

**APPENDIX A**  
**EDR Records Searches**

**EDR NEPA Check®**



**VA Cemetery  
VA Cemetery  
Montevallo, AL 35115**

**Inquiry Number: 01418543.1r**

**May 10, 2005**

**The Standard in  
Environmental Risk  
Management Information**

440 Wheelers Farms Road  
Milford, Connecticut 06460

**Nationwide Customer Service**

Telephone: 1-800-352-0050  
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Internet: [www.edrnet.com](http://www.edrnet.com)

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***Thank you for your business.***  
Please contact EDR at 1-800-352-0050  
with any questions or comments.

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## EDR NEPACheck® DESCRIPTION

The National Environmental Policy Act of 1969 (NEPA) requires that Federal agencies include in their decision-making processes appropriate and careful consideration of all environmental effects and actions, analyze potential environmental effects of proposed actions and their alternatives for public understanding and scrutiny, avoid or minimize adverse effects of proposed actions, and restore and enhance environmental quality as much as possible.

The EDR NEPACheck provides information which may be used, in conjunction with additional research, to determine whether a proposed site or action will have significant environmental effect.

The report provides maps and data for the following items (where available). Search results are provided in the Map Findings Summary on page 2 of this report.

### Section

### Regulation

#### Natural Areas Map

- Federal Lands Data:

- Officially designated wilderness areas
- Officially designated wildlife preserves, sanctuaries and refuges
- Wild and scenic rivers
- Fish and Wildlife

47 CFR 1.1307(1)

47 CFR 1.1307(2)

40 CFR 6.302(e)

40 CFR 6.302

- Threatened or Endangered Species, Fish and Wildlife, Critical Habitat Data (where available)

47 CFR 1.1307(3); 40 CFR 6.302

#### Historic Sites Map

- National Register of Historic Places
- State Historic Places (where available)

47 CFR 1.1307(4); 40 CFR 6.302

#### Flood Plain Map

- National Flood Plain Data (where available)

47 CFR 1.1307(6); 40 CFR 6.302

#### Wetlands Map

- National Wetlands Inventory Data (where available)

47 CFR 1.1307(7); 40 CFR 6.302

#### FCC & FAA Map

- FCC antenna/tower sites, AM Radio Towers, FAA Markings and Obstructions, AM Radio Interference Zones, Airports, Topographic gradient

47 CFR 1.1307(8)

#### Key Contacts and Government Records Searched

# MAP FINDINGS SUMMARY

The databases searched in this report are listed below. Database descriptions and other agency contact information is contained in the Key Contacts and Government Records Searched section on page 31 of this report.

## TARGET PROPERTY ADDRESS

VA CEMETERY  
VA CEMETERY  
MONTEVALLO, AL 35115

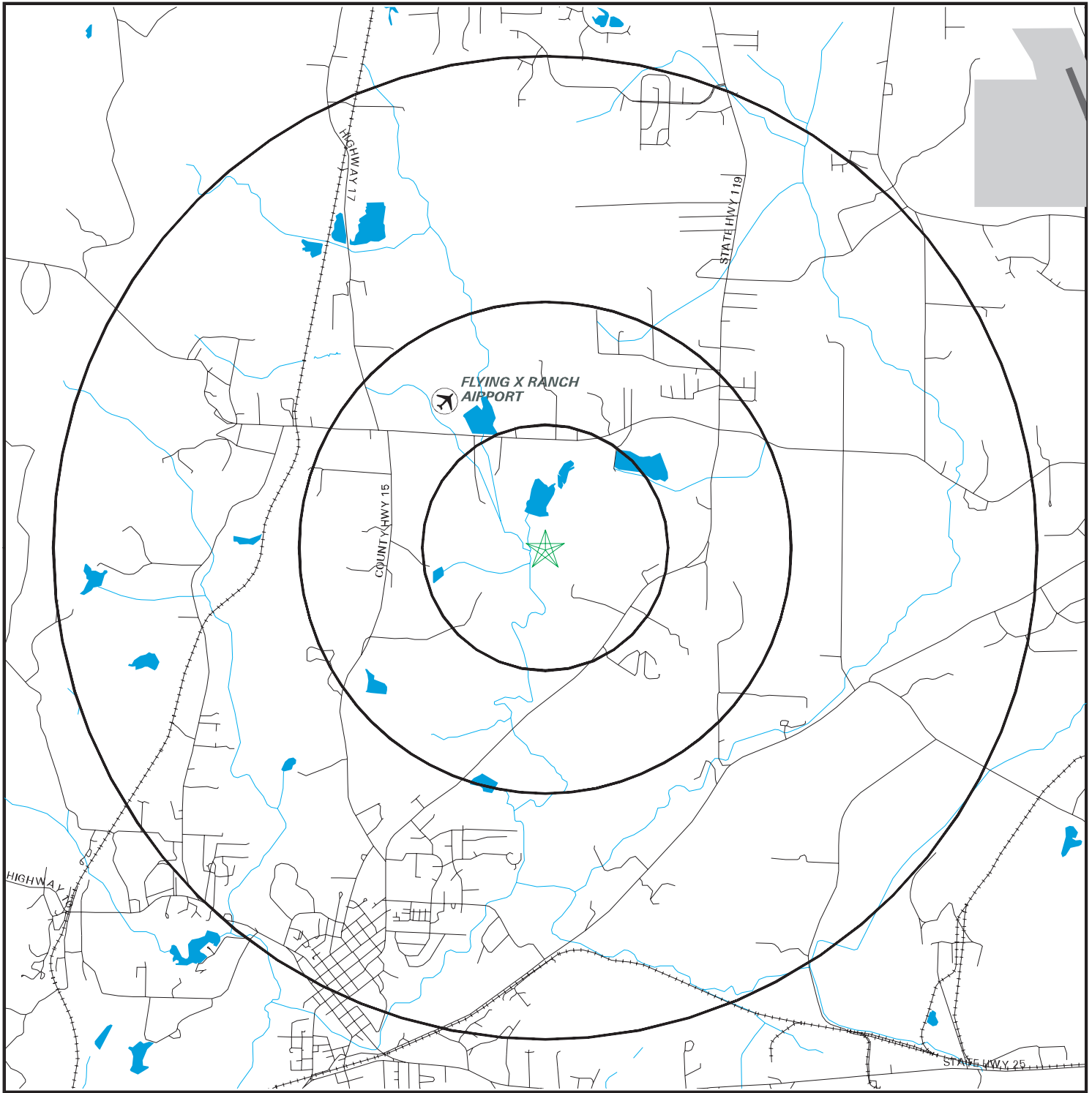
Inquiry #: 01418543.1r  
Date: 5/10/5

## TARGET PROPERTY COORDINATES

Latitude (North): 33.139900 - 33° 8' 23.6"  
Longitude (West): 86.840797 - 86° 50' 26.9"  
Universal Tranverse Mercator: Zone 16  
UTM X (Meters): 514848.6  
UTM Y (Meters): 3666616.0

Applicable Regulation from 47 CFR/FCC Checklist	Database	Search Distance (Miles)	Within Search	Within 1/8 Mile
<b><u>NATURAL AREAS MAP</u></b>				
1.1307a (1) Officially Designated Wilderness Area	US Federal Lands	3.00	NO	NO
1.1307a (2) Officially Designated Wildlife Preserve	US Federal Lands	3.00	NO	NO
1.1307a (2) Officially Designated Wildlife Preserve	AL Managed Lands	3.00	NO	NO
1.1307a (2) Officially Designated Wildlife Preserve	AL Wildlife Refuges	3.00	NO	NO
1.1307a (2) Officially Designated Wildlife Preserve	AL Wildlife Management Areas	3.00	NO	NO
1.1307a (3) Threatened or Endangered Species or Critical Habitat	County Endangered Species	County	YES	N/A
<b><u>HISTORIC SITES MAP</u></b>				
1.1307a (4) Listed or eligible for National Register	National Register Hist. Places	3.00	YES	NO
1.1307a (4) Listed or eligible for National Register	AL Historic Sites	3.00	NO	NO
<b><u>FLOODPLAIN MAP</u></b>				
1.1307 (6) Located in a Flood Plain	FLOODPLAIN	3.00	NO	NO
<b><u>WETLANDS MAP</u></b>				
1.1307 (7) Change in surface features (wetland fill)	NWI	3.00	YES	NO
<b><u>FCC &amp; FAA SITES MAP</u></b>				
	FCC Cellular	3.00	YES	NO
	FCC Antenna	3.00	YES	NO
	FCC Tower	3.00	YES	NO
	FCC AM Tower	3.00	NO	NO
	FAA DOF	3.00	YES	NO
	Airports	3.00	YES	YES
	Power Lines	3.00	NO	NO

# Natural Areas Map



- ★ Target Property
- ⊕ Locations
- ⚡ Roads
- ▨ Federal Areas
- ⚡ County Boundary
- ⚡ Federal Linear Features
- ⚡ Waterways
- ⚡ State Areas
- Water
- ⚡ State Linear Features
- ✈ Airports



TARGET PROPERTY: VA Cemetery  
 ADDRESS: VA Cemetery  
 CITY/STATE/ZIP: Montevallo AL 35115  
 LAT/LONG: 33.1399 / 86.8408

CUSTOMER: MACTEC, Inc.  
 CONTACT: Robert Perry  
 INQUIRY #: 01418543.1r  
 DATE: May 10, 2005

# NATURAL AREAS MAP FINDINGS

## Endangered Species Listed for: SHELBY County, AL.

Source: EPA Endangered Species Protection Program Database

CLAM: MOCCASINSHELL, ALABAMA  
CLAM: ACORNSHELL, SOUTHERN  
CLAM: MUCKET, ORANGE-NACRE  
CLAM: POCKETBOOK, FINE-LINED  
FISH: DARTER, GOLDLINE  
FISH: SHINER, CAHABA  
MAMMAL: BAT, GRAY  
MAMMAL: BAT, INDIANA  
SNAIL: SNAIL, TULOTOMA  
SNAIL: LIOPLAX, CYLINDRICAL  
SNAIL: PEBBLESNAIL, FLAT  
SNAIL: ROCKSNAIL, PAINTED  
SNAIL: ROCKSNAIL, ROUND

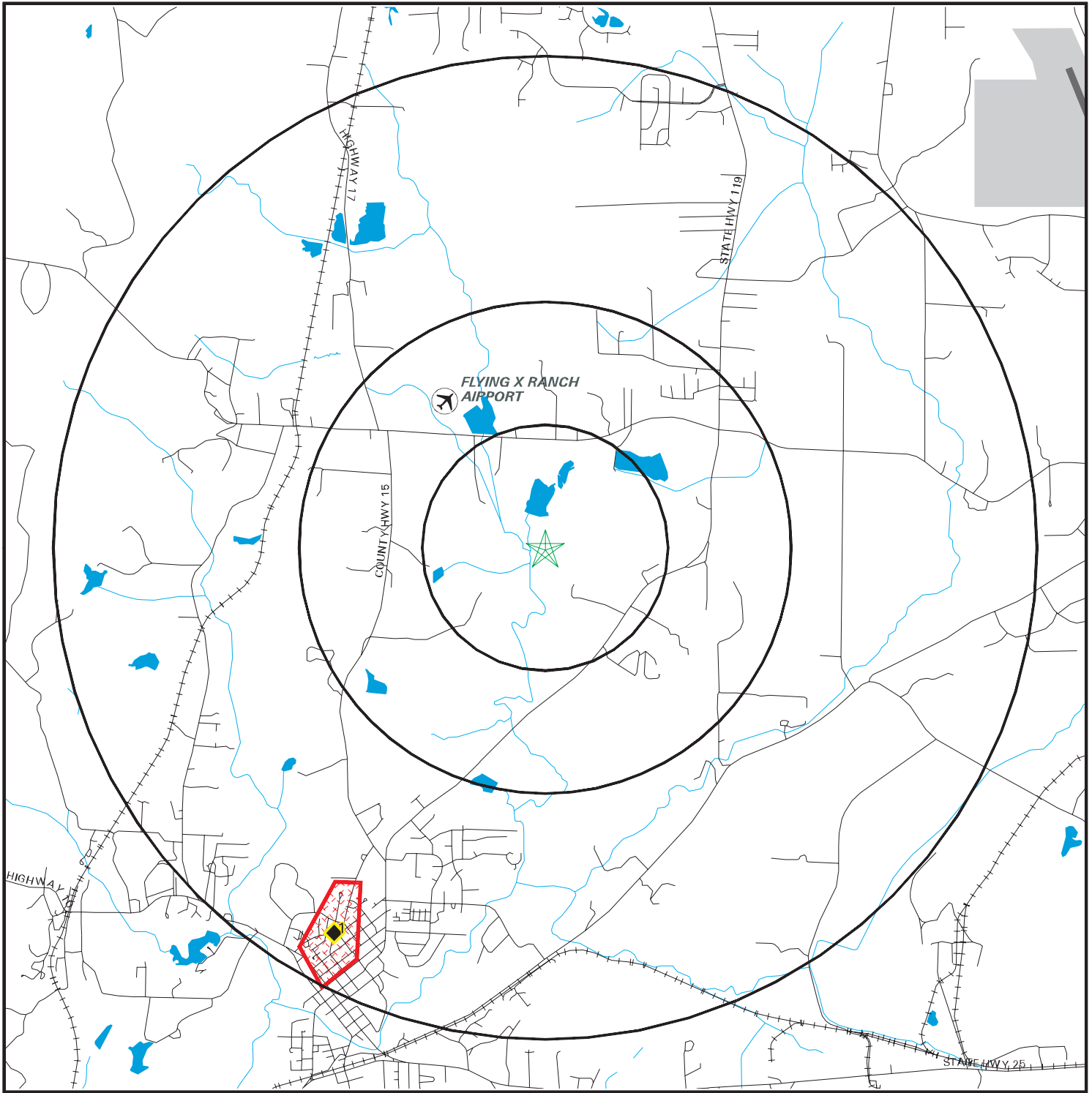
Map ID  
Direction  
Distance  
Distance (ft.)

EDR ID  
Database

---

No mapped sites were found in EDR's search of available government records within the search radius around the target property.

# Historic Sites Map



- ★ Target Property
- ◇ Historic Sites
- ≡ Streets
- ▨ Federal Historic Areas
- ▧ County Boundary
- ▩ State Historic Areas
- ≡ Waterways
- ▲ Scenic Trail
- Water
- ✈ Airports



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 INQUIRY #: 01418543.1r  
 DATE: May 10, 2005



# HISTORIC SITES MAP FINDINGS

Map ID	Direction	Distance	Distance (ft.)	EDR ID	Database
1					
SSW				90001529	
2-4 mi					National Register Hist. Places
12323					
	Resource Name:	University of Montevallo Historic District (Boundary Increase)			
	Alternate Name:	Not Reported			
	Resource Address:	Roughly bounded by Bloch St., Farmer St., Flowerhill Dr., King St., Valley St., and Middle St.			
	Resource Type:	District			
	Location:	MONTEVALLO, AL			
	County:	SHELBY, AL			
	Primary Certification:	Listed in the national register			
	Certification Date:	19901017	Acreage:	623	
	Number of Buildings:	48	Number of Objects:	0	
	Number of Sites:	2	Num. of Structures:	0	
	Number of non-contributing Buildings:	9			
	Number of non-contributing Objects:	0			
	Number of non-contributing Sites:	0			
	Num. of non-contributing Structures:	0			
	Applicable Criteria:	Event, Architecture/Engineering			
	Areas of Significance:	Architecture, Education, Community planning and development			
	Current Function:	Domestic, Education, Religion			
	Building Material:	Wood, Brick, Stucco, Asphalt, Concrete			
	Other Names:	See Also:Alabama Girls' Industrial School			

## UNMAPPABLE HISTORIC SITES

Due to poor or inadequate address information, the following sites were not mapped:

		Status EDR ID Database
Name:	Archer House	Unmappable
County:	SHELBY COUNTY	AL20000939
Site Dated:	1880s, 1910	AL Historic Sites
Date Added:	07/21/78	
Nomination:	Not reported	
Address:	intersection of New Hwy 280 and CR 55, 9481 Hwy 55, Westover 35185	
<hr/>		
Name:	Bel May Farm	Unmappable
County:	SHELBY COUNTY	AL20000940
Site Dated:	Circa 1869	AL Historic Sites
Date Added:	04/11/84	
Nomination:	Not reported	
Address:	Hwy 16, off Hwy 22, 5 mi SE, Route 5 Box 314, Montevallo	
<hr/>		
Name:	Buck Creek District (6)	Unmappable
County:	SHELBY COUNTY	AL20000942
Site Dated:	Circa 1865	AL Historic Sites
Date Added:	07/05/78	
Nomination:	Not reported	
Address:	1 mi NW Helena, Cahaba River and Buck Creek	
<hr/>		
Name:	Carter Residence (The Bowden Home)	Unmappable
County:	SHELBY COUNTY	AL20000944
Site Dated:	1915	AL Historic Sites
Date Added:	03/29/77	
Nomination:	Not reported	
Address:	19th Avenue, Calera	
<hr/>		
Name:	Chancellor House	Unmappable
County:	SHELBY COUNTY	AL20000945
Site Dated:	1935	AL Historic Sites
Date Added:	11/26/78	
Nomination:	Not reported	
Address:	intersection CRs 76 & 79, 4 1/2 mi from Hapersville	
<hr/>		
Name:	COLUMBIANA CITY HALL (formerly Shelby County Courthouse)	Unmappable
County:	SHELBY COUNTY	AL10000962
Site Dated:	1854	AL Historic Sites
Structures:	1	
Date Added:	10/29/74	
Nomination:	Not reported	
Address:	South Main Street, Columbiana	
<hr/>		
Name:	Cowart Drug Store	Unmappable
County:	SHELBY COUNTY	AL20000946
Site Dated:	Circa 1885	AL Historic Sites
Date Added:	02/15/77	
Nomination:	Not reported	
Address:	SW Corner of 17th Avenue and Hwy 31, Calera	

