

# Three Mile Creek Watershed Management Plan

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## Appendix A – GIS and Literature Data Review

### Key Information

Several items obtained during our data collection efforts reveal key information that form the basis of this study and inform the required steps ahead. In 2004, the USGS published the report titled “Assessment of Water Quality, Benthic Invertebrates, and Periphyton in the Three Mile Creek Basin, Mobile, Alabama, 1999-2003”. This report summarizes the results of extensive water quality and biological monitoring performed between 1999 and 2003 in the creek and two tributaries. Surface water flow monitoring was performed in conjunction with sample collection and laboratory analysis for a wide range of parameters, including nutrients, oxygen demand parameters, pathogens, benthic invertebrates, periphyton, and even potential wastewater compounds. This report documented the water quality and biological conditions within TMC at the time and identified key stressors to the surface water system. Due to the elevated values of certain pollutants including pathogens and wastewater compounds in Toulmin Springs Branch (TSB), CEN, and the downstream end of the watershed, there appears to be a contribution from the groundwater system in these areas (possibly from legacy or continued instances of sewer system leaks and/or overflows).

In 2006, ADEM published the Final Total Maximum Daily Load (TMDL) report for Organic Enrichment/Dissolved Oxygen (DO) for all three segments of TMC which calculated the limits of pollutant/load contributions which would not diminish healthy DO levels. ADEM performed modeling in conjunction with field monitoring to develop the TMDLs for nitrogenous biochemical oxygen demand (NBOD) and carbonaceous biochemical oxygen demand (CBOD) for both point and non-point pollution sources. These TMDLs established and required NBOD and CBOD load reductions to improve water quality and gradually increase ambient dissolved oxygen concentrations throughout the creek, specifically improving dissolved oxygen conditions throughout the creek.

In 2009, Final TMDLs were developed by ADEM for pathogens in TSB and CEN. TMDLs are expected from ADEM this year for pathogens throughout TMC, and nutrients for both TSB and CEN. Once these TMDLs are completed, the required load reductions will be specified for all primary pollutants of concern in the TMC basin. The primary pollutants of concern include: NBOD/CBOD (impacting ambient dissolved oxygen concentrations); nutrients; and pathogens. There is a secondary concern related to industrial and wastewater compounds in specific areas.

In the 1980's, the USACE prepared preliminary design documents and an environmental assessment report for the TMC which recommended channel improvements to reduce flooding. These documents provided valuable information related to the design

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of the improvements including channel straightening, channel widening, and the installation of numerous weirs/water control structures.

### Literature Data

Currently, 88 reports, tables, spreadsheets and maps have been collected for the TMC watershed. Data has been collected from multiple agencies including the Alabama Department of Environmental Management (ADEM), the US Army Corps of Engineers (USACE), the City of Mobile (Mobile), the Mobile Area Water and Sewer System (MAWSS), and the Mobile Bay National Estuary Program (MBNEP). The files have been grouped into the following categories based upon the type of file; Data Source Reports, Email, Environmental Reports, Maps, Modeling Reports, Outreach and Engagement, Photos, Sample Projects, Software, Spreadsheets, and Water Quality Reports (see Attachment A).

### Data Source Reports

Data source reports were collected from ADEM and Tetra Tech as well as internally created by the project team. The ADEM and internal reports include information that was collected for this current watershed assessment. The Tetra Tech report, dated 2003, contains a summary of the data that was collected for a previous water quality modeling effort.

### Email

Email was received by the MBNEP from a concerned citizen. This citizen regularly kayaks TMC and its tributaries and documents the conditions of the watershed. Several of the emails contain links to a database of photographs of current conditions. Additionally, the data request email to USACE for the current watershed assessment was archived.

### Environmental Reports

Environmental reports contain documents from multiple sources including ADEM, MBNEP, MAWSS, USACE, the South Alabama Regional Planning Commission (SARPC), the Alabama Department of Public Health (ADPH), and Dewberry. ADEM provided documents on the Phase 1 site assessments of two brownfield sites located within the watershed at the Hickory Street Landfill and the Mobile Gas Works. Both reports are dated 2002.

Dewberry provided maps and tables of planned, active and completed roadway projects within the watershed. The projects vary in scope from roadway resurfacing to expansion of roadway lanes.

MBNEP provided the Comprehensive Conservation and Management Plan, completed in 2002, which contains an overview of

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the NEP process, priority environmental projects and health of the estuary, implementation plans, and the structure of the MBNEP. A single volume update to the program was also provided. It contains an overview of the projects completed to date and the plans and timelines for future projects. The final item provided by the MBNEP is the TMC Planning Packet. This document includes maps and tables of proposed projects in the watershed and proposed funding sources.

The SARPC report, dated 2004, is a Coastal Alabama River Basin Management Plan which is intended to guide efforts to coordinate measures implemented to reduce pollutants in critical areas of watershed.

The ADPH report, dated 2006, reviews potential health hazards at the Hickory Street Landfill. Although the landfill previously received hazardous materials, it is not considered to be harmful to human health.

The USACE Section 1135 report, dated 2008, evaluates restoration options for TMC between Conception Street Road and Martin Luther King, Jr. Avenue. A previous Section 206 report, dated 2003, provided a preliminary plan to address aquatic ecosystem restoration in the same location. A 1984 USACE Report provides some general climate and biological information for the Mississippi Sound and surrounding areas.

A USGS and MAWSS study of TMC analyzed the water quality and aquatic communities throughout the watershed. The study was conducted over a four year timeframe and published in 2004.

## Maps

ADEM provided maps, dated 2013, that indicated the 303 (d) segments within the watershed, overlaid on a map of the watershed boundary, ADEM monitoring locations TMDL segments, and NPDES discharge locations.

The City of Mobile provided a visioning map that indicated locations for redevelopment within the City dated 2008.

## Modeling Reports

The modeling report appendix, written by Tetra Tech explains the hydrodynamic and water quality modeling of the TMC watershed that was completed in 2006. The models used include EFDC and WASP/EUTRO.

A PowerPoint presentation by Tetra Tech, dated 2006, that explains the systems of models created to manage the water quality in Mobile Bay was also collected.

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### Outreach and Engagement

Outreach and Engagement items include news articles and presentation slides. There are two Mobile Press-Register articles about community planning for bike paths and a TMC field visit by members of the Environmental Protection Agency (USEPA), MBNEP, and the Southern Environmental Law Center. Also included are presentation slides from the bicycle path plan and the TMC restoration plan. There are two internal documents from a Technical Stakeholder Questionnaire that was completed as a part of this watershed assessment.

### Photos

Several field visits have occurred during the watershed assessment. Photos were taken on January 30, 2013, April 3, 2013, April 4, 2013, and July 1, 2013. Additional maps and field notes from these trips have also been collected and documented.

### Sample Projects

A USACE article titled “Turning the Blue River Green”, has been collected. It discusses the stream restoration projects that the USACE completed in urban areas of Kansas City, Kansas.

Auburn University created a WMP for Eight Mile Creek to the north of the TMC watershed. This plan was written and implemented due to the 303 (d) listing of the creek for pathogens.

### Software

An install file for HydroDesktop v 1.5 was provided. It is an open source GIS enabled desktop application that allows the user to analyze hydrologic and climate data that is registered with the CUAHSI Hydrologic Information System.

### Spreadsheets

ADEM provided field data from monitoring gages as well as fish sampling. The monitoring gages include INCM-1, INCM-2, TM-1, TMCM-1, TMCM-3, TMCM-4, TMCM-5, TMCM-6, TMCM-7, TSBM-1, TSBM-2, and UTTM-1 and provide the number of samples, minimum, maximum, and average values for the data collected since 1990. Additional pathogen sampling was provided for TMCM-4, TMCM-5, TMCM-6 and TM-1 from 2007 to 2012.

Additionally, ADEM provided a series of spreadsheets with fish sampling results. The fish were monitored for heavy metals, pesticides, and other toxic substances. Fish sampling has occurred at several locations in the watershed beginning in 1999. The



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most recent data collected includes sampling results from 2012.

## Water Quality Reports

During the data collection process, 20 water quality reports and design plans have been gathered from ADEM, Barry A. Vittor & Associates, Dewberry, USACE, USEPA, and Volkert and Associates.

ADEM provided a series of tables and reports of the 303 (d) listed waterways as of 2012 and the TMDL schedule for each watershed. They additionally provided a study of the impervious areas within TMC that determined there is not a direct correlation between impervious surface area and water quality. There are also TMDL reports for the upper segment of TMC (pathogens), Toulmins Spring Branch (pathogens), an unnamed tributary to TMC (fecal coliform), TMC (organic enrichment/dissolved oxygen), Mobile Bay (pathogens), and the lower segment of TMC (pathogens).

The report from Barry A. Vittor & Associates indicates the results of dye testing that was conducted in the TMC trunk line in 2004.

The USACE provided an Interim Survey Report in 1982 after two years of significant flooding damaged property within the watershed. In 1984, design plans and a cost share contract were provided to the City of Mobile to provide some flooding relief to residents of the watershed. The plans were based upon recommendations provided in the Interim Survey Report.

The USEPA authored reports on the delisting of the unnamed tributary to TMC for pathogens in 2009 and an analysis of the TMC watershed for the creation of the 3-d water quality model in 2001.

Additionally, Volkert and Associates completed a study of the wastewater management system and made recommendations to decentralize portions of the system within the TMC watershed. The date of the report is unknown.

## GIS Data

Currently, more than 470 GIS data sets have been collected for the TMC watershed. Data has been collected from multiple agencies including the Alabama State Water Program, the City of Mobile, the Mobile Area Water and Sewer System (MAWSS), the U.S. Census Bureau, the U.S. Department of Agriculture, the U.S. Geologic Survey, the Geological Survey of Alabama, NASA, Mobile County, the Mobile County Revenue Commission, and the US Army Corps of Engineers (USACE). The files are grouped based on the source and a spreadsheet of all individual data sets has been compiled. Following is a listing of the types of data and

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the primary data sets acquired. It is not intended to be exhaustive, but covers the most relevant information.

#### Elevation Data

Elevation data was collected from a number of sources. LiDAR data acquired in 2010 was received from MAWSS as contour files and as point data from Mobile County. Additionally, 3 meter DEMs were collected from the U.S. Department of Agriculture Natural Resource Conservation Service and small area of LiDAR data was acquired from the U.S. Geological Survey that was part of a study of the TMC and Mobile-Tensas Delta.

#### Demographic/Socio-Economic Data

Demographic and socio-economic data was collected for the project from the U.S. Census Bureau and the City of Mobile. This data included 2010 Census data for tracts, block groups and blocks that make up the project area.

#### Environmental Data

Environmental data was collected from a number of agencies. From the Alabama State Water Program data pertaining for islands and constructed ponds was collected in addition to PLSS data, National Wetland Inventory data, and HUC unit boundaries.

The City of Mobile provided storm water outfall locations, water body locations, wetlands data, landfill locations, and the location of swamps.

The largest set of environmental data was acquired from the Geological Survey of Alabama. This data was part of a previous compilation created in 2005. The compilation titled “Alabama Comprehensive GIS Inventory of Coastal Resources” includes physical characteristics (geology, hydrography, terrain), natural resources (mining, oil and gas) biological resources (ecoregions, oyster reefs, submerged grass beds), environmental quality (air quality, hazardous waste and materials, water quality), and natural hazard information (flood zones, land slide areas). Raster images were acquired from NASA illustrating the changes in land use and land cover from 1974 to 2008.

#### Infrastructure Data

Infrastructure data was collected from a number of sources for the project area. The City of Mobile provided the largest amount of infrastructure data. Data from the city included bike routes, bus routes, industrial parks, railroads, school locations, streets, and walking trails. Planimetric data from 2010 was also obtained from the City. This data included bridges, building footprints,

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cemeteries, dams, drainage features as both lines and points, driveways, fire hydrants, landfills, manholes, pipelines, pavement edges, pump stations, recreation facilities, runways, substations, sidewalks, swimming pools, towers, tree points, unpaved roads, and utility poles. As mentioned earlier, the City was also the source for storm water outfall locations. The Mobile County Revenue Commission, as part of the package of parcel and ownership data, provided a variety of data sets that delineate right-of-way lines throughout the project area.

## Base Map Data

In addition to the data detailed above, a great deal of base map data was also collected for the project. Base map data collected from the City of Mobile included city council district boundaries, church locations, municipal and county boundaries, historic districts and sites, locations for multi-family residential and public housing developments, neighborhood boundaries, public parks, subdivisions, voting ward boundaries, and streets data.

From the Mobile Area Water and Sewer System (MAWSS) high resolution aerial imagery from 2010 was collected in the form of MrSID files.

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## Appendix B – Public Participation

### Results from 2013 Public Meetings

#### Summary

Members of the Mobile Bay National Estuary Program and Dewberry Consulting arranged and executed 13 public meetings held within the Three Mile Creek watershed during April and May of 2013. The presentation included a history on Three Mile Creek, maps of the watershed in reference to the public meeting location, a summary of the Watershed Management Plan and timeline for the publication of the Plan. At the end of the presentation, attendees were asked the following questions regarding the restoration of Three Mile Creek:

1. What do you like?
2. What don't you like?
3. What opportunities and/or ideas should we consider?
4. What could threaten our success?

#### Results

1. Public- Envisioned Strengths of TMC Restoration Planning:
  - Overwhelming support for a connected corridor for biking/kayaking/walking/running
  - Could be a form of transportation for commuters and would reduce traffic.
  - Let's see people moving – families out on picnics, walks, exercising.
  - Mobile could become a bike-friendly community.
  - TMC could be a symbol of Mobile. TMC could be Mobile's Central Park – an escape to nature from urban life next door. It is a beautiful wilderness hidden in the city.
  - Would improve home values, economy and environment.
  - Once it is further connected, public investment will grow and will build a momentum which will help with future planning efforts.
  - Getting people out in TMC is the best way to preserve it.

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- Current project of moving outfalls out of TMC will improve water quality.
  - Would be a positive for children – get them outside, prevent them from joining gangs. Keep focus elsewhere.

2. Public Concerns re: TMC Restoration Planning:

- There is a huge amount of trash and litter and it smells - such an eyesore.
- Creek has been so degraded over time. We have lost so much of the natural resources already.
- Concerned for people consuming fish caught in the Creek.
- People don't even know the Creek exists.
- Existing bike paths are not maintained.

3. Opportunities and Ideas for TMC Restoration:

- Raising public awareness is key to this task – need a public awareness campaign.
- Any trails built need to be safe, designed smartly using eco-friendly ideas and sustainable-use planning and should provide space for potential races.
- Trails on both sides of TMC would be ideal.
- Would like to see vessel launches for recreation.
- Consider a river walk shopping center with restaurants.
- Community development block grants are a great way to secure future funding.
- TMC needs a new name. Implies it is only 3 miles long. What about returning it to Bayou Chatogue?
- Get the word out on churches. Can work with our congregations to hear about meetings.
- Engage community action groups in the restoration of TMC.
- Involve churches, sororities/fraternities, schools and civic clubs.
- Tricentennial Park is great, but packed – need more access areas along TMC.
- Will need to work on this one section at a time to build up public trust and overcome negativity.
- Need to think of groups that would use future parks and think of the businesses who could sponsor park beautification/maintenance.
- Use existing plans – don't try to reinvent the wheel.
- Connect citizens to project – make it personal – to obtain support.
- Piggyback on existing meetings.

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- Need public/private partnership.
- Start with east of I-65. West of I-65 already has Tricentennial Park, so work with east to build confidence in intent of project.
- First step should be to put in trails before we can tackle water quality improvement - having visual improvement will help get the community behind it.
- Need sufficient lighting along any built paths.

## 4. Threats to Success of TMC Restoration

- Safety is a priority and we need to make sure people feel secure visiting TMC. We don't want to attract the wrong crowds.
- Big challenge will be changing the littering culture in this area.
- Potential for more crime if linear park connects all neighborhoods.
- Physical obstructions in TMC will limit use by kayakers/boaters.
- Different perceptions of east vs. west of I-65.
- Industrial sites will be problematic.

## Public Participation for Plan Adoption

*Note to reader of Draft TMC WMP: this section will be completed after the comment period is completed.*

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## Appendix C – Alabama Natural Heritage Program Rare, Threatened and Endangered Species & Natural Communities Documented in Mobile County

*Section begins on the next page*



Rare, Threatened & Endangered Species & Natural Communities  
Documented in Mobile County

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status	SWAP Status
Amphibians						
<i>Ambystoma bishopi</i>	Reticulated Flatwoods Salamander <sup>1</sup>	G2	S1	LE	SP	P1
<i>Amphiuma means</i>	Two-toed Amphiuma	G5	S3			
<i>Amphiuma pholeter</i>	One-toed Amphiuma	G3	S1		SP	P2
<i>Desmognathus auriculatus</i>	Southern Dusky Salamander	G5	S2		SP	P1
<i>Lithobates heckscheri</i>	River Frog <sup>2</sup>	G5	S1		SP	P3
<i>Lithobates sevosia</i>	Mississippi Gopher Frog <sup>3</sup>	G1	SH	LE	SP	P1
Birds						
<i>Ammodramus henslowii</i>	Henslow's sparrow	G4	S2N		SP	P1
<i>Ammodramus leconteii</i>	Le Conte's Sparrow	G4	S3N		SP	
<i>Ammodramus maritimus</i>	Seaside Sparrow	G4	S2		SP	P2
<i>Ammodramus nelsoni</i>	Nelson's Sparrow	G5	S3N		SP	P2
<i>Anas fulvigula</i>	Mottled Duck	G4	S2N,S3B		SP	
<i>Asio flammeus</i>	Short-eared Owl	G5	S2N		SP	P2
<i>Athene cunicularia</i>	Burrowing Owl	G4	S2N		SP	
<i>Charadrius alexandrinus</i>	Snowy Plover	G4	S1B,S2N		SP	P1
<i>Charadrius melodus</i>	Piping Plover	G3	S1N	LE, LT <sup>4</sup>	SP	P1
<i>Charadrius wilsonia</i>	Wilson's Plover	G5	S1		SP	P1
<i>Circus cyaneus</i>	Northern Harrier	G5	S3N		SP	P2
<i>Cistothorus palustris</i>	Marsh Wren	G5	S2B,S4N		SP	
<i>Columbina passerina</i>	Common Ground-dove	G5	S3		SP	
<i>Coturnicops noveboracensis</i>	Yellow Rail	G4	S2N		SP	P2
<i>Crotophaga sulcirostris</i>	Groove-billed Ani	G5	S2N		SP	
<i>Egretta rufescens</i>	Reddish Egret	G4	S1B,S3N		SP	P2
<i>Elanoides forficatus</i>	Swallow-tailed Kite	G5	S2		SP	P2
<i>Eudocimus albus</i>	White Ibis	G5	S2B,S3N		SP	
<i>Gelochelidon nilotica</i>	Gull-billed Tern	G5	S2B,S4N		SP	
<i>Haematopus palliatus</i>	American Oystercatcher	G5	S1		SP	P1
<i>Hydroprogne caspia</i>	Caspian Tern	G5	S2B,S4N		SP	
<i>Ixobrychus exilis</i>	Least Bittern	G5	S2N,S4B		SP	P2
<i>Laterallus jamaicensis</i>	Black Rail	G4	S2N		GB	P2
<i>Mycteria americana</i>	Wood Stork	G4	S2N	LE,PT <sup>5</sup>	SP	P2
<i>Numenius americanus</i>	Long-billed Curlew	G5	S2N		SP	
<i>Passerina ciris</i>	Painted Bunting	G5	S2B		SP	
<i>Peucaea aestivalis</i>	Bachman's Sparrow	G3	S3		SP	P2
<i>Plegadis falcinellus</i>	Glossy Ibis	G5	S1B,S3N		SP	
<i>Porphyrio martinica</i>	Purple Gallinule	G5	S3B		GB	
<i>Rallus elegans</i>	King Rail	G4	S2S3B,S4N	SC	GB	
<i>Rallus longirostris</i>	Clapper Rail	G5	S2	SC	GB	
<i>Rynchops niger</i>	Black Skimmer	G5	S2B,S4N		SP	
<i>Scolopax minor</i>	American Woodcock	G5	S3B,S5N		GB	P2
<i>Sterna forsteri</i>	Forster's Tern	G5	S1B,S5N		SP	
<i>Sterna hirundo</i>	Common Tern	G5	S1B,S4N		SP	
<i>Sternula antillarum</i>	Least Tern	G4	S2B,S4N		SP	
<i>Thalasseus maximus</i>	Royal Tern	G5	S2B, S5N		SP	
<i>Thalasseus sandvicensis</i>	Sandwich Tern	G5	S1B,S5N		SP	
<i>Tringa semipalmata</i>	Willet	G5	S2B,S5N		SP	
<i>Tyrannus dominicensis</i>	Gray Kingbird	G5	S2B		SP	

<sup>1</sup> Historic occurrence, not documented in Alabama since 1981.

<sup>2</sup> Historic occurrence.

<sup>3</sup> Historic occurrence, possibly extirpated in Alabama.

<sup>4</sup> Listed by USFWS as Endangered in Great Lakes watersheds of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin; Listed as Threatened elsewhere, including Alabama.

<sup>5</sup> Listed by USFWS as Endangered in Alabama, Florida, Georgia, North Carolina, and South Carolina; not listed elsewhere. The USFWS proposed reclassifying the continental U.S. breeding population from endangered to threatened on 26 December, 2012.

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status	SWAP Status
<i>Tyrannus forficatus</i>	Scissor-tailed Flycatcher	G5	S2		SP	
Caddisflies						
<i>Brachycentrus chelatus</i>	Caddisfly	G4	S1			
<i>Ceraclea resurgens</i>	Caddisfly	G5	S1			
<i>Chimarra falcata</i>	Caddisfly	G4	S1			
<i>Hydroptila parastrepha</i>	Caddisfly	G2G3	S1			
<i>Hydroptila scheiringi</i>	A Caddisfly	G1G2	S1			
<i>Neotrichia mobilensis</i>	Caddisfly	G1G2	S1S2			
<i>Nyctiophylax morsei</i>	Caddisfly	G2	S1			
<i>Oxyethira anabola</i>	Caddisfly	G4G5	S1			
<i>Oxyethira sininsigne</i>	Caddisfly	G3G4	S1			
<i>Polycentropus clinei</i>	A Caddisfly	G5	SNR			
Crayfishes						
<i>Cambarellus diminutus</i>	Least Crayfish	G3	S3			P2
<i>Cambarellus shufeldtii</i>	Cajun Dwarf Crayfish	G5	S2			
<i>Cambarus leslei</i>	Angular Dwarf Crayfish <sup>2</sup>	G3	S3			P2
<i>Fallicambarus danielae</i>	Speckled Burrowing Crayfish	G2	S1			P2
<i>Fallicambarus oryctes</i>	Flatwoods Digger <sup>2</sup>	G4	S1			P2
<i>Procambarus bivittatus</i>	Ribbon Crayfish <sup>2</sup>	G5	S3S4			
<i>Procambarus clemmeri</i>	Cockscorb Crayfish	G5	S2			
<i>Procambarus evermanni</i>	Panhandle Crayfish	G4	S3			
<i>Procambarus lecontei</i>	Mobile Crayfish	G3G4	S3			
<i>Procambarus penni</i>	Pearl Blackwater Crayfish <sup>2</sup>	G3	S2			
<i>Procambarus shermani</i>	Gulf Crayfish	G4	S2			
Ferns and relatives						
<i>Botrychium jenmanii</i>	Alabama Grapefern	G3G4	S1			
Fishes						
<i>Alosa alabamae</i>	Alabama Shad <sup>2</sup>	G3	S2	SC <sup>6</sup>	SP	P2
<i>Ammocrypta vivax</i>	Scaly Sand Darter	G5	S1			
<i>Atractosteus spatula</i>	Alligator Gar	G3G4	S2		CNGF	
<i>Cycleptus meridionalis</i>	Southeastern Blue Sucker	G3G4	S3		CNGF	
<i>Enneacanthus gloriosus</i>	Bluespotted Sunfish	G5	S3		GF	
<i>Etheostoma fusiforme</i>	Swamp Darter	G5	S3			
<i>Etheostoma lynceum</i>	Brighteye Darter	G5	S1		SP	P1
<i>Fundulus blaire</i>	Western starhead topminnow	G4	S3			
<i>Fundulus chrysotus</i>	Golden Topminnow	G5	S3			
<i>Fundulus cingulatus</i>	Banded Topminnow	G4	S2			
<i>Fundulus dispar</i>	Starhead Topminnow	G4	S2			
<i>Fundulus jenkinsi</i>	Saltmarsh Topminnow	G3	S1	SC <sup>6</sup>		
<i>Fundulus pulvereus</i>	Bayou Killifish	G5	S2			
<i>Heterandria formosa</i>	Least Killifish	G5	S3			
<i>Hiodon tergisus</i>	Mooneye	G5	S3S4			
<i>Lucania parva</i>	Rainwater Killifish	G5	S3			
<i>Lythrurus roseipinnis</i>	Cherryfin Shiner	G5	S2			
<i>Notropis chalybaeus</i>	Ironcolor Shiner <sup>2</sup>	G4	SH			P1
<i>Notropis maculatus</i>	Taillight Shiner	G5	S3			
<i>Notropis petersoni</i>	Coastal Shiner	G5	S2			
<i>Noturus mocturnus</i>	Freckled Madtom	G5	S3		CNGF	
<i>Perca flavescens</i>	Yellow Perch	G5	S3		GF	
<i>Poecilia latipinna</i>	Sailfin Molly	G5	S2			

<sup>2</sup> Historic occurrence.

<sup>6</sup> Listed as a species of concern by the National Marine Fisheries Service (Federal Register 69(73):19975-19979, available at <<http://www.nmfs.noaa.gov/pr/pdfs/fr/fr64-19975.pdf>>).

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status	SWAP Status
<i>Polyodon spathula</i>	Paddlefish	G4	S3		SP, CNGF <sup>7</sup>	
<i>Pteronotropis signipinnis</i>	Flagfin Shiner	G5	S3			
Flowering Plants						
<i>Agalinis aphylla</i>	Leafless False-foxglove	G3G4	S2			
<i>Agalinis filicaulis</i>	Thin-stemmed False-foxglove	G3G4	S2			
<i>Agalinis linifolia</i>	Flax-leaf False-foxglove	G4?	S2			
<i>Agrimonia incisa</i>	Incised Groovebur	G3	S2			
<i>Andropogon virginicus</i> var. <i>glaucus</i>	Beardgrass	G5T4T5	S2			
<i>Calopogon barbatus</i>	Bearded Grass-pink	G4?	S1			
<i>Calopogon multiflorus</i>	Many-flowered Grass-pink	G2G3	S1			
<i>Canna flaccida</i>	Bandana-of-the-everglades	G4?	S1			
<i>Carex striata</i>	Walter's Sedge	G4G5	S1			
<i>Chasmanthium nitidum</i>	Shiny Spikegrass	G3	S1			
<i>Cirsium lecontei</i>	Le Conte's Thistle	G2G3	S1			
<i>Cladium mariscoides</i>	Twig Rush	G5	S1			
<i>Coreopsis gladiata</i>	Southeastern Tickseed	G4G5	S2			
<i>Coreopsis nudata</i>	Georgia Tickseed	G3?	S1			
<i>Eleocharis olivacea</i>	Capitate Spikerush	G5	S1			
<i>Eleocharis robbinsii</i>	Robbins' Spikerush	G4G5	S1			
<i>Eleocharis rostellata</i>	Beaked Spikerush	G5	S1			
<i>Epidendrum magnoliae</i>	Green-fly Orchid	G4	S2			
<i>Eriocaulon texense</i>	Texas Pipewort	G4	S2			
<i>Eurybia chapmanii</i>	Chapman Aster	G2G3	SH			
<i>Gordonia lasianthus</i>	Loblolly Bay	G5	S1			
<i>Helianthemum arenicola</i>	Coastal-sand Frostweed	G3	S1			
<i>Hibiscus coccineus</i>	Brilliant Hibiscus	G4?	S1			
<i>Hypericum reductum</i>	Atlantic St. John's-wort	G5	S2			
<i>Ilex amelanchier</i>	Serviceberry Holly	G4	S2			
<i>Juncus gymnocarpus</i>	Naked-fruited Rush	G4	S2			
<i>Kosteletzkya smilacifolia</i>	Southern Seashore Mallow	G1G3Q	S1?			
<i>Lachnocaulon digynum</i>	Pineland Bogbutton	G3	S2			
<i>Lepuropetalon spathulatum</i>	Southern Lepuropetalon <sup>2</sup>	G4G5	SH			
<i>Lilaeopsis carolinensis</i>	Carolina Lilaeopsis	G3G5	S1			
<i>Lindera subcoriacea</i>	Bog Spicebush	G2G3	S1			
<i>Linum macrocarpum</i>	Flax	G2	S1			
<i>Ludwigia arcuata</i>	Pond Seedbox	G4G5	S1			
<i>Ludwigia spathulata</i>	Spathulate Seedbox	G2	S1S2			
<i>Lycium carolinianum</i>	Christmas Berry	G4	S1S2			
<i>Macranthera flammea</i>	Flame Flower	G3	S2			
<i>Myriophyllum laxum</i>	Loose Water-milfoil	G3	S2			
<i>Orbexilum simplex</i>	Single-stemmed Scurf-pea	G4G5	SH			
<i>Panicum nudicaule</i>	Naked-stemmed Panic Grass	G3Q	S2			
<i>Peltandra sagittifolia</i>	Spoon-flower	G3G4	S2			
<i>Pieris phillyreifolia</i>	Climbing Fetter-bush	G3	S2			
<i>Pinguicula planifolia</i>	Chapman's Butterwort	G3?	S1S2			
<i>Platanthera blephariglottis</i> var. <i>conspicua</i>	Large White Fringed Orchid	G4G5T3 T4	S1S2			
<i>Platanthera integra</i>	Yellow Fringeless Orchid	G3G4	S2			
<i>Platanthera nivea</i>	Snowy Orchis	G5	S2			
<i>Polygala crenata</i>	Crenate Milkwort	G4?	S1			
<i>Pteroglossaspis ecristata</i>	Crestless Eulophia	G2	S1			
<i>Ptilimnium costatum</i>	Eastern Bishop-weed	G4	S1			
<i>Quercus similis</i>	Bottomland-post Oak	G4	S1			
<i>Rhynchospora crinipes</i>	Hairy-peduncled Beakrush	G2	S1			
<i>Rhynchospora macra</i>	Southern White Beak Rush	G3	S1			
<i>Rhynchospora stenophylla</i>	Chapman Beakrush	G4	S2			

<sup>2</sup> Historic occurrence.

<sup>7</sup> *Polyodon spathula* is not included in the list of protected species of the Nongame Species Regulation (Regulation 220-2-.92), but is protected by Regulations 220-2-.94 Prohibition of Taking or Possessing Paddlefish (Spoonbill) and 220-2-.43 Unlawful to Willfully Waste Paddlefish.

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status	SWAP Status
<i>Rhynchospora tracyi</i>	Tracy's Beak Rush	G4	S1			
<i>Ruellia noctiflora</i>	Night-flowering Wild-petunia	G2	S1			
<i>Sageretia minutiflora</i>	Tiny-leaved Buckthorn	G4	S1			
<i>Sarracenia leucophylla</i>	Whitetop Pitcher-plant	G3	S3			
<i>Sarracenia rubra</i> ssp. <i>wherryi</i>	Wherry's Sweet Pitcher-plant	G4T3	S3			
<i>Schizachyrium maritimum</i>	Gulf Bluestem	G3G4Q	S1			
<i>Schizachyrium scoparium</i> ssp. <i>divergens</i>	Eastern Little Bluestem	G5T5	SH			
<i>Schwalbea americana</i>	Chaffseed <sup>2</sup>	G2G3	S1	LE		
<i>Spiranthes longilabris</i>	Giant Spiral Ladies'-tresses	G3	S1			
<i>Utricularia floridana</i>	Florida Bladderwort	G3G5	S1S2			
<i>Xyris chapmanii</i>	Chapman's Yellow-eyed Grass	G3	S1			
<i>Xyris drummondii</i>	Drummond's Yellow-eyed Grass	G3	S3			
<i>Xyris scabrifolia</i>	Harper's Yellow-eyed Grass	G3	S1S2			
Freshwater Mussels						
<i>Glebula rotundata</i>	Round Pearlshell	G4G5	S2		PS	
<i>Ligumia subrostrata</i>	Pondmussel	G5	S3		PS	
Freshwater Snails						
<i>Ferrissia mcneilli</i>	Hood Ancyliid <sup>8</sup>	G2G3	S2			
Mammals						
<i>Lasiurus intermedius</i>	Northern Yellow Bat	G4G5	S1			P2
<i>Trichechus manatus</i>	West Indian Manatee	G2	S1	LE	SP	P1
<i>Trichechus manatus</i>	West Indian Manatee	G2G3	S1	LE	SP	P1
<i>Ursus americanus</i>	Black Bear	G5T2	S2		GANOS	P1
Natural Communities						
<i>Aristida beyrichiana</i> - <i>Rhynchospora oligantha</i> - <i>Panicum nudicaule</i> - ( <i>Eurybia eryngiifolia</i> ) Herbaceous Vegetation	East Gulf Coastal Plain Seepage Bog (Upper Terrace Type)	G2	S2			
<i>Ceratiola ericoides</i> - ( <i>Chrysoma pauciflosculosa</i> ) / <i>Polygonella polygama</i> / <i>Cladonia leporina</i> Shrubland	Coastal Rosemary - Woody-goldenrod Scrub	G2?	SNR			
<i>Juncus roemerianus</i> - Herbaceous Vegetation	Needlerush High Marsh	G5	S2S3			
<i>Nyssa biflora</i> / <i>Ilex myrtifolia</i> / <i>Carex glaucescens</i> - <i>Eriocaulon compressum</i> Forest	East Gulf Coastal Plain Blackgum Dome Swamp	G2G3	SNR			
<i>Pinus palustris</i> - ( <i>Pinus elliotii</i> var. <i>elliotii</i> )/ <i>Ctenium aromaticum</i> - <i>Carphephorus pseudoliatris</i> - ( <i>Sarracenia alata</i> ) Woodland	East Gulf Coastal Plain Wet Longleaf Pine Savanna	G3?	S2			
<i>Quercus laurifolia</i> - <i>Magnolia virginiana</i> - <i>Nyssa biflora</i> / <i>Chasmanthium ornithorhynchum</i> Forest	East Gulf Coastal Plain Blackgum Bayhead Forest (Clayey Type)	G2?	S2			
<i>Quercus virginiana</i> - ( <i>Juniperus virginiana</i> ) - <i>Zanthoxylum clava-herculis</i> / <i>Sideroxylon lanuginosum</i> Woodland	Gulf Coast Shell Midden Woodland	G2G3	SNR			
<i>Sarcocornia perennis</i> - ( <i>Batis maritima</i> , <i>Distichlis spicata</i> ) Dwarf-shrubland	Salt Flat (Woody Glasswort Type)	G4	S1			
<i>Spartina alterniflora</i> - <i>Juncus roemerianus</i> - <i>Distichlis spicata</i> Louisianian Zone Salt Tidal Herbaceous Vegetation	Gulf Coast Cordgrass Salt Marsh	G5	S2S3			
<i>Spartina patens</i> - <i>Schizachyrium maritimum</i> - <i>Solidago sempervirens</i> Herbaceous Vegetation	East Gulf Coastal Plain Cordgrass Dune Grassland	G3?	SNR			
<i>Spartina patens</i> - <i>Schoenoplectus (americanus, pungens)</i> - ( <i>Distichlis spicata</i> ) Herbaceous Vegetation	Saltmeadow Cordgrass - (Chairmaker's Bulrush, Threesquare) - (Saltgrass) Herbaceous Vegetation	G4?	SNR			
<i>Spartina spartinae</i> - <i>Sporobolus virginicus</i> Tidal Herbaceous Vegetation	Gulf Coast Irregularly Flooded Tidal Marsh	G4G5	SNR			

<sup>2</sup> Historic occurrence.

<sup>8</sup> Alabama endemic.

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status	SWAP Status
<i>Taxodium ascendens</i> - <i>Ilex myrtifolia</i> - <i>Hypericum myrtifolium</i> - <i>Lobelia floridana</i> - <i>Polygala cymosa</i> Woodland	Pond-cypress Dome Swamp	G3	S1			
Reptiles						
<i>Crotalus adamanteus</i>	Eastern Diamond-backed Rattlesnake	G4	S3			P2
<i>Drymarchon couperi</i>	Eastern Indigo Snake	G3	S1	LT	SP	P1 <sup>9</sup>
<i>Farancia erythrogramma</i>	Rainbow Snake	G4	S3		SP	P2
<i>Lampropeltis calligaster rhombomaculata</i>	Mole Kingsnake	G5T5	S3			
<i>Lampropeltis getula getula</i>	Eastern Kingsnake	G5T5	S4		SP	P2
<i>Lampropeltis getula holbrooki</i>	Speckled Kingsnake	G5T5	S4		SP	P2
<i>Masticophis flagellum</i>	Coachwhip	G5	S3		SP	
<i>Micrurus fulvius</i>	Eastern Coralsnake	G5	S3		SP	P2
<i>Nerodia clarkii clarkii</i>	Gulf Saltmarsh Watersnake	G4T4	S2		SP	
<i>Nerodia cyclopion</i>	Green Watersnake	G5	S1S2			
<i>Ophisaurus mimicus</i>	Mimic Glass Lizard <sup>2</sup>	G3	S2		SP	P2
<i>Pituophis melanoleucus lodingi</i>	Black Pinesnake	G4T2T3	S2	C	SP	P1
<i>Plestiodon anthracinus</i>	Coal Skink <sup>2</sup>	G5	S3		SP	P2
<i>Plestiodon inexpectatus</i>	Southeastern Five-lined Skink	G5	S3		SP	P2
<i>Rhadinaea flavilata</i>	Pine Woods Littersnake	G4	S2			
Turtles						
<i>Apalone ferox</i>	Florida Softshell	G5	S2		RT	
<i>Caretta caretta</i>	Loggerhead Sea Turtle	G3	S1	LT	SP	P1
<i>Chelonia mydas</i>	Green Sea Turtle <sup>10</sup>	G3	S1	LE, LT <sup>11</sup>	SP	P1
<i>Deirochelys reticularia</i>	Chicken Turtle	G5	S3			
<i>Dermochelys coriacea</i>	Leatherback Sea Turtle <sup>12</sup>	G2	SNA	LE	SP	P1
<i>Gopherus polyphemus</i>	Gopher Tortoise	G3	S3	LT,C <sup>13</sup>	SP	P2
<i>Graptemys nigrinoda delticola</i>	Delta Map Turtle	G3T2Q	S2		SP	
<i>Graptemys pulchra</i>	Alabama Map Turtle	G4	S3		SP	
<i>Lepidochelys kempii</i>	Kemp's Ridley Sea Turtle <sup>10</sup>	G1	S1	LE	SP	P1
<i>Macrochelys temminckii</i>	Alligator Snapping Turtle	G3G4	S3		SP	P2
<i>Malaclemys terrapin pileata</i>	Mississippi Diamondback Terrapin	G4T3Q	S2		SP	P1
<i>Pseudemys alabamensis</i>	Alabama Redbelly Turtle	G1	S1	LE	SP	P1
<i>Sternotherus carinatus</i>	Razorback Musk Turtle	G5	S1			

<sup>9</sup> Possibly extirpated

<sup>10</sup> Possible occurrence.

<sup>11</sup> Listed as Threatened throughout most of its range, including Alabama, except in Florida and Mexico where it is listed as Endangered.

<sup>12</sup> Occasional visitor but not known to nest in state.

<sup>13</sup> Listed by USFWS as Threatened west of the Mobile and Tombigbee rivers in Alabama (Choctaw, Mobile, and Washington counties), Mississippi, and Louisiana. Eastern populations were elevated to a candidate for protection under the federal Endangered Species Act 27 July 2011.

*This information is provided by the Alabama Natural Heritage Program (ALNHP) ([www.alnhp.org](http://www.alnhp.org)), a leading source of information about rare and endangered species and threatened ecosystems, and NatureServe ([www.natureserve.org](http://www.natureserve.org)), a network connecting science with conservation. Any material supplied by ALNHP will not be published without prior **written** permission, and without crediting the Alabama Natural Heritage Program as the source of material. All information remains the property of ALNHP and may not be transferred to or used by any other party or individual. The ALNHP will not be responsible for any inaccuracies in any data that it provides. Please be aware that the ALNHP's database cannot provide a conclusive statement on the presence, absence or condition of significant natural features in any part of Alabama. The response only summarizes the existing information regarding the natural features or the locations in question known to the ALNHP at the time of the request. These data are dependent on the research and observations of many scientists and institutions, and reflect our current state of knowledge. Many areas have never been thoroughly surveyed, however, and the absence of data in any particular geographic area does not necessarily mean that species or ecological communities of concern are not present. The information should never be regarded as the final statement on the site being considered, nor should it be regarded as a substitute for field surveys required for environmental assessments.*

# Three Mile Creek Watershed Management Plan

## Appendix D – Stormwater Outfall Data, Raw Inventory Data

OBJECT ID	TEMP ID	STRUCTURE TYPE	STRUCT MAT	% OBS	COND	NORTH	EAST	INFODATE	HW	DIA	H	W	COMMENTS	STRUC ID	Struc Desc	Struc_De_1	Condi Desc
2415	85	Box Culvert	Con		DF	264970	1782081	6/18/2013			4	4	PRICHARD ST.	177	Box Culvert	4ft at base of bridge	
2416	86	Box Culvert	Con			260143	1782628	6/17/2013			4	10	CLINTON ST.	169	Box Culvert		
2417	87	Channel	Con			253727	1784659	6/14/2013			3'	8'	INDIAN CIRCLE	87	Channel	135	
2418	88	Channel	Con			253807	1785011	6/14/2013			8'	6'	INDIAN CIRCLE	88	Channel	135	flow
2419	89	Channel	Con			254647	1785966	6/14/2013			4'	8'	MOBILE INFIRMARY		Channel	150	
2420	90	Pipe	Con		DF	255584	1776606	6/20/2013	y	5'			FREDRICK ST.	271	Pipe	1-3" water, trash	
2421	91	Pipe	Con	50		257014	1773958	6/20/2013		3.5'			MOFFET RD	278	Pipe	sediment	
2422	92	Box Culvert				262245	1765963						FOREST DELL RD		Box Culvert		
2423	93	Pipe				260175	1765931						FOREST DELL		Pipe		
2424	94	Pipe	CMP		NR	253190	1758258	6/20/2013					VANDERBILT DR.	256	Pipe	eroded at base, needs repair	
2425	95	Pipe	CMP		Er	253569	1758340	6/20/2013		3.5			CHAPEL HILL DR.	258	Pipe	bank erosion, clear flow	
2426	96	Other				251297	1756871	6/20/2013			3	3	REGIONS BANK		Other	storm drain/iron gate	
2427	97	Pipe	Con			251390	1756895	6/20/2013			3	6	OLD SHELL RD.	245	Pipe	storm drain	
2428	98	Pipe	Con	0		251782	1756997	6/19/2013			3.5	3.5	OLD SHELL RD.	240	Pipe	STORM DRAIN AND CHANNEL	
2429	99	Channel	Con			249013	1754018	6/19/2013			6	20	N OF BRANDY RUN RD S E OF FERN HILL CT.	226	Channel	20x6 concrete lined channel	good
2430	100	Pipe	CMP	0	co	254716	1754851	6/11/2013		3			USA CAMPUS	100	Pipe		orange IRB, moderate flow
2431	101	Pipe	Con			250335	1749293	6/19/2013	Y	3			WEST OF BURTONWOOD DR	213	Pipe	GOOD CONDITION NO FLOW	
2432	102	Channel	Oth	5	Er	250479	1747066	6/19/2013			5	6.5	WEST OF FOREMAN RD.	208	Channel	ERODED CHANNEL W SEDIMENT LOW FLOW TURBID	ERODED TURBID SEDIMENT
2433	103	Channel				259481	1752778						RIDGEWOOD DR.		Channel		
2434	104	Channel	Oth			260387	1758454	6/18/2013			8	20	DOWNSTEAM FOREST RIDGE RD. WEST BY RAILROAD		Channel		



OBJECT ID	TEMP ID	STRUCTURE TYPE	STRUCT MAT	% OBS	COND	NORTH	EAST	INFODATE	HW	DIA	H	W	COMMENTS	STRUC ID	Struc Desc	Struc_De_1	Condi Desc
2435	105	Channel	Oth			260301	1758422	6/18/2013			12	30	DOWNSTREAM FOREST RIGDE RD. WEST BY RAILROAD	203	Channel	UNLINED CHANNEL 1-2FT DEEP MIN FLOW	
2436	106	Channel	Con	0	Tu	259793	1768440	6/13/2013			2'	4'	EAST OF CARRE DR. EAST OR WEST OF WOLF RIDGE RD.	106	Channel	65,66	1/2" flow brown
2437	107	Pipe	Con	100	NR	257244	1756662	6/12/2013		2'			UNIVERSITY BESIDE RD.	107	Pipe	34	obstruct upstream
2438	108	Pipe	Con	100	NR	257389	1756676	6/12/2013		2'			UNIVERSITY BESIDE RD.	35	Pipe		
2439	109	Pipe	Con	90		257484	1756695	6/12/2013		2'			UNIVERSITY BESIDE RD.	36	Pipe		
2440	110	Pipe	Oth	100		257584	1756719	6/12/2013		?			UNIVERSITY BESIDE RD.	110	Pipe		not visible
2441	111	Pipe	Con			256558	1756524	6/12/2013			3'	5'	UNIVERSITY BLVD.	111	Pipe	38	
2442	112	Pipe				257387	1790113	6/17/2013	Y	3			BELSAW AVE.	168	Pipe	3FT CON PIPE W/ HWALL 75% SUBMERGED CLR TO CLOUDY STAND WATER	
2443	113	Pipe	Con	50		259551	1748959	6/11/2013		38"	38"	38"	1155 ANDERS DR.	113	Pipe		trash, sediment
2444	114	Pipe	Con			257082	1791519	6/17/2013	Y	3			PEACH ST.	167	Pipe	3FT CON PIPE W/HWALL MOSTLY SUBMERGED	
2445	115	Pipe	Con		Tu	263945	1795171	6/17/2013		4			CSX	164	Pipe	4FT CONC PIPE W/CHANNEL ERODED BANKB	
2446	116	Channel	Oth			264057	1795971	6/17/2013					CSX SIBERT YARD RESTRICTED AREA		Channel	restricted area	
2447	117	Channel				257791	1795857	6/17/2013			2	12	CSX	162	Channel	12FT WIDE UNLINED CHANNEL FAIR COND	
2448	118	Channel			DF	263635	1792871	6/17/2013			4	4	CSX RR AND TELEGRAPH RD	118	Channel	154	UNLINED channel

# Three Mile Creek Watershed Management Plan

OBJECT ID	TEMP ID	STRUCTURE TYPE	STRUCT MAT	% OBS	COND	NORTH	EAST	INFODATE	HW	DIA	H	W	COMMENTS	STRUC ID	Struc Desc	Struc_De_1	Condi Desc
2449	119	Channel	Oth	10		262009	1788365	6/18/2013			1	6	DUMAINE RD	188	Channel	UNLINED CHANNEL DENSE VEG, SEDIMENT FRM RD	
2450	120	Pipe	Oth	50	DF	264805	1795947	6/17/2013					HERBERT ST.	158	Pipe	4x4 metal culvert w gate	
2451	121	Channel				264735	1795329						HERBERT ST.		Channel		
2452	122	Pipe	CMP	50		264592	1794958	6/17/2013		2.5			HERBERT ST.	161	Pipe	2.5 CMP PINCHED END MOSTLY SUBMERGED	
2453	123	STORM DRAIN	Con	50		264506	1794746	6/17/2013		3			HERBERT ST.	160	Pipe	STORM DRAIN	sediment obstruction, veg
2454	124	Channel				264501	1794667	6/17/2013			2	12	CSX RR @ KIMB CLARK WHOUSE	159	Channel	CHANNEL W DUCKWEED 12X2 1-2FT DEEP	
2455	125	Channel	RIP		Er	262836	1790552	6/17/2013			3	4	LPG LUMBER	125	Channel	152	unlined w/ minor erosion
2456	126	Pipe	Oth			260751	1789012	6/18/2013					WHITNEY ST.	186	Pipe	COULD NOT LOCATE DENSE VEG	
2457	127	Pipe	Con	50		260689	1789158	6/18/2013		2.5			WHITNEY ST.	187	Pipe	MOSTLY SUBMERGED EXCESSIVE VEG	
2458	128	Channel				255204	1786907	6/14/2013			2'	3'	MOBILE INFIRMARY	128	Channel	148	
2459	129	Channel	Oth		Er	259136	1778779	6/14/2013			12'	8'	MOBILE PAPER BOARD	129	Channel	105	trash, erosion
2460	130	Channel	Con	50		257022	1773964	6/20/2013		4'			MOFFETT RD.	279	Channel	sediment	
2461	131	Pipe				260089	1765788						FOREST DELL		Pipe		
2462	132	Other				261134	1765970						FOREST DELL		Other		
2463	133	Other				260789	1765969						FOREST DELL		Other		
2464	134	Other				260654	1765983						FOREST DELL		Other		
2465	135	Pipe				258763	1764590						PINEWOOD DR. EAST		Pipe		
2466	136	Channel				258501	1763796						FOREST HILL		Channel		
2467	137	Pipe	CMP	0	DF	257820	1764096	6/12/2013		3'			FISH HATCHERY	137	Pipe	55	clear flow
2468	138	Channel	Oth		DF	257715	1764274	6/12/2013			20'	5'	DOWN STEAM FROM ZEIGLER BLVD.	138	Channel	56	clear flow, sandy bottom

OBJECT ID	TEMP ID	STRUCTURE TYPE	STRUCT MAT	% OBS	COND	NORTH	EAST	INFODATE	HW	DIA	H	W	COMMENTS	STRUC ID	Struc Desc	Struc_De_1	Condi Desc
2469	139	Channel	Oth	0		258087	1764874	6/12/2013			2'	6'	CARONDOLET APT.	139	Channel	57	
2470	140	Channel	Con			257409	1770918	6/13/2013			6'	5'	ACROSS FROM SPRINGWOOD DR. EAST	140	Channel	70	dry
2471	141	Channel	Oth	0	Tu	258997	1769192	6/13/2013			3'	6'	AT RAILROAD TRACK / ACROSS FROM 424	141	Channel	67	stagnant, brown, silty bottom, algae
2472	142	Channel	Oth	0	DF	256874	1771162	6/13/2013			2'	5'	SPRINGHILL AVE.	142	Channel	77	dense veg, sandy bottom,
2473	143	Channel	Oth	0	DF	256917	1771060	6/13/2013			6'	4'	SPRINGHILL AVE.	143	Channel	78	sandy bottom, dense veg
2474	144	Pipe				257077	1769777						SPRINGHILL AVE.		Pipe		
2475	145	Pipe				256652	1769289						SOUTH OF SPRINGHILL AVE.		Pipe		
2476	146	Channel	Oth			257673	1760289	6/12/2013			4'	20'	GALLIARD ST.	146	Channel	42	lots of aq veg
2477	147	Channel				254657	1759081						UPSTREAM FROM MUSEUM DR.		Channel		
2478	148	Pipe	Con			255808	1760356	6/12/2013	y	3'x2			UPSTREAM FROM MUSEUM DR.	148	Pipe	49	a lot of sediment
2479	149	Channel	Oth			261003	1788668	6/18/2013			1	2	WHITNEY ST.	185	Channel	vegetated no stand water	
2480	150	Pipe				255561	1762633						CARMEL DR.		Pipe		
2481	151	Channel				255057	1762911						RIDGELAWN DR. EAST		Channel		
2482	152	Channel				253089	1762776						RIDGELAWN DR.		Channel		
2483	153	Pipe				262229	1773662						BELTLINE		Pipe		
2484	154	Pipe				262386	1773674						BELTLINE		Pipe		
2485	155	Pipe				262337	1773599						I-65		Pipe		
2486	156	Channel				262317	1773378						BELTLINE		Channel		
2487	157	Channel				262394	1773378						BELTLINE		Channel		
2488	158	Channel				262396	1773363						BELTLINE		Channel		
2489	159	Channel				262184	1771467						SHARON DR.		Channel		
2490	160	Channel				262357	1772256						DOWN STREAM FROM AUTUMDALE DR.		Channel		
2491	161	Pipe				262099	1770683						LYDIA DR.		Pipe		

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OBJECT ID	TEMP ID	STRUCTURE TYPE	STRUCT MAT	% OBS	COND	NORTH	EAST	INFODATE	HW	DIA	H	W	COMMENTS	STRUC ID	Struc Desc	Struc_De_1	Condi Desc
2492	162	Box Culvert	Con		DF	251464	1746113	6/19/2013			3	3	NORTH CODY RD.	205, 206	Box Culvert	BANK EROSION DWNSTREAM	
2493	163	Channel	Con			257417	1746486	6/11/2013			1'	3'	DOWN STREAM FROM CODY RD.	163	Channel		
2494	164	Pipe	Con	20		254635	1751498	6/11/2013		38"			USA	164	Pipe		
2495	165	Pipe	Con	50		254439	1753615	6/11/2013		24"			USA	165	Pipe		sediment
2496	166	Channel	RIP	0	DF	254622	1753265	6/11/2013			1'	5'	USA	166	Channel		algae, turbid, dry flow
2497	167	Channel	Oth	10	Er	257457	1749459	6/11/2013			2'	20'	DEWITT	167	Channel		sediment
2498	168	Channel	Oth	15	Er	257629	1749258	6/11/2013			4'	20'	DOWN STREAM FROM ZEIGLER BLVD.	168	Channel		trash, privet, sediment
2499	169	Pipe	Con	0		259816	1748937	6/11/2013	y	38"	38"	38"	1159 ANDERS DR.	169	Pipe		excessive trash, privet, riprap stream
2500	170	Box Culvert	Con	0		260986	1746115	6/11/2013			34 in	62 in	CODY RD.	170	Box Culvert	concrete	
2501	171	box culvert	Con	0		258467	1746930	6/11/2013	y		4.5'	10'	ZIEGLER BLVD.	171	Pipe		kudzo
2502	172	box culvert	Con	50		259589	1747062	6/11/2013	y		5'	10'	ORANGEBURG DR. NORTH	173	Pipe		trash, sewer line adjacent
2503	173	Channel	Con			250442	1748452	6/19/2013			7	25	EAST OF FOREMAN RD.	210	Channel	CONCRETE CHANNEL NO FLOW	GOOD
2504	174	Channel	Con			250336	1748738	6/19/2013			5	12	EAST OF FOREMAN RD.	212	Channel		GOOD
2505	175	Channel	Oth	10	Er	257260	1749805	6/11/2013			3'	20'	UPSTEAM FROM TYUS ST. MAWSS TRAIL		Channel		sediment
2506	176	Channel	RIP	5		261729	1756246	6/18/2013			20	30	5679 MORLEE DR. WEST	199	Channel	2-3IN STAND WATER, TREES IN CHANNEL , RIP RAP ARMOR	
2507	177	Pipe	CMP			261987	1758189	6/18/2013	y	4			FOREST RIDGE RD. WEST	201	Pipe	2, 4FT CMP NO FLOW	
2508	178	Channel	Con			262733	1753980	6/18/2013			4	12	5975 SCOTTSDALE CT.	191	Channel	1-2 in sediment	
2509	179	Channel	Con			263010	1753412	6/18/2013			4	12	WEST OF SCOTTSDALE CT.	190	Channel	WE	
2510	180	Channel	Con			263179	1753158	6/18/2013			3	3	WEST OF SCOTTSDALE CT.	192	Channel		

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2511	181	Pipe	CMP			259465	1759406	6/12/2013		3'			ZEIGLER BLVD.	181	Pipe	40	
2512	183	Pipe	Con			257035	1756941	6/12/2013		3'			GAILLARD DR.	183	Pipe	33	
2513	184	Pipe	Con		co	258192	1756512	6/12/2013		3'			5755 PARKMOUT CIR. SOUTH	184	Pipe	32	orange IRB, dry flow
2514	185	Pipe	Con			260724	1782575	6/17/2013	Y	3			OFF WELLWORTH ST	170	Pipe	170	
2515	186	Pipe	Con	50		255344	1780347	6/14/2013		2'			STANTON RD	123	Pipe		
2516	187	Channel	Con			256168	1780065	6/14/2013			6'	6'	BETWEEN STANTON & USA HOSPITAL	187	Channel	121	
2517	188	Channel	Con	0	DF	257408	1763767	6/12/2013			5'	60'	ZEIGLER BLVD.	188	Channel	52	spillway
2518	189	Pipe	Con			255353	1780342	6/14/2013		2.5'			STANTON RD.	189	Pipe	122	apple snails
2519	190	Pipe	Con			257424	1763790	6/12/2013		3'			ZEIGLER BLVD.	190	Pipe	54	
2520	191	Pipe	Con			256503	1788786	6/14/2013	y	4'			OFF DR MLK AVE.	191	Pipe	144	
2521	192	Pipe	CMP	5	NR	256921	1759554	6/12/2013		2.5'			MUSEUM DRIVE	162	Pipe	44,45	needs repair, apple snail
2522	193	Pipe	Con			262479	1786561	6/18/2013	y	4			OFF OSAGE RD.	183	Pipe	30% submerged no visible flow, excessive trash, sediment	
2523	194	Channel	Con			257571	1779797	6/14/2013			4'	6'	BEHIND USAMC	194	Channel	117	
2524	195	Pipe	Con	0	DF	257926	1765241	6/12/2013	y	4'			CARONDOLET CT. NORTH	195	Pipe	58	
2525	196	Pipe	Con	50	NR	259125	1766550	6/12/2013		3'			BRISTOL CT.	196	Pipe	59	severe erosion, dry flow
2526	197	Pipe	Con			260713	1782560	6/17/2013	Y	3			OFF WELLWORTH AND TUCKER	171	Pipe	NO FLOW	
2527	198	Pipe	Con			261867	1782046	6/18/2013			4	4	OFF BARRETT LN	175	Pipe	storm drain discharge under road	
2528	199	Pipe	Con			260702	1782564	6/17/2013		3			OFF TUCKER	172	Pipe		
2529	200	Pipe	Con			254129	1782722	6/14/2013	y	3'			STANTON RD.	200	Pipe	125	
2530	201	Channel				255798	1779970						SIENA VISTA		Channel		
2531	202	Pipe	Con	0		260366	1748069	6/11/2013	y	3'2"	3'2"	38 in	ANDERS DR.	202	Pipe		needs clearing
2616	182	Pipe	con		g	258086	1756349	6/12/2013		4'x2			5763 PARKMOUT CIR. SOUTH	162	Pipe	31	clear flow
2330	0	Box Culvert	Con			250693	1788227	6/20/2013			4	4.5	FEARNWAY	261	Box Culvert		
2331	1	Pipe	Con		DF	251476	1787647	6/20/2013		4.5			OLD SHELL RD.	259	Pipe		

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OBJECT ID	TEMP ID	STRUCTURE TYPE	STRUCT MAT	% OBS	COND	NORTH	EAST	INFODATE	HW	DIA	H	W	COMMENTS	STRUC ID	Struc Desc	Struc_De_1	Condi Desc
2332	2	Box Culvert	Con		DF	251470	1787605	6/20/2013			5	8	OLD SHELL RD.	260	Box Culvert		
2333	3	Pipe	Con		co	256223	1788217	6/14/2013		3'			SIMMINGTON DR	3	Pipe	143	flow, irb
2334	4	Pipe	Con	0	DF	260625	1774699	6/13/2013		3'			ARMOUR AVE	4	Pipe	95	low flow, algae
2335	5	Pipe	CMP	0		261115	1775200	6/13/2013		3'			OFF GEORGIA PACIFIC AVE.	5	Pipe	96	
2336	6	Channel	Con			258626	1779343	6/14/2013			8'	20'	MOBILE ST.	6	Channel	110	2' water
2337	7	Pipe	Con		DF	261049	1782451	6/18/2013	y	3			813 WELLWORTH ST.	173	Pipe	173	
2338	8	Pipe	Con		g	261847	1782055	6/18/2013		3			BARRETT LN.	174	Pipe	discharge under bridge under road	
2339	9	Channel	Con			259434	1778183	6/14/2013			3'	8'	OFF MOBILE ST.	9	Channel	108	clear flow
2340	10	Pipe	Con			259361	1778413	6/14/2013		12"			OFF MOBILE ST.	10	Pipe	107	clear flow, some rain
2341	11	Channel	Con			258917	1778975	6/14/2013			2'	8'	OFF MOBILE ST.	11	Channel	109	
2342	12	Channel				258544	1764249						FISH HATCHERY		Channel		
2343	13	Channel	RIP	0	DF	260654	1776541	6/13/2013			3'	3'	ARMOUR AVE.	13	Channel	100	
2344	14	Channel	Con	df		261284	1775552	6/13/2013			20'	12'	DOWN THE STREET FROM GEORGIA PACIFIC AVE.	14	Channel	97	
2345	15	Pipe	Con	0	DF	260113	1767351	6/13/2013	y	4'			CARRE DRIVE EAST	15	Pipe	63	
2346	16	Channel		30	DF	260085	1767180	6/13/2013			1'	4'	BETWEEN CARRE DR. EAST & CARRE DR. WEST	16	Channel	64	debris damn at sewer crossing
2347	17	Pipe	Con			259162	1778674	6/14/2013		12"			OFF MOBILE ST.	17	Pipe	106	
2348	18	Pipe	Con			258039	1779651	6/14/2013	y	3'			FILLINGIM ST.	18	Pipe	116	flow
2349	19	Pipe	Con			257971	1779631	6/14/2013	y	3'			BEHIND USAMC	19	Pipe	115	apple snail eggs
2350	20	Channel	Con			257837	1779687	6/14/2013			3'	4'	BEHIND USAMC	20	Channel	113	
2351	21	Pipe	Con			257257	1779894	6/14/2013	y	4			FORENSIC DR.	21	Pipe	118	flow
2352	22	Channel	Con			257079	1779962	6/14/2013			4'	6'	USAMC	22	Channel	119	
2353	23	Channel	Con			256822	1779986	6/14/2013			4'	6'	USAMC	23	Channel	120	
2354	24	Pipe	Con			257863	1779674	6/14/2013	y	3'			BEHIND USAMC	24	Pipe	114	
2355	25	Other	Con	0		251798	1757111	6/19/2013			3.5	3.5	OLD SHELL RD	237	Other	STORM DRAIN AND CHANNEL	
2356	26	Pipe	Con	0	DF	259024	1768977	6/13/2013	y	4'			OFF BRAWOOD DR.	26	Pipe	26	metal flap
2357	27	Channel	Con			258505	1769322	6/13/2013			2'	4'	OFF BRAWOOD DR.	26	Channel	69	dry

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2358	28	Channel	RIP		co	257022	1762380	6/12/2013				15'	MUSEUM DR.	28	Channel	50	clear up, iron reducing bacteria down stream, orange
2359	29	Channel	Con	20		263841	1783474	6/18/2013			6	4	COLLEGE ST	179	Channel	4X6 CON CHANNEL	
2360	30	Channel	Oth	5		263871	1783201	6/18/2013			6	4	S SIDE S COLLEGE ST	181	Channel	UNLINED CHANNEL DENSE VEG NO DISCHARGE	
2361	31	Pipe	Con			263998	1783475	6/18/2013	y	4			COLLEGE ST.	180	Pipe	PHOTO 180 DRY	
2362	32	Pipe	Con			264954	1782061	6/18/2013	y	1.5			PRICHARD AVE.	176	Pipe	1.5 ft pipe in sidewall of con channel	
2363	33	Pipe	HDP		NR	252917	1758058	6/20/2013		3			VANDERBILT DR.	254,255	Pipe	eroded at base, signif. flow, needs repair	
2364	34	Channel	Con		Tu	261888	1787331	6/18/2013			3	15	CRAWFORD PL	184	Channel	STAND WATER 2FT, NO VIS FLOW	
2365	35	Box Culvert				260927	1779729						CONE ST.		Box Culvert		
2366	36	Pipe	Con			253198	1787189	6/20/2013		2			BETWEEN SPRINGHILL AVE. AND USA WOMENS & CHILDREN HOSPITAL	264	Pipe		
2367	37	Other	Con			251802	1757210	6/19/2013			3.5	3.5	OLD SHELL RD.	235	Other	STORM DRAIN AND CHANNEL	CHANNEL STAINED
2368	38	Channel	Con	0		259057	1772709	6/13/2013			4'	3'	I-65 / MOFFETT RD.	38	Channel	89	
2369	39	CHANNEL	Oth	20	DF	264562	1793587	6/17/2013			2	4	OFF TELEGRAPH RD.	156	CHANNEL	UNLIND CHANNEL	F
2370	40	Pipe	Con	50		262800	1794786	6/17/2013		3			INDUSTRIAL CANAL RD.	163	Pipe	3FT CONC PIPE MOSTLY SUBMERGED W/UNLINED CHANNEL	
2371	41	Pipe	Con			265837	1793491	6/17/2013	Y	5			CHIN ST.	155	Pipe	5 FT CON PIPE W HWALL AND 18IN PIPE	



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2372	42	Box Culvert	Con		DF	264487	1791617	6/17/2013	Y		3	8	STIMRAD RD.		Box Culvert	153	BOX CULV W/rip rap good cond
2373	43	Channel	Oth		Tu	262489	1789517	6/18/2013			10	40	TREATMENT PLANT RD.	189	Channel	UNLINED CHANNEL, TURBID, 2-3FT DEEP NO FLOW	
2374	44	Pipe	Con			266172	1794620	6/17/2013	Y	5			CHIN ST.	157	Pipe	5ft conc w hdwall clear stand water 1.5ft	
2375	45	Pipe	Con			255592	1787471	6/14/2013		4'			DUNBAR ST.	45	Pipe	147	
2376	46	Pipe	Con			256138	1778016	6/20/2013					BAY SHORE AVE.		Pipe	in culvert, unknown dia	
2377	47	Pipe	CMP	0	co	258235	1772493	6/13/2013		3'			MOFFAT RD.	47	Pipe	85	orange IRB
2378	48	Pipe	Con			257940	1772434	6/13/2013	y	3'			MOFFETT RD.	48	Pipe	74	
2379	49	Channel	Con			257854	1772390	6/13/2013			3'	6'	MOFFAT RD.	49	Channel	73	
2380	50	Channel	Con			257555	1761721	6/12/2013			4'	4'	MUNICIPAL PARK	50	Channel	61	
2381	51	Channel	Con			254227	1785364	6/14/2013		8'	4'		INDIAN CIRCLE	51	Channel	150	
2382	52	Pipe	Con			255344	1787027	6/14/2013	y	3'			ST. STEPHENS RD.	141	Pipe		
2383	53	Channel	Con			256174	1788644	6/14/2013			4'	8'	DR MLK BLVD.	53	Channel	146	
2384	54	Box Culvert	Con			256352	1788892	6/14/2013	y		4'	6'	DR MLK BLVD.	54	Box Culvert	145	
2385	55	Pipe	Con	0		257497	1763740	6/12/2013	y	3'			ZEIGLER BLVD.		Pipe	53	
2386	56	Channel	Con	0	DF	257589	1762924	6/12/2013			4'	3'	MUNICIPAL PARK	56	Channel	60	apple snail eggs
2387	57	Pipe	Con			259957	1758628	6/12/2013		4'			UNIVERSITY BLVD.	57	Pipe	41	clear flow
2388	58	Channel	Oth			262692	1755646	6/18/2013			6	20	CARLISLE DR.	195	Channel	CONFLUENCE , UNLINED, RIP RAP ARMOR, HIGHLY VEGETATED	
2389	59	Channel	Con			263058	1755573	6/18/2013			6	12	SOUTH OF CARLISLE DR EASTW	194	Channel	DRY, CONFLUENCE 2 CHANNELS	
2390	60	Channel	Con			264148	1754327	6/18/2013			4	15	5921 PRINCESS HELEN RD	193	Channel	DRY	
2391	61	Channel			Er	254264	1785238	6/14/2013			4'	8'	STANTON RD.	138	Channel	138	
2392	62	Pipe				259270	1779197						MOBILE ST.		Pipe		
2393	63	Pipe	Con			256219	1779014	6/20/2013					MOBILE ST.	274,275	Pipe		
2394	64	Channel	Oth			255880	1779615	6/20/2013			4	6	NALL ST.	277	Channel	unlined,excess veg	
2395	65	Pipe				260189	1779041						MOBILE ST.		Pipe		

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2396	66	Pipe	CMP	75	NR	258130	1753555	6/12/2013		2.5'			ZEIGLER BLVD.		Pipe	29,30	needs repair, collapsed headwall, dry flow
2397	67	Pipe				260435	1779466						CONE ST.		Pipe		
2304	1001	Pipe	CMP	0% obstructed		0	0	6/11/2013	N	24 in	24 in	24 in	photos 1, 2, 3	1001			
2305	1002	Pipe	Con	26% - 50% obstructed	NR	0	0	6/11/2013	N	2'			photo 14,15	1002			
2306	1004	Pipe	Con		DF	0	0	6/12/2013		2'			Photo 43, from tennis court deten pond	1004			
2307	1005	Pipe	CMP	0%	Su	0	0	6/12/2013		2.5'			photo 46	1005			
2308	1006	Pipe	Con		Su	0	0	6/12/2013		2.5'			photo 47	1006			
2309	1008	Pipe	Con	1% - 25% obstructed		0	0	6/12/2013		1.5'			photo 51	1008			
2310	1009	Pipe	Con	0%		0	0	6/12/2013		2.5'			Photo 62	1009			
2311	1018	Pipe	Con	0%		0	0	6/14/2013	y	3'			Photo 128	1018			
2312	1019	Pipe	Con	0%	DF	0	0	6/14/2013	y	2.5'x3			photo 129	1018			
2313	1020	Pipe	Con	0%		0	0	6/14/2013		3'			photo 130	1020			
2314	1021	Pipe	Con	0%		0	0	6/14/2013	y	2.5'			Photo 134, Apple Snails in Cattails	1021			
2315	1022	Pipe	Con	0%		0	0	6/14/2013		2.5'			136	1022			
2316	1024	Pipe	Con	0% obstructed		0	0	6/19/2013		3'			225	1024			
2398	68	Other	Con		DF	261545	1757107	6/18/2013			10	30	SANDRA DR.	200	Other	CONC BRIDGE W STORM DRAINS	
2399	69	Pipe	Con			259367	1758852	6/12/2013	y	3'			ZEIGLER BLVD.	69	Pipe	39	kudzu
2400	70	Pipe	Con	0	Tu	254909	1751353	6/11/2013		5'			USA CAMPUS / MIDDLE RING	70	Pipe		
2401	71	Pipe	Con	0		261042	1747680	6/11/2013		10"	10"	10"	AMELIA	71	Pipe		g
2402	72	Pipe	Con	5		249600	1754669	6/19/2013	Y	1.5			WEST OF EAST DR. SOUTH OF MAGNOLIA PL	228	Pipe	NO FLOW	
2403	73	Pipe	Con			250987	1756715	6/20/2013		3			UNIVERSITY BLVD.		Pipe	in sidewall of bridge structure	
2404	74	Pipe				259494	1752756						DOWN FROM RIDGWOOD DR.		Pipe		
2405	75	Pipe	HDP			262165	1756213	6/18/2013					DOWN STEAM FROM OVERLOOK RD.	197-198	Pipe	2FT PIPE IN RIP RP SIDEWALL	
2406	76	Pipe	Con			250995	1756762	6/20/2013		3			UNIVERSITY BLVD.		Pipe		
2407	77	Pipe	Con			251002	1756813	6/20/2013			1	3	UNIVERSITY BLVD.	248	Pipe	storm drain w/ channel and 2x2.5' pipes	

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2408	78	Pipe	Con			251077	1756916	6/20/2013			5	5	UNIVERSITY BLVD.	247	Pipe		
2409	79	Channel	Con		DF	261045	1775971	6/13/2013			2'	5'	MOFFET RD. / I-65 NEXT TO RAILROAD	79	Channel	99	stagnant, algae, sandy bottom, sediment
2410	80	Channel	Bri		DF	259590	1777355	6/13/2013			3'	2'	SHELL ST.		Channel	103	sandy bottom, veg
2411	81	Channel	Con			253817	1783575	6/14/2013			2'	8'	STANTON RD.	81	Channel	132	apple snail eggs
2532	203	Box Culvert	Con	100	NR	256325	1750818	6/11/2013	y		5'	10'	LISLOY DR.	203	Box Culvert		turbid, major impoundment
2533	204	Pipe	Con	20		255421	1755664	6/11/2013	y	3'			USA CAMPUS		Pipe		sediment
2534	205	Pipe	CMP	0	DF	254655	1754127	6/11/2013	y	5'			USA CAMPUS	205	Pipe		clear, dry flow
2535	206	Pipe	Con			254200	1782107	6/14/2013		3'	2'	3'	STANTON RD.	206	Pipe	124	channel/pipe
2536	207	Pipe	Con	0		249591	1754758	6/19/2013		2.5			COVERT @ EAST RD.	229	Pipe	NO FLOW	GOOD
2537	208	Pipe	Con	0		250300	1755680	6/19/2013		4			WINDHAM CT.	231	Pipe	NO FLOW	
2538	209	Channel	Con			253793	1783830	6/14/2013			8'	3'	STANTON	209	Channel	133	
2539	210	Pipe	Con			256317	1793162	6/17/2013	Y	3			MAPLE ST.	166	Pipe	3FT CONC PIPE COLOCATED W/ PT239	
2540	211	Channel				254968	1786501	6/14/2013			8'	30'	LITTLE STICKNEY	211	Channel	149	
2541	212	Channel	Con	0		259648	1773707	6/13/2013			3'	5'	CORPORATE DR N	212	Channel	90	
2542	213	Channel	Con	0		260245	1774500	6/13/2013			2'	4'	CORPORATE DR N	213	Channel	94	
2543	214	Channel	Con			260068	1774035	6/13/2013			2'	8'	ARMOUR	214	Channel	92	
2544	215	Pipe	Con	0		249724	1755447	6/19/2013	y	4			EAST OF EAST DR. / ACROSS CREEK	230	Pipe	NO FLOW	
2545	216	Pipe	CMP			259899	1774031	6/13/2013	y	4'			CORPORATE DR. NORTH	214	Pipe	93	
2546	217	Pipe	Con			249185	1753783	6/19/2013	y	3.5			EAST OF WEST DR.	222	Pipe	no flow good condition	good
2547	218	Pipe	Con			249184	1753735	6/19/2013					EAST OF WEST DR.		Pipe		
2548	219	Channel	Con			254066	1784313	6/14/2013			4'	8'	STANTON	219	Channel	137	
2549	220	Pipe	Con		co	255517	1753407	6/11/2013	y	2.5'			USA CAMPUS	220	Pipe		sediment, orange IRB, dry flow
2550	221	Pipe	Con	0		248955	1754036	6/19/2013		5			N. OF BRANDY RUN RD S, EAST OF FERN HILL CT.		Pipe		G
2551	222	Channel	Con			258296	1772590	6/13/2013			4'	8'	I-65 MOFFETT RD	222	Channel	82	

OBJECT ID	TEMP ID	STRUCTURE TYPE	STRUCT MAT	% OBS	COND	NORTH	EAST	INFODATE	HW	DIA	H	W	COMMENTS	STRUC ID	Struc Desc	Struc_De_1	Condi Desc
2552	223	Pipe	Con		NR	249977	1750666	6/19/2013	Y	3			WEST OF HILLCREST RD.	214, 215	Pipe	CON PIPE ERODED UPSTREAM OF HEADWALL NO FLOW	needs repair
2553	224	Channel	Oth	5	DF	249939	1751005	6/19/2013			3	6.5	400' WEST OF HILLCREST RD.	216, 217	Channel	UNLINED CHANNEL SLIGHT EROSION SEDIMENT CLEAR 1-6 IN DEEP MIN FLOW	
2554	225	Pipe	Con		DF	249196	1753417	6/19/2013		3.5			WEST DR.	220	Pipe	CON PIPE IN CHANNEL SIDEWALL MIN FLOW CLEAR	GOOD
2555	226	Pipe	Con			250441	1748084	6/19/2013	Y	4			FOREMAN RD.	209	Pipe	CON PIPE GOOD CONDITION NO FLOW	
2556	227	Pipe	Con			249769	1751424	6/19/2013		5			HILLCREST RD.	219	Pipe	1, 5FT AND 1, 18IN PIPE CONCRETE NO FLOW	GOOD
2557	228	Pipe	Con			250414	1747746	6/19/2013		3			WEST OF FOREMAN RD.	211	Pipe	GOOD CONDITION NO FLOW	
2558	229	Pipe	Con	90		250427	1747039	6/19/2013		1.5			N OF AIRPORT BLVD, WARREN APTS.	207	Pipe	90% OBS, SEDIMENT	
2559	230	Channel	Con	0		250614	1756067	6/19/2013			3	8	ACROSS FROM LONG ST.	232	Channel	BANKS ERODED ON MAIN CHANNEL 300-500 FT DOWNSTREAM	
2560	231	Pipe	Con			249772	1751384	6/19/2013	Y	4			HILLCREST RD.	218	Pipe	concrete pipe under bridge no flow	
2561	232	Pipe	Con			249562	1752313	6/19/2013		3			WEST OF BRANDY RUN WEST	223	Pipe	good condition no flow	good
2562	233	Pipe	Con			256864	1795113	6/17/2013		3			OFF CONCEPTION ST.	165	Pipe	3FT CON PIPE MOSTLY SUBMERGED STAG WATER	

# Three Mile Creek Watershed Management Plan

OBJECT ID	TEMP ID	STRUCTURE TYPE	STRUCT MAT	% OBS	COND	NORTH	EAST	INFODATE	HW	DIA	H	W	COMMENTS	STRUC ID	Struc Desc	Struc_De_1	Condi Desc
2563	234	Pipe	Con			256158	1778019	6/20/2013		2.5'			BAY SHORE AVE.	272	Pipe		
2564	235	Pipe				256955	1775635						JOSEPHINE ST.		Pipe		
2565	236	Pipe	Con		DF	255804	1776933	6/20/2013		3'			PAGES LN.		Pipe	pipe w/i box culvert, trickle	
2566	237	Pipe	Con	20		256135	1777962	6/20/2013					BAY SHORE AVE.	273	Pipe	in box culvert	
2567	238	Pipe	Con		co	253676	1786937	6/20/2013		2.5			CENTER ST.	265	Pipe	min flow, orange IRB	
2568	239	Pipe	Con			256336	1793135	6/17/2013	Y	3			MAPLE ST.	166	Pipe	3FT CONCRETE PIPE W/HDWALL MOSTLY SUBMERGED	
2569	240	Pipe				259727	1779111						MOBILE ST.		Pipe		
2570	241	Pipe				262399	1774377						OFF BELTLINE HWY.		Pipe		
2571	242	Pipe	Con	25	Tu	257499	1751246	6/11/2013	y 10'	4'			VICTORIA PL.		Pipe		
2572	243	Pipe	Con			255519	1776418	6/20/2013		3.5			SPRINGHILL AVE.	268,269	Pipe	50% submerged, 2x4" pipes coming from shop ctr	
2573	244	Pipe	Con	10	DF	257189	1750610	6/11/2013	y	2.5'			VICTORIA PL.	244	Pipe		sediment, turbid, veg obstruction
2317	1023	Pipe	Con	0% obstructed		0	0	6/19/2013		2'			235	1023			
2318	1025	Other	Con	0% obstructed		0	0	6/20/2013		3'			250	1025			
2319	1026	Pipe	HDP	0% obstructed		0	0	6/20/2013	y	3'			252	1026			
2320	1027	Pipe	HDP	1% - 25% obstructed		0	0	6/20/2013	Y	3'			257	1027			
2321	1011	Pipe	CMP	0%		0	0	6/13/2013	Y	2'			Photo 79	1011			
2322	1012	Pipe	CMP	0% obstructed	DF	0	0	6/13/2013	Y	2'			Photo 80	1012			
2323	1013	Pipe	CMP	0%		0	0	6/13/2013	N	2.5'			Photo 81	1013			
2324	1014	Pipe	Con	0%		0	0	6/13/2013	Y	18"			Photo 84	1014			
2325	1015	Pipe	Con	0%	DF	0	0	6/13/2013	N	2'			Photo 87	1015			
2326	1016	Pipe	HDP	0%		0	0	6/13/2013	N	6"			Photo 88	1016			
2327	1017	Pipe	CMP	0%	DF	0	0	6/13/2013	Y	2.5'			Photo 91	1017			
2328	1010	Channel	Con	0%	DF	0	0	6/13/2013			4'	8'	Photo 75	1010			
2329	1007			0%		0	0	6/12/2013					Photo 48 Apple Snails	1007			

OBJECT ID	TEMP ID	STRUCTURE TYPE	STRUCT MAT	% OBS	COND	NORTH	EAST	INFODATE	HW	DIA	H	W	COMMENTS	STRUC ID	Struc Desc	Struc_De_1	Condi Desc
2412	82	Box Culvert	Con			254106	1786489	8/20/2013			40	8	USA WOMENS & CHILDREN HOSPITAL		Box Culvert	standing water .5-1.0'	
2413	83	Box Culvert				253908	1794304						BROAD ST.		Box Culvert		
2414	84	Channel		20		264146	1782652	6/18/2013			3	3	OFF PIERCE AND REYNOLDS		Channel	highly overgrown	
2574	245	Other	Con			251792	1757072	6/19/2013			3.5	3.5	OLD SHELL RD.	238	Other	STORM DRAIN AND CHANNEL	
2575	246	Other	Con	0		251770	1757024	6/19/2013			3.5	3.5	OLD SHELL RD.	239	Other	STORM DRAIN AND CHANNEL	
2576	247	Other	Con			251722	1757000	6/19/2013			3.5	3.5	OLD SHELL RD.	241	Other	STORM DRAIN AND CHANNEL	
2577	248	Other				251637	1756969						OLD SHELL RD.		Other		
2578	249	Other	Con			251582	1756940	6/20/2013			3	5	OLD SHELL RD.	242	Other	storm drain w/concrete channel	
2579	250	Pipe	Con	5		255834	1787432	6/14/2013		3'			SIMMINGTON DR.	250	Pipe	142	trash
2580	251	Channel	Con			259157	1773012	6/13/2013			8'	8'	I-65 / MOFFETT RD.	251	Channel	86	
2581	252	Pipe	Con			256884	1771306	6/13/2013	y	3'			SPRINGHILL PLAZA	252	Pipe	76	
2582	253	Pipe	CMP		DF	258236	1772584	6/13/2013		3'			I-65 / MOFFETT RD.	253	Pipe	83	apple snail at dam, orange discharge
2583	254	Pipe	Con			257598	1772409	6/13/2013	y	3'			I-65 / MOFFETT RD.	254	Pipe	72	
2584	255	Channel	Con			253969	1783562	6/14/2013			4'	3'	STANTON RD.	255	Channel	126	
2585	256	Pipe	CMP	0		255580	1755295	6/11/2013	y	3'			USA CAMPUS	256	Pipe		
2586	257	Pipe	CMP			255292	1755045	6/11/2013		2.5'			USA CAMPUS	256	Pipe		
2587	258	Pipe	CMP			257419	1772264	6/13/2013		2'			MOFFETT RD.	258	Pipe	71	
2588	259	Pipe	Con		DF	253688	1786953	6/20/2013					CENTER ST.	265	Pipe	min flow, orange IRB	
2589	260	Other				251476	1756925	6/20/2013			3	5	OLD SHELL RD.		Other	dumpster	
2590	261	Pipe	Con			252251	1787584	6/20/2013			3	3	SPRINGHILL AVE.	262,263	Pipe		
2591	262	Other	Con			251526	1756937	6/20/2013			3	5	OLD SHELL RD.	243	Other	storm drain w/concrete channel	
2592	263	Channel	Con	5		263227	1785711	6/18/2013			6	12	VELMA ST.	182	Channel	CLEAR 2IN DEEP ACROSS BASE DENSE VEG ON SIDES	

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OBJECT ID	TEMP ID	STRUCTURE TYPE	STRUCT MAT	% OBS	COND	NORTH	EAST	INFODATE	HW	DIA	H	W	COMMENTS	STRUC ID	Struc Desc	Struc_De_1	Condi Desc
2593	264	Pipe				254412	1758986						OFF MUSEUM DR.		Pipe		
2594	265	Other	Con	0		251799	1757158	6/19/2013			3.5	3.5	OLD SHELL RD.	236	Other	STORM DRAIN AND CHANNEL	
2595	266	Pipe	HDP			252471	1757952	6/20/2013	y	4.5			VANDERBILT DR.	253	Pipe		
2596	267	Channel	Oth			251792	1757432	6/20/2013			1.5	2.5	OLD SHELL RD.	251	Channel	unlined, dense veg	
2597	268	Other	Con			251811	1757308	6/19/2013			3.5	3.5	OLD SHELL RD.	233	Other	CONCRETE CHANNEL W CONCRETE STORM DRAIN	
2598	269	Other	Con			251802	1757264	6/19/2013			3.5	3.5	OLD SHELL RD.	234	Other	STORM DRAIN AND CHANNEL	
2599	270	Box Culvert	Con			255490	1786902	6/14/2013	y		4'	4'	ST. STEPHENS RD.	270	Box Culvert	140	
2600	271	Pipe	Con	0	DF	259609	1777374	6/13/2013		4'			SHELL ST.	271	Pipe	102	
2601	272	Channel			DF	258898	1778773	6/13/2013			2'	4'	MOBILE ST.	272	Channel	104	sed, trash, sandy bottom, veg
2602	273	Pipe	Con			258298	1779389	6/14/2013	y	3'			FILLINGIM ST.	273	Pipe	111	
2603	274	Channel	Con			258034	1779467	6/14/2013			3'	3'	MOBILE ST.	274	Channel	112	
2604	275	Channel	Con		DF	257774	1779557		y	18"			MOBILE ST.		Channel		
2605	276	Pipe				257245	1779757						MILL ST.		Pipe		
2606	277	Channel	Con			255124	1780349	6/14/2013			8'	12'	WINGFIELD DR.	277	Channel	127	
2607	278	Channel	Con			255272	1786553	6/14/2013			4'	8'	ST. STEPHENS RD.	278	Channel	139	
2608	279	Pipe	Con			253831	1783597	6/14/2013		2.5			STANTON RD.	281	Pipe	131	flow
2609	280	Box Culvert	Con	0		257418	1746185	6/11/2013	y		5'	6'	CODY RD.	280	Box Culvert		vegetation in channel
2610	281	Channel		0	Er	260339	1747437	6/11/2013			1'	3'	DOWN STEAM GURLEY RD.		Channel		trash, sediment upstream
2611	282	Pipe	Con	0	DF	260291	1776586	6/13/2013		4'			FENNEL ST.	282	Pipe		flow clear, algae
2612	283	Other	Oth		DF	259986	1758550	6/18/2013			7	40	UNIVERSITY BLVD.	202	Other	BRIDGE STRUCTURE OVER UNLINED CHANNEL	
2613	284	Channel	RIP			260034	1758474	6/18/2013			6	12	UNIVERSITY BLVD.	204	Channel	UNLINED CHANNEL	
2614	285	Pipe	HDP			262426	1756194	6/18/2013		2			OVERLOOK RD.	196	Pipe	DRY, IN SIDEWALL OF CHANNEL	
2615	286	Channel	Con	0	DF	261061	1775781	6/13/2013			2'	3'	BESIDE RAILROAD	286	Channel	98	clear flow



# Three Mile Creek Watershed Management Plan

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## Appendix E – Groundwater, sediment and stormwater sampling and Results

### USA Sampling and Testing Plan

Assess groundwater contribution up and down gradient. Groundwater flow and samples will be obtained from river craft and will not require site access. Perform Subtitle D analysis.

