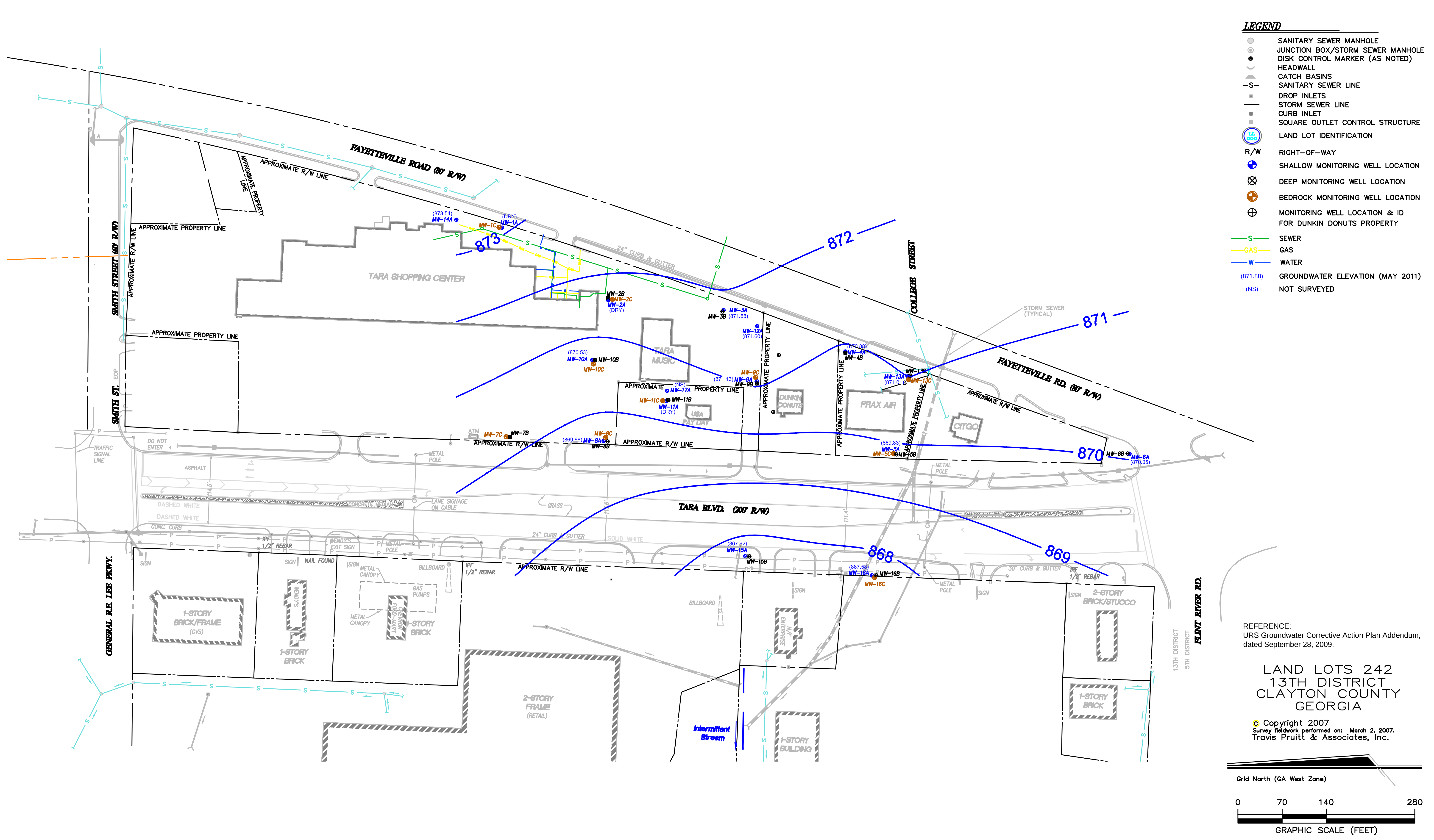


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FIGURE D-8
UPPER RESIDUUM POTENTIOMETRIC SURFACE
MAY 2011

Drawn By:	MDO	Date Drawn:	01/05/2012
Reviewed By:	MN	Date Reviewed:	01/2012
Scale:	1" = 140'	Plot Date:	01/2012
Project Number.:			

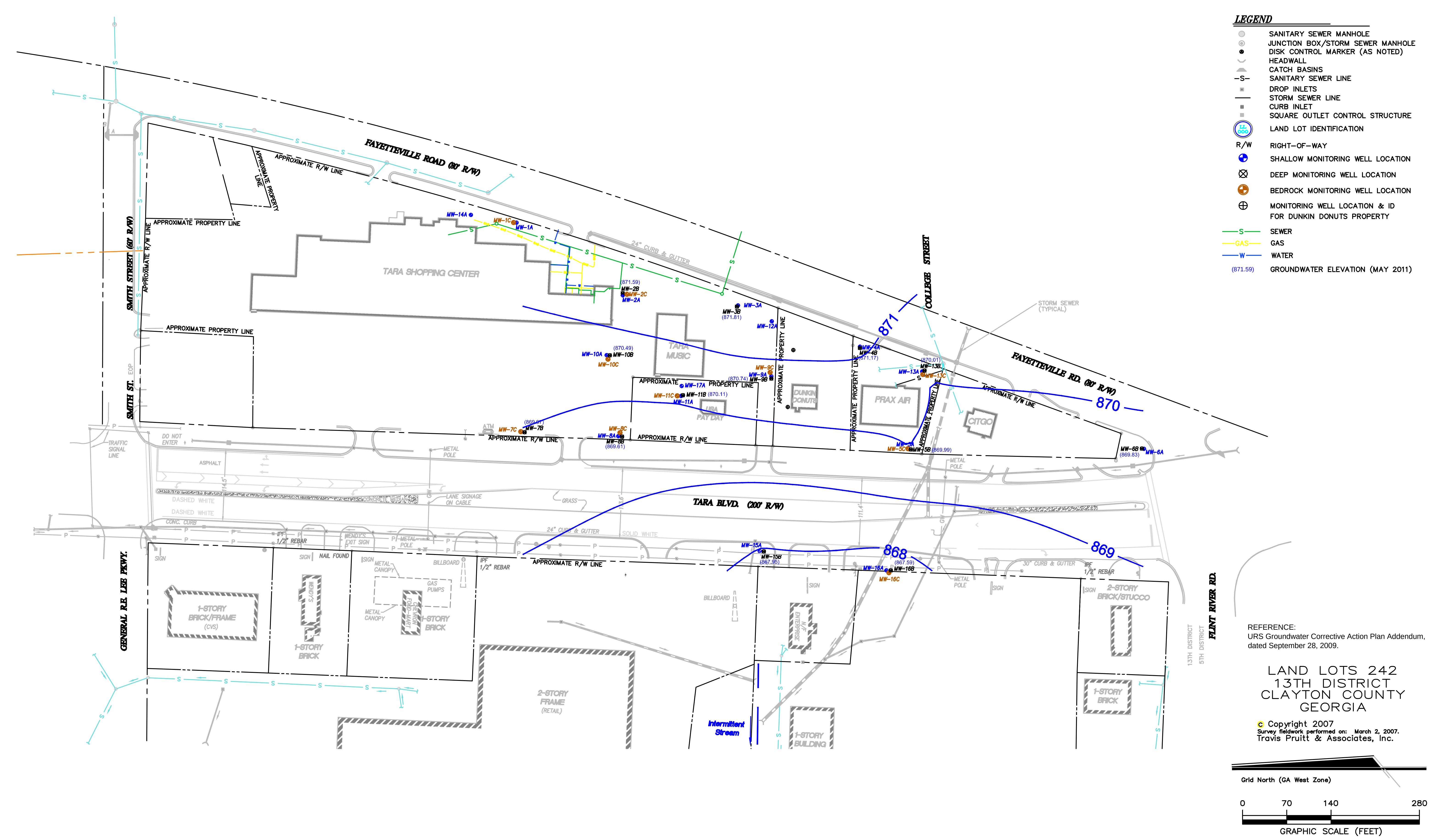

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FIGURE D-9
LOWER RESIDUUM POTENTIOMETRIC SURFACE
MAY 2011

Drawn By:	MDO	Date Drawn:	01/05/2012
Reviewed By:	MN	Date Reviewed:	01/2012
Scale:	1" = 140'	Plot Date:	01/2012
Project Number.:			