## UNMAPPABLE HISTORIC SITES

Due to poor or inadequate address information, the following sites were not mapped:

		Status EDR ID Database
Name:	Cunningham-Stamps House	Unmappable
County:	SHELBY COUNTY	AL20000947
Site Dated:	Circa 1828	AL Historic Sites
Date Added:	01/31/79	
Nomination:	Not reported	
Address:	N on Hwy 119 from Montevallo, CR 22 at Moore's	
<hr/>		
Name:	Ebenezer Church	Unmappable
County:	SHELBY COUNTY	AL20000948
Site Dated:	1891	AL Historic Sites
Date Added:	07/21/78	
Nomination:	Not reported	
Address:	AL 119 N to CR 24, 1 mi left on unpaved Rd, Ebenezer Com.	
<hr/>		
Name:	Falkner School	Unmappable
County:	SHELBY COUNTY	AL20000949
Site Dated:	Circa 1850	AL Historic Sites
Date Added:	03/21/78	
Nomination:	Not reported	
Address:	CR 43, 4 mi E of Vandiver	
<hr/>		
Name:	Frost-Sorrell Log House/Crowson-Ward House	Unmappable
County:	SHELBY COUNTY	AL20000950
Site Dated:	Circa 1820	AL Historic Sites
Date Added:	03/29/77	
Nomination:	Not reported	
Address:	N of Montevallo	
<hr/>		
Name:	Harrison House	Unmappable
County:	SHELBY COUNTY	AL20000951
Site Dated:	1887	AL Historic Sites
Date Added:	04/11/78	
Nomination:	Not reported	
Address:	intersection CRs 17 and 22, Dogwood (N. of Montevallo)	
<hr/>		
Name:	Jones-Bailey Cemetery	Unmappable
County:	SHELBY COUNTY	AL20000952
Site Dated:	1860	AL Historic Sites
Date Added:	11/13/78	
Nomination:	Not reported	
Address:	W of Old Hwy 31, N of Dargin Crossroad, Dargin	
<hr/>		
Name:	KING HOUSE	Unmappable
County:	SHELBY COUNTY	AL10000963
Site Dated:	1823	AL Historic Sites
Structures:	1	
Date Added:	01/14/72	
Nomination:	HABS	
Address:	University of Montevallo, Montevallo	

## UNMAPPABLE HISTORIC SITES

Due to poor or inadequate address information, the following sites were not mapped:

		Status EDR ID Database
Name:	Klein-Wallace Home	Unmappable
County:	SHELBY COUNTY	AL20000953
Site Dated:	1841	AL Historic Sites
Date Added:	01/18/78	
Nomination:	Not reported	
Address:	junction Hwys 25 and 76, Route 1, Harpersville	
<hr/>		
Name:	McGaughy Farms	Unmappable
County:	SHELBY COUNTY	AL20000954
Site Dated:	1840-1845	AL Historic Sites
Date Added:	02/15/77	
Nomination:	Not reported	
Address:	Rt 2, Box 41-C, Montevallo	
<hr/>		
Name:	Meredith-McLaughlin House (McLaughlin Farm)	Unmappable
County:	SHELBY COUNTY	AL20000956
Site Dated:	Circa 1820	AL Historic Sites
Date Added:	10/04/78	
Nomination:	Not reported	
Address:	Route, Box 129, Maylene	
<hr/>		
Name:	Mt. Calvary Baptist Church	Unmappable
County:	SHELBY COUNTY	AL20000957
Site Dated:	1905	AL Historic Sites
Date Added:	04/16/85	
Nomination:	Not reported	
Address:	AL Hwy 74 at Chelsea	
<hr/>		
Name:	Old Shelby Hotel	Unmappable
County:	SHELBY COUNTY	AL20000958
Site Dated:	1900	AL Historic Sites
Date Added:	09/14/77	
Nomination:	Not reported	
Address:	Broadway and Church streets, Shelby	
<hr/>		
Name:	People's Hotel	Unmappable
County:	SHELBY COUNTY	AL20000959
Site Dated:	1909	AL Historic Sites
Date Added:	03/25/76	
Nomination:	Not reported	
Address:	16th Avenue, Calera (demolished)	
<hr/>		
Name:	Perry Hall (Shoal Creek Farm, Inc.)	Unmappable
County:	SHELBY COUNTY	AL20000960
Site Dated:	1834	AL Historic Sites
Date Added:	09/17/76	
Nomination:	Not reported	
Address:	Hwy 119, Rt 2, Box 11, Montevallo	

## UNMAPPABLE HISTORIC SITES

Due to poor or inadequate address information, the following sites were not mapped:

		Status EDR ID Database
Name:	Railey House	Unmappable
County:	SHELBY COUNTY	AL20000961
Site Dated:	1890	AL Historic Sites
Date Added:	11/26/78	
Nomination:	Not reported	
Address:	Hwy 231, Vincent	
<hr/>		
Name:	Rock House (Eastis House)	Unmappable
County:	SHELBY COUNTY	AL20000962
Site Dated:	c. 1835	AL Historic Sites
Date Added:	12/04/92	
Nomination:	Not reported	
Address:	off US Hwy 230 East, Harpersville	
<hr/>		
Name:	Scott-Bradford Home	Unmappable
County:	SHELBY COUNTY	AL20000963
Site Dated:	1824; 1830s	AL Historic Sites
Date Added:	01/18/78	
Nomination:	Not reported	
Address:	Rt 1, Harpersville, Hwy 25 to Wilsonville on Hwy 76	
<hr/>		
Name:	The Brick House	Unmappable
County:	SHELBY COUNTY	AL20000941
Site Dated:	Not Reported	AL Historic Sites
Date Added:	02/19/88	
Nomination:	Not reported	
Address:	Shelby Co. Hwy. 42, 1 mi. W of Co. Hwy. 47, Shelby	
<hr/>		
Name:	UNIVERSITY OF MONTEVALLO HISTORIC DISTRICT	Unmappable
County:	SHELBY COUNTY	AL10000964
Site Dated:	1896	AL Historic Sites
Structures:	16	
Date Added:	12/11/78	
Nomination:	HABS (2)	
Address:	University of Montevallo campus, Montevallo (portion generally bounded on S by Oak St, E by Bloch St, N by Middle Campus Dr, and W by Middle St)	
<hr/>		
Name:	Wilson-Albright Log Cabin	Unmappable
County:	SHELBY COUNTY	AL20000964
Site Dated:	Circa 1820	AL Historic Sites
Date Added:	02/06/78	
Nomination:	Not reported	
Address:	1/4 mi N CRs 22 & 107, Montevallo vicinity	
<hr/>		
Name:	Wilson-Lathem-Taff House	Unmappable
County:	SHELBY COUNTY	AL20000965
Site Dated:	Circa 1880	AL Historic Sites
Date Added:	02/28/79	
Nomination:	Not reported	

## UNMAPPABLE HISTORIC SITES

Due to poor or inadequate address information, the following sites were not mapped:

Status  
EDR ID  
Database

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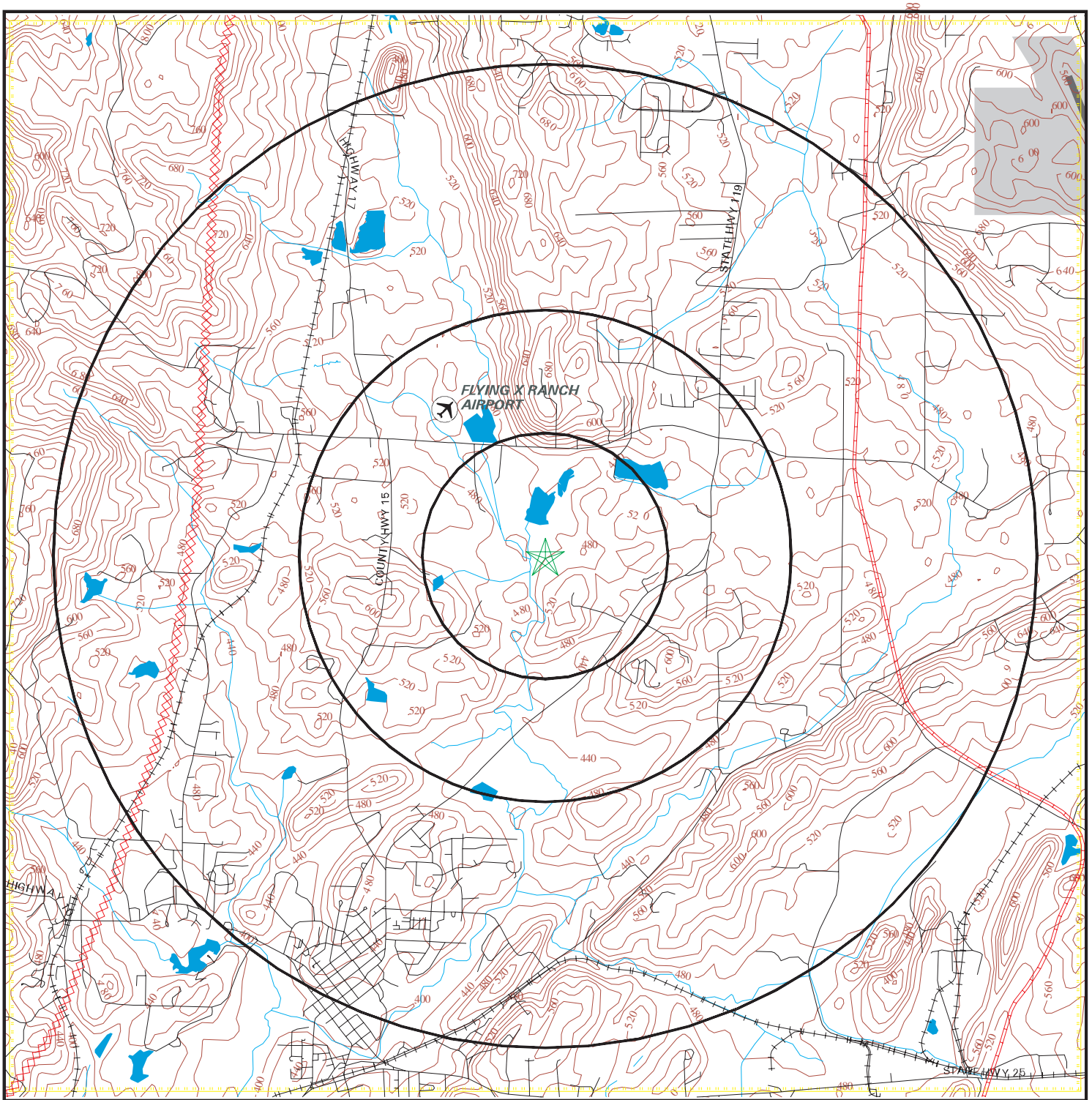
Address: 131 Shelby Street, Montevallo

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Name: Woods-Cleveland-Cooling House  
County: SHELBY COUNTY  
Site Dated: Circa 1845  
Date Added: 11/16/78  
Nomination: Not reported  
Address: off AL Hwy 25, 1 mi S of Wilton

Unmappable  
AL20000966  
AL Historic Sites

# Flood Plain Map



- |                 |                                |                                    |
|-----------------|--------------------------------|------------------------------------|
| Major Roads     | Power Lines                    | Water                              |
| Contour Lines   | Pipe Lines                     | 100-year flood zone                |
| Waterways       | Fault Lines                    | 500-year flood zone                |
| County Boundary | Electronic FEMA data available | Electronic FEMA data not available |
| Airports        |                                |                                    |



<b>TARGET PROPERTY:</b> VA Cemetery <b>ADDRESS:</b> VA Cemetery <b>CITY/STATE/ZIP:</b> Montevallo AL 35115 <b>LAT/LONG:</b> 33.1399 / 86.8408	<b>CUSTOMER:</b> MACTEC, Inc. <b>CONTACT:</b> Robert Perry <b>INQUIRY #:</b> 01418543.1r <b>DATE:</b> May 10, 2005	TC01418543.1r Page 12 of 36
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# FLOOD PLAIN MAP FINDINGS

Source: FEMA Q3 Flood Data

County

FEMA flood data electronic coverage

SHELBY, AL

NO

Flood Plain panel at target property:

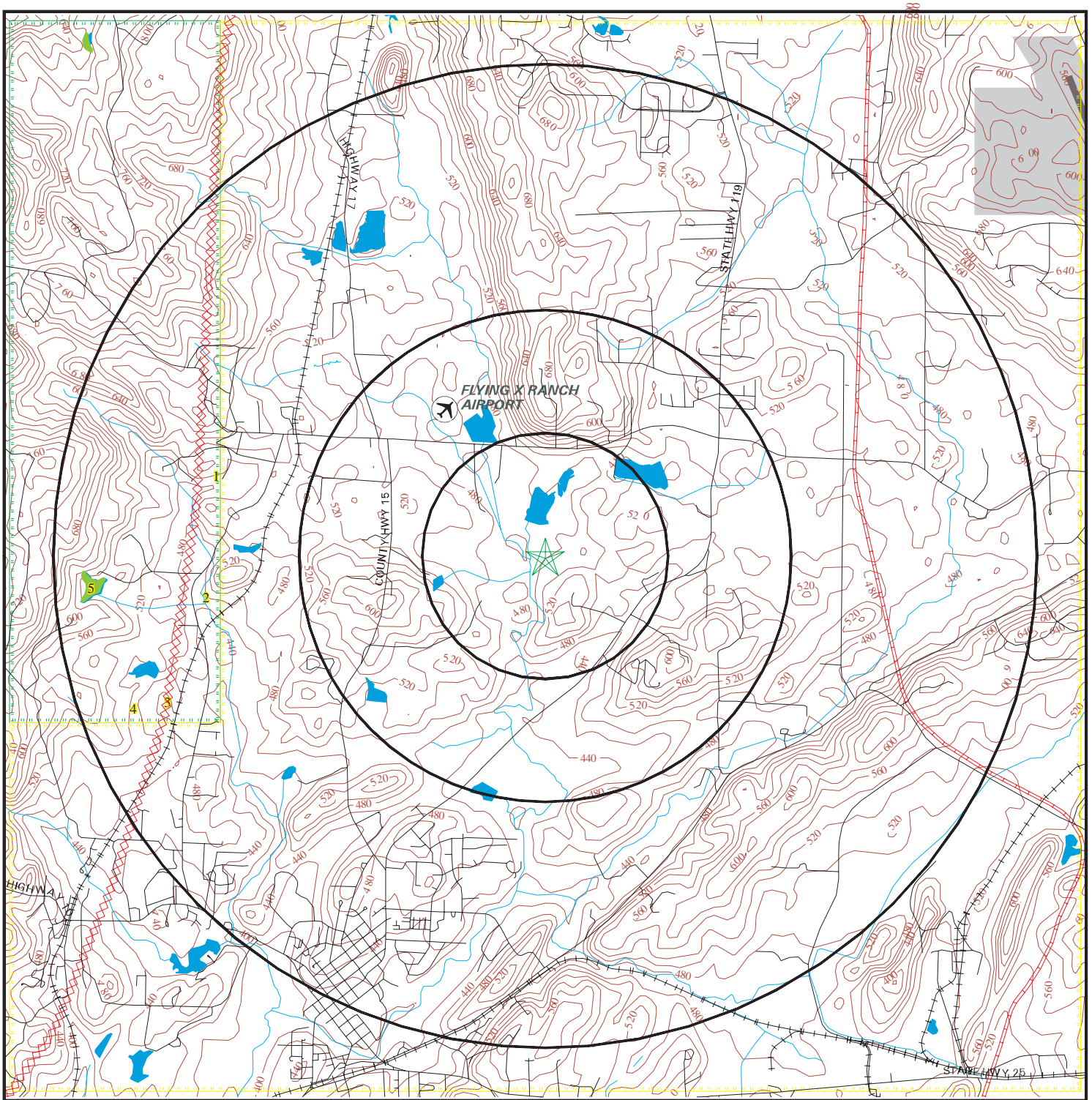
None Reported

Additional Flood Plain panel(s) in search area:

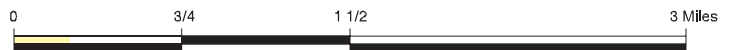
None Reported



# National Wetlands Inventory Map



- |  |                 |  |                                   |  |                               |
|--|-----------------|--|-----------------------------------|--|-------------------------------|
|  | Major Roads     |  | Power Lines                       |  | Water                         |
|  | Contour Lines   |  | Pipe Lines                        |  | Federal Wetlands              |
|  | Waterways       |  | Fault Lines                       |  | Electronic NWI data available |
|  | County Boundary |  | Electronic NWI data not available |  |                               |
|  | Airports        |  |                                   |  |                               |



<b>TARGET PROPERTY:</b> VA Cemetery <b>ADDRESS:</b> VA Cemetery <b>CITY/STATE/ZIP:</b> Montevallo AL 35115 <b>LAT/LONG:</b> 33.1399 / 86.8408	<b>CUSTOMER:</b> MACTEC, Inc. <b>CONTACT:</b> Robert Perry <b>INQUIRY #:</b> 01418543.1r <b>DATE:</b> May 10, 2005	TC01418543.1r Page 14 of 36
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## WETLANDS MAP FINDINGS

Source: Fish and Wildlife Service NWI data

NWI hardcopy map at target property: Alabaster

Additional NWI hardcopy map(s) in search area:

Pea Ridge  
Aldrich  
Montevallo

Map ID

Direction

Distance

Distance (ft.)