**Parameters:** Groundwater flow rate and volume; 126 Priority Pollutants; TKN, NH<sub>3</sub>, and NO<sub>x</sub>, SRP and TP; BOD; COD; fecal coliform (freshwater reaches), Enterococcus (brackish water reaches); field pH, conductivity, DO, temp., ORP.

**Frequency:** Once in September. Dry weather - rainfall must be less than 0.1-inches for prior 72 hours.

**Samples:** 4- 1 each from 4 sites; two up gradient and two down gradient of landfill; one pair for One Mile Creek and one pair for TMC. Assumes all 4 samples will be brackish water. Please note brackish water samples on sample containers.

### Groundwater contribution assessment throughout TMC

Assess groundwater contribution at various points throughout the watershed. Groundwater flow and samples can be obtained from river craft and will not require site access. Propose to perform limited list of parameters for analysis. One sample session can be performed this summer. Project also has potential for long term sampling in future years.

**Parameters:** Surface water flow rate; 8 RCRA metals; TKN, NH<sub>3</sub>, and NO<sub>x</sub>; SRP and TP; BOD; COD; fecal coliform (freshwater reaches), Enterococcus (brackish water reaches); field pH, conductivity, DO, temp., ORP, turbidity, salinity.

**Frequency:** Once in September. Dry weather - rainfall must be less than 0.1-inches for prior 72 hours.

**Sites:** 20 – 2 each from 10 sites, see map provided in Figure 3-3. Please note brackish water samples on sample containers.

### Sediment sample assessment throughout TMC

Assess sediments at various points throughout the watershed. Three samples will be obtained from each site and composited for analysis. Samples will be obtained from river craft and will not require site access.

**Parameters:** 8 RCRA metals; moisture content; organic content; TN; TP; BOD; COD; fecal coliform (freshwater reaches), Enterococcus (brackish water reaches); visual characterization.

**Frequency:** Once in September. Dry weather, rainfall less than 0.1-inches for 72 hours.

**Samples:** 10 – 1 each from 10 sites, see map. Please note brackish water samples on sample containers.



## USA Field Report

### Groundwater and Sediment Sample Collection In The Three Mile Creek Watershed

Graduate student researchers from the University of South Alabama Marine Sciences and Environmental Toxicology programs collected groundwater and sediment samples at locations throughout the Three Mile Creek watershed in Mobile, Alabama during September and October 2013. The locations of these sample sites are displayed on Figures 1 and 2 below.

These samples were collected to:

- 1) Generically assess the chemical makeup of baseflow/groundwater entering Three Mile Creek and selected tributaries throughout the watershed;
- 2) Generally characterize any contaminants entrained in the creek

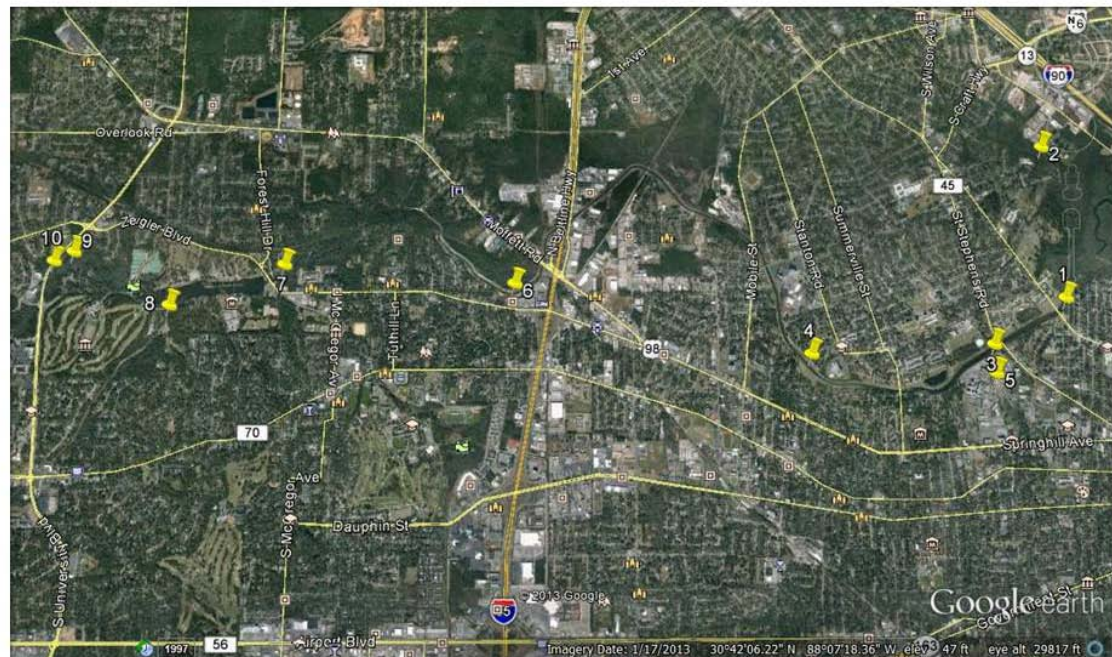


Figure 1. Locations of Sediment (SD) and Baseflow/Groundwater (GW) sample locations in the Three Mile Creek watershed.

# Three Mile Creek Watershed Management Plan

sediments in the watershed; and

3) Specifically assess the chemical composition of groundwater entering the creek system from an abandoned municipal solid waste landfill located near downtown Mobile (the Hickory Street Landfill).

The details of each of these sample subsets are described below, along with relevant information regarding sample collection and handling procedures.

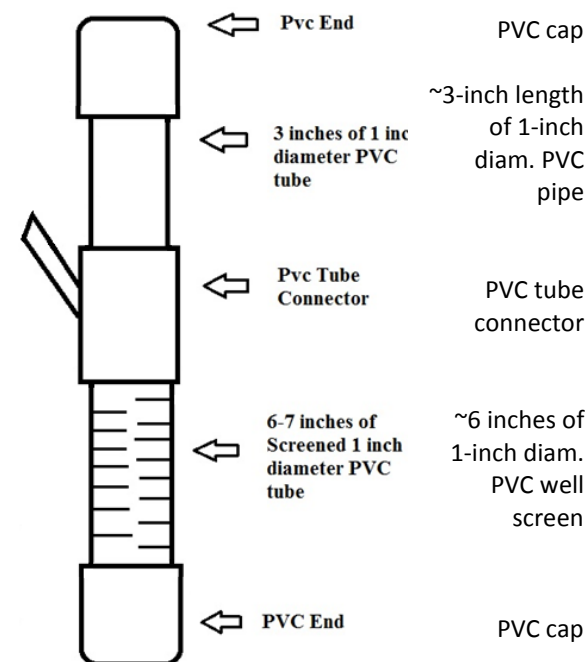
## Watershed Baseflow/Groundwater Samples

Baseflow/groundwater (GW) samples were collected at the locations displayed on Figure 1. The exception was location 1, where access concerns have prevented the collection of any samples to date.

Sampling was accomplished at all other locations using *mini piezometers* such as the one described schematically in Figure 3. Each of these was constructed onsite using PVC well screen, riser pipe, and fittings. A clear plastic sampling tube was attached to each mini piezometer. This tube was in turn connected at the surface to a peristaltic pump.

At sampling locations 2GW through 10GW mini piezometers were emplaced into the creek bottom sediments close to the shoreline so that the screened section was completely buried. Prior to sampling, each piezometer was pumped for a few minutes and then allowed to rest. After a short equilibration period, the pressure of groundwater in the tubes at each sampling location was visually gauged and measured. Positive pressure gradients (groundwater rising in the tube above the level of local surface water) were indicative of groundwater flow into the creek. If no positive gradient was observed, the mini piezometer was relocated to other spots closer to shore at the same sampling location until a positive gradient was observed.

Figure 3. Mini piezometer schematic.



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Piezometers displaying positive pressure gradients were sampled. To accomplish this, each was purged using a peristaltic pump and *low-flow/low-stress* sampling techniques.

Purging began with withdrawal of water from each mini piezometer at a rate that balanced discharge and recharge (equilibrium) and ended with the stabilization of field temperature, pH, and specific conductance readings as follows:

- pH = +/- 0.05
- Temperature = +/- 0.5 °C
- Conductivity = +/- 5%

Once the field parameters stabilized, groundwater was collected from the discharge stream of the peristaltic pump. For collection of VOC samples, the peristaltic pump discharge rate was placed on the lowest setting to minimize sample agitation.

Once collected, each sample was placed into a laboratory-provided sample container for subsequent laboratory analysis. Sample containers were labeled with waterproof ink, placed on ice in sealed laboratory-supplied coolers, and transported to the laboratory (TestAmerica Laboratories at 900 Lakeside Drive, Mobile, Alabama) for analysis within allotted holding times. Complete chain-of-custody documentation accompanied all coolers.

Personnel involved in groundwater (and all other) sampling wore clean latex gloves that were disposed of after each sample was collected, along with all tubing and other expendables used during the process.

Non-disposable sampling equipment (probes, etc.) was decontaminated prior to reuse using the following five-step procedure:

- 1) Phosphate-free detergent wash
- 2) Potable water rinse
- 3) Deionized water rinse
- 4) Isopropanol rinse
- 5) Deionized water rinse and air dry

# Three Mile Creek Watershed Management Plan

## Groundwater Sample Results Matrix

Reports detailing the Groundwater Sample Results can be found according to the site location in the table below. The reports follow at the end of this Appendix. For example, at site 1GW, the BOD results can be found in the report with “400-80120-5” on the cover.

Sample Site Name	Groundwater Sample Results Report Name						
	Gen Chem	O-P	P	Metals	BOD	Enterococci	Coliform, Fecal
<b>1GW</b>							
1	400-80120-1						
2		400-80120-2					
3			400-80120-3				
4				400-80120-4			
5					400-80120-5		
6-7						*	*
<b>2GW</b>							
1	*						
2		*					
3			*				
4				*			
5					*		
6-7						*	*
<b>3GW</b>							
1	400-80120-6						
2-7		400-80383-7	400-80383-7	400-80383-7	400-80383-7	400-80383-7	400-80383-7
<b>4GW</b>							
1	400-80120-7						
2		400-80120-8					
3			400-80120-9				

Sample Site Name	Groundwater Sample Results Report Name						
	Gen Chem	O-P	P	Metals	BOD	Enterococci	Coliform, Fecal
4				400-80120-10			
5					400-80120-11		
6-7						400-80383-6	400-80383-6
<b>5GW</b>							
1-5	400-80411-2	400-80411-2	400-80411-2	400-80411-2	400-80411-2	*	*
<b>6GW</b>							
1	400-80120-16						
2		400-80120-17					
3			400-80120-18				
4				400-80120-19			
5					400-80120-20		
6-7						400-80383-5	400-80383-5
<b>7GW</b>							
1	400-80118-10						
2		400-80118-11					
3			400-80118-12				
4				400-80118-13			
5					400-80118-14		
6-7						400-80383-4	400-80383-4
<b>8GW</b>							
1	400-80118-7						
2		400-80118-6					
3	400-80118-5		*				
4				400-80118-4			
5					400-80118-3		
6-7						400-80383-3	400-80383-3

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Sample Site Name	Groundwater Sample Results Report Name						
	Gen Chem	O-P	P	Metals	BOD	Enterococci	Coliform, Fecal
9GW							
1-7	400-80383-2	400-80383-2	400-80383-2	400-80383-2	400-80383-2	400-80383-2	400-80383-2
10GW							
1-7	400-80383-1	400-80383-1	400-80383-1	400-80383-1	400-80383-1	400-80383-1	400-80383-1

*\*Sample results not obtained.*

## Sediment Samples

Sediment (SD) samples were collected at the same locations as the baseflow/groundwater samples (Figure 1). These samples were collected from the upper 2 to 3 inches of sediment in the creek bed near the shoreline.

At each sampled location (2SD through 2SD), previously undisturbed sediment was collected using a glass container and then placed in a decontaminated glass mixing bowl. The material was then carefully homogenized with a glass mixing spoon. Subsequently, aliquots from the composited sample were placed in each laboratory-supplied sample container. These were then sealed, labeled, and placed on ice in laboratory-supplied coolers. The sealed coolers, along with completed chain-of-custody forms, were driven to the laboratory within allotted holding times for analysis.



## Sediment Sample Results Matrix

Reports detailing the Sediment Sample Results can be found according to the site location in the table below. The reports follow at the end of this Appendix. For example, at site 3SD, the Coliform, Fecal results can be found in the report with “400-80383-9” on the cover.

Sample Site Name	Sediment Sample Report Results		
	Metals	Gen Chem	Coliform, Fecal
<b>1SD</b>			
1	400-80120-12		
2		400-80120-13	
3			*
<b>2SD</b>			
1	*		
2		*	
3			*
<b>3SD</b>			
1-3	400-80383-9	400-80383-9	400-80383-9
<b>4SD</b>			
1	400-80120-14		
2		400-80120-15	
3			400-80383-13
<b>5SD</b>			
1-2	400-80411-1	400-80411-1	
3			*
<b>6SD</b>			
1	400-80120-21		



# Three Mile Creek Watershed Management Plan

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Sample Site Name	Sediment Sample Report Results		
	Metals	Gen Chem	Coliform, Fecal
2		400-80120-22	
3			400-80383-12
<b>7SD</b>			
1	400-80118-8		
2		400-80118-9	
3			400-80383-14
<b>8SD</b>			
1	400-80118-1		
2		400-80118-2	
3			400-80383-11
<b>9SD</b>			
1-3	400-80383-8	400-80383-8	400-80383-8
<b>10SD</b>			
1-3D	400-80383-10	400-80383-10	400-80383-10

*\*Sample results not obtained.*

### Hickory Street Landfill Samples

Four locations (HS-1, 2, 3, and 4) were targeted for acquisition of groundwater discharge samples in the vicinity of the Hickory Street Landfill at the locations shown on Figure 2. One of these samples (HS-1) was located upgradient of the landfill and three (HS-2 through 4) were located downgradient. The HS-1 location was accessed by land at Earle Street bridge in the Orange Grove subdivision just north of Beauregard Street. The three downgradient sampling sites were all accessed by boat.

At each HS sampling location, a mini piezometer (Figure 3) was constructed and emplaced into the creek bottom close to the shoreline as described above. This allowed for low-flow/low-stress sample acquisition using a peristaltic pump. All HS groundwater sample acquisition, handling, and documentation/transport procedures, as well as all decontamination procedures, were carried out as described previously.

Four locations (HS-1, 2, 3, and 4) were targeted for acquisition of groundwater discharge samples in the vicinity of the Hickory Street Landfill at the locations shown on Figure 2. One of these samples (HS-1) was located upgradient of the landfill and three (HS-2 through 4) were located downgradient. The HS-1 location was accessed by land at Earle Street bridge in the Orange Grove subdivision just north of Beauregard Street. The three downgradient sampling sites were all accessed by boat.

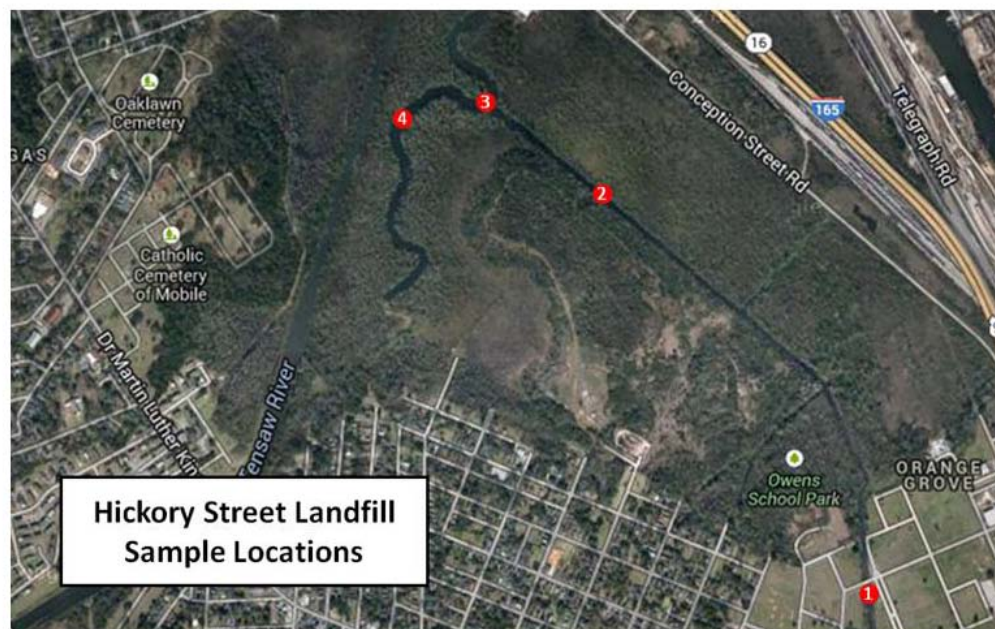


Figure 2. Locations of Hickory Street Landfill targeted groundwater (HS) samples.

# Three Mile Creek Watershed Management Plan

## Stormwater Sample Results Matrix

Reports detailing the Stormwater Sample Results can be found according to the site location in the table below. The reports follow at the end of this Appendix. For example, at site HS2, the Phenol results can be found in the report with “400-80278-11” on the cover.

Sample Site Name	Stormwater Sample Report Results									
	P	O-P	Metals	VOC	Semi-VOC	PCB	BOD	Phenol	Gen Chem	Cyanide
<b>HS1</b>										
1-14	400-80411-3	400-80411-3	400-80411-3	400-80411-3	400-80411-3	400-80411-3	400-80411-3	400-80411-3	400-80411-3	400-80411-3
<b>HS2</b>										
1	400-80278-27	-	-	-	-	-	-	-	-	-
2		400-80278-2								
3			400-80278-3							
4				400-80278-4						
6					400-80278-6					
8						400-80278-8				
10							400-80278-10			
11								400-80278-11		
12									400-80278-12	
13										400-80278-13
14									400-80278-14	
<b>HS3</b>										
1	400-80278-28									
2		400-80278-15								
3			400-80278-16							
4				400-80278-17						
6					400-80284-1					

Sample Site Name	Stormwater Sample Report Results									
	P	O-P	Metals	VOC	Semi-VOC	PCB	BOD	Phenol	Gen Chem	Cyanide
8						400-80284-3				
10							400-80278-19			
11								400-80278-20		
12									*	
13										400-80278-22
14									*	
HS4										
1	400-80278-29									
2		400-80278-23								
3			400-80278-24							
4				400-80278-25						
6					400-80284-5					
8						400-80284-7				
10							400-80284-9			
11								400-80284-10		
13										400-80284-12
14									400-80284-13	

\*Sample results not obtained.

# Three Mile Creek Watershed Management Plan

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Laboratory Reports from USA Sampling Discussed Above

Continued on next page.

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola

3355 McLemore Drive

Pensacola, FL 32514

Tel: (850)474-1001

TestAmerica Job ID: 400-80118-1

Client Project/Site: Three Mile CreekUSA-Surface Water/Solids

For:

Dewberry

2301 Rexwoods Dr.

Raleigh, North Carolina 27607

Attn: Michael Hanson



Authorized for release by:

9/30/2013 3:39:01 PM

Mike Nance, Project Manager II

(251)666-6633

[mike.nance@testamericainc.com](mailto:mike.nance@testamericainc.com)

### LINKS

Review your project  
results through

TotalAccess

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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## Definitions/Glossary

Client: Dewberry

TestAmerica Job ID: 400-80118-1

Project/Site: Three Mile CreekUSA-Surface Water/Solids

### Qualifiers

#### Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### General Chemistry

Qualifier	Qualifier Description
*	LCS or LCSD exceeds the control limits
F	MS/MSD Recovery and/or RPD exceeds the control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)



## Case Narrative

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Surface Water/Solids

TestAmerica Job ID: 400-80118-1

**Job ID: 400-80118-1**

**Laboratory: TestAmerica Pensacola**

### Narrative

#### Job Narrative 400-80118-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 9/16/2013 9:43 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.7° C.

#### Metals

No analytical or quality issues were noted.

#### General Chemistry

Method(s) 160.4, SM 2540G: The laboratory control sample (LCS) for batch 192170 recovered outside control limits for the following analytes: Volatile Total Solids. These analytes were biased high in the LCS.

Method(s) 351.2: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 192653 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) 351.2: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 193102 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) 365.4: The matrix spike duplicate (MSD) recoveries for batch 193072 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other analytical or quality issues were noted.

#### Organic Prep

No analytical or quality issues were noted.

## Sample Summary

Client: Dewberry

TestAmerica Job ID: 400-80118-1

Project/Site: Three Mile CreekUSA-Surface Water/Solids

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-80118-1	8S-001	Solid	09/15/13 10:55	09/16/13 09:43
400-80118-2	8S-002	Solid	09/15/13 10:55	09/16/13 09:43
400-80118-3	8G-005	Water	09/15/13 10:25	09/16/13 09:43
400-80118-4	8G-004	Water	09/15/13 10:20	09/16/13 09:43
400-80118-5	8G-003	Water	09/15/13 10:15	09/16/13 09:43
400-80118-6	8G-002	Water	09/15/13 10:10	09/16/13 09:43
400-80118-7	8G-001	Water	09/15/13 10:10	09/16/13 09:43
400-80118-8	7S-001	Solid	09/15/13 12:07	09/16/13 09:43
400-80118-9	7S-002	Solid	09/15/13 12:07	09/16/13 09:43
400-80118-10	7G-001	Water	09/15/13 11:45	09/16/13 09:43
400-80118-11	7G-002	Water	09/15/13 11:53	09/16/13 09:43
400-80118-12	7G-003	Water	09/15/13 11:51	09/16/13 09:43
400-80118-13	7G-004	Water	09/15/13 12:06	09/16/13 09:43
400-80118-14	7G-005	Water	09/15/13 12:05	09/16/13 09:43

# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Surface Water/Solids

TestAmerica Job ID: 400-80118-1

**Client Sample ID: 8S- 001**

**Date Collected: 09/15/13 10:55**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80118-1**

**Matrix: Solid**

**Percent Solids: 78.1**

## Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.24		0.60	0.24	mg/Kg	☼	09/18/13 08:50	09/19/13 22:27	1
Arsenic	<0.48		0.60	0.48	mg/Kg	☼	09/18/13 08:50	09/19/13 22:27	1
Barium	1.5		1.2	0.24	mg/Kg	☼	09/18/13 08:50	09/19/13 22:27	1
Cadmium	<0.12		0.60	0.12	mg/Kg	☼	09/18/13 08:50	09/19/13 22:27	1
Chromium	5.4		0.60	0.24	mg/Kg	☼	09/18/13 08:50	09/19/13 22:27	1
Lead	1.5		0.60	0.24	mg/Kg	☼	09/18/13 08:50	09/19/13 22:27	1
Selenium	<0.48		1.2	0.48	mg/Kg	☼	09/18/13 08:50	09/19/13 22:27	1

## Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	0.023		0.020	0.012	mg/Kg	☼	09/19/13 08:45	09/19/13 13:44	1

**Client Sample ID: 8S-002**

**Date Collected: 09/15/13 10:55**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80118-2**

**Matrix: Solid**

**Percent Solids: 78.6**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	140		15	7.8	mg/Kg	☼	09/26/13 14:59	09/27/13 15:40	1
Phosphorus, Total	15		15	4.5	mg/Kg	☼	09/26/13 15:10	09/27/13 11:48	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Volatile Solids	0.30	*	0.10	0.10	%			09/17/13 18:01	1

## General Chemistry - ASTM Leach

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<3.0		10	3.0	mg/L			09/30/13 13:44	1

**Client Sample ID: 8G-005**

**Date Collected: 09/15/13 10:25**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80118-3**

**Matrix: Water**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	7.8		2.0	2.0	mg/L			09/17/13 10:07	1

**Client Sample ID: 8G-004**

**Date Collected: 09/15/13 10:20**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80118-4**

**Matrix: Water**

## Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.0020		0.0050	0.0020	mg/L		09/18/13 14:46	09/19/13 17:35	1
Arsenic	<0.0040		0.0050	0.0040	mg/L		09/18/13 14:46	09/19/13 17:35	1
Barium	0.093		0.010	0.0020	mg/L		09/18/13 14:46	09/19/13 17:35	1
Cadmium	<0.0010		0.0050	0.0010	mg/L		09/18/13 14:46	09/19/13 17:35	1
Chromium	<0.0020		0.0050	0.0020	mg/L		09/18/13 14:46	09/19/13 17:35	1
Lead	0.0050		0.0050	0.0020	mg/L		09/18/13 14:46	09/19/13 17:35	1
Selenium	<0.0040		0.010	0.0040	mg/L		09/18/13 14:46	09/19/13 17:35	1

TestAmerica Pensacola

# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Surface Water/Solids

TestAmerica Job ID: 400-80118-1

**Client Sample ID: 8G-004**

**Date Collected: 09/15/13 10:20**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80118-4**

**Matrix: Water**

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		09/26/13 08:30	09/27/13 15:48	1

**Client Sample ID: 8G-003**

**Date Collected: 09/15/13 10:15**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80118-5**

**Matrix: Water**

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.81		0.050	0.016	mg/L			09/19/13 15:03	1
Nitrogen, Kjeldahl	1.5		0.50	0.26	mg/L		09/18/13 12:49	09/19/13 12:22	1
Nitrate Nitrite as N	0.019 J		0.050	0.018	mg/L			09/23/13 08:34	1
Chemical Oxygen Demand	24		10	6.4	mg/L			09/24/13 14:57	1

**Client Sample ID: 8G-002**

**Date Collected: 09/15/13 10:10**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80118-6**

**Matrix: Water**

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ortho-Phosphate	<0.015		0.050	0.015	mg/L			09/16/13 18:23	1

**Client Sample ID: 8G-001**

**Date Collected: 09/15/13 10:10**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80118-7**

**Matrix: Water**

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.80		0.050	0.016	mg/L			09/19/13 15:04	1
Chemical Oxygen Demand	23		10	6.4	mg/L			09/24/13 14:57	1

**Client Sample ID: 7S-001**

**Date Collected: 09/15/13 12:07**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80118-8**

**Matrix: Solid**

**Percent Solids: 80.2**

**Method: 6010B - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.24		0.60	0.24	mg/Kg	☼	09/18/13 08:50	09/19/13 22:30	1
Arsenic	1.6		0.60	0.48	mg/Kg	☼	09/18/13 08:50	09/19/13 22:30	1
Barium	3.9		1.2	0.24	mg/Kg	☼	09/18/13 08:50	09/19/13 22:30	1
Cadmium	<0.12		0.60	0.12	mg/Kg	☼	09/18/13 08:50	09/19/13 22:30	1
Chromium	1.5		0.60	0.24	mg/Kg	☼	09/18/13 08:50	09/19/13 22:30	1
Lead	1.7		0.60	0.24	mg/Kg	☼	09/18/13 08:50	09/19/13 22:30	1
Selenium	<0.48		1.2	0.48	mg/Kg	☼	09/18/13 08:50	09/19/13 22:30	1

**Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	<0.011		0.019	0.011	mg/Kg	☼	09/19/13 08:45	09/19/13 13:57	1

TestAmerica Pensacola

# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Surface Water/Solids

TestAmerica Job ID: 400-80118-1

**Client Sample ID: 7S-002**

**Date Collected: 09/15/13 12:07**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80118-9**

**Matrix: Solid**

**Percent Solids: 80.9**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	140		12	6.3	mg/Kg	☼	09/20/13 14:33	09/24/13 11:07	1
Phosphorus, Total	24		13	3.9	mg/Kg	☼	09/26/13 15:10	09/27/13 11:51	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Volatile Solids	0.50	*	0.10	0.10	%			09/17/13 18:01	1

## General Chemistry - ASTM Leach

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<3.0		10	3.0	mg/L			09/30/13 13:44	1

**Client Sample ID: 7G-001**

**Date Collected: 09/15/13 11:45**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80118-10**

**Matrix: Water**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.26		0.050	0.016	mg/L			09/19/13 15:06	1
Nitrogen, Kjeldahl	3.5		0.50	0.26	mg/L		09/18/13 12:49	09/19/13 12:23	1
Chemical Oxygen Demand	56		10	6.4	mg/L			09/24/13 14:57	1

**Client Sample ID: 7G-002**

**Date Collected: 09/15/13 11:53**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80118-11**

**Matrix: Water**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ortho-Phosphate	<0.015		0.050	0.015	mg/L			09/16/13 18:23	1

**Client Sample ID: 7G-003**

**Date Collected: 09/15/13 11:51**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80118-12**

**Matrix: Water**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phosphorus	0.11		0.0020	0.0010	mg/L		09/19/13 10:48	09/21/13 07:07	1

**Client Sample ID: 7G-004**

**Date Collected: 09/15/13 12:06**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80118-13**

**Matrix: Water**

## Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.0020		0.0050	0.0020	mg/L		09/18/13 14:46	09/19/13 17:38	1
Arsenic	<0.0040		0.0050	0.0040	mg/L		09/18/13 14:46	09/19/13 17:38	1
Barium	0.040		0.010	0.0020	mg/L		09/18/13 14:46	09/19/13 17:38	1
Cadmium	<0.0010		0.0050	0.0010	mg/L		09/18/13 14:46	09/19/13 17:38	1
Chromium	<0.0020		0.0050	0.0020	mg/L		09/18/13 14:46	09/19/13 17:38	1
Lead	0.0036	J	0.0050	0.0020	mg/L		09/18/13 14:46	09/19/13 17:38	1
Selenium	<0.0040		0.010	0.0040	mg/L		09/18/13 14:46	09/19/13 17:38	1

TestAmerica Pensacola

## Client Sample Results

Client: Dewberry

TestAmerica Job ID: 400-80118-1

Project/Site: Three Mile CreekUSA-Surface Water/Solids

**Client Sample ID: 7G-004**

**Date Collected: 09/15/13 12:06**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80118-13**

**Matrix: Water**

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L	-	09/25/13 08:40	09/25/13 14:54	1

**Client Sample ID: 7G-005**

**Date Collected: 09/15/13 12:05**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80118-14**

**Matrix: Water**

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	3.0		2.0	2.0	mg/L	-		09/17/13 10:08	1

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Surface Water/Solids

TestAmerica Job ID: 400-80118-1

## Method: 6010B - Metals (ICP)

Lab Sample ID: MB 400-191919/1-A

Matrix: Solid

Analysis Batch: 192296

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 191919

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.20		0.50	0.20	mg/Kg		09/18/13 08:50	09/19/13 21:16	1
Arsenic	<0.40		0.50	0.40	mg/Kg		09/18/13 08:50	09/19/13 21:16	1
Barium	<0.20		0.99	0.20	mg/Kg		09/18/13 08:50	09/19/13 21:16	1
Cadmium	<0.099		0.50	0.099	mg/Kg		09/18/13 08:50	09/19/13 21:16	1
Chromium	<0.20		0.50	0.20	mg/Kg		09/18/13 08:50	09/19/13 21:16	1
Lead	<0.20		0.50	0.20	mg/Kg		09/18/13 08:50	09/19/13 21:16	1
Selenium	<0.40		0.99	0.40	mg/Kg		09/18/13 08:50	09/19/13 21:16	1

Lab Sample ID: LCS 400-191919/2-A

Matrix: Solid

Analysis Batch: 192296

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 191919

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Silver	55.2	52.6		mg/Kg		95	66 - 134
Arsenic	137	121		mg/Kg		88	83 - 118
Barium	290	267		mg/Kg		92	83 - 118
Cadmium	85.0	75.2		mg/Kg		88	79 - 104
Chromium	168	157		mg/Kg		93	82 - 118
Lead	120	119		mg/Kg		99	83 - 117
Selenium	43.5	37.3		mg/Kg		86	78 - 122

Lab Sample ID: MB 400-192083/1-A

Matrix: Water

Analysis Batch: 192296

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 192083

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.0020		0.0050	0.0020	mg/L		09/18/13 14:46	09/19/13 16:23	1
Arsenic	<0.0040		0.0050	0.0040	mg/L		09/18/13 14:46	09/19/13 16:23	1
Barium	<0.0020		0.010	0.0020	mg/L		09/18/13 14:46	09/19/13 16:23	1
Cadmium	<0.0010		0.0050	0.0010	mg/L		09/18/13 14:46	09/19/13 16:23	1
Chromium	<0.0020		0.0050	0.0020	mg/L		09/18/13 14:46	09/19/13 16:23	1
Lead	<0.0020		0.0050	0.0020	mg/L		09/18/13 14:46	09/19/13 16:23	1
Selenium	<0.0040		0.010	0.0040	mg/L		09/18/13 14:46	09/19/13 16:23	1

Lab Sample ID: LCS 400-192083/2-A

Matrix: Water

Analysis Batch: 192296

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 192083

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Silver	0.500	0.510		mg/L		102	80 - 120
Arsenic	1.00	0.988		mg/L		99	80 - 120
Barium	1.00	1.02		mg/L		102	80 - 120
Cadmium	0.500	0.506		mg/L		101	80 - 120
Chromium	1.00	1.03		mg/L		103	80 - 120
Lead	1.00	1.02		mg/L		102	80 - 120
Selenium	1.00	1.05		mg/L		105	80 - 120

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Surface Water/Solids

TestAmerica Job ID: 400-80118-1

## Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 400-192744/14-A

Matrix: Water

Analysis Batch: 192812

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192744

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L	-	09/25/13 08:40	09/25/13 14:00	1

Lab Sample ID: LCS 400-192744/15-A

Matrix: Water

Analysis Batch: 192812

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 192744

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00100	0.000934		mg/L	-	93	80 - 120

Lab Sample ID: MB 400-192871/14-A

Matrix: Water

Analysis Batch: 193104

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192871

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0000700	J	0.00020	0.000070	mg/L	-	09/26/13 08:30	09/27/13 15:44	1

Lab Sample ID: LCS 400-192871/15-A

Matrix: Water

Analysis Batch: 193104

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 192871

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00100	0.000974		mg/L	-	97	80 - 120

## Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Lab Sample ID: MB 400-192141/14-A

Matrix: Solid

Analysis Batch: 192231

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192141

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	<0.024		0.040	0.024	mg/Kg	-	09/19/13 08:45	09/19/13 13:19	1

Lab Sample ID: LCS 400-192141/15-A

Matrix: Solid

Analysis Batch: 192231

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 192141

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Hg	7.69	6.71		mg/Kg	-	87	80 - 120

## Method: 160.4 - Solids, Total Volatile (TVS)

Lab Sample ID: MB 400-192170/1

Matrix: Solid

Analysis Batch: 192170

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Volatile Solids	<0.10		0.10	0.10	%	-		09/17/13 18:01	1

TestAmerica Pensacola



# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Surface Water/Solids

TestAmerica Job ID: 400-80118-1

## Method: 160.4 - Solids, Total Volatile (TVS) (Continued)

Lab Sample ID: LCS 400-192170/2

Matrix: Solid

Analysis Batch: 192170

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Volatile Solids	0.0412	<0.10	*	%		117	79 - 112

Lab Sample ID: 400-80118-9 DU

Matrix: Solid

Analysis Batch: 192170

Client Sample ID: 7S-002

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Volatile Solids	0.50	*	0.600	*	%		18	4

## Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 400-192251/15

Matrix: Water

Analysis Batch: 192251

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.016		0.050	0.016	mg/L			09/19/13 14:39	1

Lab Sample ID: LCS 400-192251/16

Matrix: Water

Analysis Batch: 192251

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.00	2.17		mg/L		109	90 - 110

Lab Sample ID: MRL 400-192251/13 MRL

Matrix: Water

Analysis Batch: 192251

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	0.0500	0.0512		mg/L		102	50 - 150

Lab Sample ID: 400-80118-10 MS

Matrix: Water

Analysis Batch: 192251

Client Sample ID: 7G-001

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	0.26		1.00	1.28		mg/L		103	90 - 110

Lab Sample ID: 400-80118-10 MSD

Matrix: Water

Analysis Batch: 192251

Client Sample ID: 7G-001

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	0.26		1.00	1.27		mg/L		102	90 - 110	1	11

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Surface Water/Solids

TestAmerica Job ID: 400-80118-1

## Method: 351.2 - Nitrogen, Total Kjeldahl

Lab Sample ID: MB 400-192065/1-A

Matrix: Water

Analysis Batch: 192217

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192065

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	<0.26		0.50	0.26	mg/L		09/18/13 12:49	09/19/13 12:12	1

Lab Sample ID: LCS 400-192065/2-A

Matrix: Water

Analysis Batch: 192217

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 192065

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Kjeldahl	10.0	9.76		mg/L		98	90 - 110

Lab Sample ID: MRL 400-192217/11 MRL

Matrix: Water

Analysis Batch: 192217

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Kjeldahl	0.500	0.466	J	mg/L		93	50 - 150

Lab Sample ID: MB 400-192357/1-A

Matrix: Solid

Analysis Batch: 192653

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192357

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	<0.26		0.50	0.26	mg/Kg		09/20/13 14:33	09/24/13 11:03	1

Lab Sample ID: LCS 400-192357/2-A

Matrix: Solid

Analysis Batch: 192653

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 192357

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Kjeldahl	10.0	9.89		mg/Kg		99	75 - 125

Lab Sample ID: 400-80118-9 MS

Matrix: Solid

Analysis Batch: 192653

Client Sample ID: 7S-002

Prep Type: Total/NA

Prep Batch: 192357

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Kjeldahl	140		241	420	F	mg/Kg	✱	115	90 - 110

Lab Sample ID: 400-80118-9 MSD

Matrix: Solid

Analysis Batch: 192653

Client Sample ID: 7S-002

Prep Type: Total/NA

Prep Batch: 192357

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrogen, Kjeldahl	140		241	423	F	mg/Kg	✱	116	90 - 110	1	20

Lab Sample ID: MRL 400-192653/11 MRL

Matrix: Solid

Analysis Batch: 192653

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Kjeldahl	0.500	0.405	J	mg/Kg		81	

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Surface Water/Solids

TestAmerica Job ID: 400-80118-1

Lab Sample ID: MB 400-192948/1-A  
Matrix: Solid  
Analysis Batch: 193102

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 192948

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	<0.26		0.50	0.26	mg/Kg		09/26/13 14:59	09/27/13 15:36	1

Lab Sample ID: LCS 400-192948/2-A  
Matrix: Solid  
Analysis Batch: 193102

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 192948

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Kjeldahl	10.0	9.49		mg/Kg		95	75 - 125

Lab Sample ID: 400-80118-2 MS  
Matrix: Solid  
Analysis Batch: 193102

Client Sample ID: 8S-002  
Prep Type: Total/NA  
Prep Batch: 192948

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Kjeldahl	140		235	433	F	mg/Kg	✱	123	90 - 110

Lab Sample ID: 400-80118-2 MSD  
Matrix: Solid  
Analysis Batch: 193102

Client Sample ID: 8S-002  
Prep Type: Total/NA  
Prep Batch: 192948

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrogen, Kjeldahl	140		221	408	F	mg/Kg	✱	119	90 - 110	6	20

Lab Sample ID: MRL 400-193102/11 MRL  
Matrix: Solid  
Analysis Batch: 193102

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Kjeldahl	0.500	0.651		mg/Kg		130	

## Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 400-192484/14  
Matrix: Water  
Analysis Batch: 192484

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.018		0.050	0.018	mg/L			09/23/13 08:24	1

Lab Sample ID: LCS 400-192484/15  
Matrix: Water  
Analysis Batch: 192484

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	0.500	0.522		mg/L		104	90 - 110

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Surface Water/Solids

TestAmerica Job ID: 400-80118-1

## Method: 353.2 - Nitrogen, Nitrate-Nitrite (Continued)

Lab Sample ID: MRL 400-192484/12 MRL  
Matrix: Water  
Analysis Batch: 192484

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	0.0500	0.0493	J	mg/L		99	50 - 150

## Method: 365.1 - Phosphorus, Ortho

Lab Sample ID: MB 400-192334/27  
Matrix: Water  
Analysis Batch: 192334

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ortho-Phosphate	<0.015		0.050	0.015	mg/L			09/16/13 19:07	1

Lab Sample ID: LCS 400-192334/12  
Matrix: Water  
Analysis Batch: 192334

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
ortho-Phosphate	0.300	0.299		mg/L		100	90 - 110

## Method: 365.1 - Phosphorus, Total

Lab Sample ID: MB 640-104585/3-A  
Matrix: Water  
Analysis Batch: 104637

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 104585

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phosphorus	<0.0010		0.0020	0.0010	mg/L		09/19/13 10:48	09/21/13 06:41	1

Lab Sample ID: LCS 640-104585/5-A  
Matrix: Water  
Analysis Batch: 104637

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 104585

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phosphorus	0.100	0.0941		mg/L		94	90 - 110

Lab Sample ID: LCSD 640-104585/6-A  
Matrix: Water  
Analysis Batch: 104637

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA  
Prep Batch: 104585

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phosphorus	0.100	0.0920		mg/L		92	90 - 110	2	30

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Surface Water/Solids

TestAmerica Job ID: 400-80118-1

## Method: 365.4 - Phosphorus, Total

Lab Sample ID: MB 400-192951/1-A

Matrix: Solid

Analysis Batch: 193072

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192951

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phosphorus, Total	<0.15		0.50	0.15	mg/Kg		09/26/13 15:10	09/27/13 11:43	1

Lab Sample ID: LCS 400-192951/2-A

Matrix: Solid

Analysis Batch: 193072

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 192951

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phosphorus, Total	2.60	2.53		mg/Kg		97	75 - 125

Lab Sample ID: 400-80118-2 MS

Matrix: Solid

Analysis Batch: 193072

Client Sample ID: 8S-002

Prep Type: Total/NA

Prep Batch: 192951

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Phosphorus, Total	15		23.5	34.7		mg/Kg	☼	83	75 - 125

Lab Sample ID: 400-80118-2 MSD

Matrix: Solid

Analysis Batch: 193072

Client Sample ID: 8S-002

Prep Type: Total/NA

Prep Batch: 192951

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phosphorus, Total	15		22.1	27.7	F	mg/Kg	☼	57	75 - 125	22	20

Lab Sample ID: MRL 400-193072/13 MRL

Matrix: Solid

Analysis Batch: 193072

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Phosphorus, Total	0.100	0.141	J	mg/Kg		141	

## Method: SM 5210B - BOD, 5-Day

Lab Sample ID: USB 400-192570/1 USB

Matrix: Water

Analysis Batch: 192570

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	<2.0		2.0	2.0	mg/L			09/17/13 18:07	1

Lab Sample ID: LCS 400-192570/2

Matrix: Water

Analysis Batch: 192570

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Biochemical Oxygen Demand	198	203		mg/L		103	85 - 115

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Surface Water/Solids

TestAmerica Job ID: 400-80118-1

## Method: SM 5210B - BOD, 5-Day (Continued)

Lab Sample ID: LCSD 400-192570/3

Matrix: Water

Analysis Batch: 192570

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Biochemical Oxygen Demand	198	194		mg/L		98	85 - 115	5	27

## Method: SM 5220D - COD

Lab Sample ID: MB 490-110826/3

Matrix: Solid

Analysis Batch: 110826

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<3.0		10	3.0	mg/L			09/30/13 13:44	1

Lab Sample ID: LCS 490-110826/4

Matrix: Solid

Analysis Batch: 110826

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chemical Oxygen Demand	20.0	19.8		mg/L		99	90 - 110		

Lab Sample ID: LCSD 490-110826/5

Matrix: Solid

Analysis Batch: 110826

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chemical Oxygen Demand	20.0	20.6		mg/L		103	90 - 110	4	20

Lab Sample ID: MB 400-192686/1

Matrix: Water

Analysis Batch: 192686

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<6.4		10	6.4	mg/L			09/24/13 14:57	1

Lab Sample ID: LCS 400-192686/2

Matrix: Water

Analysis Batch: 192686

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chemical Oxygen Demand	50.0	53.6		mg/L		107	90 - 110		

Lab Sample ID: LB 490-108016/1-A LB

Matrix: Solid

Analysis Batch: 110826

Client Sample ID: Method Blank

Prep Type: ASTM Leach

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<3.0		10	3.0	mg/L			09/30/13 13:44	1
Chemical Oxygen Demand	<3.0		10	3.0	mg/L			09/30/13 13:44	1

TestAmerica Pensacola

## QC Sample Results

Client: Dewberry

TestAmerica Job ID: 400-80118-1

Project/Site: Three Mile CreekUSA-Surface Water/Solids

### Method: SM 5220D - COD (Continued)

Lab Sample ID: 400-80118-9 DU

Matrix: Solid

Analysis Batch: 110826

Client Sample ID: 7S-002

Prep Type: ASTM Leach

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chemical Oxygen Demand	<3.0		<3.0		mg/L	—	NC	20

# Lab Chronicle

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Surface Water/Solids

TestAmerica Job ID: 400-80118-1

**Client Sample ID: 8S- 001**

**Date Collected: 09/15/13 10:55**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80118-1**

**Matrix: Solid**

**Percent Solids: 78.1**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7471B			192141	09/19/13 08:45	JAP	TAL PEN
Total/NA	Analysis	7471B		1	192231	09/19/13 13:44	JAP	TAL PEN
Total/NA	Prep	3050B			191919	09/18/13 08:50	NAB	TAL PEN
Total/NA	Analysis	6010B		1	192296	09/19/13 22:27	SLM	TAL PEN
Total/NA	Analysis	Moisture		1	192016	09/17/13 17:00	LEC	TAL PEN

**Client Sample ID: 8S-002**

**Date Collected: 09/15/13 10:55**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80118-2**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	192016	09/17/13 17:00	LEC	TAL PEN
Total/NA	Analysis	160.4		1	192170	09/17/13 18:01	CAC	TAL PEN
Total/NA	Prep	365.2/365.3/365			192951	09/26/13 15:10	JAT	TAL PEN
Total/NA	Analysis	365.4		1	193072	09/27/13 11:48	JAT	TAL PEN
Total/NA	Prep	351.2			192948	09/26/13 14:59	JAT	TAL PEN
Total/NA	Analysis	351.2		1	193102	09/27/13 15:40	JAT	TAL PEN
ASTM Leach	Leach	D3987-85			108016	09/18/13 12:29	SJM	TAL NSH
ASTM Leach	Analysis	SM 5220D		1	110826	09/30/13 13:44	MSJ	TAL NSH

**Client Sample ID: 8G-005**

**Date Collected: 09/15/13 10:25**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80118-3**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 5210B		1	192570		GMF	TAL PEN
					(Start)	09/17/13 10:07		
					(End)	09/22/13 17:03		

**Client Sample ID: 8G-004**

**Date Collected: 09/15/13 10:20**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80118-4**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			192083	09/18/13 14:46	NAB	TAL PEN
Total Recoverable	Analysis	6010B		1	192296	09/19/13 17:35	SLM	TAL PEN
Total/NA	Prep	7470A			192871	09/26/13 08:30	JAP	TAL PEN
Total/NA	Analysis	7470A		1	193104	09/27/13 15:48	JAP	TAL PEN



# Lab Chronicle

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Surface Water/Solids

TestAmerica Job ID: 400-80118-1

**Client Sample ID: 8G-003**

**Date Collected: 09/15/13 10:15**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80118-5**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	351.2			192065	09/18/13 12:49	JAT	TAL PEN
Total/NA	Analysis	351.2		1	192217	09/19/13 12:22	JAT	TAL PEN
Total/NA	Analysis	350.1		1	192251	09/19/13 15:03	KJR	TAL PEN
Total/NA	Analysis	353.2		1	192484	09/23/13 08:34	KJR	TAL PEN
Total/NA	Analysis	SM 5220D		1	192686	09/24/13 14:57	JMH	TAL PEN

**Client Sample ID: 8G-002**

**Date Collected: 09/15/13 10:10**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80118-6**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	365.1		1	192334	09/16/13 18:23	LSS	TAL PEN

**Client Sample ID: 8G-001**

**Date Collected: 09/15/13 10:10**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80118-7**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		1	192251	09/19/13 15:04	KJR	TAL PEN
Total/NA	Analysis	SM 5220D		1	192686	09/24/13 14:57	JMH	TAL PEN

**Client Sample ID: 7S-001**

**Date Collected: 09/15/13 12:07**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80118-8**

**Matrix: Solid**

**Percent Solids: 80.2**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7471B			192141	09/19/13 08:45	JAP	TAL PEN
Total/NA	Analysis	7471B		1	192231	09/19/13 13:57	JAP	TAL PEN
Total/NA	Prep	3050B			191919	09/18/13 08:50	NAB	TAL PEN
Total/NA	Analysis	6010B		1	192296	09/19/13 22:30	SLM	TAL PEN
Total/NA	Analysis	Moisture		1	192016	09/17/13 17:00	LEC	TAL PEN

**Client Sample ID: 7S-002**

**Date Collected: 09/15/13 12:07**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80118-9**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	192016	09/17/13 17:00	LEC	TAL PEN
Total/NA	Analysis	160.4		1	192170	09/17/13 18:01	CAC	TAL PEN
Total/NA	Prep	351.2			192357	09/20/13 14:33	JAT	TAL PEN
Total/NA	Analysis	351.2		1	192653	09/24/13 11:07	JAT	TAL PEN
Total/NA	Prep	365.2/365.3/365			192951	09/26/13 15:10	JAT	TAL PEN

TestAmerica Pensacola

# Lab Chronicle

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Surface Water/Solids

TestAmerica Job ID: 400-80118-1

## Client Sample ID: 7S-002

Date Collected: 09/15/13 12:07

Date Received: 09/16/13 09:43

## Lab Sample ID: 400-80118-9

Matrix: Solid

Percent Solids: 80.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	365.4		1	193072	09/27/13 11:51	JAT	TAL PEN
ASTM Leach	Leach	D3987-85			108016	09/18/13 12:29	SJM	TAL NSH
ASTM Leach	Analysis	SM 5220D		1	110826	09/30/13 13:44	MSJ	TAL NSH

## Client Sample ID: 7G-001

Date Collected: 09/15/13 11:45

Date Received: 09/16/13 09:43

## Lab Sample ID: 400-80118-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	351.2			192065	09/18/13 12:49	JAT	TAL PEN
Total/NA	Analysis	351.2		1	192217	09/19/13 12:23	JAT	TAL PEN
Total/NA	Analysis	350.1		1	192251	09/19/13 15:06	KJR	TAL PEN
Total/NA	Analysis	SM 5220D		1	192686	09/24/13 14:57	JMH	TAL PEN

## Client Sample ID: 7G-002

Date Collected: 09/15/13 11:53

Date Received: 09/16/13 09:43

## Lab Sample ID: 400-80118-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	365.1		1	192334	09/16/13 18:23	LSS	TAL PEN

## Client Sample ID: 7G-003

Date Collected: 09/15/13 11:51

Date Received: 09/16/13 09:43

## Lab Sample ID: 400-80118-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	365.2/365.3/365			104585	09/19/13 10:48	QMC	TAL TAL
Total/NA	Analysis	365.1		1	104637	09/21/13 07:07	QMC	TAL TAL

## Client Sample ID: 7G-004

Date Collected: 09/15/13 12:06

Date Received: 09/16/13 09:43

## Lab Sample ID: 400-80118-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			192083	09/18/13 14:46	NAB	TAL PEN
Total Recoverable	Analysis	6010B		1	192296	09/19/13 17:38	SLM	TAL PEN
Total/NA	Prep	7470A			192744	09/25/13 08:40	JAP	TAL PEN
Total/NA	Analysis	7470A		1	192812	09/25/13 14:54	JAP	TAL PEN

TestAmerica Pensacola

Lab Chronicle

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Surface Water/Solids

TestAmerica Job ID: 400-80118-1

**Client Sample ID: 7G-005**  
**Date Collected: 09/15/13 12:05**  
**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80118-14**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 5210B		1	192570	(Start) 09/17/13 10:08 (End) 09/22/13 17:03	GMF	TAL PEN

**Laboratory References:**  
TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177  
TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001  
TAL TAL = TestAmerica Tallahassee, 2846 Industrial Plaza Drive, Tallahassee, FL 32301, TEL (850)878-3994

## Method Summary

Client: Dewberry

TestAmerica Job ID: 400-80118-1

Project/Site: Three Mile CreekUSA-Surface Water/Solids

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL PEN
7470A	Mercury (CVAA)	SW846	TAL PEN
7471B	Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)	SW846	TAL PEN
160.4	Solids, Total Volatile (TVS)	MCAWW	TAL PEN
350.1	Nitrogen, Ammonia	MCAWW	TAL PEN
351.2	Nitrogen, Total Kjeldahl	MCAWW	TAL PEN
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL PEN
365.1	Phosphorus, Ortho	EPA	TAL PEN
365.1	Phosphorus, Total	EPA	TAL TAL
365.4	Phosphorus, Total	EPA	TAL PEN
Moisture	Percent Moisture	EPA	TAL PEN
SM 5210B	BOD, 5-Day	SM	TAL PEN
SM 5220D	COD	SM	TAL PEN
SM 5220D	COD	SM	TAL NSH

### Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

TAL TAL = TestAmerica Tallahassee, 2846 Industrial Plaza Drive, Tallahassee, FL 32301, TEL (850)878-3994



<u>SAMPLE IDENTIFICATION</u>	<u>DATE</u>	<u>TIME</u>	<u>SAMPLE TYPE</u>	<u>MARK</u>	<u>ANALYSIS REQUESTED</u>
76-003	9/15/13	11:57A	G	water	T. Phos - Tall
76-004	9/15/13	12:06P	G	water	Mems (600 / 7470)
76-005	9/15/13	12:05P	G	water	BoD



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola

3355 McLemore Drive

Pensacola, FL 32514

Tel: (850)474-1001

TestAmerica Job ID: 400-80120-1

Client Project/Site: Three Mile CreekUSA Sampling Program

For:

Dewberry

2301 Rexwoods Dr.

Raleigh, North Carolina 27607

Attn: Michael Hanson



Authorized for release by:

10/2/2013 1:50:38 PM

Mike Nance, Project Manager II

(251)666-6633

[mike.nance@testamericainc.com](mailto:mike.nance@testamericainc.com)

### LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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## Definitions/Glossary

Client: Dewberry  
Project/Site: Three Mile CreekUSA Sampling Program

TestAmerica Job ID: 400-80120-1

### Qualifiers

#### Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F	MS/MSD Recovery and/or RPD exceeds the control limits
*	LCS or LCSD exceeds the control limits

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

## Case Narrative

Client: Dewberry  
Project/Site: Three Mile CreekUSA Sampling Program

TestAmerica Job ID: 400-80120-1

**Job ID: 400-80120-1**

**Laboratory: TestAmerica Pensacola**

### Narrative

#### Job Narrative 400-80120-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 9/16/2013 9:43 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.5° C.

#### Metals

No analytical or quality issues were noted.

#### General Chemistry

Method(s) 160.4, SM 2540G: The laboratory control sample (LCS) for batch 192170 recovered outside control limits for the following analytes: Volatile Total Solids. These analytes were biased high in the LCS.

Method(s) 351.2: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 192653 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) 351.2: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 192653 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) 365.4: The matrix spike / matrix spike duplicate MS recoveries for batch 192838 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) 365.4: The matrix spike / matrix spike duplicate MSD recoveries for batch 192838 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) SM 5220D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 193365 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other analytical or quality issues were noted.

#### Organic Prep

No analytical or quality issues were noted.

#### Lab Admin

No analytical or quality issues were noted.