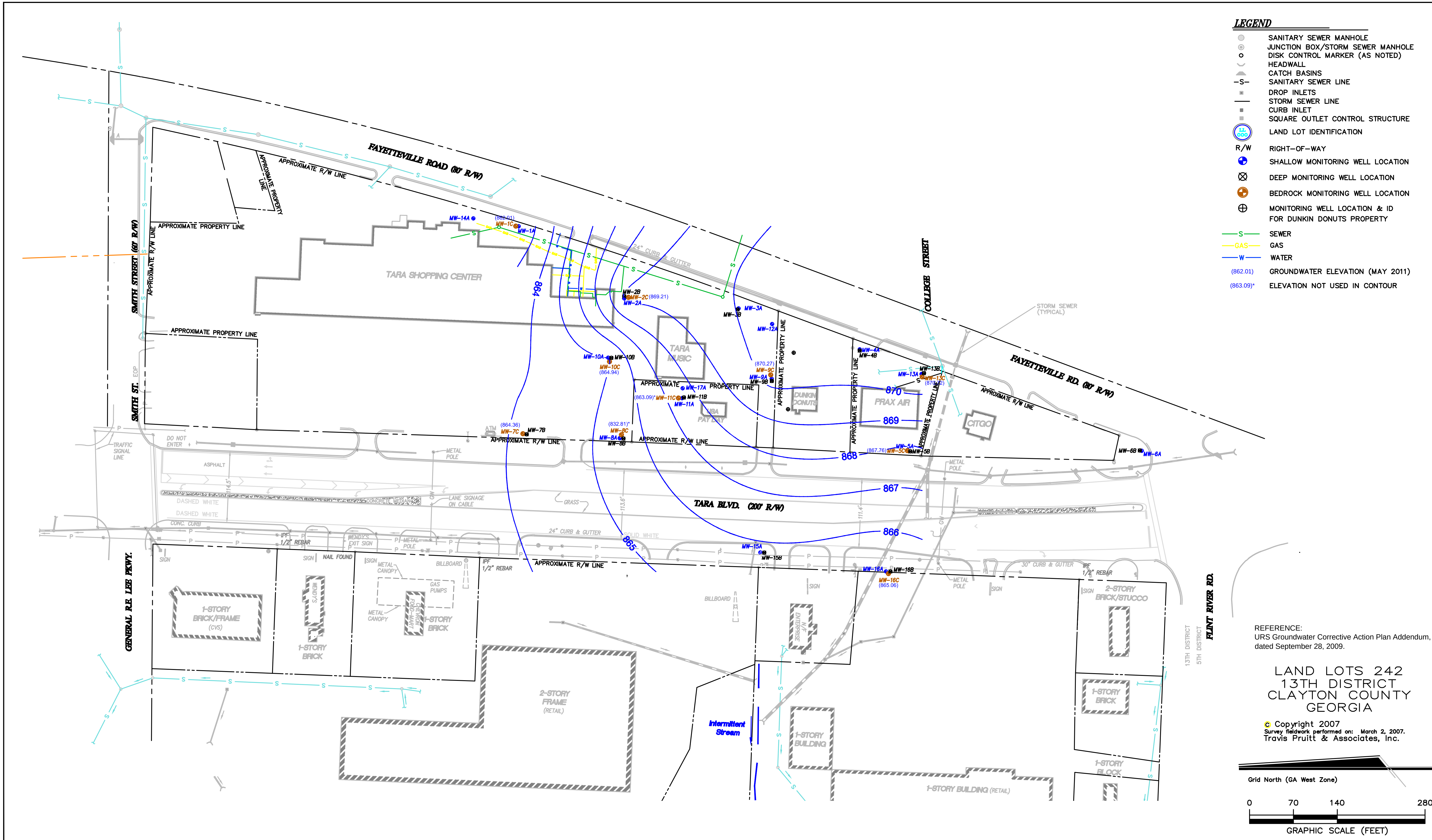

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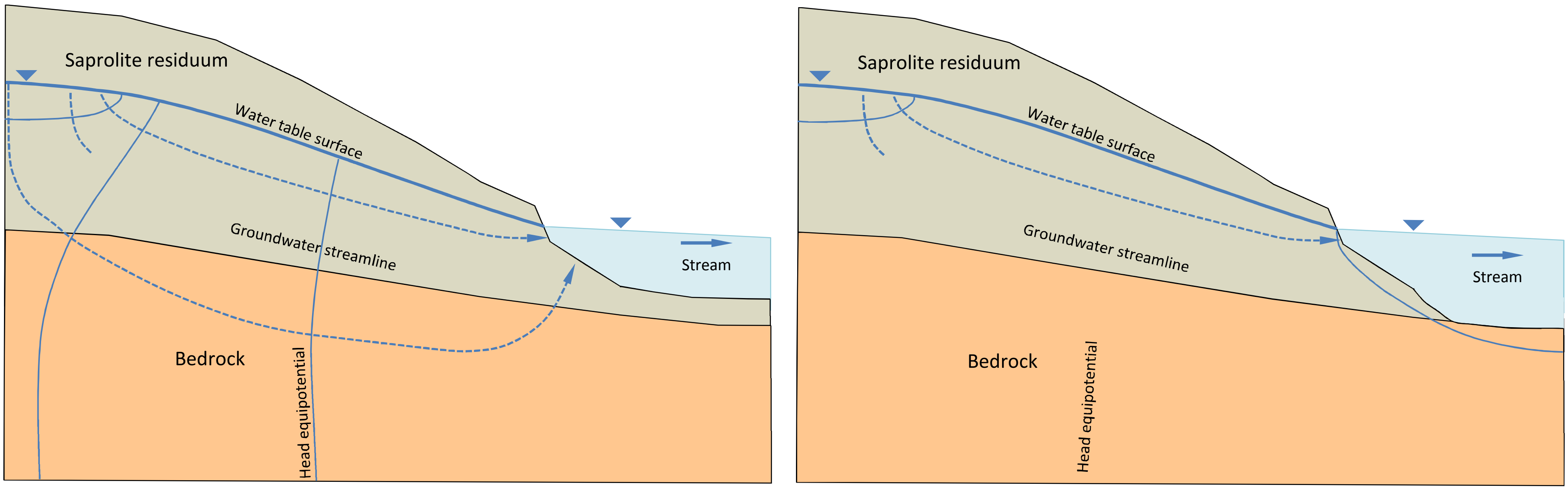
FIGURE D-10
BEDROCK POTENTIOMETRIC SURFACE
MAY 2011

Drawn By:	MDO	Date Drawn:	01/06/2012
Reviewed By:	MN	Date Reviewed:	01/2012
Scale:	1" = 140'	Plot Date:	01/2012
Project Number.:			

Groundwater discharge near streambed incised into residuum

Groundwater discharge near streambed at or incised into bedrock



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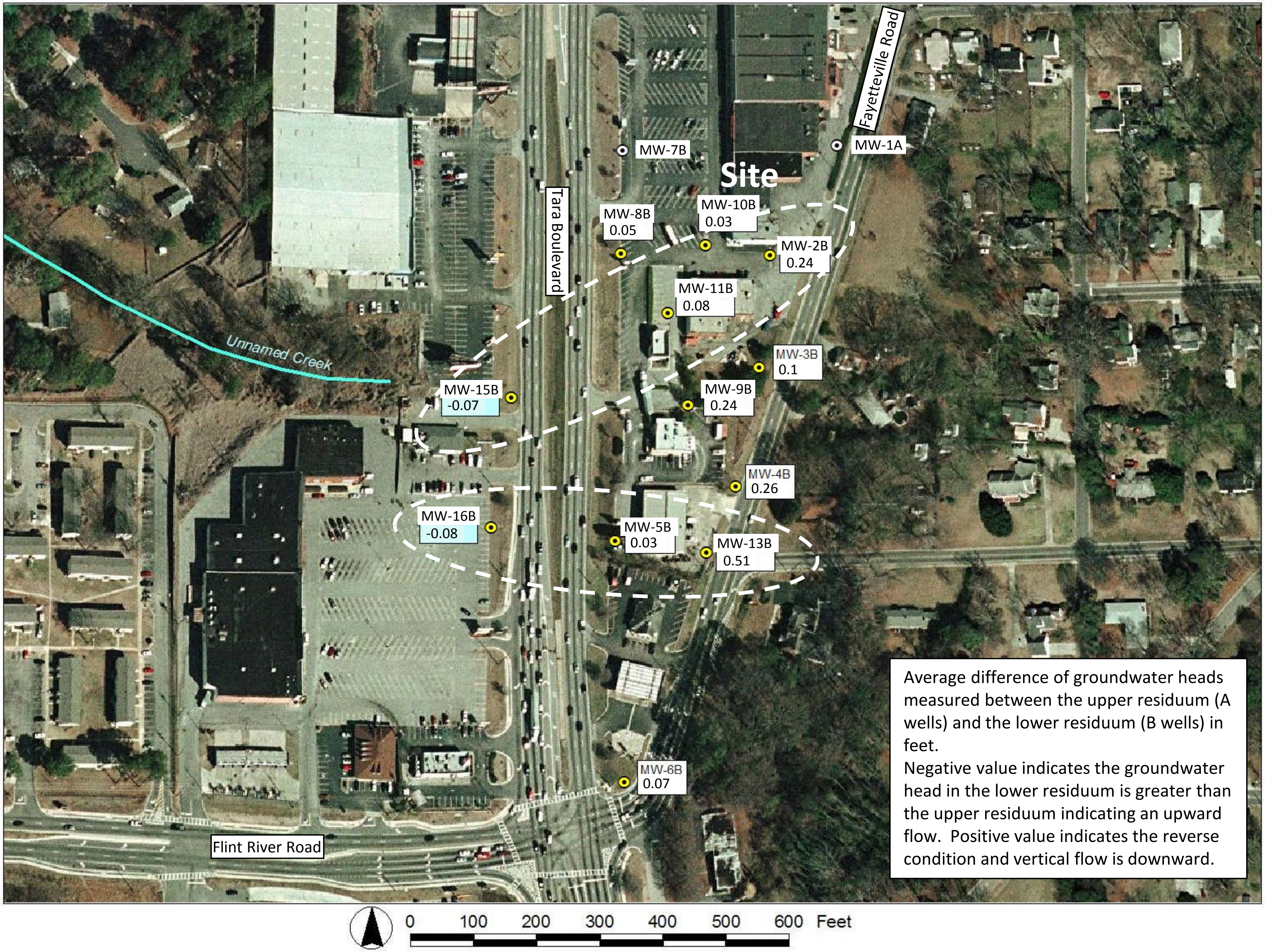
May, 2011

CONCEPTUAL GROUNDWATER FLOW IN THE VICINITY OF SURFACE WATER DRAINAGE

FIGURE D-11



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AVERAGE GROUNDWATER HEAD DIFFERENCES BETWEEN THE UPPER AND LOWER RESIDUUM