Code and Description\*

Database

Map ID Direction Distance Distance (ft.)	Code and Description*	Database
1 WNW 2-4 mi 10870	PUBHh [P] Palustrine, [UB] Unconsolidated Bottom, [H] Permanently Flooded, [h] Diked/Impounded	NWI
2 West 2-4 mi 10926	PUBHx [P] Palustrine, [UB] Unconsolidated Bottom, [H] Permanently Flooded, [x] Excavated	NWI
3 WSW 2-4 mi 12917	PUBHx [P] Palustrine, [UB] Unconsolidated Bottom, [H] Permanently Flooded, [x] Excavated	NWI
4 WSW 2-4 mi 14048	PUBHh [P] Palustrine, [UB] Unconsolidated Bottom, [H] Permanently Flooded, [h] Diked/Impounded	NWI
5 West 2-4 mi 14185	PUBHx [P] Palustrine, [UB] Unconsolidated Bottom, [H] Permanently Flooded, [x] Excavated	NWI

\*See Wetland Classification System for additional information.

# WETLANDS CLASSIFICATION SYSTEM

National Wetland Inventory Maps are produced by the U.S. Fish and Wildlife Service, a sub-department of the U.S. Department of the Interior. In 1974, the U.S. Fish and Wildlife Service developed a criteria for wetland classification with four long range objectives:

- to describe ecological units that have certain homogeneous natural attributes,
- to arrange these units in a system that will aid decisions about resource management,
- to furnish units for inventory and mapping, and
- to provide uniformity in concepts and terminology throughout the U.S.

High altitude infrared photographs, soil maps, topographic maps and site visits are the methods used to gather data for the productions of these maps. In the infrared photos, wetlands appear as different colors and these wetlands are then classified by type. Using a hierarchical classification, the maps identify wetland and deepwater habitats according to:

- system
- subsystem
- class
- subclass
- modifiers

(as defined by Cowardin, et al. U.S. Fish and Wildlife Service FWS/OBS 79/31. 1979.)

The classification system consists of five systems:

1. marine
2. estuarine
3. riverine
4. lacustrine
5. palustrine

The marine system consists of deep water tidal habitats and adjacent tidal wetlands. The riverine system consists of all wetlands contained within a channel. The lacustrine systems includes all nontidal wetlands related to swamps, bogs & marshes. The estuarine system consists of deepwater tidal habitats and where ocean water is diluted by fresh water. The palustrine system includes nontidal wetlands dominated by trees and shrubs and where salinity is below .5% in tidal areas. All of these systems are divided in subsystems and then further divided into class.

National Wetland Inventory Maps are produced by transferring gathered data on a standard 7.5 minute U.S.G.S. topographic map. Approximately 52 square miles are covered on a National Wetland Inventory map at a scale of 1:24,000. Electronic data is compiled by digitizing these National Wetland Inventory Maps.

**SYSTEM**

**MARINE**

**SUBSYSTEM**

**1 - SUBTIDAL**

**2 - INTERTIDAL**

CLASS	RB-ROCK BOTTOM	UB-UNCONSOLIDATED BOTTOM	AB-AQUATIC BED	RF-REEF	OW-OPEN WATER / Unknown Bottom	AB-AQUATIC BED	RF-REEF	RS-ROCKY SHORE	US-UNCONSOLIDATED SHORE
Subclass	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Algal 3 Rooted Vascular 5 Unknown Submergent	1 Coral 3 Worm		1 Algal 3 Rooted Vascular 5 Unknown Submergent	1 Coral 3 Worm	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic

**SYSTEM**

**E - ESTUARINE**

**SUBSYSTEM**

**1 - SUBTIDAL**

CLASS	RB-ROCK BOTTOM	UB-UNCONSOLIDATED BOTTOM	AB-AQUATIC BED	RF-REEF	OW-OPEN WATER / Unknown Bottom
Subclass	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Algal 3 Rooted Vascular 4 Floating Vascular 5 Unknown Submergent 6 Unknown Surface	2 Mollusk 3 Worm	

**SUBSYSTEM**

**2 - INTERTIDAL**

CLASS	AB-AQUATIC BED	RF-REEF	SB - STREAMBED	RS-ROCKY SHORE	US-UNCONSOLIDATED SHORE	EM-EMERGENT	SS-SCRUB SHRUB	FO-FORESTED
Subclass	1 Algal 3 Rooted Vascular 4 Floating Vascular 5 Unknown Submergent 6 Unknown Surface	2 Mollusk 3 Worm	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Persistent 2 Nonpersistent	1 Broad-Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 Deciduous 7 Evergreen	1 Broad-Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 Deciduous 7 Evergreen

**SYSTEM**

**R - RIVERINE**

**SUBSYSTEM**

**1 - TIDAL      2 - LOWER PERENNIAL      3 - UPPER PERENNIAL      4 - INTERMITTENT      5 - UNKNOWN PERENNIAL**

CLASS	RB-ROCK BOTTOM	UB-UNCONSOLIDATED BOTTOM	*SB-STREAMBED	AB-AQUATIC BED	RS-ROCKY SHORE	US-UNCONSOLIDATED SHORE	**EM-EMERGENT	OW-OPEN WATER/ Unknown Bottom
Subclass	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Bedrock 2 Rubble 3 Cobble-Gravel 4 Sand 5 Mud 6 Organic 7 Vegetated	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 Unknown Submergent 6 Unknown Surface	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic 5 Vegetated	2 Nonpersistent	

\* STREAMBED is limited to TIDAL and INTERMITTENT SUBSYSTEMS, and comprises the only CLASS in the INTERMITTENT SUBSYSTEM.  
 \*\*EMERGENT is limited to TIDAL and LOWER PERENNIAL SUBSYSTEMS.

**SYSTEM**

**L - LACUSTRINE**

**SUBSYSTEM**

**1 - LIMNETIC**

CLASS	RB-ROCK BOTTOM	UB-UNCONSOLIDATED BOTTOM	AB-AQUATIC BED	OW-OPEN WATER/ Unknown Bottom
Subclass	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 Unknown Submergent 6 Unknown Surface	

**SUBSYSTEM**

**2 - LITTORAL**

CLASS	RB-ROCK BOTTOM	UB-UNCONSOLIDATED BOTTOM	AB-AQUATIC BED	RS-ROCKY SHORE	US-UNCONSOLIDATED SHORE	EM-EMERGENT	OW-OPEN WATER/ Unknown Bottom
Subclass	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 Unknown Submergent 6 Unknown Surface	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic 5 Vegetated	2 Nonpersistent	

**SUBSYSTEM**

**P - PALUSTRINE**

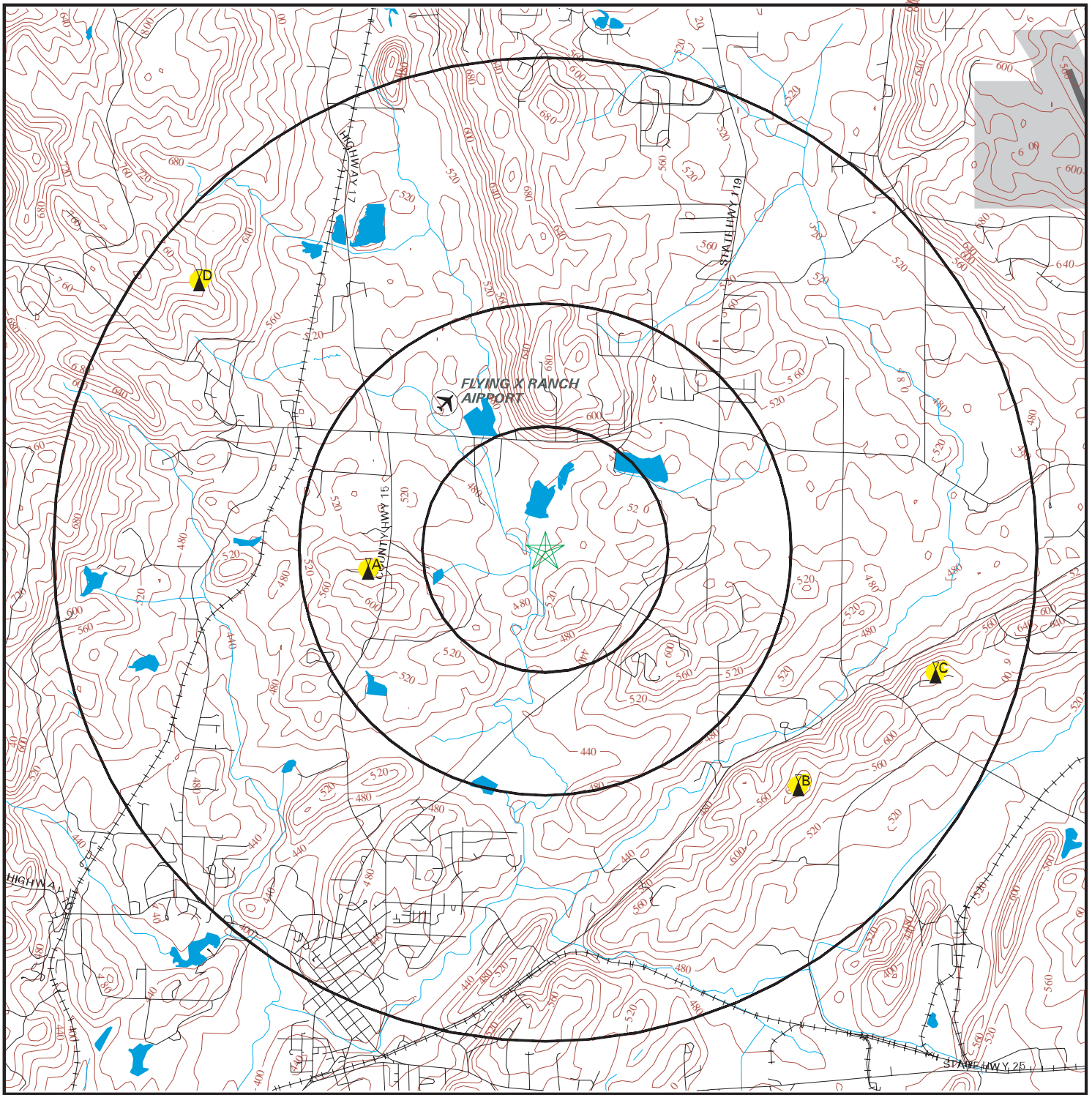
CLASS	RB--ROCK BOTTOM	UB--UNCONSOLIDATED BOTTOM	AB-AQUATIC BED	US--UNCONSOLIDATED SHORE	ML--MOSS- LICHEN	EM--EMERGENT	SS--SCRUB-SHRUB	FO--FORESTED	OW-OPEN WATER/ Unknown
Subclass	1 Bedrock 2 Rubble 3 Mud 4 Organic	1 Cobble-Gravel 2 Sand	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 Unknown 6 Unknown Surface	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic 5 Vegetated	1 Moss 2 Lichen	1 Persistent 2 Nonpersistent	1 Broad-Leaved 2 Needle-Leaved 3 Broad-Leaved 4 Needle-Leaved 5 Dead 6 Deciduous 7 Evergreen	1 Broad-Leaved 2 Needle-Leaved 3 Broad-Leaved 4 Needle-Leaved 5 Dead 6 Deciduous 7 Evergreen	








**MODIFIERS**




In order to more adequately describe wetland and deepwater habitats one or more of the water regime, water chemistry, soil, or special modifiers may be applied at the class or lower level in the hierarchy. The farmed modifier may also be applied to the ecological system.

WATER REGIME				WATER CHEMISTRY			SOIL	SPECIAL MODIFIERS
Non-Tidal	Tidal	Coastal Halinity	Inland Salinity	pH	all Fresh Water			
A Temporarily Flooded	H Permanently Flooded	K Artificially Flooded	*S Temporary-Tidal		1 Hyperhaline	7 Hypersaline	g Organic	b Beaver
B Saturated	J Intermittently Flooded	L Subtidal	*R Seasonal-Tidal		2 Euhaline	8 Eusaline	n Mineral	d Partially Drained/Ditched
C Seasonally Flooded	K Artificially Flooded	M Irregularly Exposed	*T Semipermanent -Tidal		3 Mixohaline (Brackish)	9 Mixosaline	a Acid	f Farmed
D Seasonally Flooded/ Well Drained	W Intermittently Flooded/Temporary	N Regularly Flooded	V Permanent -Tidal		4 Polyhaline	0 Fresh	t Circumneutral	h Diked/Impounded
E Seasonally Flooded/ Saturated	Y Saturated/Semipermanent/ Seasonal	P Irregularly Flooded	U Unknown		5 Mesohaline		i Alkaline	r Artificial Substrate
F Semipermanently Flooded	Z Intermittently Exposed/Permanent	*These water regimes are only used in tidally influenced, freshwater systems.			6 Oligohaline			s Spoil
G Intermittently Exposed	U Unknown				0 Fresh			x Excavated

# FCC & FAA Sites Map



-  Streets
-  Contour Lines
-  County Boundary
-  Waterways
-  Power Lines
-  Water
-  Airports

-  Sites
-  Omni Directional AM Interference
-  Directional AM Interference



TARGET PROPERTY: VA Cemetery  
 ADDRESS: VA Cemetery  
 CITY/STATE/ZIP: Montevallo AL 35115  
 LAT/LONG: 33.1399 / 86.8408

CUSTOMER: MACTEC, Inc.  
 CONTACT: Robert Perry  
 INQUIRY #: 01418543.1r  
 DATE: May 10, 2005

# FCC & FAA SITES MAP FINDINGS TOWERS

**Map ID**  
**Direction**  
**Distance**  
**Distance (ft.)**

**EDR ID**  
**Database**

A1  
West  
1-2 mi  
5734

ANT100000009747  
ANTREG

Tower ID:	1010001		
Address:	112 GLORY RD, MONTEVALLO, AL		
Lat (NAD 27):	330817	Lon (NAD 27):	0865134
Lat (NAD 83):	330817	Lon (NAD 83):	0865134
Construction Date:		Dismantled Date:	
Nepa Flag:	N	FAA ID:	96-ASO-4926-OE
Structure Type:	TOWER	Elevation (M):	173.70
Structure Hgt (M):	78.00	Hgt Above Ground:	78.00
Hgt Above Ground (M):	78.0297470	Hgt Above Mean Sea Level (M):	251.767852
Date Activated:	Dec 12 1996	License Issue Date:	Dec 12 1996
Date Keyed:	Dec 11 1996	Date Printed:	Dec 13 1996
Date Processed:	Dec 11 1996	Date Received:	Dec 11 1996
Licensee Signature	MICHAEL FRANKAEL FRANKLIN		
Nature of Modification:		Purpose:	N
Company (DBA) Name:	SPRINT PCS		
Owner Name:	SPRINT SPECTRUM LP		
Attention:	MICHAEL FRANKLIN ROBINSON		
Owner Address:	2090 COLUMBIANA RD STE 3000, BIRMINGHAM, AL 35216		
Owner PO Box:		Phone Number:	2058244140
E-Mail Address:	MBOYD01@SPRINTSPECTRUM.COM		
Internet Domain:	SPRINTSPECTRUM.COM		
Painting & Lighting Specs:		Date of Last Remarks:	Dec 12 1996
Special Conditions #1:			
Special Conditions #2:			
Key Remarks:	CORRECTED OVERALL STRUCTURE HEIGHT, SUBMITTED WITH AMSL. CLEARED STRUCTURE WITH CLEARANCE FILE COPY.		

This record is for a license, and it may or may not indicate a site which has been built.

A2  
West  
1-2 mi  
5735

DOF000000002622  
FAA DOF

Unique ID:	11881	Obstruction #:	1881
City:	MONTEVALLO	State:	Alabama
Verification Status:	unverified	Obstruction Type:	TOWER
Latitude:	33 08 17N	Longitude:	086 51 34W
Frequency:	Not Reported	Type of Lighting:	Dual, Red with MEDIUM Intensity White Strobe
Above Ground Level Height (Ft.):			0256
Above Mean Sea Level Height (Ft.):			00826
Horizontal Accuracy:	Not Reported	Vertical Accuracy:	Not Reported
Painted/Marked:	No	FAA Study #:	96SO4926



# FCC & FAA SITES MAP FINDINGS TOWERS

**Map ID**  
**Direction**  
**Distance**  
**Distance (ft.)**

**EDR ID**  
**Database**

B3  
SE  
2-4 mi  
11144

CEL10000043260  
CELLULAR

Low Frequency:	880.02000000	High Frequency:	889.98000000
Callsign:	KNKA262	Radio Code:	CL
DBA Name:	ALABAMA CELLULAR SERVICE, INC.		
Contact:	Not Reported		
Licensee:	ALABAMA CELLULAR SERVICE, INC.		
	Not Reported		
	ATLANTA, GA 30342		
Transmitter Address:	225 HWY 22		
	CALERA, AL		
County:	SHELBY		
Latitude:	330708	Longitude:	0864851
Elevation:	00000	Height:	00000
Height Average:	00000	Effective Height:	00000
Structure Height:	00000	Class Code:	FB
ERP:	10000000	Database ID:	Y
License Date:	940219	Emissions:	40K0F3E 40K0F1D
Issue Date:	940107	Expiration Date:	941001
Mobile Vehicles:	Not Reported	Total Units:	Not Reported
Control Point Auth:	00	Authorization Type:	L

This record is for a license, and it may or may not indicate a site which has been built.

B4  
SE  
2-4 mi  
11144

CEL10000018474  
CELLULAR

Low Frequency:	835.02000000	High Frequency:	844.98000000
Callsign:	KNKA262	Radio Code:	CL
DBA Name:	ALABAMA CELLULAR SERVICE, INC.		
Contact:	Not Reported		
Licensee:	ALABAMA CELLULAR SERVICE, INC.		
	Not Reported		
	ATLANTA, GA 30342		
Transmitter Address:	225 HWY 22		
	CALERA, AL		
County:	SHELBY		
Latitude:	330708	Longitude:	0864851
Elevation:	00000	Height:	00000
Height Average:	00000	Effective Height:	00000
Structure Height:	00000	Class Code:	MO
ERP:	10000000	Database ID:	Y
License Date:	940219	Emissions:	40K0F3E 40K0F1D
Issue Date:	940107	Expiration Date:	941001
Mobile Vehicles:	Not Reported	Total Units:	Not Reported
Control Point Auth:	00	Authorization Type:	L

This record is for a license, and it may or may not indicate a site which has been built.