## Sample Summary

Client: Dewberry

TestAmerica Job ID: 400-80120-1

Project/Site: Three Mile CreekUSA Sampling Program

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-80120-1	1G-001	Water	09/15/13 16:15	09/16/13 09:43
400-80120-2	1G-002	Water	09/15/13 16:30	09/16/13 09:43
400-80120-3	1G-003	Water	09/15/13 16:32	09/16/13 09:43
400-80120-4	1G-004	Water	09/15/13 16:36	09/16/13 09:43
400-80120-5	1G-005	Water	09/15/13 16:55	09/16/13 09:43
400-80120-6	3G-001	Water	09/15/13 15:36	09/16/13 09:43
400-80120-7	4G-001	Water	09/15/13 14:28	09/16/13 09:43
400-80120-8	4G-002	Water	09/15/13 14:36	09/16/13 09:43
400-80120-9	4G-003	Water	09/15/13 14:25	09/16/13 09:43
400-80120-10	4G-004	Water	09/15/13 14:29	09/16/13 09:43
400-80120-11	4G-005	Water	09/15/13 14:20	09/16/13 09:43
400-80120-12	S1-001	Solid	09/15/13 16:30	09/16/13 09:43
400-80120-13	S1-002	Solid	09/15/13 16:30	09/16/13 09:43
400-80120-14	S4-001	Solid	09/15/13 14:15	09/16/13 09:43
400-80120-15	S4-002	Solid	09/15/13 14:16	09/16/13 09:43
400-80120-16	6G-001	Water	09/15/13 12:44	09/16/13 09:43
400-80120-17	6G-002	Water	09/15/13 12:48	09/16/13 09:43
400-80120-18	6G-003	Water	09/15/13 12:49	09/16/13 09:43
400-80120-19	6G-004	Water	09/15/13 13:03	09/16/13 09:43
400-80120-20	6G-005	Water	09/15/13 13:00	09/16/13 09:43
400-80120-21	S6-001	Solid	09/15/13 12:52	09/16/13 09:43
400-80120-22	S6-002	Solid	09/15/13 12:50	09/16/13 09:43

# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA Sampling Program

TestAmerica Job ID: 400-80120-1

**Client Sample ID: 1G-001**

Date Collected: 09/15/13 16:15

Date Received: 09/16/13 09:43

**Lab Sample ID: 400-80120-1**

Matrix: Water

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	1.7		0.050	0.016	mg/L			09/19/13 15:10	1
Nitrogen, Kjeldahl	4.2		0.50	0.26	mg/L		09/18/13 12:49	09/19/13 12:29	1
Nitrate Nitrite as N	0.020	J	0.050	0.018	mg/L			09/18/13 14:22	1
Chemical Oxygen Demand	100		10	6.4	mg/L			09/30/13 15:55	1

**Client Sample ID: 1G-002**

Date Collected: 09/15/13 16:30

Date Received: 09/16/13 09:43

**Lab Sample ID: 400-80120-2**

Matrix: Water

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ortho-Phosphate	0.19		0.050	0.015	mg/L			09/16/13 18:20	1

**Client Sample ID: 1G-003**

Date Collected: 09/15/13 16:32

Date Received: 09/16/13 09:43

**Lab Sample ID: 400-80120-3**

Matrix: Water

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phosphorus	0.56		0.0040	0.0020	mg/L		09/19/13 10:48	09/21/13 08:26	2

**Client Sample ID: 1G-004**

Date Collected: 09/15/13 16:36

Date Received: 09/16/13 09:43

**Lab Sample ID: 400-80120-4**

Matrix: Water

## Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.0020		0.0050	0.0020	mg/L		09/18/13 14:46	09/19/13 17:42	1
Arsenic	<0.0040		0.0050	0.0040	mg/L		09/18/13 14:46	09/19/13 17:42	1
Barium	0.11		0.010	0.0020	mg/L		09/18/13 14:46	09/19/13 17:42	1
Cadmium	<0.0010		0.0050	0.0010	mg/L		09/18/13 14:46	09/19/13 17:42	1
Chromium	<0.0020		0.0050	0.0020	mg/L		09/18/13 14:46	09/19/13 17:42	1
Lead	0.053		0.0050	0.0020	mg/L		09/18/13 14:46	09/19/13 17:42	1
Selenium	<0.0040		0.010	0.0040	mg/L		09/18/13 14:46	09/19/13 17:42	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00038		0.00020	0.000070	mg/L		09/26/13 08:30	09/27/13 15:02	1

**Client Sample ID: 1G-005**

Date Collected: 09/15/13 16:55

Date Received: 09/16/13 09:43

**Lab Sample ID: 400-80120-5**

Matrix: Water

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	3.0		2.0	2.0	mg/L			09/17/13 10:13	1

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# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA Sampling Program

TestAmerica Job ID: 400-80120-1

## Client Sample ID: 3G-001

Date Collected: 09/15/13 15:36

Date Received: 09/16/13 09:43

## Lab Sample ID: 400-80120-6

Matrix: Water

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	3.5		0.050	0.016	mg/L			09/19/13 15:11	1
Nitrogen, Kjeldahl	5.9		0.50	0.26	mg/L		09/20/13 14:26	09/24/13 10:46	1
Nitrate Nitrite as N	<0.018		0.050	0.018	mg/L			09/18/13 14:23	1
Chemical Oxygen Demand	81		10	6.4	mg/L			09/30/13 15:55	1

## Client Sample ID: 4G-001

Date Collected: 09/15/13 14:28

Date Received: 09/16/13 09:43

## Lab Sample ID: 400-80120-7

Matrix: Water

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	1.2		0.050	0.016	mg/L			09/19/13 15:19	1
Nitrogen, Kjeldahl	2.5		0.50	0.26	mg/L		09/20/13 14:26	09/24/13 10:47	1
Nitrate Nitrite as N	0.051		0.050	0.018	mg/L			09/18/13 14:24	1
Chemical Oxygen Demand	32		10	6.4	mg/L			09/30/13 15:55	1

## Client Sample ID: 4G-002

Date Collected: 09/15/13 14:36

Date Received: 09/16/13 09:43

## Lab Sample ID: 400-80120-8

Matrix: Water

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ortho-Phosphate	<0.015		0.050	0.015	mg/L			09/16/13 18:20	1

## Client Sample ID: 4G-003

Date Collected: 09/15/13 14:25

Date Received: 09/16/13 09:43

## Lab Sample ID: 400-80120-9

Matrix: Water

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phosphorus	0.11		0.0020	0.0010	mg/L		09/19/13 10:48	09/21/13 07:23	1

## Client Sample ID: 4G-004

Date Collected: 09/15/13 14:29

Date Received: 09/16/13 09:43

## Lab Sample ID: 400-80120-10

Matrix: Water

### Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.0020		0.0050	0.0020	mg/L		09/18/13 14:46	09/19/13 17:45	1
Arsenic	<0.0040		0.0050	0.0040	mg/L		09/18/13 14:46	09/19/13 17:45	1
Barium	0.061		0.010	0.0020	mg/L		09/18/13 14:46	09/19/13 17:45	1
Cadmium	<0.0010		0.0050	0.0010	mg/L		09/18/13 14:46	09/19/13 17:45	1
Chromium	<0.0020		0.0050	0.0020	mg/L		09/18/13 14:46	09/19/13 17:45	1
Lead	0.0052		0.0050	0.0020	mg/L		09/18/13 14:46	09/19/13 17:45	1
Selenium	<0.0040		0.010	0.0040	mg/L		09/18/13 14:46	09/19/13 17:45	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		09/26/13 08:30	09/27/13 15:04	1

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# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA Sampling Program

TestAmerica Job ID: 400-80120-1

**Client Sample ID: 4G-005**

**Date Collected: 09/15/13 14:20**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80120-11**

**Matrix: Water**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	9.7		2.0	2.0	mg/L	—		09/17/13 10:15	1

**Client Sample ID: S1-001**

**Date Collected: 09/15/13 16:30**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80120-12**

**Matrix: Solid**

**Percent Solids: 67.7**

## Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.28		0.70	0.28	mg/Kg	☼	09/18/13 08:50	09/19/13 22:34	1
Arsenic	1.1		0.70	0.56	mg/Kg	☼	09/18/13 08:50	09/19/13 22:34	1
Barium	27		1.4	0.28	mg/Kg	☼	09/18/13 08:50	09/19/13 22:34	1
Cadmium	0.23	J	0.70	0.14	mg/Kg	☼	09/18/13 08:50	09/19/13 22:34	1
Chromium	8.2		0.70	0.28	mg/Kg	☼	09/18/13 08:50	09/19/13 22:34	1
Lead	55		0.70	0.28	mg/Kg	☼	09/18/13 08:50	09/19/13 22:34	1
Selenium	<0.56		1.4	0.56	mg/Kg	☼	09/18/13 08:50	09/19/13 22:34	1

## Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	0.31		0.024	0.014	mg/Kg	☼	09/19/13 08:45	09/19/13 14:15	1

**Client Sample ID: S1-002**

**Date Collected: 09/15/13 16:30**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80120-13**

**Matrix: Solid**

**Percent Solids: 64.5**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	1100		87	45	mg/Kg	☼	09/20/13 14:33	09/24/13 11:29	5
Phosphorus, Total	100		17	5.2	mg/Kg	☼	09/20/13 14:41	09/25/13 15:13	1
Nitrogen, Total	1100		3.9	2.0	mg/Kg	☼		09/23/13 16:57	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Volatile Solids	4.9	*	0.10	0.10	%	—		09/17/13 18:01	1

## General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.56		1.6	0.56	mg/Kg	☼		09/18/13 16:26	1

## General Chemistry - ASTM Leach

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	6.5	J	10	3.0	mg/L	—		09/30/13 13:44	1

**Client Sample ID: S4-001**

**Date Collected: 09/15/13 14:15**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80120-14**

**Matrix: Solid**

**Percent Solids: 65.0**

## Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.30		0.76	0.30	mg/Kg	☼	09/18/13 08:50	09/19/13 22:37	1
Arsenic	1.7		0.76	0.61	mg/Kg	☼	09/18/13 08:50	09/19/13 22:37	1
Barium	34		1.5	0.30	mg/Kg	☼	09/18/13 08:50	09/19/13 22:37	1
Cadmium	0.18	J	0.76	0.15	mg/Kg	☼	09/18/13 08:50	09/19/13 22:37	1
Chromium	6.0		0.76	0.30	mg/Kg	☼	09/18/13 08:50	09/19/13 22:37	1

TestAmerica Pensacola

# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA Sampling Program

TestAmerica Job ID: 400-80120-1

**Client Sample ID: S4-001**

**Date Collected: 09/15/13 14:15**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80120-14**

**Matrix: Solid**

**Percent Solids: 65.0**

## Method: 6010B - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	20		0.76	0.30	mg/Kg	☼	09/18/13 08:50	09/19/13 22:37	1
Selenium	<0.61		1.5	0.61	mg/Kg	☼	09/18/13 08:50	09/19/13 22:37	1

## Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	0.055		0.025	0.015	mg/Kg	☼	09/19/13 08:45	09/19/13 14:26	1

**Client Sample ID: S4-002**

**Date Collected: 09/15/13 14:16**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80120-15**

**Matrix: Solid**

**Percent Solids: 64.0**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	1000		93	48	mg/Kg	☼	09/20/13 14:33	09/24/13 11:30	5
Phosphorus, Total	110		19	5.6	mg/Kg	☼	09/20/13 14:41	09/25/13 15:16	1
Nitrogen, Total	1000		3.9	2.0	mg/Kg	☼		09/23/13 16:57	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Volatile Solids	3.3	*	0.10	0.10	%	—		09/17/13 18:01	1

## General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.56		1.6	0.56	mg/Kg	☼		09/18/13 16:27	1

## General Chemistry - ASTM Leach

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	4.2	J	10	3.0	mg/L	—		09/30/13 13:44	1

**Client Sample ID: 6G-001**

**Date Collected: 09/15/13 12:44**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80120-16**

**Matrix: Water**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.34		0.050	0.016	mg/L	—		09/19/13 15:20	1
Nitrogen, Kjeldahl	5.2		0.50	0.26	mg/L		09/20/13 14:26	09/24/13 10:48	1
Nitrate Nitrite as N	0.020	J	0.050	0.018	mg/L			09/18/13 14:25	1
Chemical Oxygen Demand	220		10	6.4	mg/L			10/01/13 12:40	1

**Client Sample ID: 6G-002**

**Date Collected: 09/15/13 12:48**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80120-17**

**Matrix: Water**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ortho-Phosphate	0.076		0.050	0.015	mg/L	—		09/16/13 18:20	1

TestAmerica Pensacola

# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA Sampling Program

TestAmerica Job ID: 400-80120-1

**Client Sample ID: 6G-003**

**Date Collected: 09/15/13 12:49**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80120-18**

**Matrix: Water**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phosphorus	0.22		0.0020	0.0010	mg/L	—	09/19/13 10:48	09/21/13 07:26	1

**Client Sample ID: 6G-004**

**Date Collected: 09/15/13 13:03**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80120-19**

**Matrix: Water**

## Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.0020		0.0050	0.0020	mg/L	—	09/18/13 14:46	09/19/13 17:48	1
Arsenic	<0.0040		0.0050	0.0040	mg/L	—	09/18/13 14:46	09/19/13 17:48	1
Barium	0.057		0.010	0.0020	mg/L	—	09/18/13 14:46	09/19/13 17:48	1
Cadmium	<0.0010		0.0050	0.0010	mg/L	—	09/18/13 14:46	09/19/13 17:48	1
Chromium	<0.0020		0.0050	0.0020	mg/L	—	09/18/13 14:46	09/19/13 17:48	1
Lead	0.0026 J		0.0050	0.0020	mg/L	—	09/18/13 14:46	09/19/13 17:48	1
Selenium	<0.0040		0.010	0.0040	mg/L	—	09/18/13 14:46	09/19/13 17:48	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L	—	09/26/13 08:30	09/27/13 15:05	1

**Client Sample ID: 6G-005**

**Date Collected: 09/15/13 13:00**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80120-20**

**Matrix: Water**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	3.3		2.0	2.0	mg/L	—		09/17/13 10:19	1

**Client Sample ID: S6-001**

**Date Collected: 09/15/13 12:52**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80120-21**

**Matrix: Solid**

**Percent Solids: 80.9**

## Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.23		0.58	0.23	mg/Kg	☼	09/18/13 08:50	09/19/13 22:40	1
Arsenic	<0.47		0.58	0.47	mg/Kg	☼	09/18/13 08:50	09/19/13 22:40	1
Barium	1.9		1.2	0.23	mg/Kg	☼	09/18/13 08:50	09/19/13 22:40	1
Cadmium	<0.12		0.58	0.12	mg/Kg	☼	09/18/13 08:50	09/19/13 22:40	1
Chromium	1.1		0.58	0.23	mg/Kg	☼	09/18/13 08:50	09/19/13 22:40	1
Lead	1.4		0.58	0.23	mg/Kg	☼	09/18/13 08:50	09/19/13 22:40	1
Selenium	<0.47		1.2	0.47	mg/Kg	☼	09/18/13 08:50	09/19/13 22:40	1

## Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	0.013 J		0.019	0.012	mg/Kg	☼	09/19/13 08:45	09/19/13 14:27	1

TestAmerica Pensacola



# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA Sampling Program

TestAmerica Job ID: 400-80120-1

**Client Sample ID: S6-002**

**Lab Sample ID: 400-80120-22**

**Date Collected: 09/15/13 12:50**

**Matrix: Solid**

**Date Received: 09/16/13 09:43**

**Percent Solids: 79.9**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	140		15	8.0	mg/Kg	☼	09/20/13 14:33	09/24/13 11:12	1
Phosphorus, Total	16		15	4.6	mg/Kg	☼	09/20/13 14:41	09/25/13 15:18	1
Nitrogen, Total	140		3.1	1.6	mg/Kg	☼		09/23/13 16:57	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Volatile Solids	0.50	*	0.10	0.10	%	—		09/17/13 18:01	1

## General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.45		1.3	0.45	mg/Kg	☼		09/18/13 16:13	1

## General Chemistry - ASTM Leach

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<3.0		10	3.0	mg/L	—		09/30/13 13:44	1

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA Sampling Program

TestAmerica Job ID: 400-80120-1

## Method: 6010B - Metals (ICP)

Lab Sample ID: MB 400-191919/1-A

Matrix: Solid

Analysis Batch: 192296

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 191919

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.20		0.50	0.20	mg/Kg		09/18/13 08:50	09/19/13 21:16	1
Arsenic	<0.40		0.50	0.40	mg/Kg		09/18/13 08:50	09/19/13 21:16	1
Barium	<0.20		0.99	0.20	mg/Kg		09/18/13 08:50	09/19/13 21:16	1
Cadmium	<0.099		0.50	0.099	mg/Kg		09/18/13 08:50	09/19/13 21:16	1
Chromium	<0.20		0.50	0.20	mg/Kg		09/18/13 08:50	09/19/13 21:16	1
Lead	<0.20		0.50	0.20	mg/Kg		09/18/13 08:50	09/19/13 21:16	1
Selenium	<0.40		0.99	0.40	mg/Kg		09/18/13 08:50	09/19/13 21:16	1

Lab Sample ID: LCS 400-191919/2-A

Matrix: Solid

Analysis Batch: 192296

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 191919

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Silver	55.2	52.6		mg/Kg		95	66 - 134
Arsenic	137	121		mg/Kg		88	83 - 118
Barium	290	267		mg/Kg		92	83 - 118
Cadmium	85.0	75.2		mg/Kg		88	79 - 104
Chromium	168	157		mg/Kg		93	82 - 118
Lead	120	119		mg/Kg		99	83 - 117
Selenium	43.5	37.3		mg/Kg		86	78 - 122

Lab Sample ID: MB 400-192083/1-A

Matrix: Water

Analysis Batch: 192296

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 192083

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.0020		0.0050	0.0020	mg/L		09/18/13 14:46	09/19/13 16:23	1
Arsenic	<0.0040		0.0050	0.0040	mg/L		09/18/13 14:46	09/19/13 16:23	1
Barium	<0.0020		0.010	0.0020	mg/L		09/18/13 14:46	09/19/13 16:23	1
Cadmium	<0.0010		0.0050	0.0010	mg/L		09/18/13 14:46	09/19/13 16:23	1
Chromium	<0.0020		0.0050	0.0020	mg/L		09/18/13 14:46	09/19/13 16:23	1
Lead	<0.0020		0.0050	0.0020	mg/L		09/18/13 14:46	09/19/13 16:23	1
Selenium	<0.0040		0.010	0.0040	mg/L		09/18/13 14:46	09/19/13 16:23	1

Lab Sample ID: LCS 400-192083/2-A

Matrix: Water

Analysis Batch: 192296

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 192083

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Silver	0.500	0.510		mg/L		102	80 - 120
Arsenic	1.00	0.988		mg/L		99	80 - 120
Barium	1.00	1.02		mg/L		102	80 - 120
Cadmium	0.500	0.506		mg/L		101	80 - 120
Chromium	1.00	1.03		mg/L		103	80 - 120
Lead	1.00	1.02		mg/L		102	80 - 120
Selenium	1.00	1.05		mg/L		105	80 - 120

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA Sampling Program

TestAmerica Job ID: 400-80120-1

## Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 400-192875/14-A  
Matrix: Water  
Analysis Batch: 193104

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 192875

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		09/26/13 08:30	09/27/13 14:52	1

Lab Sample ID: LCS 400-192875/15-A  
Matrix: Water  
Analysis Batch: 193104

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 192875

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00100	0.00100		mg/L		100	80 - 120

## Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Lab Sample ID: MB 400-192141/14-A  
Matrix: Solid  
Analysis Batch: 192231

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 192141

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	<0.024		0.040	0.024	mg/Kg		09/19/13 08:45	09/19/13 13:19	1

Lab Sample ID: LCS 400-192141/15-A  
Matrix: Solid  
Analysis Batch: 192231

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 192141

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Hg	7.69	6.71		mg/Kg		87	80 - 120

## Method: 160.4 - Solids, Total Volatile (TVS)

Lab Sample ID: MB 400-192170/1  
Matrix: Solid  
Analysis Batch: 192170

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Volatile Solids	<0.10		0.10	0.10	%			09/17/13 18:01	1

Lab Sample ID: LCS 400-192170/2  
Matrix: Solid  
Analysis Batch: 192170

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Volatile Solids	0.0412	<0.10	*	%		117	79 - 112

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA Sampling Program

TestAmerica Job ID: 400-80120-1

## Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 400-192251/15

Matrix: Water

Analysis Batch: 192251

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.016		0.050	0.016	mg/L			09/19/13 14:39	1

Lab Sample ID: LCS 400-192251/16

Matrix: Water

Analysis Batch: 192251

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.00	2.17		mg/L		109	90 - 110

Lab Sample ID: MRL 400-192251/13 MRL

Matrix: Water

Analysis Batch: 192251

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	0.0500	0.0512		mg/L		102	50 - 150

## Method: 351.2 - Nitrogen, Total Kjeldahl

Lab Sample ID: MB 400-192065/1-A

Matrix: Water

Analysis Batch: 192217

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192065

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	<0.26		0.50	0.26	mg/L		09/18/13 12:49	09/19/13 12:12	1

Lab Sample ID: LCS 400-192065/2-A

Matrix: Water

Analysis Batch: 192217

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 192065

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Kjeldahl	10.0	9.76		mg/L		98	90 - 110

Lab Sample ID: MRL 400-192217/11 MRL

Matrix: Water

Analysis Batch: 192217

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Kjeldahl	0.500	0.466	J	mg/L		93	50 - 150

Lab Sample ID: MB 400-192355/1-A

Matrix: Water

Analysis Batch: 192653

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192355

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	<0.26		0.50	0.26	mg/L		09/20/13 14:26	09/24/13 10:22	1

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA Sampling Program

TestAmerica Job ID: 400-80120-1

## Method: 351.2 - Nitrogen, Total Kjeldahl (Continued)

Lab Sample ID: LCS 400-192355/2-A

Matrix: Water

Analysis Batch: 192653

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 192355

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Kjeldahl	10.0	9.93		mg/L		99	90 - 110

Lab Sample ID: MB 400-192357/1-A

Matrix: Solid

Analysis Batch: 192653

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192357

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	<0.26		0.50	0.26	mg/Kg		09/20/13 14:33	09/24/13 11:03	1

Lab Sample ID: LCS 400-192357/2-A

Matrix: Solid

Analysis Batch: 192653

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 192357

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Kjeldahl	10.0	9.89		mg/Kg		99	75 - 125

Lab Sample ID: MRL 400-192653/11 MRL

Matrix: Solid

Analysis Batch: 192653

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Kjeldahl	0.500	0.405	J	mg/L		81	50 - 150

## Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 400-192079/14

Matrix: Water

Analysis Batch: 192079

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.018		0.050	0.018	mg/L			09/18/13 13:33	1

Lab Sample ID: LCS 400-192079/15

Matrix: Water

Analysis Batch: 192079

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	0.500	0.527		mg/L		105	90 - 110

Lab Sample ID: MRL 400-192079/12 MRL

Matrix: Water

Analysis Batch: 192079

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	0.0500	0.0446	J	mg/L		89	50 - 150

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA Sampling Program

TestAmerica Job ID: 400-80120-1

## Method: 353.2 - Nitrogen, Nitrate-Nitrite (Continued)

Lab Sample ID: MRL 400-192117/12 MRL  
Matrix: Solid  
Analysis Batch: 192117

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	0.0500	0.0417	J	mg/Kg		83	

Lab Sample ID: MB 400-192046/1-A  
Matrix: Solid  
Analysis Batch: 192117

Client Sample ID: Method Blank  
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.36		1.0	0.36	mg/Kg			09/18/13 15:49	1

Lab Sample ID: LCS 400-192046/2-A  
Matrix: Solid  
Analysis Batch: 192117

Client Sample ID: Lab Control Sample  
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	0.500	0.522		mg/Kg		104	90 - 110

Lab Sample ID: 400-80120-22 MS  
Matrix: Solid  
Analysis Batch: 192117

Client Sample ID: S6-002  
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	<0.45		12.5	12.9		mg/Kg	☼	103	90 - 110

Lab Sample ID: 400-80120-22 MSD  
Matrix: Solid  
Analysis Batch: 192117

Client Sample ID: S6-002  
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Nitrate Nitrite as N	<0.45		12.5	12.3		mg/Kg	☼	98	90 - 110	5	6

## Method: 365.1 - Phosphorus, Ortho

Lab Sample ID: MB 400-192334/27  
Matrix: Water  
Analysis Batch: 192334

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ortho-Phosphate	<0.015		0.050	0.015	mg/L			09/16/13 19:07	1

Lab Sample ID: LCS 400-192334/12  
Matrix: Water  
Analysis Batch: 192334

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
ortho-Phosphate	0.300	0.299		mg/L		100	90 - 110

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA Sampling Program

TestAmerica Job ID: 400-80120-1

## Method: 365.1 - Phosphorus, Ortho (Continued)

Lab Sample ID: 400-80120-2 MS

Matrix: Water

Analysis Batch: 192334

Client Sample ID: 1G-002

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
ortho-Phosphate	0.19		0.200	0.380		mg/L		97	90 - 110

Lab Sample ID: 400-80120-2 MSD

Matrix: Water

Analysis Batch: 192334

Client Sample ID: 1G-002

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
ortho-Phosphate	0.19		0.200	0.387		mg/L		101	90 - 110	2	7

## Method: 365.1 - Phosphorus, Total

Lab Sample ID: MB 640-104585/3-A

Matrix: Water

Analysis Batch: 104637

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 104585

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phosphorus	<0.0010		0.0020	0.0010	mg/L		09/19/13 10:48	09/21/13 06:41	1

Lab Sample ID: LCS 640-104585/5-A

Matrix: Water

Analysis Batch: 104637

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 104585

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phosphorus	0.100	0.0941		mg/L		94	90 - 110

Lab Sample ID: LCSD 640-104585/6-A

Matrix: Water

Analysis Batch: 104637

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 104585

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phosphorus	0.100	0.0920		mg/L		92	90 - 110	2	30

## Method: 365.4 - Phosphorus, Total

Lab Sample ID: MB 400-192360/1-A

Matrix: Solid

Analysis Batch: 192838

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192360

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phosphorus, Total	<0.15		0.50	0.15	mg/Kg		09/20/13 14:41	09/25/13 15:09	1

Lab Sample ID: LCS 400-192360/2-A

Matrix: Solid

Analysis Batch: 192838

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 192360

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phosphorus, Total	2.60	2.59		mg/Kg		100	75 - 125

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA Sampling Program

TestAmerica Job ID: 400-80120-1

## Method: 365.4 - Phosphorus, Total (Continued)

Lab Sample ID: 400-80120-13 MS

Matrix: Solid

Analysis Batch: 192838

Client Sample ID: S1-002

Prep Type: Total/NA

Prep Batch: 192360

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Phosphorus, Total	100		34.9	130	F	mg/Kg	✱	72	75 - 125

Lab Sample ID: 400-80120-13 MSD

Matrix: Solid

Analysis Batch: 192838

Client Sample ID: S1-002

Prep Type: Total/NA

Prep Batch: 192360

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phosphorus, Total	100		34.9	130	F	mg/Kg	✱	73	75 - 125	0	20

Lab Sample ID: MRL 400-192838/13 MRL

Matrix: Solid

Analysis Batch: 192838

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Phosphorus, Total	0.100	<0.12		mg/Kg		78	

## Method: SM 5210B - BOD, 5-Day

Lab Sample ID: USB 400-192570/1 USB

Matrix: Water

Analysis Batch: 192570

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	<2.0		2.0	2.0	mg/L			09/17/13 18:07	1

Lab Sample ID: LCS 400-192570/2

Matrix: Water

Analysis Batch: 192570

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Biochemical Oxygen Demand	198	203		mg/L		103	85 - 115

Lab Sample ID: LCSD 400-192570/3

Matrix: Water

Analysis Batch: 192570

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Biochemical Oxygen Demand	198	194		mg/L		98	85 - 115	5	27

## Method: SM 5220D - COD

Lab Sample ID: MB 490-110826/3

Matrix: Solid

Analysis Batch: 110826

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<3.0		10	3.0	mg/L			09/30/13 13:44	1

TestAmerica Pensacola



# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA Sampling Program

TestAmerica Job ID: 400-80120-1

## Method: SM 5220D - COD (Continued)

Lab Sample ID: LCS 490-110826/4

Matrix: Solid

Analysis Batch: 110826

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	20.0	19.8		mg/L		99	90 - 110

Lab Sample ID: LCSD 490-110826/5

Matrix: Solid

Analysis Batch: 110826

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chemical Oxygen Demand	20.0	20.6		mg/L		103	90 - 110	4	20

Lab Sample ID: MB 400-193275/1

Matrix: Water

Analysis Batch: 193275

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<6.4		10	6.4	mg/L			09/30/13 15:55	1

Lab Sample ID: LCS 400-193275/2

Matrix: Water

Analysis Batch: 193275

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	50.0	54.9		mg/L		110	90 - 110

Lab Sample ID: LCS 400-193275/33

Matrix: Water

Analysis Batch: 193275

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	50.0	53.2		mg/L		106	90 - 110

Lab Sample ID: LCS 400-193275/34

Matrix: Water

Analysis Batch: 193275

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	50.0	54.0		mg/L		108	90 - 110

Lab Sample ID: LCS 400-193275/35

Matrix: Water

Analysis Batch: 193275

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	50.0	54.6		mg/L		109	90 - 110

Lab Sample ID: 400-80120-1 MS

Matrix: Water

Analysis Batch: 193275

Client Sample ID: 1G-001

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	100		37.5	79.6	F	mg/L		-57	90 - 110

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA Sampling Program

TestAmerica Job ID: 400-80120-1

Lab Sample ID: 400-80120-1 MSD

Matrix: Water

Analysis Batch: 193275

Client Sample ID: 1G-001

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chemical Oxygen Demand	100		37.5	83.1	F	mg/L		-47	90 - 110	4	13

Lab Sample ID: MB 400-193365/1

Matrix: Water

Analysis Batch: 193365

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<6.4		10	6.4	mg/L			10/01/13 12:40	1

Lab Sample ID: LCS 400-193365/2

Matrix: Water

Analysis Batch: 193365

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	500	541		mg/L		108	90 - 110

Lab Sample ID: LB 490-108016/1-A LB

Matrix: Solid

Analysis Batch: 110826

Client Sample ID: Method Blank

Prep Type: ASTM Leach

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<3.0		10	3.0	mg/L			09/30/13 13:44	1
Chemical Oxygen Demand	<3.0		10	3.0	mg/L			09/30/13 13:44	1

Lab Sample ID: 400-80120-13 MS

Matrix: Solid

Analysis Batch: 110826

Client Sample ID: S1-002

Prep Type: ASTM Leach

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	6.5	J	50.0	53.2		mg/L		93	90 - 110

Lab Sample ID: 400-80120-13 MSD

Matrix: Solid

Analysis Batch: 110826

Client Sample ID: S1-002

Prep Type: ASTM Leach

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chemical Oxygen Demand	6.5	J	50.0	53.7		mg/L		94	90 - 110	1	20

TestAmerica Pensacola

# Lab Chronicle

Client: Dewberry  
Project/Site: Three Mile CreekUSA Sampling Program

TestAmerica Job ID: 400-80120-1

**Client Sample ID: 1G-001**

**Date Collected: 09/15/13 16:15**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80120-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	353.2		1	192079	09/18/13 14:22	KJR	TAL PEN
Total/NA	Prep	351.2			192065	09/18/13 12:49	JAT	TAL PEN
Total/NA	Analysis	351.2		1	192217	09/19/13 12:29	JAT	TAL PEN
Total/NA	Analysis	350.1		1	192251	09/19/13 15:10	KJR	TAL PEN
Total/NA	Analysis	SM 5220D		1	193275	09/30/13 15:55	CLS	TAL PEN

**Client Sample ID: 1G-002**

**Date Collected: 09/15/13 16:30**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80120-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	365.1		1	192334	09/16/13 18:20	LSS	TAL PEN

**Client Sample ID: 1G-003**

**Date Collected: 09/15/13 16:32**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80120-3**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	365.2/365.3/365			104585	09/19/13 10:48	QMC	TAL TAL
Total/NA	Analysis	365.1		2	104637	09/21/13 08:26	QMC	TAL TAL

**Client Sample ID: 1G-004**

**Date Collected: 09/15/13 16:36**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80120-4**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			192083	09/18/13 14:46	NAB	TAL PEN
Total Recoverable	Analysis	6010B		1	192296	09/19/13 17:42	SLM	TAL PEN
Total/NA	Prep	7470A			192875	09/26/13 08:30	JAP	TAL PEN
Total/NA	Analysis	7470A		1	193104	09/27/13 15:02	JAP	TAL PEN

**Client Sample ID: 1G-005**

**Date Collected: 09/15/13 16:55**

**Date Received: 09/16/13 09:43**

**Lab Sample ID: 400-80120-5**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 5210B		1	192570		GMF	TAL PEN
					(Start)	09/17/13 10:13		
					(End)	09/22/13 17:03		

TestAmerica Pensacola

# Lab Chronicle

Client: Dewberry  
Project/Site: Three Mile CreekUSA Sampling Program

TestAmerica Job ID: 400-80120-1

## Client Sample ID: 3G-001

Date Collected: 09/15/13 15:36

Date Received: 09/16/13 09:43

## Lab Sample ID: 400-80120-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	353.2		1	192079	09/18/13 14:23	KJR	TAL PEN
Total/NA	Analysis	350.1		1	192251	09/19/13 15:11	KJR	TAL PEN
Total/NA	Prep	351.2			192355	09/20/13 14:26	JAT	TAL PEN
Total/NA	Analysis	351.2		1	192653	09/24/13 10:46	JAT	TAL PEN
Total/NA	Analysis	SM 5220D		1	193275	09/30/13 15:55	CLS	TAL PEN

## Client Sample ID: 4G-001

Date Collected: 09/15/13 14:28

Date Received: 09/16/13 09:43

## Lab Sample ID: 400-80120-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	353.2		1	192079	09/18/13 14:24	KJR	TAL PEN
Total/NA	Analysis	350.1		1	192251	09/19/13 15:19	KJR	TAL PEN
Total/NA	Prep	351.2			192355	09/20/13 14:26	JAT	TAL PEN
Total/NA	Analysis	351.2		1	192653	09/24/13 10:47	JAT	TAL PEN
Total/NA	Analysis	SM 5220D		1	193275	09/30/13 15:55	CLS	TAL PEN

## Client Sample ID: 4G-002

Date Collected: 09/15/13 14:36

Date Received: 09/16/13 09:43

## Lab Sample ID: 400-80120-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	365.1		1	192334	09/16/13 18:20	LSS	TAL PEN

## Client Sample ID: 4G-003

Date Collected: 09/15/13 14:25

Date Received: 09/16/13 09:43

## Lab Sample ID: 400-80120-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	365.2/365.3/365			104585	09/19/13 10:48	QMC	TAL TAL
Total/NA	Analysis	365.1		1	104637	09/21/13 07:23	QMC	TAL TAL

## Client Sample ID: 4G-004

Date Collected: 09/15/13 14:29

Date Received: 09/16/13 09:43

## Lab Sample ID: 400-80120-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			192083	09/18/13 14:46	NAB	TAL PEN
Total Recoverable	Analysis	6010B		1	192296	09/19/13 17:45	SLM	TAL PEN
Total/NA	Prep	7470A			192875	09/26/13 08:30	JAP	TAL PEN
Total/NA	Analysis	7470A		1	193104	09/27/13 15:04	JAP	TAL PEN

TestAmerica Pensacola

# Lab Chronicle

Client: Dewberry  
Project/Site: Three Mile CreekUSA Sampling Program

TestAmerica Job ID: 400-80120-1

**Client Sample ID: 4G-005**

**Lab Sample ID: 400-80120-11**

**Date Collected: 09/15/13 14:20**

**Matrix: Water**

**Date Received: 09/16/13 09:43**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 5210B		1	192570	09/17/13 10:15 (Start) 09/22/13 17:03 (End)	GMF	TAL PEN

**Client Sample ID: S1-001**

**Lab Sample ID: 400-80120-12**

**Date Collected: 09/15/13 16:30**

**Matrix: Solid**

**Date Received: 09/16/13 09:43**

**Percent Solids: 67.7**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7471B			192141	09/19/13 08:45	JAP	TAL PEN
Total/NA	Analysis	7471B		1	192231	09/19/13 14:15	JAP	TAL PEN
Total/NA	Prep	3050B			191919	09/18/13 08:50	NAB	TAL PEN
Total/NA	Analysis	6010B		1	192296	09/19/13 22:34	SLM	TAL PEN
Total/NA	Analysis	Moisture		1	192016	09/17/13 17:00	LEC	TAL PEN

**Client Sample ID: S1-002**

**Lab Sample ID: 400-80120-13**

**Date Collected: 09/15/13 16:30**

**Matrix: Solid**

**Date Received: 09/16/13 09:43**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	192016	09/17/13 17:00	LEC	TAL PEN
Soluble	Leach	DI Leach			192046	09/18/13 11:24	KJR	TAL PEN
Soluble	Analysis	353.2		1	192117	09/18/13 16:26	KJR	TAL PEN
Total/NA	Analysis	160.4		1	192170	09/17/13 18:01	CAC	TAL PEN
Total/NA	Analysis	Total Nitrogen		1	192560	09/23/13 16:57	JAT	TAL PEN
Total/NA	Prep	351.2			192357	09/20/13 14:33	JAT	TAL PEN
Total/NA	Analysis	351.2		5	192653	09/24/13 11:29	JAT	TAL PEN
Total/NA	Prep	365.2/365.3/365			192360	09/20/13 14:41	JAT	TAL PEN
Total/NA	Analysis	365.4		1	192838	09/25/13 15:13	JAT	TAL PEN
ASTM Leach	Leach	D3987-85			108686	09/20/13 12:57	SJM	TAL NSH
ASTM Leach	Analysis	SM 5220D		1	110826	09/30/13 13:44	MSJ	TAL NSH

**Client Sample ID: S4-001**

**Lab Sample ID: 400-80120-14**

**Date Collected: 09/15/13 14:15**

**Matrix: Solid**

**Date Received: 09/16/13 09:43**

**Percent Solids: 65.0**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7471B			192141	09/19/13 08:45	JAP	TAL PEN
Total/NA	Analysis	7471B		1	192231	09/19/13 14:26	JAP	TAL PEN
Total/NA	Prep	3050B			191919	09/18/13 08:50	NAB	TAL PEN
Total/NA	Analysis	6010B		1	192296	09/19/13 22:37	SLM	TAL PEN
Total/NA	Analysis	Moisture		1	192016	09/17/13 17:00	LEC	TAL PEN

TestAmerica Pensacola

# Lab Chronicle

Client: Dewberry  
Project/Site: Three Mile CreekUSA Sampling Program

TestAmerica Job ID: 400-80120-1

**Client Sample ID: S4-002**

**Lab Sample ID: 400-80120-15**

**Date Collected: 09/15/13 14:16**

**Matrix: Solid**

**Date Received: 09/16/13 09:43**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	192016	09/17/13 17:00	LEC	TAL PEN
Soluble	Leach	DI Leach			192046	09/18/13 11:24	KJR	TAL PEN
Soluble	Analysis	353.2		1	192117	09/18/13 16:27	KJR	TAL PEN
Total/NA	Analysis	160.4		1	192170	09/17/13 18:01	CAC	TAL PEN
Total/NA	Analysis	Total Nitrogen		1	192560	09/23/13 16:57	JAT	TAL PEN
Total/NA	Prep	351.2			192357	09/20/13 14:33	JAT	TAL PEN
Total/NA	Analysis	351.2		5	192653	09/24/13 11:30	JAT	TAL PEN
Total/NA	Prep	365.2/365.3/365			192360	09/20/13 14:41	JAT	TAL PEN
Total/NA	Analysis	365.4		1	192838	09/25/13 15:16	JAT	TAL PEN
ASTM Leach	Leach	D3987-85			108686	09/20/13 12:57	SJM	TAL NSH
ASTM Leach	Analysis	SM 5220D		1	110826	09/30/13 13:44	MSJ	TAL NSH

**Client Sample ID: 6G-001**

**Lab Sample ID: 400-80120-16**

**Date Collected: 09/15/13 12:44**

**Matrix: Water**

**Date Received: 09/16/13 09:43**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	353.2		1	192079	09/18/13 14:25	KJR	TAL PEN
Total/NA	Analysis	350.1		1	192251	09/19/13 15:20	KJR	TAL PEN
Total/NA	Prep	351.2			192355	09/20/13 14:26	JAT	TAL PEN
Total/NA	Analysis	351.2		1	192653	09/24/13 10:48	JAT	TAL PEN
Total/NA	Analysis	SM 5220D		1	193365	10/01/13 12:40	CLS	TAL PEN

**Client Sample ID: 6G-002**

**Lab Sample ID: 400-80120-17**

**Date Collected: 09/15/13 12:48**

**Matrix: Water**

**Date Received: 09/16/13 09:43**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	365.1		1	192334	09/16/13 18:20	LSS	TAL PEN

**Client Sample ID: 6G-003**

**Lab Sample ID: 400-80120-18**

**Date Collected: 09/15/13 12:49**

**Matrix: Water**

**Date Received: 09/16/13 09:43**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	365.2/365.3/365			104585	09/19/13 10:48	QMC	TAL TAL
Total/NA	Analysis	365.1		1	104637	09/21/13 07:26	QMC	TAL TAL

TestAmerica Pensacola

# Lab Chronicle

Client: Dewberry  
Project/Site: Three Mile CreekUSA Sampling Program

TestAmerica Job ID: 400-80120-1

## Client Sample ID: 6G-004

Lab Sample ID: 400-80120-19

Date Collected: 09/15/13 13:03

Matrix: Water

Date Received: 09/16/13 09:43

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			192083	09/18/13 14:46	NAB	TAL PEN
Total Recoverable	Analysis	6010B		1	192296	09/19/13 17:48	SLM	TAL PEN
Total/NA	Prep	7470A			192875	09/26/13 08:30	JAP	TAL PEN
Total/NA	Analysis	7470A		1	193104	09/27/13 15:05	JAP	TAL PEN

## Client Sample ID: 6G-005

Lab Sample ID: 400-80120-20

Date Collected: 09/15/13 13:00

Matrix: Water

Date Received: 09/16/13 09:43

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 5210B		1	192570		GMF	TAL PEN
					(Start)	09/17/13 10:19		
					(End)	09/22/13 17:03		

## Client Sample ID: S6-001

Lab Sample ID: 400-80120-21

Date Collected: 09/15/13 12:52

Matrix: Solid

Date Received: 09/16/13 09:43

Percent Solids: 80.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7471B			192141	09/19/13 08:45	JAP	TAL PEN
Total/NA	Analysis	7471B		1	192231	09/19/13 14:27	JAP	TAL PEN
Total/NA	Prep	3050B			191919	09/18/13 08:50	NAB	TAL PEN
Total/NA	Analysis	6010B		1	192296	09/19/13 22:40	SLM	TAL PEN
Total/NA	Analysis	Moisture		1	192016	09/17/13 17:00	LEC	TAL PEN

## Client Sample ID: S6-002

Lab Sample ID: 400-80120-22

Date Collected: 09/15/13 12:50

Matrix: Solid

Date Received: 09/16/13 09:43

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	192016	09/17/13 17:00	LEC	TAL PEN
Soluble	Leach	DI Leach			192046	09/18/13 11:16	KJR	TAL PEN
Soluble	Analysis	353.2		1	192117	09/18/13 16:13	KJR	TAL PEN
Total/NA	Analysis	160.4		1	192170	09/17/13 18:01	CAC	TAL PEN
Total/NA	Analysis	Total Nitrogen		1	192560	09/23/13 16:57	JAT	TAL PEN
Total/NA	Prep	351.2			192357	09/20/13 14:33	JAT	TAL PEN
Total/NA	Analysis	351.2		1	192653	09/24/13 11:12	JAT	TAL PEN
Total/NA	Prep	365.2/365.3/365			192360	09/20/13 14:41	JAT	TAL PEN
Total/NA	Analysis	365.4		1	192838	09/25/13 15:18	JAT	TAL PEN
ASTM Leach	Leach	D3987-85			108686	09/20/13 12:57	SJM	TAL NSH
ASTM Leach	Analysis	SM 5220D		1	110826	09/30/13 13:44	MSJ	TAL NSH

TestAmerica Pensacola

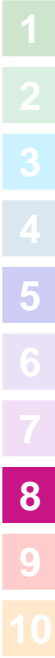
Lab Chronicle

Client: Dewberry  
Project/Site: Three Mile CreekUSA Sampling Program

TestAmerica Job ID: 400-80120-1

Laboratory References:

- TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177
- TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001
- TAL TAL = TestAmerica Tallahassee, 2846 Industrial Plaza Drive, Tallahassee, FL 32301, TEL (850)878-3994





## Method Summary

Client: Dewberry

TestAmerica Job ID: 400-80120-1

Project/Site: Three Mile CreekUSA Sampling Program

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL PEN
7470A	Mercury (CVAA)	SW846	TAL PEN
7471B	Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)	SW846	TAL PEN
160.4	Solids, Total Volatile (TVS)	MCAWW	TAL PEN
350.1	Nitrogen, Ammonia	MCAWW	TAL PEN
351.2	Nitrogen, Total Kjeldahl	MCAWW	TAL PEN
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL PEN
365.1	Phosphorus, Ortho	EPA	TAL PEN
365.1	Phosphorus, Total	EPA	TAL TAL
365.4	Phosphorus, Total	EPA	TAL PEN
Moisture	Percent Moisture	EPA	TAL PEN
SM 5210B	BOD, 5-Day	SM	TAL PEN
SM 5220D	COD	SM	TAL PEN
SM 5220D	COD	SM	TAL NSH
Total Nitrogen	Nitrogen, Total	EPA	TAL PEN

### Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

TAL TAL = TestAmerica Tallahassee, 2846 Industrial Plaza Drive, Tallahassee, FL 32301, TEL (850)878-3994

# TestAmerica Mobile

900 Lakeside Drive  
Mobile, AL 36693  
Phone (251) 666-6633 Fax (251) 666-6696

## Chain of Custody Record

**TestAmerica**  
THE LEADER IN ENVIRONMENTAL TESTING

<b>Client Information</b> Client Contact: Michael Hanson Company: Dewberry Address: 2301 Rexwoods Dr. City: Raleigh State, Zip: NC, 27607 Phone: 919-424-3716(Tel) Email: mhanson@dewberry.com Project Name: Sediment Site:		Sampler: Nance, Mike M Lab PM: Nance, Mike M E-Mail: mike.nance@testamericainc.com Carrier Tracking No(s): COC No: 400-30871-17686.1 Page: Page 1 of 1 Job #:																																																																																																																																																																																																																																																			
Due Date Requested: TAT Requested (days): PO #: Purchase Order not required WO #: Project #: 40003408 SSOW#:		<b>Analysis Requested</b> <table border="1"> <tr> <th>Sample Identification</th> <th>Sample Date</th> <th>Sample Time</th> <th>Sample Type (G=Grab, G=grab)</th> <th>Matrix (W=water, S=solid, B=soil, O=oil, BT=trace, A=air)</th> <th>6010B - RCRA (Mercury not included)</th> <th>160.4 - Total Volatile Solids</th> <th>353.2 Pres - Nitrate Nitrite as N</th> <th>7470A - Hg</th> <th>Nitrogen, Total</th> <th>365.4 - Phosphorus, Total</th> <th>5220D - Chemical Oxygen Demand</th> <th>351.2 - Nitrogen, Kjeldahl</th> <th>COB</th> <th>NH<sub>3</sub> - 350.1</th> <th>NO<sub>3</sub> + NO<sub>2</sub></th> <th>O-Phosphate - 365.1</th> <th>BOD5</th> <th>Total Number of Containers</th> <th>Special Instructions/Note:</th> </tr> <tr> <td>1G-001</td> <td>9/15</td> <td>4:15p</td> <td>G</td> <td>W</td> <td>N</td> <td>N</td> <td>X</td> <td>N</td> <td>N</td> <td>N</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>* See back for additional samples and tests to be performed.</td> </tr> <tr> <td>1G-002</td> <td>9/15</td> <td>4:30p</td> <td>G</td> <td>W</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>X</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td></td> </tr> <tr> <td>1G-003</td> <td>9/15</td> <td>4:32p</td> <td>G</td> <td>W</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td></td> </tr> <tr> <td>1G-004</td> <td>9/15</td> <td>4:30p</td> <td>G</td> <td>W</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td></td> </tr> <tr> <td>1G-005</td> <td>9/15</td> <td>4:55</td> <td>G</td> <td>W</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td></td> </tr> <tr> <td>3G-001</td> <td>9/15</td> <td>3:36</td> <td>G</td> <td>W</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td></td> </tr> <tr> <td>4G-001</td> <td>9/15</td> <td>2:28</td> <td>G</td> <td>W</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td></td> </tr> <tr> <td>4G-002</td> <td>9/15</td> <td>2:36</td> <td>G</td> <td>W</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td></td> </tr> <tr> <td>4G-003</td> <td>9/15</td> <td>2:25</td> <td>G</td> <td>W</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td></td> </tr> <tr> <td>4G-004</td> <td>9/15</td> <td>2:29</td> <td>G</td> <td>W</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td></td> </tr> <tr> <td>4G-005</td> <td>9/15</td> <td>2:20</td> <td>G</td> <td>W</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> <td></td> </tr> </table>		Sample Identification	Sample Date	Sample Time	Sample Type (G=Grab, G=grab)	Matrix (W=water, S=solid, B=soil, O=oil, BT=trace, A=air)	6010B - RCRA (Mercury not included)	160.4 - Total Volatile Solids	353.2 Pres - Nitrate Nitrite as N	7470A - Hg	Nitrogen, Total	365.4 - Phosphorus, Total	5220D - Chemical Oxygen Demand	351.2 - Nitrogen, Kjeldahl	COB	NH <sub>3</sub> - 350.1	NO <sub>3</sub> + NO <sub>2</sub>	O-Phosphate - 365.1	BOD5	Total Number of Containers	Special Instructions/Note:	1G-001	9/15	4:15p	G	W	N	N	X	N	N	N	X	X	X	X	X	X	X	X	* See back for additional samples and tests to be performed.	1G-002	9/15	4:30p	G	W	N	N	N	N	N	X	N	N	N	N	N	N	N	N		1G-003	9/15	4:32p	G	W	N	N	N	N	N	N	N	N	N	N	N	N	N	N		1G-004	9/15	4:30p	G	W	N	N	N	N	N	N	N	N	N	N	N	N	N	N		1G-005	9/15	4:55	G	W	N	N	N	N	N	N	N	N	N	N	N	N	N	N		3G-001	9/15	3:36	G	W	N	N	N	N	N	N	N	N	N	N	N	N	N	N		4G-001	9/15	2:28	G	W	N	N	N	N	N	N	N	N	N	N	N	N	N	N		4G-002	9/15	2:36	G	W	N	N	N	N	N	N	N	N	N	N	N	N	N	N		4G-003	9/15	2:25	G	W	N	N	N	N	N	N	N	N	N	N	N	N	N	N		4G-004	9/15	2:29	G	W	N	N	N	N	N	N	N	N	N	N	N	N	N	N		4G-005	9/15	2:20	G	W	N	N	N	N	N	N	N	N	N	N	N	N	N	N		<b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b> <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months <b>Special Instructions/QC Requirements:</b>	
Sample Identification	Sample Date	Sample Time	Sample Type (G=Grab, G=grab)	Matrix (W=water, S=solid, B=soil, O=oil, BT=trace, A=air)	6010B - RCRA (Mercury not included)	160.4 - Total Volatile Solids	353.2 Pres - Nitrate Nitrite as N	7470A - Hg	Nitrogen, Total	365.4 - Phosphorus, Total	5220D - Chemical Oxygen Demand	351.2 - Nitrogen, Kjeldahl	COB	NH <sub>3</sub> - 350.1	NO <sub>3</sub> + NO <sub>2</sub>	O-Phosphate - 365.1	BOD5	Total Number of Containers	Special Instructions/Note:																																																																																																																																																																																																																																		
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<b>Possible Hazard Identification</b> <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		<b>Deliverable Requested: I, II, III, IV, Other (Specify)</b>																																																																																																																																																																																																																																																			
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Sample ID	Date	Time	Sample Type	Matrix	Tests to be performed
S1-001	9/15	4:30P	G	solid	Metals (6010/7471)
S1-002	9/15	4:30P	G	solid	N, TKN, NO <sub>3</sub> +NO <sub>2</sub> , COD, P, TVS, moisture
S4-001	9/15	2:15P	G	Solid	Metals (6010, 7471)
S4-002	9/15	2:16P	G	Solid	N, TKN, NO <sub>3</sub> +NO <sub>2</sub> , COD, P, TVS, moisture
66-001	9/15	12:44P	G	<del>Solid</del> W	TKN, NO <sub>3</sub> +NO <sub>2</sub> , NH <sub>3</sub> , COD
66-002	9/15	12:48P	G	W	O-phosphate
66-003	9/15	12:49P	G	W	T-Phos
66-004	9/15	1:03P	G	W	Metals (6010, 7470A)
66-005	9/15	1:00P	G	W	BOD
S6-001	9/15	12:52P	G	Solid	Metals (6010/7471)
S6-002	9/15	12:50P	G	Solid	N, TKN, NO <sub>3</sub> +NO <sub>2</sub> , COD, P, TVS, moisture

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola

3355 McLemore Drive

Pensacola, FL 32514

Tel: (850)474-1001

TestAmerica Job ID: 400-80278-1

Client Project/Site: Three Mile CreekUSA - Groundwater

For:

Dewberry

2301 Rexwoods Dr.

Raleigh, North Carolina 27607

Attn: Michael Hanson



Authorized for release by:

10/4/2013 4:51:50 PM

Mike Nance, Project Manager II

(251)666-6633

[mike.nance@testamericainc.com](mailto:mike.nance@testamericainc.com)

### LINKS

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results through

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[www.testamericainc.com](http://www.testamericainc.com)

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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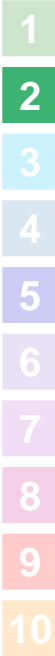
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## Definitions/Glossary

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

### Qualifiers

#### GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD exceeds the control limits

#### GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### General Chemistry

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

## Case Narrative

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

### Job ID: 400-80278-1

Laboratory: TestAmerica Pensacola

#### Narrative

#### Job Narrative 400-80278-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 9/19/2013 8:18 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.9° C.

#### GC/MS VOA

Method(s) 624: A full list spike was utilized for this method. Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for 1 analyte to recover outside criteria for this method when a full list spike is utilized. The LCS associated with batch 193116 had 1 analyte outside control limits; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.HS2-004 (400-80278-4), HS3-004 (400-80278-17), HS4-004 (400-80278-25)

No other analytical or quality issues were noted.

#### GC/MS Semi VOA

Method(s) 625: The continuing calibration verification (CCV) for Benzidine associated with batch 192689 recovered above the upper control limit. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. HS2-006 (400-80278-6)

No other analytical or quality issues were noted.

#### GC Semi VOA

No analytical or quality issues were noted.

#### Metals

No analytical or quality issues were noted.

#### General Chemistry

No other analytical or quality issues were noted.

#### Organic Prep

Method(s) 608: Insufficient sample volume was available to meet method-mandated requirements for matrix spike/matrix spike duplicate (MS/MSD) analyses for batch 192227.

No other analytical or quality issues were noted.



## Sample Summary

Client: Dewberry

TestAmerica Job ID: 400-80278-1

Project/Site: Three Mile CreekUSA - Groundwater

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-80278-2	HS2-002	Water	09/18/13 11:19	09/19/13 08:30
400-80278-3	HS2-003	Water	09/18/13 11:20	09/19/13 08:30
400-80278-4	HS2-004	Water	09/18/13 11:35	09/19/13 08:30
400-80278-6	HS2-006	Water	09/18/13 11:22	09/19/13 08:30
400-80278-8	HS2-008	Water	09/18/13 11:26	09/19/13 08:30
400-80278-10	HS2-010	Water	09/18/13 11:30	09/19/13 08:30
400-80278-11	HS2-011	Water	09/18/13 11:32	09/19/13 08:30
400-80278-12	HS3-014	Water	09/18/13 13:28	09/19/13 08:30
400-80278-13	HS2-013	Water	09/18/13 11:34	09/19/13 08:30
400-80278-14	HS2-014	Water	09/18/13 11:34	09/19/13 08:30
400-80278-15	HS3-002	Water	09/18/13 13:26	09/19/13 08:30
400-80278-16	HS3-003	Water	09/18/13 13:27	09/19/13 08:30
400-80278-17	HS3-004	Water	09/18/13 13:30	09/19/13 08:30
400-80278-19	HS3-010	Water	09/18/13 13:07	09/19/13 08:30
400-80278-20	HS3-011	Water	09/18/13 13:09	09/19/13 08:30
400-80278-22	HS3-013	Water	09/18/13 13:28	09/19/13 08:30
400-80278-23	HS4-002	Water	09/18/13 14:48	09/19/13 08:30
400-80278-24	HS4-003	Water	09/18/13 14:53	09/19/13 08:30
400-80278-25	HS4-004	Water	09/18/13 14:49	09/19/13 08:30
400-80278-27	HS2-001	Water	09/18/13 11:19	09/19/13 08:30
400-80278-28	HS3-001	Water	09/18/13 13:25	09/19/13 08:30
400-80278-29	HS4-001	Water	09/18/13 14:45	09/19/13 08:30



# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

**Client Sample ID: HS2-002**

**Date Collected: 09/18/13 11:19**

**Date Received: 09/19/13 08:30**

**Lab Sample ID: 400-80278-2**

**Matrix: Water**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ortho-Phosphate	0.11		0.050	0.015	mg/L			09/19/13 17:22	1

**Client Sample ID: HS2-003**

**Date Collected: 09/18/13 11:20**

**Date Received: 09/19/13 08:30**

**Lab Sample ID: 400-80278-3**

**Matrix: Water**

## Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.010		0.050	0.010	mg/L		09/23/13 09:10	09/23/13 17:29	1
Arsenic	<0.0040		0.0050	0.0040	mg/L		09/23/13 09:10	09/23/13 17:29	1
Beryllium	<0.0010		0.0030	0.0010	mg/L		09/23/13 09:10	09/23/13 17:29	1
Cadmium	<0.0010		0.0050	0.0010	mg/L		09/23/13 09:10	09/23/13 17:29	1
Chromium	<0.0020		0.0050	0.0020	mg/L		09/23/13 09:10	09/23/13 17:29	1
Copper	0.015		0.010	0.0020	mg/L		09/23/13 09:10	09/23/13 17:29	1
Lead	0.025		0.0050	0.0020	mg/L		09/23/13 09:10	09/23/13 17:29	1
Nickel	<0.0030		0.0050	0.0030	mg/L		09/23/13 09:10	09/23/13 17:29	1
Selenium	<0.0040		0.010	0.0040	mg/L		09/23/13 09:10	09/23/13 17:29	1
Silver	<0.0020		0.0050	0.0020	mg/L		09/23/13 09:10	09/23/13 17:29	1
Thallium	<0.0040		0.010	0.0040	mg/L		09/23/13 09:10	09/23/13 17:29	1
Zinc	0.080		0.020	0.0080	mg/L		09/23/13 09:10	09/23/13 17:29	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		10/01/13 08:35	10/01/13 14:26	1

**Client Sample ID: HS2-004**

**Date Collected: 09/18/13 11:35**

**Date Received: 09/19/13 08:30**

**Lab Sample ID: 400-80278-4**

**Matrix: Water**

## Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.50		1.0	0.50	ug/L			09/28/13 17:27	1
1,1,2,2-Tetrachloroethane	<0.50		1.0	0.50	ug/L			09/28/13 17:27	1
1,1,2-Trichloroethane	<0.50		5.0	0.50	ug/L			09/28/13 17:27	1
1,1-Dichloroethane	<0.50		1.0	0.50	ug/L			09/28/13 17:27	1
1,1-Dichloroethene	<0.50		1.0	0.50	ug/L			09/28/13 17:27	1
1,2-Dichlorobenzene	<0.50		1.0	0.50	ug/L			09/28/13 17:27	1
1,2-Dichloroethane	<0.50		1.0	0.50	ug/L			09/28/13 17:27	1
1,2-Dichloropropane	<0.50		1.0	0.50	ug/L			09/28/13 17:27	1
1,3-Dichlorobenzene	<0.54		1.0	0.54	ug/L			09/28/13 17:27	1
1,4-Dichlorobenzene	<0.64		1.0	0.64	ug/L			09/28/13 17:27	1
Acrolein	<20 *		20	20	ug/L			09/28/13 17:27	1
Acrylonitrile	<2.8		5.0	2.8	ug/L			09/28/13 17:27	1
Benzene	<0.34		1.0	0.34	ug/L			09/28/13 17:27	1
Bromoform	<0.71		5.0	0.71	ug/L			09/28/13 17:27	1
Bromomethane	<0.98		1.0	0.98	ug/L			09/28/13 17:27	1
Carbon tetrachloride	<0.50		1.0	0.50	ug/L			09/28/13 17:27	1
Chlorobenzene	<0.50		1.0	0.50	ug/L			09/28/13 17:27	1
Dibromochloromethane	<0.50		1.0	0.50	ug/L			09/28/13 17:27	1
Chloroethane	<0.76		1.0	0.76	ug/L			09/28/13 17:27	1

TestAmerica Pensacola

# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

**Client Sample ID: HS2-004**

**Lab Sample ID: 400-80278-4**

**Date Collected: 09/18/13 11:35**

**Matrix: Water**

**Date Received: 09/19/13 08:30**

## Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloroform</b>	<b>1.1</b>		1.0	0.60	ug/L			09/28/13 17:27	1
Chloromethane	<0.83		1.0	0.83	ug/L			09/28/13 17:27	1
cis-1,2-Dichloroethene	<0.50		1.0	0.50	ug/L			09/28/13 17:27	1
cis-1,3-Dichloropropene	<0.50		5.0	0.50	ug/L			09/28/13 17:27	1
Bromodichloromethane	<0.50		1.0	0.50	ug/L			09/28/13 17:27	1
Ethylbenzene	<0.50		1.0	0.50	ug/L			09/28/13 17:27	1
m-Xylene & p-Xylene	<1.6		10	1.6	ug/L			09/28/13 17:27	1
Methyl tert-butyl ether	<0.74		1.0	0.74	ug/L			09/28/13 17:27	1
Methylene Chloride	<3.0		5.0	3.0	ug/L			09/28/13 17:27	1
o-Xylene	<0.60		5.0	0.60	ug/L			09/28/13 17:27	1
Tetrachloroethene	<0.58		1.0	0.58	ug/L			09/28/13 17:27	1
<b>Toluene</b>	<b>1.4</b>		1.0	0.70	ug/L			09/28/13 17:27	1
trans-1,2-Dichloroethene	<0.50		1.0	0.50	ug/L			09/28/13 17:27	1
trans-1,3-Dichloropropene	<0.50		5.0	0.50	ug/L			09/28/13 17:27	1
Trichloroethene	<0.50		1.0	0.50	ug/L			09/28/13 17:27	1
Trichlorofluoromethane	<0.52		1.0	0.52	ug/L			09/28/13 17:27	1
Vinyl chloride	<0.50		1.0	0.50	ug/L			09/28/13 17:27	1
2-Chloroethyl vinyl ether	<2.0		5.0	2.0	ug/L			09/28/13 17:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	95		78 - 118					09/28/13 17:27	1
Dibromofluoromethane	106		81 - 121					09/28/13 17:27	1
Toluene-d8 (Surr)	94		80 - 120					09/28/13 17:27	1

**Client Sample ID: HS2-006**

**Lab Sample ID: 400-80278-6**

**Date Collected: 09/18/13 11:22**

**Matrix: Water**

**Date Received: 09/19/13 08:30**

## Method: 625 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.15		9.5	0.15	ug/L		09/19/13 15:10	09/24/13 16:35	1
Acenaphthylene	<0.16		9.5	0.16	ug/L		09/19/13 15:10	09/24/13 16:35	1
Anthracene	<0.17		9.5	0.17	ug/L		09/19/13 15:10	09/24/13 16:35	1
Benzidine	<19		48	19	ug/L		09/19/13 15:10	09/24/13 16:35	1
Benzo[a]anthracene	<0.17		9.5	0.17	ug/L		09/19/13 15:10	09/24/13 16:35	1
Benzo[b]fluoranthene	<0.14		9.5	0.14	ug/L		09/19/13 15:10	09/24/13 16:35	1
Benzo[k]fluoranthene	<0.15		9.5	0.15	ug/L		09/19/13 15:10	09/24/13 16:35	1
Benzo[g,h,i]perylene	<0.22		9.5	0.22	ug/L		09/19/13 15:10	09/24/13 16:35	1
Benzo[a]pyrene	<0.11		9.5	0.11	ug/L		09/19/13 15:10	09/24/13 16:35	1
4-Bromophenyl phenyl ether	<0.19		9.5	0.19	ug/L		09/19/13 15:10	09/24/13 16:35	1
Butyl benzyl phthalate	<0.18		9.5	0.18	ug/L		09/19/13 15:10	09/24/13 16:35	1
Bis(2-chloroethoxy)methane	<0.15		9.5	0.15	ug/L		09/19/13 15:10	09/24/13 16:35	1
Bis(2-chloroethyl)ether	<0.48		9.5	0.48	ug/L		09/19/13 15:10	09/24/13 16:35	1
4-Chloro-3-methylphenol	<3.6		9.5	3.6	ug/L		09/19/13 15:10	09/24/13 16:35	1
2-Chloronaphthalene	<0.13		9.5	0.13	ug/L		09/19/13 15:10	09/24/13 16:35	1
2-Chlorophenol	<2.1		9.5	2.1	ug/L		09/19/13 15:10	09/24/13 16:35	1
4-Chlorophenyl phenyl ether	<1.9		9.5	1.9	ug/L		09/19/13 15:10	09/24/13 16:35	1
Chrysene	<0.18		9.5	0.18	ug/L		09/19/13 15:10	09/24/13 16:35	1
Dibenz(a,h)anthracene	<0.23		9.5	0.23	ug/L		09/19/13 15:10	09/24/13 16:35	1
Di-n-butyl phthalate	<2.6		9.5	2.6	ug/L		09/19/13 15:10	09/24/13 16:35	1

TestAmerica Pensacola

# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

Client Sample ID: HS2-006

Lab Sample ID: 400-80278-6

Date Collected: 09/18/13 11:22

Matrix: Water

Date Received: 09/19/13 08:30

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	<0.16		9.5	0.16	ug/L		09/19/13 15:10	09/24/13 16:35	1
1,3-Dichlorobenzene	<0.17		9.5	0.17	ug/L		09/19/13 15:10	09/24/13 16:35	1
1,4-Dichlorobenzene	<0.15		9.5	0.15	ug/L		09/19/13 15:10	09/24/13 16:35	1
3,3'-Dichlorobenzidine	<2.5		9.5	2.5	ug/L		09/19/13 15:10	09/24/13 16:35	1
2,4-Dichlorophenol	<2.9		9.5	2.9	ug/L		09/19/13 15:10	09/24/13 16:35	1
Diethyl phthalate	0.88	J	9.5	0.23	ug/L		09/19/13 15:10	09/24/13 16:35	1
2,4-Dimethylphenol	<3.3		9.5	3.3	ug/L		09/19/13 15:10	09/24/13 16:35	1
Dimethyl phthalate	<0.16		9.5	0.16	ug/L		09/19/13 15:10	09/24/13 16:35	1
4,6-Dinitro-2-methylphenol	<1.5		9.5	1.5	ug/L		09/19/13 15:10	09/24/13 16:35	1
2,4-Dinitrophenol	<3.2		29	3.2	ug/L		09/19/13 15:10	09/24/13 16:35	1
2,4-Dinitrotoluene	<1.8		9.5	1.8	ug/L		09/19/13 15:10	09/24/13 16:35	1
2,6-Dinitrotoluene	<1.8		9.5	1.8	ug/L		09/19/13 15:10	09/24/13 16:35	1
Di-n-octyl phthalate	<0.16		9.5	0.16	ug/L		09/19/13 15:10	09/24/13 16:35	1
Bis(2-ethylhexyl) phthalate	<1.9		9.5	1.9	ug/L		09/19/13 15:10	09/24/13 16:35	1
Fluoranthene	<0.17		9.5	0.17	ug/L		09/19/13 15:10	09/24/13 16:35	1
Fluorene	<0.17		9.5	0.17	ug/L		09/19/13 15:10	09/24/13 16:35	1
Hexachlorobenzene	<0.16		9.5	0.16	ug/L		09/19/13 15:10	09/24/13 16:35	1
Hexachlorobutadiene	<3.4		9.5	3.4	ug/L		09/19/13 15:10	09/24/13 16:35	1
Hexachlorocyclopentadiene	<2.5		19	2.5	ug/L		09/19/13 15:10	09/24/13 16:35	1
Hexachloroethane	<4.0		9.5	4.0	ug/L		09/19/13 15:10	09/24/13 16:35	1
Indeno[1,2,3-cd]pyrene	<0.21		9.5	0.21	ug/L		09/19/13 15:10	09/24/13 16:35	1
Isophorone	<0.13		9.5	0.13	ug/L		09/19/13 15:10	09/24/13 16:35	1
Naphthalene	<0.16		9.5	0.16	ug/L		09/19/13 15:10	09/24/13 16:35	1
Nitrobenzene	<0.12		9.5	0.12	ug/L		09/19/13 15:10	09/24/13 16:35	1
2-Nitrophenol	<5.0		9.5	5.0	ug/L		09/19/13 15:10	09/24/13 16:35	1
4-Nitrophenol	<2.0		9.5	2.0	ug/L		09/19/13 15:10	09/24/13 16:35	1
N-Nitrosodimethylamine	<3.3		9.5	3.3	ug/L		09/19/13 15:10	09/24/13 16:35	1
N-Nitrosodiphenylamine	<0.17		9.5	0.17	ug/L		09/19/13 15:10	09/24/13 16:35	1
N-Nitrosodi-n-propylamine	<3.1		9.5	3.1	ug/L		09/19/13 15:10	09/24/13 16:35	1
Pentachlorophenol	<1.3		19	1.3	ug/L		09/19/13 15:10	09/24/13 16:35	1
Phenanthrene	<0.17		9.5	0.17	ug/L		09/19/13 15:10	09/24/13 16:35	1
Phenol	<2.5		9.5	2.5	ug/L		09/19/13 15:10	09/24/13 16:35	1
Pyrene	<0.20		9.5	0.20	ug/L		09/19/13 15:10	09/24/13 16:35	1
1,2,4-Trichlorobenzene	<0.17		9.5	0.17	ug/L		09/19/13 15:10	09/24/13 16:35	1
2,4,6-Trichlorophenol	<3.3		9.5	3.3	ug/L		09/19/13 15:10	09/24/13 16:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	84		15 - 135				09/19/13 15:10	09/24/13 16:35	1
2-Fluorobiphenyl	68		34 - 113				09/19/13 15:10	09/24/13 16:35	1
2-Fluorophenol	54		10 - 104				09/19/13 15:10	09/24/13 16:35	1
Nitrobenzene-d5	71		27 - 110				09/19/13 15:10	09/24/13 16:35	1
Phenol-d5	56		10 - 110				09/19/13 15:10	09/24/13 16:35	1
Terphenyl-d14	71		53 - 125				09/19/13 15:10	09/24/13 16:35	1

TestAmerica Pensacola

# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

**Client Sample ID: HS2-008**

**Lab Sample ID: 400-80278-8**

**Date Collected: 09/18/13 11:26**

**Matrix: Water**

**Date Received: 09/19/13 08:30**

## Method: 608 - Organochlorine Pesticides/PCBs in Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.0014		0.024	0.0014	ug/L		09/19/13 15:06	09/27/13 13:58	1
alpha-BHC	<0.0017		0.024	0.0017	ug/L		09/19/13 15:06	09/27/13 13:58	1
beta-BHC	<0.0014		0.024	0.0014	ug/L		09/19/13 15:06	09/27/13 13:58	1
delta-BHC	<0.0010		0.024	0.0010	ug/L		09/19/13 15:06	09/27/13 13:58	1
gamma-BHC (Lindane)	<0.012		0.024	0.012	ug/L		09/19/13 15:06	09/27/13 13:58	1
Chlordane (technical)	<0.062		0.24	0.062	ug/L		09/19/13 15:06	09/27/13 13:58	1
4,4'-DDD	<0.0014		0.024	0.0014	ug/L		09/19/13 15:06	09/27/13 13:58	1
4,4'-DDE	<0.0010		0.024	0.0010	ug/L		09/19/13 15:06	09/27/13 13:58	1
4,4'-DDT	<0.0019		0.024	0.0019	ug/L		09/19/13 15:06	09/27/13 13:58	1
Dieldrin	<0.0014		0.024	0.0014	ug/L		09/19/13 15:06	09/27/13 13:58	1
Endosulfan I	<0.0014		0.024	0.0014	ug/L		09/19/13 15:06	09/27/13 13:58	1
Endosulfan II	<0.0035		0.024	0.0035	ug/L		09/19/13 15:06	09/27/13 13:58	1
Endosulfan sulfate	<0.0010		0.024	0.0010	ug/L		09/19/13 15:06	09/27/13 13:58	1
Endrin	<0.0014		0.024	0.0014	ug/L		09/19/13 15:06	09/27/13 13:58	1
Endrin aldehyde	<0.0013		0.024	0.0013	ug/L		09/19/13 15:06	09/27/13 13:58	1
Heptachlor	<0.0015		0.024	0.0015	ug/L		09/19/13 15:06	09/27/13 13:58	1
Heptachlor epoxide	<0.0015		0.024	0.0015	ug/L		09/19/13 15:06	09/27/13 13:58	1
PCB-1016	<0.023		0.24	0.023	ug/L		09/19/13 15:06	09/26/13 21:53	1
PCB-1221	<0.10		0.24	0.10	ug/L		09/19/13 15:06	09/26/13 21:53	1
PCB-1232	<0.048		0.24	0.048	ug/L		09/19/13 15:06	09/26/13 21:53	1
PCB-1242	<0.016		0.24	0.016	ug/L		09/19/13 15:06	09/26/13 21:53	1
PCB-1248	<0.0095		0.24	0.0095	ug/L		09/19/13 15:06	09/26/13 21:53	1
PCB-1254	<0.027		0.24	0.027	ug/L		09/19/13 15:06	09/26/13 21:53	1
PCB-1260	<0.016		0.24	0.016	ug/L		09/19/13 15:06	09/26/13 21:53	1
Toxaphene	<0.14		1.4	0.14	ug/L		09/19/13 15:06	09/27/13 13:58	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
DCB Decachlorobiphenyl	71		47 - 148				09/19/13 15:06	09/26/13 21:53	1
Tetrachloro-m-xylene	93		65 - 134				09/19/13 15:06	09/26/13 21:53	1

**Client Sample ID: HS2-010**

**Lab Sample ID: 400-80278-10**

**Date Collected: 09/18/13 11:30**

**Matrix: Water**

**Date Received: 09/19/13 08:30**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	<2.0		2.0	2.0	mg/L			09/20/13 10:46	1

**Client Sample ID: HS2-011**

**Lab Sample ID: 400-80278-11**

**Date Collected: 09/18/13 11:32**

**Matrix: Water**

**Date Received: 09/19/13 08:30**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenols, Total	<0.0045		0.0050	0.0045	mg/L		09/27/13 14:03	10/01/13 13:28	1

TestAmerica Pensacola

# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

**Client Sample ID: HS3-014**

**Date Collected: 09/18/13 13:28**

**Date Received: 09/19/13 08:30**

**Lab Sample ID: 400-80278-12**

**Matrix: Water**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.016		0.050	0.016	mg/L			09/20/13 11:51	1
Nitrogen, Kjeldahl	1.1		0.50	0.26	mg/L		09/26/13 14:39	09/27/13 15:14	1
Nitrate Nitrite as N	1.7		0.050	0.018	mg/L			09/23/13 13:44	1
Chemical Oxygen Demand	23		10	6.4	mg/L			10/01/13 13:07	1

**Client Sample ID: HS2-013**

**Date Collected: 09/18/13 11:34**

**Date Received: 09/19/13 08:30**

**Lab Sample ID: 400-80278-13**

**Matrix: Water**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.0082		0.0050	0.0022	mg/L		09/23/13 12:40	09/24/13 08:55	1

**Client Sample ID: HS2-014**

**Date Collected: 09/18/13 11:34**

**Date Received: 09/19/13 08:30**

**Lab Sample ID: 400-80278-14**

**Matrix: Water**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.10		0.050	0.016	mg/L			09/20/13 11:52	1
Nitrogen, Kjeldahl	0.76		0.50	0.26	mg/L		09/26/13 14:39	09/27/13 15:15	1
Nitrate Nitrite as N	1.5		0.050	0.018	mg/L			09/23/13 10:08	1
Chemical Oxygen Demand	13		10	6.4	mg/L			10/01/13 13:07	1

**Client Sample ID: HS3-002**

**Date Collected: 09/18/13 13:26**

**Date Received: 09/19/13 08:30**

**Lab Sample ID: 400-80278-15**

**Matrix: Water**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ortho-Phosphate	0.24		0.050	0.015	mg/L			09/19/13 17:46	1

**Client Sample ID: HS3-003**

**Date Collected: 09/18/13 13:27**

**Date Received: 09/19/13 08:30**

**Lab Sample ID: 400-80278-16**

**Matrix: Water**

## Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.010		0.050	0.010	mg/L		09/23/13 09:10	09/23/13 17:32	1
Arsenic	<0.0040		0.0050	0.0040	mg/L		09/23/13 09:10	09/23/13 17:32	1
Beryllium	<0.0010		0.0030	0.0010	mg/L		09/23/13 09:10	09/23/13 17:32	1
Cadmium	<0.0010		0.0050	0.0010	mg/L		09/23/13 09:10	09/23/13 17:32	1
Chromium	<0.0020		0.0050	0.0020	mg/L		09/23/13 09:10	09/23/13 17:32	1
Copper	0.0063	J	0.010	0.0020	mg/L		09/23/13 09:10	09/23/13 17:32	1
Lead	0.011		0.0050	0.0020	mg/L		09/23/13 09:10	09/23/13 17:32	1
Nickel	<0.0030		0.0050	0.0030	mg/L		09/23/13 09:10	09/23/13 17:32	1
Selenium	<0.0040		0.010	0.0040	mg/L		09/23/13 09:10	09/23/13 17:32	1
Silver	<0.0020		0.0050	0.0020	mg/L		09/23/13 09:10	09/23/13 17:32	1
Thallium	<0.0040		0.010	0.0040	mg/L		09/23/13 09:10	09/23/13 17:32	1
Zinc	0.067		0.020	0.0080	mg/L		09/23/13 09:10	09/23/13 17:32	1

TestAmerica Pensacola

# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

**Client Sample ID: HS3-003**

**Lab Sample ID: 400-80278-16**

**Date Collected: 09/18/13 13:27**

**Matrix: Water**

**Date Received: 09/19/13 08:30**

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		10/01/13 08:35	10/01/13 14:28	1

**Client Sample ID: HS3-004**

**Lab Sample ID: 400-80278-17**

**Date Collected: 09/18/13 13:30**

**Matrix: Water**

**Date Received: 09/19/13 08:30**

**Method: 624 - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.50		1.0	0.50	ug/L			09/28/13 17:53	1
1,1,2,2-Tetrachloroethane	<0.50		1.0	0.50	ug/L			09/28/13 17:53	1
1,1,2-Trichloroethane	<0.50		5.0	0.50	ug/L			09/28/13 17:53	1
1,1-Dichloroethane	<0.50		1.0	0.50	ug/L			09/28/13 17:53	1
1,1-Dichloroethene	<0.50		1.0	0.50	ug/L			09/28/13 17:53	1
1,2-Dichlorobenzene	<0.50		1.0	0.50	ug/L			09/28/13 17:53	1
1,2-Dichloroethane	<0.50		1.0	0.50	ug/L			09/28/13 17:53	1
1,2-Dichloropropane	<0.50		1.0	0.50	ug/L			09/28/13 17:53	1
1,3-Dichlorobenzene	<0.54		1.0	0.54	ug/L			09/28/13 17:53	1
1,4-Dichlorobenzene	<0.64		1.0	0.64	ug/L			09/28/13 17:53	1
Acrolein	<20 *		20	20	ug/L			09/28/13 17:53	1
Acrylonitrile	<2.8		5.0	2.8	ug/L			09/28/13 17:53	1
Benzene	<0.34		1.0	0.34	ug/L			09/28/13 17:53	1
Bromoform	<0.71		5.0	0.71	ug/L			09/28/13 17:53	1
Bromomethane	<0.98		1.0	0.98	ug/L			09/28/13 17:53	1
Carbon tetrachloride	<0.50		1.0	0.50	ug/L			09/28/13 17:53	1
Chlorobenzene	<0.50		1.0	0.50	ug/L			09/28/13 17:53	1
Dibromochloromethane	<0.50		1.0	0.50	ug/L			09/28/13 17:53	1
Chloroethane	<0.76		1.0	0.76	ug/L			09/28/13 17:53	1
<b>Chloroform</b>	<b>1.1</b>		1.0	0.60	ug/L			09/28/13 17:53	1
Chloromethane	<0.83		1.0	0.83	ug/L			09/28/13 17:53	1
cis-1,2-Dichloroethene	<0.50		1.0	0.50	ug/L			09/28/13 17:53	1
cis-1,3-Dichloropropene	<0.50		5.0	0.50	ug/L			09/28/13 17:53	1
Bromodichloromethane	<0.50		1.0	0.50	ug/L			09/28/13 17:53	1
Ethylbenzene	<0.50		1.0	0.50	ug/L			09/28/13 17:53	1
m-Xylene & p-Xylene	<1.6		10	1.6	ug/L			09/28/13 17:53	1
Methyl tert-butyl ether	<0.74		1.0	0.74	ug/L			09/28/13 17:53	1
Methylene Chloride	<3.0		5.0	3.0	ug/L			09/28/13 17:53	1
o-Xylene	<0.60		5.0	0.60	ug/L			09/28/13 17:53	1
Tetrachloroethene	<0.58		1.0	0.58	ug/L			09/28/13 17:53	1
Toluene	<0.70		1.0	0.70	ug/L			09/28/13 17:53	1
trans-1,2-Dichloroethene	<0.50		1.0	0.50	ug/L			09/28/13 17:53	1
trans-1,3-Dichloropropene	<0.50		5.0	0.50	ug/L			09/28/13 17:53	1
Trichloroethene	<0.50		1.0	0.50	ug/L			09/28/13 17:53	1
Trichlorofluoromethane	<0.52		1.0	0.52	ug/L			09/28/13 17:53	1
Vinyl chloride	<0.50		1.0	0.50	ug/L			09/28/13 17:53	1
2-Chloroethyl vinyl ether	<2.0		5.0	2.0	ug/L			09/28/13 17:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	94		78 - 118		09/28/13 17:53	1
Dibromofluoromethane	107		81 - 121		09/28/13 17:53	1
Toluene-d8 (Surr)	92		80 - 120		09/28/13 17:53	1

TestAmerica Pensacola

# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

**Client Sample ID: HS3-010**

**Lab Sample ID: 400-80278-19**

Date Collected: 09/18/13 13:07

Matrix: Water

Date Received: 09/19/13 08:30

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	6.3		2.0	2.0	mg/L			09/20/13 10:47	1

**Client Sample ID: HS3-011**

**Lab Sample ID: 400-80278-20**

Date Collected: 09/18/13 13:09

Matrix: Water

Date Received: 09/19/13 08:30

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenols, Total	<0.0045		0.0050	0.0045	mg/L		09/27/13 14:03	10/01/13 13:28	1

**Client Sample ID: HS3-013**

**Lab Sample ID: 400-80278-22**

Date Collected: 09/18/13 13:28

Matrix: Water

Date Received: 09/19/13 08:30

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.0022		0.0050	0.0022	mg/L		09/23/13 12:40	09/24/13 08:55	1

**Client Sample ID: HS4-002**

**Lab Sample ID: 400-80278-23**

Date Collected: 09/18/13 14:48

Matrix: Water

Date Received: 09/19/13 08:30

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ortho-Phosphate	0.33		0.050	0.015	mg/L			09/19/13 17:46	1

**Client Sample ID: HS4-003**

**Lab Sample ID: 400-80278-24**

Date Collected: 09/18/13 14:53

Matrix: Water

Date Received: 09/19/13 08:30

## Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.010		0.050	0.010	mg/L		09/23/13 09:10	09/23/13 17:36	1
Arsenic	<0.0040		0.0050	0.0040	mg/L		09/23/13 09:10	09/23/13 17:36	1
Beryllium	<0.0010		0.0030	0.0010	mg/L		09/23/13 09:10	09/23/13 17:36	1
Cadmium	<0.0010		0.0050	0.0010	mg/L		09/23/13 09:10	09/23/13 17:36	1
Chromium	<0.0020		0.0050	0.0020	mg/L		09/23/13 09:10	09/23/13 17:36	1
Copper	0.0043	J	0.010	0.0020	mg/L		09/23/13 09:10	09/23/13 17:36	1
Lead	0.010		0.0050	0.0020	mg/L		09/23/13 09:10	09/23/13 17:36	1
Nickel	0.0049	J	0.0050	0.0030	mg/L		09/23/13 09:10	09/23/13 17:36	1
Selenium	<0.0040		0.010	0.0040	mg/L		09/23/13 09:10	09/23/13 17:36	1
Silver	<0.0020		0.0050	0.0020	mg/L		09/23/13 09:10	09/23/13 17:36	1
Thallium	<0.0040		0.010	0.0040	mg/L		09/23/13 09:10	09/23/13 17:36	1
Zinc	0.064		0.020	0.0080	mg/L		09/23/13 09:10	09/23/13 17:36	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		10/01/13 08:35	10/01/13 15:43	1