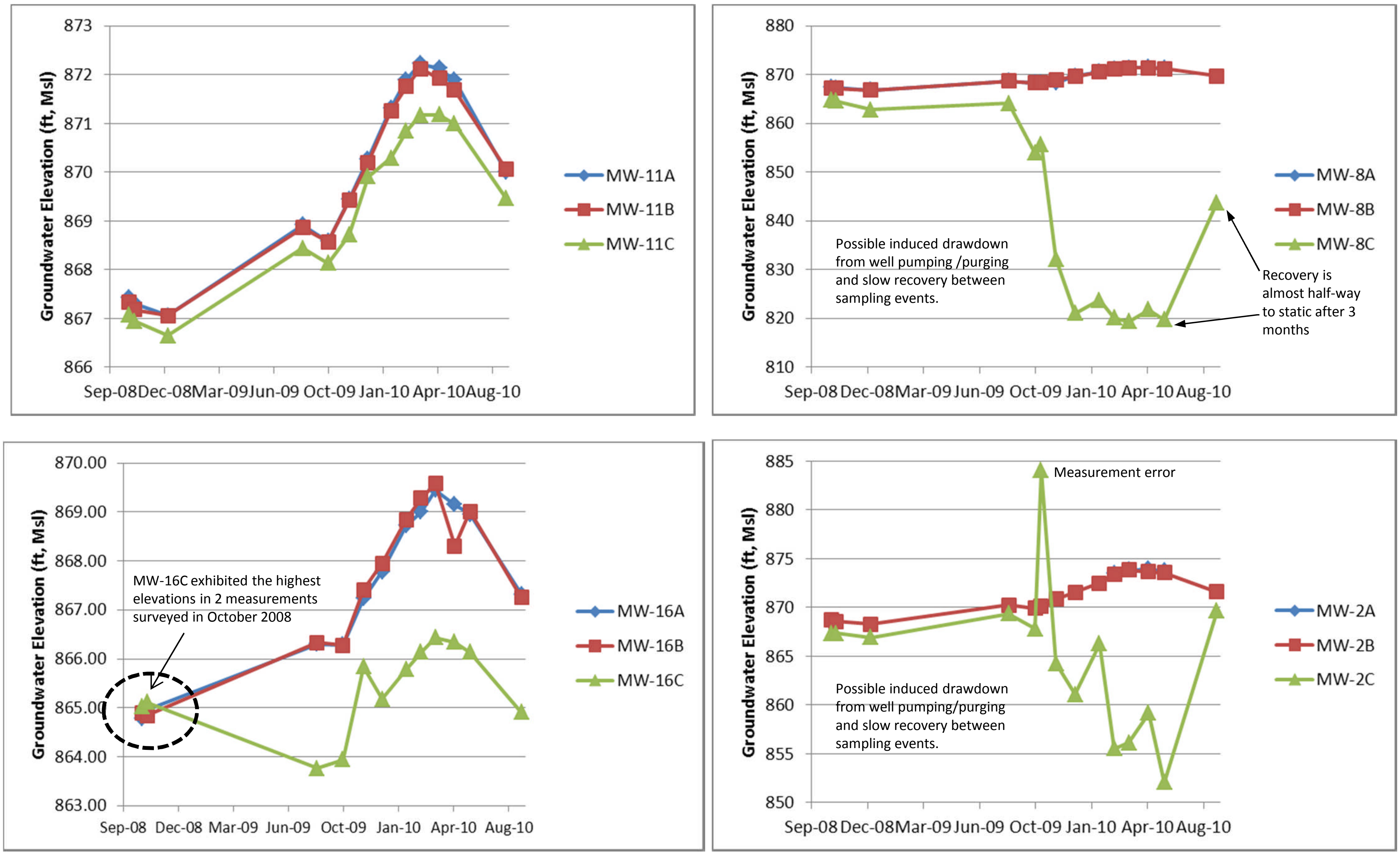
FIGURE D-12

TARA SHOPPING CENTER
JONESBORO, GEORGIA

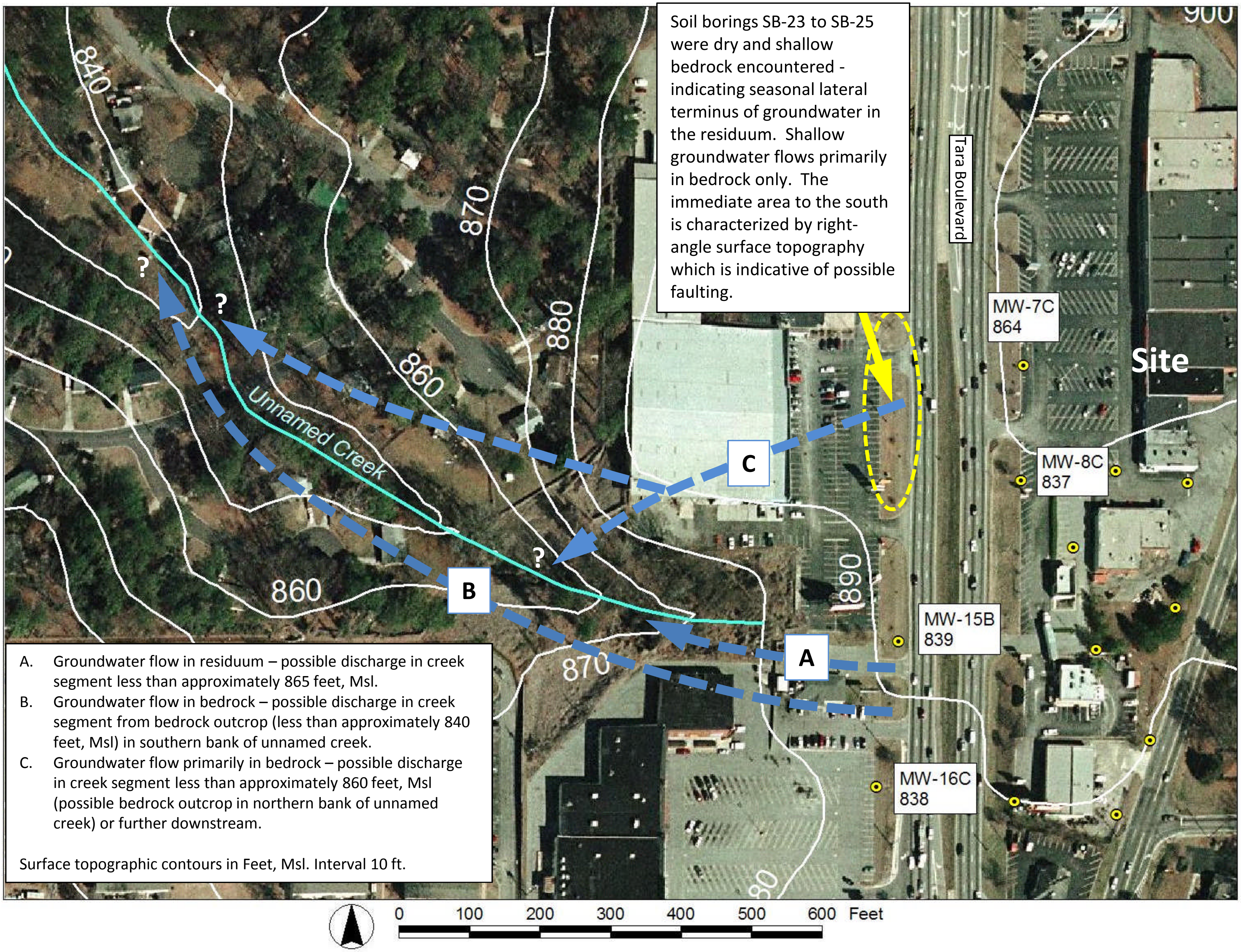
EHS Support May, 2011

AVERAGE GROUNDWATER HEAD DIFFERENCES BETWEEN THE LOWER RESIDUUM AND THE BEDROCK

FIGURE D-13



TARA SHOPPING CENTER JONESBORO, GEORGIA EHS Support *May, 2011*	**GROUNDWATER HYDROGRAPHS – MW-2, MW-7, MW-8 AND MW-11 WELL NESTS**	**FIGURE D-14**



TARA SHOPPING CENTER
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CONCEPTUALIZATION OF LOCAL GROUNDWATER DISCHARGE INTO OFF-SITE CREEK

FIGURE D-15

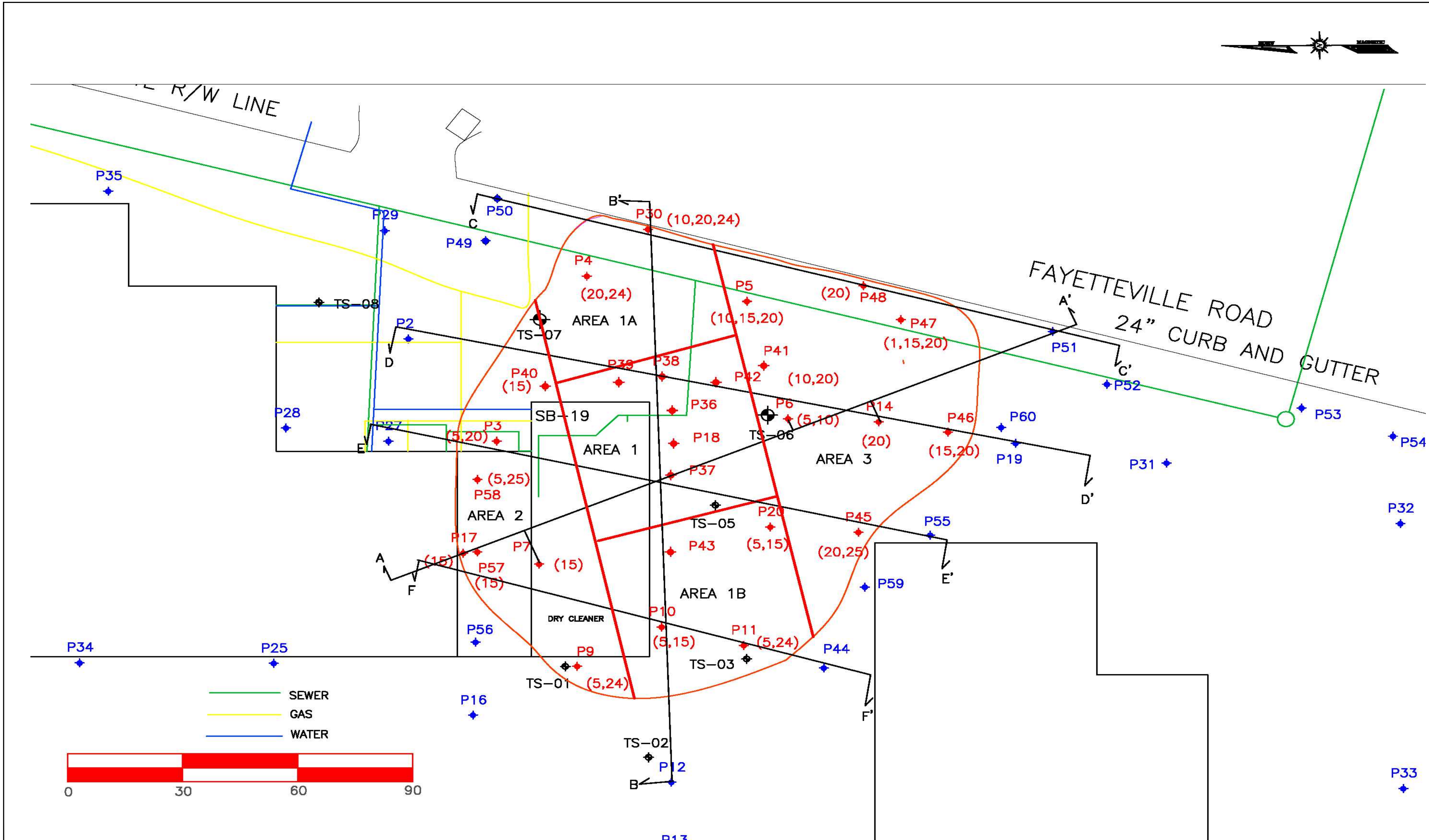

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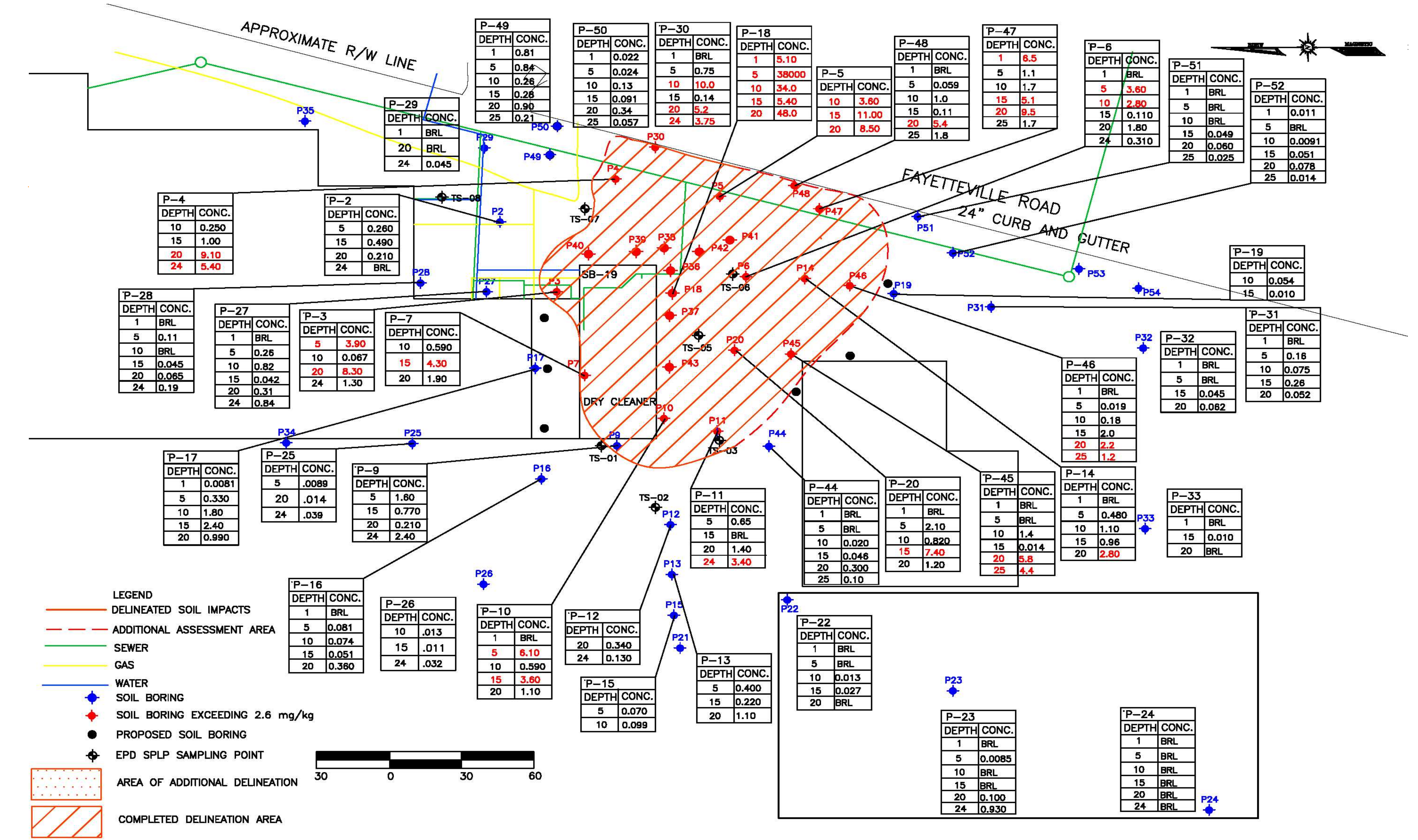
FIGURE D-16
LOCATION OF SOURCE AREAS