# FCC & FAA SITES MAP FINDINGS TOWERS

Map ID  
Direction  
Distance  
Distance (ft.)

EDR ID  
Database

B5  
SE  
2-4 mi  
11144

TOW100000014398  
TOWER

Tower ID:	119042		
Tower Owner Name:	ALABAMA CELLULAR SERVICE INC 225 HWY 222, MONTEVALLO, AL		
Latitude:	33 7' 119228"	Latitude (in seconds):	119228
Longitude:	86 48' 51"	Longitude (in seconds):	312531
Transmitter Latitude:	330708	Transmitter Longitude	0864851
Construction Date:		Activation Date:	Nov 13 1992
FAA Date:	Jun 5 1992	FCC Date:	Oct 22 1992
File Number:	00342-CL-L-92	FAA ID:	92-ASO-0707-OE
Antenna Height:	0.0000	Antenna Height (M):	0.0000
Beacon Height:	0.0000	Beacon Height (M):	0.0000
Elevation:	1045.0000	Elevation FAA:	1045.0000
Elevation FAA (M):	318.5000	Elevation (M):	318.5000
Structure Height:	414.0000	Structure Height (M):	126.2000
Structure Height FAA:	414.0000	Structure Height FAA (M):	126.2000
Supporting Struct Hgt:	0.0000	Supporting Struct Hgt (M):	0.0000
Tower Height:	414.0000	Tower Height (M):	126.2000
Structure Type:	TOW	Tower Type:	E
Key Remarks:		Date:	
Key Site:	19247	Record Action:	MOD
ID Exam:	PRB4	ID_ASB_ACC:	A
Paint and Lighting Specs:	A H I		
Special Conditions/Remarks:	PARAGRAPH A MODIFIED TO REQUIRE USE OF L-865 MEDIUM INTENSITY LIGHTS AT THE TOP AND MID LEVELS IN LIEU OF L-856. LIGHTS SHALL EMIT A PEAK INTENSITY OF APPROXIMATELY 2,000 CANDELAS AT NIGHT IN LIEU OF 4,000.		

This record is for a license, and it may or may not indicate a site which has been built.

B6  
SE  
2-4 mi  
11144

DOF000000012706  
FAA DOF

Unique ID:	11403	Obstruction #:	1403
City:	MONTEVALLO	State:	Alabama
Verification Status:	verified	Obstruction Type:	TOWER
Latitude:	33 07 08N	Longitude:	086 48 51W
Frequency:	Not Reported	Type of Lighting:	Medium Intensity White Strobe Lighting
Above Ground Level Height (Ft.):			0414
Above Mean Sea Level Height (Ft.):			01045
Horizontal Accuracy:	+50'	Vertical Accuracy:	+20'
Painted/Marked:	No	FAA Study #:	92SO0707

# FCC & FAA SITES MAP FINDINGS TOWERS

Map ID  
Direction  
Distance  
Distance (ft.)

EDR ID  
Database

C7  
ESE  
2-4 mi  
13183

ANT100000027942  
ANTREG

Tower ID:	1028407		
Address:	.4 MI E INT SPRINGCREEK RD & CR 16, CALERA, AL		
Lat (NAD 27):	330744	Lon (NAD 27):	0864759
Lat (NAD 83):	330744	Lon (NAD 83):	0864759
Construction Date:	Jan 1 1991	Dismantled Date:	
Nepa Flag:	N	FAA ID:	91-ASO-0028-OE
Structure Type:	TOWER	Elevation (M):	192.00
Structure Hgt (M):	56.30	Hgt Above Ground:	60.00
Hgt Above Ground (M):	60.3511314	Hgt Above Mean Sea Level (M):	252.377456
Date Activated:	Jan 27 1999	License Issue Date:	Sep 2 1997
Date Keyed:	Sep 2 1997	Date Printed:	Sep 3 1997
Date Processed:	Sep 2 1997	Date Received:	Aug 22 1997
Licensee Signature	JOAN ROBBINS		
Nature of Modification:		Purpose:	R
Company (DBA) Name:			
Owner Name:	GTE MOBILNET OF BIRMINGHAM INCORPORATED		
Attention:	REGULATORY DEPT		
Owner Address:	245 PERIMETER CTR PKY, ATLANTA, GA 30346		
Owner PO Box:		Phone Number:	7703533517
E-Mail Address:	JROBBINS@MOBILNET.GTE.COM		
Internet Domain:	MOBILNET.GTE.COM		
Painting & Lighting Specs:		Date of Last Remarks:	
Special Conditions #1:			
Special Conditions #2:			
Key Remarks:			

This record is for a license, and it may or may not indicate a site which has been built.

# FCC & FAA SITES MAP FINDINGS TOWERS

Map ID  
Direction  
Distance  
Distance (ft.)

EDR ID  
Database

C8  
ESE  
2-4 mi  
13183

CEL100000031952  
CELLULAR

Low Frequency:	870.03000000	High Frequency:	879.99000000
Callsign:	KNKA343	Radio Code:	CL
DBA Name:	CONTEL CELLULAR OF BIRMINGHAM, INC.		
Contact:	Not Reported		
Licensee:	CONTEL CELLULAR OF BIRMINGHAM, INC.		
	Not Reported		
	ATLANTA, GA 30346		
Transmitter Address:	0.4 EAST OF INTERSECTION OF SPRINGCREEK SHELBY, AL		
County:	SHELBY		
Latitude:	330744	Longitude:	0864759
Elevation:	00000	Height:	00000
Height Average:	00000	Effective Height:	00000
Structure Height:	00000	Class Code:	FB
ERP:	10000000	Database ID:	Y
License Date:	940219	Emissions:	40K0F3E 40K0F1D
Issue Date:	940124	Expiration Date:	961001
Mobile Vehicles:	Not Reported	Total Units:	Not Reported
Control Point Auth:	00	Authorization Type:	L

This record is for a license, and it may or may not indicate a site which has been built.

C9  
ESE  
2-4 mi  
13183

CEL100000003679  
CELLULAR

Low Frequency:	825.03000000	High Frequency:	834.99000000
Callsign:	KNKA343	Radio Code:	CL
DBA Name:	CONTEL CELLULAR OF BIRMINGHAM, INC.		
Contact:	Not Reported		
Licensee:	CONTEL CELLULAR OF BIRMINGHAM, INC.		
	Not Reported		
	ATLANTA, GA 30346		
Transmitter Address:	0.4 EAST OF INTERSECTION OF SPRINGCREEK SHELBY, AL		
County:	SHELBY		
Latitude:	330744	Longitude:	0864759
Elevation:	00000	Height:	00000
Height Average:	00000	Effective Height:	00000
Structure Height:	00000	Class Code:	MO
ERP:	10000000	Database ID:	Y
License Date:	940219	Emissions:	40K0F3E 40K0F1D
Issue Date:	940124	Expiration Date:	961001
Mobile Vehicles:	Not Reported	Total Units:	Not Reported
Control Point Auth:	00	Authorization Type:	L

This record is for a license, and it may or may not indicate a site which has been built.

# FCC & FAA SITES MAP FINDINGS TOWERS

Map ID  
Direction  
Distance  
Distance (ft.)

EDR ID  
Database

C10  
ESE  
2-4 mi  
13183

TOW100000008588  
TOWER

Tower ID:	113469		
Tower Owner Name:	CONTEL CELLULAR HOLDING, INC .4 ML EAST, CALERA, AL		
Latitude:	33 7' 119264"	Latitude (in seconds):	119264
Longitude:	86 47' 59"	Longitude (in seconds):	312479
Transmitter Latitude:	330744	Transmitter Longitude	0864759
Construction Date:	99/99/1999	Activation Date:	Jun 13 1991
FAA Date:	Feb 12 1991	FCC Date:	Jun 19 1991
File Number:	12207-CF-P-91	FAA ID:	91-ASO-0028-OE
Antenna Height:	0.0000	Antenna Height (M):	0.0000
Beacon Height:	0.0000	Beacon Height (M):	0.0000
Elevation:	828.0000	Elevation FAA:	828.0000
Elevation FAA (M):	252.4000	Elevation (M):	252.4000
Structure Height:	198.0000	Structure Height (M):	60.4000
Structure Height FAA:	198.0000	Structure Height FAA (M):	60.4000
Supporting Struct Hgt:	0.0000	Supporting Struct Hgt (M):	0.0000
Tower Height:	198.0000	Tower Height (M):	60.4000
Structure Type:	TOW	Tower Type:	E
Key Remarks:		Date:	
Key Site:	19278	Record Action:	ADD
ID Exam:	ASB6	ID_ASB_ACC:	C
Paint and Lighting Specs:			
Special Conditions/Remarks:			

This record is for a license, and it may or may not indicate a site which has been built.

# FCC & FAA SITES MAP FINDINGS TOWERS

**Map ID**  
**Direction**  
**Distance**  
**Distance (ft.)**

**EDR ID**  
**Database**

D11  
NW  
2-4 mi  
14117

TOW100000073065  
TOWER

Tower ID:	65520		
Tower Owner Name:	SCI COMMUNICATIONS, INC		
	, UNDERWOOD, AL		
Latitude:	33 9' 119389"	Latitude (in seconds):	119389
Longitude:	86 52' 38"	Longitude (in seconds):	312758
Transmitter Latitude:	330949	Transmitter Longitude	0865238
Construction Date:	07/28/1986	Activation Date:	Mar 4 1993
FAA Date:	Aug 21 1985	FCC Date:	Sep 24 1985
File Number:	15253-CF-P-85	FAA ID:	85-ASO-1634-OE
Antenna Height:	0.0000	Antenna Height (M):	0.0000
Beacon Height:	0.0000	Beacon Height (M):	0.0000
Elevation:	964.0000	Elevation FAA:	964.0000
Elevation FAA (M):	293.8000	Elevation (M):	293.8000
Structure Height:	255.0000	Structure Height (M):	77.7000
Structure Height FAA:	255.0000	Structure Height FAA (M):	77.7000
Supporting Struct Hgt:	0.0000	Supporting Struct Hgt (M):	0.0000
Tower Height:	0.0000	Tower Height (M):	0.0000
Structure Type:	TOW	Tower Type:	E
Key Remarks:		Date:	
Key Site:	19405	Record Action:	MOD
ID Exam:	PRB6	ID_ASB_ACC:	A
Paint and Lighting Specs:	1 12 21 3		
Special Conditions/Remarks:			

This record is for a license, and it may or may not indicate a site which has been built.

D12  
NW  
2-4 mi  
14117

DOF000000012320  
FAA DOF

Unique ID:	10962	Obstruction #:	0962
City:	UNDERWOOD	State:	Alabama
Verification Status:	verified	Obstruction Type:	TOWER
Latitude:	33 09 49N	Longitude:	086 52 38W
Frequency:	Not Reported	Type of Lighting:	Red Lighting
Above Ground Level Height (Ft.):			0255
Above Mean Sea Level Height (Ft.):			00964
Horizontal Accuracy:	+/-15'	Vertical Accuracy:	+/-50'
Painted/Marked:	Yes	FAA Study #:	85SO1634

# FCC & FAA SITES MAP FINDINGS

## AIRPORTS

EDR ID  
Database

AIR00618  
AIRPORTS

<p>Site Number: 00110.*A          Airport Type: AIRPORT          County: SHELBY          Facility Name: SHELBY COUNTY          Use: PU          Owner Address: 1115 CO SERVICES DRIVE          Phone: 205-620-6620          Mgmt Address: 265 WEATHER VANE ROAD          Mgmt Phone: 205-663-4805          Longitude: 086-46-59.654W          Elev (ft): 584          Aero chart: ATLANTA          Dir from Business: SE          Certified Date: Not Reported          Is Int'l Airport?: N          Inspection Method: S          Last inspected: 11031999          Lighting: DUSK-DAWN          Beacon Color: CG          Single engine: 071          Jet engines: Not Reported          Gliders: Not Reported          Ultralights: Not Reported          Air taxis: Not Reported</p> <p>Runway id: 15/33          Width: 75          Lights Intensity: MED          Markings: NPI          Longitude: 086-47-08.276W          Approach lights: Not Reported          Centerline Lights: Not Reported          Recip End ID: 33          Recip Lat: 33-10-22.810N          Recip Elev: 584.3          Recip End Lgts: Not Reported</p>	<p>State: ALABAMA          City: ALABASTER          Owner type: PU          Owner: SHELBY COUNTY          City/State: PELHAM, AL 35124          Mgmt Name: PATRICK DENT          Mgmt City/St: CALERA, AL 35040          Latitude: 33-10-40.119N          Lat Method: E          Elev method: S          Dist from Business: 04          Date Active: Not Reported          Fed agreements: NGY          Is Customs Airport?: N          Inspected by: S          Attendance: ALL/ALL/0630-DUSK          Has ATC Tower: N          Landing fee: N          Multi engine: 013          Helicopters: Not Reported          Military: Not Reported          Commercial: Not Reported          Local ops: 006048</p> <p>Length: 3797          Surface: ASPH-G          Base End Id: 15          Latitude: 33-10-57.441N          Elevation: 568.7          End Lights: Not Reported          Touchdown Lights: Not Reported          Recip markings: NPI          Recip Long: 086-46-50.975W          Recip App Lgts: Not Reported          Recip Ctr Lgts: Not Reported</p>
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AIR00793  
AIRPORTS

<p>Site Number: 00445.*A          Airport Type: AIRPORT          County: SHELBY          Facility Name: FLYING X RANCH</p>	<p>State: ALABAMA          City: MONTEVALLO          Owner type: PR</p>
--	---

# FCC & FAA SITES MAP FINDINGS AIRPORTS

EDR ID  
Database

Use: PR  
 Owner Address: FLYING X RANCH  
 Phone: 205-665-7776  
 Mgmt Address: FLYING X RANCH  
 Mgmt Phone: 205-665-7080  
 Longitude: 086-51-04.960W  
 Elev (ft): 466  
 Aero chart: ATLANTA  
 Dir from Business: N  
 Certified Date: Not Reported  
 Is Int'l Airport?: Not Reported  
 Inspection Method: 2  
 Last inspected: 11161982  
 Lighting: Not Reported  
 Beacon Color: Not Reported  
 Single engine: 002  
 Jet engines: Not Reported  
 Gliders: 005  
 Ultralights: Not Reported  
 Air taxis: Not Reported

Runway id: 17/35  
 Width: 100  
 Lights Intensity: Not Reported  
 Markings: Not Reported  
 Longitude: Not Reported  
 Approach lights: Not Reported  
 Centerline Lights: Not Reported  
 Recip End ID: 35  
 Recip Lat: Not Reported  
 Recip Elev: Not Reported  
 Recip End Lgts: Not Reported

Owner: D H BALLARD  
 City/State: MONTEVALLO, AL 35115  
 Mgmt Name: D H BALLARD  
 Mgmt City/St: MONTEVALLO, AL 35115  
 Latitude: 33-09-10.422N  
 Lat Method: E  
 Elev method: S  
 Dist from Business: 03  
 Date Active: Not Reported  
 Fed agreements: Not Reported  
 Is Customs Airport?: Not Reported  
 Inspected by: N  
 Attendance: UNATNDD  
 Has ATC Tower: N  
 Landing fee: N  
 Multi engine: Not Reported  
 Helicopters: Not Reported  
 Military: Not Reported  
 Commercial: Not Reported  
 Local ops: Not Reported

Length: 2500  
 Surface: TURF  
 Base End Id: 17  
 Latitude: Not Reported  
 Elevation: Not Reported  
 End Lights: Not Reported  
 Touchdown Lights: Not Reported  
 Recip markings: Not Reported  
 Recip Long: Not Reported  
 Recip App Lgts: Not Reported  
 Recip Ctr Lgts: Not Reported



# FCC & FAA SITES MAP FINDINGS POWERLINES

EDR ID  
Database

---

No Sites Reported.

## KEY CONTACTS & GOVERNMENT RECORDS SEARCHED

Various Federal laws and executive orders address specific environmental concerns. NEPA requires the responsible offices to integrate to the greatest practical extent the applicable procedures required by these laws and executive orders. EDR provides key contacts at agencies charged with implementing these laws and executive orders to supplement the information contained in this report.

### **NATURAL AREAS**

#### **Officially designated wilderness areas**

##### Government Records Searched in This Report

FED\_LAND: Federal Lands

Source: USGS

Telephone: 703-648-5094

Federal data from Bureau of Land Management, National Park Service, Forest Service, Fish and Wildlife Service, and Bureau of Indian Affairs.

- National Parks
- Forests
- Monuments
- Wildlife Sanctuaries, Preserves, Refuges
- Federal Wilderness Areas.
- Indian Reservations

Date of Government Version: 09/01/1997

##### Federal Contacts for Additional Information

National Park Service, Southeast Region

100 Alabama Street SW, 1924 Building

Atlanta, GA 30303

404-562-3100

USDA Forest Service, Southern

1720 Peachtree Road, N.W.

Atlanta, GA 30367

404-347-2384

BLM - Eastern States Office

7450 Boston Blvd.

Springfield, VA 22153

703-440-1713

Fish & Wildlife Service, Region 4

Budget and Finance 1875 Century Boulevard

Atlanta, GA 30345

404-679-4096

#### **Officially designated wildlife preserves, sanctuaries and refuges**

##### Government Records Searched in This Report

FED\_LAND: Federal Lands

Source: USGS

Telephone: 703-648-5094

Federal data from Bureau of Land Management, National Park Service, Forest Service, Fish and Wildlife Service, and Bureau of Indian Affairs.