TestAmerica Pensacola



# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

Client Sample ID: HS4-004

Lab Sample ID: 400-80278-25

Date Collected: 09/18/13 14:49

Matrix: Water

Date Received: 09/19/13 08:30

## Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.50		1.0	0.50	ug/L			09/28/13 18:19	1
1,1,1,2-Tetrachloroethane	<0.50		1.0	0.50	ug/L			09/28/13 18:19	1
1,1,2-Trichloroethane	<0.50		5.0	0.50	ug/L			09/28/13 18:19	1
1,1-Dichloroethane	<0.50		1.0	0.50	ug/L			09/28/13 18:19	1
1,1-Dichloroethene	<0.50		1.0	0.50	ug/L			09/28/13 18:19	1
1,2-Dichlorobenzene	<0.50		1.0	0.50	ug/L			09/28/13 18:19	1
1,2-Dichloroethane	<0.50		1.0	0.50	ug/L			09/28/13 18:19	1
1,2-Dichloropropane	<0.50		1.0	0.50	ug/L			09/28/13 18:19	1
1,3-Dichlorobenzene	<0.54		1.0	0.54	ug/L			09/28/13 18:19	1
1,4-Dichlorobenzene	<0.64		1.0	0.64	ug/L			09/28/13 18:19	1
Acrolein	<20 *		20	20	ug/L			09/28/13 18:19	1
Acrylonitrile	<2.8		5.0	2.8	ug/L			09/28/13 18:19	1
Benzene	<0.34		1.0	0.34	ug/L			09/28/13 18:19	1
Bromoform	<0.71		5.0	0.71	ug/L			09/28/13 18:19	1
Bromomethane	<0.98		1.0	0.98	ug/L			09/28/13 18:19	1
Carbon tetrachloride	<0.50		1.0	0.50	ug/L			09/28/13 18:19	1
Chlorobenzene	<0.50		1.0	0.50	ug/L			09/28/13 18:19	1
Dibromochloromethane	<0.50		1.0	0.50	ug/L			09/28/13 18:19	1
Chloroethane	<0.76		1.0	0.76	ug/L			09/28/13 18:19	1
Chloroform	<0.60		1.0	0.60	ug/L			09/28/13 18:19	1
Chloromethane	<0.83		1.0	0.83	ug/L			09/28/13 18:19	1
cis-1,2-Dichloroethene	<0.50		1.0	0.50	ug/L			09/28/13 18:19	1
cis-1,3-Dichloropropene	<0.50		5.0	0.50	ug/L			09/28/13 18:19	1
Bromodichloromethane	<0.50		1.0	0.50	ug/L			09/28/13 18:19	1
Ethylbenzene	<0.50		1.0	0.50	ug/L			09/28/13 18:19	1
m-Xylene & p-Xylene	<1.6		10	1.6	ug/L			09/28/13 18:19	1
Methyl tert-butyl ether	<0.74		1.0	0.74	ug/L			09/28/13 18:19	1
Methylene Chloride	<3.0		5.0	3.0	ug/L			09/28/13 18:19	1
o-Xylene	<0.60		5.0	0.60	ug/L			09/28/13 18:19	1
Tetrachloroethene	<0.58		1.0	0.58	ug/L			09/28/13 18:19	1
Toluene	<0.70		1.0	0.70	ug/L			09/28/13 18:19	1
trans-1,2-Dichloroethene	<0.50		1.0	0.50	ug/L			09/28/13 18:19	1
trans-1,3-Dichloropropene	<0.50		5.0	0.50	ug/L			09/28/13 18:19	1
Trichloroethene	<0.50		1.0	0.50	ug/L			09/28/13 18:19	1
Trichlorofluoromethane	<0.52		1.0	0.52	ug/L			09/28/13 18:19	1
Vinyl chloride	<0.50		1.0	0.50	ug/L			09/28/13 18:19	1
2-Chloroethyl vinyl ether	<2.0		5.0	2.0	ug/L			09/28/13 18:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	94		78 - 118		09/28/13 18:19	1
Dibromofluoromethane	108		81 - 121		09/28/13 18:19	1
Toluene-d8 (Surr)	92		80 - 120		09/28/13 18:19	1

Client Sample ID: HS2-001

Lab Sample ID: 400-80278-27

Date Collected: 09/18/13 11:19

Matrix: Water

Date Received: 09/19/13 08:30

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phosphorus	1.3		0.010	0.0050	mg/L		10/04/13 10:54	10/04/13 15:35	5

TestAmerica Pensacola



## Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

**Client Sample ID: HS3-001**

**Date Collected: 09/18/13 13:25**

**Date Received: 09/19/13 08:30**

**Lab Sample ID: 400-80278-28**

**Matrix: Water**

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phosphorus	0.27		0.0020	0.0010	mg/L	—	10/04/13 10:54	10/04/13 14:39	1

**Client Sample ID: HS4-001**

**Date Collected: 09/18/13 14:45**

**Date Received: 09/19/13 08:30**

**Lab Sample ID: 400-80278-29**

**Matrix: Water**

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phosphorus	0.47		0.0040	0.0020	mg/L	—	10/04/13 10:54	10/04/13 15:18	2

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

## Method: 624 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 400-193116/4

Matrix: Water

Analysis Batch: 193116

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.50		1.0	0.50	ug/L			09/28/13 07:32	1
1,1,2,2-Tetrachloroethane	<0.50		1.0	0.50	ug/L			09/28/13 07:32	1
1,1,2-Trichloroethane	<0.50		5.0	0.50	ug/L			09/28/13 07:32	1
1,1-Dichloroethane	<0.50		1.0	0.50	ug/L			09/28/13 07:32	1
1,1-Dichloroethene	<0.50		1.0	0.50	ug/L			09/28/13 07:32	1
1,2-Dichlorobenzene	<0.50		1.0	0.50	ug/L			09/28/13 07:32	1
1,2-Dichloroethane	<0.50		1.0	0.50	ug/L			09/28/13 07:32	1
1,2-Dichloropropane	<0.50		1.0	0.50	ug/L			09/28/13 07:32	1
1,3-Dichlorobenzene	<0.54		1.0	0.54	ug/L			09/28/13 07:32	1
1,4-Dichlorobenzene	<0.64		1.0	0.64	ug/L			09/28/13 07:32	1
Acrolein	<20		20	20	ug/L			09/28/13 07:32	1
Acrylonitrile	<2.8		5.0	2.8	ug/L			09/28/13 07:32	1
Benzene	<0.34		1.0	0.34	ug/L			09/28/13 07:32	1
Bromoform	<0.71		5.0	0.71	ug/L			09/28/13 07:32	1
Bromomethane	<0.98		1.0	0.98	ug/L			09/28/13 07:32	1
Carbon tetrachloride	<0.50		1.0	0.50	ug/L			09/28/13 07:32	1
Chlorobenzene	<0.50		1.0	0.50	ug/L			09/28/13 07:32	1
Dibromochloromethane	<0.50		1.0	0.50	ug/L			09/28/13 07:32	1
Chloroethane	<0.76		1.0	0.76	ug/L			09/28/13 07:32	1
Chloroform	<0.60		1.0	0.60	ug/L			09/28/13 07:32	1
Chloromethane	<0.83		1.0	0.83	ug/L			09/28/13 07:32	1
cis-1,2-Dichloroethene	<0.50		1.0	0.50	ug/L			09/28/13 07:32	1
cis-1,3-Dichloropropene	<0.50		5.0	0.50	ug/L			09/28/13 07:32	1
Bromodichloromethane	<0.50		1.0	0.50	ug/L			09/28/13 07:32	1
Ethylbenzene	<0.50		1.0	0.50	ug/L			09/28/13 07:32	1
m-Xylene & p-Xylene	<1.6		10	1.6	ug/L			09/28/13 07:32	1
Methyl tert-butyl ether	<0.74		1.0	0.74	ug/L			09/28/13 07:32	1
Methylene Chloride	<3.0		5.0	3.0	ug/L			09/28/13 07:32	1
o-Xylene	<0.60		5.0	0.60	ug/L			09/28/13 07:32	1
Tetrachloroethene	<0.58		1.0	0.58	ug/L			09/28/13 07:32	1
Toluene	<0.70		1.0	0.70	ug/L			09/28/13 07:32	1
trans-1,2-Dichloroethene	<0.50		1.0	0.50	ug/L			09/28/13 07:32	1
trans-1,3-Dichloropropene	<0.50		5.0	0.50	ug/L			09/28/13 07:32	1
Trichloroethene	<0.50		1.0	0.50	ug/L			09/28/13 07:32	1
Trichlorofluoromethane	<0.52		1.0	0.52	ug/L			09/28/13 07:32	1
Vinyl chloride	<0.50		1.0	0.50	ug/L			09/28/13 07:32	1
2-Chloroethyl vinyl ether	<2.0		5.0	2.0	ug/L			09/28/13 07:32	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	94		78 - 118		09/28/13 07:32	1
Dibromofluoromethane	108		81 - 121		09/28/13 07:32	1
Toluene-d8 (Surr)	94		80 - 120		09/28/13 07:32	1

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

## Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 400-193116/1000

Matrix: Water

Analysis Batch: 193116

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	50.0	52.3		ug/L		105	52 - 162
1,1,1,2-Tetrachloroethane	50.0	41.1		ug/L		82	46 - 157
1,1,2-Trichloroethane	50.0	44.3		ug/L		89	52 - 150
1,1-Dichloroethane	50.0	47.0		ug/L		94	59 - 155
1,1-Dichloroethene	50.0	45.6		ug/L		91	1 - 234
1,2-Dichlorobenzene	50.0	45.6		ug/L		91	18 - 190
1,2-Dichloroethane	50.0	52.5		ug/L		105	49 - 155
1,2-Dichloropropane	50.0	45.8		ug/L		92	1 - 210
1,3-Dichlorobenzene	50.0	45.3		ug/L		91	59 - 156
1,4-Dichlorobenzene	50.0	45.4		ug/L		91	18 - 190
Acrolein	500	126	*	ug/L		25	38 - 145
Acrylonitrile	500	483		ug/L		97	23 - 150
Benzene	50.0	45.3		ug/L		91	37 - 151
Bromoform	50.0	47.7		ug/L		95	45 - 169
Bromomethane	50.0	12.7		ug/L		25	1 - 242
Carbon tetrachloride	50.0	52.1		ug/L		104	70 - 140
Chlorobenzene	50.0	44.5		ug/L		89	37 - 160
Dibromochloromethane	50.0	46.9		ug/L		94	53 - 149
Chloroethane	50.0	36.2		ug/L		72	14 - 230
Chloroform	50.0	49.2		ug/L		98	51 - 138
Chloromethane	50.0	40.5		ug/L		81	1 - 273
cis-1,2-Dichloroethene	50.0	46.7		ug/L		93	67 - 135
cis-1,3-Dichloropropene	50.0	49.5		ug/L		99	1 - 227
Bromodichloromethane	50.0	49.8		ug/L		100	35 - 155
Ethylbenzene	50.0	45.3		ug/L		91	37 - 162
m-Xylene & p-Xylene	50.0	45.6		ug/L		91	66 - 130
Methyl tert-butyl ether	50.0	50.5		ug/L		101	69 - 127
Methylene Chloride	50.0	45.8		ug/L		92	1 - 221
o-Xylene	50.0	47.4		ug/L		95	71 - 125
Tetrachloroethene	50.0	45.8		ug/L		92	64 - 148
Toluene	50.0	43.3		ug/L		87	47 - 150
trans-1,2-Dichloroethene	50.0	46.6		ug/L		93	54 - 156
trans-1,3-Dichloropropene	50.0	47.0		ug/L		94	17 - 183
Trichloroethene	50.0	50.0		ug/L		100	71 - 157
Trichlorofluoromethane	50.0	55.8		ug/L		112	17 - 181
Vinyl chloride	50.0	44.4		ug/L		89	1 - 251
2-Chloroethyl vinyl ether	50.0	34.8		ug/L		70	1 - 305

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	97		78 - 118
Dibromofluoromethane	105		81 - 121
Toluene-d8 (Surr)	94		80 - 120

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 400-192150/1-A

Matrix: Water

Analysis Batch: 192532

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192150

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.16		10	0.16	ug/L		09/19/13 09:17	09/23/13 19:17	1
Acenaphthylene	<0.17		10	0.17	ug/L		09/19/13 09:17	09/23/13 19:17	1
Anthracene	<0.18		10	0.18	ug/L		09/19/13 09:17	09/23/13 19:17	1
Benzidine	<20		50	20	ug/L		09/19/13 09:17	09/23/13 19:17	1
Benzo[a]anthracene	<0.18		10	0.18	ug/L		09/19/13 09:17	09/23/13 19:17	1
Benzo[b]fluoranthene	<0.15		10	0.15	ug/L		09/19/13 09:17	09/23/13 19:17	1
Benzo[k]fluoranthene	<0.16		10	0.16	ug/L		09/19/13 09:17	09/23/13 19:17	1
Benzo[g,h,i]perylene	<0.23		10	0.23	ug/L		09/19/13 09:17	09/23/13 19:17	1
Benzo[a]pyrene	<0.12		10	0.12	ug/L		09/19/13 09:17	09/23/13 19:17	1
4-Bromophenyl phenyl ether	<0.20		10	0.20	ug/L		09/19/13 09:17	09/23/13 19:17	1
Butyl benzyl phthalate	<0.19		10	0.19	ug/L		09/19/13 09:17	09/23/13 19:17	1
Bis(2-chloroethoxy)methane	<0.16		10	0.16	ug/L		09/19/13 09:17	09/23/13 19:17	1
Bis(2-chloroethyl)ether	<0.50		10	0.50	ug/L		09/19/13 09:17	09/23/13 19:17	1
4-Chloro-3-methylphenol	<3.8		10	3.8	ug/L		09/19/13 09:17	09/23/13 19:17	1
2-Chloronaphthalene	<0.14		10	0.14	ug/L		09/19/13 09:17	09/23/13 19:17	1
2-Chlorophenol	<2.2		10	2.2	ug/L		09/19/13 09:17	09/23/13 19:17	1
4-Chlorophenyl phenyl ether	<2.0		10	2.0	ug/L		09/19/13 09:17	09/23/13 19:17	1
Chrysene	<0.19		10	0.19	ug/L		09/19/13 09:17	09/23/13 19:17	1
Dibenz(a,h)anthracene	<0.24		10	0.24	ug/L		09/19/13 09:17	09/23/13 19:17	1
Di-n-butyl phthalate	<2.7		10	2.7	ug/L		09/19/13 09:17	09/23/13 19:17	1
1,2-Dichlorobenzene	<0.17		10	0.17	ug/L		09/19/13 09:17	09/23/13 19:17	1
1,3-Dichlorobenzene	<0.18		10	0.18	ug/L		09/19/13 09:17	09/23/13 19:17	1
1,4-Dichlorobenzene	<0.16		10	0.16	ug/L		09/19/13 09:17	09/23/13 19:17	1
3,3'-Dichlorobenzidine	<2.6		10	2.6	ug/L		09/19/13 09:17	09/23/13 19:17	1
2,4-Dichlorophenol	<3.0		10	3.0	ug/L		09/19/13 09:17	09/23/13 19:17	1
Diethyl phthalate	<0.24		10	0.24	ug/L		09/19/13 09:17	09/23/13 19:17	1
2,4-Dimethylphenol	<3.5		10	3.5	ug/L		09/19/13 09:17	09/23/13 19:17	1
Dimethyl phthalate	<0.17		10	0.17	ug/L		09/19/13 09:17	09/23/13 19:17	1
4,6-Dinitro-2-methylphenol	<1.6		10	1.6	ug/L		09/19/13 09:17	09/23/13 19:17	1
2,4-Dinitrophenol	<3.4		30	3.4	ug/L		09/19/13 09:17	09/23/13 19:17	1
2,4-Dinitrotoluene	<1.9		10	1.9	ug/L		09/19/13 09:17	09/23/13 19:17	1
2,6-Dinitrotoluene	<1.9		10	1.9	ug/L		09/19/13 09:17	09/23/13 19:17	1
Di-n-octyl phthalate	<0.17		10	0.17	ug/L		09/19/13 09:17	09/23/13 19:17	1
Bis(2-ethylhexyl) phthalate	<2.0		10	2.0	ug/L		09/19/13 09:17	09/23/13 19:17	1
Fluoranthene	<0.18		10	0.18	ug/L		09/19/13 09:17	09/23/13 19:17	1
Fluorene	<0.18		10	0.18	ug/L		09/19/13 09:17	09/23/13 19:17	1
Hexachlorobenzene	<0.17		10	0.17	ug/L		09/19/13 09:17	09/23/13 19:17	1
Hexachlorobutadiene	<3.6		10	3.6	ug/L		09/19/13 09:17	09/23/13 19:17	1
Hexachlorocyclopentadiene	<2.6		20	2.6	ug/L		09/19/13 09:17	09/23/13 19:17	1
Hexachloroethane	<4.2		10	4.2	ug/L		09/19/13 09:17	09/23/13 19:17	1
Indeno[1,2,3-cd]pyrene	<0.22		10	0.22	ug/L		09/19/13 09:17	09/23/13 19:17	1
Isophorone	<0.14		10	0.14	ug/L		09/19/13 09:17	09/23/13 19:17	1
Naphthalene	<0.17		10	0.17	ug/L		09/19/13 09:17	09/23/13 19:17	1
Nitrobenzene	<0.13		10	0.13	ug/L		09/19/13 09:17	09/23/13 19:17	1
2-Nitrophenol	<5.2		10	5.2	ug/L		09/19/13 09:17	09/23/13 19:17	1
4-Nitrophenol	<2.1		10	2.1	ug/L		09/19/13 09:17	09/23/13 19:17	1
N-Nitrosodimethylamine	<3.5		10	3.5	ug/L		09/19/13 09:17	09/23/13 19:17	1
N-Nitrosodiphenylamine	<0.18		10	0.18	ug/L		09/19/13 09:17	09/23/13 19:17	1

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 400-192150/1-A

Matrix: Water

Analysis Batch: 192532

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192150

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosodi-n-propylamine	<3.3		10	3.3	ug/L		09/19/13 09:17	09/23/13 19:17	1
Pentachlorophenol	<1.4		20	1.4	ug/L		09/19/13 09:17	09/23/13 19:17	1
Phenanthrene	<0.18		10	0.18	ug/L		09/19/13 09:17	09/23/13 19:17	1
Phenol	<2.6		10	2.6	ug/L		09/19/13 09:17	09/23/13 19:17	1
Pyrene	<0.21		10	0.21	ug/L		09/19/13 09:17	09/23/13 19:17	1
1,2,4-Trichlorobenzene	<0.18		10	0.18	ug/L		09/19/13 09:17	09/23/13 19:17	1
2,4,6-Trichlorophenol	<3.5		10	3.5	ug/L		09/19/13 09:17	09/23/13 19:17	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	83		15 - 135	09/19/13 09:17	09/23/13 19:17	1
2-Fluorobiphenyl	83		34 - 113	09/19/13 09:17	09/23/13 19:17	1
2-Fluorophenol	65		10 - 104	09/19/13 09:17	09/23/13 19:17	1
Nitrobenzene-d5	81		27 - 110	09/19/13 09:17	09/23/13 19:17	1
Phenol-d5	71		10 - 110	09/19/13 09:17	09/23/13 19:17	1
Terphenyl-d14	114		53 - 125	09/19/13 09:17	09/23/13 19:17	1

Lab Sample ID: LCS 400-192150/2-A

Matrix: Water

Analysis Batch: 192532

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 192150

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	50.0	42.1		ug/L		84	47 - 145
Acenaphthylene	50.0	41.6		ug/L		83	33 - 145
Anthracene	50.0	43.2		ug/L		86	27 - 133
Benzo[a]anthracene	50.0	42.7		ug/L		85	33 - 143
Benzo[b]fluoranthene	50.0	46.5		ug/L		93	24 - 159
Benzo[k]fluoranthene	50.0	46.0		ug/L		92	11 - 162
Benzo[g,h,i]perylene	50.0	42.2		ug/L		84	10 - 219
Benzo[a]pyrene	50.0	45.6		ug/L		91	17 - 163
4-Bromophenyl phenyl ether	50.0	45.2		ug/L		90	53 - 127
Butyl benzyl phthalate	50.0	55.8		ug/L		112	1 - 152
Bis(2-chloroethoxy)methane	50.0	38.6		ug/L		77	33 - 184
Bis(2-chloroethyl)ether	50.0	34.1		ug/L		68	12 - 158
4-Chloro-3-methylphenol	50.0	43.3		ug/L		87	22 - 147
2-Chloronaphthalene	50.0	39.6		ug/L		79	60 - 118
2-Chlorophenol	50.0	34.7		ug/L		69	23 - 134
4-Chlorophenyl phenyl ether	50.0	46.3		ug/L		93	25 - 158
Chrysene	50.0	40.2		ug/L		80	17 - 168
Dibenz(a,h)anthracene	50.0	42.8		ug/L		86	10 - 227
Di-n-butyl phthalate	50.0	54.3		ug/L		109	1 - 118
1,2-Dichlorobenzene	50.0	35.2		ug/L		70	32 - 129
1,3-Dichlorobenzene	50.0	34.1		ug/L		68	10 - 172
1,4-Dichlorobenzene	50.0	35.3		ug/L		71	20 - 124
3,3'-Dichlorobenzidine	50.0	45.1		ug/L		90	10 - 262
2,4-Dichlorophenol	50.0	39.8		ug/L		80	39 - 135
Diethyl phthalate	50.0	50.6		ug/L		101	10 - 114
2,4-Dimethylphenol	50.0	41.9		ug/L		84	32 - 119
Dimethyl phthalate	50.0	44.3		ug/L		89	10 - 112

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 400-192150/2-A

Matrix: Water

Analysis Batch: 192532

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 192150

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4,6-Dinitro-2-methylphenol	100	53.6		ug/L		54	10 - 181
2,4-Dinitrophenol	100	55.2		ug/L		55	30 - 191
2,4-Dinitrotoluene	50.0	47.0		ug/L		94	39 - 139
2,6-Dinitrotoluene	50.0	42.8		ug/L		86	50 - 158
Di-n-octyl phthalate	50.0	48.7		ug/L		97	4 - 146
Bis(2-ethylhexyl) phthalate	50.0	54.8		ug/L		110	8 - 158
Fluoranthene	50.0	43.9		ug/L		88	26 - 137
Fluorene	50.0	44.6		ug/L		89	59 - 121
Hexachlorobenzene	50.0	46.6		ug/L		93	10 - 152
Hexachlorobutadiene	50.0	43.4		ug/L		87	24 - 116
Hexachlorocyclopentadiene	50.0	26.7		ug/L		53	10 - 122
Hexachloroethane	50.0	33.7		ug/L		67	40 - 113
Indeno[1,2,3-cd]pyrene	50.0	43.0		ug/L		86	10 - 171
Isophorone	50.0	40.6		ug/L		81	21 - 196
Naphthalene	50.0	39.8		ug/L		80	21 - 133
Nitrobenzene	50.0	38.6		ug/L		77	35 - 180
2-Nitrophenol	50.0	35.5		ug/L		71	29 - 182
4-Nitrophenol	100	82.4		ug/L		82	10 - 132
N-Nitrosodimethylamine	50.0	29.5		ug/L		59	38 - 104
N-Nitrosodiphenylamine	58.6	51.3		ug/L		88	58 - 120
N-Nitrosodi-n-propylamine	50.0	41.8		ug/L		84	10 - 230
Pentachlorophenol	100	81.7		ug/L		82	14 - 176
Phenanthrene	50.0	43.0		ug/L		86	54 - 120
Phenol	50.0	31.0		ug/L		62	5 - 112
Pyrene	50.0	50.2		ug/L		100	52 - 115
1,2,4-Trichlorobenzene	50.0	38.3		ug/L		77	44 - 142
2,4,6-Trichlorophenol	50.0	40.5		ug/L		81	37 - 144

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol	102		15 - 135
2-Fluorobiphenyl	86		34 - 113
2-Fluorophenol	62		10 - 104
Nitrobenzene-d5	83		27 - 110
Phenol-d5	71		10 - 110
Terphenyl-d14	121		53 - 125

Lab Sample ID: LCSD 400-192150/3-A

Matrix: Water

Analysis Batch: 192532

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 192150

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	50.0	40.9		ug/L		82	47 - 145	3	30
Acenaphthylene	50.0	41.3		ug/L		83	33 - 145	1	30
Anthracene	50.0	42.7		ug/L		85	27 - 133	1	30
Benzo[a]anthracene	50.0	42.0		ug/L		84	33 - 143	2	30
Benzo[b]fluoranthene	50.0	44.7		ug/L		89	24 - 159	4	30
Benzo[k]fluoranthene	50.0	45.3		ug/L		91	11 - 162	1	30
Benzo[g,h,i]perylene	50.0	39.9		ug/L		80	10 - 219	6	30

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 400-192150/3-A

Matrix: Water

Analysis Batch: 192532

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 192150

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzo[a]pyrene	50.0	44.5		ug/L		89	17 - 163	2	30
4-Bromophenyl phenyl ether	50.0	43.3		ug/L		87	53 - 127	4	30
Butyl benzyl phthalate	50.0	49.4		ug/L		99	1 - 152	12	30
Bis(2-chloroethoxy)methane	50.0	37.4		ug/L		75	33 - 184	3	30
Bis(2-chloroethyl)ether	50.0	34.9		ug/L		70	12 - 158	2	30
4-Chloro-3-methylphenol	50.0	41.5		ug/L		83	22 - 147	4	30
2-Chloronaphthalene	50.0	38.2		ug/L		76	60 - 118	4	30
2-Chlorophenol	50.0	33.5		ug/L		67	23 - 134	4	30
4-Chlorophenyl phenyl ether	50.0	45.9		ug/L		92	25 - 158	1	30
Chrysene	50.0	40.3		ug/L		81	17 - 168	0	30
Dibenz(a,h)anthracene	50.0	40.7		ug/L		81	10 - 227	5	30
Di-n-butyl phthalate	50.0	53.3		ug/L		107	1 - 118	2	30
1,2-Dichlorobenzene	50.0	34.3		ug/L		69	32 - 129	3	30
1,3-Dichlorobenzene	50.0	33.9		ug/L		68	10 - 172	1	30
1,4-Dichlorobenzene	50.0	34.4		ug/L		69	20 - 124	2	30
3,3'-Dichlorobenzidine	50.0	46.7		ug/L		93	10 - 262	4	30
2,4-Dichlorophenol	50.0	38.2		ug/L		76	39 - 135	4	30
Diethyl phthalate	50.0	50.0		ug/L		100	10 - 114	1	30
2,4-Dimethylphenol	50.0	38.7		ug/L		77	32 - 119	8	30
Dimethyl phthalate	50.0	42.8		ug/L		86	10 - 112	3	30
4,6-Dinitro-2-methylphenol	100	59.3		ug/L		59	10 - 181	10	30
2,4-Dinitrophenol	100	58.2		ug/L		58	30 - 191	5	30
2,4-Dinitrotoluene	50.0	45.6		ug/L		91	39 - 139	3	30
2,6-Dinitrotoluene	50.0	43.7		ug/L		87	50 - 158	2	30
Di-n-octyl phthalate	50.0	49.0		ug/L		98	4 - 146	1	30
Bis(2-ethylhexyl) phthalate	50.0	52.1		ug/L		104	8 - 158	5	30
Fluoranthene	50.0	45.9		ug/L		92	26 - 137	5	30
Fluorene	50.0	44.4		ug/L		89	59 - 121	1	30
Hexachlorobenzene	50.0	47.1		ug/L		94	10 - 152	1	30
Hexachlorobutadiene	50.0	40.9		ug/L		82	24 - 116	6	30
Hexachlorocyclopentadiene	50.0	26.2		ug/L		52	10 - 122	2	30
Hexachloroethane	50.0	34.3		ug/L		69	40 - 113	2	30
Indeno[1,2,3-cd]pyrene	50.0	40.8		ug/L		82	10 - 171	5	30
Isophorone	50.0	40.6		ug/L		81	21 - 196	0	30
Naphthalene	50.0	38.6		ug/L		77	21 - 133	3	30
Nitrobenzene	50.0	38.2		ug/L		76	35 - 180	1	30
2-Nitrophenol	50.0	34.5		ug/L		69	29 - 182	3	30
4-Nitrophenol	100	77.3		ug/L		77	10 - 132	6	30
N-Nitrosodimethylamine	50.0	31.6		ug/L		63	38 - 104	7	30
N-Nitrosodiphenylamine	58.6	50.7		ug/L		87	58 - 120	1	30
N-Nitrosodi-n-propylamine	50.0	39.7		ug/L		79	10 - 230	5	30
Pentachlorophenol	100	75.9		ug/L		76	14 - 176	7	30
Phenanthrene	50.0	42.6		ug/L		85	54 - 120	1	30
Phenol	50.0	26.6		ug/L		53	5 - 112	15	30
Pyrene	50.0	44.1		ug/L		88	52 - 115	13	30
1,2,4-Trichlorobenzene	50.0	37.9		ug/L		76	44 - 142	1	30
2,4,6-Trichlorophenol	50.0	38.8		ug/L		78	37 - 144	4	30

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 400-192150/3-A

Matrix: Water

Analysis Batch: 192532

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 192150

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2,4,6-Tribromophenol	96		15 - 135
2-Fluorobiphenyl	83		34 - 113
2-Fluorophenol	54		10 - 104
Nitrobenzene-d5	78		27 - 110
Phenol-d5	61		10 - 110
Terphenyl-d14	102		53 - 125

## Method: 608 - Organochlorine Pesticides/PCBs in Water

Lab Sample ID: MB 400-192227/1-A

Matrix: Water

Analysis Batch: 193040

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192227

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.024		0.25	0.024	ug/L		09/19/13 15:06	09/26/13 20:38	1
PCB-1221	<0.11		0.25	0.11	ug/L		09/19/13 15:06	09/26/13 20:38	1
PCB-1232	<0.050		0.25	0.050	ug/L		09/19/13 15:06	09/26/13 20:38	1
PCB-1242	<0.017		0.25	0.017	ug/L		09/19/13 15:06	09/26/13 20:38	1
PCB-1248	<0.010		0.25	0.010	ug/L		09/19/13 15:06	09/26/13 20:38	1
PCB-1254	<0.029		0.25	0.029	ug/L		09/19/13 15:06	09/26/13 20:38	1
PCB-1260	<0.017		0.25	0.017	ug/L		09/19/13 15:06	09/26/13 20:38	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	59		47 - 148				09/19/13 15:06	09/26/13 20:38	1
Tetrachloro-m-xylene	102		65 - 134				09/19/13 15:06	09/26/13 20:38	1

Lab Sample ID: MB 400-192227/1-A

Matrix: Water

Analysis Batch: 193096

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192227

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.0015		0.025	0.0015	ug/L		09/19/13 15:06	09/27/13 12:54	1
alpha-BHC	<0.0018		0.025	0.0018	ug/L		09/19/13 15:06	09/27/13 12:54	1
beta-BHC	<0.0015		0.025	0.0015	ug/L		09/19/13 15:06	09/27/13 12:54	1
delta-BHC	<0.0011		0.025	0.0011	ug/L		09/19/13 15:06	09/27/13 12:54	1
gamma-BHC (Lindane)	<0.013		0.025	0.013	ug/L		09/19/13 15:06	09/27/13 12:54	1
Chlordane (technical)	<0.065		0.25	0.065	ug/L		09/19/13 15:06	09/27/13 12:54	1
4,4'-DDD	<0.0015		0.025	0.0015	ug/L		09/19/13 15:06	09/27/13 12:54	1
4,4'-DDE	<0.0011		0.025	0.0011	ug/L		09/19/13 15:06	09/27/13 12:54	1
4,4'-DDT	<0.0020		0.025	0.0020	ug/L		09/19/13 15:06	09/27/13 12:54	1
Dieldrin	<0.0015		0.025	0.0015	ug/L		09/19/13 15:06	09/27/13 12:54	1
Endosulfan I	<0.0015		0.025	0.0015	ug/L		09/19/13 15:06	09/27/13 12:54	1
Endosulfan II	<0.0037		0.025	0.0037	ug/L		09/19/13 15:06	09/27/13 12:54	1
Endosulfan sulfate	<0.0011		0.025	0.0011	ug/L		09/19/13 15:06	09/27/13 12:54	1
Endrin	<0.0015		0.025	0.0015	ug/L		09/19/13 15:06	09/27/13 12:54	1
Endrin aldehyde	<0.0014		0.025	0.0014	ug/L		09/19/13 15:06	09/27/13 12:54	1
Heptachlor	<0.0016		0.025	0.0016	ug/L		09/19/13 15:06	09/27/13 12:54	1

TestAmerica Pensacola



# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

## Method: 608 - Organochlorine Pesticides/PCBs in Water (Continued)

Lab Sample ID: MB 400-192227/1-A

Matrix: Water

Analysis Batch: 193096

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192227

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor epoxide	<0.0016		0.025	0.0016	ug/L		09/19/13 15:06	09/27/13 12:54	1
Toxaphene	<0.15		1.5	0.15	ug/L		09/19/13 15:06	09/27/13 12:54	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	55		47 - 148				09/19/13 15:06	09/27/13 12:54	1
Tetrachloro-m-xylene	98		65 - 134				09/19/13 15:06	09/27/13 12:54	1

Lab Sample ID: LCS 400-192227/2-A

Matrix: Water

Analysis Batch: 193096

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 192227

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.500	0.259		ug/L		52	42 - 122
alpha-BHC	0.500	0.277		ug/L		55	37 - 134
beta-BHC	0.500	0.261		ug/L		52	17 - 147
delta-BHC	0.500	0.268		ug/L		54	19 - 140
gamma-BHC (Lindane)	0.500	0.287		ug/L		57	32 - 127
4,4'-DDD	0.500	0.246		ug/L		49	31 - 141
4,4'-DDE	0.500	0.248		ug/L		50	30 - 145
4,4'-DDT	0.500	0.319		ug/L		64	25 - 160
Dieldrin	0.500	0.269		ug/L		54	36 - 146
Endosulfan I	0.500	0.265		ug/L		53	45 - 153
Endosulfan II	0.500	0.268		ug/L		54	1 - 202
Endosulfan sulfate	0.500	0.283		ug/L		57	26 - 144
Endrin	0.500	0.261		ug/L		52	30 - 147
Endrin aldehyde	0.500	0.284		ug/L		57	30 - 130
Heptachlor	0.500	0.286		ug/L		57	34 - 111
Heptachlor epoxide	0.500	0.266		ug/L		53	37 - 142

Lab Sample ID: LCS 400-192227/4-A

Matrix: Water

Analysis Batch: 193040

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 192227

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	5.00	4.83		ug/L		97	50 - 114
PCB-1260	5.00	4.26		ug/L		85	8 - 127
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
DCB Decachlorobiphenyl	66		47 - 148				
Tetrachloro-m-xylene	106		65 - 134				

Lab Sample ID: LCSD 400-192227/3-A

Matrix: Water

Analysis Batch: 193096

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 192227

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Aldrin	0.500	0.285		ug/L		57	42 - 122	10	40
alpha-BHC	0.500	0.312		ug/L		62	37 - 134	12	40

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

## Method: 608 - Organochlorine Pesticides/PCBs in Water (Continued)

Lab Sample ID: LCSD 400-192227/3-A

Matrix: Water

Analysis Batch: 193096

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 192227

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits		RPD	Limit
beta-BHC	0.500	0.299		ug/L		60	17 - 147		14	40
delta-BHC	0.500	0.306		ug/L		61	19 - 140		13	40
gamma-BHC (Lindane)	0.500	0.324		ug/L		65	32 - 127		12	40
4,4'-DDD	0.500	0.284		ug/L		57	31 - 141		14	40
4,4'-DDE	0.500	0.289		ug/L		58	30 - 145		15	40
4,4'-DDT	0.500	0.382		ug/L		76	25 - 160		18	40
Dieldrin	0.500	0.304		ug/L		61	36 - 146		12	40
Endosulfan I	0.500	0.297		ug/L		59	45 - 153		11	40
Endosulfan II	0.500	0.305		ug/L		61	1 - 202		13	40
Endosulfan sulfate	0.500	0.327		ug/L		65	26 - 144		14	40
Endrin	0.500	0.302		ug/L		60	30 - 147		15	40
Endrin aldehyde	0.500	0.325		ug/L		65	30 - 130		13	40
Heptachlor	0.500	0.319		ug/L		64	34 - 111		11	40
Heptachlor epoxide	0.500	0.299		ug/L		60	37 - 142		11	40

Lab Sample ID: LCSD 400-192227/5-A

Matrix: Water

Analysis Batch: 193040

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 192227

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits		RPD	Limit
PCB-1016	5.00	4.97		ug/L		99	50 - 114		3	40
PCB-1260	5.00	4.93		ug/L		99	8 - 127		15	40

Surrogate	LCSD %Recovery		LCSD Qualifier	Limits
DCB Decachlorobiphenyl	74			47 - 148
Tetrachloro-m-xylene	101			65 - 134

## Method: 6010B - Metals (ICP)

Lab Sample ID: MB 400-192480/1-A

Matrix: Water

Analysis Batch: 192587

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 192480

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Antimony	<0.010		0.050	0.010	mg/L		09/23/13 09:10	09/23/13 16:57	1
Arsenic	<0.0040		0.0050	0.0040	mg/L		09/23/13 09:10	09/23/13 16:57	1
Beryllium	<0.0010		0.0030	0.0010	mg/L		09/23/13 09:10	09/23/13 16:57	1
Cadmium	<0.0010		0.0050	0.0010	mg/L		09/23/13 09:10	09/23/13 16:57	1
Chromium	<0.0020		0.0050	0.0020	mg/L		09/23/13 09:10	09/23/13 16:57	1
Copper	<0.0020		0.010	0.0020	mg/L		09/23/13 09:10	09/23/13 16:57	1
Lead	<0.0020		0.0050	0.0020	mg/L		09/23/13 09:10	09/23/13 16:57	1
Nickel	<0.0030		0.0050	0.0030	mg/L		09/23/13 09:10	09/23/13 16:57	1
Selenium	<0.0040		0.010	0.0040	mg/L		09/23/13 09:10	09/23/13 16:57	1
Silver	<0.0020		0.0050	0.0020	mg/L		09/23/13 09:10	09/23/13 16:57	1
Thallium	<0.0040		0.010	0.0040	mg/L		09/23/13 09:10	09/23/13 16:57	1
Zinc	<0.0080		0.020	0.0080	mg/L		09/23/13 09:10	09/23/13 16:57	1

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

## Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCS 400-192480/2-A

Matrix: Water

Analysis Batch: 192587

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 192480

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	1.00	1.01		mg/L		101	80 - 120
Arsenic	1.00	1.03		mg/L		103	80 - 120
Beryllium	0.500	0.523		mg/L		105	80 - 120
Cadmium	0.500	0.509		mg/L		102	80 - 120
Chromium	1.00	1.02		mg/L		102	80 - 120
Copper	1.00	1.02		mg/L		102	80 - 120
Lead	1.00	1.04		mg/L		104	80 - 120
Nickel	1.00	1.02		mg/L		102	80 - 120
Selenium	1.00	1.05		mg/L		105	80 - 120
Silver	0.500	0.506		mg/L		101	80 - 120
Thallium	1.00	1.05		mg/L		105	80 - 120
Zinc	1.00	1.03		mg/L		103	80 - 120

## Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 400-193312/37-A

Matrix: Water

Analysis Batch: 193406

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 193312

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		10/01/13 08:35	10/01/13 13:24	1

Lab Sample ID: LCS 400-193312/14-A

Matrix: Water

Analysis Batch: 193406

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 193312

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00100	0.00101		mg/L		101	80 - 120

Lab Sample ID: MB 400-193314/31-A

Matrix: Water

Analysis Batch: 193406

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 193314

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		10/01/13 08:35	10/01/13 15:19	1

Lab Sample ID: LCS 400-193314/14-A

Matrix: Water

Analysis Batch: 193406

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 193314

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00100	0.000941		mg/L		94	80 - 120

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

## Method: 335.4 - Cyanide, Total

Lab Sample ID: MB 400-192520/1-A  
Matrix: Water  
Analysis Batch: 192603

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 192520

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.0022		0.0050	0.0022	mg/L		09/23/13 12:40	09/24/13 08:55	1

Lab Sample ID: LCS 400-192520/2-A  
Matrix: Water  
Analysis Batch: 192603

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 192520

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.318	0.329		mg/L		103	75 - 125

Lab Sample ID: 400-80278-22 MS  
Matrix: Water  
Analysis Batch: 192603

Client Sample ID: HS3-013  
Prep Type: Total/NA  
Prep Batch: 192520

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	<0.0022		0.200	0.190		mg/L		95	68 - 133

Lab Sample ID: 400-80278-22 MSD  
Matrix: Water  
Analysis Batch: 192603

Client Sample ID: HS3-013  
Prep Type: Total/NA  
Prep Batch: 192520

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	<0.0022		0.200	0.188		mg/L		94	68 - 133	1	36

## Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 400-192338/8  
Matrix: Water  
Analysis Batch: 192338

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.016		0.050	0.016	mg/L			09/20/13 11:04	1

Lab Sample ID: LCS 400-192338/11  
Matrix: Water  
Analysis Batch: 192338

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.00	2.20		mg/L		110	90 - 110

Lab Sample ID: MRL 400-192338/6 MRL  
Matrix: Water  
Analysis Batch: 192338

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	0.0500	0.0550		mg/L		110	50 - 150

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

## Method: 351.2 - Nitrogen, Total Kjeldahl

Lab Sample ID: MB 400-192942/1-A

Matrix: Water

Analysis Batch: 193102

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192942

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	<0.26		0.50	0.26	mg/L		09/26/13 14:39	09/27/13 14:55	1

Lab Sample ID: LCS 400-192942/2-A

Matrix: Water

Analysis Batch: 193102

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 192942

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Kjeldahl	10.0	9.20		mg/L		92	90 - 110

Lab Sample ID: 400-80278-14 MS

Matrix: Water

Analysis Batch: 193102

Client Sample ID: HS2-014

Prep Type: Total/NA

Prep Batch: 192942

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Kjeldahl	0.76		4.00	4.65		mg/L		97	90 - 110

Lab Sample ID: 400-80278-14 MSD

Matrix: Water

Analysis Batch: 193102

Client Sample ID: HS2-014

Prep Type: Total/NA

Prep Batch: 192942

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrogen, Kjeldahl	0.76		4.00	4.64		mg/L		97	90 - 110	0	22

Lab Sample ID: MRL 400-193102/11 MRL

Matrix: Water

Analysis Batch: 193102

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Kjeldahl	0.500	0.651		mg/L		130	50 - 150

## Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 400-192505/14

Matrix: Water

Analysis Batch: 192505

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.018		0.050	0.018	mg/L			09/23/13 09:37	1

Lab Sample ID: LCS 400-192505/15

Matrix: Water

Analysis Batch: 192505

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	0.500	0.519		mg/L		104	90 - 110

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

## Method: 353.2 - Nitrogen, Nitrate-Nitrite (Continued)

Lab Sample ID: MRL 400-192505/12 MRL  
Matrix: Water  
Analysis Batch: 192505

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	0.0500	0.0495	J	mg/L		99	50 - 150

Lab Sample ID: MB 400-192586/14  
Matrix: Water  
Analysis Batch: 192586

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.018		0.050	0.018	mg/L			09/23/13 13:19	1

Lab Sample ID: LCS 400-192586/15  
Matrix: Water  
Analysis Batch: 192586

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	0.500	0.526		mg/L		105	90 - 110

Lab Sample ID: MRL 400-192586/12 MRL  
Matrix: Water  
Analysis Batch: 192586

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	0.0500	0.0480	J	mg/L		96	50 - 150

## Method: 365.1 - Phosphorus, Ortho

Lab Sample ID: MB 400-192312/6  
Matrix: Water  
Analysis Batch: 192312

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ortho-Phosphate	<0.015		0.050	0.015	mg/L			09/19/13 17:22	1

Lab Sample ID: LCS 400-192312/7  
Matrix: Water  
Analysis Batch: 192312

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
ortho-Phosphate	0.300	0.295		mg/L		98	90 - 110

## Method: 365.1 - Phosphorus, Total

Lab Sample ID: MB 640-104910/3-A  
Matrix: Water  
Analysis Batch: 104934

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 104910

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phosphorus	<0.0010		0.0020	0.0010	mg/L		10/04/13 10:54	10/04/13 14:13	1

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

## Method: 365.1 - Phosphorus, Total (Continued)

Lab Sample ID: LCS 640-104910/4-A

Matrix: Water

Analysis Batch: 104934

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 104910

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phosphorus	0.100	0.0924		mg/L		92	90 - 110

Lab Sample ID: LCSD 640-104910/5-A

Matrix: Water

Analysis Batch: 104934

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 104910

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phosphorus	0.100	0.0942		mg/L		94	90 - 110	2	30

Lab Sample ID: 400-80278-29 MS

Matrix: Water

Analysis Batch: 104934

Client Sample ID: HS4-001

Prep Type: Total/NA

Prep Batch: 104910

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Phosphorus	0.47		0.100	0.541	4	mg/L		76	90 - 110

Lab Sample ID: 400-80278-29 MSD

Matrix: Water

Analysis Batch: 104934

Client Sample ID: HS4-001

Prep Type: Total/NA

Prep Batch: 104910

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phosphorus	0.47		0.100	0.564	4	mg/L		99	90 - 110	4	30

Lab Sample ID: 400-80278-29 DU

Matrix: Water

Analysis Batch: 104934

Client Sample ID: HS4-001

Prep Type: Total/NA

Prep Batch: 104910

Analyte	Sample Result	Sample Qualifier	Spike Added	DU Result	DU Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phosphorus	0.47		0.100	0.471		mg/L				1	30

## Method: 420.1 - Phenolics, Total Recoverable

Lab Sample ID: MB 400-193255/1-A

Matrix: Water

Analysis Batch: 193543

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 193255

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenols, Total	<0.0045		0.0050	0.0045	mg/L		09/27/13 14:03	10/01/13 13:28	1

Lab Sample ID: LCS 400-193255/2-A

Matrix: Water

Analysis Batch: 193543

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 193255

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phenols, Total	0.400	0.420		mg/L		105	79 - 122

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

## Method: SM 5210B - BOD, 5-Day

Lab Sample ID: USB 400-193000/1 USB

Matrix: Water

Analysis Batch: 193000

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	<2.0		2.0	2.0	mg/L	-		09/20/13 18:39	1

Lab Sample ID: LCS 400-193000/2

Matrix: Water

Analysis Batch: 193000

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Biochemical Oxygen Demand	198	198		mg/L	-	100	85 - 115

Lab Sample ID: LCSD 400-193000/3

Matrix: Water

Analysis Batch: 193000

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Biochemical Oxygen Demand	198	201		mg/L	-	102	85 - 115	2	27

## Method: SM 5220D - COD

Lab Sample ID: MB 400-193378/1

Matrix: Water

Analysis Batch: 193378

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<6.4		10	6.4	mg/L	-		10/01/13 13:07	1

Lab Sample ID: LCS 400-193378/2

Matrix: Water

Analysis Batch: 193378

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	50.0	54.9		mg/L	-	110	90 - 110



# Lab Chronicle

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

**Client Sample ID: HS2-002**

**Date Collected: 09/18/13 11:19**

**Date Received: 09/19/13 08:30**

**Lab Sample ID: 400-80278-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	365.1		1	192312	09/19/13 17:22	LSS	TAL PEN

**Client Sample ID: HS2-003**

**Date Collected: 09/18/13 11:20**

**Date Received: 09/19/13 08:30**

**Lab Sample ID: 400-80278-3**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			192480	09/23/13 09:10	NAB	TAL PEN
Total Recoverable	Analysis	6010B		1	192587	09/23/13 17:29	SLM	TAL PEN
Total/NA	Prep	7470A			193314	10/01/13 08:35	JAP	TAL PEN
Total/NA	Analysis	7470A		1	193406	10/01/13 14:26	JAP	TAL PEN

**Client Sample ID: HS2-004**

**Date Collected: 09/18/13 11:35**

**Date Received: 09/19/13 08:30**

**Lab Sample ID: 400-80278-4**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	193116	09/28/13 17:27	WPD	TAL PEN

**Client Sample ID: HS2-006**

**Date Collected: 09/18/13 11:22**

**Date Received: 09/19/13 08:30**

**Lab Sample ID: 400-80278-6**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	625			192150	09/19/13 15:10	KH1	TAL PEN
Total/NA	Analysis	625		1	192689	09/24/13 16:35	AJR	TAL PEN

**Client Sample ID: HS2-008**

**Date Collected: 09/18/13 11:26**

**Date Received: 09/19/13 08:30**

**Lab Sample ID: 400-80278-8**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	608		1	193040	09/26/13 21:53	VC1	TAL PEN
Total/NA	Prep	608			192227	09/19/13 15:06	KH1	TAL PEN
Total/NA	Prep	608			192227	09/19/13 15:06	KH1	TAL PEN
Total/NA	Analysis	608		1	193096	09/27/13 13:58	VC1	TAL PEN

# Lab Chronicle

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

**Client Sample ID: HS2-010**

**Lab Sample ID: 400-80278-10**

**Date Collected: 09/18/13 11:30**

**Matrix: Water**

**Date Received: 09/19/13 08:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 5210B		1	193000	(Start) 09/20/13 10:46 (End) 09/25/13 17:03	GMF	TAL PEN

**Client Sample ID: HS2-011**

**Lab Sample ID: 400-80278-11**

**Date Collected: 09/18/13 11:32**

**Matrix: Water**

**Date Received: 09/19/13 08:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Distill/Phenol			193255	09/27/13 14:03	CLS	TAL PEN
Total/NA	Analysis	420.1		1	193543	10/01/13 13:28	JMH	TAL PEN

**Client Sample ID: HS3-014**

**Lab Sample ID: 400-80278-12**

**Date Collected: 09/18/13 13:28**

**Matrix: Water**

**Date Received: 09/19/13 08:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		1	192338	09/20/13 11:51	KJR	TAL PEN
Total/NA	Analysis	353.2		1	192586	09/23/13 13:44	KJR	TAL PEN
Total/NA	Prep	351.2			192942	09/26/13 14:39	JAT	TAL PEN
Total/NA	Analysis	351.2		1	193102	09/27/13 15:14	JAT	TAL PEN
Total/NA	Analysis	SM 5220D		1	193378	10/01/13 13:07	CLS	TAL PEN

**Client Sample ID: HS2-013**

**Lab Sample ID: 400-80278-13**

**Date Collected: 09/18/13 11:34**

**Matrix: Water**

**Date Received: 09/19/13 08:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Distill/CN			192520	09/23/13 12:40	BAB	TAL PEN
Total/NA	Analysis	335.4		1	192603	09/24/13 08:55	BAB	TAL PEN

**Client Sample ID: HS2-014**

**Lab Sample ID: 400-80278-14**

**Date Collected: 09/18/13 11:34**

**Matrix: Water**

**Date Received: 09/19/13 08:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		1	192338	09/20/13 11:52	KJR	TAL PEN
Total/NA	Analysis	353.2		1	192505	09/23/13 10:08	KJR	TAL PEN
Total/NA	Prep	351.2			192942	09/26/13 14:39	JAT	TAL PEN
Total/NA	Analysis	351.2		1	193102	09/27/13 15:15	JAT	TAL PEN
Total/NA	Analysis	SM 5220D		1	193378	10/01/13 13:07	CLS	TAL PEN

TestAmerica Pensacola

# Lab Chronicle

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

**Client Sample ID: HS3-002**

**Lab Sample ID: 400-80278-15**

**Date Collected: 09/18/13 13:26**

**Matrix: Water**

**Date Received: 09/19/13 08:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	365.1		1	192312	09/19/13 17:46	LSS	TAL PEN

**Client Sample ID: HS3-003**

**Lab Sample ID: 400-80278-16**

**Date Collected: 09/18/13 13:27**

**Matrix: Water**

**Date Received: 09/19/13 08:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			192480	09/23/13 09:10	NAB	TAL PEN
Total Recoverable	Analysis	6010B		1	192587	09/23/13 17:32	SLM	TAL PEN
Total/NA	Prep	7470A			193314	10/01/13 08:35	JAP	TAL PEN
Total/NA	Analysis	7470A		1	193406	10/01/13 14:28	JAP	TAL PEN

**Client Sample ID: HS3-004**

**Lab Sample ID: 400-80278-17**

**Date Collected: 09/18/13 13:30**

**Matrix: Water**

**Date Received: 09/19/13 08:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	193116	09/28/13 17:53	WPD	TAL PEN

**Client Sample ID: HS3-010**

**Lab Sample ID: 400-80278-19**

**Date Collected: 09/18/13 13:07**

**Matrix: Water**

**Date Received: 09/19/13 08:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 5210B		1	193000		GMF	TAL PEN
					(Start)	09/20/13 10:47		
					(End)	09/25/13 17:03		

**Client Sample ID: HS3-011**

**Lab Sample ID: 400-80278-20**

**Date Collected: 09/18/13 13:09**

**Matrix: Water**

**Date Received: 09/19/13 08:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Distill/Phenol			193255	09/27/13 14:03	CLS	TAL PEN
Total/NA	Analysis	420.1		1	193543	10/01/13 13:28	JMH	TAL PEN

**Client Sample ID: HS3-013**

**Lab Sample ID: 400-80278-22**

**Date Collected: 09/18/13 13:28**

**Matrix: Water**

**Date Received: 09/19/13 08:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Distill/CN			192520	09/23/13 12:40	BAB	TAL PEN
Total/NA	Analysis	335.4		1	192603	09/24/13 08:55	BAB	TAL PEN

TestAmerica Pensacola

# Lab Chronicle

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

## Client Sample ID: HS4-002

Date Collected: 09/18/13 14:48

Date Received: 09/19/13 08:30

## Lab Sample ID: 400-80278-23

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	365.1		1	192312	09/19/13 17:46	LSS	TAL PEN

## Client Sample ID: HS4-003

Date Collected: 09/18/13 14:53

Date Received: 09/19/13 08:30

## Lab Sample ID: 400-80278-24

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			192480	09/23/13 09:10	NAB	TAL PEN
Total Recoverable	Analysis	6010B		1	192587	09/23/13 17:36	SLM	TAL PEN
Total/NA	Prep	7470A			193312	10/01/13 08:35	JAP	TAL PEN
Total/NA	Analysis	7470A		1	193406	10/01/13 15:43	JAP	TAL PEN

## Client Sample ID: HS4-004

Date Collected: 09/18/13 14:49

Date Received: 09/19/13 08:30

## Lab Sample ID: 400-80278-25

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	193116	09/28/13 18:19	WPD	TAL PEN

## Client Sample ID: HS2-001

Date Collected: 09/18/13 11:19

Date Received: 09/19/13 08:30

## Lab Sample ID: 400-80278-27

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	365.2/365.3/365			104910	10/04/13 10:54	AJN	TAL TAL
Total/NA	Analysis	365.1		5	104934	10/04/13 15:35	AJN	TAL TAL

## Client Sample ID: HS3-001

Date Collected: 09/18/13 13:25

Date Received: 09/19/13 08:30

## Lab Sample ID: 400-80278-28

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	365.2/365.3/365			104910	10/04/13 10:54	AJN	TAL TAL
Total/NA	Analysis	365.1		1	104934	10/04/13 14:39	AJN	TAL TAL

## Client Sample ID: HS4-001

Date Collected: 09/18/13 14:45

Date Received: 09/19/13 08:30

## Lab Sample ID: 400-80278-29

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	365.2/365.3/365			104910	10/04/13 10:54	AJN	TAL TAL
Total/NA	Analysis	365.1		2	104934	10/04/13 15:18	AJN	TAL TAL

TestAmerica Pensacola

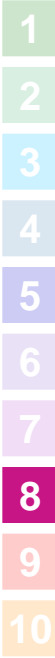
Lab Chronicle

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80278-1

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001  
TAL TAL = TestAmerica Tallahassee, 2846 Industrial Plaza Drive, Tallahassee, FL 32301, TEL (850)878-3994



## Method Summary

Client: Dewberry

TestAmerica Job ID: 400-80278-1

Project/Site: Three Mile CreekUSA - Groundwater

Method	Method Description	Protocol	Laboratory
624	Volatile Organic Compounds (GC/MS)	40CFR136A	TAL PEN
625	Semivolatile Organic Compounds (GC/MS)	40CFR136A	TAL PEN
608	Organochlorine Pesticides/PCBs in Water	40CFR136A	TAL PEN
6010B	Metals (ICP)	SW846	TAL PEN
7470A	Mercury (CVAA)	SW846	TAL PEN
335.4	Cyanide, Total	MCAWW	TAL PEN
350.1	Nitrogen, Ammonia	MCAWW	TAL PEN
351.2	Nitrogen, Total Kjeldahl	MCAWW	TAL PEN
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL PEN
365.1	Phosphorus, Total	EPA	TAL TAL
365.1	Phosphorus, Ortho	EPA	TAL PEN
420.1	Phenolics, Total Recoverable	MCAWW	TAL PEN
SM 5210B	BOD, 5-Day	SM	TAL PEN
SM 5220D	COD	SM	TAL PEN

### Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

TAL TAL = TestAmerica Tallahassee, 2846 Industrial Plaza Drive, Tallahassee, FL 32301, TEL (850)878-3994



# TestAmerica Mobile

900 Lakeside Drive  
Mobile, AL 36693  
Phone (251) 666-6633 Fax (251) 666-6696

## Chain of Custody Record

**TestAmerica**  
THE LEADER IN ENVIRONMENTAL TESTING

<b>Client Information</b>		Sampler:	Lab PM:	Carrier Tracking No(s):		COC No:
Client Contact: Michael Hanson		Phone:	Nance, Mike M			400-30863-17662.1
Company: Dewberry		E-Mail: mike.nance@testamericainc.com				Page 1 of 2
Address: 2301 Rexwoods Dr.		Due Date Requested:	Analysis Requested			
City: Raleigh		TAT Requested (days):				
State, Zip: NC, 27607		PO #:				
Phone: 919-424-3716(Tel)		Purchase Order not required				
Email: mhanson@dewberry.com		WFO #:				
Project Name: Groundwater		Project #:				
Site:		SSOW#:				
Sample Identification		Sample Date	Sample Time	Sample Type (G=Comp, G=grab)	Matrix (Hewlett-Packard, On-site, BT=Trans, A=Air)	Preservation Codes:
<del>HS2-001</del> HS2-012		9/18	11:33A	G	Water	350.1 - Ammonia
HS2-002		9/18	11:19A	G	Water	351.2 - Nitrogen, Kjeldahl
HS2-003		9/18	11:20A	G	Water	353.2 Pres - Nitrate Nitrite as N
HS2-004		9/18	11:35A	G	Water	5220D - Chemical Oxygen Demand
HS2-005		9/18	11:36A	G	Water	365.1 Ortho - ortho-Phosphate
HS2-006		9/18	11:22A	G	Water	6010B - Priority Pollutant 6010 (Hg not included)
HS2-007		9/18	11:24A	G	Water	7470A - Mercury
HS2-008		9/18	11:26A	G	Water	624 5ml - PP/TTO Volatiles by 624 w/xylene isomers
HS2-009		9/18	11:28A	G	Water	608 - PP / TTO - Pesticides & PCBs by 608
HS2-010		9/18	11:30A	G	Water	625 - PP / TTO Semivolatiles by method 625
HS2-011		9/18	11:32A	G	Water	5210B - Biochemical Oxygen Demand
						335.4 - Cyanide, Total
						420.1 - Phenols, Total
						Total Number of Containers
						Special Instructions/Note:
Possible Hazard Identification		<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological				
Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)				
		<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months				
Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:		
Relinquished by: [Signature]		9/19/13		Received by: [Signature]		Date/Time: 9-19-13 8:18
Relinquished by: [Signature]				Received by: [Signature]		Date/Time: 9-19-13 8:18
Custody Seal Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.: 400-80278	Cooler Temperature(s) °C and Other Remarks:		39°C 5592	



900 Lakeside Drive  
Mobile, AL 36693  
Phone (251) 666-6633 Fax (251) 666-6696

Chain of Custody Record

TestAmerica  
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Client Information

Client Contact:  
Michael Hanson

Company:  
Dewberry

Address:  
2301 Rexwoods Dr.

City:  
Raleigh

State zip:  
NC, 27607

Phone:  
919-424-3718 (Tel)

Email:  
mhanson@dewberry.com

Project Name:  
Groundwater

Site:

Sampler:

Phone:

E-Mail:

Lab Pmt:  
Nance, Mike M  
E-Mail:  
mike.nance@testamericainc.com

Carrier Tracking No(s):

COC No:  
400-30863-17662.1

Page:  
Page 1 of 2

Job #:

Analysis Requested

Due Date Requested:

TAT Requested (days):

PO #:

Purchase Order not required

WO #:

Project #:

40003408

SSOW#:

350.1 - Ammonia	
351.2 - Nitrogen, Kjeldahl	
353.2 Pres - Nitrate Nitrite as N	
5220D - Chemical Oxygen Demand	
365.1 Ortho - ortho-Phosphate	
6010B - Priority Pollutant 6010 (Hg not included)	
7470A - Mercury	
624 5ml - PP/TTO Volatiles by 624 w/xylene isomers	
608 - PP / TTO - Pesticides & PCBs by 608	
625 - PP / TTO Semivolatiles by method 625	
5210B - Biochemical Oxygen Demand	
335.4 - Cyanide, Total	
420.1 - Phenols, Total	

Special Instructions/Note:

Preservation Codes:

A - HCL  
B - NaOH  
C - Zn Acetate  
D - Nitric Acid  
E - NaHSO4  
F - MeOH  
G - Anion  
H - Ascorbic Acid  
I - Ice  
J - DI Water  
K - EDTA  
L - EDA  
M - Hexane  
N - None  
O - AsnO2  
P - Na2O4S  
Q - NaHSO3  
R - Na2S2O3  
S - H2SO4  
T - TSP Dodecahydrate  
U - Acetone  
V - MCAA  
W - pH 4-5  
Z - other (specify)

Sample Identification

Sample ID	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=Water, S=solid, O=oil, A=air)	Analysis
<del>HS2-012</del> HS3-014	9/18	1:28P	G	Water	X X X X
HS2-013	9/18	11:34A	G	Water	
HS2-014	9/18	11:34A	G	Water	X X X X
HS3-002	9/18	1:26P	G	Water	
HS3-003	9/18	1:27P	G	W	
HS3-004	9/18	1:30P	G	W	
HS3-005	9/18	1:30P	G	W	
HS3-010	9/18	1:07P	G	W	
HS3-011	9/18	1:07P	G	W	
HS3-012	9/18	1:11P	G	W	
HS3-013	9/18	1:28P	G	W	

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
☐ Return To Client ☐ Disposal By Lab ☐ Archive For Months

Empty Kit Relinquished by:

Relinquished by: [Signature]

Date/Time: 9/19/13

Company:

Received by: [Signature]

Date/Time: 9-19-13 8:18

Company: 7A

Relinquished by:

Date/Time:

Company:

Received by:

Date/Time:

Company:

Custody Seals Intact:

Δ Yes Δ No

Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

400-86278



900 Lakeside Drive  
Mobile, AL 36693  
Phone (251) 666-6633 Fax (251) 666-6696

Chain of Custody Record

Client Information

Client Contact: Michael Hanson  
Company: Dewberry

Sampler:

Phone:

Lab P/N: Name: Mike M  
E-Mail: mike.nance@testamericainc.com

Carrier/Tracking No(s):

COC No: 400-30863-17662.1

Page: Page 1 of 2

Job #:

Address: 2301 Rexwoods Dr.  
City: Raleigh  
State Zip: NC, 27607  
Phone: 919-424-3716(Tel)  
Email: mhanson@dewberry.com  
Project Name: Groundwater  
Site: SSOV#:

Due Date Requested:  
TAT Requested (days):

PO #:  
Purchase Order not required  
W/O #:

Project #:  
40003408

SSOV#:

Sample Identification

Sample ID	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix (W=Water, S=Soil, G=Gravel, A=Air, etc.)
HS4-002	9/18	2:48p	G	Water
HS4-003	9/18	2:53p	G	Water
HS4-004	9/18	2:49p	G	Water
HS4-005	9/18	2:51p	G	Water

Analysis Requested

350.1 - Ammonia	
351.2 - Nitrogen, Kjeldahl	
353.2_Pres - Nitrate Nitrite as N	
5220D - Chemical Oxygen Demand	
365.1_Ortho - ortho-Phosphate	
6010B - Priority Pollutant 6010 (Hg not included)	
7470A - Mercury	
624_5ml - PP/TTO Volatiles by 624 w/xylene isomers	
608 - PP / TTO - Pesticides & PCBs by 608	
625 - PP / TTO Semivolatiles by method 625	
5210B - Biochemical Oxygen Demand	
335.4 - Cyanide, Total	
420.1 - Phenols, Total	

Special Instructions/Note:

Preservation Codes:  
A - HCL  
B - NaOH  
C - Zn Acetate  
D - Nitric Acid  
E - NaHSO4  
F - MeOH  
G - Ascorbic Acid  
H - Ascorbic Acid  
I - Ice Water  
J - DI Water  
K - EDTA  
L - EDTA  
M - Hexane  
N - None  
O - AsNaO2  
P - Na2O4S  
Q - Na2SO3  
R - Na2S2O3  
S - H2SO4  
T - TSP Dodecahydrate  
U - Acetone  
V - MCAA  
W - pH 4-5  
Z - other (specify)

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological  
Deliverable Requested: I, II, III, IV, Other (specify)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return To Client ☐ Disposal By Lab ☐ Archive For Months

Empty Kit Relinquished by:

Relinquished by: Date: 9/19/13

Relinquished by: Date:

Relinquished by: Date:

Custody Seats Intact: ☐ Yes ☐ No

Cooler Temperature(s) °C and Other Remarks:

400-80278

399C 5592

THA



## 10

**TestAmerica**

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[illegible]

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola

3355 McLemore Drive

Pensacola, FL 32514

Tel: (850)474-1001

TestAmerica Job ID: 400-80284-1

Client Project/Site: Three Mile CreekUSA - Groundwater

For:

Dewberry

2301 Rexwoods Dr.

Raleigh, North Carolina 27607

Attn: Michael Hanson



Authorized for release by:

10/4/2013 2:47:51 PM

Mike Nance, Project Manager II

(251)666-6633

[mike.nance@testamericainc.com](mailto:mike.nance@testamericainc.com)

### LINKS

Review your project  
results through

TotalAccess

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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## Definitions/Glossary

Client: Dewberry

Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80284-1

### Qualifiers

#### GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

#### General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
b	Result Detected in the Unseeded Control blank (USB).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

## Case Narrative

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80284-1

**Job ID: 400-80284-1**

**Laboratory: TestAmerica Pensacola**

### Narrative

#### Job Narrative 400-80284-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 9/19/2013 10:07 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.6° C.

#### GC/MS Semi VOA

Method(s) 625: The continuing calibration verification (CCV) for Benzidine associated with batch 192689 recovered above the upper control limit. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. HS3-006 (400-80284-1), HS4-006 (400-80284-5)

No other analytical or quality issues were noted.

#### GC Semi VOA

No analytical or quality issues were noted.

#### General Chemistry

Method(s) 350.1, 4500 NH3 H: The following sample(s) showed a negative result greater than the reporting limit 81926-091713-MOS-DAP-SO-EB (400-80219-5). These samples were re-analyzed with a dilution and were non-detect, therefore the original result is reported.

Method(s) 350.1, 4500 NH3 H: The method blank for batch 192472 contained NH3 above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 353.2, SM 4500 NO3 F: The matrix spike / matrix spike duplicate MSD recoveries for batch 192505 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) SM 5210B: The USB dilution water D.O. depletion was greater than 0.2 mg/L but less than the reporting limit of 2.0 mg/L. The associated sample results are reported.

No other analytical or quality issues were noted.

#### Organic Prep

No other analytical or quality issues were noted.