Drawn By: MDO		Date Drawn:	01/05/2012
Reviewed By: MN		Date Reviewed:	01/2012
Scale:	1" = 140'	Plot Date:	01/2012
Project Number.:			



P-49

DEPTH	CONC.
1	0.81
5	0.84
10	0.26
15	0.28
20	0.90
25	0.21

P-50

DEPTH	CONC.
1	0.022
5	0.024
10	0.13
15	0.091
20	0.34
25	0.057

P-30

DEPTH	CONC.
1	BRL
5	0.75
10	10.0
15	0.14
20	5.2
24	3.75

P-18

DEPTH	CONC.
1	5.10
5	38000
10	34.0
15	5.40
20	48.0

P-5

DEPTH	CONC.
10	3.60
15	11.00
20	8.50

P-48

DEPTH	CONC.
1	BRL
5	0.059
10	1.0
15	0.11
20	5.4
25	1.8

P-47

DEPTH	CONC.
1	6.5
5	1.1
10	1.7
15	5.1
20	9.5
25	1.7

P-6

DEPTH	CONC.
1	BRL
5	3.60
10	2.80
15	0.110
20	1.80
24	0.310

P-51

DEPTH	CONC.
1	BRL
5	BRL
10	BRL
15	0.049
20	0.060
25	0.025

P-52

DEPTH	CONC.
1	0.011
5	BRL
10	0.0091
15	0.051
20	0.078
25	0.014

P-29

DEPTH	CONC.
1	BRL
20	BRL
24	0.045

P-4

DEPTH	CONC.
10	0.250
15	1.00
20	9.10
24	5.40

P-2

DEPTH	CONC.
5	0.260
15	0.490
20	0.210
24	BRL

P-28

DEPTH	CONC.
1	BRL
5	0.11
10	BRL
15	0.045
20	0.065
24	0.19

P-27

DEPTH	CONC.
1	BRL
5	0.26
10	0.82
15	0.042
20	0.31
24	0.84

P-3

DEPTH	CONC.
5	3.90
10	0.067
20	8.30
24	1.30

P-7

DEPTH	CONC.
10	0.590
15	4.30
20	1.90

P-19

DEPTH	CONC.
10	0.054
15	0.010

P-31

DEPTH	CONC.
1	BRL
5	0.16
10	0.075
15	0.26
20	0.052

P-32

DEPTH	CONC.
1	BRL
5	BRL
15	0.045
20	0.062

P-46

DEPTH	CONC.
1	BRL
5	0.019
10	0.18
15	2.0
20	2.2
25	1.2

P-17

DEPTH	CONC.
1	0.0081
5	0.330
10	1.80
15	2.40
20	0.990

P-25

DEPTH	CONC.
5	.0089
20	.014
24	.039

P-9

DEPTH	CONC.
5	1.60
15	0.770
20	0.210
24	2.40

P-11

DEPTH	CONC.
5	0.65
15	BRL
20	1.40
24	3.40

P-44

DEPTH	CONC.
1	BRL
5	BRL
10	0.020
15	0.046
20	0.300
25	0.10

P-20

DEPTH	CONC.
1	BRL
5	2.10
10	0.820
15	7.40
20	1.20

P-45

DEPTH	CONC.
1	BRL
5	BRL
10	1.4
15	0.014
20	5.8
25	4.4

P-14

DEPTH	CONC.
1	BRL
5	0.480
10	1.10
15	0.96
20	2.80

P-33

DEPTH	CONC.
1	BRL
15	0.010
20	BRL

P-16

DEPTH	CONC.
1	BRL
5	0.081
10	0.074
15	0.051
20	0.360

P-26

DEPTH	CONC.
10	.013
15	.011
24	.032

P-10

DEPTH	CONC.
1	BRL
5	6.10
10	0.590
15	3.60
20	1.10

P-12

DEPTH	CONC.
20	0.340
24	0.130

P-15

DEPTH	CONC.
5	0.070
10	0.099

P-13

DEPTH	CONC.
5	0.400
15	0.220
20	1.10

P-22

DEPTH	CONC.
1	BRL
5	BRL
10	0.013
15	0.027
20	BRL

P-23

DEPTH	CONC.
1	BRL
5	0.0085
10	BRL
15	BRL
20	0.100
24	0.930

P-24

DEPTH	CONC.
1	BRL
5	BRL
10	BRL
15	BRL
20	BRL
24	BRL

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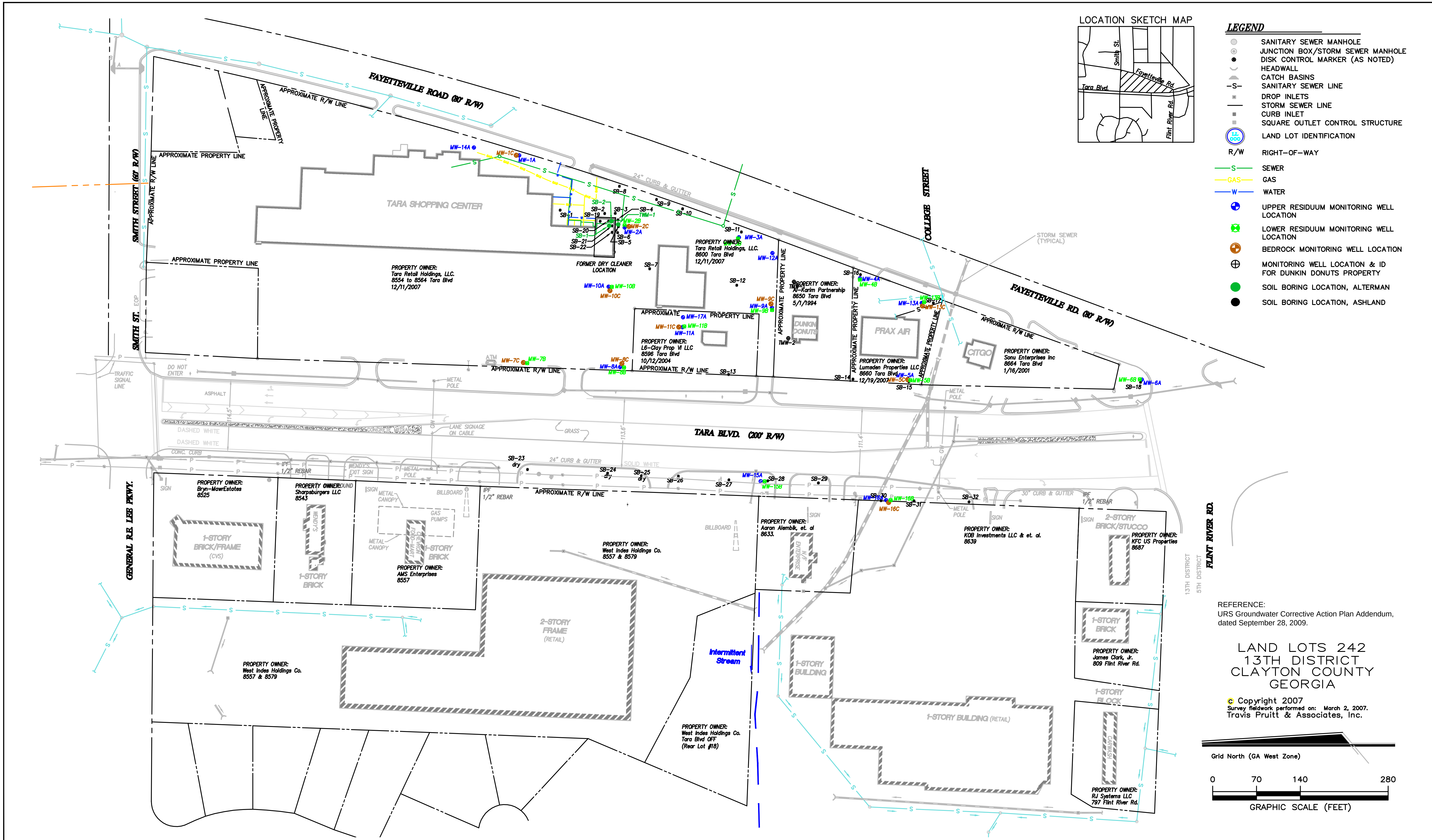
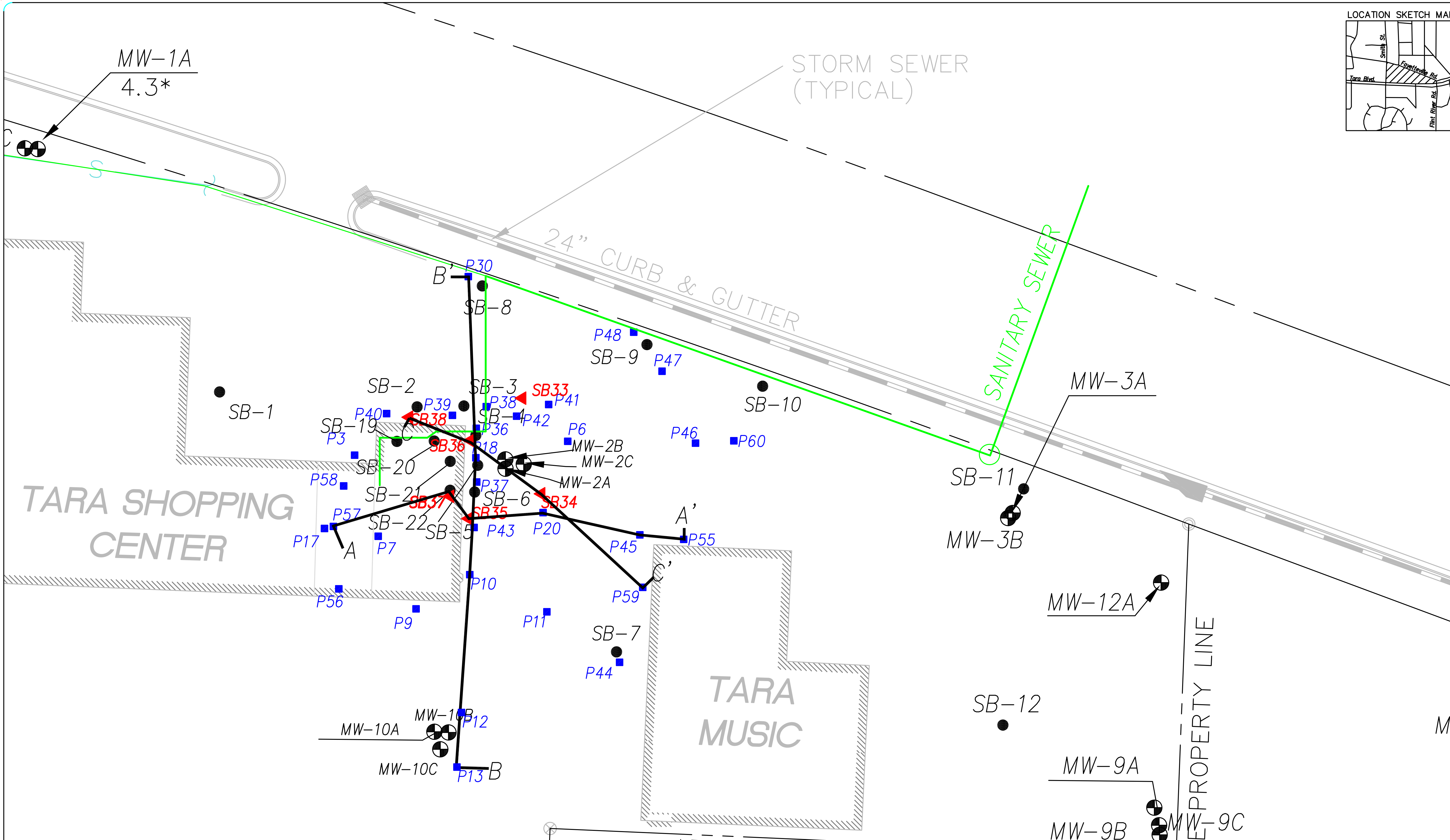
ASHLAND INC.
TARA HOLDINGS
8564 TARA BOULEVARD
JONESBORO, GEORGIA