- National Parks
- Forests
- Monuments
- Wildlife Sanctuaries, Preserves, Refuges
- Federal Wilderness Areas.
- Indian Reservations

Date of Government Version: 09/01/1997

## KEY CONTACTS & GOVERNMENT RECORDS SEARCHED

AL Wildlife Refuges: Wildlife Refuges  
Source: Dept. of Conservation and Natural Resources.  
Telephone: 334-242-3051

AL Managed Lands: Managed Lands  
State land purchased for the Forever Wild Nature Preserve  
Source: Dept. of Conservation and Natural Resources.  
Telephone: 334-242-3051

### Federal Contacts for Additional Information

Fish & Wildlife Service, Region 4  
Budget and Finance 1875 Century Boulevard  
Atlanta, GA 30345  
404-679-4096

### State Contacts for Additional Information

Dept. of Conservation & Natural Resources 334-242-3465

### **Wild and scenic rivers**

#### Government Records Searched in This Report

##### FED\_LAND: Federal Lands

Source: USGS

Telephone: 703-648-5094

Federal data from Bureau of Land Management, National Park Service, Forest Service, Fish and Wildlife Service, and Bureau of Indian Affairs.

- National Parks
- Forests
- Monuments
- Wildlife Sanctuaries, Preserves, Refuges
- Federal Wilderness Areas.
- Indian Reservations

Date of Government Version: 09/01/1997

### Federal Contacts for Additional Information

Fish & Wildlife Service, Region 4  
Budget and Finance 1875 Century Boulevard  
Atlanta, GA 30345  
404-679-4096

### **Endangered Species**

#### Government Records Searched in This Report

##### Endangered Species Protection Program Database

A listing of endangered species by county.

Source: Environmental Protection Agency

Telephone: 703-305-5239

### Federal Contacts for Additional Information

Fish & Wildlife Service, Region 4  
Budget and Finance 1875 Century Boulevard  
Atlanta, GA 30345  
404-679-4096

### State Contacts for Additional Information

Natural Heritage Program, Huntingdon College 334-834-4519

## KEY CONTACTS & GOVERNMENT RECORDS SEARCHED

### LANDMARKS, HISTORICAL, AND ARCHEOLOGICAL SITES

#### Historic Places

##### Government Records Searched in This Report

##### National Register of Historic Places:

The National Register of Historic Places is the official federal list of districts, sites, buildings, structures, and objects significant in American history, architecture, archeology, engineering, and culture. These contribute to an understanding of the historical and cultural foundations of the nation.

The National Register includes:

- All prehistoric and historic units of the National Park System;
- National Historic Landmarks, which are properties recognized by the Secretary of the Interior as possessing national significance; and
- Properties significant in American, state, or local prehistory and history that have been nominated by State Historic Preservation Officers, federal agencies, and others, and have been approved for listing by the National Park Service.

Date of Government Version: 03/15/2000

AL Historic Sites: Properties on the Alabama Register of Landmarks and Heritage

Listing of historic sites included on the State Register.

Source: Alabama Historical Commission.

Telephone: 334-230-2654

AL Historic Sites: Alabama Properties Listed on the National Register of Historic Places.

Listing of historic sites included on the National Register for Alabama.

Source: Alabama Historical Commission.

Telephone: 334-230-2654

##### Federal Contacts for Additional Information

Park Service; Advisory Council on Historic Preservation

1849 C Street NW

Washington, DC 20240

Phone: (202) 208-6843

##### State Contacts for Additional Information

Alabama Historical Commission 334-242-3184

### Indian Religious Sites

##### Federal Contacts for Additional Information

Department of the Interior- Bureau of Indian Affairs

Office of Public Affairs

1849 C Street, NW

Washington, DC 20240-0001

Office: 202-208-3711

Fax: 202-501-1516

National Association of Tribal Historic Preservation Officers

1411 K Street NW, Suite 700

Washington, DC 20005

Phone: 202-628-8476

Fax: 202-628-2241

## KEY CONTACTS & GOVERNMENT RECORDS SEARCHED

### State Contacts for Additional Information

A listing of local Tribal Leaders and Bureau of Indian Affairs Representatives can be found at:  
<http://www.doi.gov/bia/areas/agency.html>

Poarch Band of Creek Indians  
5811 Jack Springs Road  
Atmore, AL 36502

### **Scenic Trails**

### State Contacts for Additional Information

Natchez Trace National Scenic Trail  
American Hiking Society 1422 Fenwick Lane  
Silver Spring, Maryland 20910  
301-565-6704

### **FLOOD PLAIN, WETLANDS AND COASTAL ZONE**

#### **Flood Plain Management**

#### Government Records Searched in This Report

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

#### Federal Contacts for Additional Information

Federal Emergency Management Agency 877-3362-627

#### State Contacts for Additional Information

Alabama Emergency Management Agency 205-280-2200

#### **Wetlands Protection**

#### Government Records Searched in This Report

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

#### Federal Contacts for Additional Information

Fish & Wildlife Service 813-570-5412

#### State Contacts for Additional Information

Department of Conservation & Natural Resources 334-242-3465

## KEY CONTACTS & GOVERNMENT RECORDS SEARCHED

### **Coastal Zone Management**

#### Government Records Searched in This Report

##### **CAMA Management Areas**

Dept. of Env., Health & Natural Resources  
919-733-2293

#### Federal Contacts for Additional Information

##### **Office of Ocean and Coastal Resource Management**

N/ORM, SSMC4  
1305 East-West Highway  
Silver Spring, Maryland 20910  
301-713-3102

#### State Contacts for Additional Information

ADECA, Coastal Programs Office 334-626-0042

### **FCC & FAA SITES MAP**

For NEPA actions that come under the authority of the FCC, the FCC requires evaluation of Antenna towers and/or supporting structures that are to be equipped with high intensity white lights which are to be located in residential neighborhoods, as defined by the applicable zoning law.

#### Government Records Searched in This Report

##### **Cellular**

##### **Federal Communications Commission**

Mass Media Bureau  
2nd Floor - 445 12th Street SW  
Washington DC 20554 USA  
Telephone (202) 418-2700

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##### **Tower**

##### **Federal Communications Commission**

Mass Media Bureau  
2nd Floor - 445 12th Street SW  
Washington DC 20554 USA  
Telephone (202) 418-2700

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##### **Antenna Registration**

##### **Federal Communications Commission**

Mass Media Bureau  
2nd Floor - 445 12th Street SW  
Washington DC 20554 USA  
Telephone (202) 418-2700

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##### **AM Tower**

##### **Federal Communications Commission**

Mass Media Bureau  
2nd Floor - 445 12th Street SW  
Washington DC 20554 USA  
Telephone (202) 418-2700

## KEY CONTACTS & GOVERNMENT RECORDS SEARCHED

### **FAA Digital Obstacle File**

National Oceanic and Atmospheric Administration

Telephone: 301-436-8301

Describes known obstacles of interest to aviation users in the US. Used by the Federal Aviation Administration (FAA) and the National Oceanic and Atmospheric Administration to manage the National Airspace System.

### **Airport Landing Facilities**

Federal Aviation Administration

Telephone (800) 457-6656

Private and public use landing facilities.

### **Electric Power Transmission Line Data**

PennWell Corporation

Telephone: (800) 823-6277

This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

### **Excessive Radio Frequency Emission**

For NEPA actions that come under the authority of the FCC, Commission actions granting construction permits, licenses to transmit or renewals thereof, equipment authorizations or modifications in existing facilities, require the determination of whether the particular facility, operation or transmitter would cause human exposure to levels of radio frequency in excess of certain limits.

### Federal Contacts for Additional Information

Office of Engineering and Technology

Federal Communications Commission

445 12th Street SW

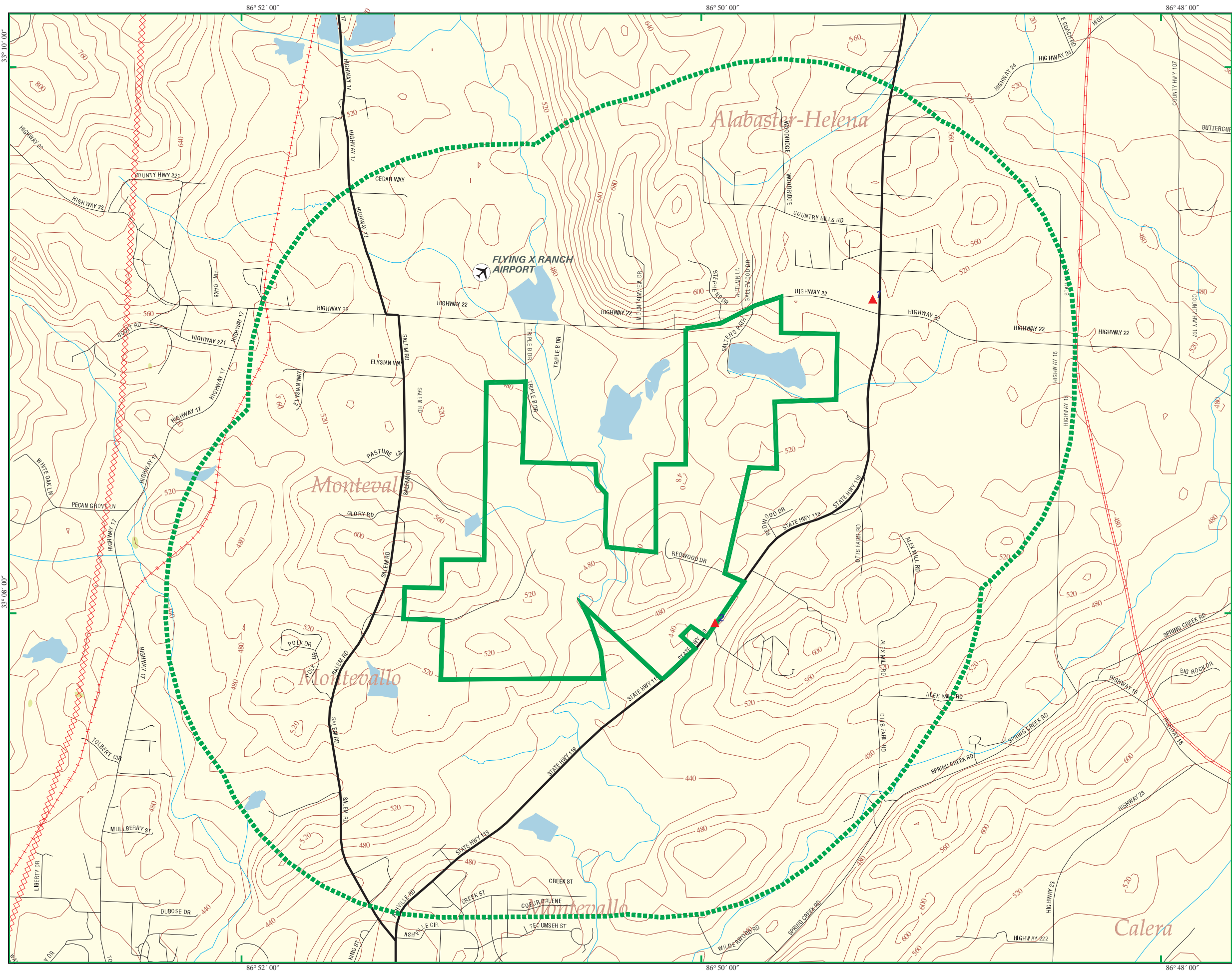
Washington, DC 20554

Phone: 202-418-2470






### **OTHER CONTACT SOURCES**

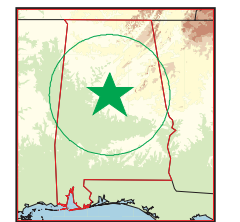
### **STREET AND ADDRESS INFORMATION**

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# VA Cemetery

-  Listed Sites
-  Earthquake Epicenters (Richter 5 or greater)
-  Search Boundary
-  Roads
-  Major Roads
-  Waterways
-  Railroads
-  Contour Lines
-  Pipelines
-  Powerlines
-  Fault Lines
-  Water
-  Superfund Sites
-  Federal DOD Sites
-  Indian Reservations BIA
-  Wetlands



Montevallo, AL

0 1/4 1/2



Scale in Miles







**EDR™** Environmental  
Data Resources Inc

# **EDR DataMap™ Area Study**

**VA Cemetery  
Montevallo, AL 35115**

**May 10, 2005**

**Inquiry number 01417254.2r**

## **The Standard in Environmental Risk Management Information**

440 Wheelers Farms Road  
Milford, Connecticut 06460

### **Nationwide Customer Service**

Telephone: 1-800-352-0050  
Fax: 1-800-231-6802  
Internet: [www.edrnet.com](http://www.edrnet.com)

## EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR).

### TARGET PROPERTY INFORMATION

#### ADDRESS

MONTEVALLO, AL 35115  
MONTEVALLO, AL 35115

### DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ( "reasonably ascertainable " ) government records within the requested search area for the following databases:

#### FEDERAL ASTM STANDARD

**NPL**..... National Priority List  
**Proposed NPL**..... Proposed National Priority List Sites  
**CERCLIS**..... Comprehensive Environmental Response, Compensation, and Liability Information System  
**CERC-NFRAP**..... CERCLIS No Further Remedial Action Planned  
**CORRACTS**..... Corrective Action Report  
**RCRA-TSDF**..... Resource Conservation and Recovery Act Information  
**RCRA-LQG**..... Resource Conservation and Recovery Act Information  
**ERNS**..... Emergency Response Notification System

#### STATE ASTM STANDARD

**SHWS**..... Hazardous Substance Cleanup Fund  
**SWF/LF**..... Permitted Landfills  
**LUST**..... Leaking Underground Storage Tank Listing  
**SWRCY**..... Recycling/Recovered Materials Processors Directory  
**VCP**..... Cleanup Program Inventory

#### FEDERAL ASTM SUPPLEMENTAL

**CONSENT**..... Superfund (CERCLA) Consent Decrees  
**ROD**..... Records Of Decision  
**Delisted NPL**..... National Priority List Deletions  
**HMIRS**..... Hazardous Materials Information Reporting System  
**MLTS**..... Material Licensing Tracking System  
**MINES**..... Mines Master Index File  
**NPL Liens**..... Federal Superfund Liens  
**PADS**..... PCB Activity Database System  
**UMTRA**..... Uranium Mill Tailings Sites  
**US ENG CONTROLS**..... Engineering Controls Sites List

## EXECUTIVE SUMMARY

<b>ODI</b> .....	Open Dump Inventory
<b>FUDS</b> .....	Formerly Used Defense Sites
<b>DOD</b> .....	Department of Defense Sites
<b>INDIAN RESERV</b> .....	Indian Reservations
<b>RAATS</b> .....	RCRA Administrative Action Tracking System
<b>TRIS</b> .....	Toxic Chemical Release Inventory System
<b>TSCA</b> .....	Toxic Substances Control Act
<b>SSTS</b> .....	Section 7 Tracking Systems
<b>FTTS INSP</b> .....	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

### STATE OR LOCAL ASTM SUPPLEMENTAL

<b>AST</b> .....	Aboveground Storage Tank Sites
<b>AOCONCERN</b> .....	Area of Concern
<b>LAST</b> .....	List of AST Release Incidents
<b>CDL</b> .....	Clandestine Methamphetamine Lab Sites

### EDR PROPRIETARY HISTORICAL DATABASES

<b>Coal Gas</b> .....	Former Manufactured Gas (Coal Gas) Sites
-----------------------	--

### BROWNFIELDS DATABASES

<b>US BROWNFIELDS</b> .....	A Listing of Brownfields Sites
<b>US INST CONTROL</b> .....	Sites with Institutional Controls
<b>VCP</b> .....	Cleanup Program Inventory
<b>BROWNFIELDS</b> .....	Land Division Brownfields 128(a) Program Site Listing
<b>INST CONTROL</b> .....	Land Division Brownfields 128(a) Program Site Listing

### SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

### FEDERAL ASTM STANDARD

**RCRAInfo:** RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act ( RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System(RCRIS). The database includes selective information on sites which generate, transport, store , treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous

## EXECUTIVE SUMMARY

waste per month Large quantity generators generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRA-SQG list, as provided by EDR, and dated 03/13/2005 has revealed that there is 1 RCRA-SQG site within the searched area.

<u>Site</u>	<u>Address</u>	<u>Map ID</u>	<u>Page</u>
<i>PROFESSIONAL AUTO BODY SHOP</i>	<i>2601 HIGHWAY 119</i>	<i>2</i>	<i>4</i>

### STATE ASTM STANDARD

**UST:** The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Environmental Management's UST Data with Owner/Site/Tank Information database.

A review of the UST list, as provided by EDR, and dated 01/24/2005 has revealed that there is 1 UST site within the searched area.

<u>Site</u>	<u>Address</u>	<u>Map ID</u>	<u>Page</u>
CROSSROAD MART	4737 HWY 119	1	3

### FEDERAL ASTM SUPPLEMENTAL

**FINDS:** The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 01/12/2005 has revealed that there is 1 FINDS site within the searched area.

<u>Site</u>	<u>Address</u>	<u>Map ID</u>	<u>Page</u>
<i>PROFESSIONAL AUTO BODY SHOP</i>	<i>2601 HIGHWAY 119</i>	<i>2</i>	<i>4</i>

## **EXECUTIVE SUMMARY**

Please refer to the end of the findings report for unmapped orphan sites due to poor or inadequate address information.