## Sample Summary

Client: Dewberry

TestAmerica Job ID: 400-80284-1

Project/Site: Three Mile CreekUSA - Groundwater

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-80284-1	HS3-006	Water	09/18/13 13:24	09/19/13 10:07
400-80284-3	HS3-008	Water	09/18/13 13:15	09/19/13 10:07
400-80284-5	HS4-006	Water	09/18/13 14:26	09/19/13 10:07
400-80284-7	HS4-008	Water	09/18/13 15:53	09/19/13 10:07
400-80284-9	HS4-010	Water	09/18/13 15:13	09/19/13 10:07
400-80284-10	HS4-011	Water	09/18/13 15:24	09/19/13 10:07
400-80284-12	HS4-013	Water	09/18/13 14:56	09/19/13 10:07
400-80284-13	HS4-014	Water	09/18/13 15:00	09/19/13 10:07



# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80284-1

**Client Sample ID: HS3-006**

**Lab Sample ID: 400-80284-1**

**Date Collected: 09/18/13 13:24**

**Matrix: Water**

**Date Received: 09/19/13 10:07**

## Method: 625 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.15		9.5	0.15	ug/L		09/19/13 15:10	09/24/13 17:53	1
Acenaphthylene	<0.16		9.5	0.16	ug/L		09/19/13 15:10	09/24/13 17:53	1
Anthracene	<0.17		9.5	0.17	ug/L		09/19/13 15:10	09/24/13 17:53	1
Benzidine	<19		48	19	ug/L		09/19/13 15:10	09/24/13 17:53	1
Benzo[a]anthracene	<0.17		9.5	0.17	ug/L		09/19/13 15:10	09/24/13 17:53	1
Benzo[b]fluoranthene	<0.14		9.5	0.14	ug/L		09/19/13 15:10	09/24/13 17:53	1
Benzo[k]fluoranthene	<0.15		9.5	0.15	ug/L		09/19/13 15:10	09/24/13 17:53	1
Benzo[g,h,i]perylene	<0.22		9.5	0.22	ug/L		09/19/13 15:10	09/24/13 17:53	1
Benzo[a]pyrene	<0.11		9.5	0.11	ug/L		09/19/13 15:10	09/24/13 17:53	1
4-Bromophenyl phenyl ether	<0.19		9.5	0.19	ug/L		09/19/13 15:10	09/24/13 17:53	1
Butyl benzyl phthalate	<0.18		9.5	0.18	ug/L		09/19/13 15:10	09/24/13 17:53	1
Bis(2-chloroethoxy)methane	<0.15		9.5	0.15	ug/L		09/19/13 15:10	09/24/13 17:53	1
Bis(2-chloroethyl)ether	<0.48		9.5	0.48	ug/L		09/19/13 15:10	09/24/13 17:53	1
4-Chloro-3-methylphenol	<3.6		9.5	3.6	ug/L		09/19/13 15:10	09/24/13 17:53	1
2-Chloronaphthalene	<0.13		9.5	0.13	ug/L		09/19/13 15:10	09/24/13 17:53	1
2-Chlorophenol	<2.1		9.5	2.1	ug/L		09/19/13 15:10	09/24/13 17:53	1
4-Chlorophenyl phenyl ether	<1.9		9.5	1.9	ug/L		09/19/13 15:10	09/24/13 17:53	1
Chrysene	<0.18		9.5	0.18	ug/L		09/19/13 15:10	09/24/13 17:53	1
Dibenz(a,h)anthracene	<0.23		9.5	0.23	ug/L		09/19/13 15:10	09/24/13 17:53	1
Di-n-butyl phthalate	<2.6		9.5	2.6	ug/L		09/19/13 15:10	09/24/13 17:53	1
1,2-Dichlorobenzene	<0.16		9.5	0.16	ug/L		09/19/13 15:10	09/24/13 17:53	1
1,3-Dichlorobenzene	<0.17		9.5	0.17	ug/L		09/19/13 15:10	09/24/13 17:53	1
1,4-Dichlorobenzene	<0.15		9.5	0.15	ug/L		09/19/13 15:10	09/24/13 17:53	1
3,3'-Dichlorobenzidine	<2.5		9.5	2.5	ug/L		09/19/13 15:10	09/24/13 17:53	1
2,4-Dichlorophenol	<2.9		9.5	2.9	ug/L		09/19/13 15:10	09/24/13 17:53	1
Diethyl phthalate	0.27	J	9.5	0.23	ug/L		09/19/13 15:10	09/24/13 17:53	1
2,4-Dimethylphenol	<3.3		9.5	3.3	ug/L		09/19/13 15:10	09/24/13 17:53	1
Dimethyl phthalate	<0.16		9.5	0.16	ug/L		09/19/13 15:10	09/24/13 17:53	1
4,6-Dinitro-2-methylphenol	<1.5		9.5	1.5	ug/L		09/19/13 15:10	09/24/13 17:53	1
2,4-Dinitrophenol	<3.2		29	3.2	ug/L		09/19/13 15:10	09/24/13 17:53	1
2,4-Dinitrotoluene	<1.8		9.5	1.8	ug/L		09/19/13 15:10	09/24/13 17:53	1
2,6-Dinitrotoluene	<1.8		9.5	1.8	ug/L		09/19/13 15:10	09/24/13 17:53	1
Di-n-octyl phthalate	<0.16		9.5	0.16	ug/L		09/19/13 15:10	09/24/13 17:53	1
Bis(2-ethylhexyl) phthalate	<1.9		9.5	1.9	ug/L		09/19/13 15:10	09/24/13 17:53	1
Fluoranthene	<0.17		9.5	0.17	ug/L		09/19/13 15:10	09/24/13 17:53	1
Fluorene	<0.17		9.5	0.17	ug/L		09/19/13 15:10	09/24/13 17:53	1
Hexachlorobenzene	<0.16		9.5	0.16	ug/L		09/19/13 15:10	09/24/13 17:53	1
Hexachlorobutadiene	<3.4		9.5	3.4	ug/L		09/19/13 15:10	09/24/13 17:53	1
Hexachlorocyclopentadiene	<2.5		19	2.5	ug/L		09/19/13 15:10	09/24/13 17:53	1
Hexachloroethane	<4.0		9.5	4.0	ug/L		09/19/13 15:10	09/24/13 17:53	1
Indeno[1,2,3-cd]pyrene	<0.21		9.5	0.21	ug/L		09/19/13 15:10	09/24/13 17:53	1
Isophorone	<0.13		9.5	0.13	ug/L		09/19/13 15:10	09/24/13 17:53	1
Naphthalene	<0.16		9.5	0.16	ug/L		09/19/13 15:10	09/24/13 17:53	1
Nitrobenzene	<0.12		9.5	0.12	ug/L		09/19/13 15:10	09/24/13 17:53	1
2-Nitrophenol	<5.0		9.5	5.0	ug/L		09/19/13 15:10	09/24/13 17:53	1
4-Nitrophenol	<2.0		9.5	2.0	ug/L		09/19/13 15:10	09/24/13 17:53	1
N-Nitrosodimethylamine	<3.3		9.5	3.3	ug/L		09/19/13 15:10	09/24/13 17:53	1
N-Nitrosodiphenylamine	<0.17		9.5	0.17	ug/L		09/19/13 15:10	09/24/13 17:53	1
N-Nitrosodi-n-propylamine	<3.1		9.5	3.1	ug/L		09/19/13 15:10	09/24/13 17:53	1

TestAmerica Pensacola



# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80284-1

**Client Sample ID: HS3-006**

**Lab Sample ID: 400-80284-1**

**Date Collected: 09/18/13 13:24**

**Matrix: Water**

**Date Received: 09/19/13 10:07**

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<1.3		19	1.3	ug/L		09/19/13 15:10	09/24/13 17:53	1
Phenanthrene	<0.17		9.5	0.17	ug/L		09/19/13 15:10	09/24/13 17:53	1
Phenol	<2.5		9.5	2.5	ug/L		09/19/13 15:10	09/24/13 17:53	1
Pyrene	<0.20		9.5	0.20	ug/L		09/19/13 15:10	09/24/13 17:53	1
1,2,4-Trichlorobenzene	<0.17		9.5	0.17	ug/L		09/19/13 15:10	09/24/13 17:53	1
2,4,6-Trichlorophenol	<3.3		9.5	3.3	ug/L		09/19/13 15:10	09/24/13 17:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	79		15 - 135				09/19/13 15:10	09/24/13 17:53	1
2-Fluorobiphenyl	61		34 - 113				09/19/13 15:10	09/24/13 17:53	1
2-Fluorophenol	44		10 - 104				09/19/13 15:10	09/24/13 17:53	1
Nitrobenzene-d5	62		27 - 110				09/19/13 15:10	09/24/13 17:53	1
Phenol-d5	51		10 - 110				09/19/13 15:10	09/24/13 17:53	1
Terphenyl-d14	74		53 - 125				09/19/13 15:10	09/24/13 17:53	1

**Client Sample ID: HS3-008**

**Lab Sample ID: 400-80284-3**

**Date Collected: 09/18/13 13:15**

**Matrix: Water**

**Date Received: 09/19/13 10:07**

## Method: 608 - Organochlorine Pesticides/PCBs in Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.0014		0.024	0.0014	ug/L		09/19/13 15:06	09/27/13 14:41	1
alpha-BHC	<0.0017		0.024	0.0017	ug/L		09/19/13 15:06	09/27/13 14:41	1
beta-BHC	<0.0014		0.024	0.0014	ug/L		09/19/13 15:06	09/27/13 14:41	1
delta-BHC	<0.0010		0.024	0.0010	ug/L		09/19/13 15:06	09/27/13 14:41	1
gamma-BHC (Lindane)	<0.012		0.024	0.012	ug/L		09/19/13 15:06	09/27/13 14:41	1
Chlordane (technical)	<0.062		0.24	0.062	ug/L		09/19/13 15:06	09/27/13 14:41	1
4,4'-DDD	<0.0014		0.024	0.0014	ug/L		09/19/13 15:06	09/27/13 14:41	1
4,4'-DDE	<0.0010		0.024	0.0010	ug/L		09/19/13 15:06	09/27/13 14:41	1
4,4'-DDT	<0.0019		0.024	0.0019	ug/L		09/19/13 15:06	09/27/13 14:41	1
Dieldrin	<0.0014		0.024	0.0014	ug/L		09/19/13 15:06	09/27/13 14:41	1
Endosulfan I	<0.0014		0.024	0.0014	ug/L		09/19/13 15:06	09/27/13 14:41	1
Endosulfan II	<0.0035		0.024	0.0035	ug/L		09/19/13 15:06	09/27/13 14:41	1
Endosulfan sulfate	<0.0010		0.024	0.0010	ug/L		09/19/13 15:06	09/27/13 14:41	1
Endrin	<0.0014		0.024	0.0014	ug/L		09/19/13 15:06	09/27/13 14:41	1
Endrin aldehyde	<0.0013		0.024	0.0013	ug/L		09/19/13 15:06	09/27/13 14:41	1
Heptachlor	<0.0015		0.024	0.0015	ug/L		09/19/13 15:06	09/27/13 14:41	1
Heptachlor epoxide	<0.0015		0.024	0.0015	ug/L		09/19/13 15:06	09/27/13 14:41	1
PCB-1016	<0.023		0.24	0.023	ug/L		09/19/13 15:06	09/26/13 22:43	1
PCB-1221	<0.10		0.24	0.10	ug/L		09/19/13 15:06	09/26/13 22:43	1
PCB-1232	<0.048		0.24	0.048	ug/L		09/19/13 15:06	09/26/13 22:43	1
PCB-1242	<0.016		0.24	0.016	ug/L		09/19/13 15:06	09/26/13 22:43	1
PCB-1248	<0.0095		0.24	0.0095	ug/L		09/19/13 15:06	09/26/13 22:43	1
PCB-1254	<0.027		0.24	0.027	ug/L		09/19/13 15:06	09/26/13 22:43	1
PCB-1260	<0.016		0.24	0.016	ug/L		09/19/13 15:06	09/26/13 22:43	1
Toxaphene	<0.14		1.4	0.14	ug/L		09/19/13 15:06	09/27/13 14:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	49		47 - 148				09/19/13 15:06	09/26/13 22:43	1
Tetrachloro-m-xylene	80		65 - 134				09/19/13 15:06	09/26/13 22:43	1

TestAmerica Pensacola

# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80284-1

Client Sample ID: HS4-006

Lab Sample ID: 400-80284-5

Date Collected: 09/18/13 14:26

Matrix: Water

Date Received: 09/19/13 10:07

## Method: 625 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.15		9.5	0.15	ug/L		09/19/13 15:10	09/24/13 19:12	1
Acenaphthylene	<0.16		9.5	0.16	ug/L		09/19/13 15:10	09/24/13 19:12	1
Anthracene	<0.17		9.5	0.17	ug/L		09/19/13 15:10	09/24/13 19:12	1
Benzidine	<19		48	19	ug/L		09/19/13 15:10	09/24/13 19:12	1
Benzo[a]anthracene	<0.17		9.5	0.17	ug/L		09/19/13 15:10	09/24/13 19:12	1
Benzo[b]fluoranthene	<0.14		9.5	0.14	ug/L		09/19/13 15:10	09/24/13 19:12	1
Benzo[k]fluoranthene	<0.15		9.5	0.15	ug/L		09/19/13 15:10	09/24/13 19:12	1
Benzo[g,h,i]perylene	<0.22		9.5	0.22	ug/L		09/19/13 15:10	09/24/13 19:12	1
Benzo[a]pyrene	<0.11		9.5	0.11	ug/L		09/19/13 15:10	09/24/13 19:12	1
4-Bromophenyl phenyl ether	<0.19		9.5	0.19	ug/L		09/19/13 15:10	09/24/13 19:12	1
Butyl benzyl phthalate	0.20	J	9.5	0.18	ug/L		09/19/13 15:10	09/24/13 19:12	1
Bis(2-chloroethoxy)methane	<0.15		9.5	0.15	ug/L		09/19/13 15:10	09/24/13 19:12	1
Bis(2-chloroethyl)ether	<0.48		9.5	0.48	ug/L		09/19/13 15:10	09/24/13 19:12	1
4-Chloro-3-methylphenol	<3.6		9.5	3.6	ug/L		09/19/13 15:10	09/24/13 19:12	1
2-Chloronaphthalene	<0.13		9.5	0.13	ug/L		09/19/13 15:10	09/24/13 19:12	1
2-Chlorophenol	<2.1		9.5	2.1	ug/L		09/19/13 15:10	09/24/13 19:12	1
4-Chlorophenyl phenyl ether	<1.9		9.5	1.9	ug/L		09/19/13 15:10	09/24/13 19:12	1
Chrysene	<0.18		9.5	0.18	ug/L		09/19/13 15:10	09/24/13 19:12	1
Dibenz(a,h)anthracene	<0.23		9.5	0.23	ug/L		09/19/13 15:10	09/24/13 19:12	1
Di-n-butyl phthalate	<2.6		9.5	2.6	ug/L		09/19/13 15:10	09/24/13 19:12	1
1,2-Dichlorobenzene	<0.16		9.5	0.16	ug/L		09/19/13 15:10	09/24/13 19:12	1
1,3-Dichlorobenzene	<0.17		9.5	0.17	ug/L		09/19/13 15:10	09/24/13 19:12	1
1,4-Dichlorobenzene	<0.15		9.5	0.15	ug/L		09/19/13 15:10	09/24/13 19:12	1
3,3'-Dichlorobenzidine	<2.5		9.5	2.5	ug/L		09/19/13 15:10	09/24/13 19:12	1
2,4-Dichlorophenol	<2.9		9.5	2.9	ug/L		09/19/13 15:10	09/24/13 19:12	1
Diethyl phthalate	0.74	J	9.5	0.23	ug/L		09/19/13 15:10	09/24/13 19:12	1
2,4-Dimethylphenol	<3.3		9.5	3.3	ug/L		09/19/13 15:10	09/24/13 19:12	1
Dimethyl phthalate	<0.16		9.5	0.16	ug/L		09/19/13 15:10	09/24/13 19:12	1
4,6-Dinitro-2-methylphenol	<1.5		9.5	1.5	ug/L		09/19/13 15:10	09/24/13 19:12	1
2,4-Dinitrophenol	<3.2		29	3.2	ug/L		09/19/13 15:10	09/24/13 19:12	1
2,4-Dinitrotoluene	<1.8		9.5	1.8	ug/L		09/19/13 15:10	09/24/13 19:12	1
2,6-Dinitrotoluene	<1.8		9.5	1.8	ug/L		09/19/13 15:10	09/24/13 19:12	1
Di-n-octyl phthalate	<0.16		9.5	0.16	ug/L		09/19/13 15:10	09/24/13 19:12	1
Bis(2-ethylhexyl) phthalate	<1.9		9.5	1.9	ug/L		09/19/13 15:10	09/24/13 19:12	1
Fluoranthene	<0.17		9.5	0.17	ug/L		09/19/13 15:10	09/24/13 19:12	1
Fluorene	<0.17		9.5	0.17	ug/L		09/19/13 15:10	09/24/13 19:12	1
Hexachlorobenzene	<0.16		9.5	0.16	ug/L		09/19/13 15:10	09/24/13 19:12	1
Hexachlorobutadiene	<3.4		9.5	3.4	ug/L		09/19/13 15:10	09/24/13 19:12	1
Hexachlorocyclopentadiene	<2.5		19	2.5	ug/L		09/19/13 15:10	09/24/13 19:12	1
Hexachloroethane	<4.0		9.5	4.0	ug/L		09/19/13 15:10	09/24/13 19:12	1
Indeno[1,2,3-cd]pyrene	<0.21		9.5	0.21	ug/L		09/19/13 15:10	09/24/13 19:12	1
Isophorone	<0.13		9.5	0.13	ug/L		09/19/13 15:10	09/24/13 19:12	1
Naphthalene	<0.16		9.5	0.16	ug/L		09/19/13 15:10	09/24/13 19:12	1
Nitrobenzene	<0.12		9.5	0.12	ug/L		09/19/13 15:10	09/24/13 19:12	1
2-Nitrophenol	<5.0		9.5	5.0	ug/L		09/19/13 15:10	09/24/13 19:12	1
4-Nitrophenol	<2.0		9.5	2.0	ug/L		09/19/13 15:10	09/24/13 19:12	1
N-Nitrosodimethylamine	<3.3		9.5	3.3	ug/L		09/19/13 15:10	09/24/13 19:12	1
N-Nitrosodiphenylamine	<0.17		9.5	0.17	ug/L		09/19/13 15:10	09/24/13 19:12	1
N-Nitrosodi-n-propylamine	<3.1		9.5	3.1	ug/L		09/19/13 15:10	09/24/13 19:12	1

TestAmerica Pensacola

# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80284-1

**Client Sample ID: HS4-006**

**Lab Sample ID: 400-80284-5**

**Date Collected: 09/18/13 14:26**

**Matrix: Water**

**Date Received: 09/19/13 10:07**

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<1.3		19	1.3	ug/L		09/19/13 15:10	09/24/13 19:12	1
Phenanthrene	<0.17		9.5	0.17	ug/L		09/19/13 15:10	09/24/13 19:12	1
Phenol	<2.5		9.5	2.5	ug/L		09/19/13 15:10	09/24/13 19:12	1
Pyrene	<0.20		9.5	0.20	ug/L		09/19/13 15:10	09/24/13 19:12	1
1,2,4-Trichlorobenzene	<0.17		9.5	0.17	ug/L		09/19/13 15:10	09/24/13 19:12	1
2,4,6-Trichlorophenol	<3.3		9.5	3.3	ug/L		09/19/13 15:10	09/24/13 19:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	55		15 - 135				09/19/13 15:10	09/24/13 19:12	1
2-Fluorobiphenyl	51		34 - 113				09/19/13 15:10	09/24/13 19:12	1
2-Fluorophenol	40		10 - 104				09/19/13 15:10	09/24/13 19:12	1
Nitrobenzene-d5	55		27 - 110				09/19/13 15:10	09/24/13 19:12	1
Phenol-d5	42		10 - 110				09/19/13 15:10	09/24/13 19:12	1
Terphenyl-d14	67		53 - 125				09/19/13 15:10	09/24/13 19:12	1

**Client Sample ID: HS4-008**

**Lab Sample ID: 400-80284-7**

**Date Collected: 09/18/13 15:53**

**Matrix: Water**

**Date Received: 09/19/13 10:07**

## Method: 608 - Organochlorine Pesticides/PCBs in Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.0015		0.025	0.0015	ug/L		09/19/13 15:06	09/27/13 15:24	1
alpha-BHC	<0.0018		0.025	0.0018	ug/L		09/19/13 15:06	09/27/13 15:24	1
beta-BHC	<0.0015		0.025	0.0015	ug/L		09/19/13 15:06	09/27/13 15:24	1
delta-BHC	<0.0011		0.025	0.0011	ug/L		09/19/13 15:06	09/27/13 15:24	1
gamma-BHC (Lindane)	<0.013		0.025	0.013	ug/L		09/19/13 15:06	09/27/13 15:24	1
Chlordane (technical)	<0.065		0.25	0.065	ug/L		09/19/13 15:06	09/27/13 15:24	1
4,4'-DDD	<0.0015		0.025	0.0015	ug/L		09/19/13 15:06	09/27/13 15:24	1
4,4'-DDE	<0.0011		0.025	0.0011	ug/L		09/19/13 15:06	09/27/13 15:24	1
4,4'-DDT	<0.0020		0.025	0.0020	ug/L		09/19/13 15:06	09/27/13 15:24	1
Dieldrin	<0.0015		0.025	0.0015	ug/L		09/19/13 15:06	09/27/13 15:24	1
Endosulfan I	<0.0015		0.025	0.0015	ug/L		09/19/13 15:06	09/27/13 15:24	1
Endosulfan II	<0.0037		0.025	0.0037	ug/L		09/19/13 15:06	09/27/13 15:24	1
Endosulfan sulfate	<0.0011		0.025	0.0011	ug/L		09/19/13 15:06	09/27/13 15:24	1
Endrin	<0.0015		0.025	0.0015	ug/L		09/19/13 15:06	09/27/13 15:24	1
Endrin aldehyde	<0.0014		0.025	0.0014	ug/L		09/19/13 15:06	09/27/13 15:24	1
Heptachlor	<0.0016		0.025	0.0016	ug/L		09/19/13 15:06	09/27/13 15:24	1
Heptachlor epoxide	<0.0016		0.025	0.0016	ug/L		09/19/13 15:06	09/27/13 15:24	1
PCB-1016	<0.024		0.25	0.024	ug/L		09/19/13 15:06	09/26/13 23:33	1
PCB-1221	<0.11		0.25	0.11	ug/L		09/19/13 15:06	09/26/13 23:33	1
PCB-1232	<0.050		0.25	0.050	ug/L		09/19/13 15:06	09/26/13 23:33	1
PCB-1242	<0.017		0.25	0.017	ug/L		09/19/13 15:06	09/26/13 23:33	1
PCB-1248	<0.010		0.25	0.010	ug/L		09/19/13 15:06	09/26/13 23:33	1
PCB-1254	<0.029		0.25	0.029	ug/L		09/19/13 15:06	09/26/13 23:33	1
PCB-1260	<0.017		0.25	0.017	ug/L		09/19/13 15:06	09/26/13 23:33	1
Toxaphene	<0.15		1.5	0.15	ug/L		09/19/13 15:06	09/27/13 15:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	35	X	47 - 148				09/19/13 15:06	09/26/13 23:33	1
Tetrachloro-m-xylene	78		65 - 134				09/19/13 15:06	09/26/13 23:33	1

TestAmerica Pensacola

# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80284-1

**Client Sample ID: HS4-010**

Date Collected: 09/18/13 15:13

Date Received: 09/19/13 10:07

**Lab Sample ID: 400-80284-9**

Matrix: Water

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	6.9	b	2.0	2.0	mg/L			09/20/13 10:50	1

**Client Sample ID: HS4-011**

Date Collected: 09/18/13 15:24

Date Received: 09/19/13 10:07

**Lab Sample ID: 400-80284-10**

Matrix: Water

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenols, Total	0.0087		0.0050	0.0045	mg/L		09/27/13 14:03	10/01/13 13:28	1

**Client Sample ID: HS4-013**

Date Collected: 09/18/13 14:56

Date Received: 09/19/13 10:07

**Lab Sample ID: 400-80284-12**

Matrix: Water

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.0022		0.0050	0.0022	mg/L		09/23/13 12:40	09/24/13 08:55	1

**Client Sample ID: HS4-014**

Date Collected: 09/18/13 15:00

Date Received: 09/19/13 10:07

**Lab Sample ID: 400-80284-13**

Matrix: Water

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.20	B	0.050	0.016	mg/L			09/20/13 14:15	1
Nitrogen, Kjeldahl	1.2		0.50	0.26	mg/L		09/26/13 14:39	09/27/13 15:18	1
Nitrate Nitrite as N	0.20		0.050	0.018	mg/L			09/23/13 10:07	1
Chemical Oxygen Demand	30		10	6.4	mg/L			10/01/13 13:07	1

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80284-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 400-192150/1-A

Matrix: Water

Analysis Batch: 192532

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192150

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.16		10	0.16	ug/L		09/19/13 09:17	09/23/13 19:17	1
Acenaphthylene	<0.17		10	0.17	ug/L		09/19/13 09:17	09/23/13 19:17	1
Anthracene	<0.18		10	0.18	ug/L		09/19/13 09:17	09/23/13 19:17	1
Benzidine	<20		50	20	ug/L		09/19/13 09:17	09/23/13 19:17	1
Benzo[a]anthracene	<0.18		10	0.18	ug/L		09/19/13 09:17	09/23/13 19:17	1
Benzo[b]fluoranthene	<0.15		10	0.15	ug/L		09/19/13 09:17	09/23/13 19:17	1
Benzo[k]fluoranthene	<0.16		10	0.16	ug/L		09/19/13 09:17	09/23/13 19:17	1
Benzo[g,h,i]perylene	<0.23		10	0.23	ug/L		09/19/13 09:17	09/23/13 19:17	1
Benzo[a]pyrene	<0.12		10	0.12	ug/L		09/19/13 09:17	09/23/13 19:17	1
4-Bromophenyl phenyl ether	<0.20		10	0.20	ug/L		09/19/13 09:17	09/23/13 19:17	1
Butyl benzyl phthalate	<0.19		10	0.19	ug/L		09/19/13 09:17	09/23/13 19:17	1
Bis(2-chloroethoxy)methane	<0.16		10	0.16	ug/L		09/19/13 09:17	09/23/13 19:17	1
Bis(2-chloroethyl)ether	<0.50		10	0.50	ug/L		09/19/13 09:17	09/23/13 19:17	1
4-Chloro-3-methylphenol	<3.8		10	3.8	ug/L		09/19/13 09:17	09/23/13 19:17	1
2-Chloronaphthalene	<0.14		10	0.14	ug/L		09/19/13 09:17	09/23/13 19:17	1
2-Chlorophenol	<2.2		10	2.2	ug/L		09/19/13 09:17	09/23/13 19:17	1
4-Chlorophenyl phenyl ether	<2.0		10	2.0	ug/L		09/19/13 09:17	09/23/13 19:17	1
Chrysene	<0.19		10	0.19	ug/L		09/19/13 09:17	09/23/13 19:17	1
Dibenz(a,h)anthracene	<0.24		10	0.24	ug/L		09/19/13 09:17	09/23/13 19:17	1
Di-n-butyl phthalate	<2.7		10	2.7	ug/L		09/19/13 09:17	09/23/13 19:17	1
1,2-Dichlorobenzene	<0.17		10	0.17	ug/L		09/19/13 09:17	09/23/13 19:17	1
1,3-Dichlorobenzene	<0.18		10	0.18	ug/L		09/19/13 09:17	09/23/13 19:17	1
1,4-Dichlorobenzene	<0.16		10	0.16	ug/L		09/19/13 09:17	09/23/13 19:17	1
3,3'-Dichlorobenzidine	<2.6		10	2.6	ug/L		09/19/13 09:17	09/23/13 19:17	1
2,4-Dichlorophenol	<3.0		10	3.0	ug/L		09/19/13 09:17	09/23/13 19:17	1
Diethyl phthalate	<0.24		10	0.24	ug/L		09/19/13 09:17	09/23/13 19:17	1
2,4-Dimethylphenol	<3.5		10	3.5	ug/L		09/19/13 09:17	09/23/13 19:17	1
Dimethyl phthalate	<0.17		10	0.17	ug/L		09/19/13 09:17	09/23/13 19:17	1
4,6-Dinitro-2-methylphenol	<1.6		10	1.6	ug/L		09/19/13 09:17	09/23/13 19:17	1
2,4-Dinitrophenol	<3.4		30	3.4	ug/L		09/19/13 09:17	09/23/13 19:17	1
2,4-Dinitrotoluene	<1.9		10	1.9	ug/L		09/19/13 09:17	09/23/13 19:17	1
2,6-Dinitrotoluene	<1.9		10	1.9	ug/L		09/19/13 09:17	09/23/13 19:17	1
Di-n-octyl phthalate	<0.17		10	0.17	ug/L		09/19/13 09:17	09/23/13 19:17	1
Bis(2-ethylhexyl) phthalate	<2.0		10	2.0	ug/L		09/19/13 09:17	09/23/13 19:17	1
Fluoranthene	<0.18		10	0.18	ug/L		09/19/13 09:17	09/23/13 19:17	1
Fluorene	<0.18		10	0.18	ug/L		09/19/13 09:17	09/23/13 19:17	1
Hexachlorobenzene	<0.17		10	0.17	ug/L		09/19/13 09:17	09/23/13 19:17	1
Hexachlorobutadiene	<3.6		10	3.6	ug/L		09/19/13 09:17	09/23/13 19:17	1
Hexachlorocyclopentadiene	<2.6		20	2.6	ug/L		09/19/13 09:17	09/23/13 19:17	1
Hexachloroethane	<4.2		10	4.2	ug/L		09/19/13 09:17	09/23/13 19:17	1
Indeno[1,2,3-cd]pyrene	<0.22		10	0.22	ug/L		09/19/13 09:17	09/23/13 19:17	1
Isophorone	<0.14		10	0.14	ug/L		09/19/13 09:17	09/23/13 19:17	1
Naphthalene	<0.17		10	0.17	ug/L		09/19/13 09:17	09/23/13 19:17	1
Nitrobenzene	<0.13		10	0.13	ug/L		09/19/13 09:17	09/23/13 19:17	1
2-Nitrophenol	<5.2		10	5.2	ug/L		09/19/13 09:17	09/23/13 19:17	1
4-Nitrophenol	<2.1		10	2.1	ug/L		09/19/13 09:17	09/23/13 19:17	1
N-Nitrosodimethylamine	<3.5		10	3.5	ug/L		09/19/13 09:17	09/23/13 19:17	1
N-Nitrosodiphenylamine	<0.18		10	0.18	ug/L		09/19/13 09:17	09/23/13 19:17	1

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80284-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 400-192150/1-A

Matrix: Water

Analysis Batch: 192532

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192150

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosodi-n-propylamine	<3.3		10	3.3	ug/L		09/19/13 09:17	09/23/13 19:17	1
Pentachlorophenol	<1.4		20	1.4	ug/L		09/19/13 09:17	09/23/13 19:17	1
Phenanthrene	<0.18		10	0.18	ug/L		09/19/13 09:17	09/23/13 19:17	1
Phenol	<2.6		10	2.6	ug/L		09/19/13 09:17	09/23/13 19:17	1
Pyrene	<0.21		10	0.21	ug/L		09/19/13 09:17	09/23/13 19:17	1
1,2,4-Trichlorobenzene	<0.18		10	0.18	ug/L		09/19/13 09:17	09/23/13 19:17	1
2,4,6-Trichlorophenol	<3.5		10	3.5	ug/L		09/19/13 09:17	09/23/13 19:17	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	83		15 - 135	09/19/13 09:17	09/23/13 19:17	1
2-Fluorobiphenyl	83		34 - 113	09/19/13 09:17	09/23/13 19:17	1
2-Fluorophenol	65		10 - 104	09/19/13 09:17	09/23/13 19:17	1
Nitrobenzene-d5	81		27 - 110	09/19/13 09:17	09/23/13 19:17	1
Phenol-d5	71		10 - 110	09/19/13 09:17	09/23/13 19:17	1
Terphenyl-d14	114		53 - 125	09/19/13 09:17	09/23/13 19:17	1

Lab Sample ID: LCS 400-192150/2-A

Matrix: Water

Analysis Batch: 192532

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 192150

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	50.0	42.1		ug/L		84	47 - 145
Acenaphthylene	50.0	41.6		ug/L		83	33 - 145
Anthracene	50.0	43.2		ug/L		86	27 - 133
Benzo[a]anthracene	50.0	42.7		ug/L		85	33 - 143
Benzo[b]fluoranthene	50.0	46.5		ug/L		93	24 - 159
Benzo[k]fluoranthene	50.0	46.0		ug/L		92	11 - 162
Benzo[g,h,i]perylene	50.0	42.2		ug/L		84	10 - 219
Benzo[a]pyrene	50.0	45.6		ug/L		91	17 - 163
4-Bromophenyl phenyl ether	50.0	45.2		ug/L		90	53 - 127
Butyl benzyl phthalate	50.0	55.8		ug/L		112	1 - 152
Bis(2-chloroethoxy)methane	50.0	38.6		ug/L		77	33 - 184
Bis(2-chloroethyl)ether	50.0	34.1		ug/L		68	12 - 158
4-Chloro-3-methylphenol	50.0	43.3		ug/L		87	22 - 147
2-Chloronaphthalene	50.0	39.6		ug/L		79	60 - 118
2-Chlorophenol	50.0	34.7		ug/L		69	23 - 134
4-Chlorophenyl phenyl ether	50.0	46.3		ug/L		93	25 - 158
Chrysene	50.0	40.2		ug/L		80	17 - 168
Dibenz(a,h)anthracene	50.0	42.8		ug/L		86	10 - 227
Di-n-butyl phthalate	50.0	54.3		ug/L		109	1 - 118
1,2-Dichlorobenzene	50.0	35.2		ug/L		70	32 - 129
1,3-Dichlorobenzene	50.0	34.1		ug/L		68	10 - 172
1,4-Dichlorobenzene	50.0	35.3		ug/L		71	20 - 124
3,3'-Dichlorobenzidine	50.0	45.1		ug/L		90	10 - 262
2,4-Dichlorophenol	50.0	39.8		ug/L		80	39 - 135
Diethyl phthalate	50.0	50.6		ug/L		101	10 - 114
2,4-Dimethylphenol	50.0	41.9		ug/L		84	32 - 119
Dimethyl phthalate	50.0	44.3		ug/L		89	10 - 112

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80284-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 400-192150/2-A

Matrix: Water

Analysis Batch: 192532

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 192150

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4,6-Dinitro-2-methylphenol	100	53.6		ug/L		54	10 - 181
2,4-Dinitrophenol	100	55.2		ug/L		55	30 - 191
2,4-Dinitrotoluene	50.0	47.0		ug/L		94	39 - 139
2,6-Dinitrotoluene	50.0	42.8		ug/L		86	50 - 158
Di-n-octyl phthalate	50.0	48.7		ug/L		97	4 - 146
Bis(2-ethylhexyl) phthalate	50.0	54.8		ug/L		110	8 - 158
Fluoranthene	50.0	43.9		ug/L		88	26 - 137
Fluorene	50.0	44.6		ug/L		89	59 - 121
Hexachlorobenzene	50.0	46.6		ug/L		93	10 - 152
Hexachlorobutadiene	50.0	43.4		ug/L		87	24 - 116
Hexachlorocyclopentadiene	50.0	26.7		ug/L		53	10 - 122
Hexachloroethane	50.0	33.7		ug/L		67	40 - 113
Indeno[1,2,3-cd]pyrene	50.0	43.0		ug/L		86	10 - 171
Isophorone	50.0	40.6		ug/L		81	21 - 196
Naphthalene	50.0	39.8		ug/L		80	21 - 133
Nitrobenzene	50.0	38.6		ug/L		77	35 - 180
2-Nitrophenol	50.0	35.5		ug/L		71	29 - 182
4-Nitrophenol	100	82.4		ug/L		82	10 - 132
N-Nitrosodimethylamine	50.0	29.5		ug/L		59	38 - 104
N-Nitrosodiphenylamine	58.6	51.3		ug/L		88	58 - 120
N-Nitrosodi-n-propylamine	50.0	41.8		ug/L		84	10 - 230
Pentachlorophenol	100	81.7		ug/L		82	14 - 176
Phenanthrene	50.0	43.0		ug/L		86	54 - 120
Phenol	50.0	31.0		ug/L		62	5 - 112
Pyrene	50.0	50.2		ug/L		100	52 - 115
1,2,4-Trichlorobenzene	50.0	38.3		ug/L		77	44 - 142
2,4,6-Trichlorophenol	50.0	40.5		ug/L		81	37 - 144

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol	102		15 - 135
2-Fluorobiphenyl	86		34 - 113
2-Fluorophenol	62		10 - 104
Nitrobenzene-d5	83		27 - 110
Phenol-d5	71		10 - 110
Terphenyl-d14	121		53 - 125

Lab Sample ID: LCSD 400-192150/3-A

Matrix: Water

Analysis Batch: 192532

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 192150

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Acenaphthene	50.0	40.9		ug/L		82	47 - 145	3	30
Acenaphthylene	50.0	41.3		ug/L		83	33 - 145	1	30
Anthracene	50.0	42.7		ug/L		85	27 - 133	1	30
Benzo[a]anthracene	50.0	42.0		ug/L		84	33 - 143	2	30
Benzo[b]fluoranthene	50.0	44.7		ug/L		89	24 - 159	4	30
Benzo[k]fluoranthene	50.0	45.3		ug/L		91	11 - 162	1	30
Benzo[g,h,i]perylene	50.0	39.9		ug/L		80	10 - 219	6	30

TestAmerica Pensacola



# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80284-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 400-192150/3-A

Matrix: Water

Analysis Batch: 192532

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 192150

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzo[a]pyrene	50.0	44.5		ug/L		89	17 - 163	2	30
4-Bromophenyl phenyl ether	50.0	43.3		ug/L		87	53 - 127	4	30
Butyl benzyl phthalate	50.0	49.4		ug/L		99	1 - 152	12	30
Bis(2-chloroethoxy)methane	50.0	37.4		ug/L		75	33 - 184	3	30
Bis(2-chloroethyl)ether	50.0	34.9		ug/L		70	12 - 158	2	30
4-Chloro-3-methylphenol	50.0	41.5		ug/L		83	22 - 147	4	30
2-Chloronaphthalene	50.0	38.2		ug/L		76	60 - 118	4	30
2-Chlorophenol	50.0	33.5		ug/L		67	23 - 134	4	30
4-Chlorophenyl phenyl ether	50.0	45.9		ug/L		92	25 - 158	1	30
Chrysene	50.0	40.3		ug/L		81	17 - 168	0	30
Dibenz(a,h)anthracene	50.0	40.7		ug/L		81	10 - 227	5	30
Di-n-butyl phthalate	50.0	53.3		ug/L		107	1 - 118	2	30
1,2-Dichlorobenzene	50.0	34.3		ug/L		69	32 - 129	3	30
1,3-Dichlorobenzene	50.0	33.9		ug/L		68	10 - 172	1	30
1,4-Dichlorobenzene	50.0	34.4		ug/L		69	20 - 124	2	30
3,3'-Dichlorobenzidine	50.0	46.7		ug/L		93	10 - 262	4	30
2,4-Dichlorophenol	50.0	38.2		ug/L		76	39 - 135	4	30
Diethyl phthalate	50.0	50.0		ug/L		100	10 - 114	1	30
2,4-Dimethylphenol	50.0	38.7		ug/L		77	32 - 119	8	30
Dimethyl phthalate	50.0	42.8		ug/L		86	10 - 112	3	30
4,6-Dinitro-2-methylphenol	100	59.3		ug/L		59	10 - 181	10	30
2,4-Dinitrophenol	100	58.2		ug/L		58	30 - 191	5	30
2,4-Dinitrotoluene	50.0	45.6		ug/L		91	39 - 139	3	30
2,6-Dinitrotoluene	50.0	43.7		ug/L		87	50 - 158	2	30
Di-n-octyl phthalate	50.0	49.0		ug/L		98	4 - 146	1	30
Bis(2-ethylhexyl) phthalate	50.0	52.1		ug/L		104	8 - 158	5	30
Fluoranthene	50.0	45.9		ug/L		92	26 - 137	5	30
Fluorene	50.0	44.4		ug/L		89	59 - 121	1	30
Hexachlorobenzene	50.0	47.1		ug/L		94	10 - 152	1	30
Hexachlorobutadiene	50.0	40.9		ug/L		82	24 - 116	6	30
Hexachlorocyclopentadiene	50.0	26.2		ug/L		52	10 - 122	2	30
Hexachloroethane	50.0	34.3		ug/L		69	40 - 113	2	30
Indeno[1,2,3-cd]pyrene	50.0	40.8		ug/L		82	10 - 171	5	30
Isophorone	50.0	40.6		ug/L		81	21 - 196	0	30
Naphthalene	50.0	38.6		ug/L		77	21 - 133	3	30
Nitrobenzene	50.0	38.2		ug/L		76	35 - 180	1	30
2-Nitrophenol	50.0	34.5		ug/L		69	29 - 182	3	30
4-Nitrophenol	100	77.3		ug/L		77	10 - 132	6	30
N-Nitrosodimethylamine	50.0	31.6		ug/L		63	38 - 104	7	30
N-Nitrosodiphenylamine	58.6	50.7		ug/L		87	58 - 120	1	30
N-Nitrosodi-n-propylamine	50.0	39.7		ug/L		79	10 - 230	5	30
Pentachlorophenol	100	75.9		ug/L		76	14 - 176	7	30
Phenanthrene	50.0	42.6		ug/L		85	54 - 120	1	30
Phenol	50.0	26.6		ug/L		53	5 - 112	15	30
Pyrene	50.0	44.1		ug/L		88	52 - 115	13	30
1,2,4-Trichlorobenzene	50.0	37.9		ug/L		76	44 - 142	1	30
2,4,6-Trichlorophenol	50.0	38.8		ug/L		78	37 - 144	4	30

TestAmerica Pensacola



# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80284-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 400-192150/3-A

Matrix: Water

Analysis Batch: 192532

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 192150

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2,4,6-Tribromophenol	96		15 - 135
2-Fluorobiphenyl	83		34 - 113
2-Fluorophenol	54		10 - 104
Nitrobenzene-d5	78		27 - 110
Phenol-d5	61		10 - 110
Terphenyl-d14	102		53 - 125

## Method: 608 - Organochlorine Pesticides/PCBs in Water

Lab Sample ID: MB 400-192227/1-A

Matrix: Water

Analysis Batch: 193040

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192227

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.024		0.25	0.024	ug/L		09/19/13 15:06	09/26/13 20:38	1
PCB-1221	<0.11		0.25	0.11	ug/L		09/19/13 15:06	09/26/13 20:38	1
PCB-1232	<0.050		0.25	0.050	ug/L		09/19/13 15:06	09/26/13 20:38	1
PCB-1242	<0.017		0.25	0.017	ug/L		09/19/13 15:06	09/26/13 20:38	1
PCB-1248	<0.010		0.25	0.010	ug/L		09/19/13 15:06	09/26/13 20:38	1
PCB-1254	<0.029		0.25	0.029	ug/L		09/19/13 15:06	09/26/13 20:38	1
PCB-1260	<0.017		0.25	0.017	ug/L		09/19/13 15:06	09/26/13 20:38	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	59		47 - 148				09/19/13 15:06	09/26/13 20:38	1
Tetrachloro-m-xylene	102		65 - 134				09/19/13 15:06	09/26/13 20:38	1

Lab Sample ID: MB 400-192227/1-A

Matrix: Water

Analysis Batch: 193096

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192227

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.0015		0.025	0.0015	ug/L		09/19/13 15:06	09/27/13 12:54	1
alpha-BHC	<0.0018		0.025	0.0018	ug/L		09/19/13 15:06	09/27/13 12:54	1
beta-BHC	<0.0015		0.025	0.0015	ug/L		09/19/13 15:06	09/27/13 12:54	1
delta-BHC	<0.0011		0.025	0.0011	ug/L		09/19/13 15:06	09/27/13 12:54	1
gamma-BHC (Lindane)	<0.013		0.025	0.013	ug/L		09/19/13 15:06	09/27/13 12:54	1
Chlordane (technical)	<0.065		0.25	0.065	ug/L		09/19/13 15:06	09/27/13 12:54	1
4,4'-DDD	<0.0015		0.025	0.0015	ug/L		09/19/13 15:06	09/27/13 12:54	1
4,4'-DDE	<0.0011		0.025	0.0011	ug/L		09/19/13 15:06	09/27/13 12:54	1
4,4'-DDT	<0.0020		0.025	0.0020	ug/L		09/19/13 15:06	09/27/13 12:54	1
Dieldrin	<0.0015		0.025	0.0015	ug/L		09/19/13 15:06	09/27/13 12:54	1
Endosulfan I	<0.0015		0.025	0.0015	ug/L		09/19/13 15:06	09/27/13 12:54	1
Endosulfan II	<0.0037		0.025	0.0037	ug/L		09/19/13 15:06	09/27/13 12:54	1
Endosulfan sulfate	<0.0011		0.025	0.0011	ug/L		09/19/13 15:06	09/27/13 12:54	1
Endrin	<0.0015		0.025	0.0015	ug/L		09/19/13 15:06	09/27/13 12:54	1
Endrin aldehyde	<0.0014		0.025	0.0014	ug/L		09/19/13 15:06	09/27/13 12:54	1
Heptachlor	<0.0016		0.025	0.0016	ug/L		09/19/13 15:06	09/27/13 12:54	1

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80284-1

## Method: 608 - Organochlorine Pesticides/PCBs in Water (Continued)

Lab Sample ID: MB 400-192227/1-A

Matrix: Water

Analysis Batch: 193096

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192227

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor epoxide	<0.0016		0.025	0.0016	ug/L		09/19/13 15:06	09/27/13 12:54	1
Toxaphene	<0.15		1.5	0.15	ug/L		09/19/13 15:06	09/27/13 12:54	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	55		47 - 148				09/19/13 15:06	09/27/13 12:54	1
Tetrachloro-m-xylene	98		65 - 134				09/19/13 15:06	09/27/13 12:54	1

Lab Sample ID: LCS 400-192227/2-A

Matrix: Water

Analysis Batch: 193096

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 192227

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.500	0.259		ug/L		52	42 - 122
alpha-BHC	0.500	0.277		ug/L		55	37 - 134
beta-BHC	0.500	0.261		ug/L		52	17 - 147
delta-BHC	0.500	0.268		ug/L		54	19 - 140
gamma-BHC (Lindane)	0.500	0.287		ug/L		57	32 - 127
4,4'-DDD	0.500	0.246		ug/L		49	31 - 141
4,4'-DDE	0.500	0.248		ug/L		50	30 - 145
4,4'-DDT	0.500	0.319		ug/L		64	25 - 160
Dieldrin	0.500	0.269		ug/L		54	36 - 146
Endosulfan I	0.500	0.265		ug/L		53	45 - 153
Endosulfan II	0.500	0.268		ug/L		54	1 - 202
Endosulfan sulfate	0.500	0.283		ug/L		57	26 - 144
Endrin	0.500	0.261		ug/L		52	30 - 147
Endrin aldehyde	0.500	0.284		ug/L		57	30 - 130
Heptachlor	0.500	0.286		ug/L		57	34 - 111
Heptachlor epoxide	0.500	0.266		ug/L		53	37 - 142

Lab Sample ID: LCS 400-192227/4-A

Matrix: Water

Analysis Batch: 193040

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 192227

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	5.00	4.83		ug/L		97	50 - 114
PCB-1260	5.00	4.26		ug/L		85	8 - 127
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
DCB Decachlorobiphenyl	66		47 - 148				
Tetrachloro-m-xylene	106		65 - 134				

Lab Sample ID: LCSD 400-192227/3-A

Matrix: Water

Analysis Batch: 193096

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 192227

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Aldrin	0.500	0.285		ug/L		57	42 - 122	10	40
alpha-BHC	0.500	0.312		ug/L		62	37 - 134	12	40

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80284-1

## Method: 608 - Organochlorine Pesticides/PCBs in Water (Continued)

Lab Sample ID: LCSD 400-192227/3-A

Matrix: Water

Analysis Batch: 193096

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 192227

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD	Limit
							Limits	RPD		
beta-BHC	0.500	0.299		ug/L		60	17 - 147	14		40
delta-BHC	0.500	0.306		ug/L		61	19 - 140	13		40
gamma-BHC (Lindane)	0.500	0.324		ug/L		65	32 - 127	12		40
4,4'-DDD	0.500	0.284		ug/L		57	31 - 141	14		40
4,4'-DDE	0.500	0.289		ug/L		58	30 - 145	15		40
4,4'-DDT	0.500	0.382		ug/L		76	25 - 160	18		40
Dieldrin	0.500	0.304		ug/L		61	36 - 146	12		40
Endosulfan I	0.500	0.297		ug/L		59	45 - 153	11		40
Endosulfan II	0.500	0.305		ug/L		61	1 - 202	13		40
Endosulfan sulfate	0.500	0.327		ug/L		65	26 - 144	14		40
Endrin	0.500	0.302		ug/L		60	30 - 147	15		40
Endrin aldehyde	0.500	0.325		ug/L		65	30 - 130	13		40
Heptachlor	0.500	0.319		ug/L		64	34 - 111	11		40
Heptachlor epoxide	0.500	0.299		ug/L		60	37 - 142	11		40

Lab Sample ID: LCSD 400-192227/5-A

Matrix: Water

Analysis Batch: 193040

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 192227

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD	Limit
							Limits	RPD		
PCB-1016	5.00	4.97		ug/L		99	50 - 114	3		40
PCB-1260	5.00	4.93		ug/L		99	8 - 127	15		40
Surrogate										
		LCSD %Recovery	LCSD Qualifier	Limits						
DCB Decachlorobiphenyl		74		47 - 148						
Tetrachloro-m-xylene		101		65 - 134						

## Method: 335.4 - Cyanide, Total

Lab Sample ID: MB 400-192520/1-A

Matrix: Water

Analysis Batch: 192603

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192520

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Cyanide, Total	<0.0022		0.0050	0.0022	mg/L		09/23/13 12:40	09/24/13 08:55	1

Lab Sample ID: LCS 400-192520/2-A

Matrix: Water

Analysis Batch: 192603

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 192520

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	
							Limits	
Cyanide, Total	0.318	0.329		mg/L		103	75 - 125	

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80284-1

## Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 400-192472/15

Matrix: Water

Analysis Batch: 192472

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.0294	J	0.050	0.016	mg/L			09/20/13 14:01	1

Lab Sample ID: LCS 400-192472/16

Matrix: Water

Analysis Batch: 192472

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.00	2.08		mg/L		104	90 - 110

Lab Sample ID: MRL 400-192472/13 MRL

Matrix: Water

Analysis Batch: 192472

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	0.0500	0.0364	J	mg/L		73	50 - 150

## Method: 351.2 - Nitrogen, Total Kjeldahl

Lab Sample ID: MB 400-192942/1-A

Matrix: Water

Analysis Batch: 193102

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192942

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	<0.26		0.50	0.26	mg/L		09/26/13 14:39	09/27/13 14:55	1

Lab Sample ID: LCS 400-192942/2-A

Matrix: Water

Analysis Batch: 193102

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 192942

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Kjeldahl	10.0	9.20		mg/L		92	90 - 110

Lab Sample ID: MRL 400-193102/11 MRL

Matrix: Water

Analysis Batch: 193102

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Kjeldahl	0.500	0.651		mg/L		130	50 - 150

## Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 400-192505/14

Matrix: Water

Analysis Batch: 192505

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.018		0.050	0.018	mg/L			09/23/13 09:37	1

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80284-1

## Method: 353.2 - Nitrogen, Nitrate-Nitrite (Continued)

Lab Sample ID: LCS 400-192505/15

Matrix: Water

Analysis Batch: 192505

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	0.500	0.519		mg/L		104	90 - 110

Lab Sample ID: MRL 400-192505/12 MRL

Matrix: Water

Analysis Batch: 192505

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	0.0500	0.0495	J	mg/L		99	50 - 150

## Method: 420.1 - Phenolics, Total Recoverable

Lab Sample ID: MB 400-193255/1-A

Matrix: Water

Analysis Batch: 193543

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 193255

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenols, Total	<0.0045		0.0050	0.0045	mg/L		09/27/13 14:03	10/01/13 13:28	1

Lab Sample ID: LCS 400-193255/2-A

Matrix: Water

Analysis Batch: 193543

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 193255

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phenols, Total	0.400	0.420		mg/L		105	79 - 122

## Method: SM 5210B - BOD, 5-Day

Lab Sample ID: USB 400-193000/1 USB

Matrix: Water

Analysis Batch: 193000

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	<2.0		2.0	2.0	mg/L			09/20/13 18:39	1

Lab Sample ID: LCS 400-193000/2

Matrix: Water

Analysis Batch: 193000

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Biochemical Oxygen Demand	198	198		mg/L		100	85 - 115

Lab Sample ID: LCSD 400-193000/3

Matrix: Water

Analysis Batch: 193000

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Biochemical Oxygen Demand	198	201		mg/L		102	85 - 115	2	27

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80284-1

## Method: SM 5220D - COD

Lab Sample ID: MB 400-193378/1

Matrix: Water

Analysis Batch: 193378

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<6.4		10	6.4	mg/L			10/01/13 13:07	1

Lab Sample ID: LCS 400-193378/2

Matrix: Water

Analysis Batch: 193378

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	50.0	54.9		mg/L		110	90 - 110

## Lab Chronicle

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80284-1

**Client Sample ID: HS3-006**

**Date Collected: 09/18/13 13:24**

**Date Received: 09/19/13 10:07**

**Lab Sample ID: 400-80284-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	625			192150	09/19/13 15:10	KH1	TAL PEN
Total/NA	Analysis	625		1	192689	09/24/13 17:53	AJR	TAL PEN

**Client Sample ID: HS3-008**

**Date Collected: 09/18/13 13:15**

**Date Received: 09/19/13 10:07**

**Lab Sample ID: 400-80284-3**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	608			192227	09/19/13 15:06	KH1	TAL PEN
Total/NA	Analysis	608		1	193040	09/26/13 22:43	VC1	TAL PEN
Total/NA	Prep	608			192227	09/19/13 15:06	KH1	TAL PEN
Total/NA	Analysis	608		1	193096	09/27/13 14:41	VC1	TAL PEN

**Client Sample ID: HS4-006**

**Date Collected: 09/18/13 14:26**

**Date Received: 09/19/13 10:07**

**Lab Sample ID: 400-80284-5**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	625			192150	09/19/13 15:10	KH1	TAL PEN
Total/NA	Analysis	625		1	192689	09/24/13 19:12	AJR	TAL PEN

**Client Sample ID: HS4-008**

**Date Collected: 09/18/13 15:53**

**Date Received: 09/19/13 10:07**

**Lab Sample ID: 400-80284-7**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	608			192227	09/19/13 15:06	KH1	TAL PEN
Total/NA	Analysis	608		1	193040	09/26/13 23:33	VC1	TAL PEN
Total/NA	Prep	608			192227	09/19/13 15:06	KH1	TAL PEN
Total/NA	Analysis	608		1	193096	09/27/13 15:24	VC1	TAL PEN

**Client Sample ID: HS4-010**

**Date Collected: 09/18/13 15:13**

**Date Received: 09/19/13 10:07**

**Lab Sample ID: 400-80284-9**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 5210B		1	193000		GMF	TAL PEN
					(Start)	09/20/13 10:50		
					(End)	09/25/13 17:03		

TestAmerica Pensacola

# Lab Chronicle

Client: Dewberry  
Project/Site: Three Mile CreekUSA - Groundwater

TestAmerica Job ID: 400-80284-1

**Client Sample ID: HS4-011**

**Lab Sample ID: 400-80284-10**

**Date Collected: 09/18/13 15:24**

**Matrix: Water**

**Date Received: 09/19/13 10:07**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Distill/Phenol			193255	09/27/13 14:03	CLS	TAL PEN
Total/NA	Analysis	420.1		1	193543	10/01/13 13:28	JMH	TAL PEN

**Client Sample ID: HS4-013**

**Lab Sample ID: 400-80284-12**

**Date Collected: 09/18/13 14:56**

**Matrix: Water**

**Date Received: 09/19/13 10:07**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Distill/CN			192520	09/23/13 12:40	BAB	TAL PEN
Total/NA	Analysis	335.4		1	192603	09/24/13 08:55	BAB	TAL PEN

**Client Sample ID: HS4-014**

**Lab Sample ID: 400-80284-13**

**Date Collected: 09/18/13 15:00**

**Matrix: Water**

**Date Received: 09/19/13 10:07**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		1	192472	09/20/13 14:15	KJR	TAL PEN
Total/NA	Analysis	353.2		1	192505	09/23/13 10:07	KJR	TAL PEN
Total/NA	Prep	351.2			192942	09/26/13 14:39	JAT	TAL PEN
Total/NA	Analysis	351.2		1	193102	09/27/13 15:18	JAT	TAL PEN
Total/NA	Analysis	SM 5220D		1	193378	10/01/13 13:07	CLS	TAL PEN

## Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001



## Method Summary

Client: Dewberry

TestAmerica Job ID: 400-80284-1

Project/Site: Three Mile CreekUSA - Groundwater

Method	Method Description	Protocol	Laboratory
625	Semivolatile Organic Compounds (GC/MS)	40CFR136A	TAL PEN
608	Organochlorine Pesticides/PCBs in Water	40CFR136A	TAL PEN
335.4	Cyanide, Total	MCAWW	TAL PEN
350.1	Nitrogen, Ammonia	MCAWW	TAL PEN
351.2	Nitrogen, Total Kjeldahl	MCAWW	TAL PEN
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL PEN
420.1	Phenolics, Total Recoverable	MCAWW	TAL PEN
SM 5210B	BOD, 5-Day	SM	TAL PEN
SM 5220D	COD	SM	TAL PEN

### Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

### Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

**TestAmerica Mobile**

900 Lakeside Drive  
Mobile, AL 36693  
Phone (251) 666-6633 Fax (251) 666-6696

## Chain of Custody Record

**TestAmerica**  
THE LEADER IN ENVIRONMENTAL TESTING

THE LEADER IN ENVIRONMENTAL TESTING

[illegible]

**TestAmerica**  
THE LEADER IN ENVIRONMENTAL TESTING

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10/4/2013



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola

3355 McLemore Drive

Pensacola, FL 32514

Tel: (850)474-1001

TestAmerica Job ID: 400-80383-1

Client Project/Site: Three Mile CreekUSA-  
Groundwater/Sediment

For:

Dewberry

2301 Rexwoods Dr.

Raleigh, North Carolina 27607

Attn: Michael Hanson



Authorized for release by:

10/4/2013 4:58:13 PM

Mike Nance, Project Manager II

(251)666-6633

[mike.nance@testamericainc.com](mailto:mike.nance@testamericainc.com)

### LINKS

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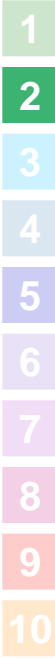
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*Results relate only to the items tested and the sample(s) as received by the laboratory.*



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## Definitions/Glossary

Client: Dewberry

TestAmerica Job ID: 400-80383-1

Project/Site: Three Mile CreekUSA-Groundwater/Sediment

### Qualifiers

#### Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

## Case Narrative

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80383-1

**Job ID: 400-80383-1**

**Laboratory: TestAmerica Pensacola**

### Narrative

#### Job Narrative 400-80383-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 9/20/2013 1:50 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.4° C.

Except:

Sample 7S for fecal was not listed on COC. but was received in sample cooler

#### Metals

No analytical or quality issues were noted.

#### General Chemistry

No other analytical or quality issues were noted.

#### Organic Prep

No analytical or quality issues were noted.

#### Lab Admin

No analytical or quality issues were noted.

## Sample Summary

Client: Dewberry

TestAmerica Job ID: 400-80383-1

Project/Site: Three Mile CreekUSA-Groundwater/Sediment

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-80383-1	10G-001-007	Water	09/20/13 08:41	09/20/13 13:50
400-80383-2	9G-001-007	Water	09/20/13 09:51	09/20/13 13:50
400-80383-3	8G-006-007	Water	09/20/13 10:48	09/20/13 13:50
400-80383-4	7G-006-007	Water	09/20/13 11:09	09/20/13 13:50
400-80383-5	6G-006-007	Water	09/20/13 11:05	09/20/13 13:50
400-80383-6	4G-006-007	Water	09/20/13 11:44	09/20/13 13:50
400-80383-7	3G-002-007	Water	09/20/13 12:37	09/20/13 13:50
400-80383-8	9S-001-003	Solid	09/20/13 09:18	09/20/13 13:50
400-80383-9	3S-001-003	Solid	09/20/13 12:17	09/20/13 13:50
400-80383-10	10S-001-003	Solid	09/20/13 08:10	09/20/13 13:50
400-80383-11	8S(F)-003	Solid	09/20/13 10:53	09/20/13 13:50
400-80383-12	6S(F)-003	Solid	09/20/13 11:25	09/20/13 13:50
400-80383-13	4S(F)-003	Solid	09/20/13 11:45	09/20/13 13:50
400-80383-14	7S(F)-003	Solid	09/20/13 11:10	09/20/13 13:50



# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80383-1

**Client Sample ID: 10G-001-007**

**Lab Sample ID: 400-80383-1**

Date Collected: 09/20/13 08:41

Matrix: Water

Date Received: 09/20/13 13:50

## Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.0020		0.0050	0.0020	mg/L		09/23/13 09:10	09/23/13 17:42	1
Arsenic	<0.0040		0.0050	0.0040	mg/L		09/23/13 09:10	09/23/13 17:42	1
Barium	0.039		0.010	0.0020	mg/L		09/23/13 09:10	09/23/13 17:42	1
Cadmium	<0.0010		0.0050	0.0010	mg/L		09/23/13 09:10	09/23/13 17:42	1
Chromium	<0.0020		0.0050	0.0020	mg/L		09/23/13 09:10	09/23/13 17:42	1
Lead	0.0025	J	0.0050	0.0020	mg/L		09/23/13 09:10	09/23/13 17:42	1
Selenium	<0.0040		0.010	0.0040	mg/L		09/23/13 09:10	09/23/13 17:42	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		10/02/13 08:15	10/02/13 14:17	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	0.29	J	0.50	0.26	mg/L		09/26/13 14:39	09/27/13 15:30	1
ortho-Phosphate	<0.015		0.050	0.015	mg/L			09/21/13 10:32	1
Phosphorus	0.0062		0.0020	0.0010	mg/L		10/04/13 10:54	10/04/13 14:53	1
Biochemical Oxygen Demand	<2.0		2.0	2.0	mg/L			09/21/13 12:59	1

## Method: Enterolert - Enterococcus by Enterolert (Quantitray)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Enterococci	47		1.0	1.0	MPN/100mL			09/20/13 15:05	1

## Method: SM 9222D - Coliforms, Fecal (Membrane Filter)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	1500		100	100	CFU/100mL			09/20/13 15:20	1

**Client Sample ID: 9G-001-007**

**Lab Sample ID: 400-80383-2**

Date Collected: 09/20/13 09:51

Matrix: Water

Date Received: 09/20/13 13:50

## Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.0020		0.0050	0.0020	mg/L		09/23/13 09:10	09/23/13 17:46	1
Arsenic	<0.0040		0.0050	0.0040	mg/L		09/23/13 09:10	09/23/13 17:46	1
Barium	0.032		0.010	0.0020	mg/L		09/23/13 09:10	09/23/13 17:46	1
Cadmium	<0.0010		0.0050	0.0010	mg/L		09/23/13 09:10	09/23/13 17:46	1
Chromium	<0.0020		0.0050	0.0020	mg/L		09/23/13 09:10	09/23/13 17:46	1
Lead	<0.0020		0.0050	0.0020	mg/L		09/23/13 09:10	09/23/13 17:46	1
Selenium	<0.0040		0.010	0.0040	mg/L		09/23/13 09:10	09/23/13 17:46	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		10/02/13 08:15	10/02/13 14:18	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	1.4		0.50	0.26	mg/L		09/26/13 14:39	09/27/13 15:31	1
ortho-Phosphate	0.092		0.050	0.015	mg/L			09/21/13 11:33	1
Phosphorus	0.081		0.0020	0.0010	mg/L		10/04/13 10:54	10/04/13 14:55	1
Biochemical Oxygen Demand	<2.0		2.0	2.0	mg/L			09/21/13 12:59	1

TestAmerica Pensacola

# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80383-1

## Client Sample ID: 9G-001-007

Date Collected: 09/20/13 09:51

Date Received: 09/20/13 13:50

## Lab Sample ID: 400-80383-2

Matrix: Water

### Method: Enterolert - Enterococcus by Enterolert (Quantitray)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Enterococci	11		1.0	1.0	MPN/100mL	-		09/20/13 15:05	1

### Method: SM 9222D - Coliforms, Fecal (Membrane Filter)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	140		1.0	1.0	CFU/100mL	-		09/20/13 15:20	1

## Client Sample ID: 8G-006-007

Date Collected: 09/20/13 10:48

Date Received: 09/20/13 13:50

## Lab Sample ID: 400-80383-3

Matrix: Water

### Method: Enterolert - Enterococcus by Enterolert (Quantitray)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Enterococci	16		1.0	1.0	MPN/100mL	-		09/20/13 15:05	1

### Method: SM 9222D - Coliforms, Fecal (Membrane Filter)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	830		10	10	CFU/100mL	-		09/20/13 15:20	1

## Client Sample ID: 7G-006-007

Date Collected: 09/20/13 11:09

Date Received: 09/20/13 13:50

## Lab Sample ID: 400-80383-4

Matrix: Water

### Method: Enterolert - Enterococcus by Enterolert (Quantitray)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Enterococci	9.2		1.0	1.0	MPN/100mL	-		09/20/13 15:05	1

### Method: SM 9222D - Coliforms, Fecal (Membrane Filter)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	180		10	10	CFU/100mL	-		09/20/13 15:20	1

## Client Sample ID: 6G-006-007

Date Collected: 09/20/13 11:05

Date Received: 09/20/13 13:50

## Lab Sample ID: 400-80383-5

Matrix: Water

### Method: Enterolert - Enterococcus by Enterolert (Quantitray)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Enterococci	17		1.0	1.0	MPN/100mL	-		09/20/13 15:05	1

### Method: SM 9222D - Coliforms, Fecal (Membrane Filter)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	90		1.0	1.0	CFU/100mL	-		09/20/13 15:20	1

## Client Sample ID: 4G-006-007

Date Collected: 09/20/13 11:44

Date Received: 09/20/13 13:50

## Lab Sample ID: 400-80383-6

Matrix: Water

### Method: Enterolert - Enterococcus by Enterolert (Quantitray)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Enterococci	35		1.0	1.0	MPN/100mL	-		09/20/13 15:05	1

TestAmerica Pensacola

# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80383-1

**Client Sample ID: 4G-006-007**

**Lab Sample ID: 400-80383-6**

**Date Collected: 09/20/13 11:44**

**Matrix: Water**

**Date Received: 09/20/13 13:50**

**Method: SM 9222D - Coliforms, Fecal (Membrane Filter)**

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	220		10	10	CFU/100mL			09/20/13 15:20	1

**Client Sample ID: 3G-002-007**

**Lab Sample ID: 400-80383-7**

**Date Collected: 09/20/13 12:37**

**Matrix: Water**

**Date Received: 09/20/13 13:50**

**Method: 6010B - Metals (ICP) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.0020		0.0050	0.0020	mg/L		09/23/13 09:10	09/23/13 17:49	1
Arsenic	0.021		0.0050	0.0040	mg/L		09/23/13 09:10	09/23/13 17:49	1
Barium	0.14		0.010	0.0020	mg/L		09/23/13 09:10	09/23/13 17:49	1
Cadmium	<0.0010		0.0050	0.0010	mg/L		09/23/13 09:10	09/23/13 17:49	1
Chromium	<0.0020		0.0050	0.0020	mg/L		09/23/13 09:10	09/23/13 17:49	1
Lead	0.018		0.0050	0.0020	mg/L		09/23/13 09:10	09/23/13 17:49	1
Selenium	<0.0040		0.010	0.0040	mg/L		09/23/13 09:10	09/23/13 17:49	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		10/02/13 08:15	10/02/13 14:20	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ortho-Phosphate	0.19		0.050	0.015	mg/L			09/21/13 11:33	1
Phosphorus	1.2		0.010	0.0050	mg/L		10/04/13 10:54	10/04/13 15:37	5
Biochemical Oxygen Demand	18		2.0	2.0	mg/L			09/21/13 12:59	1

**Method: Enterolert - Enterococcus by Enterolert (Quantitray)**

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Enterococci	91		1.0	1.0	MPN/100mL			09/20/13 15:05	1

**Method: SM 9222D - Coliforms, Fecal (Membrane Filter)**

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	690		10	10	CFU/100mL			09/20/13 15:20	1

**Client Sample ID: 9S-001-003**

**Lab Sample ID: 400-80383-8**

**Date Collected: 09/20/13 09:18**

**Matrix: Solid**

**Date Received: 09/20/13 13:50**

**Percent Solids: 77.3**

**Method: 6010B - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.24		0.59	0.24	mg/Kg	☼	09/26/13 10:15	09/27/13 22:54	1
Arsenic	<0.47		0.59	0.47	mg/Kg	☼	09/26/13 10:15	09/27/13 22:54	1
Barium	1.4		1.2	0.24	mg/Kg	☼	09/26/13 10:15	09/27/13 22:54	1
Cadmium	<0.12		0.59	0.12	mg/Kg	☼	09/26/13 10:15	09/27/13 22:54	1
Chromium	0.67		0.59	0.24	mg/Kg	☼	09/26/13 10:15	09/27/13 22:54	1
Lead	0.65		0.59	0.24	mg/Kg	☼	09/26/13 10:15	09/27/13 22:54	1
Selenium	<0.47		1.2	0.47	mg/Kg	☼	09/26/13 10:15	09/27/13 22:54	1

**Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	<0.010		0.017	0.010	mg/Kg	☼	09/26/13 10:25	09/30/13 15:04	1

TestAmerica Pensacola

# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80383-1

**Client Sample ID: 9S-001-003**

**Lab Sample ID: 400-80383-8**

**Date Collected: 09/20/13 09:18**

**Matrix: Solid**

**Date Received: 09/20/13 13:50**

**Percent Solids: 77.3**

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	130		12	6.4	mg/Kg	☼	09/26/13 14:59	09/27/13 15:43	1
Phosphorus, Total	11	J	12	3.7	mg/Kg	☼	09/26/13 15:10	09/27/13 11:52	1
Nitrogen, Total	130		3.2	1.7	mg/Kg	☼		10/02/13 13:14	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Volatile Solids	0.20	B	0.10	0.10	%			09/24/13 13:04	1

## General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.47		1.3	0.47	mg/Kg	☼		09/27/13 10:39	1

## General Chemistry - ASTM Leach

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	7.3	J	10	3.0	mg/L			10/02/13 16:55	1

## Method: SM 9221E - Coliforms, Fecal (Multiple-Tube Fermentation)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	300		0.38	0.38	MPN/g D.W.	☼	09/20/13 15:40	09/20/13 15:40	1

**Client Sample ID: 3S-001-003**

**Lab Sample ID: 400-80383-9**

**Date Collected: 09/20/13 12:17**

**Matrix: Solid**

**Date Received: 09/20/13 13:50**

**Percent Solids: 33.6**

## Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.59		1.5	0.59	mg/Kg	☼	09/26/13 10:15	09/27/13 22:57	1
Arsenic	9.0		1.5	1.2	mg/Kg	☼	09/26/13 10:15	09/27/13 22:57	1
Barium	100		3.0	0.59	mg/Kg	☼	09/26/13 10:15	09/27/13 22:57	1
Cadmium	0.83	J	1.5	0.30	mg/Kg	☼	09/26/13 10:15	09/27/13 22:57	1
Chromium	24		1.5	0.59	mg/Kg	☼	09/26/13 10:15	09/27/13 22:57	1
Lead	61		1.5	0.59	mg/Kg	☼	09/26/13 10:15	09/27/13 22:57	1
Selenium	1.6	J	3.0	1.2	mg/Kg	☼	09/26/13 10:15	09/27/13 22:57	1

## Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	0.16		0.038	0.023	mg/Kg	☼	09/26/13 10:25	09/30/13 15:07	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	860		28	15	mg/Kg	☼	09/26/13 14:59	09/27/13 16:05	1
Phosphorus, Total	720		56	17	mg/Kg	☼	09/26/13 15:10	09/27/13 12:54	2
Nitrogen, Total	890		7.4	3.9	mg/Kg	☼		10/02/13 13:14	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Volatile Solids	19	B	0.10	0.10	%			09/24/13 13:04	1

## General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	28		3.0	1.1	mg/Kg	☼		09/27/13 10:26	1

## General Chemistry - ASTM Leach

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	250		10	3.0	mg/L			10/02/13 16:55	1

TestAmerica Pensacola

# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80383-1

## Client Sample ID: 3S-001-003

Date Collected: 09/20/13 12:17

Date Received: 09/20/13 13:50

## Lab Sample ID: 400-80383-9

Matrix: Solid

Percent Solids: 33.6

### Method: SM 9221E - Coliforms, Fecal (Multiple-Tube Fermentation)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	7000		8.9	8.9	MPN/g D.W.	☼	09/20/13 15:40	09/20/13 15:40	10

## Client Sample ID: 10S-001-003

Date Collected: 09/20/13 08:10

Date Received: 09/20/13 13:50

## Lab Sample ID: 400-80383-10

Matrix: Solid

Percent Solids: 73.1

### Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.26		0.66	0.26	mg/Kg	☼	09/26/13 10:15	09/27/13 23:00	1
Arsenic	<0.53		0.66	0.53	mg/Kg	☼	09/26/13 10:15	09/27/13 23:00	1
Barium	2.4		1.3	0.26	mg/Kg	☼	09/26/13 10:15	09/27/13 23:00	1
Cadmium	<0.13		0.66	0.13	mg/Kg	☼	09/26/13 10:15	09/27/13 23:00	1
Chromium	3.6		0.66	0.26	mg/Kg	☼	09/26/13 10:15	09/27/13 23:00	1
Lead	1.1		0.66	0.26	mg/Kg	☼	09/26/13 10:15	09/27/13 23:00	1
Selenium	<0.53		1.3	0.53	mg/Kg	☼	09/26/13 10:15	09/27/13 23:00	1

### Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	<0.010		0.017	0.010	mg/Kg	☼	09/26/13 10:25	09/30/13 15:08	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	87		9.9	5.1	mg/Kg	☼	09/26/13 14:59	09/27/13 15:46	1
Phosphorus, Total	14		9.9	3.0	mg/Kg	☼	09/26/13 15:10	09/27/13 11:54	1
Nitrogen, Total	87		3.4	1.8	mg/Kg	☼		10/02/13 13:14	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Volatile Solids	0.40	B	0.10	0.10	%	—		09/24/13 13:04	1

### General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.49		1.4	0.49	mg/Kg	☼		09/27/13 10:29	1

### General Chemistry - ASTM Leach

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	26		10	3.0	mg/L	—		10/02/13 16:55	1

### Method: SM 9221E - Coliforms, Fecal (Multiple-Tube Fermentation)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	200		0.40	0.40	MPN/g D.W.	☼	09/20/13 15:40	09/20/13 15:40	1

## Client Sample ID: 8S(F)-003

Date Collected: 09/20/13 10:53

Date Received: 09/20/13 13:50

## Lab Sample ID: 400-80383-11

Matrix: Solid

Percent Solids: 39.7

### Method: SM 9221E - Coliforms, Fecal (Multiple-Tube Fermentation)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	28000		7.5	7.5	MPN/g D.W.	☼	09/20/13 15:40	09/20/13 15:40	10

TestAmerica Pensacola

# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80383-1

## Client Sample ID: 6S(F)-003

Date Collected: 09/20/13 11:25

Date Received: 09/20/13 13:50

## Lab Sample ID: 400-80383-12

Matrix: Solid

Percent Solids: 76.2

### Method: SM 9221E - Coliforms, Fecal (Multiple-Tube Fermentation)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	14000		3.9	3.9	MPN/g D.W.	☼	09/20/13 15:40	09/20/13 15:40	10

## Client Sample ID: 4S(F)-003

Date Collected: 09/20/13 11:45

Date Received: 09/20/13 13:50

## Lab Sample ID: 400-80383-13

Matrix: Solid

Percent Solids: 74.9

### Method: SM 9221E - Coliforms, Fecal (Multiple-Tube Fermentation)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	590		0.39	0.39	MPN/g D.W.	☼	09/20/13 15:40	09/20/13 15:40	1

## Client Sample ID: 7S(F)-003

Date Collected: 09/20/13 11:10

Date Received: 09/20/13 13:50

## Lab Sample ID: 400-80383-14

Matrix: Solid

Percent Solids: 76.5

### Method: SM 9221E - Coliforms, Fecal (Multiple-Tube Fermentation)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	260		0.38	0.38	MPN/g D.W.	☼	09/20/13 15:40	09/20/13 15:40	1

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80383-1

## Method: 6010B - Metals (ICP)

Lab Sample ID: MB 400-192809/1-A

Matrix: Solid

Analysis Batch: 193174

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192809

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.20		0.49	0.20	mg/Kg		09/26/13 10:15	09/27/13 21:23	1
Arsenic	<0.39		0.49	0.39	mg/Kg		09/26/13 10:15	09/27/13 21:23	1
Barium	<0.20		0.98	0.20	mg/Kg		09/26/13 10:15	09/27/13 21:23	1
Cadmium	<0.098		0.49	0.098	mg/Kg		09/26/13 10:15	09/27/13 21:23	1
Chromium	<0.20		0.49	0.20	mg/Kg		09/26/13 10:15	09/27/13 21:23	1
Lead	<0.20		0.49	0.20	mg/Kg		09/26/13 10:15	09/27/13 21:23	1
Selenium	<0.39		0.98	0.39	mg/Kg		09/26/13 10:15	09/27/13 21:23	1

Lab Sample ID: LCS 400-192809/2-A

Matrix: Solid

Analysis Batch: 193174

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 192809

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Silver	55.2	50.4		mg/Kg		91	66 - 134
Arsenic	137	123		mg/Kg		90	83 - 118
Barium	290	266		mg/Kg		92	83 - 118
Cadmium	85.0	73.5		mg/Kg		86	79 - 104
Chromium	168	154		mg/Kg		92	82 - 118
Lead	120	118		mg/Kg		98	83 - 117
Selenium	43.5	38.4		mg/Kg		88	78 - 122

Lab Sample ID: MB 400-192480/1-A

Matrix: Water

Analysis Batch: 192587

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 192480

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.0020		0.0050	0.0020	mg/L		09/23/13 09:10	09/23/13 16:57	1
Arsenic	<0.0040		0.0050	0.0040	mg/L		09/23/13 09:10	09/23/13 16:57	1
Barium	<0.0020		0.010	0.0020	mg/L		09/23/13 09:10	09/23/13 16:57	1
Cadmium	<0.0010		0.0050	0.0010	mg/L		09/23/13 09:10	09/23/13 16:57	1
Chromium	<0.0020		0.0050	0.0020	mg/L		09/23/13 09:10	09/23/13 16:57	1
Lead	<0.0020		0.0050	0.0020	mg/L		09/23/13 09:10	09/23/13 16:57	1
Selenium	<0.0040		0.010	0.0040	mg/L		09/23/13 09:10	09/23/13 16:57	1

Lab Sample ID: LCS 400-192480/2-A

Matrix: Water

Analysis Batch: 192587

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 192480

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Silver	0.500	0.506		mg/L		101	80 - 120
Arsenic	1.00	1.03		mg/L		103	80 - 120
Barium	1.00	1.03		mg/L		103	80 - 120
Cadmium	0.500	0.509		mg/L		102	80 - 120
Chromium	1.00	1.02		mg/L		102	80 - 120
Lead	1.00	1.04		mg/L		104	80 - 120
Selenium	1.00	1.05		mg/L		105	80 - 120

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80383-1

## Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 400-193489/14-A

Matrix: Water

Analysis Batch: 193562

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 193489

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		10/02/13 08:15	10/02/13 13:42	1

Lab Sample ID: LCS 400-193489/33-A

Matrix: Water

Analysis Batch: 193562

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 193489

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00100	0.00101		mg/L		101	80 - 120

## Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Lab Sample ID: MB 400-192906/14-A

Matrix: Solid

Analysis Batch: 193267

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192906

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	<0.021		0.035	0.021	mg/Kg		09/26/13 10:25	09/30/13 13:58	1

Lab Sample ID: LCS 400-192906/15-A

Matrix: Solid

Analysis Batch: 193267

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 192906

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Hg	7.69	7.33		mg/Kg		95	80 - 120

## Method: 160.4 - Solids, Total Volatile (TVS)

Lab Sample ID: MB 400-192776/1

Matrix: Solid

Analysis Batch: 192776

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Volatile Solids	100		0.10	0.10	%			09/24/13 13:04	1

Lab Sample ID: LCS 400-192776/2

Matrix: Solid

Analysis Batch: 192776

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Volatile Solids	0.0412	<0.10		%		109	79 - 112

TestAmerica Pensacola



# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80383-1

## Method: 351.2 - Nitrogen, Total Kjeldahl

Lab Sample ID: MB 400-192942/1-A  
Matrix: Water  
Analysis Batch: 193102

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 192942

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	<0.26		0.50	0.26	mg/L		09/26/13 14:39	09/27/13 14:55	1

Lab Sample ID: LCS 400-192942/2-A  
Matrix: Water  
Analysis Batch: 193102

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 192942

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Kjeldahl	10.0	9.20		mg/L		92	90 - 110

Lab Sample ID: MB 400-192948/1-A  
Matrix: Solid  
Analysis Batch: 193102

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 192948

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	<0.26		0.50	0.26	mg/Kg		09/26/13 14:59	09/27/13 15:36	1

Lab Sample ID: LCS 400-192948/2-A  
Matrix: Solid  
Analysis Batch: 193102

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 192948

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Kjeldahl	10.0	9.49		mg/Kg		95	75 - 125

Lab Sample ID: MRL 400-193102/11 MRL  
Matrix: Solid  
Analysis Batch: 193102

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Kjeldahl	0.500	0.651		mg/L		130	50 - 150

## Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MRL 400-193034/12 MRL  
Matrix: Solid  
Analysis Batch: 193034

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	0.0500	0.0460	J	mg/Kg		92	

Lab Sample ID: MB 400-192694/1-A  
Matrix: Solid  
Analysis Batch: 193034

Client Sample ID: Method Blank  
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.36		1.0	0.36	mg/Kg			09/27/13 10:23	1

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80383-1

## Method: 353.2 - Nitrogen, Nitrate-Nitrite (Continued)

Lab Sample ID: LCS 400-192694/2-A

Matrix: Solid

Analysis Batch: 193034

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	0.500	0.518		mg/Kg		104	90 - 110

Lab Sample ID: 400-80383-9 MS

Matrix: Solid

Analysis Batch: 193034

Client Sample ID: 3S-001-003

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	28		29.8	57.2		mg/Kg	✱	98	90 - 110

Lab Sample ID: 400-80383-9 MSD

Matrix: Solid

Analysis Batch: 193034

Client Sample ID: 3S-001-003

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate Nitrite as N	28		29.8	56.8		mg/Kg	✱	97	90 - 110	1	6

## Method: 365.1 - Phosphorus, Ortho

Lab Sample ID: MB 400-192517/6

Matrix: Water

Analysis Batch: 192517

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ortho-Phosphate	<0.015		0.050	0.015	mg/L			09/21/13 10:32	1

Lab Sample ID: LCS 400-192517/7

Matrix: Water

Analysis Batch: 192517

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
ortho-Phosphate	0.300	0.299		mg/L		100	90 - 110

Lab Sample ID: 400-80383-1 MS

Matrix: Water

Analysis Batch: 192517

Client Sample ID: 10G-001-007

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
ortho-Phosphate	<0.015		0.200	0.200		mg/L		100	90 - 110

Lab Sample ID: 400-80383-1 MSD

Matrix: Water

Analysis Batch: 192517

Client Sample ID: 10G-001-007

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
ortho-Phosphate	<0.015		0.200	0.209		mg/L		105	90 - 110	4	7

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80383-1

## Method: 365.1 - Phosphorus, Total

Lab Sample ID: MB 640-104910/3-A

Matrix: Water

Analysis Batch: 104934

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 104910

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phosphorus	<0.0010		0.0020	0.0010	mg/L		10/04/13 10:54	10/04/13 14:13	1

Lab Sample ID: LCS 640-104910/4-A

Matrix: Water

Analysis Batch: 104934

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 104910

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phosphorus	0.100	0.0924		mg/L		92	90 - 110

Lab Sample ID: LCSD 640-104910/5-A

Matrix: Water

Analysis Batch: 104934

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 104910

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phosphorus	0.100	0.0942		mg/L		94	90 - 110	2	30

## Method: 365.4 - Phosphorus, Total

Lab Sample ID: MB 400-192951/1-A

Matrix: Solid

Analysis Batch: 193072

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192951

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phosphorus, Total	<0.15		0.50	0.15	mg/Kg		09/26/13 15:10	09/27/13 11:43	1

Lab Sample ID: LCS 400-192951/2-A

Matrix: Solid

Analysis Batch: 193072

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 192951

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phosphorus, Total	2.60	2.53		mg/Kg		97	75 - 125

Lab Sample ID: MRL 400-193072/13 MRL

Matrix: Solid

Analysis Batch: 193072

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Phosphorus, Total	0.100	0.141	J	mg/Kg		141	

Lab Sample ID: MRL 400-193072/70 MRL

Matrix: Solid

Analysis Batch: 193072

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Phosphorus, Total	0.100	<0.12		mg/Kg		59	

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80383-1

## Method: SM 5210B - BOD, 5-Day

Lab Sample ID: USB 400-193059/1 USB

Matrix: Water

Analysis Batch: 193059

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	<2.0		2.0	2.0	mg/L			09/21/13 12:59	1