FIGURE D-17
TARA RETAIL SOIL BORING LOCATIONS AND RESULTS

Drawn By:	MDO	Date Drawn:	01/05/2012
Reviewed By:	MN	Date Reviewed:	01/2012
Scale:	1" = 140'	Plot Date:	01/2012
Project Number.:			



EHS Support consider it done www.ehs-support.com	REVISIONS				ASHLAND INC. TARA HOLDINGS 8564 TARA BOULEVARD JONESBORO, GEORGIA	Figure D-18 HISTORICAL SOIL BORING LOCATIONS AND MONITORING WELL LOCATIONS	Drawn By: MDO	Date Drawn: 12/06/2012
	Rev.	By:	Disc.:	Date:			Reviewed By: MN	Date Reviewed: 12/2012
	Rev.	By:	Disc.:	Date:			Scale: 1" = 140'	Plot Date: 12/2012
	Rev.	By:	Disc.:	Date:			Project Number.:	
	Rev.	By:	Disc.:	Date:				



LAND LOTS 242
13TH DISTRICT
CLAYTON COUNTY
GEORGIA

© Copyright 2007
Survey fieldwork performed on: March 2, 2007.
Travis Pruitt & Associates, Inc.

LEGEND

- SANITARY SEWER MANHOLE
- JUNCTION BOX/STORM SEWER MANHOLE
- DISK CONTROL MARKER (AS NOTED)
- HEADWALL
- CATCH BASINS
- -S- SANITARY SEWER LINE
- DROP INLETS
- STORM SEWER LINE
- CURB INLET
- SQUARE OUTLET CONTROL STRUCTURE
- LAND LOT IDENTIFICATION
- R/W RIGHT-OF-WAY
- CROSS SECTION LOCATION
- P44 TARA DIRECT PUSH LOCATIONS
- SB34 2008 SOIL BORINGS
- MW-3A MONITORING WELL LOCATION
- DIRECT PUSH LOCATIONS

Grid North (GA West Zone)

0 15 30 60
GRAPHIC SCALE (FEET)

REV	DESCRIPTION OF REVISION	BY	DATE
△			
△			
△			
△			
	P:\3767\AutoCadFiles\Ashland\Alterman\Phase III Investigation\Total VOC Upper Residuum Iso Map.dwg	BY	DATE

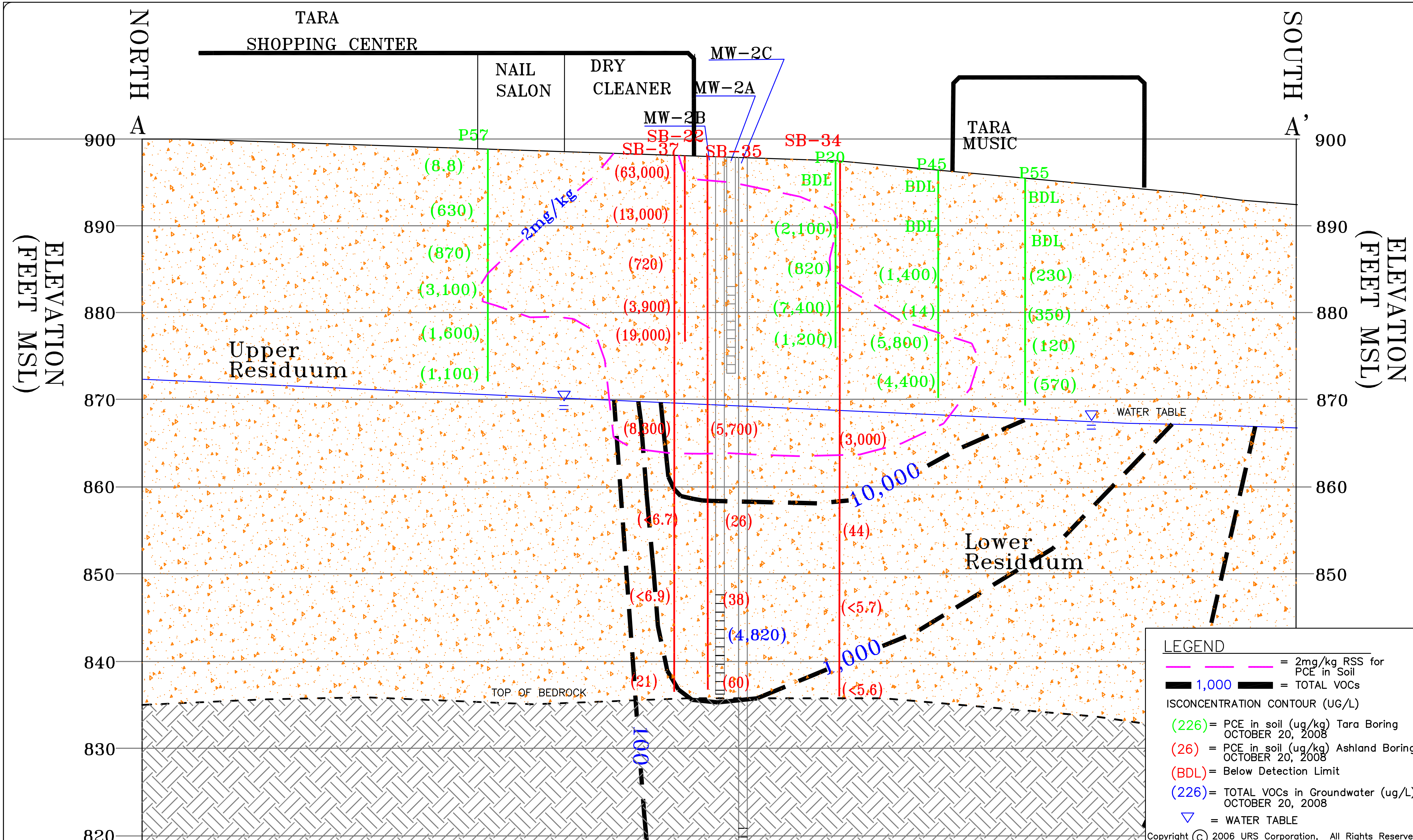
PROPERTY OWNER:
TARA HOLDINGS
5887 Glendridge Dr. NE
Atlanta, GA 30328
(770) 392-9004

APPLICANT:
ASHLAND
5200 Blazer Parkway
Dublin, OH 43017
(614) 790-1586

ENGINEER:
URS
1000 Abernathy Road, Suite 900
Atlanta, GA 30328
(678) 808-8800

TITLE
SOIL BORING CROSS SECTION LOCATION MAP
8564 Tara Boulevard
Jonesboro, GA

SCALE: H NTS	12-12-08	JOB NO.	37670147
SCALE: H NTS	DR. JMF / CK. RSK	SKETCH NO.	FIGURE D--19



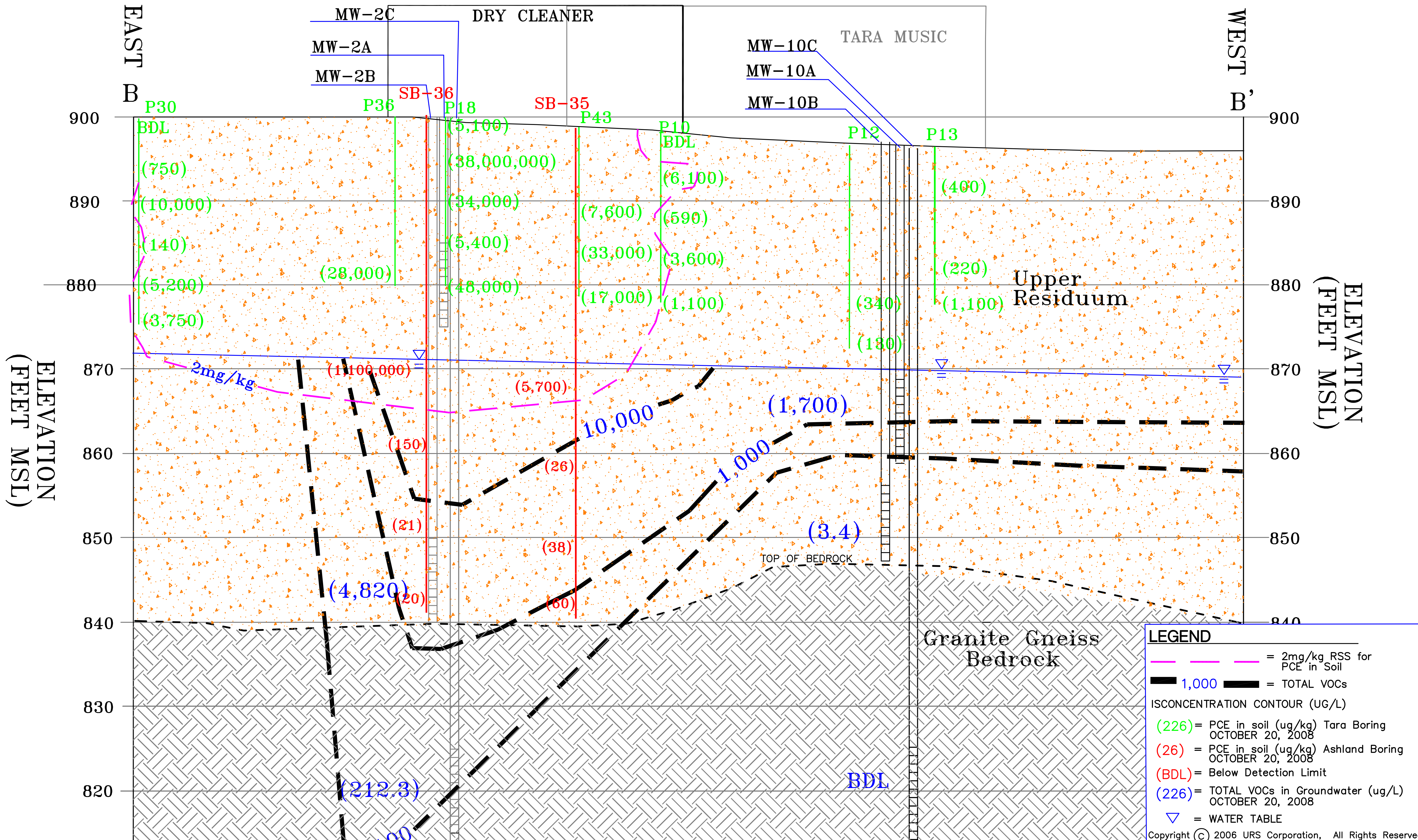
REV	DESCRIPTION OF REVISION	BY	DATE
△			
△			
△			
△			
P:\3767\AutoCadFiles\Ashland\Alterman\Phase III Investigation\Cross Sections\		BY	DATE