MAP FINDINGS SUMMARY

<u>Database</u>	<u>Total Plotted</u>
<b><u>FEDERAL ASTM STANDARD</u></b>	
NPL	0
Proposed NPL	0
CERCLIS	0
CERC-NFRAP	0
CORRACTS	0
RCRA TSD	0
RCRA Lg. Quan. Gen.	0
RCRA Sm. Quan. Gen.	1
ERNS	0
<b><u>STATE ASTM STANDARD</u></b>	
State Haz. Waste	0
State Landfill	0
LUST	0
UST	1
SWRCY	0
VCP	0
<b><u>FEDERAL ASTM SUPPLEMENTAL</u></b>	
CONSENT	0
ROD	0
Delisted NPL	0
FINDS	1
HMIRS	0
MLTS	0
MINES	0
NPL Liens	0
PADS	0
UMTRA	0
US ENG CONTROLS	0
ODI	0
FUDS	0
DOD	0
INDIAN RESERV	0
RAATS	0
TRIS	0
TSCA	0
SSTS	0
FTTS	0
<b><u>STATE OR LOCAL ASTM SUPPLEMENTAL</u></b>	
AST	0
AOCONCERN	0

## MAP FINDINGS SUMMARY

<u>Database</u>	<u>Total Plotted</u>
LAST	0
CDL	0
<b><u>EDR PROPRIETARY HISTORICAL DATABASES</u></b>	
Coal Gas	0
<b><u>BROWNFIELDS DATABASES</u></b>	
US BROWNFIELDS	0
US INST CONTROL	0
VCP	0
BROWNFIELDS	0
INST CONTROL	0

### NOTES:

Sites may be listed in more than one database

MAP FINDINGS

Map ID  
 Direction  
 Distance  
 Distance (ft.)Site

EDR ID Number

Database(s) EPA ID Number

**Coal Gas Site Search: No site was found in a search of Real Property Scan's ENVIROHAZ database.**

**1 CROSSROAD MART  
 4737 HWY 119  
 MONTEVALLO, AL 35115**

**UST U003933437  
 N/A**

UST:

Facility ID: 13378-117-1270 Site ID : 1270  
 Contact Name: LESLIE GREEN  
 Contact Phone: 2056652300  
 Tank Number: 42225  
 Owner: MCPHERSON OIL CO  
 Owner Address: 2340 WOODCREST PLACE, SUITE 175  
 BIRMINGHAM, AL 35209  
 Owner Contact: BOB WHITE 1782/TIM MURPHREE EXT 1719  
 Account Number: 13378  
 Tank Status: Currently in Use  
 Capacity: 10000 Compartments: 1  
 Installer:  
 Installed Date: 09/04/91  
 Removal Date: 01/01/01  
 Tank Contents: Unleaded Gasoline  
 Tank Usage: Retail  
 Tank Construction Material: Steel  
 Tank Corrosion Protection: Cathodic Protection  
 Piping Material of Construction: Fiberglass Plastic  
 Piping Corrosion Protection: Ext Pipe Protection Installed Date - 01/01/01  
 Tank Method of Release Detection: Ext Pipe Protection Installed Date - 01/01/01  
 Other Pipe: Not reported

Facility ID: 13378-117-1270 Site ID : 1270  
 Contact Name: LESLIE GREEN  
 Contact Phone: 2056652300  
 Tank Number: 42226  
 Owner: MCPHERSON OIL CO  
 Owner Address: 2340 WOODCREST PLACE, SUITE 175  
 BIRMINGHAM, AL 35209  
 Owner Contact: BOB WHITE 1782/TIM MURPHREE EXT 1719  
 Account Number: 13378  
 Tank Status: Currently in Use  
 Capacity: 10000 Compartments: 1  
 Installer:  
 Installed Date: 09/04/91  
 Removal Date: 01/01/01  
 Tank Contents: Premium Gasoline  
 Tank Usage: Retail  
 Tank Construction Material: Steel  
 Tank Corrosion Protection: Cathodic Protection  
 Piping Material of Construction: Fiberglass Plastic  
 Piping Corrosion Protection: Ext Pipe Protection Installed Date - 01/01/01  
 Tank Method of Release Detection: Ext Pipe Protection Installed Date - 01/01/01  
 Other Pipe: Not reported



MAP FINDINGS

Map ID			EDR ID Number
Direction			
Distance			
Distance (ft.)	Site	Database(s)	EPA ID Number

---

2	<b>PROFESSIONAL AUTO BODY SHOP</b> <b>2601 HIGHWAY 119</b> <b>ALABASTER, AL 35007</b>	<b>RCRA-SQG</b> <b>FINDS</b>	<b>1000460524</b> <b>ALD983174624</b>
---	---	---------------------------------	--

RCRAInfo:

Owner: WELTON HAWKINS  
UNKNOWN

EPA ID: ALD983174624

Contact: VICTOR MCKIM  
(205) 664-2639

Classification: Small Quantity Generator

TSDF Activities: Not reported

Violation Status: No violations found

FINDS:

Other Pertinent Environmental Activity Identified at Site:  
Resource Conservation and Recovery Act Information system

## ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
MCCALLA	U003530308	SUNNY FOOD STORE # 10	21352 HIGHWAY 11 NORTH	35115	UST
MONTEVALLO	U003404185	PHILLIPS 66 #27	4660 HWY 119	35115	UST
MONTEVALLO	1002840445	WESTINGHOUSE	HWY 25 S	35115	CERC-NFRAP
MONTEVALLO	1004670790	GALLOWAY GULF SERVICE	HIGHWAY 25 SOUTH	35115	RCRA-SQG, FINDS
MONTEVALLO	1004672079	METROCK STEEL & WIRE CO INC	6869 HWY 25	35115	RCRA-SQG
MONTEVALLO	1004672178	CHEMICAL LIME COMPANY MONTEVALLO PLANT	7444 HIGHWAY 25 SOUTH	35115	RCRA-SQG, FINDS
MONTEVALLO	U000768033	H & H CONSTRUCTION	HWY 25	35115	UST
MONTEVALLO	U001468810	LELCO	HWY 25	35115	UST
MONTEVALLO	U001865172	ROCKOS FUNERAL HOME	HWY 25	35115	UST
MONTEVALLO	U003547593	ALLIED PRODUCTS CO	HWY 25	35115	UST
MONTEVALLO	U003548852	SHERMAN READY MIX CONCRETE	HWY 25	35115	UST, AST
MONTEVALLO	1003869456	SEAMAN WOOD PRESERVING	ALABAMA HWY 25	35115	CERC-NFRAP
MONTEVALLO	1001114826	MONTEVALLO PLUME	SHELBY COUNTY	35115	CERCLIS, FINDS
MONTEVALLO	U003203828	MONTEVALLO CREW HEADQUARTERS	SPRING CREEK RD	35115	UST, AST
RANDOLPH	U003933514	TILLERY SHELL	HWY 139 & CO RD 36	35115	UST, AST

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

**Elapsed ASTM days:** Provides confirmation that this EDR report meets or exceeds the 90-day updating requirement of the ASTM standard.

## **FEDERAL ASTM STANDARD RECORDS**

### **NPL: National Priority List**

Source: EPA

Telephone: N/A

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 12/14/04

Date Made Active at EDR: 02/03/05

Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 02/01/05

Elapsed ASTM days: 2

Date of Last EDR Contact: 02/01/05

### **NPL Site Boundaries**

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)

Telephone: 202-564-7333

EPA Region 1

Telephone 617-918-1143

EPA Region 3

Telephone 215-814-5418

EPA Region 4

Telephone 404-562-8033

EPA Region 6

Telephone: 214-655-6659

EPA Region 8

Telephone: 303-312-6774

### **Proposed NPL: Proposed National Priority List Sites**

Source: EPA

Telephone: N/A

Date of Government Version: 12/14/04

Date Made Active at EDR: 02/03/05

Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 02/01/05

Elapsed ASTM days: 2

Date of Last EDR Contact: 02/01/05

### **CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System**

Source: EPA

Telephone: 703-413-0223

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 02/15/05

Date Made Active at EDR: 04/06/05

Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 03/22/05

Elapsed ASTM days: 15

Date of Last EDR Contact: 03/22/05

### **CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned**

Source: EPA

Telephone: 703-413-0223

As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/22/05  
Date Made Active at EDR: 04/06/05  
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 04/01/05  
Elapsed ASTM days: 5  
Date of Last EDR Contact: 04/01/05

## **CORRACTS:** Corrective Action Report

Source: EPA  
Telephone: 800-424-9346

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/15/04  
Date Made Active at EDR: 02/25/05  
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 01/07/05  
Elapsed ASTM days: 49  
Date of Last EDR Contact: 03/07/05

## **RCRA:** Resource Conservation and Recovery Act Information

Source: EPA  
Telephone: 800-424-9346

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/13/05  
Date Made Active at EDR: 04/25/05  
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 03/23/05  
Elapsed ASTM days: 33  
Date of Last EDR Contact: 03/23/05

## **ERNS:** Emergency Response Notification System

Source: National Response Center, United States Coast Guard  
Telephone: 202-260-2342

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/04  
Date Made Active at EDR: 03/24/05  
Database Release Frequency: Annually

Date of Data Arrival at EDR: 01/27/05  
Elapsed ASTM days: 56  
Date of Last EDR Contact: 04/25/05

## **FEDERAL ASTM SUPPLEMENTAL RECORDS**

### **BRS:** Biennial Reporting System

Source: EPA/NTIS  
Telephone: 800-424-9346

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/01/01  
Database Release Frequency: Biennially

Date of Last EDR Contact: 04/15/05  
Date of Next Scheduled EDR Contact: 06/13/05

### **CONSENT:** Superfund (CERCLA) Consent Decrees

Source: Department of Justice, Consent Decree Library  
Telephone: Varies

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/14/04  
Database Release Frequency: Varies

Date of Last EDR Contact: 04/26/05  
Date of Next Scheduled EDR Contact: 07/25/05

**ROD:** Records Of Decision

Source: EPA  
Telephone: 703-416-0223

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 01/10/05  
Database Release Frequency: Annually

Date of Last EDR Contact: 04/04/05  
Date of Next Scheduled EDR Contact: 07/04/05

**DELISTED NPL:** National Priority List Deletions

Source: EPA  
Telephone: N/A

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 12/14/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 02/01/05  
Date of Next Scheduled EDR Contact: 05/02/05

**FINDS:** Facility Index System/Facility Identification Initiative Program Summary Report

Source: EPA  
Telephone: N/A

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 01/12/05  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 04/04/05  
Date of Next Scheduled EDR Contact: 07/04/05

**HMIRS:** Hazardous Materials Information Reporting System

Source: U.S. Department of Transportation  
Telephone: 202-366-4555

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 11/16/04  
Database Release Frequency: Annually

Date of Last EDR Contact: 04/19/05  
Date of Next Scheduled EDR Contact: 07/18/05

**MLTS:** Material Licensing Tracking System

Source: Nuclear Regulatory Commission  
Telephone: 301-415-7169

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 01/12/05  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 04/04/05  
Date of Next Scheduled EDR Contact: 07/04/05

**MINES:** Mines Master Index File

Source: Department of Labor, Mine Safety and Health Administration  
Telephone: 303-231-5959

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 11/15/04  
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 03/30/05  
Date of Next Scheduled EDR Contact: 06/27/05

**NPL LIENS:** Federal Superfund Liens

Source: EPA  
Telephone: 202-564-4267

Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/91  
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 02/22/05  
Date of Next Scheduled EDR Contact: 05/23/05

**PADS:** PCB Activity Database System

Source: EPA  
Telephone: 202-564-3887

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 12/21/04  
Database Release Frequency: Annually

Date of Last EDR Contact: 02/23/05  
Date of Next Scheduled EDR Contact: 05/09/05

**DOD:** Department of Defense Sites

Source: USGS  
Telephone: 703-692-8801

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 10/01/03  
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 02/08/05  
Date of Next Scheduled EDR Contact: 05/09/05

**UMTRA:** Uranium Mill Tailings Sites

Source: Department of Energy  
Telephone: 505-845-0011

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized. In 1978, 24 inactive uranium mill tailings sites in Oregon, Idaho, Wyoming, Utah, Colorado, New Mexico, Texas, North Dakota, South Dakota, Pennsylvania, and on Navajo and Hopi tribal lands, were targeted for cleanup by the Department of Energy.

Date of Government Version: 12/29/04  
Database Release Frequency: Varies

Date of Last EDR Contact: 03/22/05  
Date of Next Scheduled EDR Contact: 06/20/05

**ODI:** Open Dump Inventory

Source: Environmental Protection Agency  
Telephone: 800-424-9346

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/85  
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 05/23/95  
Date of Next Scheduled EDR Contact: N/A

**FUDS:** Formerly Used Defense Sites

Source: U.S. Army Corps of Engineers  
Telephone: 202-528-4285

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/03  
Database Release Frequency: Varies

Date of Last EDR Contact: 04/04/05  
Date of Next Scheduled EDR Contact: 07/04/05

**INDIAN RESERV:** Indian Reservations

Source: USGS  
Telephone: 202-208-3710

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 10/01/03  
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 02/08/05  
Date of Next Scheduled EDR Contact: 05/09/05

**US ENG CONTROLS:** Engineering Controls Sites List

Source: Environmental Protection Agency  
Telephone: 703-603-8867

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 01/10/05  
Database Release Frequency: Varies

Date of Last EDR Contact: 04/04/05  
Date of Next Scheduled EDR Contact: 07/04/05

**RAATS:** RCRA Administrative Action Tracking System

Source: EPA  
Telephone: 202-564-4104

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/95  
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 03/07/05  
Date of Next Scheduled EDR Contact: 06/06/05

**TRIS:** Toxic Chemical Release Inventory System

Source: EPA  
Telephone: 202-566-0250

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/02  
Database Release Frequency: Annually

Date of Last EDR Contact: 03/22/05  
Date of Next Scheduled EDR Contact: 06/20/05

**TSCA:** Toxic Substances Control Act

Source: EPA  
Telephone: 202-260-5521

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/02  
Database Release Frequency: Every 4 Years

Date of Last EDR Contact: 04/05/05  
Date of Next Scheduled EDR Contact: 06/06/05

**FTTS INSP:** FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

Source: EPA  
Telephone: 202-566-1667

Date of Government Version: 04/13/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/21/05  
Date of Next Scheduled EDR Contact: 06/20/05

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## **SSTS:** Section 7 Tracking Systems

Source: EPA  
Telephone: 202-564-5008

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/03  
Database Release Frequency: Annually

Date of Last EDR Contact: 04/19/05  
Date of Next Scheduled EDR Contact: 07/18/05

## **FTTS:** FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

Source: EPA/Office of Prevention, Pesticides and Toxic Substances  
Telephone: 202-566-1667

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 09/13/04  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/21/05  
Date of Next Scheduled EDR Contact: 06/20/05

## **STATE OF ALABAMA ASTM STANDARD RECORDS**

### **SHWS:** Hazardous Substance Cleanup Fund

Source: Department of Environmental Management  
Telephone: 334-271-7984

Hazardous substance sites, which pose a threat to public health and the environment, which will be cleaned up utilizing the Hazardous Substance Cleanup Fund.

Date of Government Version: 04/11/05  
Date Made Active at EDR: 04/22/05  
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 04/11/05  
Elapsed ASTM days: 11  
Date of Last EDR Contact: 04/11/05

### **SWF/LF:** Permitted Landfills

Source: Department of Environmental Management  
Telephone: 334-271-7988  
Source: Department of Environmental Management, GIS Section  
Telephone: 334-271-7700

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 12/31/02  
Date Made Active at EDR: 03/04/03  
Database Release Frequency: Annually

Date of Data Arrival at EDR: 02/12/03  
Elapsed ASTM days: 20  
Date of Last EDR Contact: 02/07/05

### **LUST:** Leaking Underground Storage Tank Listing

Source: Department of Environmental Management  
Telephone: 334-270-5655

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 04/05/05  
Date Made Active at EDR: 05/06/05  
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 04/26/05  
Elapsed ASTM days: 10  
Date of Last EDR Contact: 04/25/05

### **UST:** Underground Storage Tank Information

Source: Department of Environmental Management  
Telephone: 334-270-5655

Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.



# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/24/05  
Date Made Active at EDR: 03/04/05  
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 01/25/05  
Elapsed ASTM days: 38  
Date of Last EDR Contact: 04/25/05

**SWRCY:** Recycling/Recovered Materials Processors Directory  
Source: Department of Economic & Community Affairs  
Telephone: 334-242-5336  
A listing of recycling facilities.

Date of Government Version: 09/01/03  
Date Made Active at EDR: 03/28/05  
Database Release Frequency: Varies

Date of Data Arrival at EDR: 02/25/05  
Elapsed ASTM days: 31  
Date of Last EDR Contact: 02/07/05

**VCP:** Cleanup Program Inventory  
Source: Department of Environmental Management  
Telephone: 334-271-7700

Currently the Cleanup Program Inventory List contains information about sites undergoing assessment and possible cleanup under Alabama's Brownfield Redevelopment and Voluntary Cleanup Program. It also includes sites that have exited the program but were remediated to less than unrestricted levels.

Date of Government Version: 01/13/05  
Date Made Active at EDR: 03/04/05  
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 01/18/05  
Elapsed ASTM days: 45  
Date of Last EDR Contact: 04/26/05

## STATE OF ALABAMA ASTM SUPPLEMENTAL RECORDS

**AST:** Aboveground Storage Tank Sites  
Source: Department of Environmental Management  
Telephone: 334-271-7926  
Aboveground storage tank locations.

Date of Government Version: 01/24/05  
Database Release Frequency: Quarterly

Date of Last EDR Contact: 04/25/05  
Date of Next Scheduled EDR Contact: 07/25/05

**AOCONCERN:** Area of Concern  
Source: Department of the Army  
Telephone: N/A  
Property boundary of the Redstone Arsenal facility.