Lab Sample ID: LCS 400-193059/2

Matrix: Water

Analysis Batch: 193059

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Biochemical Oxygen Demand	198	186		mg/L		94	85 - 115

Lab Sample ID: LCSD 400-193059/3

Matrix: Water

Analysis Batch: 193059

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Biochemical Oxygen Demand	198	192		mg/L		97	85 - 115	3	27

## Method: SM 5220D - COD

Lab Sample ID: MB 490-111442/17

Matrix: Solid

Analysis Batch: 111442

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<3.0		10	3.0	mg/L			10/02/13 16:55	1

Lab Sample ID: MB 490-111442/3

Matrix: Solid

Analysis Batch: 111442

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<3.0		10	3.0	mg/L			10/02/13 16:55	1

Lab Sample ID: LCS 490-111442/18

Matrix: Solid

Analysis Batch: 111442

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	300	307		mg/L		102	90 - 110

Lab Sample ID: LCS 490-111442/4

Matrix: Solid

Analysis Batch: 111442

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	20.0	20.1		mg/L		100	90 - 110

TestAmerica Pensacola

## QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80383-1

### Method: SM 5220D - COD (Continued)

Lab Sample ID: LCSD 490-111442/19

Matrix: Solid

Analysis Batch: 111442

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chemical Oxygen Demand	300	305		mg/L		102	90 - 110	1	20

Lab Sample ID: LCSD 490-111442/5

Matrix: Solid

Analysis Batch: 111442

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chemical Oxygen Demand	20.0	20.6		mg/L		103	90 - 110	3	20

Lab Sample ID: LB 490-109671/1-A LB

Matrix: Solid

Analysis Batch: 111442

Client Sample ID: Method Blank

Prep Type: ASTM Leach

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<3.0		10	3.0	mg/L			10/02/13 16:55	1

### Method: Enterolert - Enterococcus by Enterolert (Quantitray)

Lab Sample ID: MB 700-129366/1

Matrix: Water

Analysis Batch: 129366

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Enterococci	<1.0		1.0	1.0	MPN/100mL			09/20/13 11:10	1

# Lab Chronicle

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80383-1

**Client Sample ID: 10G-001-007**

**Date Collected: 09/20/13 08:41**

**Date Received: 09/20/13 13:50**

**Lab Sample ID: 400-80383-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			192480	09/23/13 09:10	NAB	TAL PEN
Total Recoverable	Analysis	6010B		1	192587	09/23/13 17:42	SLM	TAL PEN
Total/NA	Prep	7470A			193489	10/02/13 08:15	JAP	TAL PEN
Total/NA	Analysis	7470A		1	193562	10/02/13 14:17	JAP	TAL PEN
Total/NA	Analysis	365.1		1	192517	09/21/13 10:32	LSS	TAL PEN
Total/NA	Analysis	SM 5210B		1	193059		LSS	TAL PEN
					(Start)	09/21/13 12:59		
					(End)	09/26/13 15:50		
Total/NA	Prep	351.2			192942	09/26/13 14:39	JAT	TAL PEN
Total/NA	Analysis	351.2		1	193102	09/27/13 15:30	JAT	TAL PEN
Total/NA	Prep	365.2/365.3/365			104910	10/04/13 10:54	AJN	TAL TAL
Total/NA	Analysis	365.1		1	104934	10/04/13 14:53	AJN	TAL TAL
Total/NA	Analysis	SM 9222D		1	129362	09/20/13 15:20	JDP	TAL MOB
Total/NA	Analysis	Enterolert		1	129366	09/20/13 15:05	JDP	TAL MOB

**Client Sample ID: 9G-001-007**

**Date Collected: 09/20/13 09:51**

**Date Received: 09/20/13 13:50**

**Lab Sample ID: 400-80383-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			192480	09/23/13 09:10	NAB	TAL PEN
Total Recoverable	Analysis	6010B		1	192587	09/23/13 17:46	SLM	TAL PEN
Total/NA	Prep	7470A			193489	10/02/13 08:15	JAP	TAL PEN
Total/NA	Analysis	7470A		1	193562	10/02/13 14:18	JAP	TAL PEN
Total/NA	Analysis	365.1		1	192517	09/21/13 11:33	LSS	TAL PEN
Total/NA	Analysis	SM 5210B		1	193059		LSS	TAL PEN
					(Start)	09/21/13 12:59		
					(End)	09/26/13 15:50		
Total/NA	Prep	351.2			192942	09/26/13 14:39	JAT	TAL PEN
Total/NA	Analysis	351.2		1	193102	09/27/13 15:31	JAT	TAL PEN
Total/NA	Prep	365.2/365.3/365			104910	10/04/13 10:54	AJN	TAL TAL
Total/NA	Analysis	365.1		1	104934	10/04/13 14:55	AJN	TAL TAL
Total/NA	Analysis	SM 9222D		1	129362	09/20/13 15:20	JDP	TAL MOB
Total/NA	Analysis	Enterolert		1	129366	09/20/13 15:05	JDP	TAL MOB

**Client Sample ID: 8G-006-007**

**Date Collected: 09/20/13 10:48**

**Date Received: 09/20/13 13:50**

**Lab Sample ID: 400-80383-3**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 9222D		1	129362	09/20/13 15:20	JDP	TAL MOB
Total/NA	Analysis	Enterolert		1	129366	09/20/13 15:05	JDP	TAL MOB

TestAmerica Pensacola

# Lab Chronicle

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80383-1

**Client Sample ID: 7G-006-007**

**Lab Sample ID: 400-80383-4**

Date Collected: 09/20/13 11:09

Matrix: Water

Date Received: 09/20/13 13:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 9222D		1	129362	09/20/13 15:20	JDP	TAL MOB
Total/NA	Analysis	Enterolert		1	129366	09/20/13 15:05	JDP	TAL MOB

**Client Sample ID: 6G-006-007**

**Lab Sample ID: 400-80383-5**

Date Collected: 09/20/13 11:05

Matrix: Water

Date Received: 09/20/13 13:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 9222D		1	129362	09/20/13 15:20	JDP	TAL MOB
Total/NA	Analysis	Enterolert		1	129366	09/20/13 15:05	JDP	TAL MOB

**Client Sample ID: 4G-006-007**

**Lab Sample ID: 400-80383-6**

Date Collected: 09/20/13 11:44

Matrix: Water

Date Received: 09/20/13 13:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 9222D		1	129362	09/20/13 15:20	JDP	TAL MOB
Total/NA	Analysis	Enterolert		1	129366	09/20/13 15:05	JDP	TAL MOB

**Client Sample ID: 3G-002-007**

**Lab Sample ID: 400-80383-7**

Date Collected: 09/20/13 12:37

Matrix: Water

Date Received: 09/20/13 13:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			192480	09/23/13 09:10	NAB	TAL PEN
Total Recoverable	Analysis	6010B		1	192587	09/23/13 17:49	SLM	TAL PEN
Total/NA	Prep	7470A			193489	10/02/13 08:15	JAP	TAL PEN
Total/NA	Analysis	7470A		1	193562	10/02/13 14:20	JAP	TAL PEN
Total/NA	Analysis	365.1		1	192517	09/21/13 11:33	LSS	TAL PEN
Total/NA	Analysis	SM 5210B		1	193059		LSS	TAL PEN
					(Start)	09/21/13 12:59		
					(End)	09/26/13 15:50		
Total/NA	Prep	365.2/365.3/365			104910	10/04/13 10:54	AJN	TAL TAL
Total/NA	Analysis	365.1		5	104934	10/04/13 15:37	AJN	TAL TAL
Total/NA	Analysis	SM 9222D		1	129362	09/20/13 15:20	JDP	TAL MOB
Total/NA	Analysis	Enterolert		1	129366	09/20/13 15:05	JDP	TAL MOB

TestAmerica Pensacola

# Lab Chronicle

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80383-1

**Client Sample ID: 9S-001-003**

**Lab Sample ID: 400-80383-8**

**Date Collected: 09/20/13 09:18**

**Matrix: Solid**

**Date Received: 09/20/13 13:50**

**Percent Solids: 77.3**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			192809	09/26/13 10:15	NAB	TAL PEN
Total/NA	Analysis	6010B		1	193174	09/27/13 22:54	SLM	TAL PEN
Total/NA	Prep	7471B			192906	09/26/13 10:25	JAP	TAL PEN
Total/NA	Analysis	7471B		1	193267	09/30/13 15:04	JAP	TAL PEN
Total/NA	Analysis	Moisture		1	192751	09/25/13 09:19	LEC	TAL PEN
Total/NA	Analysis	160.4		1	192776	09/24/13 13:04	SLT	TAL PEN
Soluble	Leach	DI Leach			192694	09/27/13 09:20	KJR	TAL PEN
Soluble	Analysis	353.2		1	193034	09/27/13 10:39	KJR	TAL PEN
Total/NA	Prep	365.2/365.3/365			192951	09/26/13 15:10	JAT	TAL PEN
Total/NA	Analysis	365.4		1	193072	09/27/13 11:52	JAT	TAL PEN
Total/NA	Prep	351.2			192948	09/26/13 14:59	JAT	TAL PEN
Total/NA	Analysis	351.2		1	193102	09/27/13 15:43	JAT	TAL PEN
Total/NA	Analysis	Total Nitrogen		1	193542	10/02/13 13:14	JMH	TAL PEN
ASTM Leach	Leach	D3987-85			109671	09/25/13 11:09	SJM	TAL NSH
ASTM Leach	Analysis	SM 5220D		1	111442	10/02/13 16:55	MSJ	TAL NSH
Total/NA	Analysis	SM 9221E		1	129377	09/20/13 15:40	JDP	TAL MOB
Total/NA	Prep	SterileWatSusp			129376	09/20/13 15:40	JDP	TAL MOB

**Client Sample ID: 3S-001-003**

**Lab Sample ID: 400-80383-9**

**Date Collected: 09/20/13 12:17**

**Matrix: Solid**

**Date Received: 09/20/13 13:50**

**Percent Solids: 33.6**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			192809	09/26/13 10:15	NAB	TAL PEN
Total/NA	Analysis	6010B		1	193174	09/27/13 22:57	SLM	TAL PEN
Total/NA	Prep	7471B			192906	09/26/13 10:25	JAP	TAL PEN
Total/NA	Analysis	7471B		1	193267	09/30/13 15:07	JAP	TAL PEN
Total/NA	Analysis	Moisture		1	192751	09/25/13 09:19	LEC	TAL PEN
Total/NA	Analysis	160.4		1	192776	09/24/13 13:04	SLT	TAL PEN
Soluble	Leach	DI Leach			192694	09/24/13 15:10	KJR	TAL PEN
Soluble	Analysis	353.2		1	193034	09/27/13 10:26	KJR	TAL PEN
Total/NA	Prep	365.2/365.3/365			192951	09/26/13 15:10	JAT	TAL PEN
Total/NA	Analysis	365.4		2	193072	09/27/13 12:54	JAT	TAL PEN
Total/NA	Prep	351.2			192948	09/26/13 14:59	JAT	TAL PEN
Total/NA	Analysis	351.2		1	193102	09/27/13 16:05	JAT	TAL PEN
Total/NA	Analysis	Total Nitrogen		1	193542	10/02/13 13:14	JMH	TAL PEN
ASTM Leach	Leach	D3987-85			109671	09/25/13 11:09	SJM	TAL NSH
ASTM Leach	Analysis	SM 5220D		1	111442	10/02/13 16:55	MSJ	TAL NSH
Total/NA	Analysis	SM 9221E		10	129377	09/20/13 15:40	JDP	TAL MOB
Total/NA	Prep	SterileWatSusp			129376	09/20/13 15:40	JDP	TAL MOB

TestAmerica Pensacola



# Lab Chronicle

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80383-1

**Client Sample ID: 10S-001-003**

**Lab Sample ID: 400-80383-10**

**Date Collected: 09/20/13 08:10**

**Matrix: Solid**

**Date Received: 09/20/13 13:50**

**Percent Solids: 73.1**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			192809	09/26/13 10:15	NAB	TAL PEN
Total/NA	Analysis	6010B		1	193174	09/27/13 23:00	SLM	TAL PEN
Total/NA	Prep	7471B			192906	09/26/13 10:25	JAP	TAL PEN
Total/NA	Analysis	7471B		1	193267	09/30/13 15:08	JAP	TAL PEN
Total/NA	Analysis	Moisture		1	192751	09/25/13 09:19	LEC	TAL PEN
Total/NA	Analysis	160.4		1	192776	09/24/13 13:04	SLT	TAL PEN
Soluble	Leach	DI Leach			192694	09/24/13 15:10	KJR	TAL PEN
Soluble	Analysis	353.2		1	193034	09/27/13 10:29	KJR	TAL PEN
Total/NA	Prep	365.2/365.3/365			192951	09/26/13 15:10	JAT	TAL PEN
Total/NA	Analysis	365.4		1	193072	09/27/13 11:54	JAT	TAL PEN
Total/NA	Prep	351.2			192948	09/26/13 14:59	JAT	TAL PEN
Total/NA	Analysis	351.2		1	193102	09/27/13 15:46	JAT	TAL PEN
Total/NA	Analysis	Total Nitrogen		1	193542	10/02/13 13:14	JMH	TAL PEN
ASTM Leach	Leach	D3987-85			109671	09/25/13 11:09	SJM	TAL NSH
ASTM Leach	Analysis	SM 5220D		1	111442	10/02/13 16:55	MSJ	TAL NSH
Total/NA	Analysis	SM 9221E		1	129377	09/20/13 15:40	JDP	TAL MOB
Total/NA	Prep	SterileWatSusp			129376	09/20/13 15:40	JDP	TAL MOB

**Client Sample ID: 8S(F)-003**

**Lab Sample ID: 400-80383-11**

**Date Collected: 09/20/13 10:53**

**Matrix: Solid**

**Date Received: 09/20/13 13:50**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	193286	09/30/13 16:00	CJM	TAL PEN
Total/NA	Analysis	SM 9221E		10	129377	09/20/13 15:40	JDP	TAL MOB
Total/NA	Prep	SterileWatSusp			129376	09/20/13 15:40	JDP	TAL MOB

**Client Sample ID: 6S(F)-003**

**Lab Sample ID: 400-80383-12**

**Date Collected: 09/20/13 11:25**

**Matrix: Solid**

**Date Received: 09/20/13 13:50**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	193286	09/30/13 16:00	CJM	TAL PEN
Total/NA	Analysis	SM 9221E		10	129377	09/20/13 15:40	JDP	TAL MOB
Total/NA	Prep	SterileWatSusp			129376	09/20/13 15:40	JDP	TAL MOB

**Client Sample ID: 4S(F)-003**

**Lab Sample ID: 400-80383-13**

**Date Collected: 09/20/13 11:45**

**Matrix: Solid**

**Date Received: 09/20/13 13:50**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	193286	09/30/13 16:00	CJM	TAL PEN

TestAmerica Pensacola

## Lab Chronicle

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80383-1

**Client Sample ID: 4S(F)-003**

**Lab Sample ID: 400-80383-13**

**Date Collected: 09/20/13 11:45**

**Matrix: Solid**

**Date Received: 09/20/13 13:50**

**Percent Solids: 74.9**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 9221E		1	129377	09/20/13 15:40	JDP	TAL MOB
Total/NA	Prep	SterileWatSusp			129376	09/20/13 15:40	JDP	TAL MOB

**Client Sample ID: 7S(F)-003**

**Lab Sample ID: 400-80383-14**

**Date Collected: 09/20/13 11:10**

**Matrix: Solid**

**Date Received: 09/20/13 13:50**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	193286	09/30/13 16:00	CJM	TAL PEN
Total/NA	Analysis	SM 9221E		1	129377	09/20/13 15:40	JDP	TAL MOB
Total/NA	Prep	SterileWatSusp			129376	09/20/13 15:40	JDP	TAL MOB

### Laboratory References:

TAL MOB = TestAmerica Mobile, 900 Lakeside Drive, Mobile, AL 36693, TEL (251)666-6633

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

TAL TAL = TestAmerica Tallahassee, 2846 Industrial Plaza Drive, Tallahassee, FL 32301, TEL (850)878-3994

## Method Summary

Client: Dewberry

TestAmerica Job ID: 400-80383-1

Project/Site: Three Mile CreekUSA-Groundwater/Sediment

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL PEN
7470A	Mercury (CVAA)	SW846	TAL PEN
7471B	Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)	SW846	TAL PEN
160.4	Solids, Total Volatile (TVS)	MCAWW	TAL PEN
351.2	Nitrogen, Total Kjeldahl	MCAWW	TAL PEN
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL PEN
365.1	Phosphorus, Total	EPA	TAL TAL
365.1	Phosphorus, Ortho	EPA	TAL PEN
365.4	Phosphorus, Total	EPA	TAL PEN
Moisture	Percent Moisture	EPA	TAL PEN
SM 5210B	BOD, 5-Day	SM	TAL PEN
SM 5220D	COD	SM	TAL NSH
Total Nitrogen	Nitrogen, Total	EPA	TAL PEN
Enterolert	Enterococcus by Enterolert (Quantitray)	IDEXX	TAL MOB
SM 9221E	Coliforms, Fecal (Multiple-Tube Fermentation)	SM	TAL MOB
SM 9222D	Coliforms, Fecal (Membrane Filter)	SM	TAL MOB

### Protocol References:

EPA = US Environmental Protection Agency

IDEXX = IDEXX Laboratories

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

TAL MOB = TestAmerica Mobile, 900 Lakeside Drive, Mobile, AL 36693, TEL (251)666-6633

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

TAL TAL = TestAmerica Tallahassee, 2846 Industrial Plaza Drive, Tallahassee, FL 32301, TEL (850)878-3994

# TestAmerica Mobile

900 Lakeside Drive  
Mobile, AL 36693  
Phone (251) 666-6633 Fax (251) 666-6696

## Chain of Custody Record

**TestAmerica**  
THE LEADER IN ENVIRONMENTAL TESTING

<b>Client Information</b> Client Contact: Michael Hanson Company: Dewberry Address: 2301 Rexwoods Dr. City: Raleigh State, Zip: NC, 27607 Phone: 919-424-3716(Tel) Email: mhanson@dewberry.com Project Name: Groundwater Site:		Sampler: S. Stokes Lab PM: Nance, Mike M E-Mail: mike.nance@testamericainc.com		Carrier Tracking No(s): CQC No: 400-30863-17662.1 Page: Page 1 of 2 Job #:	
Due Date Requested: TAT Requested (days): PO #: Purchase Order not required WO #:		<b>Analysis Requested</b>			
Sample Identification Sample Date Sample Time Sample Type (C=Comp, G=Grab) Matrix (W=Water, S=Soil, O=Other) Preservation Code(s)		Preservation Codes: A - HCL M - Hexane N - None B - NaOH O - AsNaO2 C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amthor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Z - other (specify) Other:			
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months			
Empty Kit Relinquished by:		Method of Shipment:			
Relinquished by: <i>Stokes</i> Date/Time: 9-20 1:50 pm Company:		Received by: <i>Monique Carr</i> Date/Time: 9-20-13 13:50 Company: <i>TA</i>			
Relinquished by:		Received by:			
Relinquished by:		Received by:			
Custody Seal No.: Δ Yes Δ No		Cooler Temperature(s) °C and Other Remarks: 900-80383 3,40C #5592			

MORE ON BACK!

Sample	Date	Time	Sample	Matrix	Analysis
96-005	9-20	9:51 am	G	W	B.O.D.
96-006	9-20	9:34 am	G	W	Fecal
96-007	9-20	9:40 am	G	W	Enterococcus
96-006	9-20	10:48 am	G	W	Fecal
96-007	9-20	10:48 am	G	W	Enterococcus
96-007	9-20	11:09 am	G	W	Fecal
96-006	9-20	11:09 am	G	W	Enterococcus
96-007	9-20	11:25 am	G	W	Fecal
96-006	9-20	11:25 am	G	W	Enterococcus
96-007	9-20	11:44 am	G	W	Fecal
96-006	9-20	11:44 am	G	W	Enterococcus
96-007	9-20	12:11	G	W	O-Phos
96-003	9-20	12:14	G	W	T-Phos
96-004	9-20	12:14	G	W	metals
96-005	9-20	12:37	G	W	BOD
96-006	9-20	12:30	G	W	Fecal
96-007	9-20	12:30	G	W	Enterococcus



<b>Client Information</b>		Sampler: <u>M. Mann</u>		Lab PM: <u>NAGE, MIREM</u>		Carrier Tracking No(s):		OOC No: <u>400-30863-1762.1</u>	
Client Contact: <u>MICHAEL HANSON</u>		Phone:		E-Mail: <u>MIRE.NAGE@TESTAMERICA.COM</u>				Page:	
Company: <u>DEWBERRY</u>								STL Job #:	
Address: <u>2301 Rexway Dr</u>		Due Date Requested:		Analysis Requested				Preservation Codes:	
City: <u>FALEIGH</u>		TAT Requested (days):						A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
State, Zip: <u>NC, 27607</u>		PO #:						M - Hexane N - None O - AshNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)	
Phone: <u>919-424-3716 (Ger)</u>		WO #:							
E-Mail: <u>MHANSON@DEWBERRY.COM</u>		Project #:							
Project Name: <u>GREENWATER</u>		SSOW #:							
Site:									

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix (W=Water, S=Solid, O=Waste/Oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of Containers	Special Instructions/Note:
93-001	9/20/13	9:16 A	G	S				
95-002	9/20/13	9:18 A	G	S				
95(F)-003	9/20/13	9:18 A	G	S				
35-001	9/20/13	12:15 P	G	S				
35-002	9/20/13	12:12 P	G	S				
35(F)-003	9/20/13	12:17 P	G	S				

**Possible Hazard Identification**  
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Deliverable Requested: I, II, III, IV, Other (specify)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
☐ Return To Client ☐ Disposal By Lab ☐ Archive For \_\_\_\_\_ Months

Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Time:	
Relinquished by: <u>John Stoker</u>	Date: <u>9-20-13 1:50 PM</u>	Company:	Method of Shipment:
Relinquished by:	Date/Time:	Company:	Date/Time:
Relinquished by:	Date/Time:	Company:	Date/Time:

Custody Seals Intact: ? Yes ? No	Custody Seal No.:
	<u>400-30863</u>

Received by: <u>Mirem Nage</u>	Date/Time: <u>9-20-13 13:50</u>	Company: <u>TA</u>
Received by:	Date/Time: <u>9-20-13 13:50</u>	Company:
Received by:	Date/Time:	Company:

Cooler Temperature(s) °C and °F	Cooler Temperature(s) °C and °F
	<u>3.40C 35.94F</u>

## Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

<b>Client Information</b>		Sampler: <u>Steen Stokes</u>	Lab PM: <u>Nancy Mike M</u>	Carrier Tracking No(s):	COQ No: <u>400-30863-17662.1</u>
Client Contact: <u>Michael Hanson</u>		Phone:	E-Mail:		Page:
Company: <u>Dewberry</u>		STL Job #:			
Address: <u>2301 Redwoods Dr</u>		Analysis Requested			
City: <u>Raleigh</u>					
State/Zip: <u>NC 27607</u>					
Phone: <u>919-424-3716</u>					
E-Mail: <u>M.Hanson@dewberry.com</u>					
Project Name: <u>Groundwater</u>					
Site:					
Due Date Requested:		Preservation Codes:			
TAT Requested (days):		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:			
PO #:		Total Number of containers			
WO #:		Special Instructions/Note:			
Project # <u>40003408</u>					
SSOW #:					
Sample Identification					
Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix (W=water, S=Solid, O=Waste/Oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)
9-20	8:02	G	S	X	
9-20	8:06	G	S		
9-20	8:10	G	S		
9-20	10:53	G	S		
9-20	11:25	G	S		
9-20	11:45	G	S		
Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)			
Relinquished by: <u>Steen Stokes</u>		<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For Months			
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/OC Requirements:			
Empty Kit Relinquished by:		Method of Shipment:			
Relinquished by: <u>Steen Stokes</u>		Received by: <u>Meighan Can</u>			
Relinquished by:		Date/Time: <u>9-20-13 13:50</u>			
Relinquished by:		Date/Time: <u>9-20-13 13:50</u>			
Relinquished by:		Date/Time: <u>9-20-13 13:50</u>			
Custody Seals Intact: ? Yes ? No		Cooler Temperature(s) °C and Other Remarks: <u>400-80383 3.40C &amp; 559L</u>			

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola

3355 McLemore Drive

Pensacola, FL 32514

Tel: (850)474-1001

TestAmerica Job ID: 400-80411-1

Client Project/Site: Three Mile CreekUSA-  
Groundwater/Sediment

For:

Dewberry

2301 Rexwoods Dr.

Raleigh, North Carolina 27607

Attn: Michael Hanson



Authorized for release by:

10/4/2013 5:09:30 PM

Mike Nance, Project Manager II

(251)666-6633

[mike.nance@testamericainc.com](mailto:mike.nance@testamericainc.com)

### LINKS

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results through

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[www.testamericainc.com](http://www.testamericainc.com)

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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## Definitions/Glossary

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80411-1

### Qualifiers

#### GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD exceeds the control limits

#### GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

#### Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
F	MS/MSD Recovery and/or RPD exceeds the control limits
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

## Case Narrative

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80411-1

**Job ID: 400-80411-1**

**Laboratory: TestAmerica Pensacola**

### Narrative

#### Job Narrative 400-80411-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 9/21/2013 9:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.9° C.

#### GC/MS VOA

Method(s) 624: A full list spike was utilized for this method. Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for 5 analytes to recover outside criteria for this method when a full list spike is utilized. The LCS associated with batch 193582 had 1 analyte outside control limits; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

No other analytical or quality issues were noted.

#### GC/MS Semi VOA

Method(s) 625: The continuing calibration verification (CCV) for Benzidine associated with batch 192689 recovered above the upper control limit. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. HSI-001-014 (400-80411-3)

No other analytical or quality issues were noted.

#### GC Semi VOA

Method(s) 608, 8082A: The TCMX surrogate recovery for sample HSI-001-014 (400-80411-3) is within control limits, however, the DCB surrogate recovery is low outside control limits. The sample is non-detect and reported.

No other analytical or quality issues were noted.

#### Metals

Method(s) 7471A, 7471B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for prep batch 193192 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) 7471A, 7471B: The closing CRA recovered below limits due to the spike being omitted before digestion. The beginning CRA and all other instrument QC passed criteria therefore the data is reported with this narrative.

No other analytical or quality issues were noted.

#### General Chemistry

Method(s) 365.1: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for 365.1 batch 640-104934 were outside control limits. The associated laboratory control samples met acceptance criteria.

Method(s) 365.1: The following sample(s) was received outside of holding time: 5G-001-005 (400-80411-2), HSI-001-014 (400-80411-3).

Method(s) 365.4: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 193438 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) SM 5210B: The following sample(s) were received in the Mobile Lab on 09/21/13 @0940, but did not arrive to the Pensacola Lab until 09/23/13 @ 1226. PM was notified that samples were out of hold upon receipt. Analyst was instructed to proceed with analyzing sample out of hold.: 5G-001-005 (400-80411-2), HSI-001-014 (400-80411-3).

Method(s) SM 5220D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 193378 were outside control limits. The

## Case Narrative

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80411-1

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### Job ID: 400-80411-1 (Continued)

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#### Laboratory: TestAmerica Pensacola (Continued)

associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) 410.4, SM 5220D: The matrix spike (MS) recovery for batch 111442 was outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other analytical or quality issues were noted.

#### Organic Prep

No other analytical or quality issues were noted.

#### Lab Admin

No analytical or quality issues were noted.

## Sample Summary

Client: Dewberry

TestAmerica Job ID: 400-80411-1

Project/Site: Three Mile CreekUSA-Groundwater/Sediment

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-80411-1	5S-001-002	Solid	09/20/13 17:20	09/21/13 09:40
400-80411-2	5G-001-005	Water	09/20/13 17:27	09/21/13 09:40
400-80411-3	HSI-001-014	Water	09/20/13 16:22	09/21/13 09:40

# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80411-1

**Client Sample ID: 5S-001-002**

**Date Collected: 09/20/13 17:20**

**Date Received: 09/21/13 09:40**

**Lab Sample ID: 400-80411-1**

**Matrix: Solid**

**Percent Solids: 74.0**

## Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.25		0.62	0.25	mg/Kg	☼	09/27/13 13:06	09/28/13 04:28	1
Arsenic	<0.49		0.62	0.49	mg/Kg	☼	09/27/13 13:06	09/28/13 04:28	1
Barium	9.6		1.2	0.25	mg/Kg	☼	09/27/13 13:06	09/28/13 04:28	1
Cadmium	0.14	J	0.62	0.12	mg/Kg	☼	09/27/13 13:06	09/28/13 04:28	1
Chromium	3.7		0.62	0.25	mg/Kg	☼	09/27/13 13:06	09/28/13 04:28	1
Lead	7.2		0.62	0.25	mg/Kg	☼	09/27/13 13:06	09/28/13 04:28	1
Selenium	<0.49		1.2	0.49	mg/Kg	☼	09/27/13 13:06	09/28/13 04:28	1

## Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	<0.011		0.018	0.011	mg/Kg	☼	10/01/13 10:55	10/02/13 12:42	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	280		16	8.1	mg/Kg	☼	09/30/13 12:42	10/01/13 10:59	1
Phosphorus, Total	34		16	4.7	mg/Kg	☼	09/30/13 12:47	10/01/13 17:36	1
Nitrogen, Total	280		3.4	1.8	mg/Kg	☼		10/02/13 13:14	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Volatile Solids	2.8	B	0.10	0.10	%			09/24/13 13:04	1

## General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.49		1.4	0.49	mg/Kg	☼		09/27/13 10:33	1

## General Chemistry - ASTM Leach

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<4.1		14	4.1	mg/L	☼		10/02/13 16:55	1

**Client Sample ID: 5G-001-005**

**Date Collected: 09/20/13 17:27**

**Date Received: 09/21/13 09:40**

**Lab Sample ID: 400-80411-2**

**Matrix: Water**

## Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.0020		0.0050	0.0020	mg/L		09/27/13 08:43	09/27/13 15:46	1
Arsenic	<0.0040		0.0050	0.0040	mg/L		09/27/13 08:43	09/27/13 15:46	1
Barium	0.062		0.010	0.0020	mg/L		09/27/13 08:43	09/27/13 15:46	1
Cadmium	<0.0010		0.0050	0.0010	mg/L		09/27/13 08:43	09/27/13 15:46	1
Chromium	<0.0020		0.0050	0.0020	mg/L		09/27/13 08:43	09/27/13 15:46	1
Lead	0.0037	J	0.0050	0.0020	mg/L		09/27/13 08:43	09/27/13 15:46	1
Selenium	<0.0040		0.010	0.0040	mg/L		09/27/13 08:43	09/27/13 15:46	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		10/02/13 08:15	10/02/13 14:22	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	0.93		0.50	0.26	mg/L		09/30/13 12:32	10/01/13 10:41	1
ortho-Phosphate	0.069	H	0.050	0.015	mg/L			09/23/13 16:53	1
Phosphorus	0.15		0.0020	0.0010	mg/L		10/04/13 10:54	10/04/13 15:00	1

TestAmerica Pensacola

# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80411-1

**Client Sample ID: 5G-001-005**

**Lab Sample ID: 400-80411-2**

**Date Collected: 09/20/13 17:27**

**Matrix: Water**

**Date Received: 09/21/13 09:40**

## General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	2.1	H	2.0	2.0	mg/L			09/24/13 16:50	1

**Client Sample ID: HSI-001-014**

**Lab Sample ID: 400-80411-3**

**Date Collected: 09/20/13 16:22**

**Matrix: Water**

**Date Received: 09/21/13 09:40**

## Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.50		1.0	0.50	ug/L			10/03/13 00:42	1
1,1,2,2-Tetrachloroethane	<0.50		1.0	0.50	ug/L			10/03/13 00:42	1
1,1,2-Trichloroethane	<0.50		5.0	0.50	ug/L			10/03/13 00:42	1
1,1-Dichloroethane	<0.50		1.0	0.50	ug/L			10/03/13 00:42	1
1,1-Dichloroethene	<0.50		1.0	0.50	ug/L			10/03/13 00:42	1
1,2-Dichlorobenzene	<0.50		1.0	0.50	ug/L			10/03/13 00:42	1
1,2-Dichloroethane	<0.50		1.0	0.50	ug/L			10/03/13 00:42	1
1,2-Dichloropropane	<0.50		1.0	0.50	ug/L			10/03/13 00:42	1
1,3-Dichlorobenzene	<0.54		1.0	0.54	ug/L			10/03/13 00:42	1
1,4-Dichlorobenzene	<0.64		1.0	0.64	ug/L			10/03/13 00:42	1
Acrolein	<20 *		20	20	ug/L			10/03/13 00:42	1
Acrylonitrile	<2.8		5.0	2.8	ug/L			10/03/13 00:42	1
Benzene	<0.34		1.0	0.34	ug/L			10/03/13 00:42	1
Bromoform	<0.71		5.0	0.71	ug/L			10/03/13 00:42	1
Bromomethane	<0.98		1.0	0.98	ug/L			10/03/13 00:42	1
Carbon tetrachloride	<0.50		1.0	0.50	ug/L			10/03/13 00:42	1
Chlorobenzene	<0.50		1.0	0.50	ug/L			10/03/13 00:42	1
Dibromochloromethane	<0.50		1.0	0.50	ug/L			10/03/13 00:42	1
Chloroethane	<0.76		1.0	0.76	ug/L			10/03/13 00:42	1
Chloroform	<0.60		1.0	0.60	ug/L			10/03/13 00:42	1
Chloromethane	<0.83		1.0	0.83	ug/L			10/03/13 00:42	1
cis-1,2-Dichloroethene	<0.50		1.0	0.50	ug/L			10/03/13 00:42	1
cis-1,3-Dichloropropene	<0.50		5.0	0.50	ug/L			10/03/13 00:42	1
Bromodichloromethane	<0.50		1.0	0.50	ug/L			10/03/13 00:42	1
Ethylbenzene	<0.50		1.0	0.50	ug/L			10/03/13 00:42	1
m-Xylene & p-Xylene	<1.6		10	1.6	ug/L			10/03/13 00:42	1
Methyl tert-butyl ether	<0.74		1.0	0.74	ug/L			10/03/13 00:42	1
Methylene Chloride	<3.0		5.0	3.0	ug/L			10/03/13 00:42	1
o-Xylene	<0.60		5.0	0.60	ug/L			10/03/13 00:42	1
Tetrachloroethene	<0.58		1.0	0.58	ug/L			10/03/13 00:42	1
Toluene	<0.70		1.0	0.70	ug/L			10/03/13 00:42	1
trans-1,2-Dichloroethene	<0.50		1.0	0.50	ug/L			10/03/13 00:42	1
trans-1,3-Dichloropropene	<0.50		5.0	0.50	ug/L			10/03/13 00:42	1
Trichloroethene	<0.50		1.0	0.50	ug/L			10/03/13 00:42	1
Trichlorofluoromethane	<0.52		1.0	0.52	ug/L			10/03/13 00:42	1
Vinyl chloride	<0.50		1.0	0.50	ug/L			10/03/13 00:42	1
2-Chloroethyl vinyl ether	<2.0		5.0	2.0	ug/L			10/03/13 00:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	103		78 - 118		10/03/13 00:42	1
Dibromofluoromethane	100		81 - 121		10/03/13 00:42	1
Toluene-d8 (Surr)	102		80 - 120		10/03/13 00:42	1

TestAmerica Pensacola

# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80411-1

Client Sample ID: HSI-001-014

Lab Sample ID: 400-80411-3

Date Collected: 09/20/13 16:22

Matrix: Water

Date Received: 09/21/13 09:40

## Method: 625 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.15		9.5	0.15	ug/L		09/23/13 13:18	09/25/13 01:01	1
Acenaphthylene	<0.16		9.5	0.16	ug/L		09/23/13 13:18	09/25/13 01:01	1
Anthracene	<0.17		9.5	0.17	ug/L		09/23/13 13:18	09/25/13 01:01	1
Benzidine	<19		48	19	ug/L		09/23/13 13:18	09/25/13 01:01	1
Benzo[a]anthracene	<0.17		9.5	0.17	ug/L		09/23/13 13:18	09/25/13 01:01	1
Benzo[b]fluoranthene	<0.14		9.5	0.14	ug/L		09/23/13 13:18	09/25/13 01:01	1
Benzo[k]fluoranthene	<0.15		9.5	0.15	ug/L		09/23/13 13:18	09/25/13 01:01	1
Benzo[g,h,i]perylene	<0.22		9.5	0.22	ug/L		09/23/13 13:18	09/25/13 01:01	1
Benzo[a]pyrene	<0.11		9.5	0.11	ug/L		09/23/13 13:18	09/25/13 01:01	1
4-Bromophenyl phenyl ether	<0.19		9.5	0.19	ug/L		09/23/13 13:18	09/25/13 01:01	1
Butyl benzyl phthalate	0.25	J	9.5	0.18	ug/L		09/23/13 13:18	09/25/13 01:01	1
Bis(2-chloroethoxy)methane	<0.15		9.5	0.15	ug/L		09/23/13 13:18	09/25/13 01:01	1
Bis(2-chloroethyl)ether	<0.48		9.5	0.48	ug/L		09/23/13 13:18	09/25/13 01:01	1
4-Chloro-3-methylphenol	<3.6		9.5	3.6	ug/L		09/23/13 13:18	09/25/13 01:01	1
2-Chloronaphthalene	<0.13		9.5	0.13	ug/L		09/23/13 13:18	09/25/13 01:01	1
2-Chlorophenol	<2.1		9.5	2.1	ug/L		09/23/13 13:18	09/25/13 01:01	1
4-Chlorophenyl phenyl ether	<1.9		9.5	1.9	ug/L		09/23/13 13:18	09/25/13 01:01	1
Chrysene	<0.18		9.5	0.18	ug/L		09/23/13 13:18	09/25/13 01:01	1
Dibenz(a,h)anthracene	<0.23		9.5	0.23	ug/L		09/23/13 13:18	09/25/13 01:01	1
Di-n-butyl phthalate	<2.6		9.5	2.6	ug/L		09/23/13 13:18	09/25/13 01:01	1
1,2-Dichlorobenzene	<0.16		9.5	0.16	ug/L		09/23/13 13:18	09/25/13 01:01	1
1,3-Dichlorobenzene	<0.17		9.5	0.17	ug/L		09/23/13 13:18	09/25/13 01:01	1
1,4-Dichlorobenzene	<0.15		9.5	0.15	ug/L		09/23/13 13:18	09/25/13 01:01	1
3,3'-Dichlorobenzidine	<2.5		9.5	2.5	ug/L		09/23/13 13:18	09/25/13 01:01	1
2,4-Dichlorophenol	<2.9		9.5	2.9	ug/L		09/23/13 13:18	09/25/13 01:01	1
Diethyl phthalate	0.23	J	9.5	0.23	ug/L		09/23/13 13:18	09/25/13 01:01	1
2,4-Dimethylphenol	<3.3		9.5	3.3	ug/L		09/23/13 13:18	09/25/13 01:01	1
Dimethyl phthalate	<0.16		9.5	0.16	ug/L		09/23/13 13:18	09/25/13 01:01	1
4,6-Dinitro-2-methylphenol	<1.5		9.5	1.5	ug/L		09/23/13 13:18	09/25/13 01:01	1
2,4-Dinitrophenol	<3.2		29	3.2	ug/L		09/23/13 13:18	09/25/13 01:01	1
2,4-Dinitrotoluene	<1.8		9.5	1.8	ug/L		09/23/13 13:18	09/25/13 01:01	1
2,6-Dinitrotoluene	<1.8		9.5	1.8	ug/L		09/23/13 13:18	09/25/13 01:01	1
Di-n-octyl phthalate	<0.16		9.5	0.16	ug/L		09/23/13 13:18	09/25/13 01:01	1
Bis(2-ethylhexyl) phthalate	<1.9		9.5	1.9	ug/L		09/23/13 13:18	09/25/13 01:01	1
Fluoranthene	<0.17		9.5	0.17	ug/L		09/23/13 13:18	09/25/13 01:01	1
Fluorene	<0.17		9.5	0.17	ug/L		09/23/13 13:18	09/25/13 01:01	1
Hexachlorobenzene	<0.16		9.5	0.16	ug/L		09/23/13 13:18	09/25/13 01:01	1
Hexachlorobutadiene	<3.4		9.5	3.4	ug/L		09/23/13 13:18	09/25/13 01:01	1
Hexachlorocyclopentadiene	<2.5		19	2.5	ug/L		09/23/13 13:18	09/25/13 01:01	1
Hexachloroethane	<4.0		9.5	4.0	ug/L		09/23/13 13:18	09/25/13 01:01	1
Indeno[1,2,3-cd]pyrene	<0.21		9.5	0.21	ug/L		09/23/13 13:18	09/25/13 01:01	1
Isophorone	<0.13		9.5	0.13	ug/L		09/23/13 13:18	09/25/13 01:01	1
Naphthalene	<0.16		9.5	0.16	ug/L		09/23/13 13:18	09/25/13 01:01	1
Nitrobenzene	<0.12		9.5	0.12	ug/L		09/23/13 13:18	09/25/13 01:01	1
2-Nitrophenol	<5.0		9.5	5.0	ug/L		09/23/13 13:18	09/25/13 01:01	1
4-Nitrophenol	<2.0		9.5	2.0	ug/L		09/23/13 13:18	09/25/13 01:01	1
N-Nitrosodimethylamine	<3.3		9.5	3.3	ug/L		09/23/13 13:18	09/25/13 01:01	1
N-Nitrosodiphenylamine	<0.17		9.5	0.17	ug/L		09/23/13 13:18	09/25/13 01:01	1
N-Nitrosodi-n-propylamine	<3.1		9.5	3.1	ug/L		09/23/13 13:18	09/25/13 01:01	1

TestAmerica Pensacola



# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80411-1

Client Sample ID: HSI-001-014

Lab Sample ID: 400-80411-3

Date Collected: 09/20/13 16:22

Matrix: Water

Date Received: 09/21/13 09:40

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<1.3		19	1.3	ug/L		09/23/13 13:18	09/25/13 01:01	1
Phenanthrene	<0.17		9.5	0.17	ug/L		09/23/13 13:18	09/25/13 01:01	1
Phenol	<2.5		9.5	2.5	ug/L		09/23/13 13:18	09/25/13 01:01	1
Pyrene	<0.20		9.5	0.20	ug/L		09/23/13 13:18	09/25/13 01:01	1
1,2,4-Trichlorobenzene	<0.17		9.5	0.17	ug/L		09/23/13 13:18	09/25/13 01:01	1
2,4,6-Trichlorophenol	<3.3		9.5	3.3	ug/L		09/23/13 13:18	09/25/13 01:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	81		15 - 135	09/23/13 13:18	09/25/13 01:01	1
2-Fluorobiphenyl	70		34 - 113	09/23/13 13:18	09/25/13 01:01	1
2-Fluorophenol	46		10 - 104	09/23/13 13:18	09/25/13 01:01	1
Nitrobenzene-d5	67		27 - 110	09/23/13 13:18	09/25/13 01:01	1
Phenol-d5	57		10 - 110	09/23/13 13:18	09/25/13 01:01	1
Terphenyl-d14	83		53 - 125	09/23/13 13:18	09/25/13 01:01	1

## Method: 608 - Organochlorine Pesticides/PCBs in Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.0014		0.024	0.0014	ug/L		09/23/13 13:16	09/27/13 11:29	1
alpha-BHC	<0.0017		0.024	0.0017	ug/L		09/23/13 13:16	09/27/13 11:29	1
beta-BHC	<0.0014		0.024	0.0014	ug/L		09/23/13 13:16	09/27/13 11:29	1
delta-BHC	<0.0010		0.024	0.0010	ug/L		09/23/13 13:16	09/27/13 11:29	1
gamma-BHC (Lindane)	<0.012		0.024	0.012	ug/L		09/23/13 13:16	09/27/13 11:29	1
Chlordane (technical)	<0.062		0.24	0.062	ug/L		09/23/13 13:16	09/27/13 11:29	1
4,4'-DDD	<0.0014		0.024	0.0014	ug/L		09/23/13 13:16	09/27/13 11:29	1
4,4'-DDE	<0.0010		0.024	0.0010	ug/L		09/23/13 13:16	09/27/13 11:29	1
4,4'-DDT	<0.0019		0.024	0.0019	ug/L		09/23/13 13:16	09/27/13 11:29	1
Dieldrin	<0.0014		0.024	0.0014	ug/L		09/23/13 13:16	09/27/13 11:29	1
Endosulfan I	<0.0014		0.024	0.0014	ug/L		09/23/13 13:16	09/27/13 11:29	1
Endosulfan II	<0.0035		0.024	0.0035	ug/L		09/23/13 13:16	09/27/13 11:29	1
Endosulfan sulfate	<0.0010		0.024	0.0010	ug/L		09/23/13 13:16	09/27/13 11:29	1
Endrin	<0.0014		0.024	0.0014	ug/L		09/23/13 13:16	09/27/13 11:29	1
Endrin aldehyde	<0.0013		0.024	0.0013	ug/L		09/23/13 13:16	09/27/13 11:29	1
Heptachlor	<0.0015		0.024	0.0015	ug/L		09/23/13 13:16	09/27/13 11:29	1
Heptachlor epoxide	<0.0015		0.024	0.0015	ug/L		09/23/13 13:16	09/27/13 11:29	1
PCB-1016	<0.023		0.24	0.023	ug/L		09/23/13 13:16	09/26/13 19:23	1
PCB-1221	<0.10		0.24	0.10	ug/L		09/23/13 13:16	09/26/13 19:23	1
PCB-1232	<0.048		0.24	0.048	ug/L		09/23/13 13:16	09/26/13 19:23	1
PCB-1242	<0.016		0.24	0.016	ug/L		09/23/13 13:16	09/26/13 19:23	1
PCB-1248	<0.0095		0.24	0.0095	ug/L		09/23/13 13:16	09/26/13 19:23	1
PCB-1254	<0.027		0.24	0.027	ug/L		09/23/13 13:16	09/26/13 19:23	1
PCB-1260	<0.016		0.24	0.016	ug/L		09/23/13 13:16	09/26/13 19:23	1
Toxaphene	<0.14		1.4	0.14	ug/L		09/23/13 13:16	09/27/13 11:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	28	X	47 - 148	09/23/13 13:16	09/27/13 11:29	1
Tetrachloro-m-xylene	75		65 - 134	09/23/13 13:16	09/27/13 11:29	1

## Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.010		0.050	0.010	mg/L		09/27/13 08:43	09/27/13 15:50	1

TestAmerica Pensacola

# Client Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80411-1

**Client Sample ID: HSI-001-014**

**Lab Sample ID: 400-80411-3**

**Date Collected: 09/20/13 16:22**

**Matrix: Water**

**Date Received: 09/21/13 09:40**

## Method: 6010B - Metals (ICP) - Total Recoverable (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.0040		0.0050	0.0040	mg/L		09/27/13 08:43	09/27/13 15:50	1
Beryllium	<0.0010		0.0030	0.0010	mg/L		09/27/13 08:43	09/27/13 15:50	1
Cadmium	<0.0010		0.0050	0.0010	mg/L		09/27/13 08:43	09/27/13 15:50	1
Chromium	<0.0020		0.0050	0.0020	mg/L		09/27/13 08:43	09/27/13 15:50	1
Copper	0.019		0.010	0.0020	mg/L		09/27/13 08:43	09/27/13 15:50	1
Lead	0.022		0.0050	0.0020	mg/L		09/27/13 08:43	09/27/13 15:50	1
Nickel	<0.0030		0.0050	0.0030	mg/L		09/27/13 08:43	09/27/13 15:50	1
Selenium	<0.0040		0.010	0.0040	mg/L		09/27/13 08:43	09/27/13 15:50	1
Silver	<0.0020		0.0050	0.0020	mg/L		09/27/13 08:43	09/27/13 15:50	1
Thallium	<0.0040		0.010	0.0040	mg/L		09/27/13 08:43	09/27/13 15:50	1
Zinc	0.073		0.020	0.0080	mg/L		09/27/13 08:43	09/27/13 15:50	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		10/02/13 08:15	10/02/13 14:24	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.0022		0.0050	0.0022	mg/L		09/25/13 08:54	09/25/13 14:23	1
Ammonia	0.29		0.050	0.016	mg/L			09/25/13 17:08	1
Nitrogen, Kjeldahl	2.5		0.50	0.26	mg/L		09/30/13 12:32	10/01/13 10:42	1
Nitrate Nitrite as N	0.25		0.050	0.018	mg/L			09/27/13 08:32	1
ortho-Phosphate	0.22	H	0.050	0.015	mg/L			09/23/13 16:53	1
Phosphorus	1.3		0.010	0.0050	mg/L		10/04/13 10:54	10/04/13 15:39	5
Phenols, Total	<0.0045		0.0050	0.0045	mg/L		09/27/13 14:03	10/01/13 13:28	1
Biochemical Oxygen Demand	3.9	H	2.0	2.0	mg/L			09/24/13 16:53	1
Chemical Oxygen Demand	45		10	6.4	mg/L			10/01/13 13:07	1

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80411-1

## Method: 624 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 400-193582/4

Matrix: Water

Analysis Batch: 193582

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.50		1.0	0.50	ug/L			10/02/13 17:30	1
1,1,2,2-Tetrachloroethane	<0.50		1.0	0.50	ug/L			10/02/13 17:30	1
1,1,2-Trichloroethane	<0.50		5.0	0.50	ug/L			10/02/13 17:30	1
1,1-Dichloroethane	<0.50		1.0	0.50	ug/L			10/02/13 17:30	1
1,1-Dichloroethene	<0.50		1.0	0.50	ug/L			10/02/13 17:30	1
1,2-Dichlorobenzene	<0.50		1.0	0.50	ug/L			10/02/13 17:30	1
1,2-Dichloroethane	<0.50		1.0	0.50	ug/L			10/02/13 17:30	1
1,2-Dichloropropane	<0.50		1.0	0.50	ug/L			10/02/13 17:30	1
1,3-Dichlorobenzene	<0.54		1.0	0.54	ug/L			10/02/13 17:30	1
1,4-Dichlorobenzene	<0.64		1.0	0.64	ug/L			10/02/13 17:30	1
Acrolein	<20		20	20	ug/L			10/02/13 17:30	1
Acrylonitrile	<2.8		5.0	2.8	ug/L			10/02/13 17:30	1
Benzene	<0.34		1.0	0.34	ug/L			10/02/13 17:30	1
Bromoform	<0.71		5.0	0.71	ug/L			10/02/13 17:30	1
Bromomethane	<0.98		1.0	0.98	ug/L			10/02/13 17:30	1
Carbon tetrachloride	<0.50		1.0	0.50	ug/L			10/02/13 17:30	1
Chlorobenzene	<0.50		1.0	0.50	ug/L			10/02/13 17:30	1
Dibromochloromethane	<0.50		1.0	0.50	ug/L			10/02/13 17:30	1
Chloroethane	<0.76		1.0	0.76	ug/L			10/02/13 17:30	1
Chloroform	<0.60		1.0	0.60	ug/L			10/02/13 17:30	1
Chloromethane	<0.83		1.0	0.83	ug/L			10/02/13 17:30	1
cis-1,2-Dichloroethene	<0.50		1.0	0.50	ug/L			10/02/13 17:30	1
cis-1,3-Dichloropropene	<0.50		5.0	0.50	ug/L			10/02/13 17:30	1
Bromodichloromethane	<0.50		1.0	0.50	ug/L			10/02/13 17:30	1
Ethylbenzene	<0.50		1.0	0.50	ug/L			10/02/13 17:30	1
m-Xylene & p-Xylene	<1.6		10	1.6	ug/L			10/02/13 17:30	1
Methyl tert-butyl ether	<0.74		1.0	0.74	ug/L			10/02/13 17:30	1
Methylene Chloride	<3.0		5.0	3.0	ug/L			10/02/13 17:30	1
o-Xylene	<0.60		5.0	0.60	ug/L			10/02/13 17:30	1
Tetrachloroethene	<0.58		1.0	0.58	ug/L			10/02/13 17:30	1
Toluene	<0.70		1.0	0.70	ug/L			10/02/13 17:30	1
trans-1,2-Dichloroethene	<0.50		1.0	0.50	ug/L			10/02/13 17:30	1
trans-1,3-Dichloropropene	<0.50		5.0	0.50	ug/L			10/02/13 17:30	1
Trichloroethene	<0.50		1.0	0.50	ug/L			10/02/13 17:30	1
Trichlorofluoromethane	<0.52		1.0	0.52	ug/L			10/02/13 17:30	1
Vinyl chloride	<0.50		1.0	0.50	ug/L			10/02/13 17:30	1
2-Chloroethyl vinyl ether	<2.0		5.0	2.0	ug/L			10/02/13 17:30	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	106		78 - 118					10/02/13 17:30	1
Dibromofluoromethane	100		81 - 121					10/02/13 17:30	1
Toluene-d8 (Surr)	103		80 - 120					10/02/13 17:30	1

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80411-1

## Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 400-193582/1000

Matrix: Water

Analysis Batch: 193582

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	50.0	52.0		ug/L		104	52 - 162
1,1,2,2-Tetrachloroethane	50.0	48.7		ug/L		97	46 - 157
1,1,2-Trichloroethane	50.0	50.1		ug/L		100	52 - 150
1,1-Dichloroethane	50.0	51.8		ug/L		104	59 - 155
1,1-Dichloroethene	50.0	57.0		ug/L		114	1 - 234
1,2-Dichlorobenzene	50.0	47.1		ug/L		94	18 - 190
1,2-Dichloroethane	50.0	55.0		ug/L		110	49 - 155
1,2-Dichloropropane	50.0	51.1		ug/L		102	1 - 210
1,3-Dichlorobenzene	50.0	47.5		ug/L		95	59 - 156
1,4-Dichlorobenzene	50.0	48.1		ug/L		96	18 - 190
Acrolein	500	166 *		ug/L		33	38 - 145
Acrylonitrile	500	554		ug/L		111	23 - 150
Benzene	50.0	47.1		ug/L		94	37 - 151
Bromoform	50.0	48.0		ug/L		96	45 - 169
Bromomethane	50.0	14.6		ug/L		29	1 - 242
Carbon tetrachloride	50.0	49.1		ug/L		98	70 - 140
Chlorobenzene	50.0	47.0		ug/L		94	37 - 160
Dibromochloromethane	50.0	49.0		ug/L		98	53 - 149
Chloroethane	50.0	40.4		ug/L		81	14 - 230
Chloroform	50.0	50.7		ug/L		101	51 - 138
Chloromethane	50.0	41.3		ug/L		83	1 - 273
cis-1,2-Dichloroethene	50.0	51.1		ug/L		102	67 - 135
cis-1,3-Dichloropropene	50.0	49.1		ug/L		98	1 - 227
Bromodichloromethane	50.0	49.3		ug/L		99	35 - 155
Ethylbenzene	50.0	51.4		ug/L		103	37 - 162
m-Xylene & p-Xylene	50.0	51.8		ug/L		104	66 - 130
Methyl tert-butyl ether	50.0	51.0		ug/L		102	69 - 127
Methylene Chloride	50.0	48.6		ug/L		97	1 - 221
o-Xylene	50.0	53.5		ug/L		107	71 - 125
Tetrachloroethene	50.0	47.2		ug/L		94	64 - 148
Toluene	50.0	47.5		ug/L		95	47 - 150
trans-1,2-Dichloroethene	50.0	48.6		ug/L		97	54 - 156
trans-1,3-Dichloropropene	50.0	51.4		ug/L		103	17 - 183
Trichloroethene	50.0	46.9		ug/L		94	71 - 157
Trichlorofluoromethane	50.0	54.5		ug/L		109	17 - 181
Vinyl chloride	50.0	48.7		ug/L		97	1 - 251
2-Chloroethyl vinyl ether	50.0	35.3		ug/L		71	1 - 305

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	108		78 - 118
Dibromofluoromethane	100		81 - 121
Toluene-d8 (Surr)	103		80 - 120

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80411-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 400-192475/1-A

Matrix: Water

Analysis Batch: 192689

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192475

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.16		10	0.16	ug/L		09/23/13 08:48	09/24/13 21:08	1
Acenaphthylene	<0.17		10	0.17	ug/L		09/23/13 08:48	09/24/13 21:08	1
Anthracene	<0.18		10	0.18	ug/L		09/23/13 08:48	09/24/13 21:08	1
Benzidine	<20		50	20	ug/L		09/23/13 08:48	09/24/13 21:08	1
Benzo[a]anthracene	<0.18		10	0.18	ug/L		09/23/13 08:48	09/24/13 21:08	1
Benzo[b]fluoranthene	<0.15		10	0.15	ug/L		09/23/13 08:48	09/24/13 21:08	1
Benzo[k]fluoranthene	<0.16		10	0.16	ug/L		09/23/13 08:48	09/24/13 21:08	1
Benzo[g,h,i]perylene	<0.23		10	0.23	ug/L		09/23/13 08:48	09/24/13 21:08	1
Benzo[a]pyrene	<0.12		10	0.12	ug/L		09/23/13 08:48	09/24/13 21:08	1
4-Bromophenyl phenyl ether	<0.20		10	0.20	ug/L		09/23/13 08:48	09/24/13 21:08	1
Butyl benzyl phthalate	<0.19		10	0.19	ug/L		09/23/13 08:48	09/24/13 21:08	1
Bis(2-chloroethoxy)methane	<0.16		10	0.16	ug/L		09/23/13 08:48	09/24/13 21:08	1
Bis(2-chloroethyl)ether	<0.50		10	0.50	ug/L		09/23/13 08:48	09/24/13 21:08	1
4-Chloro-3-methylphenol	<3.8		10	3.8	ug/L		09/23/13 08:48	09/24/13 21:08	1
2-Chloronaphthalene	<0.14		10	0.14	ug/L		09/23/13 08:48	09/24/13 21:08	1
2-Chlorophenol	<2.2		10	2.2	ug/L		09/23/13 08:48	09/24/13 21:08	1
4-Chlorophenyl phenyl ether	<2.0		10	2.0	ug/L		09/23/13 08:48	09/24/13 21:08	1
Chrysene	<0.19		10	0.19	ug/L		09/23/13 08:48	09/24/13 21:08	1
Dibenz(a,h)anthracene	<0.24		10	0.24	ug/L		09/23/13 08:48	09/24/13 21:08	1
Di-n-butyl phthalate	<2.7		10	2.7	ug/L		09/23/13 08:48	09/24/13 21:08	1
1,2-Dichlorobenzene	<0.17		10	0.17	ug/L		09/23/13 08:48	09/24/13 21:08	1
1,3-Dichlorobenzene	<0.18		10	0.18	ug/L		09/23/13 08:48	09/24/13 21:08	1
1,4-Dichlorobenzene	<0.16		10	0.16	ug/L		09/23/13 08:48	09/24/13 21:08	1
3,3'-Dichlorobenzidine	<2.6		10	2.6	ug/L		09/23/13 08:48	09/24/13 21:08	1
2,4-Dichlorophenol	<3.0		10	3.0	ug/L		09/23/13 08:48	09/24/13 21:08	1
Diethyl phthalate	<0.24		10	0.24	ug/L		09/23/13 08:48	09/24/13 21:08	1
2,4-Dimethylphenol	<3.5		10	3.5	ug/L		09/23/13 08:48	09/24/13 21:08	1
Dimethyl phthalate	<0.17		10	0.17	ug/L		09/23/13 08:48	09/24/13 21:08	1
4,6-Dinitro-2-methylphenol	<1.6		10	1.6	ug/L		09/23/13 08:48	09/24/13 21:08	1
2,4-Dinitrophenol	<3.4		30	3.4	ug/L		09/23/13 08:48	09/24/13 21:08	1
2,4-Dinitrotoluene	<1.9		10	1.9	ug/L		09/23/13 08:48	09/24/13 21:08	1
2,6-Dinitrotoluene	<1.9		10	1.9	ug/L		09/23/13 08:48	09/24/13 21:08	1
Di-n-octyl phthalate	<0.17		10	0.17	ug/L		09/23/13 08:48	09/24/13 21:08	1
Bis(2-ethylhexyl) phthalate	<2.0		10	2.0	ug/L		09/23/13 08:48	09/24/13 21:08	1
Fluoranthene	<0.18		10	0.18	ug/L		09/23/13 08:48	09/24/13 21:08	1
Fluorene	<0.18		10	0.18	ug/L		09/23/13 08:48	09/24/13 21:08	1
Hexachlorobenzene	<0.17		10	0.17	ug/L		09/23/13 08:48	09/24/13 21:08	1
Hexachlorobutadiene	<3.6		10	3.6	ug/L		09/23/13 08:48	09/24/13 21:08	1
Hexachlorocyclopentadiene	<2.6		20	2.6	ug/L		09/23/13 08:48	09/24/13 21:08	1
Hexachloroethane	<4.2		10	4.2	ug/L		09/23/13 08:48	09/24/13 21:08	1
Indeno[1,2,3-cd]pyrene	<0.22		10	0.22	ug/L		09/23/13 08:48	09/24/13 21:08	1
Isophorone	<0.14		10	0.14	ug/L		09/23/13 08:48	09/24/13 21:08	1
Naphthalene	<0.17		10	0.17	ug/L		09/23/13 08:48	09/24/13 21:08	1
Nitrobenzene	<0.13		10	0.13	ug/L		09/23/13 08:48	09/24/13 21:08	1
2-Nitrophenol	<5.2		10	5.2	ug/L		09/23/13 08:48	09/24/13 21:08	1
4-Nitrophenol	<2.1		10	2.1	ug/L		09/23/13 08:48	09/24/13 21:08	1
N-Nitrosodimethylamine	<3.5		10	3.5	ug/L		09/23/13 08:48	09/24/13 21:08	1
N-Nitrosodiphenylamine	<0.18		10	0.18	ug/L		09/23/13 08:48	09/24/13 21:08	1

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80411-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 400-192475/1-A

Matrix: Water

Analysis Batch: 192689

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192475

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosodi-n-propylamine	<3.3		10	3.3	ug/L		09/23/13 08:48	09/24/13 21:08	1
Pentachlorophenol	<1.4		20	1.4	ug/L		09/23/13 08:48	09/24/13 21:08	1
Phenanthrene	<0.18		10	0.18	ug/L		09/23/13 08:48	09/24/13 21:08	1
Phenol	<2.6		10	2.6	ug/L		09/23/13 08:48	09/24/13 21:08	1
Pyrene	<0.21		10	0.21	ug/L		09/23/13 08:48	09/24/13 21:08	1
1,2,4-Trichlorobenzene	<0.18		10	0.18	ug/L		09/23/13 08:48	09/24/13 21:08	1
2,4,6-Trichlorophenol	<3.5		10	3.5	ug/L		09/23/13 08:48	09/24/13 21:08	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	88		15 - 135	09/23/13 08:48	09/24/13 21:08	1
2-Fluorobiphenyl	78		34 - 113	09/23/13 08:48	09/24/13 21:08	1
2-Fluorophenol	64		10 - 104	09/23/13 08:48	09/24/13 21:08	1
Nitrobenzene-d5	80		27 - 110	09/23/13 08:48	09/24/13 21:08	1
Phenol-d5	69		10 - 110	09/23/13 08:48	09/24/13 21:08	1
Terphenyl-d14	87		53 - 125	09/23/13 08:48	09/24/13 21:08	1

Lab Sample ID: LCS 400-192475/2-A

Matrix: Water

Analysis Batch: 192689

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 192475

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	50.0	41.3		ug/L		83	47 - 145
Acenaphthylene	50.0	40.2		ug/L		80	33 - 145
Anthracene	50.0	42.1		ug/L		84	27 - 133
Benzo[a]anthracene	50.0	43.7		ug/L		87	33 - 143
Benzo[b]fluoranthene	50.0	47.3		ug/L		95	24 - 159
Benzo[k]fluoranthene	50.0	49.0		ug/L		98	11 - 162
Benzo[g,h,i]perylene	50.0	45.1		ug/L		90	10 - 219
Benzo[a]pyrene	50.0	46.4		ug/L		93	17 - 163
4-Bromophenyl phenyl ether	50.0	44.1		ug/L		88	53 - 127
Butyl benzyl phthalate	50.0	44.9		ug/L		90	1 - 152
Bis(2-chloroethoxy)methane	50.0	38.9		ug/L		78	33 - 184
Bis(2-chloroethyl)ether	50.0	37.8		ug/L		76	12 - 158
4-Chloro-3-methylphenol	50.0	42.8		ug/L		86	22 - 147
2-Chloronaphthalene	50.0	40.2		ug/L		80	60 - 118
2-Chlorophenol	50.0	36.7		ug/L		73	23 - 134
4-Chlorophenyl phenyl ether	50.0	44.7		ug/L		89	25 - 158
Chrysene	50.0	43.7		ug/L		87	17 - 168
Dibenz(a,h)anthracene	50.0	46.8		ug/L		94	10 - 227
Di-n-butyl phthalate	50.0	41.3		ug/L		83	1 - 118
1,2-Dichlorobenzene	50.0	34.6		ug/L		69	32 - 129
1,3-Dichlorobenzene	50.0	35.7		ug/L		71	10 - 172
1,4-Dichlorobenzene	50.0	35.8		ug/L		72	20 - 124
3,3'-Dichlorobenzidine	50.0	60.3		ug/L		121	10 - 262
2,4-Dichlorophenol	50.0	40.4		ug/L		81	39 - 135
Diethyl phthalate	50.0	42.7		ug/L		85	10 - 114
2,4-Dimethylphenol	50.0	40.5		ug/L		81	32 - 119
Dimethyl phthalate	50.0	41.1		ug/L		82	10 - 112

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80411-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 400-192475/2-A

Matrix: Water

Analysis Batch: 192689

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 192475

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4,6-Dinitro-2-methylphenol	100	95.6		ug/L		96	10 - 181
2,4-Dinitrophenol	100	88.2		ug/L		88	30 - 191
2,4-Dinitrotoluene	50.0	44.5		ug/L		89	39 - 139
2,6-Dinitrotoluene	50.0	43.0		ug/L		86	50 - 158
Di-n-octyl phthalate	50.0	46.3		ug/L		93	4 - 146
Bis(2-ethylhexyl) phthalate	50.0	45.7		ug/L		91	8 - 158
Fluoranthene	50.0	42.2		ug/L		84	26 - 137
Fluorene	50.0	41.1		ug/L		82	59 - 121
Hexachlorobenzene	50.0	44.1		ug/L		88	10 - 152
Hexachlorobutadiene	50.0	38.1		ug/L		76	24 - 116
Hexachlorocyclopentadiene	50.0	37.7		ug/L		75	10 - 122
Hexachloroethane	50.0	34.2		ug/L		68	40 - 113
Indeno[1,2,3-cd]pyrene	50.0	45.7		ug/L		91	10 - 171
Isophorone	50.0	40.8		ug/L		82	21 - 196
Naphthalene	50.0	37.7		ug/L		75	21 - 133
Nitrobenzene	50.0	37.5		ug/L		75	35 - 180
2-Nitrophenol	50.0	39.2		ug/L		78	29 - 182
4-Nitrophenol	100	85.3		ug/L		85	10 - 132
N-Nitrosodimethylamine	50.0	35.7		ug/L		71	38 - 104
N-Nitrosodiphenylamine	58.6	52.9		ug/L		90	58 - 120
N-Nitrosodi-n-propylamine	50.0	41.6		ug/L		83	10 - 230
Pentachlorophenol	100	92.2		ug/L		92	14 - 176
Phenanthrene	50.0	43.1		ug/L		86	54 - 120
Phenol	50.0	31.5		ug/L		63	5 - 112
Pyrene	50.0	41.5		ug/L		83	52 - 115
1,2,4-Trichlorobenzene	50.0	39.3		ug/L		79	44 - 142
2,4,6-Trichlorophenol	50.0	41.7		ug/L		83	37 - 144

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol	93		15 - 135
2-Fluorobiphenyl	75		34 - 113
2-Fluorophenol	60		10 - 104
Nitrobenzene-d5	75		27 - 110
Phenol-d5	63		10 - 110
Terphenyl-d14	80		53 - 125

Lab Sample ID: LCSD 400-192475/3-A

Matrix: Water

Analysis Batch: 192689

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 192475

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	50.0	41.9		ug/L		84	47 - 145	1	30
Acenaphthylene	50.0	41.0		ug/L		82	33 - 145	2	30
Anthracene	50.0	41.6		ug/L		83	27 - 133	1	30
Benzo[a]anthracene	50.0	43.3		ug/L		87	33 - 143	1	30
Benzo[b]fluoranthene	50.0	45.4		ug/L		91	24 - 159	4	30
Benzo[k]fluoranthene	50.0	47.5		ug/L		95	11 - 162	3	30
Benzo[g,h,i]perylene	50.0	47.5		ug/L		95	10 - 219	5	30

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80411-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 400-192475/3-A

Matrix: Water

Analysis Batch: 192689

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 192475

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzo[a]pyrene	50.0	45.7		ug/L		91	17 - 163	1	30
4-Bromophenyl phenyl ether	50.0	44.3		ug/L		89	53 - 127	0	30
Butyl benzyl phthalate	50.0	46.9		ug/L		94	1 - 152	4	30
Bis(2-chloroethoxy)methane	50.0	39.3		ug/L		79	33 - 184	1	30
Bis(2-chloroethyl)ether	50.0	38.2		ug/L		76	12 - 158	1	30
4-Chloro-3-methylphenol	50.0	40.9		ug/L		82	22 - 147	5	30
2-Chloronaphthalene	50.0	41.1		ug/L		82	60 - 118	2	30
2-Chlorophenol	50.0	36.5		ug/L		73	23 - 134	1	30
4-Chlorophenyl phenyl ether	50.0	44.6		ug/L		89	25 - 158	0	30
Chrysene	50.0	43.2		ug/L		86	17 - 168	1	30
Dibenz(a,h)anthracene	50.0	48.5		ug/L		97	10 - 227	4	30
Di-n-butyl phthalate	50.0	40.8		ug/L		82	1 - 118	1	30
1,2-Dichlorobenzene	50.0	33.1		ug/L		66	32 - 129	4	30
1,3-Dichlorobenzene	50.0	33.8		ug/L		68	10 - 172	5	30
1,4-Dichlorobenzene	50.0	34.0		ug/L		68	20 - 124	5	30
3,3'-Dichlorobenzidine	50.0	57.0		ug/L		114	10 - 262	6	30
2,4-Dichlorophenol	50.0	38.4		ug/L		77	39 - 135	5	30
Diethyl phthalate	50.0	41.6		ug/L		83	10 - 114	2	30
2,4-Dimethylphenol	50.0	39.4		ug/L		79	32 - 119	3	30
Dimethyl phthalate	50.0	40.1		ug/L		80	10 - 112	3	30
4,6-Dinitro-2-methylphenol	100	92.2		ug/L		92	10 - 181	4	30
2,4-Dinitrophenol	100	89.1		ug/L		89	30 - 191	1	30
2,4-Dinitrotoluene	50.0	43.9		ug/L		88	39 - 139	1	30
2,6-Dinitrotoluene	50.0	43.0		ug/L		86	50 - 158	0	30
Di-n-octyl phthalate	50.0	47.3		ug/L		95	4 - 146	2	30
Bis(2-ethylhexyl) phthalate	50.0	48.2		ug/L		96	8 - 158	5	30
Fluoranthene	50.0	40.5		ug/L		81	26 - 137	4	30
Fluorene	50.0	40.8		ug/L		82	59 - 121	1	30
Hexachlorobenzene	50.0	43.8		ug/L		88	10 - 152	1	30
Hexachlorobutadiene	50.0	37.7		ug/L		75	24 - 116	1	30
Hexachlorocyclopentadiene	50.0	37.3		ug/L		75	10 - 122	1	30
Hexachloroethane	50.0	31.7		ug/L		63	40 - 113	7	30
Indeno[1,2,3-cd]pyrene	50.0	46.9		ug/L		94	10 - 171	3	30
Isophorone	50.0	41.1		ug/L		82	21 - 196	1	30
Naphthalene	50.0	37.6		ug/L		75	21 - 133	0	30
Nitrobenzene	50.0	38.2		ug/L		76	35 - 180	2	30
2-Nitrophenol	50.0	39.5		ug/L		79	29 - 182	1	30
4-Nitrophenol	100	64.2		ug/L		64	10 - 132	28	30
N-Nitrosodimethylamine	50.0	35.4		ug/L		71	38 - 104	1	30
N-Nitrosodiphenylamine	58.6	53.0		ug/L		91	58 - 120	0	30
N-Nitrosodi-n-propylamine	50.0	40.9		ug/L		82	10 - 230	2	30
Pentachlorophenol	100	87.5		ug/L		88	14 - 176	5	30
Phenanthrene	50.0	42.2		ug/L		84	54 - 120	2	30
Phenol	50.0	29.6		ug/L		59	5 - 112	6	30
Pyrene	50.0	44.1		ug/L		88	52 - 115	6	30
1,2,4-Trichlorobenzene	50.0	38.9		ug/L		78	44 - 142	1	30
2,4,6-Trichlorophenol	50.0	41.0		ug/L		82	37 - 144	2	30

TestAmerica Pensacola



# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80411-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 400-192475/3-A

Matrix: Water

Analysis Batch: 192689

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 192475

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2,4,6-Tribromophenol	87		15 - 135
2-Fluorobiphenyl	74		34 - 113
2-Fluorophenol	59		10 - 104
Nitrobenzene-d5	74		27 - 110
Phenol-d5	58		10 - 110
Terphenyl-d14	82		53 - 125

## Method: 608 - Organochlorine Pesticides/PCBs in Water

Lab Sample ID: MB 400-192470/1-A

Matrix: Water

Analysis Batch: 193039

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192470

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.024		0.25	0.024	ug/L		09/23/13 08:36	09/26/13 17:16	1
PCB-1221	<0.11		0.25	0.11	ug/L		09/23/13 08:36	09/26/13 17:16	1
PCB-1232	<0.050		0.25	0.050	ug/L		09/23/13 08:36	09/26/13 17:16	1
PCB-1242	<0.017		0.25	0.017	ug/L		09/23/13 08:36	09/26/13 17:16	1
PCB-1248	<0.010		0.25	0.010	ug/L		09/23/13 08:36	09/26/13 17:16	1
PCB-1254	<0.029		0.25	0.029	ug/L		09/23/13 08:36	09/26/13 17:16	1
PCB-1260	<0.017		0.25	0.017	ug/L		09/23/13 08:36	09/26/13 17:16	1

Lab Sample ID: MB 400-192470/1-A

Matrix: Water

Analysis Batch: 193409

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192470

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.0015		0.025	0.0015	ug/L		09/23/13 08:36	09/30/13 15:28	1
alpha-BHC	<0.0018		0.025	0.0018	ug/L		09/23/13 08:36	09/30/13 15:28	1
beta-BHC	<0.0015		0.025	0.0015	ug/L		09/23/13 08:36	09/30/13 15:28	1
delta-BHC	<0.0011		0.025	0.0011	ug/L		09/23/13 08:36	09/30/13 15:28	1
gamma-BHC (Lindane)	<0.013		0.025	0.013	ug/L		09/23/13 08:36	09/30/13 15:28	1
Chlordane (technical)	<0.065		0.25	0.065	ug/L		09/23/13 08:36	09/30/13 15:28	1
4,4'-DDD	<0.0015		0.025	0.0015	ug/L		09/23/13 08:36	09/30/13 15:28	1
4,4'-DDE	<0.0011		0.025	0.0011	ug/L		09/23/13 08:36	09/30/13 15:28	1
4,4'-DDT	<0.0020		0.025	0.0020	ug/L		09/23/13 08:36	09/30/13 15:28	1
Dieldrin	<0.0015		0.025	0.0015	ug/L		09/23/13 08:36	09/30/13 15:28	1
Endosulfan I	<0.0015		0.025	0.0015	ug/L		09/23/13 08:36	09/30/13 15:28	1
Endosulfan II	<0.0037		0.025	0.0037	ug/L		09/23/13 08:36	09/30/13 15:28	1
Endosulfan sulfate	<0.0011		0.025	0.0011	ug/L		09/23/13 08:36	09/30/13 15:28	1
Endrin	<0.0015		0.025	0.0015	ug/L		09/23/13 08:36	09/30/13 15:28	1
Endrin aldehyde	<0.0014		0.025	0.0014	ug/L		09/23/13 08:36	09/30/13 15:28	1
Heptachlor	<0.0016		0.025	0.0016	ug/L		09/23/13 08:36	09/30/13 15:28	1
Heptachlor epoxide	<0.0016		0.025	0.0016	ug/L		09/23/13 08:36	09/30/13 15:28	1
Toxaphene	<0.15		1.5	0.15	ug/L		09/23/13 08:36	09/30/13 15:28	1