ASHLAND
8564 Tara Blvd
Jonesboro, Georgia

TITLE
NORTH-SOUTH FACILITY CROSS-SECTION A-A'

URS CORPORATION, ATLANTA, GA., 678-808-8800

SCALE: H: NTS	DATE 2-20-09	JOB NO. 37680147
SCALE: V: NTS	DR. BMG	SKETCH NO.
	CK. JMF	FIGURE D-20



LEGEND

= 2mg/kg RSS for PCE in Soil

1,000 = TOTAL VOCs ISCONCENTRATION CONTOUR (UG/L)

(226) = PCE in soil (ug/kg) Tara Boring OCTOBER 20, 2008

(26) = PCE in soil (ug/kg) Ashland Boring OCTOBER 20, 2008

(BDL) = Below Detection Limit

(226) = TOTAL VOCs in Groundwater (ug/L) OCTOBER 20, 2008

= WATER TABLE

REV	DESCRIPTION OF REVISION	BY	DATE
△			
△			
△			
△			

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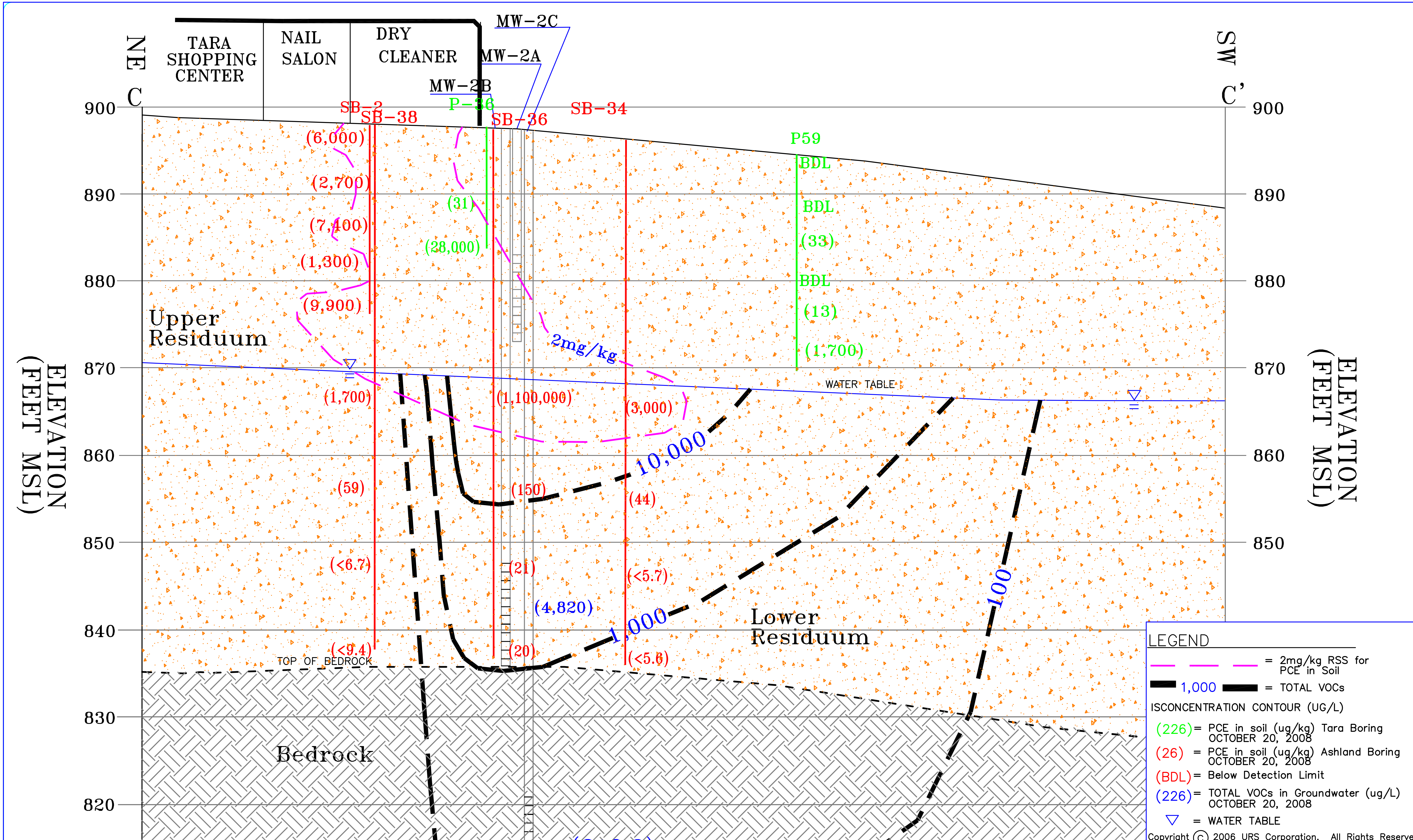
ASHLAND
8564 Tara Blvd
Jonesboro, Georgia

TITLE E-W CROSS SECTION B - B'

URS CORPORATION, ATLANTA, GA., 678-808-8800

SCALE: H NTS	DATE 2-20-09	JOB NO. 37680147
SCALE: V NTS'	DR. BMG	SKETCH NO.
	CK. JMF	FIGURE D-21



REV	DESCRIPTION OF REVISION	BY	DATE
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△			

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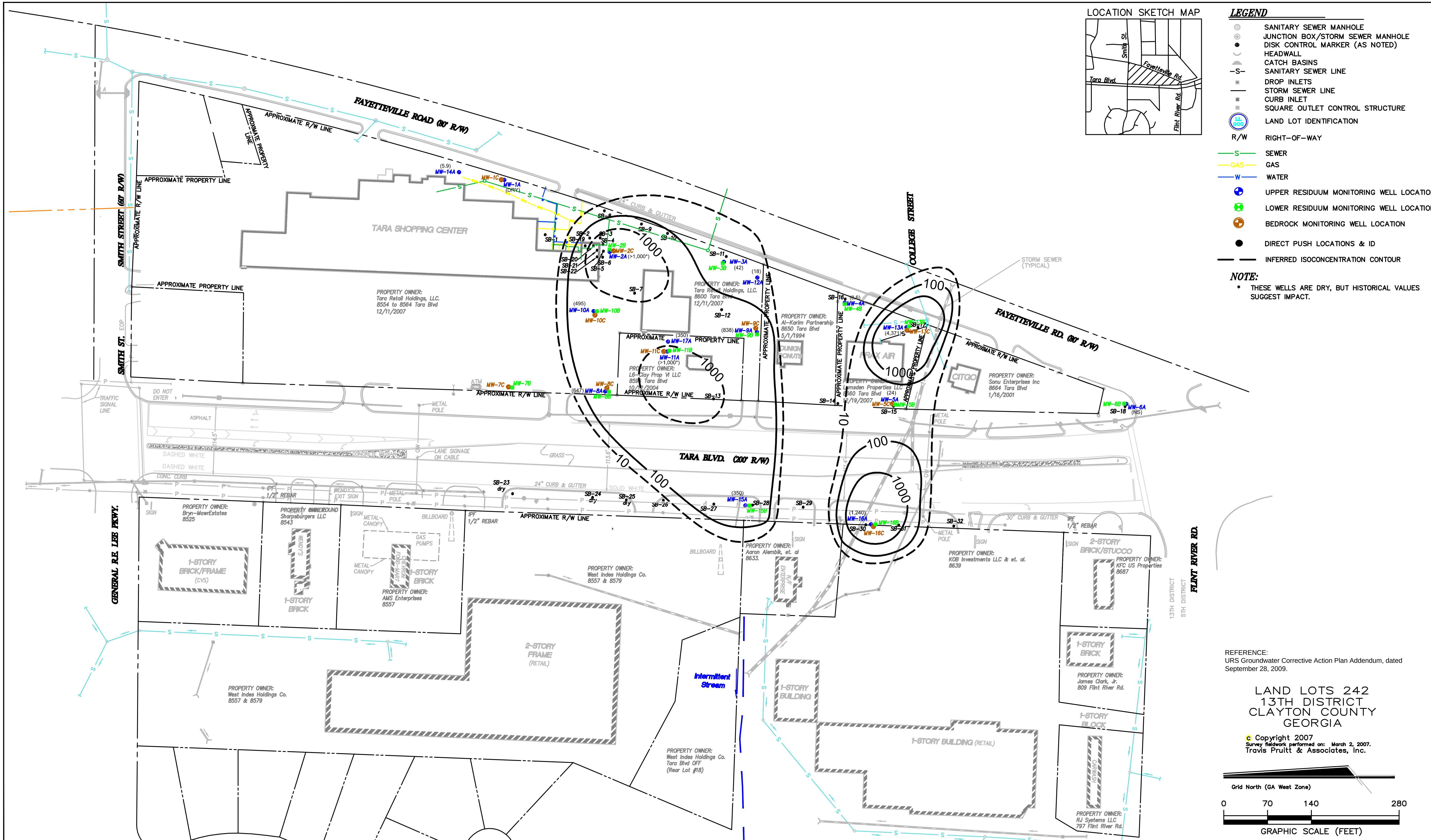
ASHLAND
8564 Tara Blvd
Jonesboro, Georgia