Date of Government Version: N/A  
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 06/27/01  
Date of Next Scheduled EDR Contact: N/A

**LAST:** List of AST Release Incidents  
Source: Department of Environmental Management  
Telephone: 334-271-7712

A listing of aboveground storage tank releases that have been reported to ADEM. These are primarily smaller retail ASTs and smaller bulk plant ASTs.

Date of Government Version: 04/28/05  
Database Release Frequency: Varies

Date of Last EDR Contact: 04/25/05  
Date of Next Scheduled EDR Contact: 07/25/05

**CDL:** Clandestine Methamphetamine Lab Sites  
Source: Department of Environmental Management  
Telephone: 334-271-7700  
Clandestine methamphetamine lab locations seized by law enforcement agencies.

Date of Government Version: 02/14/05  
Database Release Frequency: Varies

Date of Last EDR Contact: 02/14/05  
Date of Next Scheduled EDR Contact: 05/16/05

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## EDR PROPRIETARY HISTORICAL DATABASES

**Former Manufactured Gas (Coal Gas) Sites:** The existence and location of Coal Gas sites is provided exclusively to EDR by Real Property Scan, Inc. ©Copyright 1993 Real Property Scan, Inc. For a technical description of the types of hazards which may be found at such sites, contact your EDR customer service representative.

### **Disclaimer Provided by Real Property Scan, Inc.**

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## BROWNFIELDS DATABASES

### **VCP:** Cleanup Program Inventory

Source: Department of Environmental Management  
Telephone: 334-271-7700

Currently the Cleanup Inventory List contains information about sites undergoing assessment and possible cleanup under Alabama's Brownfield Redevelopment and Voluntary Cleanup Program. It also includes sites that have exited the program but were remediated to less than unrestricted levels.

Date of Government Version: 01/13/05  
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 04/26/05  
Date of Next Scheduled EDR Contact: 07/11/05

### **US BROWNFIELDS:** A Listing of Brownfields Sites

Source: Environmental Protection Agency  
Telephone: 202-566-2777

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 01/10/05  
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 03/14/05  
Date of Next Scheduled EDR Contact: 06/13/05

### **INST CONTROL:** Land Division Brownfields 128(a) Program Site Listing

Source: Department of Environmental Management  
Telephone: 334-271-7735

Institutional Controls (ICs) are non-engineered instruments, such as administrative and/or legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of a remedy by limiting land or resource use. There are five different types of controls. These are governmental, proprietary, enforcement tools with IC components, informational devices and unrestricted. Unrestricted- No institutional controls (unrestricted for industrial and residential use). Governmental- controls implemented and enforced by state and local governments. (zoning restrictions, ordinances, building permits, etc.). Proprietary- controls which have their basis in real property law (easements, covenants). Enforcement and Permit Tools with IC components- these controls are issued to compel land owners to limit certain site activities on both federal and private sites. Informational devices- informational tools with provide information or notification that residual or capped contamination may remain on site (deed or hazard notices).

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/13/04  
Database Release Frequency: Varies

Date of Last EDR Contact: 04/13/05  
Date of Next Scheduled EDR Contact: 07/11/05

**BROWNFIELDS:** Land Division Brownfields 128(a) Program Site Listing

Source: Department of Environmental Management  
Telephone: 334-271-7735

A listing of Brownfields activities performed by ADEM.

Date of Government Version: 10/13/04  
Database Release Frequency: Varies

Date of Last EDR Contact: 04/13/05  
Date of Next Scheduled EDR Contact: 07/11/05

**US INST CONTROL:** Sites with Institutional Controls

Source: Environmental Protection Agency  
Telephone: 703-603-8867

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 01/10/05  
Database Release Frequency: Varies

Date of Last EDR Contact: 04/04/05  
Date of Next Scheduled EDR Contact: 07/04/05

**OTHER DATABASE(S)**

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

**Sensitive Receptors:** There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

**AHA Hospitals:**

Source: American Hospital Association, Inc.  
Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

**Medical Centers: Provider of Services Listing**

Source: Centers for Medicare & Medicaid Services  
Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

**Nursing Homes**

Source: National Institutes of Health  
Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

**Public Schools**

Source: National Center for Education Statistics  
Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

**Private Schools**

Source: National Center for Education Statistics  
Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

**Daycare Centers: Licensed Centers**

Source: Department of Human Resources  
Telephone: 334-242-1425

## GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

**Flood Zone Data:** This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

**NWI:** National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

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**APPENDIX B**  
**Cultural Resources Overview**

# **CULTURAL RESOURCES OVERVIEW**

**SHELBY COUNTY, ALABAMA**

PREPARED FOR:

**DEPARTMENT OF VETERANS AFFAIRS  
NATIONAL CEMETERY ADMINISTRATION**

811 VERMONT AVENUE NW  
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PREPARED BY:

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BIRMINGHAM, AL 35244

MACTEC PROJECT: 6671-05-0316

## **Cultural Resources Overview**

The following is a summary of the culture history for the region encompassing the three alternative sites for the siting of a National Cemetery in Shelby County, Alabama. Gross divisions of time and cultural periods have been made based on interpretation of macroeconomic adaptations to the local climate and ecology. These divisions are referred to herein as Stages, which may be further subdivided into cultural periods. Cultural periods describe general trends that have been recognized on a regional level and conform to the generalized character of the Stage in which it is included. The “phase” designation is used by archaeologists to indicate a set of cultural traits that are found on archaeological sites over limited space and time (Willey and Phillips 1958:21-24).

### ***Paleoindian Stage***

The earliest documented human occupation of Alabama has been dated to around 10,500 B.C., though there are several sites in the southeast that have been proposed to predate this time (Anderson et al. 1996:7). The Paleoindian Stage is divided into three periods based on the presence of distinctive projectile point types. The Early Paleoindian period is indicated by the presence of lanceolate fluted projectiles of the Clovis type or similar forms (Anderson et al. 1996:7).

No Early Paleoindian sites have been discovered to date within the project area. The nearest discoveries of fluted points were made in Jefferson County at two separate sites (Josselyn 1961:2,4) suggesting a pattern of very light occupation for the region that is common across the southeast (Anderson 1996:27). In Alabama, the greatest concentration of Early Paleoindian sites is found approximately 150 kilometers to the north of the project area, in the Middle Tennessee River drainage (Anderson 1991:6; Futato 1982:30 ,1996:303).



Three Late Paleoindian sites have been recorded in Shelby County. These sites are thought to represent a broadly scattered settlement pattern that is locally very widely dispersed in comparison to settlement patterns in the middle Tennessee River Valley.

### *Archaic Stage*

The archaic stage is defined by cultures with an economy still based on hunting and gathering, although with an increase in gathering over the Paleoindian Stage (Willey and Phillips 1958:107). New technologies such as ground stone tools ,and notched and re-sharpened projectile points were developed in the Archaic that allowed for better adaptation to a changing environment (Anderson and Sassaman 2004:88). Largely based on projectile point types, the Archaic Stage is subdivided into early, middle and late periods. These Periods are often further divided into horizons or phases.

### *Early Archaic*

There is evidence for a dramatic increase in the utilization of the upper Cahaba River drainage after 9500 B.C. Unlike what is known of the Paleoindian Stage in the area, there are many Early Archaic sites recorded within the Cahaba Valley. Most of these sites, however, do not have large amounts of material, indicating light or sporadic use. Early Archaic sites occur with enough frequency in the upper Cahaba River drainage to consider only sites within 10 km of the project area. Early Archaic components are recognized by the occurrence of various projectile point styles. These horizons, from the earliest to latest are: Dalton, Big Sandy, Kirk, and Bifurcate horizons. These horizons date from approximately 9500 B.C. to around 6950 B.C. (Anderson and Sassaman 2004:87).

Dalton horizon components are identified by the presence of a set of triangular, lanceolate projectile points with concave bases, and frequently exhibit re-sharpened blade edges (Chapman 1948:13; Justice 1987:40). Following the Dalton Horizon are horizons marked by a succession of side and corner notched projectile point forms. Each horizon is named according to projectile point types that are diagnostic markers of the horizon.

The succeeding Big Sandy horizon is represented in the upper Cahaba drainage by two sites. Following this trend of increasing frequency of sites within the area, three sites that have a Kirk horizon component have been recorded within 10 km of the project boundaries. Only one site with a Bifurcate horizon component has been recorded within 10 km of the project area and the apparent decrease in site frequency is not unusual for this horizon in this part of the southeast. Bifurcate projectile points are not common south of the Tennessee River Valley (Justice 1987:89-96). This may not be an indication that the area was abandoned, rather that such projectile points were probably not a part of the material culture of groups residing in the area. The increase in the frequency of sites from the Dalton horizon to the Kirk horizon in this area is a pattern frequently observed in areas across the Southeast and is interpreted as evidence of an increase in population (Anderson 1996:54).

### *Middle Archaic*

The Middle Archaic period roughly corresponds in time (ca. 6950 to 3750 B.C.) with the Hypsithermal climate period. (Anderson and Sassaman 2004:94) The Hypsithermal was marked by broad fluctuations in worldwide temperature, and much lower precipitation in the Southeast (Delcourt and Delcourt 1987; Ganopolski 1998:1916). The Middle Archaic period was a time of significant cultural change with the beginning of a long tradition of mound construction, establishment of long distance trade networks, the adoption of new tool forms, and evidence of warfare (Anderson and Sassaman 2004:95).

Within the immediate vicinity of the project area, there is evidence of a significant shift in population density and settlement pattern. Of the 41 archaeological sites recorded within 10 km of the project boundaries, 11 have Middle Archaic components. Several of these sites also show evidence of more than ephemeral usage, as do most of the Early Archaic sites of the area. This could be interpreted as an increase in local population through either immigration from other areas or an increase in the indigenous population due to successful adaptation to the local environment.

### *Late Archaic*

By the Late Archaic period had begun, climate had stabilized to closely resemble modern climate patterns (Delcourt and Delcourt 1987). Within the Southeast there is a large increase in the number of recorded Late Archaic sites over Middle Archaic sites (Steponaitis 1986:373) and an apparent increase in the utilization of riverine environments (Sassaman and Anderson 2004:103). Within 10 km of the project boundaries there are 11 recorded sites with identified Late Archaic components.

During the Late Archaic, there were further developments of tool technology, as well as significant changes in container technology such as stone bowls, and in some areas of the Southeast, ceramic containers. Interregional exchange networks became more extensive, and raw materials and finished goods became commodities of exchange. Evidence of this is seen in the vicinity of the project area in the form of exotic stone such as greenstone, steatite, mica, and hematite, and in ground stone artifacts made of exotic stone such as stone vessels and gorgets.

### ***Gulf Formational Stage***

For decades Southeastern archaeologists divided the Archaic Stage from the Woodland Stage on the basis of the presence or absence of pottery. This division based on one technology became problematical when it became apparent that in the Gulf Coast region of the Southeast there was a period of time when the basic economy of residents of the area followed the patterns of Archaic Stage people, yet there was widespread use of pottery. To resolve this problem Walthall and Jenkins (1976) proposed the creation of the Gulf Formational Stage as a taxonomic category into which such cultures could be placed. The use of the term Gulf Formational Stage has been adopted by many archaeologists in the Gulf Coast region, and it is included here as well. Based on pottery types, the Gulf Ceramic Tradition (Caldwell 1958:52) has been divided into early, middle and late divisions which are the basis for period subdivisions of the Stage (Jenkins and Krause 1986:43).

Only sites of the Late Gulf Formational have been found in the immediate project area, and this appears to be the case for the entire Alabama Valley and Ridge Province (Meredith 2005b). Apparently, in the time period between 1200 and 800 B.C., a regionally determined cultural boundary existed between the Cumberland Plateau and the Alabama Valley and Ridge. People living to the west of this boundary made Middle Gulf Formational pottery, while those living to the east of that boundary did not make any pottery, presumably continuing a “Late Archaic” economy and material culture.

The Late Gulf Formational period is recognized by the presence of pottery associated with the Alexander culture. This pottery has the unifying element of a sand tempered clay body, the surface of which was decorated by a variety of treatments composed of incising, tool punctating, and fingernail decoration. All of this was applied to a smoothed surface, which was often left undecorated over much or all of a vessel. Other material culture recognized as associated with the Alexander culture includes projectile points of the Flint Creek and Little Bear Creek types, and ground stone artifacts in the form of stone vessels, gorgets, celts, oolitic hematite forms, and biconical pipes (Meredith 2005b). To date, four Late Gulf Formational phases have been defined in north and central Alabama. These phases are based solely on geographic boundaries. The nearest defined Late Gulf Formational phase is the Dry Branch phase, which includes all Alexander culture sites within the Coosa River drainage (Walling and Schrader 1983: 161). No phase designation for the Cahaba River drainage Alexander sites has been established to date.

Within 10 km of the project area five Alexander culture sites have been recorded. Site 1Sh493 was excavated in 2004 and is the only site within 10 km of the project boundaries that has been excavated. At 1Sh493, a significant Alexander culture component was identified with a large number of pit features and at least one Alexander culture burial (Ryba 2005). Such a large number of pit features indicates a substantial and at least semi-permanent habitation during that time period. Two other Alexander sites within 10 km of the project have been found to have Alexander culture subsurface pits with midden

accumulation (Meredith 2005b). This apparent increase in sedentism, coupled with the fact that three of the Alexander culture sites are relatively large (greater than three hectares) may account for the drop in the number of Alexander sites without surmising a decline in population during this time period.

### *Woodland Stage*

Across the Southeast the Woodland Stage has been subdivided into three periods, each representing major trends in economy and/or social organization. The Early Woodland period is characterized by the first widespread utilization of pottery across the Southeast. The Middle Woodland period is marked by the rise and fall of a super-regional interaction network, and the Late Woodland period is characterized by relative isolation of groups, intensification of agriculture, and population increase (Anderson and Mainfort 2002:1).

### *Early and Middle Woodland*

Due largely to the diversity and variation in form and decoration of Woodland Stage pottery, relatively detailed cultural chronologies have been developed for several areas of Alabama, such as the Middle Tennessee River Valley (Knight 1990), upper Tombigbee drainage (Jenkins and Krause 1986), and the Mobile Bay area Fuller 1998). This is not the case for any of the lower Alabama Valley and Ridge, especially within the Cahaba River drainage (Knight 1998:188). This is due largely to the fact that nearly all of the archaeological record for the region is based primarily on surface collection and many components can be identified only as Woodland. Components that produce a significant quantity of fabric marked pottery may be assumed to be Early or Middle Woodland. These fabric marked ceramics are similar to Middle Eastern Tradition (Caldwell 1958:23) pottery, such as that found in Colbert culture pottery of the Tennessee River Valley (Knight 1990:77-79), or the Kellogg phase in north Georgia (Wood and Bowen 1985).

Components that produce moderate to high percentages of paddle stamped pottery are also found in the upper Cahaba River drainage and it is assumed that these occur later

than those sites that produce high percentages of fabric marked pottery, and are most likely of the Middle Woodland period (Futato 1989:227). This pottery is most often tempered with limestone, which may indicate a degree of affiliation with groups to the north in the Tennessee River Valley. Sand tempered paddle stamped pottery has also been identified at these sites, which is more similar to Middle Woodland pottery found to the east and south of the upper Cahaba River drainage. Only one site within 10 km of the project boundaries, 1Sh493, has produced pottery that is identifiable as Early or Middle Woodland. Throughout most of the upper Cahaba River drainage there is a decrease in the number of such sites. This may indicate a drop in population in the area in this period of time for this region.

A distinct set of quartz tempered pottery with primarily plain surface treatment has been recognized in the vicinity of the project area. This pottery was most likely made by people of a local late Middle Woodland culture. Because this culture is known almost entirely through surface collections, a relative age has been implied through associated late Middle Woodland projectile point types (Meredith 2003). Seven sites that include this type of pottery have been recorded within 10 km of the project boundaries. The increase in the number of sites over that of earlier components indicates an apparent resurgence in the utilization of the area during the late Middle Woodland.

### *Late Woodland*

There is less uncertainty in identifying Late Woodland components in the upper Cahaba River drainage, largely because the few sites that have been excavated in this region have had recognizable Late Woodland components. (Ensor 1976; Little et al. 1998; Ryba 2005). Additionally, four Late Woodland sites in western Jefferson County have been excavated (Jenkins and Nielsen 1974; Brooms 1980) which has allowed for the definition of the West Jefferson phase (Jenkins and Nielsen 1974). This phase is recognized by a ceramic assemblage dominated by grog tempered pottery with a plain surface treatment. Minorities of shell tempered pottery are often present in West Jefferson phase assemblages. Based on radiocarbon dates Knight et al. (1999:7) suggest a date range for

the West Jefferson phase of around 990 to 1200 A.D. Jackson (2004:9) has proposed that the end of the phase may extend even later than 1200 A.D.

West Jefferson sites have been found across a broad area of north central Alabama in the Sipsey, Black Warrior, and upper Cahaba River drainages (Jenkins 1976). Within 10 km of the project area there are 8 recorded Late Woodland sites, and many of these sites may have West Jefferson phase components. Because there has still been a limited amount of excavation in the area, it is not known if there are Late Woodland occupations in the area that predate the West Jefferson phase.

West Jefferson phase settlement patterns and economy have been interpreted in various ways, mostly with respect to development of Mississippian culture in the Black Warrior River drainage (cf. Jenkins 2003). West Jefferson peoples apparently lived in hamlets along the Cahaba River, such as at site 1Je34 (Ensor 1978:19) or along major streams in the Cahaba Valley province. West Jefferson peoples participated in corn agriculture as well as relying on naturally available foods (Ensor 1979:36), and may have exported ground stone artifacts to neighboring groups (Seckinger and Jenkins 2000:52).