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80411-1

## Method: 608 - Organochlorine Pesticides/PCBs in Water (Continued)

Lab Sample ID: MB 400-192470/1-A

Matrix: Water

Analysis Batch: 193409

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 192470

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
%Recovery	Qualifier					
DCB Decachlorobiphenyl	67		47 - 148	09/23/13 08:36	09/30/13 15:28	1
Tetrachloro-m-xylene	98		65 - 134	09/23/13 08:36	09/30/13 15:28	1

Lab Sample ID: LCS 400-192470/2-A

Matrix: Water

Analysis Batch: 193409

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 192470

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.500	0.347		ug/L		69	42 - 122
alpha-BHC	0.500	0.361		ug/L		72	37 - 134
beta-BHC	0.500	0.346		ug/L		69	17 - 147
delta-BHC	0.500	0.382		ug/L		76	19 - 140
gamma-BHC (Lindane)	0.500	0.374		ug/L		75	32 - 127
4,4'-DDD	0.500	0.362		ug/L		72	31 - 141
4,4'-DDE	0.500	0.363		ug/L		73	30 - 145
4,4'-DDT	0.500	0.490		ug/L		98	25 - 160
Dieldrin	0.500	0.363		ug/L		73	36 - 146
Endosulfan I	0.500	0.352		ug/L		70	45 - 153
Endosulfan II	0.500	0.356		ug/L		71	1 - 202
Endosulfan sulfate	0.500	0.398		ug/L		80	26 - 144
Endrin	0.500	0.369		ug/L		74	30 - 147
Endrin aldehyde	0.500	0.384		ug/L		77	30 - 130
Heptachlor	0.500	0.386		ug/L		77	34 - 111
Heptachlor epoxide	0.500	0.359		ug/L		72	37 - 142

Surrogate	LCS	LCS	Limits
%Recovery	Qualifier		
DCB Decachlorobiphenyl	64		47 - 148
Tetrachloro-m-xylene	95		65 - 134

Lab Sample ID: LCS 400-192470/4-A

Matrix: Water

Analysis Batch: 193039

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 192470

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	5.00	5.00		ug/L		100	50 - 114
PCB-1260	5.00	4.45		ug/L		89	8 - 127

Surrogate	LCS	LCS	Limits
%Recovery	Qualifier		
DCB Decachlorobiphenyl	48		47 - 148
Tetrachloro-m-xylene	97		65 - 134

Lab Sample ID: LCSD 400-192470/3-A

Matrix: Water

Analysis Batch: 193409

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 192470

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.500	0.356		ug/L		71	42 - 122	3	40

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80411-1

## Method: 608 - Organochlorine Pesticides/PCBs in Water (Continued)

Lab Sample ID: LCSD 400-192470/3-A

Matrix: Water

Analysis Batch: 193409

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 192470

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits		RPD	RPD Limit
alpha-BHC	0.500	0.374		ug/L		75	37 - 134		4	40
beta-BHC	0.500	0.360		ug/L		72	17 - 147		4	40
delta-BHC	0.500	0.396		ug/L		79	19 - 140		4	40
gamma-BHC (Lindane)	0.500	0.387		ug/L		77	32 - 127		4	40
4,4'-DDD	0.500	0.382		ug/L		76	31 - 141		5	40
4,4'-DDE	0.500	0.377		ug/L		75	30 - 145		4	40
4,4'-DDT	0.500	0.525		ug/L		105	25 - 160		7	40
Dieldrin	0.500	0.376		ug/L		75	36 - 146		4	40
Endosulfan I	0.500	0.364		ug/L		73	45 - 153		3	40
Endosulfan II	0.500	0.376		ug/L		75	1 - 202		5	40
Endosulfan sulfate	0.500	0.421		ug/L		84	26 - 144		6	40
Endrin	0.500	0.384		ug/L		77	30 - 147		4	40
Endrin aldehyde	0.500	0.404		ug/L		81	30 - 130		5	40
Heptachlor	0.500	0.399		ug/L		80	34 - 111		3	40
Heptachlor epoxide	0.500	0.372		ug/L		74	37 - 142		4	40

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
DCB Decachlorobiphenyl	68		47 - 148
Tetrachloro-m-xylene	98		65 - 134

Lab Sample ID: LCSD 400-192470/5-A

Matrix: Water

Analysis Batch: 193039

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 192470

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits		RPD	RPD Limit
PCB-1016	5.00	4.75		ug/L		95	50 - 114		5	40
PCB-1260	5.00	4.46		ug/L		89	8 - 127		0	40

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
DCB Decachlorobiphenyl	48		47 - 148
Tetrachloro-m-xylene	103		65 - 134

## Method: 6010B - Metals (ICP)

Lab Sample ID: MB 400-193063/1-A

Matrix: Solid

Analysis Batch: 193174

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 193063

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	<0.38		0.48	0.38	mg/Kg		09/27/13 12:43	09/28/13 03:32	1
Barium	<0.19		0.96	0.19	mg/Kg		09/27/13 12:43	09/28/13 03:32	1
Cadmium	<0.096		0.48	0.096	mg/Kg		09/27/13 12:43	09/28/13 03:32	1
Chromium	<0.19		0.48	0.19	mg/Kg		09/27/13 12:43	09/28/13 03:32	1
Lead	<0.19		0.48	0.19	mg/Kg		09/27/13 12:43	09/28/13 03:32	1
Selenium	<0.38		0.96	0.38	mg/Kg		09/27/13 12:43	09/28/13 03:32	1
Silver	<0.19		0.48	0.19	mg/Kg		09/27/13 12:43	09/28/13 03:32	1

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80411-1

## Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCS 400-193063/2-A

Matrix: Solid

Analysis Batch: 193174

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 193063

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	137	121		mg/Kg		89	83 - 118
Barium	290	262		mg/Kg		90	83 - 118
Cadmium	85.0	73.4		mg/Kg		86	79 - 104
Chromium	168	155		mg/Kg		92	82 - 118
Lead	120	116		mg/Kg		97	83 - 117
Selenium	43.5	36.9		mg/Kg		85	78 - 122
Silver	55.2	50.6		mg/Kg		92	66 - 134

Lab Sample ID: MB 400-192999/1-A

Matrix: Water

Analysis Batch: 193174

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 192999

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.010		0.050	0.010	mg/L		09/27/13 08:43	09/27/13 15:04	1
Arsenic	<0.0040		0.0050	0.0040	mg/L		09/27/13 08:43	09/27/13 15:04	1
Barium	<0.0020		0.010	0.0020	mg/L		09/27/13 08:43	09/27/13 15:04	1
Beryllium	<0.0010		0.0030	0.0010	mg/L		09/27/13 08:43	09/27/13 15:04	1
Cadmium	<0.0010		0.0050	0.0010	mg/L		09/27/13 08:43	09/27/13 15:04	1
Chromium	<0.0020		0.0050	0.0020	mg/L		09/27/13 08:43	09/27/13 15:04	1
Copper	<0.0020		0.010	0.0020	mg/L		09/27/13 08:43	09/27/13 15:04	1
Lead	<0.0020		0.0050	0.0020	mg/L		09/27/13 08:43	09/27/13 15:04	1
Nickel	<0.0030		0.0050	0.0030	mg/L		09/27/13 08:43	09/27/13 15:04	1
Selenium	<0.0040		0.010	0.0040	mg/L		09/27/13 08:43	09/27/13 15:04	1
Silver	<0.0020		0.0050	0.0020	mg/L		09/27/13 08:43	09/27/13 15:04	1
Thallium	<0.0040		0.010	0.0040	mg/L		09/27/13 08:43	09/27/13 15:04	1
Zinc	<0.0080		0.020	0.0080	mg/L		09/27/13 08:43	09/27/13 15:04	1

Lab Sample ID: LCS 400-192999/2-A

Matrix: Water

Analysis Batch: 193174

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 192999

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	1.00	1.04		mg/L		104	80 - 120
Arsenic	1.00	1.02		mg/L		102	80 - 120
Barium	1.00	1.05		mg/L		105	80 - 120
Beryllium	0.500	0.527		mg/L		105	80 - 120
Cadmium	0.500	0.518		mg/L		104	80 - 120
Chromium	1.00	1.04		mg/L		104	80 - 120
Copper	1.00	1.04		mg/L		104	80 - 120
Lead	1.00	1.04		mg/L		104	80 - 120
Nickel	1.00	1.04		mg/L		104	80 - 120
Selenium	1.00	1.07		mg/L		107	80 - 120
Silver	0.500	0.514		mg/L		103	80 - 120
Thallium	1.00	1.05		mg/L		105	80 - 120
Zinc	1.00	1.05		mg/L		105	80 - 120

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80411-1

## Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 400-193489/14-A

Matrix: Water

Analysis Batch: 193562

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 193489

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		10/02/13 08:15	10/02/13 13:42	1

Lab Sample ID: LCS 400-193489/33-A

Matrix: Water

Analysis Batch: 193562

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 193489

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00100	0.00101		mg/L		101	80 - 120

## Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Lab Sample ID: MB 400-193192/1-A

Matrix: Solid

Analysis Batch: 193536

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 193192

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	<0.020		0.033	0.020	mg/Kg		09/30/13 09:25	10/02/13 11:09	1

Lab Sample ID: LCS 400-193192/2-A ^1

Matrix: Solid

Analysis Batch: 193536

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 193192

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Hg	7.69	7.75		mg/Kg		101	80 - 120

## Method: 160.4 - Solids, Total Volatile (TVS)

Lab Sample ID: MB 400-192776/1

Matrix: Solid

Analysis Batch: 192776

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Volatile Solids	100		0.10	0.10	%			09/24/13 13:04	1

Lab Sample ID: LCS 400-192776/2

Matrix: Solid

Analysis Batch: 192776

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Volatile Solids	0.0412	<0.10		%		109	79 - 112

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80411-1

## Method: 335.4 - Cyanide, Total

Lab Sample ID: MB 400-192740/1-A  
Matrix: Water  
Analysis Batch: 192891

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 192740

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.0022		0.0050	0.0022	mg/L	-	09/25/13 08:54	09/25/13 13:59	1

Lab Sample ID: LCS 400-192740/2-A  
Matrix: Water  
Analysis Batch: 192891

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 192740

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.318	0.284		mg/L	-	89	75 - 125

## Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 400-192850/18  
Matrix: Water  
Analysis Batch: 192850

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.016		0.050	0.016	mg/L	-		09/25/13 16:58	1

Lab Sample ID: LCS 400-192850/17  
Matrix: Water  
Analysis Batch: 192850

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.00	2.07		mg/L	-	104	90 - 110

Lab Sample ID: MRL 400-192850/15 MRL  
Matrix: Water  
Analysis Batch: 192850

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	0.0500	0.0560		mg/L	-	112	50 - 150

## Method: 351.2 - Nitrogen, Total Kjeldahl

Lab Sample ID: MB 400-193222/1-A  
Matrix: Water  
Analysis Batch: 193358

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 193222

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	<0.26		0.50	0.26	mg/L	-	09/30/13 12:32	10/01/13 10:15	1

Lab Sample ID: LCS 400-193222/2-A  
Matrix: Water  
Analysis Batch: 193358

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 193222

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Kjeldahl	10.0	9.32		mg/L	-	93	90 - 110

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80411-1

## Method: 351.2 - Nitrogen, Total Kjeldahl (Continued)

Lab Sample ID: MB 400-193225/1-A  
Matrix: Solid  
Analysis Batch: 193358

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 193225

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Kjeldahl	<0.26		0.50	0.26	mg/Kg		09/30/13 12:42	10/01/13 10:55	1

Lab Sample ID: LCS 400-193225/2-A  
Matrix: Solid  
Analysis Batch: 193358

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 193225

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Kjeldahl	10.0	9.36		mg/Kg		94	75 - 125

Lab Sample ID: 400-80411-1 MS  
Matrix: Solid  
Analysis Batch: 193358

Client Sample ID: 5S-001-002  
Prep Type: Total/NA  
Prep Batch: 193225

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Kjeldahl	280		235	595	F	mg/Kg	☼	134	90 - 110

Lab Sample ID: 400-80411-1 MSD  
Matrix: Solid  
Analysis Batch: 193358

Client Sample ID: 5S-001-002  
Prep Type: Total/NA  
Prep Batch: 193225

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrogen, Kjeldahl	280		258	620	F	mg/Kg	☼	132	90 - 110	4	20

Lab Sample ID: MRL 400-193358/11 MRL  
Matrix: Solid  
Analysis Batch: 193358

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Kjeldahl	0.500	0.563		mg/L		113	50 - 150

## Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 400-193032/14  
Matrix: Water  
Analysis Batch: 193032

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.018		0.050	0.018	mg/L			09/27/13 08:16	1

Lab Sample ID: LCS 400-193032/15  
Matrix: Water  
Analysis Batch: 193032

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	0.500	0.519		mg/L		104	90 - 110

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80411-1

## Method: 353.2 - Nitrogen, Nitrate-Nitrite (Continued)

Lab Sample ID: MRL 400-193032/12 MRL  
Matrix: Water  
Analysis Batch: 193032

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	0.0500	0.0477	J	mg/L		95	50 - 150

Lab Sample ID: MRL 400-193034/12 MRL  
Matrix: Solid  
Analysis Batch: 193034

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	0.0500	0.0460	J	mg/Kg		92	

Lab Sample ID: MB 400-192694/1-A  
Matrix: Solid  
Analysis Batch: 193034

Client Sample ID: Method Blank  
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	<0.36		1.0	0.36	mg/Kg			09/27/13 10:23	1

Lab Sample ID: LCS 400-192694/2-A  
Matrix: Solid  
Analysis Batch: 193034

Client Sample ID: Lab Control Sample  
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	0.500	0.518		mg/Kg		104	90 - 110

## Method: 365.1 - Phosphorus, Ortho

Lab Sample ID: MB 400-192612/35  
Matrix: Water  
Analysis Batch: 192612

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ortho-Phosphate	<0.015		0.050	0.015	mg/L			09/23/13 16:53	1

Lab Sample ID: LCS 400-192612/36  
Matrix: Water  
Analysis Batch: 192612

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
ortho-Phosphate	0.300	0.329		mg/L		110	90 - 110

Lab Sample ID: 400-80411-B-2 MS  
Matrix: Water  
Analysis Batch: 192612

Client Sample ID: 400-80411-B-2 MS  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
ortho-Phosphate	0.071		0.200	0.275		mg/L		102	90 - 110

TestAmerica Pensacola



# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80411-1

## Method: 365.1 - Phosphorus, Ortho (Continued)

Lab Sample ID: 400-80411-B-2 MSD

Matrix: Water

Analysis Batch: 192612

Client Sample ID: 400-80411-B-2 MSD

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
ortho-Phosphate	0.071		0.200	0.285		mg/L		107	90 - 110	3	7

## Method: 365.1 - Phosphorus, Total

Lab Sample ID: MB 640-104910/3-A

Matrix: Water

Analysis Batch: 104934

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 104910

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phosphorus	<0.0010		0.0020	0.0010	mg/L		10/04/13 10:54	10/04/13 14:13	1

Lab Sample ID: LCS 640-104910/4-A

Matrix: Water

Analysis Batch: 104934

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 104910

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phosphorus	0.100	0.0924		mg/L		92	90 - 110

Lab Sample ID: LCSD 640-104910/5-A

Matrix: Water

Analysis Batch: 104934

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 104910

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phosphorus	0.100	0.0942		mg/L		94	90 - 110	2	30

## Method: 365.4 - Phosphorus, Total

Lab Sample ID: MB 400-193226/1-A

Matrix: Solid

Analysis Batch: 193438

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 193226

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phosphorus, Total	<0.15		0.50	0.15	mg/Kg		09/30/13 12:47	10/01/13 17:32	1

Lab Sample ID: LCS 400-193226/2-A

Matrix: Solid

Analysis Batch: 193438

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 193226

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phosphorus, Total	2.60	2.52		mg/Kg		97	75 - 125

Lab Sample ID: 400-80411-1 MS

Matrix: Solid

Analysis Batch: 193438

Client Sample ID: 5S-001-002

Prep Type: Total/NA

Prep Batch: 193226

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Phosphorus, Total	34		23.5	41.1	F	mg/Kg	☼	31	75 - 125

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80411-1

## Method: 365.4 - Phosphorus, Total (Continued)

Lab Sample ID: 400-80411-A-1-H MSD

Matrix: Solid

Analysis Batch: 193438

Client Sample ID: 400-80411-A-1-H MSD

Prep Type: Total/NA

Prep Batch: 193226

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phosphorus, Total	34		25.8	53.5	F	mg/Kg	✱	74	75 - 125	28	20

Lab Sample ID: MRL 400-193438/52 MRL

Matrix: Solid

Analysis Batch: 193438

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phosphorus, Total	0.100	<0.12		mg/Kg		71			

## Method: 420.1 - Phenolics, Total Recoverable

Lab Sample ID: MB 400-193255/1-A

Matrix: Water

Analysis Batch: 193543

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 193255

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenols, Total	<0.0045		0.0050	0.0045	mg/L		09/27/13 14:03	10/01/13 13:28	1

Lab Sample ID: LCS 400-193255/2-A

Matrix: Water

Analysis Batch: 193543

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 193255

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phenols, Total	0.400	0.420		mg/L		105	79 - 122		

## Method: SM 5210B - BOD, 5-Day

Lab Sample ID: USB 400-193221/1 USB

Matrix: Water

Analysis Batch: 193221

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	<2.0		2.0	2.0	mg/L			09/24/13 18:42	1

Lab Sample ID: LCS 400-193221/2

Matrix: Water

Analysis Batch: 193221

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Biochemical Oxygen Demand	198	210		mg/L		106	85 - 115		

Lab Sample ID: LCSD 400-193221/3

Matrix: Water

Analysis Batch: 193221

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Biochemical Oxygen Demand	198	214		mg/L		108	85 - 115	2	27

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80411-1

## Method: SM 5220D - COD

Lab Sample ID: MB 490-111442/17

Matrix: Solid

Analysis Batch: 111442

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<3.0		10	3.0	mg/L			10/02/13 16:55	1

Lab Sample ID: MB 490-111442/3

Matrix: Solid

Analysis Batch: 111442

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<3.0		10	3.0	mg/L			10/02/13 16:55	1

Lab Sample ID: LCS 490-111442/18

Matrix: Solid

Analysis Batch: 111442

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	300	307		mg/L		102	90 - 110

Lab Sample ID: LCS 490-111442/4

Matrix: Solid

Analysis Batch: 111442

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	20.0	20.1		mg/L		100	90 - 110

Lab Sample ID: LCSD 490-111442/19

Matrix: Solid

Analysis Batch: 111442

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chemical Oxygen Demand	300	305		mg/L		102	90 - 110	1	20

Lab Sample ID: LCSD 490-111442/5

Matrix: Solid

Analysis Batch: 111442

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chemical Oxygen Demand	20.0	20.6		mg/L		103	90 - 110	3	20

Lab Sample ID: MB 400-193378/1

Matrix: Water

Analysis Batch: 193378

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<6.4		10	6.4	mg/L			10/01/13 13:07	1

Lab Sample ID: LCS 400-193378/2

Matrix: Water

Analysis Batch: 193378

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	50.0	54.9		mg/L		110	90 - 110

TestAmerica Pensacola

# QC Sample Results

Client: Dewberry

TestAmerica Job ID: 400-80411-1

Project/Site: Three Mile CreekUSA-Groundwater/Sediment

Lab Sample ID: 400-80411-3 MS

Matrix: Water

Analysis Batch: 193378

Client Sample ID: HSI-001-014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	45		37.5	58.1	F	mg/L		34	90 - 110

Lab Sample ID: 400-80411-3 MSD

Matrix: Water

Analysis Batch: 193378

Client Sample ID: HSI-001-014

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chemical Oxygen Demand	45		37.5	58.7	F	mg/L		36	90 - 110	1	13

Lab Sample ID: LB 490-109671/1-A LB

Matrix: Solid

Analysis Batch: 111442

Client Sample ID: Method Blank

Prep Type: ASTM Leach

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<3.0		10	3.0	mg/L			10/02/13 16:55	1

Lab Sample ID: 400-80411-1 DU

Matrix: Solid

Analysis Batch: 111442

Client Sample ID: 5S-001-002

Prep Type: ASTM Leach

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chemical Oxygen Demand	<4.1		<4.1		mg/L	✱	NC	20

TestAmerica Pensacola

# Lab Chronicle

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80411-1

**Client Sample ID: 5S-001-002**

**Date Collected: 09/20/13 17:20**

**Date Received: 09/21/13 09:40**

**Lab Sample ID: 400-80411-1**

**Matrix: Solid**

**Percent Solids: 74.0**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			193063	09/27/13 13:06	KWN	TAL PEN
Total/NA	Analysis	6010B		1	193174	09/28/13 04:28	SLM	TAL PEN
Total/NA	Prep	7471B			193192	10/01/13 10:55	JAP	TAL PEN
Total/NA	Analysis	7471B		1	193536	10/02/13 12:42	JAP	TAL PEN
Total/NA	Analysis	160.4		1	192776	09/24/13 13:04	SLT	TAL PEN
Soluble	Leach	DI Leach			192694	09/24/13 15:10	KJR	TAL PEN
Soluble	Analysis	353.2		1	193034	09/27/13 10:33	KJR	TAL PEN
Total/NA	Analysis	Moisture		1	193191	09/27/13 17:00	LEC	TAL PEN
Total/NA	Prep	351.2			193225	09/30/13 12:42	JAT	TAL PEN
Total/NA	Analysis	351.2		1	193358	10/01/13 10:59	JAT	TAL PEN
Total/NA	Prep	365.2/365.3/365			193226	09/30/13 12:47	JAT	TAL PEN
Total/NA	Analysis	365.4		1	193438	10/01/13 17:36	JAT	TAL PEN
Total/NA	Analysis	Total Nitrogen		1	193542	10/02/13 13:14	JMH	TAL PEN
ASTM Leach	Leach	D3987-85			109671	09/25/13 11:09	SJM	TAL NSH
ASTM Leach	Analysis	SM 5220D		1	111442	10/02/13 16:55	MSJ	TAL NSH

**Client Sample ID: 5G-001-005**

**Date Collected: 09/20/13 17:27**

**Date Received: 09/21/13 09:40**

**Lab Sample ID: 400-80411-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			192999	09/27/13 08:43	KWN	TAL PEN
Total Recoverable	Analysis	6010B		1	193174	09/27/13 15:46	SLM	TAL PEN
Total/NA	Prep	7470A			193489	10/02/13 08:15	JAP	TAL PEN
Total/NA	Analysis	7470A		1	193562	10/02/13 14:22	JAP	TAL PEN
Total/NA	Analysis	365.1		1	192612	09/23/13 16:53	LSS	TAL PEN
Total/NA	Analysis	SM 5210B		1	193221		GMF	TAL PEN
					(Start)	09/24/13 16:50		
					(End)	09/29/13 15:45		
Total/NA	Prep	351.2			193222	09/30/13 12:32	JAT	TAL PEN
Total/NA	Analysis	351.2		1	193358	10/01/13 10:41	JAT	TAL PEN
Total/NA	Prep	365.2/365.3/365			104910	10/04/13 10:54	AJN	TAL TAL
Total/NA	Analysis	365.1		1	104934	10/04/13 15:00	AJN	TAL TAL

**Client Sample ID: HSI-001-014**

**Date Collected: 09/20/13 16:22**

**Date Received: 09/21/13 09:40**

**Lab Sample ID: 400-80411-3**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	193582	10/03/13 00:42	WPD	TAL PEN
Total/NA	Prep	625			192475	09/23/13 13:18	KH1	TAL PEN
Total/NA	Analysis	625		1	192689	09/25/13 01:01	AJR	TAL PEN
Total/NA	Prep	608			192470	09/23/13 13:16	KH1	TAL PEN

TestAmerica Pensacola

# Lab Chronicle

Client: Dewberry  
Project/Site: Three Mile CreekUSA-Groundwater/Sediment

TestAmerica Job ID: 400-80411-1

**Client Sample ID: HSI-001-014**

**Lab Sample ID: 400-80411-3**

**Date Collected: 09/20/13 16:22**

**Matrix: Water**

**Date Received: 09/21/13 09:40**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	608		1	193039	09/26/13 19:23	VC1	TAL PEN
Total/NA	Prep	608			192470	09/23/13 13:16	KH1	TAL PEN
Total/NA	Analysis	608		1	193095	09/27/13 11:29	VC1	TAL PEN
Total Recoverable	Prep	3005A			192999	09/27/13 08:43	KWN	TAL PEN
Total Recoverable	Analysis	6010B		1	193174	09/27/13 15:50	SLM	TAL PEN
Total/NA	Prep	7470A			193489	10/02/13 08:15	JAP	TAL PEN
Total/NA	Analysis	7470A		1	193562	10/02/13 14:24	JAP	TAL PEN
Total/NA	Analysis	365.1		1	192612	09/23/13 16:53	LSS	TAL PEN
Total/NA	Analysis	350.1		1	192850	09/25/13 17:08	KJR	TAL PEN
Total/NA	Prep	Distill/CN			192740	09/25/13 08:54	BAB	TAL PEN
Total/NA	Analysis	335.4		1	192891	09/25/13 14:23	BAB	TAL PEN
Total/NA	Analysis	353.2		1	193032	09/27/13 08:32	KJR	TAL PEN
Total/NA	Analysis	SM 5210B		1	193221		GMF	TAL PEN
					(Start)	09/24/13 16:53		
					(End)	09/29/13 15:45		
Total/NA	Prep	351.2			193222	09/30/13 12:32	JAT	TAL PEN
Total/NA	Analysis	351.2		1	193358	10/01/13 10:42	JAT	TAL PEN
Total/NA	Analysis	SM 5220D		1	193378	10/01/13 13:07	CLS	TAL PEN
Total/NA	Prep	Distill/Phenol			193255	09/27/13 14:03	CLS	TAL PEN
Total/NA	Analysis	420.1		1	193543	10/01/13 13:28	JMH	TAL PEN
Total/NA	Prep	365.2/365.3/365			104910	10/04/13 10:54	AJN	TAL TAL
Total/NA	Analysis	365.1		5	104934	10/04/13 15:39	AJN	TAL TAL

## Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177  
TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001  
TAL TAL = TestAmerica Tallahassee, 2846 Industrial Plaza Drive, Tallahassee, FL 32301, TEL (850)878-3994

## Method Summary

Client: Dewberry

TestAmerica Job ID: 400-80411-1

Project/Site: Three Mile CreekUSA-Groundwater/Sediment

Method	Method Description	Protocol	Laboratory
624	Volatile Organic Compounds (GC/MS)	40CFR136A	TAL PEN
625	Semivolatile Organic Compounds (GC/MS)	40CFR136A	TAL PEN
608	Organochlorine Pesticides/PCBs in Water	40CFR136A	TAL PEN
6010B	Metals (ICP)	SW846	TAL PEN
7470A	Mercury (CVAA)	SW846	TAL PEN
7471B	Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)	SW846	TAL PEN
160.4	Solids, Total Volatile (TVS)	MCAWW	TAL PEN
335.4	Cyanide, Total	MCAWW	TAL PEN
350.1	Nitrogen, Ammonia	MCAWW	TAL PEN
351.2	Nitrogen, Total Kjeldahl	MCAWW	TAL PEN
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL PEN
365.1	Phosphorus, Ortho	EPA	TAL PEN
365.1	Phosphorus, Total	EPA	TAL TAL
365.4	Phosphorus, Total	EPA	TAL PEN
420.1	Phenolics, Total Recoverable	MCAWW	TAL PEN
Moisture	Percent Moisture	EPA	TAL PEN
SM 5210B	BOD, 5-Day	SM	TAL PEN
SM 5220D	COD	SM	TAL NSH
SM 5220D	COD	SM	TAL PEN
Total Nitrogen	Nitrogen, Total	EPA	TAL PEN

### Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

TAL TAL = TestAmerica Tallahassee, 2846 Industrial Plaza Drive, Tallahassee, FL 32301, TEL (850)878-3994



<b>Client Information</b> Client Contact: <u>Michael Hansen</u> Company: <u>Dewberry</u> Address: <u>2301 Rex Woods Dr.</u> City: <u>KANSAS</u> State, Zip: <u>NC, 27607</u> Phone: <u>919-424-3716 (Tr)</u> E-Mail: <u>MHANSON@DEWBERRY.COM</u> Project Name: <u>Greenwater</u> Site:		Sampler: <u>Mike Mann</u> Lab PM: <u>Name, Mike</u> Phone: <u>400-30863</u> E-Mail: <u>Mike.Mann@TestAmerica.com</u> Carrier Tracking No(s):	COC No: <u>400-30863-17662.1</u> Page: <u>1</u> STL Job #:
Due Date Requested: TAT Requested (days): POE: <u>POURCHASE ORDER NOT REC</u> WO #: <u>40003408</u> Project #: <u>40003408</u> SOW #:		Analysis Requested Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> Total Number of Containers:	
Sample Identification <u>SS-001</u> <u>SS-002</u> <u>SG-001</u> <u>SG-002</u> <u>SG-003</u> <u>SG-004</u> <u>SG-005</u>		Matrix (W = water, S = Solid, O = Waste/Oil, BT = Tissue, A = Air) Sample Type (C = Comp, G = Grab) Sample Time Sample Date Preservation Code Special Instructions/Note:	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Empty Kit Relinquished by: <u>[Signature]</u> Relinquished by: <u>[Signature]</u> Relinquished by: <u>[Signature]</u> Custody Seal No.: <u>3,900,45592</u>		Method of Shipment: Received by: <u>[Signature]</u> Date/Time: <u>9-20 9:40</u> Company: Received by: <u>[Signature]</u> Date/Time: <u>9-21-13 9:40</u> Company: Received by: <u>[Signature]</u> Date/Time: <u>9-21-13 9:40</u> Company:	



## Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Client Information		Sampler: <i>S Stokes</i>	Lab PM: <i>Nancy, Mike M</i>	Carrier Tracking No(s):	OCQ No: <i>40030863-17662.1</i>							
Client Contact: <i>Michael Hanson</i>	Phone:	Lab PM:	E-Mail:		Page:							
Company: <i>Derberry</i>					STL Job #:							
Address: <i>2301 Rexwoods Dr.</i>		Analysis Requested										
City: <i>Raleigh</i>												
State, Zip: <i>NC 27607</i>												
Phone: <i>919-424-3716</i>												
E-Mail: <i>mhanson@derberry.com</i>												
Project Name: <i>groundwater</i>												
Site:												
Due Date Requested:												
TAT Requested (days):												
PO #:												
WO #:												
Project #: <i>4003408</i>												
SSOW #:												
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix (W=water, S=Solid, O=Waste/Oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Analysis Requested		Total Number of containers	Preservation Codes:	Special Instructions/Note:	
<i>HS1-001</i>	<i>9-20</i>	<i>3:54</i>	<i>G</i>	<i>W</i>	<i>X</i>	<i>X</i>	<i>T. Phos</i>			<i>A - HCL</i>		
<i>HS1-002</i>	<i>9-20</i>	<i>3:50</i>	<i>G</i>	<i>W</i>		<i>X</i>	<i>Metals</i>			<i>B - NaOH</i>		
<i>HS1-003</i>	<i>9-20</i>	<i>3:56</i>	<i>G</i>	<i>W</i>		<i>X</i>	<i>VOCs</i>			<i>C - Zn Acetate</i>		
<i>HS1-004</i>	<i>9-20</i>	<i>3:58</i>	<i>G</i>	<i>W</i>		<i>X</i>	<i>5 VOCs and PCBs</i>			<i>D - Nitric Acid</i>		
<i>HS1-005</i>	<i>9-20</i>	<i>4:00</i>	<i>G</i>	<i>W</i>		<i>X</i>	<i>4201 Phenols total</i>			<i>E - NaHSO4</i>		
<i>HS1-006</i>	<i>9-20</i>	<i>4:05</i>	<i>G</i>	<i>W</i>		<i>X</i>				<i>F - MeOH</i>		
<i>HS1-007</i>	<i>9-20</i>	<i>4:08</i>	<i>G</i>	<i>W</i>		<i>X</i>				<i>G - Amchlor</i>		
<i>HS1-008</i>	<i>9-20</i>	<i>4:11</i>	<i>G</i>	<i>W</i>		<i>X</i>				<i>H - Ascorbic Acid</i>		
<i>HS1-009</i>	<i>9-20</i>	<i>4:14</i>	<i>G</i>	<i>W</i>		<i>X</i>				<i>I - Ice</i>		
<i>HS1-010</i>	<i>9-20</i>	<i>4:35</i>	<i>G</i>	<i>W</i>		<i>X</i>				<i>J - DI Water</i>		
<i>HS1-011</i>	<i>9-20</i>	<i>4:17</i>	<i>G</i>	<i>W</i>		<i>X</i>				<i>K - EDTA</i>		
Possible Hazard Identification		Sample Date		Sample Time	Sample Type	Matrix						
<input checked="" type="checkbox"/> Non-Hazard	<input type="checkbox"/> Flammable	<input type="checkbox"/> Skin Irritant	<input type="checkbox"/> Poison B	<input type="checkbox"/> Unknown								
Deliverable Requested: I, II, III, IV, Other (specify)		Sample Date		Sample Time	Sample Type	Matrix						
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:						
Relinquished by: <i>Jim Cornman</i>		Date/Time: <i>9-21 9:40</i>		Company:		Received by: <i>[Signature]</i>		Date/Time: <i>9-21-13 9:40</i>		Company:		
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:		
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:		
Custody Seals Intact: ? Yes ? No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: <i>400-80411 3.9°C 5592</i>								

# TestAmerica

## THE LEADER IN ENVIRONMENTAL TESTING

[illegible]

TAL-6010 - LIMS(0108)

# Three Mile Creek Watershed Management Plan

## Appendix F – Technical Committee BMP Survey and Results

### Three Mile Creek Watershed Management Measures: Prioritization Survey Results

**Question #1: Please rate the following potential management measures for Three Mile Creek.**

Answer Options	Rating	HIGH (5 points)	#(5)	HIGH / MEDIUM (4 points)	#(4)	MEDIUM (3 points)	#(3)	MEDIUM / LOW (2 points)	#(2)	LOW (1 point)	#(1)	Response Count	Average Response
3 WQ: Identify and remove sanitary sewer system and septic system leakage/overflows into groundwater, creek, and tributaries (provides reduction in nutrients, oxygen demand, pathogens and wastewater compounds).	9	45	2	8	0	0	0	0	0	0	0	11	4.818
2 WQ: Identify and remove illicit discharges to stormwater and surface water system (provides reduction in nutrients, oxygen demand, pathogens, and wastewater compounds).	8	40	1	4	2	6	0	0	0	0	0	11	4.545
18 Other	4	20	0	0	0	0	1	2	0	0	0	5	4.400
9 HA: Stabilize/Restore streambanks and riparian buffers in degraded areas to reduce in-stream erosion and improve habitat condition (provides reduction in nutrients and oxygen demand, improves habitat).	6	30	4	16	2	6	0	0	0	0	0	12	4.333
7 WQ: Repair/Protect/Fortify streambanks where utility infrastructure is located to reduce potential illicit discharges and reduce in-stream erosion (provides reduction in nutrients and oxygen demand and improves habitat).	5	25	4	16	3	9	0	0	0	0	0	12	4.167
1 Water Quality (WQ): Install Stormwater Outfall End-of-Pipe BMPs-- to remove non-point sources (also provides reduction in nutrients, oxygen demand and pathogens).	4	20	3	12	4	12	0	0	0	0	0	11	4.000

Answer Options	Rating	HIGH (5 points)	#(5)	HIGH / MEDIUM (4 points)	#(4)	MEDIUM (3 points)	#(3)	MEDIUM / LOW (2 points)	#(2)	LOW (1 point)	#(1)	Response Count	Average Response
4 WQ: Install Green Infrastructure to reduce stormwater volume and velocity– (bioretention/bioswales, reuse detention BMPs ) in upland areas (provides reduction in nutrients, oxygen demand and pathogens).		4	20	4	16	1	3	2	4	0	0	11	3.909
14 HA: Plant desirable vegetation along creek and tributary streambanks; develop plan for long term plant management (provides reduction in nutrients, oxygen demand and pathogens, improves habitat).		4	20	3	12	2	6	2	4	0	0	11	3.818
6 WQ: Reduce/modify impervious areas using LID practices to reduce stormwater runoff to waterways (provides reduction in nutrients, oxygen demand, and pathogens).		2	10	5	20	4	12	1	2	0	0	12	3.667
8 Habitat (HA): Develop a map of current creek and tributary bathymetry to identify areas within surface water system in need of sediment removal to improve stream condition (provides reduction in nutrients, oxygen demand and pathogens, improves habitat).		3	15	2	8	6	18	1	2	0	0	12	3.583
10 HA: Stabilize streambanks at stormwater outfalls to reduce stream bank erosion (provides reduction in nutrients and oxygen demand).		2	10	6	24	2	6	1	2	1	1	12	3.583
11 HA: Partner with private land owners to revegetate upland areas in watershed to reduce erosion and loss of other materials and improve habitat condition (provides reduction in nutrients, oxygen demand and pathogens).		5	25	1	4	3	9	2	4	1	1	12	3.583
12 HA: Restore hydrology of historic channel to creek system to improve flow capacity and sensitive habitats. (reduces oxygen demand and pathogens, improves habitat).		3	15	4	16	2	6	2	4	1	1	12	3.500



# Three Mile Creek Watershed Management Plan

Answer Options	Rating	HIGH (5 points)	#(5)	HIGH / MEDIUM (4 points)	#(4)	MEDIUM (3 points)	#(3)	MEDIUM / LOW (2 points)	#(2)	LOW (1 point)	#(1)	Response Count	Average Response
5 WQ: Create additional stormwater detention -- Modify existing wet ponds at USA Campus/Langan Park to reduce stormwater volume and velocity (provides reduction in nutrients, oxygen demand, and pathogens).		4	20	2	8	3	9	1	2	2	2	12	3.417
15 HA: Create Living Shorelines in lower/tidal creek segment to reduce stream bank erosion (reduces oxygen demand and pathogens, improves habitat).		2	10	2	8	4	12	3	6	0	0	11	3.273
13 HA: Improve management of/Remove exotic/nuisance vegetation adjacent to creek and tributaries to improve sensitive habitats (provides reduction in nutrients entering the creek, improves habitat).		1	5	3	12	4	12	2	4	1	1	11	3.091
16 Access (AC): Create continuous 12-mile, shared-use trail (recreation, history & culture, health, education) from Langan Park to downstream end of TMC. Identify and provide parking and access points along route.		3	15	2	8	2	6	0	0	4	4	11	3.000
17 AC: Create creek "blue-way" for paddlers from Langan Park to downstream end of TMC. This will require special consideration at each of the USACE weir structures.		0	0	3	12	2	6	1	2	5	5	11	2.273
Other (Please specify) 1. The "LOW" and "MEDIUM/LOW" priorities are VERY important, but not in the beginning.													
Other (Please specify) 2. City of Mobile needs a better plan to get trash out of system "before the end of pipe". Need better code enforcement and a new contractor w sewerage/outfall mgt concerns.													

Answer Options	Rating	HIGH (5 points)	#(5)	HIGH / MEDIUM (4 points)	#(4)	MEDIUM (3 points)	#(3)	MEDIUM / LOW (2 points)	#(2)	LOW (1 point)	#(1)	Response Count	Average Response
Other (Please specify) 3. Add to Item 8: Include incremental flow mapping to study hydrology inputs. Another Item to Map/Assess the current Riparian Buffer status for the entire drainage.													
Other (Please specify) 4. Ordinance and fines against litter													

**Question #2: Please provide a name to let us know who provided this input. Thanks**

Number	Response Date	Response Text
1	October 1, 2013, 4:16 PM	Ray
2	October 1, 2013, 1:15 Pm	Jeff DeQuattro
3	October 1, 2013, 1:11 PM	Jason Wilkins
4	October 1, 2013, 2:50 PM	Bert Eichold
5	September 30, 2013, 4:56 PM	Dave Armstrong
6	September 30, 2013, 3:46 PM	Christian
7	September 30, 2013, 3:16 PM	Joyce Nicholas
8	September 30, 2013, 3:08 PM	Randy Shaneyfelt

# Three Mile Creek Watershed Management Plan

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Three Mile Creek Watershed Management Measures: Prioritization Original Survey

Continued on the next page.

# Three Mile Creek Watershed Management Measures: Prioritization

## Intro/Charge

Vision--- Three Mile Creek and its surrounding watershed present an extraordinary opportunity to the cities of Mobile and Prichard to turn what is now a community liability, due to its degraded condition, into a community amenity and a waterway destination for the City of Mobile.

Success--- To transform TMC into a beautiful and valuable artery through the cities of Mobile and Prichard, with improved water quality, accessible walking/biking paths and park areas, neighborhood linkages, and non-motorized boating.

Below is a list of potential management measures to improve the quality of this watershed's waters and environmentally sensitive habitats. Based on the results of the Three Mile Creek watershed assessment and your professional opinion, please rate the following 18 measures on a scale of one to five (1-5) with

HIGH (5 pts) - First priority: necessary to undertake to improve water quality and habitat conditions

HIGH/MEDIUM (4 pts) - Second priority: Not necessary but desirable to improve water quality and habitat condition

MEDIUM (3 pts) - Third priority: If the opportunity arises, it would be a good investment

MEDIUM/LOW (2 pts) - Fourth priority: A project that would benefit only a small percentage of the watershed

LOW (1 pt) - Fifth priority: Not necessary but could compliment improved water quality and habitat conditions

Once the data from this survey is compiled, the Watershed Management Team will further develop the top FIVE TO SEVEN (5-7) measures to highlight as priority actions in the Watershed Plan. This survey should take no longer than 10 minutes.

Please try to complete this survey by close of business, Monday, September 30, 2013, and if that's not possible by close of business on Tuesday, October 1. If you have any questions feel free to contact Mike Hanson, [mhanson@dewberry.com](mailto:mhanson@dewberry.com), or me at [rswann@mobilebaynep.com](mailto:rswann@mobilebaynep.com), or 251-380-7940.

Thank you, Roberta



# Three Mile Creek Watershed Management Measures: Prioritization

## 1. Please rate the following potential management measures for Three Mile Creek:

Rating

1 Water Quality (WQ): Install Stormwater Outfall End-of-Pipe BMPs-- to remove non-point sources (also provides reduction in nutrients, oxygen demand and pathogens).

2 WQ: Identify and remove illicit discharges to stormwater and surface water system (provides reduction in nutrients, oxygen demand, pathogens, and wastewater compounds).

3 WQ: Identify and remove sanitary sewer system and septic system leakage/overflows into groundwater, creek, and tributaries (provides reduction in nutrients, oxygen demand, pathogens and wastewater compounds).

4 WQ: Install Green Infrastructure to reduce stormwater volume and velocity--(bioretention/bioswales, reuse detention BMPs ) in upland areas (provides reduction in nutrients, oxygen demand and pathogens).

5 WQ: Create additional stormwater detention --Modify existing wet ponds at USA Campus/Langan Park to reduce stormwater volume and velocity (provides reduction in nutrients, oxygen demand, and pathogens).

6 WQ: Reduce/modify impervious areas using LID practices to reduce stormwater runoff to waterways (provides reduction in nutrients, oxygen demand, and pathogens).

7 WQ: Repair/Protect/Fortify streambanks where utility infrastructure is located to reduce potential illicit discharges and reduce in-stream erosion (provides reduction in nutrients and oxygen demand and improves habitat).

8 Habitat (HA): Develop a map of current creek and tributary bathymetry to identify areas within surface water system in need of sediment removal to improve stream condition (provides reduction in nutrients, oxygen demand and pathogens, improves habitat).

9 HA: Stabilize/Restore streambanks and riparian buffers in degraded areas to reduce in-stream erosion and improve habitat condition (provides reduction in nutrients and oxygen demand, improves habitat).

10 HA: Stabilize streambanks at stormwater outfalls to reduce stream bank erosion (provides reduction in nutrients and oxygen demand).

11 HA: Partner with private land owners to revegetate upland areas in watershed to reduce erosion and loss of other materials and improve habitat condition (provides reduction in nutrients, oxygen demand and pathogens).

12 HA: Restore hydrology of historic channel to creek system to improve flow capacity and sensitive habitats. (reduces oxygen demand and pathogens, improves habitat).

13 HA: Improve management of/Remove exotic/nuisance vegetation adjacent to creek and tributaries to improve sensitive habitats (provides reduction in nutrients entering the creek, improves habitat).

14 HA: Plant desirable vegetation along creek and tributary streambanks; develop plan for long term plant management (provides reduction in nutrients, oxygen demand and pathogens, improves habitat).

15 HA: Create Living Shorelines in lower/tidal creek segment to reduce stream bank erosion (reduces oxygen demand and pathogens, improves habitat).

# Three Mile Creek Watershed Management Measures: Prioritization

habitat).

16 Access (AC): Create continuous 12-mile, shared-use trail (recreation, history & culture, health, education) from Langan Park to downstream end of TMC. Identify and provide parking and access points along route.

17 AC: Create creek "blue-way" for paddlers from Langan Park to downstream end of TMC. This will require special consideration at each of the USACE weir structures.

18 Other

Other (please specify)

## 2. Please provide a name to let us know who provided this input! Thanks.

Thank you for taking the time to complete this exercise. Your participation in the revitalization of the Three Mile Creek Watershed is important to its success. Have a nice day, Roberta

# Three Mile Creek Watershed Management Plan

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## Appendix G – Regulatory Review

### Regulatory Drivers and Constraints

The regulatory framework for TMC includes several layers and local, state and federal agencies. There are two primary levels of regulation which will impact the restoration of the TMC watershed: one governing the current activities in the watershed and driving the restoration effort; and a second related to implementing specific projects such as stream restoration and stormwater retrofit.

### Watershed Restoration Drivers

The primary regulatory drivers governing the current activities in the watershed and driving the restoration effort include:

- ADEM NPDES MS4 permit governing stormwater discharges for the entire watershed (several hundred outfalls discharge to surface waters); and upcoming changes to the NPDES MS4 program from USEPA expected to be final in 2014;
- TMDLs for TMC, TSB, and CEN; ADEM state groundwater and surface water quality standards;
- Groundwater concerns associated with the Hickory Street Landfill and Mobile Coal Gasification Plant; and
- Objectives and plans included in the Comprehensive Conservation and Management Plan (CCMP) developed by the Mobile Bay National Estuary Program (MBNEP) and approved in 2002.

There are two additional minor regulatory drivers including NPDES Industrial General Permits for specific facilities, and NPDES Construction General Permits for active construction sites. Although listed as minor drivers it is very important for ADEM and the City of Mobile to enforce the requirements of these NPDES permits. The City of Mobile is the local issuing authority for land disturbing permits and is therefore responsible for ensuring construction erosion and sediment controls are properly implemented and maintained.

Historically, the ADEM NPDES Wastewater Permits for two municipal wastewater treatment facility discharges, Wright Smith Jr. (12.8 MGD) and City of Prichard Carlos Morris (4.1 MGD) were primary water quality drivers in the TMC watershed. Now that both of these point source discharges are scheduled to be diverted to a different watershed, they should no longer impact TMC water quality. One issue of importance is the loss of water flows from the two facilities and how that will affect water flow and quality in the lower portion of the creek.

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ADEM NPDES MS4 permit governing stormwater discharges for the entire watershed (several hundred outfalls discharge to surface waters); and upcoming changes to the NPDES MS4 program from USEPA expected to be final in 2014

The entire TMC watershed is within the City of Mobile's NPDES MS4 permit service area. The primary objective of the NPDES MS4 permit is to reduce the discharge of pollutants from the permitted stormwater outfalls to the surface water system to the maximum extent practicable. As mentioned above the City's NPDES MS4 permit requirements include overseeing the Construction General Permits, thereby controlling erosion and sediment transport during construction. Failure to control site erosion and sediment transport can result in substantial sediment loadings to TMC and tributaries. Nationwide, sediment erosion and transport during construction is one of the largest sources of suspended solids to our surface waters. Many other pollutants can be carried into the creek with sediment including nutrients, BOD, and metals. Under the MS4 permit the City is also responsible for completing other tasks on an annual basis such as inspecting outfalls and highly visible pollutant sources, illicit discharge identification and elimination, good housekeeping at municipal facilities, public outreach and education and reporting to ADEM on activities completed.

Upcoming changes to the NPDES MS4 program will be proposed by USEPA likely in 2014. Any changes will then need to be incorporated into ADEM's NPDES program and eventually into the City's permit at a later date. The specifics of the changes and the timing and process for making the changes is not known at this time. The changes are expected to include some requirements for including runoff volume controls to reduce the volume of runoff which leaves a newly developed site. Green Infrastructure is being promoted throughout the US to achieve runoff volume reduction. By reducing runoff volume, the corresponding runoff pollutant load is also reduced.

TMDLs for TMC, TSB, and CEN; and ADEM state groundwater and surface water quality standards; and potential future numeric nutrient criteria for surface waters

TMC is classified by the state as an Agricultural and Industrial Water Supply. The minimum dissolved oxygen (DO) concentration for this classification is 3.0 milligrams per liter (mg/L). It is important to note that this DO requirement is substantially less stringent than the typical recreational surface water DO standard of 5.0 mg/L. The state surface water fecal coliform standard for non-coastal waters with incidental water contact and recreation during June through September is a geometric mean value of 200 colonies per 100 milliliters (#/100 mL). In coastal waters, the enterococci group geometric mean shall not exceed 35 colonies/100 mL and no single sample shall be greater than 158 colonies/100 mL.

In 2006, ADEM published the Final TMDL for Organic Enrichment/Dissolved Oxygen for all three segments of TMC. ADEM

# Three Mile Creek Watershed Management Plan

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performed modeling in conjunction with field monitoring to develop the TMDL for nitrogenous biochemical oxygen demand (NBOD) and carbonaceous biochemical oxygen demand (CBOD) for both point and non-point pollution sources. The TMDL establishes required NBOD and CBOD load reductions to improve water quality and specifically dissolved oxygen throughout the creek.

In 2009, Final TMDLs were developed by ADEM for pathogens for TSB and CEN. TMDLs are expected from ADEM this year for pathogens for TMC, and nutrients for both TSB and CEN. The state surface water quality standards to be used for nutrients are unknown at this time. Once these TMDLs are completed the required load reductions for all primary pollutants of concern in the TMC basin will be specified.

The primary pollutants of concern in TMC include: NBOD/CBOD (dissolved oxygen); nutrients; and pathogens. It is important to note that trash and organic debris which are prevalent throughout the TMC watershed typically contain NBOD/BOD, nutrients, and pathogens. Keeping trash and organic debris out of TMC will be one of the primary objectives of the Management Plan. There is a secondary concern related to industrial and wastewater compounds especially in TSB, the CEN and the lower portion of the creek. The USGS study identified many different types of wastewater compounds throughout the creek which could adversely impact aquatic life, wildlife, and the recreational opportunities.

## Groundwater concerns associated with the Hickory Street Landfill and Mobile Coal Gasification Plant

The Hickory Street Landfill Site and the Mobile Gas Site are both potential sources of pollutants to the surface water system. Minimal assessment of these sites has been completed to date. The primary concern is potential groundwater contamination. An assessment of groundwater flow and chemical characteristics is needed to determine if these sites are an important pollutant source in the watershed.

## Objectives and plans included in the Comprehensive Conservation and Management Plan (CCMP) developed by the Mobile Bay National Estuary Program (MBNEP) and approved in 2002

This DRAFT Comprehensive Conservation Management Plan (CCMP) 2013-2018 provides a first look at the many actions identified to protect our coastal way of life. Based on a science and extensive community input, this plan offers a well-rounded approach for coastal restoration and long-term environmental management. The plan is structured around six things the community values most about living on the coast: ACCESS, COASTLINES, FISH, HERITAGE, RESILIENCE, and WATER QUALITY. The actions within have been crafted to improve how we measure ecosystem health, restore the systems that support

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its health, build community capacity to better manage our natural and cultural assets, and expand community ownership of our cherished coastal resources.

### Project Implementation Drivers

The second component of the regulatory framework relates to the permits required to construct potential stormwater BMPs or ecological restoration projects proposed in the WMP. It will be very important with each and every restoration project to meet with local, state and federal permitting entities early in the planning process to identify all required permits and project permit application requirements.

### Local Development Permits

As previously mentioned, a local Land Disturbing Permit would need to be obtained from the City of Mobile for the construction of any project which disturbs soil. To receive this permit, construction documents which include erosion and sediment controls and a stormwater report will need to be submitted and approved by the City. Depending on the type of project and the scope of work other site or building permits may be required from the City. Some types of construction work that can trigger additional permit requirements include: street or utility modifications; sidewalks; and structures. This could involve submitting construction documents to additional City departments for review and approval.

### State and Federal Permits

If project construction requires the disturbance of state/federal jurisdictional surface waters or wetlands, such as a stream restoration project, a permit will likely be required from both ADEM and the USACE. There are exceptions for very small projects and certain types of maintenance work. For smaller projects which impact only a small jurisdictional area, only a USACE Nationwide Permit will likely be required. There are 50 types of activities covered by Nationwide Permits and all specified general conditions must be met. Nationwide Permits can typically be issued within a period of months. A single project can require one or more Nationwide Permits depending on the work activities.

For projects which do not meet the requirements for a Nationwide Permit, a Section 404 Individual Permit may be required from ADEM/USACE. This joint permit application and approval process is much more comprehensive and time consuming. When a 404 permit application is submitted it will be reviewed by a wide range of agencies and must meet a public interest test. It must also be publically noticed which can open the door for permit challenges. Obtaining an Individual Permit can take a year or

# Three Mile Creek Watershed Management Plan

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longer. Fortunately, for most stormwater BMP retrofits and stream restoration projects, only Nationwide Permits are required.

ADEM's Division 8 Coastal Program rules require that a permit be obtained for all new commercial and residential developments located wholly or partially within the coastal area which are or will be greater than five (5) acres in size and which have areas which are or could be delineated as wetlands; or are adjacent to coastal waters; or are intercepted by the coastal control line. Although not typical there may be certain types of restoration projects in the coastal area that may require an ADEM Coastal Program permit. Projects which include potential impacts to surface waters or the dredging and/or filling of wetlands may also require permits in some instances from the State Oil and Gas Board, and/or the ALDCNR-State Lands Division.

To comply with the NPDES Construction General Permit, all projects which disturb a land area of 1 acre or more will require submittal of a Construction Notice of Intent. This is typically submitted by the selected Contractor since they are responsible for erosion and sediment controls during construction. Once construction is completed the Contractor must submit a Notice of Termination.

The USACE designed and constructed the TMC widening project. Even if a specific permit is not required from USACE, which is unlikely, any proposed changes to the channel or weirs will need to be carefully coordinated with USACE. With any project of this type, care will be needed to maintain the current integrity and effectiveness of the creek for flood protection. Ideally USACE can be engaged as a partner throughout the restoration of the TMC watershed.

# Three Mile Creek Watershed Management Plan

## Appendix H – Long Range BMP, Climate Adaptation and Sustainability Project Solutions

During the development of priority projects in the One Mile Creek subwatershed opportunities were identified to improve the Historic Streamway, but were not feasible for early roll-out. Past experience with permitting agencies has shown the need to improve water quality upstream prior to re-connecting the Historic Streamway with Three Mile Creek. A step towards addressing this is to address the needs of UTTM (CEN). It was determined that the UTTM (CEN) subwatershed was identified as having much the same needs as One Mile Creek subwatershed which are listed below. In addition future connections to the proposed park facilities to the east are feasible building upon the Phase 1 improvements which will further enhance access to the proposed improvements to the Historic Streamway (See Figure H-1 and H-2). Therefore, these measures are listed below for consideration for the next phase of project implementation. The Phase II BMPs and planning level costs is given in Table H-1. **The total estimated planning level cost range for Phase II is \$2,452,000 – \$5,502,000.**

Table H-1 Summary of priority BMPs and Planning Level Costs for Phase II Watershed Restoration

Watershed Issue to be Addressed	Priority Projects	Summary Description	Cost
Stormwater	Reduce the amount of trash in and entering the creek and tributaries with a focus on Unnamed Tributary to Three Mile Creek (UTTM (CEN))	<ol style="list-style-type: none"><li>1. Identify the outfalls that contribute the most trash (8NS, 10NS, 14NS)</li><li>2. Install GPRS in strategic locations (1S, 2S)</li><li>3. Citizen involvement and education campaign (7NS, 11NS, 12NS)</li></ol>	\$960,000 to \$1.41M
Stormwater, Ecology	Remove sediment to increase storage capacity and conveyance of stormwater runoff while improving ecological conditions in Unnamed Tributary to Three Mile Creek (UTTM (CEN)) and Historic Streamway	<ol style="list-style-type: none"><li>1. Identify locations of excessive sediment (3NS, 11NS, 12 NS)</li><li>2. Remove sediment at strategic locations (4S, 5S, 12S)</li></ol>	\$1.082M to \$3.42M



Watershed Issue to be Addressed	Priority Projects	Summary Description	Cost
Ecology	Reduce the occurrence of nuisance and/or exotic species with a focus on Three Mile Creek (UTTM (CEN))	<ol style="list-style-type: none"> <li>1. Map SAV in watershed and Improve management of exotic/nuisance vegetation in wetland and upland riparian areas adjacent to creek and tributaries (6NS)</li> <li>2. Develop plan for long term management of exotic/nuisance vegetation. (6NS)</li> <li>3. Utilize previously purchased utility/trash boat/weed harvester (6NS)</li> <li>4. Remove channel plug and restore historic creek stream channel (14S)</li> <li>5. (* If purchase of utility/trash boat/weed harvester is required then add \$800,000 to this Project (15NS, 16NS)</li> </ol>	\$154,000 to \$285,000
Access	Create a fitness circuit on Historic Streamway	Connect greenway from existing bridge at Martin Luther King Jr. Ave. along Historic Streamway connecting to One Mile Creek and future Hickory Street Landfill Park (1BW, 1GW)	\$255,000 to \$382,000
Climate Adaptation	Tidal Marsh Restoration/Stream Stabilization	Restore/enhance wetland areas adjacent to historic channel/create living shorelines. (2CA, 4CA, 5CA)	TBD

*Note: Cost range does not include the cost of obtaining land or easements if required; surveying and engineering costs; and annual costs associated with operation and maintenance of the completed structural improvements. A 15-20% annual maintenance fee should be added for all structural measures to provide for on-going maintenance.*

# Three Mile Creek Watershed Management Plan

Figure H-1 Phase 2 Blueway and Greenway Trail alignment anchored by the existing facilities at Tricentennial Park and potential future connections to the planned Hickory Street Landfill park.

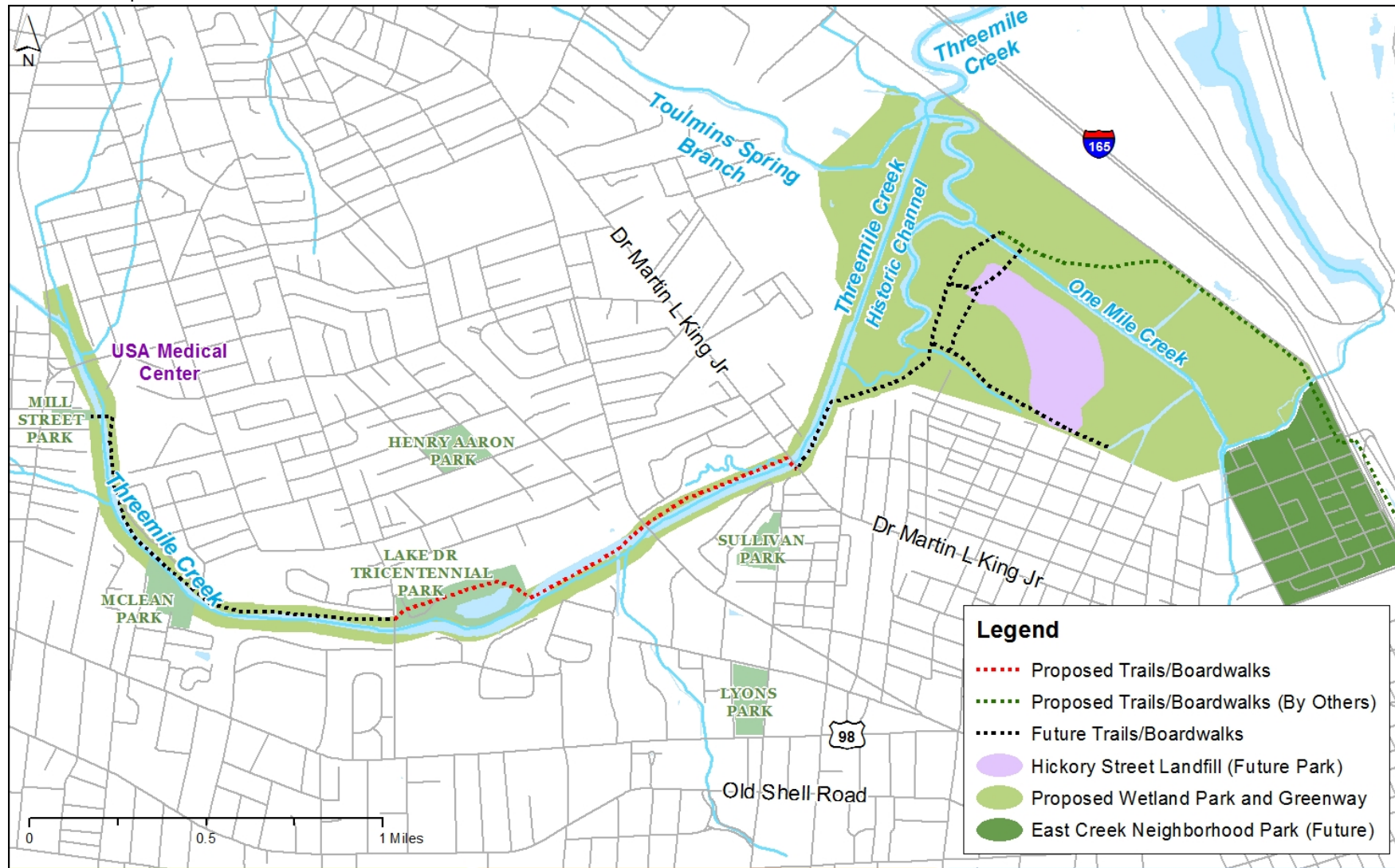
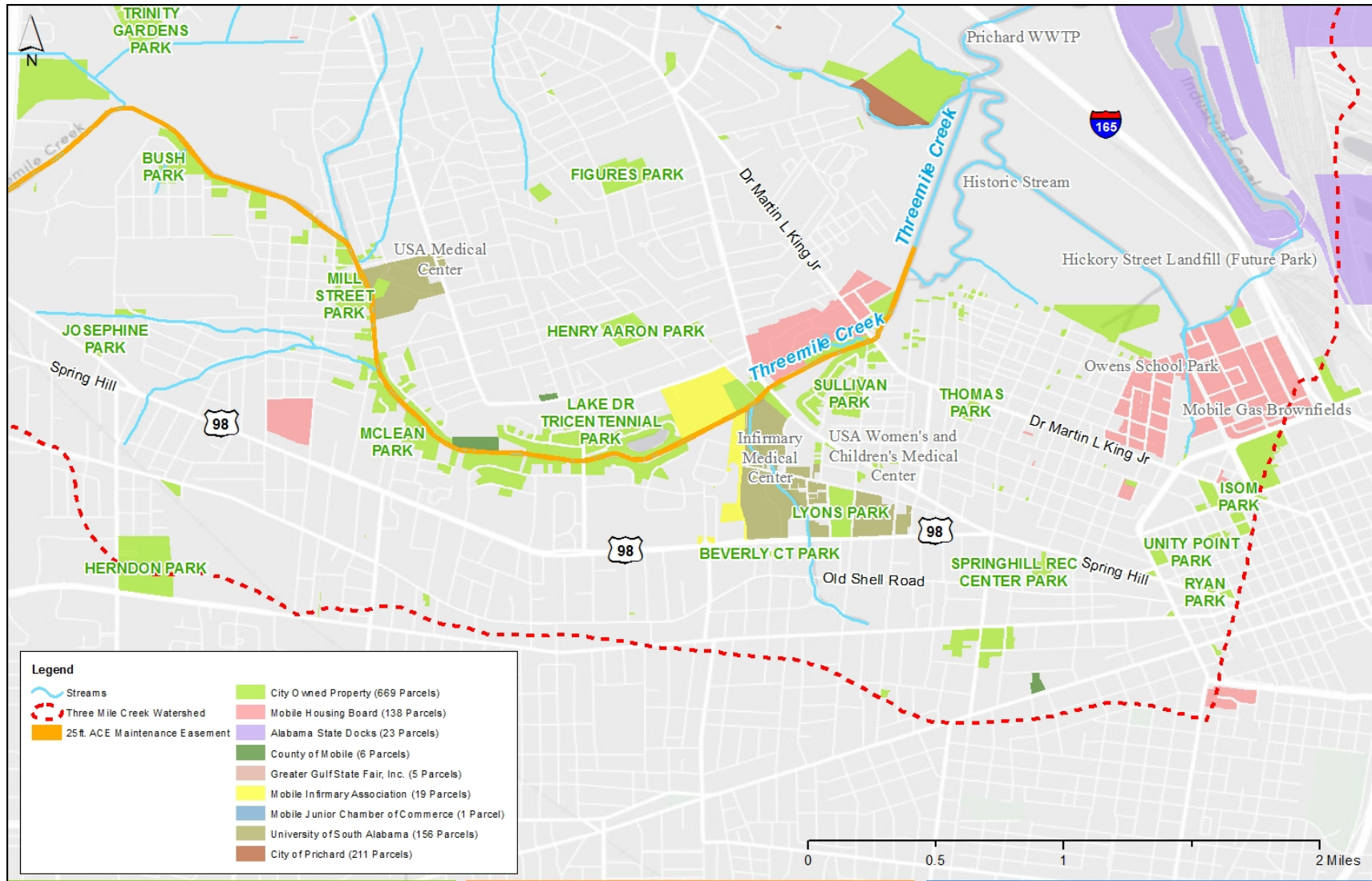


Figure H-2 Public and Non-Profit Owned Property



# Three Mile Creek Watershed Management Plan

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## Future Phases of Watershed Restoration

The watershed segment priorities (see Section 6.4) and associated BMP recommendations provide a road map for the watershed restoration implementation strategy in Three Mile Creek. If possible, it would be preferable to implement all the recommended improvements in a few years and then set about monitoring and measuring watershed response as a whole. However, the typical timeline for funding availability can be slow and unpredictable, and opportunities can arise to implement improvements in areas that do not match the prescribed and prioritized sequence. Therefore, the 10-year timeframe and priority sequence of this WMP are set forth as a management strategy that recognizes the unique conditions and needs of the Three Mile Creek watershed and provides a flexible list of improvements aimed at achieving better water quality. MBNEP should seek to implement all recommended non-structural and structural BMPs as funding is available using the watershed segments to prioritize the use of funds when discretion is allowed.

We recommend continuation of non-structural BMP practices such as ongoing education and outreach program, routine collection of trash and organic debris, as well as street cleaning throughout the implementation of the WMP. The objective of these BMPs is to remove pollutants at their source before they enter the surface water system. It is recommended that local officials should increase enforcement of existing regulations such as the NPDES Construction General Permit and littering violations. MBNEP should closely coordinate with the City of Mobile to encourage enhanced enforcement. Most importantly, monitoring and evaluation stages should be included in each implemented BMP so that BMP effectiveness and efficiency can be tracked and guide future implementation decisions. This adaptive management will not only ensure the most effective application of funds, but also their application in the area of greatest need in the watershed. The following tables provide a summary of management measures as they apply to each of the five identified challenges to Three Mile Creek.

## Stormwater

Measure Identification Number	BMP Activity Description	Location	Measure Objectives
3NS, 4S, 5S, 12S	Remove Sediments	USA wet ponds, Langan Park and as needed in the Creek and tributaries	Map of current creek and tributary bathymetry and determine physical and chemical characteristics identified in Data Gaps; assess normal water depths; select locations for sediment removal
4NS, 3S	Disconnect impervious areas/ install Green Infrastructure projects	Public R/W and private lots	Retrofit public areas and partner with private landowners (subwatershed areas of 20 acres or less)
5NS	Revegetate or stabilize bare soil areas to reduce erosion	Public R/W and private lots	Retrofit public areas and partner with private landowners to revegetate of disturbed eroding areas in upland areas
7NS, 11NS	Education and outreach program;	Entire watershed	Partner with schools, churches and community groups to promote issues on water quality improvement; Install road signage and placards (Anti-littering – Drains to Three Mile Creek).
8NS, 1S, 6S, 7S	Improve trash management	Entire watershed	Initiate water borne collection of trash/organic debris; Initiate intensive street cleaning; Install Gross Pollutant Removal Structure (GPRS) on pipe and channel outfalls; Add trash capture at USA pond and Langan Park inflow points
9NS, 10NS	Improve code enforcement	Entire watershed	Develop program of field observation/inspection to identify and reduce litter and pollution sources; Increase frequency of field observation/inspection and enforce NPDES Construction General Permit Requirements (>1 acre disturbance).
14NS	Identify drainage area and pollutant loads from major storm sewer outfalls	Entire watershed	Complete Stormwater and wet weather creek surface water quality monitoring, identify drainage area and pollutant loads for each major storm sewer outfall identified in Data Gaps.
16S, 17S	Construct Energy Dissipaters	Twelve Mile Creek downstream of East Drive and downstream of University Blvd.	Repair erosion and construct an energy dissipater in 2 locations on Twelve Mile creek exhibiting severe scour conditions



# Three Mile Creek Watershed Management Plan

## Wastewater

Measure Identification Number	BMP Activity Description	Location	Measure Objectives
1NS	Identify and remove sanitary system and septic system leakage/overflows	Focus on TSB and CEN sub-basins and lower portion of watershed.	Field studies and inspection: Identify and remove sanitary system and septic system leakage/overflows into groundwater, creeks and tributaries.
2NS	Identify and remove illicit discharges to stormwater and surface water system	Focus on TSB and CEN sub-basins and lower portion of watershed.	Field studies and inspection: Identify and remove illicit discharges to stormwater and surface water system in watershed.

## Ecology

Measure Identification Number	BMP Activity Description	Location	Measure Objectives
6NS, 15NS, 16NS	manage the abundance of invasive species (exotic/nuisance vegetation)	Entire watershed.	Map SAV in watershed and Improve management of exotic/nuisance vegetation in wetland and upland riparian areas adjacent to creek and tributaries; develop plan for long term management. Purchase Conver w/ attachments and trailer and smaller utility boat. Maintain & operate Conver and associated equipment
13NS	manage the abundance of invasive species (invasive animal species)	Three Mile Creek downstream of Langan Park	Coordinate efforts with ACDNR on eradication efforts of the Island Apple Snails and eggs
4NS, 3S	Disconnect impervious areas/ install Green Infrastructure projects	Public R/W and private lots	Retrofit public areas and partner with private landowners (subwatershed areas of 20 acres or less)
5NS	Revegetate or stabilize bare soil areas to reduce erosion	Public R/W and private lots	Retrofit public areas and partner with private landowners to revegetate of disturbed eroding areas in upland areas

Measure Identification Number	BMP Activity Description	Location	Measure Objectives
8S, 9S, 10S 11S, 15S	Wetland, Stream and Riparian Buffer Enhancement	Entire watershed	Streambank and Riparian Buffer restoration upstream and within USACE segment; create depressional runoff storage within USACE segment; Restore/enhance wetland areas adjacent to historic channel/create living shorelines.
16S, 17S	Altered creek geomorphology	Twelve Mile Creek downstream of East Drive and downstream of University Blvd.	Repair erosion and construct an energy dissipater in 2 locations on Twelve Mile creek exhibiting severe scour conditions and grade control

## Access

Measure Identification Number	BMP Activity Description	Location	Measure Objectives
1GW, 1BW, 3S, 14S, 15S	Improve recreational access to the creek	Lower Watershed	Greenway - 1.7 miles (50% public or non-profit ownership, 50% private easements); Blueway – (3 accesses, 0 portage enhancements); Install green infrastructure retrofits on developed public areas (below Langan Park); Remove channel plug and restore historic creek stream channel; Restore/enhance wetland areas adjacent to historic channel/create living shorelines.
1GW, 1BW, 3S, 8S, 9S, 10S, 11S	Improve recreational access to the creek	Middle Watershed	Greenway – 4.2 miles (100% public or non-profit ownership, 0% private easements); Blueway – (2 accesses, 4 portage enhancements); Install green infrastructure retrofits on developed public areas (below Langan Park); Streambank and Riparian Buffer restoration upstream and within USACE segment; create depressional runoff storage within USACE segment; Restore/enhance wetland areas adjacent to historic channel/create living shorelines.

# Three Mile Creek Watershed Management Plan

Measure Identification Number	BMP Activity Description	Location	Measure Objectives
1GW, 1BW, 4S, 5S, 8S, 9S, 10S, 11S	Improve recreational access to the creek	Upper Watershed	Greenway – 6.8 miles (62% public or non-profit ownership, 48% private easements); Blueway – (1 accesses, 1 portage enhancements); Remove sediment and increase normal water depth/volume at USA wet ponds; Remove sediment and increase normal water depth/volume at Langan Park ponds (assumes 3 ft sediment depth); Streambank and Riparian Buffer restoration upstream and within USACE segment; create depressional runoff storage within USACE segment; Restore/enhance wetland areas adjacent to historic channel/create living shorelines.

## Climate Adaptation

Measure Identification Number	BMP Activity Description	Location	Measure Objectives
1CA, 2CA, 3CA, 4CA, 5CA, 6CA, 7CA	Sea Level Rise	Lower Watershed and Middle Watershed downstream of USACE Weirs	Monitoring Plan; Tidal Marsh Restoration; Beneficial use of dredged material; Vegetative planting and marsh nourishment; Land Acquisition; Rolling Easements; Freshwater introduction
8CA, 9CA, 10CA, 11CA	Increased Incidents of Storm Events	Lower Watershed and Middle Watershed downstream of USACE Weirs	Raise Road Levels; Elevate Residential Structures; Flood Proof Non- Residential Structures; Backwater Control Valves; Levees and Floodwalls



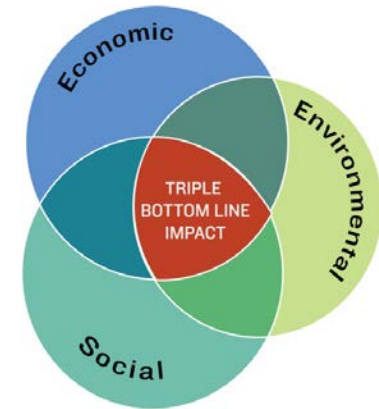
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## BMP Descriptions

During the development of the management measures and the priority projects discussed in Section 6 the Dewberry team followed an Integrated Watershed Approach to pollutant load reduction and restoration in Three Mile Creek. This included:

- Holistic evaluation considering all pollutant sources and loads
- Evaluate life cycle cost per mass pollutant removed
- Triple bottom line analysis – environmental, economic, social

The recommended water quality improvement best management practices include both non-structural and structural practices. In addition long-range sustainability project solutions were discussed to address sea level rise and tidal surge. The following provides a more detailed description of the recommended BMPs from the WMP.



### Non-structural

Signs are a smaller-scale project effort which provide great opportunities for sponsorship by local industries/businesses and advertisement of sponsorship to defray costs to the MBNEP. The information below provides additional ideas that could be explored for implementation as part of the objective raise public awareness of environmental education in the TMC watershed.

Additional types of educational signs for future consideration:

- “Don’t Dump – Drains to Three Mile Creek”: these signs connect potential litter sources on the connection to Three Mile Creek, its tributaries and Mobile Bay. These signs could be placed on bridges and storm drain inlets throughout the watershed to warn against dumping of detergents, oil or other harmful chemicals.
- Environmental educational signs: signs documenting the connections of the watershed to weather, stormwater management, and ecological restoration. These signs can be placed along the greenways and blueways encouraging users to become more knowledgeable about the benefits of Three Mile Creek and learn about the biological richness of the creek with people.
- Historical signage: signs documenting specific moments in local history, historical landmarks and the role Three Mile Creek played (i.e. Civil war battles, baptisms, recreation).

# Three Mile Creek Watershed Management Plan

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- Positive ownership signs: signs positively connecting residents with the Three Mile Creek watershed (i.e. “Keep Our Creek Clean” or “Creating a Clean Water Future”) instead of a negative connotation such as “Don’t Litter”.
- Maps: signs at launching and park entry points with maps to identify destinations and key markers along the trail.