TITLE
NE-SW FACILITY CROSS-SECTION C-C'
URS CORPORATION, ATLANTA, GA., 678-808-8800

SCALE: H: NTS
SCALE: V: NTS
DATE 11-03-08
DR. BMG
CK. JMF
JOB NO. 37680147
SKETCH NO.
FIGURE D-22



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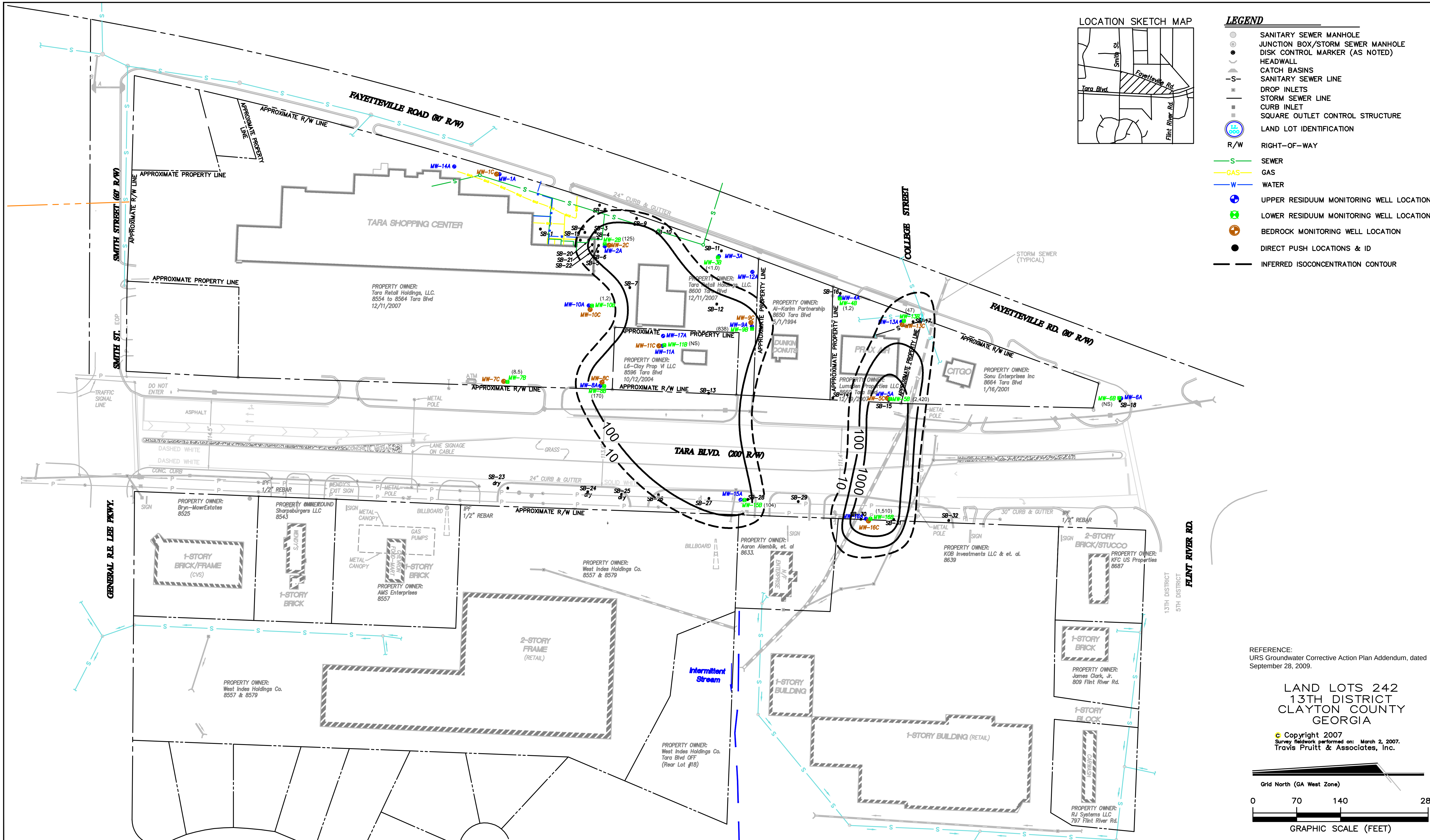
JONESBORO, GEORGIA

FIGURE D-23
TOTAL VOC ISOCONCENTRATION MAP UPPER RESIDUUM AQUIFER
MAY 2011

Drawn By: MDO	Date Drawn: 06/2011		
Reviewed By: MN	Date Reviewed: 06/2011		
Scale: 1" = 140'	Plot Date: 06/2011		
Project Number.:			



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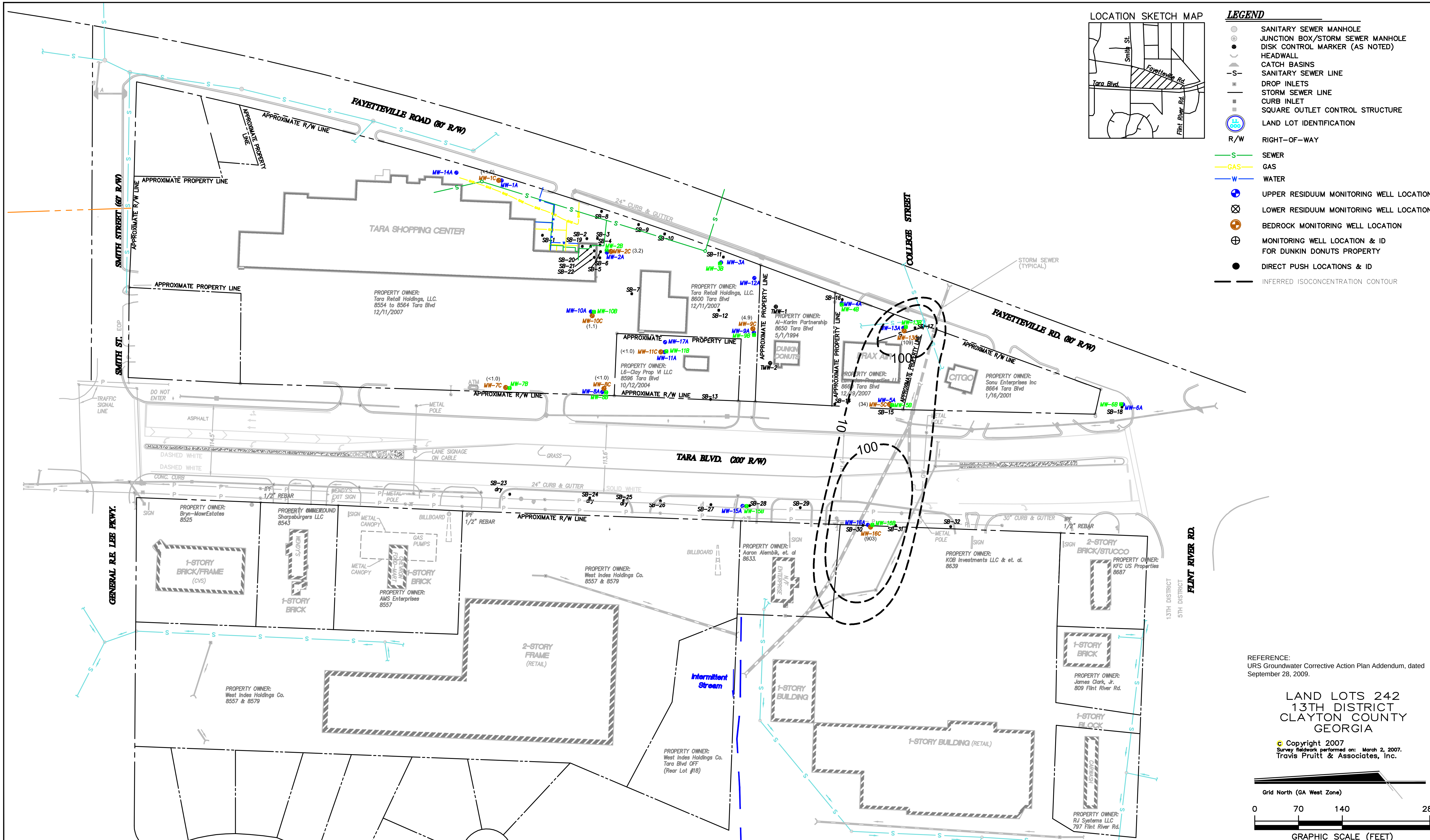
8564 TARA BOULEVARD
JONESBORO, GEORGIA

FIGURE D-24
TOTAL VOC ISOCONCENTRATION MAP LOWER RESIDUUM AQUIFER
MAY 2011

Drawn By:	MDO	Date Drawn:	06/2011
Reviewed By:	MN	Date Reviewed:	06/2011
Scale:	1" = 140'	Plot Date:	06/2011
Project Number.:			



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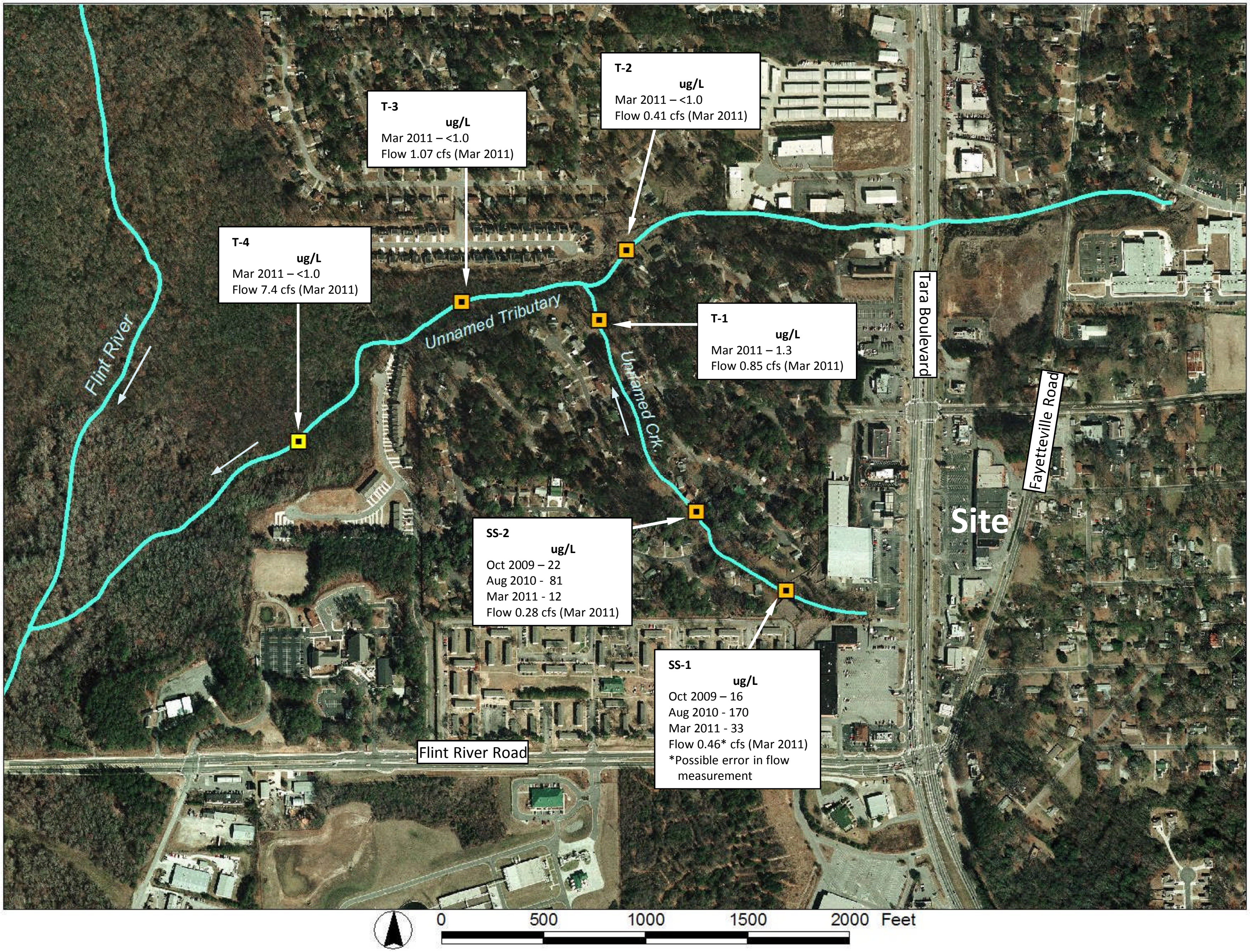
Rev.	By:	Disc.:	Date:

ASHLAND INC.
TARA HOLDINGS
8564 TARA BOULEVARD
JONESBORO, GEORGIA

FIGURE D-25
TOTAL VOC ISOCONCENTRATION MAP BEDROCK AQUIFER
MAY 2011

Drawn By:	MDO	Date Drawn:	06/2011
Reviewed By:	MN	Date Reviewed:	06/2011
Scale:	1" = 140'	Plot Date:	06/2011
Project Number.:			



TARA SHOPPING CENTER
JONESBORO, GEORGIA

EHS Support

May, 2011

SURFACE WATER SAMPLING SITES, PCE CONCENTRATIONS AND INSTANTANEOUS DISCHARGE

FIGURE
D-26

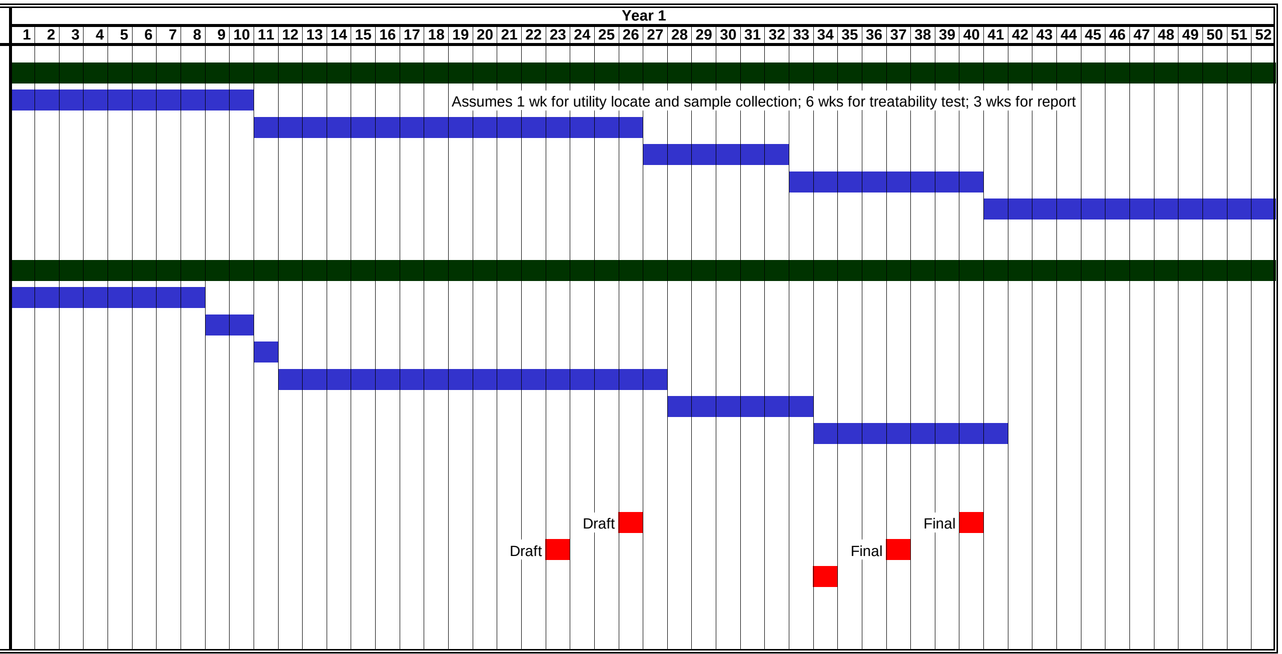
APPENDIX E

Proposed Milestone Schedule

Appendix E
Project Milestone Schedule

Tara Shopping Center
Jonesboro, Georgia

Task	Description
1	**Source Area Remediation**
1.1	Perform Source Area Treatability Study
1.2	Preparation of Source Area Remediation Plan
1.3	Agency Review/Comment Period
1.4	Prepare and Submit Final Source Area Remediation Plan
1.5	Implementation of Source Area Remedy[1]
2	**Off-site Groundwater Investigation**
2.1	Obtain Access Agreements
2.2	Complete Drilling Program
2.3	Complete Baseline Sampling
2.4	Prepare and Submit Groundwater and Surface Water Remediation Plan
2.5	Agency Review/Comment Period
2.6	Prepare and Submit Final Groundwater and Surface Water Remediation Plan
2.7	Implement Groundwater and Surface Water Remedy(s)[2]
3	**Deliverables**
3.1	Source Area Remediation Plan
3.2	Groundwater and Surface Water Remediation Plan
3.3	Semi-Annual Progress Reports[3]
3.4	Compliance Status Report[4] (To Be Determined)



Notes:

1 Assumes source remedy will be solidification/stabilization using large diameter augers; add an additional month for excavation and an additional 7+ months for electrical resistive heating.

2 Assumes Monitored Natural Attentual (on a semi-annual basis) for the final groundwater remedy and no further action for the surface water remedy.

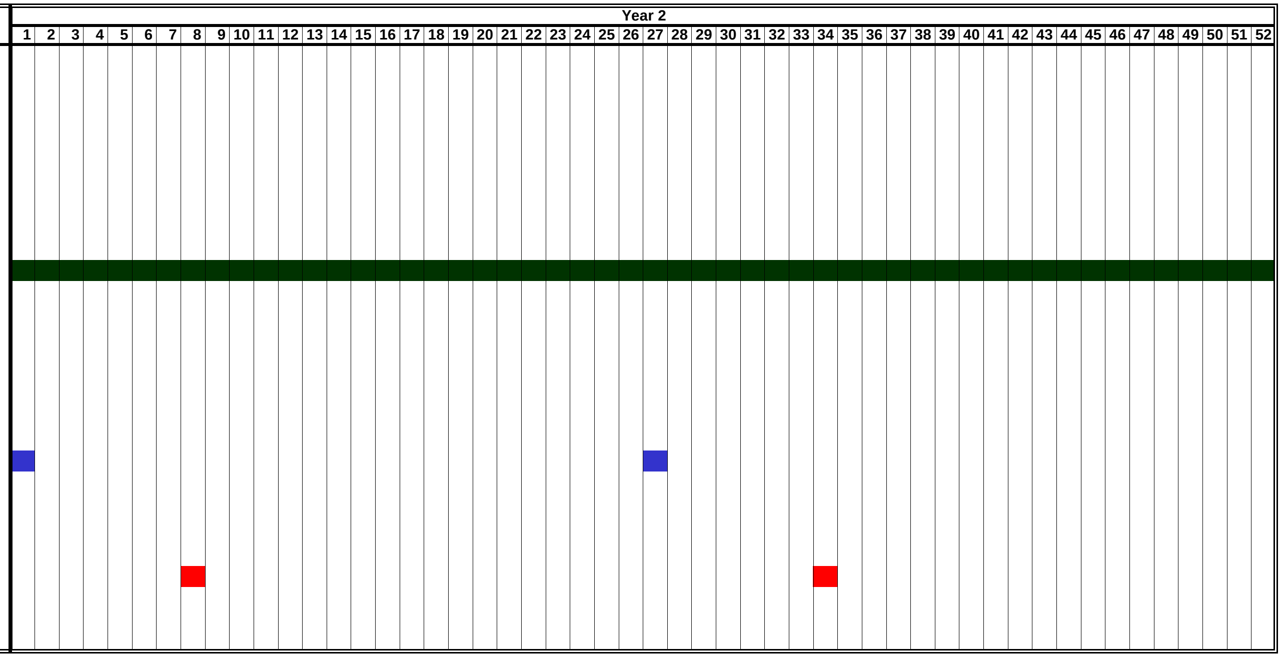
3 Assumes Semi-annual Progress Reports will be submitted approximately 2 months after the end of the reporting period.

4 Compliance Status Report will be submitted once remediation is complete.

Appendix E
Project Milestone Schedule

Tara Shopping Center
Jonesboro, Georgia

Task	Description	Weeks
1	**Source Area Remediation**	
1.1	Perform Source Area Treatability Study	
1.2	Preparation of Source Area Remediation Plan	
1.3	Agency Review/Comment Period	
1.4	Prepare and Submit Final Source Area Remediation Plan	
1.5	Implementation of Source Area Remedy[1]	
2	**Off-site Groundwater Investigation**	
2.1	Obtain Access Agreements	
2.2	Complete Drilling Program	
2.3	Complete Baseline Sampling	
2.4	Prepare and Submit Groundwater and Surface Water Remediation Plan	
2.5	Agency Review/Comment Period	
2.6	Prepare and Submit Final Groundwater and Surface Water Remediation Plan	
2.7	Implement Groundwater and Surface Water Remedy(s)[2]	
3	**Deliverables**	
3.1	Source Area Remediation Plan	
3.2	Groundwater and Surface Water Remediation Plan	
3.3	Semi-Annual Progress Reports[3]	
3.4	Compliance Status Report[4] (To Be Determined)	



Notes:

1 Assumes source remedy will be solidification/stabilization using large diameter augers; add an additional month for excavation and an additional 7+ months for electrical resistive heating.

2 Assumes Monitored Natural Attentual (on a semi-annual basis) for the final groundwater remedy and no further action for the surface water remedy.

3 Assumes Semi-annual Progress Reports will be submitted approximately 2 months after the end of the reporting period.

4 Compliance Status Report will be submitted once remediation is complete.

Appendix E
Project Milestone Schedule

Tara Shopping Center
Jonesboro, Georgia

Task	Description	Weeks	Year 3							
			1	2	3	4	5	6	7	8
1	**Source Area Remediation**									
1.1	Perform Source Area Treatability Study									
1.2	Preparation of Source Area Remediation Plan									
1.3	Agency Review/Comment Period									
1.4	Prepare and Submit Final Source Area Remediation Plan									
1.5	Implementation of Source Area Remedy[1]									
2	**Off-site Groundwater Investigation**									
2.1	Obtain Access Agreements									
2.2	Complete Drilling Program									
2.3	Complete Baseline Sampling									
2.4	Prepare and Submit Groundwater and Surface Water Remediation Plan									
2.5	Agency Review/Comment Period									
2.6	Prepare and Submit Final Groundwater and Surface Water Remediation Plan									
2.7	Implement Groundwater and Surface Water Remedy(s)[2]									
3	**Deliverables**									
3.1	Source Area Remediation Plan									
3.2	Groundwater and Surface Water Remediation Plan									
3.3	Semi-Annual Progress Reports[3]									
3.4	Compliance Status Report[4] (To Be Determined)									

Notes:

1 Assumes source remedy will be solidification/stabilization usting large diameter augers; add an additional month for excavation and an additional 7+ months for electrical resistive heating.

2 Assumes Monitored Natural Attentual (on a semi-annual basis) for the final groundwater remedy and no further action for the surface water remedy.

3 Assumes Semi-annual Progress Reports will be submitted approximately 2 months after the end of the reporting period.

4 Compliance Status Report will be submitted once remediation is complete.