## Structural

The evaluation of potential structural non-point source practices included:

- End-of-pipe treatment for gross solids, sediment
- Traditional treatment practices such as ponds, basins, etc.
- Chemical and wetland treatment
- Green Stormwater Infrastructure practices to reduce runoff volume and promote infiltration and reuse

The recommended structural Best Management Practices for Three Mile Creek include all of the above types of BMPs. The following figures provide examples of each.



**LOCATION:**

WILMINGTON, NC

**SOURCE:**

Dewberry design – JEL Wade Wetland

## Stormwater Wetlands

85% Total Suspended Solids

40% Total Nitrogen

40% Total Phosphorus

Constructed Stormwater wetlands, constructed ecological systems which treat runoff pollutants through physical, chemical, and biological processes, are well suited for coastal areas with high groundwater and available space. Salt tolerant plants may be required depending on proximity to brackish water and tidal fluctuation. Wetlands typically require more space than other SCMs, require critical water balances to properly function and need a rigorous maintenance program. The frequent wetting and drying of the shallow slopes typically surrounding wetlands also create UV exposure conditions required for effective removal of fecal coliform.



**LOCATION:**

Wilmington, NC

## Wet Detention Basins

85% Total Suspended Solids

25% Total Nitrogen

40% Total Phosphorus

Favored by many developers for their small footprint compared to the treatment volume provided, Wet Detention Basins function well in coastal environments with high groundwater and can be used for the dual purpose of flood storage and water quality improvement. These basins are space efficient since they can stack quality and quantity volumes with minimal depth constraints. Including a perimeter wetland shelf in the design incorporates some of the beneficial aspects of wetlands, increases aesthetics and may reduce the need for fencing in public areas. It is noted that ponds that are poorly designed or maintained or placed within contact with brackish water can contribute to Harmful Algae Blooms (HAB).

# Three Mile Creek Watershed Management Plan

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**LOCATION:**

CARY, NC

**SOURCE:**

Dewberry design – Hendrix Auto Sales

## Sand Filter Vaults

85% Total Suspended Solids

35% Total Nitrogen

45% Total Phosphorus

Sand Filters are surface or subsurface devices that percolate stormwater down through a sand media to provide treatment. These devices are highly effective at removing TSS, BOD, fecal coliform and Phosphorus if maintained properly, but provide limited functionality for peak flow reduction. Sand Filters can be installed in densely developed urban areas with limited space. Sealed vault systems can be installed in fill and as such are not limited by in-situ groundwater conditions. However, buoyancy should be checked in these conditions



**LOCATION:**

Virginia Beach, VA

## Vegetated Buffers

60% Total Suspended Solids

30% Total Nitrogen

35% Total Phosphorus

Vegetated buffers, such as restored riparian buffers, are low-maintenance ecosystems adjacent to surface water bodies, where trees, grasses, shrubs, and herbaceous plants function as a filter to remove pollutants from overland stormwater and shallow groundwater flow. Coastal variations include marsh and sound-side shoreline restoration. Vegetated buffers can also reduce the impact of boat wake and storm wave-action erosion. The beneficial effects for stormwater quality improvement increase with contact flow length which typically ranges from 10 to 100 feet.



**LOCATION:**

Norfolk, VA

**SOURCE:**

Living Shorelines, Center For Coastal Resources Management,  
<<http://vwrrc.vt.edu/swc/NonProprietaryBMPs.html>>.

## Living Shorelines

Living Shorelines provide shoreline stabilization with an ecological approach to creating gradual shoreline slopes with sand buffers and native vegetation. Living Shorelines address erosion in lower energy situations by providing long-term protection, restoration or enhancement of vegetated shoreline habitats through strategic placement of plants, stone, sand fill and other structural or organic materials to intercept runoff sheet flow. However, they should include structures, such as dikes or groins, which sever the natural connection between the uplands and aquatic areas. Successful living shoreline implementation can be found at the Hermitage Museum & Gardens in Norfolk, VA. Research is on-going regarding nutrient removal efficiency for this SCM, however preliminary results indicate these systems are similar to wetlands in nutrient removal. (Research from Center for Coastal Resources Management from William & Mary University)<sup>7</sup>.



**LOCATION:**

Chapel Hill, NC

**SOURCE:**

Dewberry design – UNC Botanical Gardens

## Bioretention Areas

85% Total Suspended Solids

35% Total Nitrogen

45% Total Phosphorus

Bioretention, or bio-infiltration, areas provide high nutrient removal and infiltration capacity, especially when an Internal Water Storage (IWS) Zones are included. However, high water tables present substantial challenges when implementing bioretention retrofits within coastal environments. In order to function as designed, bioretention areas require at least two feet of separation from the Seasonal High Water Table (SHWT). In poorly drained soils the use of underdrains may also be required. With a typical media depth of 3 feet, the overall depth to SHWT should exceed five feet in order to consider using a bioretention area. In certain limited conditions the use of liners and perimeter underdrains can offset high groundwater conditions, but costs may be prohibitive.



# Three Mile Creek Watershed Management Plan

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**LOCATION:**  
Wilmington, NC

## Dry Detention Areas

50% Total Suspended Solids  
10% Total Nitrogen  
10% Total Phosphorus

Dry Detention Basins can provide major flood reduction benefits. These basins typically act as a surge pool attenuating stormwater discharges to meet a pre-development flow condition. However, these facilities provide limited nutrient removal benefits due to their flow through design and are not practical for use in areas with high groundwater.



**LOCATION:**  
Alexandria, VA

## Open Sand Filters

85% Total Suspended Solids  
30% Total Nitrogen  
35% Total Phosphorus

Open sand filters are surface devices that percolate stormwater down through a sand media and promote infiltration into the surrounding soil or collect and discharge the treated water through underdrains. These devices are highly effective at removing TSS, BOD, fecal coliform and phosphorus, but provide limited functionality for peak flow reduction. Open systems require undisturbed soil conditions and a one foot separation from the SHWT. In poorly drained soils the use of underdrains below the three media depth may also be required. Therefore, in many cases the depth to SHWT must exceed five feet in order to consider using an open sand filter. In certain limited conditions the use of liners and perimeter underdrains can offset high groundwater conditions, but costs may be prohibitive.



**SOURCE:**  
Suntree Technologies, Inc.  
[suntreetech.com](http://suntreetech.com)

## Second Generation Baffle Box (Gross Pollutant Removal Device)

Varies Total Suspended Solids  
Varies Total Nitrogen  
Varies Total Phosphorus

The 2nd generation baffle box removes sediment, foliage and litter with minimal head loss. It is considered 2nd generation because of the elaborate mechanical and hydraulic methods used to achieve separation of nutrients from stormwater. Early versions without separation left the organic debris in contact with the stormwater which leads to bacterial build-up



**SOURCE:**  
Brown and Caldwell design for CalTrans

## Drum Screen (Gross Pollutant Removal Device)

Varies Total Suspended Solids  
Varies Total Nitrogen  
Varies Total Phosphorus

The drum screen removes foliage and litter with minimal head loss and achieves separation of nutrients from stormwater. The stormwater discharges from a pipe into the interior of the drum. The stormwater then passes through the perforated metal drum (screen), whilst the solids larger than the slot of the screen are retained inside. The retained screenings are captured inside and left to air dry until removed during maintenance.

# Three Mile Creek Watershed Management Plan

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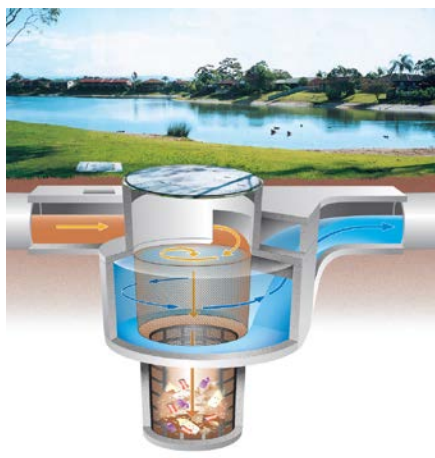
**SOURCE:**

Storm Water Systems, Inc.;  
[sales@stormwatersystems.com](mailto:sales@stormwatersystems.com)

## Trash Net (Gross Pollutant Removal Device)

Varies Total Suspended Solids  
Varies Total Nitrogen  
Varies Total Phosphorus

Trash nets are designed to float in waterways in order to capture litter before it flows further downstream by using the current to guide debris into the trap. This floatable control technology continuously operates without mechanical assistance to capture floating litter. It is considered 1st generation because the litter is left in contact with the stormwater until maintenance occurs. For organic debris this wet environment can lead to bacterial build-up.



**SOURCE:**

CDS  
[ContechES.com](http://ContechES.com)

## Pre-cast Vortex/Gravity Driven Devices

Varies Total Suspended Solids  
Varies Total Nitrogen  
Varies Total Phosphorus

Vortex/gravity driven devices are typically installed in line as part of the stormwater collection system. From the surface they often appear to be simply another manhole. These proprietary devices work through creating a vortex within vertical chamber to separate pollutants (sediments and floatable debris). However, similar to many other proprietary devices, limited unit capacity and high design, installation and maintenance cost are typically with these systems. Some manufacturers can use specially designed unit modifications to allow these units to work in high groundwater conditions, but pollutant removal efficiencies may also be reduced.





**LOCATION:**

Gwinette Co., GA.

**SOURCE:**

BROWN AND CALDWELL DESIGN -  
PRIVATE GOLF COURSE

## Depression Storage and Infiltration.

85% Total Suspended Solids  
30% Total Nitrogen  
35% Total Phosphorus

Depression storage is typically applied in the overbank area of a stream restoration. Similar to open sand filters these devices that percolate stormwater down through a sand media and promote infiltration into the surrounding soil or collect and discharge the treated stormwater through underdrains. These systems must be designed with accurate knowledge of the SHWT to prevent ponding.



**LOCATION:**

Wake Forest, NC

**SOURCE:**

Dewberry Design –NC Ecosystem  
Enhancement Program – Horse Creek

## Stream Restoration

Stream restoration is intended to stabilize natural stream segments and re-establish lost habitat and the benthic health of the stream. Most often stream restoration is needed to offset the impacts by urbanization. Changes in impervious cover and the addition of stormwater collection systems often change the timing, temperature and volume of stormwater delivery to a stream. This can lead to increased shear stresses on the banks, increased volumes, increased stream temperature and excessive velocities in the stream which lead to erosion, bank failure and loss of habitat. Failed streams are typified by excessive bank erosion, down cutting of the streambed, and an imbalance of the sediment transport capacity. A variety of techniques are used to stabilize the stream and balance the sediment transport in the system. Hydraulic models are typically used to simulate stream flow and response in different series of structures that simulate natural conditions such as cross vanes, step pools and riffle-run sequences to achieve equilibrium. Vegetation is also an important component of stream restoration. It is used to stabilize banks and structures as well as attenuate and filter runoff through vegetated buffers. Stream restorations are most successful when built in combination with vegetated buffers to re-establish the habitat of the natural stream.

# Three Mile Creek Watershed Management Plan

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**LOCATION:**  
SEATTLE, WA

## Curb Diversion (Green Infrastructure)

Varies Total Suspended Solids  
Varies Total Nitrogen  
Varies Total Phosphorus

Green infrastructure projects include a variety of structural stormwater management practices designed to reduce peak stormwater runoff, increase infiltration and improve water quality. These projects are normally small and distributed throughout the upper portions of the watershed where they can capture runoff from small catchment areas. Projects like this curb diversion are typically implemented as retrofits in older urban areas that were constructed prior to NPDES or local stormwater regulations.



**LOCATION:**  
Raleigh, NC

**SOURCE:**  
Dewberry Design – Wake County School Board - Poe Elementary Parking

## Infiltration Swales (Green Infrastructure)

85% Total Suspended Solids  
30% Total Nitrogen  
35% Total Phosphorus

Treatment swales are shallow open-channel drainage-ways stabilized with grass, herbaceous vegetation or special media designed to infiltrate runoff and filter pollutants. Because they are designed to retain water for less than 24 hours after a storm event, treatment swales can be incorporated within a development to provide an aesthetically pleasing conveyance system that is part of the maintained landscape. Treatment swales situated within soils high in silt and clays may require underdrains. Treatment swales can be placed within areas of high groundwater, as long as a minimum separation (~2 ft) is maintained. Treatment swales are typically installed flat to maximize treatment volume per linear foot, but can also be installed in moderately steep terrain with the use of check dams.



**LOCATION:**  
Norfolk, VA

## Permeable Pavement (Green Infrastructure)

85% Total Suspended Solids  
35% Total Nitrogen  
45% Total Phosphorus

Permeable pavements are alternative paving surfaces that allow stormwater runoff to filter through voids in the pavement surface into an underlying stone reservoir, where it is temporarily stored and/or infiltrated. A variety of permeable pavement surfaces are available, including pervious concrete, porous asphalt and permeable interlocking concrete pavers, as shown in the graphic. While the specific design may vary, all permeable pavements have a similar structure, consisting of a surface pavement layer, an underlying stone aggregate reservoir layer and a filter layer or fabric installed on the bottom. These facilities can replace traditional paved parking lots and provide some or all of the necessary infiltration capacity to control runoff. As such, they are commonly installed in dense urban areas where land costs offset the high installation costs. The sandy soils of most coastal communities can be ideal as a paving substrate and for providing the required infiltration capacity; however underdrain or soils replacements can also be required where silt or clay soils are present. High maintenance requirements, such as regular vacuum cleaning of the surface, are essential, especially in high wind prone areas, to maintain the infiltration capacity of these systems.

# Three Mile Creek Watershed Management Plan

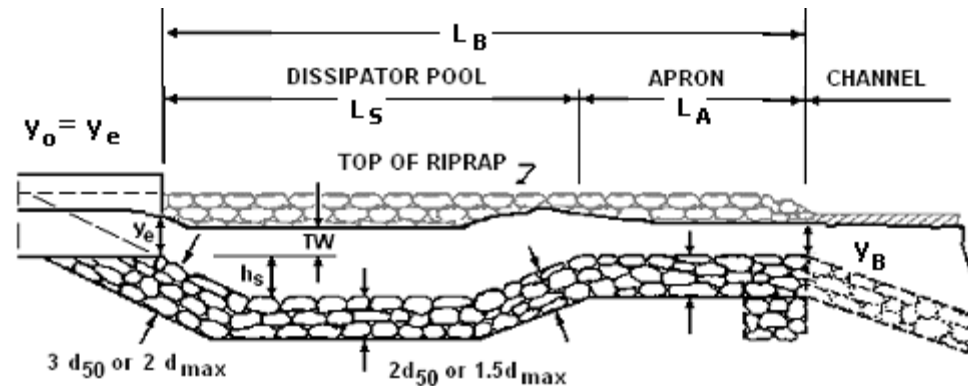


## SOURCE:

U.S. Department of Transportation,  
Federal Highway Administration,  
Hydraulic Engineering Circular No.  
14, Third Edition Hydraulic Design of  
Energy Dissipaters for Culverts and  
Channels, Publication No. FHWA-  
NHI-06-086, July 2006

## Energy Dissipater

Energy dissipaters are typically used in channels at outfalls or at grade changes where stream velocities increase causing shear stresses on the channel banks and bed. These can take the form of riprap or concrete lined channel segments where controlled drops and induced hydraulic jumps are used to force turbulent flow and reduce velocities and energy in the stream before flowing back into a natural channel. BMP Pollutant Removal Efficiency Source: North Carolina Department of Environmental and Natural Resources (NCDENR). (2010). Updated Draft Manual of Stormwater Best Management Practices. Raleigh, North Carolina: Department of Water Quality.



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## Long-Range Sustainability Project Solutions

Additional types of sea level rise adaptation strategies for future consideration:

### **1. Strategy: Tidal Marsh Restoration as a Sea Level Rise Adaptation**

The Bay Institute determined that restoring San Francisco Bay's tidal marshes is one of the best and most inexpensive ways to protect valuable shoreline development from sea level rise during the next several decades. A report by ESA PWA concluded that by using tidal marshes in combination with earthen levees construction and maintenance costs can be reduced by almost 50% (Lowe, Jeremy). This innovative approach is based on a new marsh restoration paradigm that is appropriate in many parts of the Bay and that can provide an interim solution to the problem of tidal marsh inundation and low sediment supply. The new paradigm recommends the addition of an upland ecotone slope of moist grasslands and brackish marshes landward of the existing tidal marsh. The upland ecotone slope would provide both elevation and salinity gradients that would allow the tidal marsh to both move landward and accelerate vertical accretion in order to keep pace with sea level rise. In addition, the new marsh restoration paradigm proposes the use of sediment dredged from nearby flood control channels as construction and maintenance material for the upland ecotone substrate. Reclaimed wastewater effluent from existing public water treatment plants along the shore could be used to irrigate the upland ecotone slope.



# Three Mile Creek Watershed Management Plan

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Conceptual cross-section of a “horizontal levee”, with an upland ecotone slope bayward of a flood risk management levee and landward of a tidal marsh.



By constructing an ecotone slope adjacent to the landward levee, silt from nearby flood control channels could be captured and applied to restoring marshes to build surface elevation. Further, the ecotone slope would function as a self-maintaining levee, building in elevation as root systems grow. Another significant feature of the brackish marsh would be the ability to receive treated wastewater effluent from existing water treatment plants that ring the shoreline. Those plants currently spend considerable sums to pipe, pump and discharge wastewater at distant locations in the bay. Similar brackish, back-marsh networks existed historically throughout the Bay, but were destroyed to make way for development.

**2. Strategy: Acquire property subject to coastal flood inundation and maintain the property as open space in perpetuity.**

States and other government entities can play a critical role in acquiring property that is vulnerable to flooding and adaptively reusing such properties to advance additional complementary goals. By acquiring properties subject to inundation and maintaining them as open space in perpetuity, these floodprone properties can both be removed from the

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real estate market and add open space for conservation, recreation, or other public purposes. The acquisition of floodprone properties can also further environmental benefits including allowing for marshland migration and reducing non-point source pollution. The City of Mobile has extensive experience with the acquisition of floodprone properties following Hurricane Francis. It is important to note that the property in question may include developed and undeveloped lands.

The ability to map areas under consideration and calculate the costs to acquire the land can be undertaken using available City GIS data coupled with FEMA floodplain boundaries, and other relevant County property assessment data needed to perform the benefit-cost analysis. This strategy must take into account the challenges of identifying willing sellers of their property, determining the cost-effectiveness of properties, acquiring contiguous properties (and avoiding the “checkerboard” effect whereby only some houses in a neighborhood are acquired, which requires the provision of services to remaining households), and the tracking of those bought out to ensure that the funds are used by former property owners to acquire housing outside of areas subject to SLR and coastal flooding. This strategy should draw on the flood hazard data that is readily available as well as lessons learned from the large-scale buyout of floodprone properties that has occurred in the in the mid 1980’s.

Areas considered under this strategy should include environmentally sensitive areas; areas prone to flooding, SLR, and coastal erosion; past lands acquired (including differing funding source attributes); and lands prioritized for future purchase by differing groups. A number of pre- and post-disaster hazard-mitigation grant programs provide funding to engage in this effort. Examples include the Hazard Mitigation Grant Program (HMGP, Hazard Mitigation Assistance, Flood Mitigation Assistance, and Severe Repetitive Loss (SRL) Program. In addition, the Department of Housing and Urban Development’s Community Development Block Grant Disaster Recovery funds are often used to acquire flood-prone properties after a federally declared disaster.

### **3. Strategy: Utilize rolling easements to allow for the migration of wetlands while maintaining public access to the shore.**

The dynamic nature of coastal ecology complicates coastal land use planning, as features like marshes migrate due to oceanographic, hydrological, and meteorological processes. In developed areas, governments and private landowners often attempt to hold back the sea by adding sand to beaches or building hardened structures like sea walls and

# Three Mile Creek Watershed Management Plan

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revetments. Another option to address the natural dynamism of coastal environments, including the migration of coastal wetlands, is to utilize rolling easements. The application of rolling easements has the additional benefit of helping to maintain public access along the State's shores, which also enhances important tourism and recreation-based economies. The EPA recently published a Rolling Easements Primer that outlines a range of approaches to rolling easements and the advantages and disadvantages of pursuing such a strategy (Titus, James G., 'Rolling Easements Primer').

Rolling easements depend on actual, immediate fluctuations in sea level rather than projections. As a result, this strategy sidesteps the inherent uncertainty and disagreements surrounding future levels. As indicated by the protracted debate over NC House Bill 819, much of the State-level opposition to SLR adaptation emanates from groups skeptical to prevailing climate science, which this strategy may help moderate. Developing a policy tied to actual changes may enhance the likelihood of gaining legal standing (e.g., relying on existing State coastal management rules) as well as political support. However, since structures seaward of this line would be removed at the owner's expense, under current State law, it may remain politically objectionable to some property owners. Several States have coastal management programs that employ varied forms of rolling easements. Florida's Coastal Construction Control Line (CCCL) Program provides protection for Florida's beaches and dunes while assuring reasonable use of private property by establishing an area in which more stringent siting and design criteria are applied for construction and related activities. The control line represents the landward limit of a 100-year coastal storm, which could change due to coastal erosion, changes in sea level, or intensification of coastal storms (The Homeowner's Guide to the Coastal Construction Control Line Program). The Texas Open Beaches Act, established in 1959 and amended in 1991, guarantees free public access to beaches on the Texas coast, extending from the mean low tide to the first line of stable vegetation. While litigation is pending to clarify the effects of the Act on beachfront property owners, the Act results in the public easement "rolling" with the vegetation line as long as its movement is gradual/natural and not caused by an event like a hurricane (Texas General Land Office Website). The EPA Climate Ready Estuaries Program encourages the use of rolling easements and may be used to provide broad policy guidance.

#### **4. Strategy: Allow wetland habitats to move based on changes in sea level rise.**

According to the North Carolina Department of Environment and Natural Resources, habitat corridors such as wetland marshes are essential components of the State's Wildlife Action Plan. In North Carolina, more than 70 percent of the species listed as endangered, threatened, or of special concern depend on wetlands for survival. Thus, a policy of allowing



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wetland habitats to move as coastal ecologies change as a result of SLR could have significant benefits to flora and fauna; advancing existing wildlife science and policy; and maintaining key nurseries that support important seafood, hunting, and recreational interests in the State.

While it is not hard to imagine this policy boosting coastal economies through tourism and ecosystem services, these benefits likely will prove difficult to quantify. The land acquisition processes required would be similar to Strategy 2 in combination with Strategy 3. At the Federal level, the Coastal Wetlands Conservation Grant Program; Coastal Wetlands Initiative, which identifies and disseminates tools to protect and restore wetland resources; and the Wetlands Reserve Program, which offers landowners the opportunity to protect, restore, and enhance wetlands on their property, could be used to allow wetland migration.

# Three Mile Creek Watershed Management Plan

## Appendix I –Composite List of Federal Funding Opportunities

Funding Opportunity	Contact Information	Description / Web Site
Clearinghouse for Federal Grant Opportunities (Grants.gov)	Grants.gov Contact Center Phone: 1-800-518-4726 24 hours/day, 7 days/week	Administered by the U.S. Department of Health and Human Services, Grants.gov is a central storehouse for information on over 1,000 grant programs and provides access to approximately \$500 billion in annual awards. This site also includes information about project funding that is available under the American Recovery and Reinvestment Act. <a href="http://www.grants.gov">www.grants.gov</a> , <a href="http://www.grants.gov/ForApplicants">www.grants.gov/ForApplicants</a> , <a href="http://www.grants.gov/GetStarted">www.grants.gov/GetStarted</a>
EPA Catalog of Federal Funding Sources for Watershed Protection	N/A	The Catalog of Federal Funding Sources for Watershed Protection Web site is a searchable database of financial assistance sources (grants, loans, and cost-sharing) available to fund a variety of watershed protection projects.  <a href="http://cfpub.epa.gov/fedfund">http://cfpub.epa.gov/fedfund</a>
EPA Clean Water and Drinking State Revolving Loan/Grants Funds (FY2010)	James Dailey ADEM P.O. Box 301463 Montgomery, AL 36130 1-463-334-271-7805 Email: <a href="mailto:jwd@adem.state.al.us">jwd@adem.state.al.us</a>	The Clean Water State Revolving Fund and the Drinking Water State Revolving Funds (SRF) are low-interest loan programs intended to finance public water and wastewater infrastructure improvements in Alabama. ADEM administers these funds for EPA, performs the required technical/environmental reviews of projects, and disburses funds to recipients. In 2010, project assistance loans totaled 43,450,775 in the CWSRF. In addition, \$7,411,000 was available to fund green infrastructure, water and energy efficiency, and other environmentally innovative projects. The states establish limits for project awards; there is no statutory limit.  <a href="http://www.adem.state.al.us/waterdivision/SRF/SRFMainInfo.html">www.adem.state.al.us/waterdivision/SRF/SRFMainInfo.html</a>  <a href="http://www.adem.state.al.us/programs/water/srf.cnt">www.adem.state.al.us/programs/water/srf.cnt</a>
EPA Community Action for Renewed Environment (CARE) Grants	Michelle Boyd Office of Policy & Management EPA Region 4 <a href="mailto:Boyd.michelle@epa.gov">Boyd.michelle@epa.gov</a> 404-562-8159 Davian Marraccini <a href="mailto:Marraccini.davina@epa.gov">Marraccini.davina@epa.gov</a> 404-562-8293	Community Action for a Renewed Environment (CARE) is a competitive grant program that offers an innovative way for a community to organize and take action to reduce toxic pollution in its local environment. Through CARE, a community creates a partnership that implements solutions to reduce releases of toxic pollutants and minimize people's exposure to them. By providing financial and technical assistance, EPA helps CARE communities get on the path to a renewed environment. <a href="http://www.epa.gov/care">www.epa.gov/care</a>

Funding Opportunity	Contact Information	Description / Web Site
EPA Five-Star Restoration Program Grants	Myra Price USEPA Wetlands Division Washington, DC Price.myra@epa.gov 205-566-1225	This program provides challenge grants, technical support and opportunities for information exchange to enable community-based projects that restore wetlands and streams. Grant awards typically range from \$5,000 to \$20,000. <a href="http://www.epa.gov/wetlands/restore/5star">www.epa.gov/wetlands/restore/5star</a> and <a href="http://www.epa.gov/water/funding.html">www.epa.gov/water/funding.html</a> (List of funding and financing resources)
EPA Gulf of Mexico (GOM) Program	Lael Butler USEPA Gulf of Mexico Program Office, EOA/GMPO Stennis Space Center, MS 39529 228-688-1576 butler.lael@epa.gov	The goals of the GOM Program are: (1) to assist states, Indian Tribes, interstate agencies, and other public or nonprofit organizations in developing, implementing, and demonstrating innovative approaches relating to the causes, effects, extent, prevention, reduction, and elimination of water pollution; and (2) to expand and strengthen cooperative efforts to restore and protect the health and productivity of the Gulf of Mexico in ways consistent with the economic well-being of the region. Focus is on the states of Alabama, Florida, Louisiana, Mississippi and Texas. <a href="http://www.epa.gov/gmpo">www.epa.gov/gmpo</a> and <a href="http://www.cfda.gov">www.cfda.gov</a>
EPA Non-Point Source Grant Program (Clean Water Act Section 319) <a href="http://adem.alabama.gov/inside/contact.cnt">http://adem.alabama.gov/inside/contact.cnt</a>	Federal and State Funds administered by states in EPA Region 4	Through its 319 program, EPA provides formula grants to the states and tribes to implement nonpoint source projects and programs in accordance with Section 319 of the Clean Water Act (CWA). Nonpoint source pollution reduction projects can be used to protect source water areas and the general quality of water resources in a watershed. Examples of previously funded projects include the design and implementation of BMP systems for stream, lake and estuary watersheds. Grant awards vary by State. For individual state contacts in Region 4, visit <a href="http://www.epa.gov/region4/water/nps/grants/index.html">www.epa.gov/region4/water/nps/grants/index.html</a>
EPA Region 4 Special Appropriations Grants (State and Tribal Assistance)	Natalie Ellington, Chief Infrastructure Section 404-562-9453 <a href="mailto:Ellington.natalie@epa.gov">Ellington.natalie@epa.gov</a>	Special appropriations grants fund special projects that are specifically identified in the State and Tribal Assistance Grant (STAG) account of the EPA appropriation. The recipient and amount of each grant are identified by Congress. These special projects implement the planning, design, and construction of a variety of water and wastewater infrastructure projects. Eligible costs may include planning, design, land acquisition, and construction to the extent that they are reasonable to the project objectives. Recipients prepare a plan that describes how the environmental or public health objectives will be achieved. Grant amounts vary by project. <a href="http://www.epa.gov/region4/water/gtas/specialsp appropriations.html">www.epa.gov/region4/water/gtas/specialsp appropriations.html</a>

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Funding Opportunity	Contact Information	Description / Web Site
EPA Targeted Watershed Grants (and Water Trading Funding)	Bob Rose, Office of Water, EPA Washington, DC Rose.bob@epa.gov 202-564-0322 Morgan Jackson EPA Region 4 Jackson.morgan@epa.gov	Established in 2003, the Targeted Watersheds Grant program is designed to encourage successful community-based approaches and management techniques to protect and restore the nation's watersheds. Grant awards typically range from \$300,000 to \$900,000. <a href="http://www.epa.gov/owow/watershed/initiative">www.epa.gov/owow/watershed/initiative</a>
FEMA Flood Mitigation Assistance Program	Lloyd Hake Public Assistance Branch Recovery Division 500 C Street, SW Washington, DC 20472 202-646-3428 Lloyd.hake@dhs.gov	The Flood Mitigation Assistance (FMA) program provides funding to states, federally-recognized Indian tribal governments, and communities so that cost-effective measures are taken to reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insured under the National Flood Insurance Program (NFIP). The long-term goal of FMA is to reduce or eliminate claims under the NFIP through mitigation activities. Three types of grants are available under FMA: Planning Grants to prepare Flood Mitigation Plans, Project Grants to implement measures to reduce flood losses, such as elevation, acquisition, or relocation of NFIP-insured structures, and Management Cost Grants for the State to help administer the FMA program and activities.  <a href="http://www.fema.gov/government/grant/government">www.fema.gov/government/grant/government</a> ; <a href="http://www.dhs.gov">www.dhs.gov</a>
Mitigation Grant Program	Mitigation Officer and local government official(s) for specific details	The Federal Emergency Management Agency Hazard Mitigation Grant Program (HMGP) provides states and communities with resources to invest in long-term actions that help to reduce the toll from potential natural and manmade hazards. The program also supports the implementation of mitigation measures during the immediate recovery from a disaster. The HMGP funds projects to protect either public or private property, as long as the project fits within the overall mitigation strategy of the state and/or local government and complies with program guidelines. In response to flood hazards, eligible projects include the elevation, relocation or acquisition and demolition of flood-prone structures, stormwater management projects and certain types of minor flood control projects. The state is responsible for setting priorities for funding and administering the HMGP.  <a href="http://www.fema.gov/government/grant/hmgp/index.shtm">www.fema.gov/government/grant/hmgp/index.shtm</a>

Funding Opportunity	Contact Information	Description / Web Site
NOAA Broad Agency Announcement (BAA)	Steve J. Drescher Policy Advisor Steve.j.drescher@noaa.gov	The purpose of this notice is to request applications for special projects and programs associated with NOAA's strategic plan and mission goals, as well as to provide the general public with information and guidelines on how NOAA will select proposals and administer discretionary Federal assistance under this notice is contingent upon the availability of Fiscal Year 2014, and Fiscal Year 2015 appropriations. Publication of this Announcement does not oblige NOAA to review an application, or to award any specific project, or to obligate any available funds. <a href="http://www.nmfs.noaa.gov">www.nmfs.noaa.gov</a>
NOAA Coastal Services Center Cooperative Agreements	James L. Free U.S. Department of Commerce National Oceanic and Atmospheric Administration Services Center 2234 South Hobson Avenue Charleston, SC 29405-2413 843-740-1185	The National Oceanic and Atmospheric Administration (NOAA) guides the conservation and management of coastal resources through a variety of mechanisms, including collaboration with the coastal resource management programs of the nation's states and territories. The mission of the NOAA Coastal Services Center is to support the environmental, social, and economic well being of the coast by linking people, information, and technology. The vision of the NOAA Coastal Services Center is to be the most useful government organization to those who manage and care for our nation's coasts. \$4.65 Million (est.) <a href="http://www.cwc.noaa.gov/funding">www.cwc.noaa.gov/funding</a>
NOAA Coastal Zone Management Administration Awards	John King U.S. Department of Commerce National Oceanic and Atmospheric Administration National Ocean Service 1305 East-West Highway 11th Floor Silver Spring, MD 20910 301-713-0714	The program assists states in implementing and enhancing Coastal Zone Management programs that have been approved by the Secretary of Commerce. Funds are available for projects in areas such as coastal wetlands management and protection, natural hazards management, public access improvements, reduction of marine debris, assessment of impacts of coastal growth and development, special area management planning, regional management issues, and demonstration projects with potential to improve coastal zone management. \$66 million (est.) <a href="http://www.coastalmanagement.noaa.gov">www.coastalmanagement.noaa.gov</a>

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Funding Opportunity	Contact Information	Description / Web Site
NOAA Community Based Habitat Restoration Partnership Grants	Melanie Gange U.S. Department of Commerce National Oceanic and Atmospheric Administration Office of Habitat Conservation, HC-3 1315 East-West Highway Silver Spring, MD 20910 301-713-01714 Melanie.Gange@noaa.gov	The NOAA Community-based Restoration program provides funds for small-scale, Locally driven habitat restoration projects that foster natural resource stewardship within communities. The program seeks to bring together diverse partners to implement habitat restoration projects to benefit living marine resources. Projects might include restoring salt marshes, mangroves, and other coastal habitats; improving fish passage and habitat quality for anadromous species; removing dams; restoring and creating oyster reefs, removing exotic vegetation and replanting with native species; and similar projects to restore habitat or improve habitat quality for populations of marine and anadromous fish. Closed-next competition anticipated in fall of 2014-2015. <a href="http://www.nmfs.noaa.gov/habitat/restoration/funding_opportunities/funding.html">www.nmfs.noaa.gov/habitat/restoration/funding_opportunities/funding.html</a>
NOAA Estuary Habitat Restoration Project Funding	See web site link at right.	The Estuary Restoration Act (ERA) Council seeks projects that achieve cost effective restoration while promoting partnerships among agencies and between public and private sectors. Eligible habitat restoration activities may include (but are not limited to) improvement of estuarine wetland tidal exchange or re-establishment of historic hydrology; dam or berm removal; improvement or re establishment of fish passage; appropriate reef/substrate/habitat creation; planting of native estuarine wetland and submerged aquatic vegetation; reintroduction of native species; control of invasive species; and establishment of riparian buffer zones in the estuary. Projects will be evaluated for their support of the Estuary Habitat Restoration Strategy. Awarded proposal may be funded by any of the five ERA agencies, depending on annual appropriated ERA funds. <a href="http://er.noaa.gov">http://er.noaa.gov</a>
Engineers Aquatic Ecosystem Restoration (CAP Section 206)	Todd Boatman Mobile District Office 216-694-4101	Work done under this authority may carry out aquatic ecosystem restoration projects that will improve the quality of the environment, are in the public interest, and are cost-effective. There is no requirement that an existing Corps project be involved. The median grant awarded under this program is \$300,000. A ceiling of \$5,000,000 is established for each project. <a href="http://www.sam.usace.army.mil/pd/custguide/custguide.html">http://www.sam.usace.army.mil/pd/custguide/custguide.html</a>

Funding Opportunity	Contact Information	Description / Web Site
U.S. Army Corps of Engineers Emergency Streambank and Shoreline Protection (Section 14)	Todd Boatman Mobile District Office 251-694-4101	<p>Section 14 of the 1946 Flood Control Act provides authority for the Corps of Engineers to develop and construct emergency streambank and shoreline protection projects to prevent erosion damages to endangered highways, highway bridge approaches, public work facilities such as water and sewer lines, churches, public and private non-profit schools and hospitals, and other non-profit public facilities. Each project is limited to a Federal cost of \$1,000,000.</p> <p><a href="http://www.sam.usace.army.mil/pd/custguide/custguide.htm">http://www.sam.usace.army.mil/pd/custguide/custguide.htm</a></p>
U.S. Army Corps of Engineers Environmental Infrastructure Program (Section 219)	Todd Boatman Mobile District Office 251-694-4101	<p>Section 219 of the Water Resources Development Act of 1992 provides authority for the Corps of Engineers to assist non-Federal interests carry out water-related environmental infrastructure and resource protection and development projects. Such assistance may be in the form of technical planning, design assistance, and construction assistance.</p> <p><a href="http://www.sam.usace.army.mil">http://www.sam.usace.army.mil</a></p>
U.S. Army Corps of Engineers General Investigation Study	Todd Boatman Mobile District Office 251-694-4101	<p>Authority for the study must be provided by a specific Congressional resolution or identified in a Water Resources Development Act. The Congressional authority determines the purpose and scope of the study. Funds to conduct the study must be specifically identified for that purpose in an Appropriations Act. Studies could lead to recommendations for construction of a Corps construction project.</p> <p><a href="http://www.sam.usace.army.mil">http://www.sam.usace.army.mil</a></p>
Engineers Planning Assistance to the States (Section 22)	Todd Boatman Mobile District Office 251-694-4101	<p>Section 22 of the Water Resources Development Act of 1974 provides authority for the Corps of Engineers to assist the States, local governments, and other non-Federal entities in the preparation of comprehensive plans for the development, utilization, and conservation of water and related land. Federal allotments for each State are limited to 500,000 annually, but are typically much less. Typical cost of an individual study is \$25,000 to \$75,000. The studies generally involve the analysis of existing data for planning purposes using standard engineering techniques, although some data collection is often necessary. Most studies become the basis for State and local planning decisions and can lead to a project under Section 206 or a congressionally authorized project in a future Water Resources Development Act. <a href="http://www.sam.usace.army.mil">http://www.sam.usace.army.mil</a></p>

# Three Mile Creek Watershed Management Plan

Funding Opportunity	Contact Information	Description / Web Site
U.S. Army Corps of Engineers Small Flood Damage Reduction Projects (CAP Section 205)	Todd Boatman Mobile district Office 251-694-4101	Work under this authority provides for local protection from flooding by the construction or improvements of structural flood damage reduction features such as levees, channels and dams. Non-structural alternatives are also considered and may include measures such as installation of flood warning systems, raising and/or flood proofing of structures, and relocation of flood prone facilities.  <a href="http://www.sam.usace.army.mil/pd/custguide/custguide.htm">http://www.sam.usace.army.mil/pd/custguide/custguide.htm</a>
U.S. Army Corps of Engineers Watershed and River Basin Assessments (Section 729)	Todd Boatman Mobile District Office 251-694-4101	Section 729 of the Water Resources Development Act of 1986 provides for the assessment of the water resources needs of river basins and watersheds, including needs relating to watershed protection. Congress can issue a resolution giving the Corps authority to conduct a study, but must also appropriate funding for the study. There is no Federal cost limit. The usual product of such a study is a watershed planning document that integrates water resources management, evaluating a range of project options simultaneously to determine the best combination of projects to achieve multiple goals over the entire watershed rather than examining each potential project in isolation from others. The assessments may or may not recommend further studies or projects by the Corps or other Federal or State agencies.  <a href="http://www.sam.usace.army.mil">http://www.sam.usace.army.mil</a>



Funding Opportunity	Contact Information	Description / Web Site
<p>USDA Forest Service Urban and Community Forestry Challenge</p> <p>Cost-Share Grants</p>	<p>Nancy Stremple Urban and Community Forestry Staff, Mail Stop 1151 USDA Forestry Service 1400 Independence Avenue, S.W. Washington, DC 20250-1151 202-205-7829 nstremple@fs.fed.us</p>	<p>The U.S. Forest Service Urban and Community Forestry Grant Program seeks to establish sustainable urban and community forests by encouraging communities to manage and protect their natural resources. The program works to achieve a number of goals, including (1) effectively communicating information about the social, economic, and ecological values of urban forests; (2) involving diverse resource professionals in urban and community forestry issues; and (3) supporting a holistic view of urban and community forestry. In particular, the program supports an ecosystem approach to managing urban forests for their benefits to air quality, stormwater runoff, wildlife and fish habitat, and other related ecosystem concerns. The Forest Service awards these grants based on recommendations made by the National Urban and Community Forestry Advisory Council, a 15-member advisory council created by the 1990 Farm Bill to provide advice to the Secretary of Agriculture on urban and community forestry.</p> <p><a href="http://www.fs.fed.us/ucf/nucfac">www.fs.fed.us/ucf/nucfac</a></p> <p><a href="http://www.treelink.org/nucfac">www.treelink.org/nucfac</a></p>
<p>USDA Natural Resources Conservation Service (NRCS) Emergency Watershed Protection Program</p>	<p>Contact your local USDA Service Center. For a list, see <a href="http://www.usda.gov/offices.html">www.usda.gov/offices.html</a>. Click on the County Office Locator</p>	<p>The USDA NRCS Emergency Watershed Protection (EWP) program helps protect lives and property threatened by natural disasters such as floods, hurricanes, tornadoes, droughts, and wildfires. EWP provides funding for such work as clearing debris from clogged waterways, restoring vegetation, and stabilizing river banks. The measures that are taken must be environmentally and economically sound and generally benefit more than one property owner. EWP also provides funds to purchase floodplain easements as an emergency measure. Floodplain easements restore, protect, maintain, and enhance the functions of the floodplain; conserve natural values including fish and wildlife habitat, water quality, flood water retention, ground water recharge, and open space; reduce long-term federal disaster assistance; and safeguard lives and property from floods drought and the products of erosion. EWP can provide up to 90 percent cost share in limited resource areas as determined by the U.S. Census.</p> <p><a href="http://www.nrcs.usda.gov/programs/ewp">www.nrcs.usda.gov/programs/ewp</a></p>

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Funding Opportunity	Contact Information	Description / Web Site
USDA Natural Resources Conservation Service (NRCS) Watershed Protection and Flood Prevention	Contact your local NRCS office. Information listed on the web at <a href="http://offices.usda.gov">http://offices.usda.gov</a> or <a href="http://www.nrcs.usda.gov/about/organization/regions.html#regions">www.nrcs.usda.gov/about/organization/regions.html#regions</a> .	Also known as the "Watershed Program" or the "PL566 Program," this program provides technical and financial assistance to States, Local governments and Tribes (project sponsors) to plan and implement authorized watershed project plans for the purpose of: watershed protection, flood mitigation, water quality improvements, soil erosion reduction, rural, municipal and industrial water supply, irrigation, water management, sediment control, fish and wildlife enhancement, and hydropower.  Technical and financial assistance is also available for planning new watershed surveys. <a href="http://www.nrcs.usda.gov/programs/watershed">www.nrcs.usda.gov/programs/watershed</a>
USDA Natural Resources Conservation Service (NRCS) Watershed Rehabilitation Program	National Watershed Rehabilitation Contact: Lorenzo Henderson Watershed Rehabilitation Specialist USDA Natural Resources Conservation Service 14th and Independence Ave. SW, Room 6021-S Washington D.C. 20250 Telephone: 202-205-4098 <a href="mailto:Lorenzo.henderson@wdc.usda.gov">Lorenzo.henderson@wdc.usda.gov</a>	This program provides Federal cost-share funding for the rehabilitation of aging dams that were installed primarily through the Watershed Protection and Flood Prevention Program over the past 55 years. The purpose for rehabilitation is to extend the service life of dams and bring them into compliance with applicable safety and performance standards or to decommission the dams so they no longer pose a threat to life and property. As of January 2013, there are 202 approved rehabilitation projects in 25 states. One hundred and twenty-one of these projects in 20 states have been completed; 50 projects in 12 states are being implemented (either in design or construction phase); and 31 projects in 12 states are in the planning stage. It also includes case studies of rehabilitation projects in Georgia, Oklahoma, Texas, and Virginia  <a href="http://www.nrcs.usda.gov/programs/WSRehab">www.nrcs.usda.gov/programs/WSRehab</a>
USDA Natural Resources Conservation Service (NRCS) Wetlands Reserve Program	Contact local or state NRCS office or Conservation District office. Information listed on the web at <a href="http://offices.usda.gov">http://offices.usda.gov</a>	Through this voluntary program, the NRCS provides landowners with financial incentives to restore and protect wetlands in exchange for retiring marginal agricultural land. To participate in the program landowners may sell a conservation easement to enter into a cost-share restoration agreement (landowners voluntarily limit future use of the land, but retain private ownership). Landowners and the NRCS jointly develop a plan for the restoration and maintenance of the wetland. Specific grants assist landowners with this process may also be available to eligible organizations. There is no maximum award and the award size varies by state. These NRCS easements programs will not be available for new enrollments until either the current legislation is extended or a new Farm Bill is enacted.  <a href="http://www.nrcs.usda.gov">www.nrcs.usda.gov</a>

Funding Opportunity	Contact Information	Description / Web Site
U.S. Department of Transportation Federal Highway Administration National Scenic Byways Discretionary Grant program	Collette E. Boehm Special Projects Director Alabama's Coastal Connection P.O. Drawer 457, 900 Commerce loop (36542)Gulf Shores, AL 36547 251-974-4632 cboehm@gulfshores.com Cindi Ptak National Scenic Byways Program Manager 202-366-1586	To implement projects on roads designated as national Scenic Byways or All American Roads, State scenic byways, or Indian tribe scenic byways. Eligible projects must be from one of the following eight eligible activities: State or Indian tribe Scenic Byway Programs, Corridor Management Plans, Safety Improvements, Byways Facilities, Access to Recreation, Resource Protection, Interpretive Information or marketing. Alabama's Coastal Connection is a designated Scenic Byway. <a href="http://www.bywaysonline.org/grants">http://www.bywaysonline.org/grants</a>
U.S. Fish and Wildlife Service Coastal Program (Northern Gulf Coastal Program)	Dr. Ronnie J. Haynes U.S. Fish & Wildlife Service 1875 Century Blvd. Atlanta, GA 30345 PHONE: 404-679-7138 FAX: 404-679-7081 Email: Ronnie Haynes@fws.gov Deepwater Horizon Natural Resources Damage Assessment And Restoration Office Fairhope, AL 251-929-0168	The U.S. Fish and Wildlife Service Coastal Program works to conserve healthy Coastal habitats on public or private land for the benefit of fish, wildlife, and people in 22 specific coastal areas. The program forms cooperative partnerships designed to (1) protect coastal habitats by providing technical assistance for conservation easements and acquisitions: (2) restore coastal wetlands, uplands, and riparian areas: and (3) remove barriers to fish passage in coastal watersheds and estuaries. Program biologists provide restoration expertise and financial assistance to federal and state agencies, local and tribal governments, businesses, private landowners and conservation organizations such as local land trusts and watershed councils. <a href="http://www.fws.gov/coastal/">http://www.fws.gov/coastal/</a> :  <a href="http://www.fws.gov/daphne">http://www.fws.gov/daphne</a>

# Three Mile Creek Watershed Management Plan

Funding Opportunity	Contact Information	Description / Web Site
U.S. Fish and Wildlife Service Landowner Incentive Program	Contact the state Fish and Wildlife office directly. See web site link at right.	<p>The U.S. Fish and Wildlife Service Landowner Incentive Program (LIP) grant program provides competitive matching grants to states to establish or supplement landowner incentive programs. These programs provide technical and financial assistance to private landowners for projects that protect and restore habitats of listed species or species determined to be at-risk. LIP projects involve activities such as the restoration of marginal farmlands to wetlands, the removal of exotic plants to restore natural prairies, a change in grazing practices and fencing to enhance important riparian habitats, instream structural improvements to benefit aquatic species, road closures to protect habitats and reduce harassment of wildlife, and acquisition of conservation easements. Although not directly eligible for these funds, third parties such as nonprofit organizations may benefit from these funds by working directly with their states to see if either grants or partnering opportunities are available.</p> <p><a href="http://wsfrprograms.fws.gov/Subpages/GrantPrograms/LIP/LIP.htm">http://wsfrprograms.fws.gov/Subpages/GrantPrograms/LIP/LIP.htm</a></p>
U. S. Fish and Wildlife Service National Wetlands Conservation Grant	<p>Dr. Ronnie J. Haynes U.S. Fish &amp; Wildlife Service 1875 Century Blvd. Atlanta, GA 30345 404-679-7138 FAX: 404-679-7081 Email: <a href="mailto:Ronnie_Haynes@fws.gov">Ronnie_Haynes@fws.gov</a></p>	<p>The U.S. Fish and Wildlife Service National Wetlands Conservation Grant Program provides matching grants to states and territories for coastal wetland conservation projects. Funds may be used for acquiring land or conservation easements, restoration, enhancement, or management of coastal wetland ecosystems. Projects must provide for long-term conservation of coastal wetlands. Grants typically range from \$200,000 to \$1,000,000 per project.</p> <p><a href="http://www.fws.gov/coastal/CoastalGrants">Http://www.fws.gov/coastal/CoastalGrants</a>: <a href="http://www.cfda.gov">www.cfda.gov</a> (Search program number 15.614)</p>
U.S. Fish and Wildlife Service North American Wetlands Conservation Act Grants Program	<p>U.S. Fish and Wildlife Service North American Waterfowl and Wetlands Office 4401 North Fairfax Drive Arlington, VA 22203 Leakhena Au, Branch Chief (703) 358-2463 <a href="mailto:Leakhena_Au@fws.gov">Leakhena_Au@fws.gov</a></p>	<p>The U.S. Fish and Wildlife Service Division of Bird Habitat Conservation administers this matching grants program to carry out wetlands and associated uplands conservation projects in the United States, Canada, and Mexico. Grant requests must be matched by a partnership with nonfederal funds at a minimum 1:1 ratio. Conservation activities supported by the Act in the United States and Canada include habitat protection, restoration, and enhancement. Project proposals must meet certain biological criteria established under the Act.</p> <p><a href="http://birdhabitat.fws.gov">http://birdhabitat.fws.gov</a>; <a href="http://www.cfda.gov">www.cfda.gov</a></p>

Funding Opportunity	Contact Information	Description / Web Site
U.S. Fish and Wildlife Service Partners for Fish and Wildlife Program	U.S. Fish and Wildlife Service Branch of Habitat Restoration Division of Fish and Wildlife management and Habitat Restoration 4401 North Fairfax Drive Room 400 Arlington, VA 22203 703-358-2201	The Partners for Fish and Wildlife Program provides technical and financial assistance to private landowners to restore fish and wildlife habitats on their lands. Since 1987, the program has partnered with more than 37,700 landowners to restore 765,400 acres of wetlands; over 1.9 million acres of grasslands and other upland habitats: and 6,560 miles of in-stream and streamside habitat. In addition, the program has reopened stream habitat for fish and other aquatic species by removing barriers to passage.  <a href="http://www.fws.gov/partners">www.fws.gov/partners</a> : <a href="http://www.cfda.gov">www.cfda.gov</a>
U.S. Housing and Urban Development Community Development Block Grants (CDBG)	Contact state CDBG grantees. See list at web site to right	The objective of this program is to develop viable urban communities, by providing decent housing and a suitable living environment, and by expanding economic opportunities, principally for persons of low and moderate income. Recipients may undertake a wide range of activities directed toward neighborhood revitalization, economic development and provision of improved community facilities and services.
U. S. Housing and Urban Development Sustainable Communities Planning Grant Program	Dorthera Yorkshire Program Analysis 202-402-4336	The Sustainable Communities Planning Grant Program is intended to help build the capacity of communities to address the complex challenges of growth and revitalization in the 21st century in a comprehensive, multidisciplinary way. Funding from this program will support the development and implementation of Sustainable Regional Development Plans. A priority will be placed on supporting regions that demonstrate a commitment to take well-developed plans and move them into implementation. The Appropriations Act directs the Secretary of HUD to establish a regional planning grant program that provides grants to assist regional entities and consortia of local governments with integrated housing, transportation, economic development, water infrastructure, and environmental planning. HUD's Office of Sustainable Housing and Communities is working in partnership with DOT and EPA to define all aspects of this Program. HUD will serve as the lead agency for all grants and will consult with its agency partners throughout the program.  <a href="http://www.hud.gov/sustainability">http://www.hud.gov/sustainability</a>

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Funding Opportunity	Contact Information	Description / Web Site
<a href="#">Public Works and Development Facilities Program</a>	Economic Development Administration	This program provides assistance to help distressed communities attract new industry, encourage business expansion, diversify local economies, and generate long-term, private sector jobs. Among the types of projects funded are water and sewer facilities, primarily serving industry and commerce; access roads to industrial parks or sites; port improvements; business incubator facilities; technology infrastructure; sustainable development activities; export programs; brownfields redevelopment; aquaculture facilities; and other infrastructure projects. Specific activities may include demolition, renovation, and construction of public facilities; provision of water or sewer infrastructure; or the development of stormwater control mechanisms (e.g., a retention pond) as part of an industrial park or other eligible project.
<a href="#">Pre-Disaster Mitigation Program</a>	Federal Emergency Management Agency	The Pre-Disaster Mitigation program will provide funds to states, territories, Indian tribes, communities, colleges, and universities for pre-disaster mitigation planning and the implementation of cost-effective mitigation projects prior to a disaster event. Funding these plans and projects reduces overall risks to the population and structures, while also reducing reliance on funding from actual disaster declarations.
<a href="#">Environmental Solutions for Communities</a>	National Fish and Wildlife Foundation	In 2012, Wells Fargo and the National Fish and Wildlife Foundation launched the Environmental Solutions for Communities initiative, designed to support projects that link economic development and community well-being to the stewardship and health of the environment. This 5-year initiative is supported through a \$15 million contribution from Wells Fargo that will be used to leverage other public and private investments with an expected total impact of over \$37.5 million. Funding priorities for this program include: (1) supporting sustainable agricultural practices and private lands stewardship; (2) conserving critical land and water resources and improving local water quality (3) restoring and managing natural habitat species and ecosystems that are important to community livelihoods; (4) facilitating investments in green infrastructure, renewable energy and energy efficiency; and (5) encouraging broad-based citizen participation in project implementation.

Funding Opportunity	Contact Information	Description / Web Site
<u>Conservation Partners</u>	U.S. Department of Agriculture's natural Resources Conservation Service National Fish and Wildlife Foundation Other regional/specific partners	Conservation Partners is a partnership between the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) ( <a href="http://www.nrcs.usda.gov">www.nrcs.usda.gov</a> ), the National Fish and Wildlife Foundation (NFWF) ( <a href="http://www.nfwf.org">www.nfwf.org</a> ), and other regional/initiative specific partners. The purpose of this program is to provide grants on a competitive basis to support field biologist and other habitat conservation professionals (ecologists, foresters, range cons, etc.) working with NRCS field offices in providing technical assistance to farmers, ranchers, foresters and other private landowners to optimize wildlife habitat conservation on private lands. Conservation Partners aims to better focus and increase the effectiveness of Farm Bill assistance funded through programs such as Wildlife Habitat Incentives Program (WHIP), Environmental Quality Incentives Program (EQIP), Conservation Reserve Program (CRP) and others. In addition, Conservation Partners will consider funding capacity and outreach for organizations whose mission matches the goals of this program.
<u>Marine Debris Fishing for Energy Fund</u>	National Fish and Wildlife Foundation	The Fishing for Energy Fund is a partnership between the NOAA Marine Debris Program, Covanta Energy Corporation and National Fish and Wildlife Foundation to provide grants on a variety of proposal topics to support public outreach and prevention strategies to reduce the impacts of derelict fishing gear to the marine and coastal environments. The Program supports projects that proactively engage the fishing community and state managers in developing prevention strategies to address derelict fishing gear.
<u>National Wildlife Refuge Friends Group Grant Program</u>	National Fish and Wildlife Foundation	The National Fish and Wildlife Foundation provides grants for projects that help organizations to be effective co-stewards of our nation's important natural resources within the national Wildlife Refuge System. This program provides competitive seed grants to help increase the number and effectiveness of organizations interested in assisting the refuge system nationwide. The program will fund: (1) Start-up Grants to assist starting refuge support groups with formative and/or initial operational support (membership drives, training, postage, etc.); (2) Capacity Building Grants to strengthen existing refuge support groups' capacity to be more effective (outreach efforts, strategic planning, membership development) and (3) Project Specific Grants to support a specific project (conservation education programs for local schools, outreach programs for private landowners, habitat restoration projects, etc.)



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Funding Opportunity	Contact Information	Description / Web Site
<a href="#">Cooperative Watershed Management Program</a>	U.S. Department of the Interior	The purpose of the Cooperative Watershed Management Program is to enhance water conservation, including alternative uses; improve water quality; improve ecological resiliency of a river or stream; and to reduce conflicts over water at the watershed level by supporting the formation of watershed groups to develop local solution to address water management issues.
<a href="#">Pulling Together Initiative</a>	National Fish and Wildlife	The National Fish and Wildlife Foundation's Pulling Together Initiative (PTI) provides a means for federal agencies to partner with state and local agencies, private landowners, and other interested parties to develop long-term weed management projects within the scope of an integrated pest management strategy. The goals of PTI are: (1) to prevent, manage, or eradicate invasive and noxious plants through a coordinated program of public/private partnerships; and (2) to increase public awareness of the adverse impacts of invasive and noxious plants. PTI provides support on a competitive basis for the formation of local weed management area (WMA) partnerships, allowing them to demonstrate successful collaborative efforts and develop permanent funding sources for the maintenance of WMAs from the involved parties. Successful projects will serve to increase public awareness and interest in future partnership projects.
<a href="#">Shell Marine Habitat Program</a>	National Fish and Wildlife Foundation	The Shell marine Habitat Program is a partnership between the Shell Oil Company and the National Fish and Wildlife Foundation (NFWF). The purpose of this partnership is to provide grants for projects that benefit marine and coastal habitats in and around the Gulf of Mexico, as well as the North Aleutian Basin, North Slope Borough, and Northwest Arctic Borough areas of Alaska. The National Oceanic and the Atmospheric Administration recently joined Shell and NFWF in their efforts to support projects that benefit the habitat for living marine resources in the Gulf of Mexico.
<a href="#">Southern Company Power of Flight Program</a>	National Fish and Wildlife Foundation	Through the Southern Company Power of Flight program, a minimum of \$600,000 is available annually to fund bird conservation projects within the Southern Company service area of Georgia, Alabama, northwestern Florida, and southeastern Mississippi.



Funding Opportunity	Contact Information	Description / Web Site
<a href="#">National Sea Grant College Program</a>	National Oceanic and Atmospheric Administration	The National Sea Grant College Program encourages the wise use and stewardship of marine and coastal environmental resources through research, education, outreach and technology transfer. Sea Grant works in partnership between the nation's universities and the National Oceanic and Atmospheric Administration. There are 33 Sea Grant Programs in every coastal and Great Lakes state, Puerto Rico, Lake Champlain and Guam. Sea Grant serves as a bridge between government academia, industry, scientists and private citizens to promote the sustainable use of Great Lakes and ocean waters for long-term economic growth. Funding opportunities are available through national-and state-level competitions. (Click on the program name and refer to the link listed under "primary Internet" for information on national-level competitions and links to all state Sea Grant Program offices)
<a href="#">Community-based Marine Debris Prevention and Removal Grants</a>	National Oceanic and Atmospheric Administration	The NOAA Marine Debris Program (MDP) provides funding to catalyze the implementation of locally driven, community-based marine debris prevention, assessment, and removal projects that benefit coastal habitat, waterways, and NOAA trust resources. The primary priorities for removal are large-scale debris, derelict fishing gear, derelict vessels, tsunami debris clean-ups and targeted shoreline and watershed projects. Projects funded through the MDP have strong on-the-ground habitat components and provide long-term ecological habitat improvements for NOAA trust resources, and provide educational and social benefits for people and their communities.
<a href="#">Beneficial Uses of Dredged Material (CAP Section 204)</a>	U.S. Army Corps of Engineers	Work under this authority provides for the use of dredged material from new or existing Federal projects to protect, restore, or create aquatic and ecologically related habitats, including wetlands.
<a href="#">Project Modifications for Improvement of the Environment (CAP Section 1135)</a>	U.S. Army Corps of Engineers	Work under this authority provides for modifications in the structures and operations of water resources projects constructed by the Corps of Engineers to improve the quality of the environment. Additionally, the Corps may undertake restoration projects at locations where an existing Corps project has contributed to the degradation. The primary goal of these projects is ecosystem restoration with an emphasis on projects benefiting fish and wildlife. The project must be consistent with the authorized purposes of the project being modified, environmentally acceptable, and complete within itself.

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Funding Opportunity	Contact Information	Description / Web Site
<a href="#">Healthy Forests Reserve Program</a>	U.S. Department of Agriculture	The healthy Forests Reserve Program (HFRP) is a voluntary program established for the purpose of restoring and enhancing forest ecosystems to: 1) promote the recovery of threatened and endangered species, 2) improve biodiversity; and 3) enhance carbon sequestration. Program implementation has been delegated by the Secretary of Agriculture to the Natural Resources Conservation Service
<a href="#">Wildlife Habitat Incentives Program</a>	U.S. Department of Agriculture	The Wildlife Habitat Incentives Program (WHIP) is a voluntary program for people who want to develop and improve wildlife habitat on private lands. It provides both technical assistance and cost sharing to help establish and improve fish and wildlife habitat. Participants work with USDA's Natural Resources Conservation Service to prepare a wildlife habitat development plan in consultation with a local conservation district. The plan describes the landowner's goals for improving wildlife habitat, includes a list of practices and a schedule for installing them, and details the steps necessary to maintain the habitat for the life of the agreement.
<a href="#">Land and Water Conservation Fund (Outdoor Recreation, Acquisition, Development and Planning Grants)</a>	U S Department of Interior	To provide financial assistance to the States and their political subdivisions for the preparation of Statewide Comprehensive Outdoor recreation Plans (SCORPs) and acquisition and development of outdoor recreation areas and facilities for the general public, to meet current and future needs.
<a href="#">Pollution Prevention Grant Program</a>	U.S. Environmental Protection Agency	The Pollution Prevention Grant program provides grants and cooperative agreements to state agencies, instrumentalities of a state and federally recognized tribes to implement pollution prevention projects that provide technical assistance to businesses. The program requires applicants to work towards reducing pollution, conserving energy and water, and saving dollars through P2 efforts; as identified in EPA's Strategic Plan under Goal 4: Ensuring Safety of Chemicals and Preventing Pollution, Objective 4.2: Promote Pollution Prevention

Funding Opportunity	Contact Information	Description / Web Site
<u>Urban Waters Small Grants</u>	U.S. Environmental Protection Agency	EPA's Urban Waters Program protects and restores America's urban waterways. EPA's funding priority is to achieve the goals and commitments established in the Agency's Urban Waters Strategic Framework ( <a href="http://www.epa.gov/urbanwaters/urban-waters-strategic-framework">www.epa.gov/urbanwaters/urban-waters-strategic-framework</a> ). This program has an emphasis on engaging communities with environmental justice concerns. The objective of the Urban Waters Small Grants is to fund projects that will foster a comprehensive understanding of local urban water issues, identify and address these issues at the local level, and educate and empower the community. In particular, the Urban Waters Small Grants seek to help restore and protect urban water quality and revitalize adjacent neighborhoods by engaging communities in activities that increase their connection to, understanding of, and stewardship of local urban waterways.
<u>State Wildlife Grant Program (Non-Tribal and Non-Competitive)</u>	U S Fish and Wildlife Service	The U.S. Fish and Wildlife Service's (USFWS) State Wildlife Grant (SWG) program provides grants to states, territories, and the District of Columbia for wildlife conservation. The SWG program provides funds to help develop and implement programs that benefit wildlife and their habitat, including species that are not hunted or fished. Although not directly eligible for these grants, third parties such as nonprofit organizations may benefit from these funds by working directly with their states to see if either grants or partnering opportunities are available.
<u>Cooperative Endangered Species Conservation Fund</u>	U S Fish and Wildlife Service	The U.S. Fish and Wildlife Service's (USFWS) Cooperative Endangered Species Conservation Fund provides financial assistance to states and territories that have entered into cooperative agreements with the USFWS to assist in the development of programs for the conservation of endangered and threatened species. The assistance provided to the state or territorial wildlife agency can include animal, plant, and habitat surveys; research; planning; monitoring; habitat protection, restoration, management, and acquisition; and public education. The Fund is dispersed to the states and territories through four programs: Conservation Grants, Habitat Conservation Planning Assistance Grants, Habitat Conservation Plan Land Acquisition Grants, and Recovery Land Acquisition Grants. Although not directly eligible for these grants, third parties such as nonprofit organizations and local governments may work with their state or territorial wildlife agency to apply for these funds.

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Funding Opportunity	Contact Information	Description / Web Site
<a href="#">North American Wetlands Conservation Act Grants Program</a>	U.S. Fish and Wildlife Service	The U.S. Fish and Wildlife Service's Division of Bird Habitat conservation administers this matching grants program to carry out wetlands and associated uplands conservation projects in the United States, Canada, and Mexico. Grant requests must be matched by a partnership with nonfederal funds at a minimum 1:1 ratio. Conservation activities supported by the Act in the United States and Canada include habitat protection, restoration, and enhancement. Mexican partnerships may also develop training, educational, and management programs and conduct sustainable-use studies. Project proposals must meet certain biological criteria established under the Act. Visit the program web site for more information. (Click on the hyperlinked program name to see the listing for "primary Internet".)
Coastal Impact Assistance Program (CIAP)	U.S. Fish and Wildlife Services	Funds are available to eligible counties within the State of Alabama to mitigate the impacts of outer continental shelf oil and gas activities (based upon allocation formulas prescribed by the Energy Policy Act). The purpose of the CIAP is to disburse funding (\$250 million for each of the fiscal years 2007 through 2010) to eligible producing states and coastal political subdivisions for the purpose of conservation, protection, or restoration of coastal areas including wetlands; mitigation of damage to fish, wildlife, or natural resources; planning assistance and the administrative costs of complying comprehensive conservation management plan; and, mitigation of the impact of outer continental shelf activities through funding of onshore infrastructure projects and public service needs. The award floor is \$1,000 and the award ceiling is 25,000,000. <a href="http://www07.grants.gov/search/basic.do">http://www07.grants.gov/search/basic.do</a> (Search for Funding Opportunity Number MMS09HQPA0013.)  <a href="http://www.mms.gov/offshore/ciapmain.htm">http://www.mms.gov/offshore/ciapmain.htm</a>
U.S. Department of Interior Gulf of Mexico Energy Security Act (GOMESA)	Office of Minerals Management Services	The Gulf of Mexico Energy Security Act of 2006 (GOMESA ) shares leasing revenues for the four Gulf oil and gas producing states of Alabama, Louisiana, Mississippi, and Texas, and to their coastal political subdivisions. GOMESA funds are to be used for coastal conservation, restoration, and hurricane protection.  <a href="http://www.mms.gov/offshore/GOMESARevenueSharing.htm">http://www.mms.gov/offshore/GOMESARevenueSharing.htm</a>

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## Recreational Trails Program

Recreational Trails Program website: [http://www.fhwa.dot.gov/environment/recreational\\_trails/rtstate.cfm](http://www.fhwa.dot.gov/environment/recreational_trails/rtstate.cfm)

The Recreational trails Program (RTP) is funded by the U.S. Department of Transportation and provides funding assistance to federal agencies, states, local governments and nonprofit organizations for the development and improvement of recreational areas such as walking, jogging, cycling, skating, backpacking, off-highway vehicle and horseback riding trails.

The Recreational Trails Program was created in 1998 to assist in acquiring, developing or improving trail and trail-related resources. Eligible applicants include federal and state agencies, local governments and private sector organizations. The Federal share for the program is 80 percent of the total eligible project costs up to either \$50,000 or \$100,000. The non-Federal share (20 percent) may come from state, local or private sources, including volunteer labor and donated materials. Other Federal shares cannot be included unless specific legislation allows funds to be used for the matching share (e.g., HUD Community Development Block Grants, Public Works Employment Act of 1976.) Grant funds are distributed to project sponsors on a cost-reimbursable basis.

Applications may be submitted for the following activities:

- Development of urban trail linkages near homes and workplaces (includes trail linkages to schools, parks, and existing trails)
- Maintenance of existing recreational trails
- Restoration of areas damaged by usage of recreational trails and back country terrain
- The provision of features which facilitate the access and use of trails by persons with disabilities
- The acquisition of easements for trails or for corridors identified in the state trail plan
- The acquisition of fee simple title to property from a willing seller for trail development
- The construction of new trails on state, county, municipal or private lands where a recreational need for such construction is shown
- Development of trail-side and trail-head facilities that meet goals identified by the National Recreational Trails Advisory Committee (This includes trail components or associated facilities which serve the purpose and safe use of the recreational trail and may include but are not limited to the following: 1) Drainage, 2) Crossing, 3) Stabilization, 4) Parking, 5) Signage, 6) Controls, 7) Shelters, and 8) Water, Sanitary, and Access Facilities.) Purchase of trail maintenance equipment (certain

# Three Mile Creek Watershed Management Plan

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restrictions apply)

- Only as otherwise permissible, and where necessary and required by the State Comprehensive Outdoor Recreation Plan (SCORP), construction of new trails crossing federal lands, where such construction is approved by the administering agency of the state, and the federal agency or agencies charged with management of all impacted lands, such approval to be contingent upon compliance by the federal agency with all applicable laws.

## LAND AND WATER CONSERVATION FUND

Land and Water Conservation Fund website: <http://www.yourtownalabama.com/fy-2013-land-and-water-conservation-fund-lwcf-and-recreational-trails-program-rtp-grants/>

The U.S. Department of Interior, Land and Water Conservation Fund (LWCF) provide funding to Alabama cities and counties for the development or establishment of outdoor recreational areas. Projects include parks, playgrounds, forest and wildlife refuges, recreational lakes and ponds, outdoor playing fields, and picnic and camping areas.

The LWCF Program was created in 1965 “...to assist in preserving, developing and assuring accessibility to all citizens of the United States of America of present and future generations...such quality and quantity of outdoor recreation resources as may be available and are necessary and desirable for individual active participation...” The program provides matching grants to states, and through the states to local governments, for the acquisition and development of public outdoor recreation areas and facilities.

All political subdivisions of the state are eligible to participate in the LWCF program. As such, municipalities, counties, state agencies and state authorities created by the legislature may apply for LWCF

LWCF assistance can be used to acquire land and water interests for park purposes, develop new outdoor recreation facilities, and in certain instances renovate existing recreational facilities.

Virtually all public outdoor recreation activities are eligible for assistance under the program including playgrounds, ball fields (including lights [concrete poles only]), court sports, picnic areas, camping areas, tracks, trails, swimming facilities, etc. In addition, support facilities such as concession stands, comfort stations, park access roads, parking areas, utilities and site preparation necessary to make a recreation activity area usable may qualify for assistance. The project sponsor must either own

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or have a perpetual interest in land that is developed with LWCF assistance.

The LWCF program provides 50 percent matching assistance to project sponsors. The project sponsor may provide the remaining 50 percent of the project cost in the form of cash or in-kind/donated services. Grant funds are distributed to project sponsors on a cost-reimbursable basis.

The following program criteria apply to all applicants seeking LWCF assistance:

- Existing outdoor recreation facilities must be owned and managed by eligible project sponsor; be well maintained, and the need for LWCF assistance documented in [Alabama's Statewide Comprehensive Outdoor Recreation Plan \(SCORP\)](#).
- The project sponsor must agree to manage and operate its LWCF assisted site for outdoor recreation purposes *in perpetuity*.
- The project sponsor must agree to comply with all other laws, rules and regulations associated with the LWCF program.

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## Appendix J –Selected Non-Governmental Organizaiton and Other private Funding Opportunities

Funding Opportunity	Contact Information	Description / Web Site
Chronicle of Philanthropy Guide to Grants	The Chronicle of Philanthropy 1255 Twenty-Third Street, N.W. Seventh Floor Washington, D.C. 20037 PHONE: 202-466-1200 FAX: 202-466-2078	The Guide to Grants is an electronic database of all foundation and corporate grants listed in The Chronicle since 1995. To search this database, users must purchase a subscription; subscription rates are available for terms ranging from one week to one year. <a href="http://philanthropy.com/section/Guide-to-Grants/270">http://philanthropy.com/section/Guide-to-Grants/270</a>
Community of Science Database (COS)	1 North Charles Street Suite 2305 Baltimore, MD 21201 PHONE: 410-563-2378 FAX: 410-563-5389	COS is the leading global resource for hard-to-find information critical to scientific research and other projects across all disciplines. The COS Funding Opportunities web site allows users to search more than 23,000 records, representing over 400,000 funding opportunities, worth over \$33 billion. A subscription fee may be required, depending on the type of organization conducting a search. <a href="http://www.cos.com">http://www.cos.com</a>
The Foundation Center	Contact may be made through the web site address shown in the column to the right.	The Foundation Center Foundation Finder allows users to search for basic information (contact information, web site address, and IRS 990 form) on 70,000 private and community foundations in the United States (free service). They also offer two subscription-based online searchable databases, the Foundation Director and Foundation Grants to Individuals. <a href="http://foundationcenter.org">http://foundationcenter.org</a>
The Kodak American Greenways Program	The Conservation Fund 703-908-5809	Eastman Kodak Company, the National Geographic Society, and The Conservation Fund are the partners in the Kodak American Greenways Program, an annual program that recognizes outstanding individuals and organizations for exemplary leadership in the enhancement of our nation's outdoor heritage. The program was established in response to the recommendation from the President's Commission on Americans Outdoors that a national network of greenways be created. Since the program's inception in 1989, more than \$800,000 has been granted to nearly 700 organizations in all 50 states. The program also provides small grants to land trusts, watershed organizations, local governments and others seeking to create or enhance greenways in communities throughout America. <a href="http://www.conservationfund.org/kodak_awards">www.conservationfund.org/kodak awards</a>
RBC Bank Blue Water Project Grants	Contact may be made through the web site address shown in the column to the right.	In 2013-2014, the RBC Blue Water Project will focus on supporting initiatives that help protect and preserve water in towns, cities and urbanized areas with populations of more than 10,000 people that focus on: Improved control and management of urban storm or rain water, Efficient and innovative use (or capture and reuse) of water in towns and cities, Protection and restoration of urban waterways ,Improved urban water quality <a href="http://www.rbc.com/donations/blue-water-apply.html">http://www.rbc.com/donations/blue-water-apply.html</a>



Funding Opportunity	Contact Information	Description / Web Site
Surdna Foundation Sustainable Environments Grants	Surdna Foundation 330 Madison Avenue 30 <sup>th</sup> Floor New York, NY 10017 212-557-0010 <a href="mailto:questions@surdna.org">questions@surdna.org</a>	The Surdna Foundation seeks to create just and sustainable communities where consumption and conservation are balanced and innovative solutions to environmental problems improve people's lives. The Foundation works from a sustainable development perspective to demonstrate that a healthy environment is the backbone of a healthy economy and a democratic society. They fund three key related priority areas-Climate Change, Green Economy, and Transportation and Smart Growth-that aim to transform how Americans work, consume and move. Grants are approved in February, May and September. <a href="http://www.surdna.org">www.surdna.org</a>
Water Environmental Research Foundation Werf Cooperative Agreement	Carrie Capuco Communications Director <a href="mailto:ccapuco@werf.org">ccapuco@werf.org</a> 571-384-2097	Funding for the research is through EPA's Aging Water Infrastructure Research Program, a research agenda that supports efforts to put the nation's aging infrastructure on a pathway toward sustainability. Research efforts will include treatment technologies for wastewater, stormwater, water reuse, and drinking water. The innovative tools and cost-effective solutions that will be developed through this research should provide assistance to municipalities in their ongoing efforts to serve the public and improve water quality. <a href="http://www.werf.org">www.werf.org</a>
KaBOOM	<a href="http://kaboom.org/about_kaboom/programs/grants">http://kaboom.org/about_kaboom/programs/grants</a>	The Build It with KaBOOM! Playground Grant provides eligible communities with the majority of funds, tools and resources they need to build a custom-made playground – all in one day! Through this grant program, the majority of the playground funding for the project is provided by one of our generous Funding Partners. Selected groups, referred to as Community Partners, will work closely with a KaBOOM! Project Manager who will lead Design Day and Build Day activities as well as coordinate the equipment and material purchases for the project. Community members will take the lead in recruiting volunteers, securing food and tool donations and completing any necessary site preparation.
The W.K. Kellogg Foundation	<a href="http://www.wkkf.org/who-we-are/overview">http://www.wkkf.org/who-we-are/overview</a>	Over the years, the Kellogg Foundation's programming has continued to evolve, striving to remain innovative and responsive to the ever-changing needs of society. Today, the organization ranks among the world's largest private foundations, awarding grants in the United States, Mexico, Haiti, northeastern Brazil and southern Africa.