### *Mississippian Stage*

The Mississippian Stage is the last prehistoric stage of cultural development in Southeastern prehistory. This stage is marked by the emergence of centralized chiefdoms, and dependence on agricultural food production. Political and cultural centers were often marked by earthen platform mounds where commodities were imported and redistributed. Across much of Alabama, Mississippian Stage components are recognized primarily through the presence of shell tempered pottery, though many other less common artifacts are characteristic of Mississippian material culture. Though internal chronologies vary significantly across the Southeast, the time span of the Mississippian Stage is roughly between 1000 to 1540 (Bense 1994:184).

Unlike those of the Late Woodland Stage, very few sites with Mississippian components have been recorded in the upper Cahaba River drainage. Only two sites within 10 km of the project boundaries have produced shell tempered ceramics. One site, 1Sh362, located just over 10 km to the northeast of the project area has a significant Mississippian Component and has produced a moderate amount of shell and grog tempered pottery, including Alligator Bayou Incised, and several sherds of Moundville Incised, *var. Moundville* types. Features interpreted as possible house remains have been observed at the site. The ceramic assemblage indicates it is likely an early Mississippian site, with the presence of Moundville Incised, *var. Moundville* sherds. Only one possible early Moundville site, 1Je49 (Shaffield 1975, Ensor 1978:19), has been identified in the upper Cahaba River drainage. Four sites, located on the Cahaba River between 25 and 35 km to the north of the project area have produced an assemblage of pottery that closely resembles Moundville III (late Mississippian) pottery (Vernon J. Knight, personal communication, 2003). These sites have been interpreted as being habitation sites of people that had moved out of the Black Warrior River valley in a period of late Moundville culture destabilization, migrating westward in groups (Regnier, in press). It appears that at the close of the prehistoric era, this region was relatively unpopulated, perhaps only visited occasionally by individuals venturing out from populated regions to the south, east, and west.

### **Historic Period**

The Historic Period is generally thought by scholars to have begun with the first contact between Europeans and the native inhabitants of the southeastern coast in the vicinity of the South Santee River in 1521 (Hoffman 1994). The first 180 years or so (1521 to 1700) of the Historic Period in the Southeast are often referred to as the Protohistoric Period. During this time, aboriginal populations received their first contact with Europeans and an era of rapid cultural change began within communities throughout the southeast. From 1540-1600, an increase in the number of multiple burials noted at archaeological sites, as well as a general decrease in archaeological site size suggests that aboriginal populations experienced significant cultural stress that contributed to the disintegration of southeastern chiefdoms (Smith 1987). Theoretical models of depopulation in the interior



during the 17th century due to the introduction of European diseases suggest that to some extent, these populations became more mobile (Dobyns 1983).

Beginning in the 16th century and shortly after contact with Hernando De Soto's expedition, the people of the former paramount chiefdom of Coosa appear to have moved down the river that bears their name, with each new generation taking up residence further south from their ancestral homeland along the Coosawattee River to eventually inhabit the Middle and Lower Coosa and Tallapoosa River valleys in present day Alabama. This cultural group, also known as the Cossa-Abihka, became one of the core groups of the emergent Upper Creek division of the Creek Confederacy (Smith 2000). Also during this period, Hitichiti and Muskogean speaking people living within the Piedmont and Coastal Plain areas of present day Georgia and Alabama became more mobile. Merging with local Muskogean speaking populations, these native peoples coalesced into the Lower Creek division of the Creek Confederacy and became the cultural group along the Chattahoochee River (Worth: 2000).

The Creek Indians controlled much of present-day Alabama, including the vicinity of the proposed project area until forced to cede a vast territory after their defeat by Andrew Jackson in the Creek Indian War of 1813-1814 (Perry 2004). Jackson's victories over the Creeks and the British catapulted him onto the national stage and ushered in an age of rapid American expansion into the Gulf Coast region. Beginning in 1816, immigrants from Georgia, Tennessee and the Carolinas began streaming into the region, and the population increased dramatically (Perry 2004). Shelby County was formally established by 1818 and the nearby town of Montevallo was founded in 1829 at Wilson's Hill (Remington and Kallsen 1999)

Economically valuable iron ore was mined in the Valley and Ridge beginning as early as the 1830s, and several antebellum iron works in the region provided war material for the Confederacy during the Civil War. Shelby County retained its early industrial and agricultural character until the second half of the 20<sup>th</sup> century when the population began

to increase as a result of increased mobility that allows individuals to commute to nearby Birmingham while living in the more tranquil rural setting of Shelby County.

**APPENDIX C**  
**Preliminary Zone A Floodplain Determination**

MARTIN ENGINEERING COMPANY, INC.

Preliminary  
Zone A Floodplain Determination  
Shoal Creek  
Shelby County, Alabama

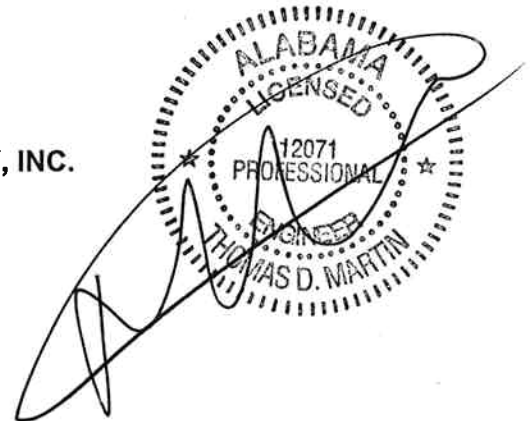
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256-268-0766  
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**PRELIMINARY**  
**ZONE A FLOODPLAIN DETERMINATION**  
**SHOAL CREEK**  
**SHELBY COUNTY, ALABAMA**

**PREPARED FOR**  
**CONRAD & RACHEL FOWLER**

**PREPARED BY**  
**MARTIN ENGINEERING COMPANY, INC.**  
**P.O. BOX 939**  
**CROPWELL, AL 35054**  
**(256) 268-0766**



**NOVEMBER, 2005**

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**PRELIMINARY  
ZONE A FLOODPLAIN DETERMINATION  
SHOAL CREEK  
SHELBY COUNTY, ALABAMA**

**PURPOSE:**

The purpose of this study is to determine preliminary 100-year flood elevations and floodplain limits for Shoal Creek and a tributary on the Fowler property in Section 10 Township 22 South Range 3 West in Shelby County, Alabama.

**BACKGROUND:**

Shoal Creek and its tributaries are designated as a Federal Emergency Management Agency (FEMA) flood Zone A. This designation means that flooding occurs but no detailed hydrologic/hydraulic analysis exists and floodplain limits are shown somewhat arbitrarily. Flooding observations over the years contradict the extent of flooding depicted by current flood maps.

**APPROACH:**

The overall technical approach used in this study was as follows:

- (a) Determine peak flows at various points along Shoal Creek and the tributary using Alabama rural regression formulae.
- (b) Using aerial topography (2 foot contour intervals) determine cross sections at key points along Shoal Creek and the tributary.
- (c) Using HEC RAS hydraulic software to determine 100-year flood elevations.
- (d) Plot the 100-year flood elevations on the topographic map.

**RESOURCES:**

- (1) Source Documents
  - (a) "Magnitude and Frequency of Floods in Alabama", USGS, WRIR 95-4199.
  - (b) U.S. Federal Emergency Management Agency, "Flood Insurance Study, Shelby County, Alabama (Unincorporated Areas)".
- (2) Computer Software
  - (a) U.S. Army Corps of Engineers, HEC-RAS, "Hydraulic Modeling System," version 3.1.2.
- (3) Primary Technical References

- (a) Chow, "Open-Channel Hydraulics"
- (b) King & Brater, "Handbook of Hydraulics"

(4) Project Documents

- (a) Aerial Topography on two (2) foot contour intervals, G-Squared, Inc., Memphis, TN.

**WATERSHED HYDROLOGY:**

(1) Watershed Size and Orientation

The watershed upstream to the south line of Section 10 Township 22 South Range 3 West consists of 11.58 square miles (7,410 acres). Drainage is generally north-to-south.

(2) Land Use and Soils

The watershed is primarily woods and pasture with new single family development occurring in the north and northeastern quadrants. It is generally rural and its impervious area is less than seven (7) per cent. New developments generally use stormwater detention to mitigate increases in runoff for the site only, with no overall watershed checks.

(3) Stream Channels

Shoal Creek and its tributaries are designated as a Flood Insurance Program (FIP) Zone A, which means no detailed analysis is available, nor have 100-year flood elevations been set.

(4) Regression Flow Estimate

There is no available stream flow data for Shoal Creek. Peak flows for the various storms were determined by USGS regression equations for rural flow in Alabama.

**HEC RAS CALCULATIONS:**

Stream cross sections were located at strategic locations along Shoal Creek and the tributary. Manning n (retardance coefficients) values were determined from field observation and aerial photography. Flow data determined from Regression formulae were placed at appropriate locations.

The HEC RAS summary report is included in the Appendix.



**RESULTS:**

Results from our calculations are shown on the attached work map, the composite FIRM panels 130 and 165, and in the HEC RAS report in the Appendix.

The calculated floodplain width is much smaller than the one depicted on the existing flood maps. This is not surprising due to the arbitrary floodplain lines in Zone A areas. (No attempt was made to investigate this; however, it will be necessary if an application is made to the FEMA to revise the Flood Insurance Rate Maps (FIRM) maps).

**CONCLUSIONS:**

The actual floodplain on the Fowler property is much smaller than that shown on the effective flood maps for Shoal Creek and its tributary. Although this report is preliminary, final flood elevations and floodplain limits should be reasonably close in a final submittal to the FEMA.

Future flood elevations may be higher due to continued development in the watershed. Structures and development adjacent to the calculated floodplain should bear this in mind.

**NOTICE:**

This study was based on certain furnished information thought to be reliable. If additional relevant information becomes known, or if provided others revise information, I reserve the right to amend any portion of this report.

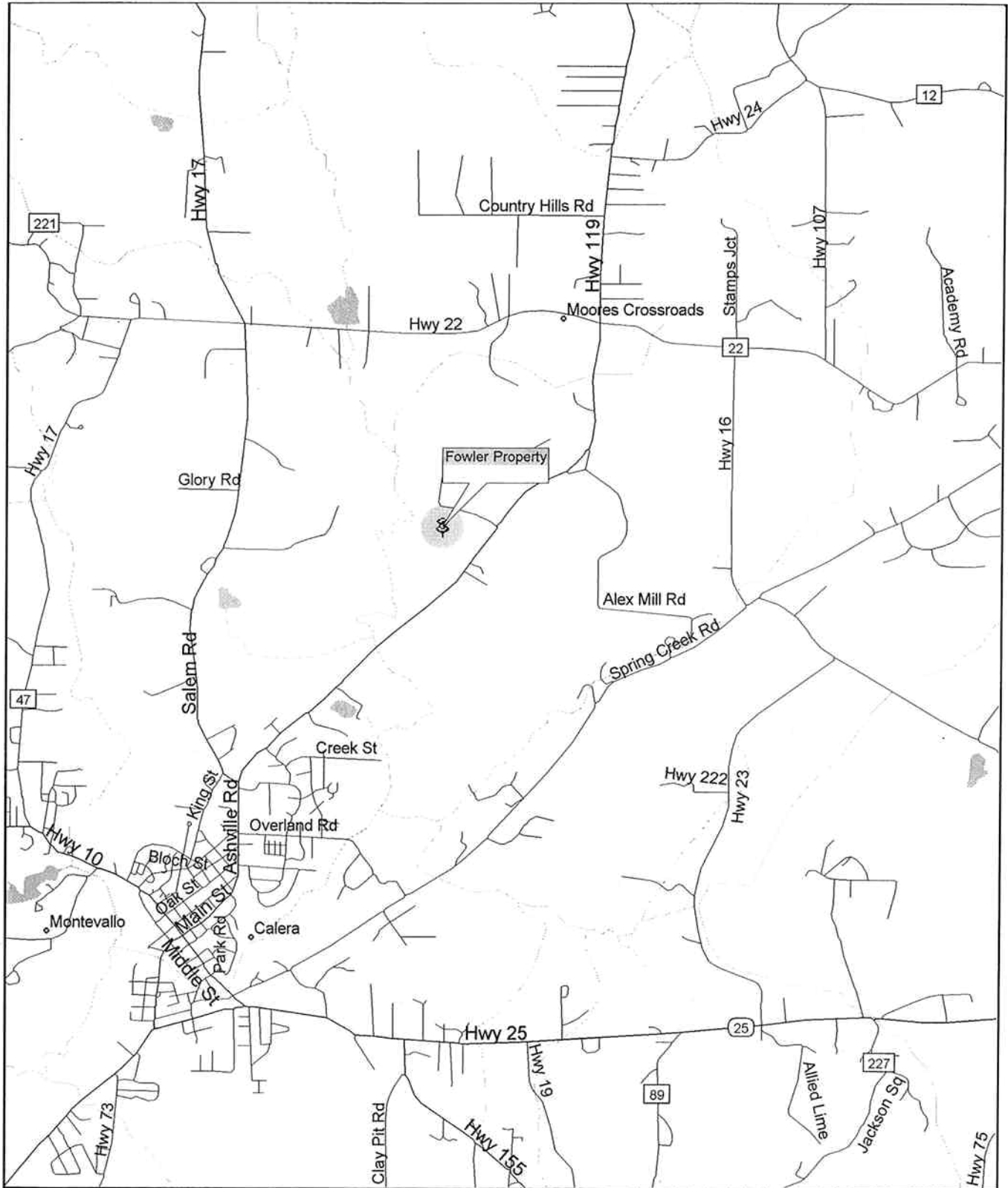
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Preliminary  
Zone A Floodplain Determination  
Shoal Creek  
Shelby County, Alabama

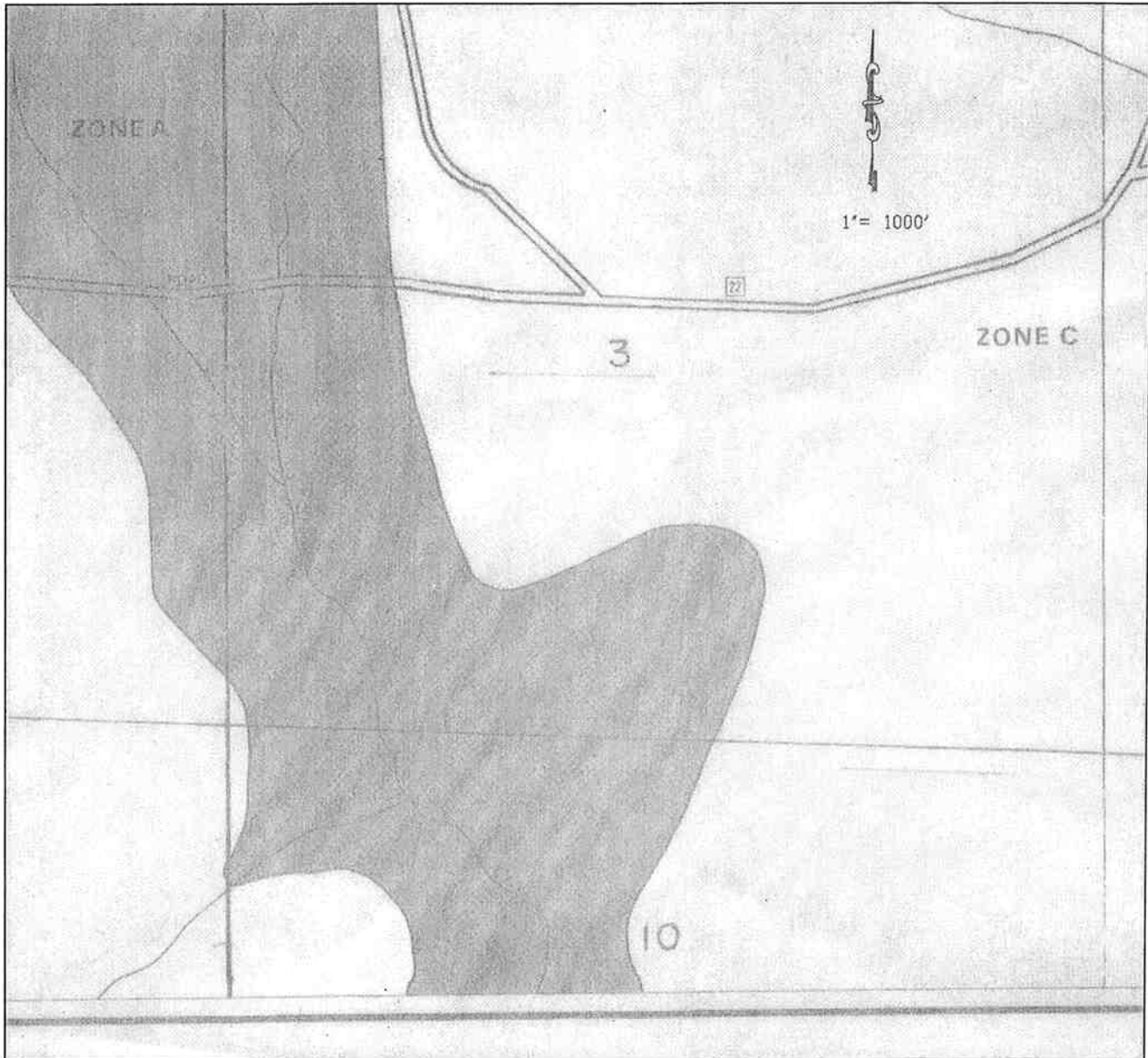
APPENDIX

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# Fowler Property VICINITY MAP



Microsoft Expedia  
**Streets98**



FIRM - FLOOD INSURANCE RATE MAP  
 SHELBY COUNTY, ALABAMA  
 (UNINCORPORATED AREAS)

PANEL 130 OF 195

COMMUNITY - PANEL NUMBER  
 010191 0130 B

EFFECTIVE DATE:  
 SEPTEMBER 16, 1982

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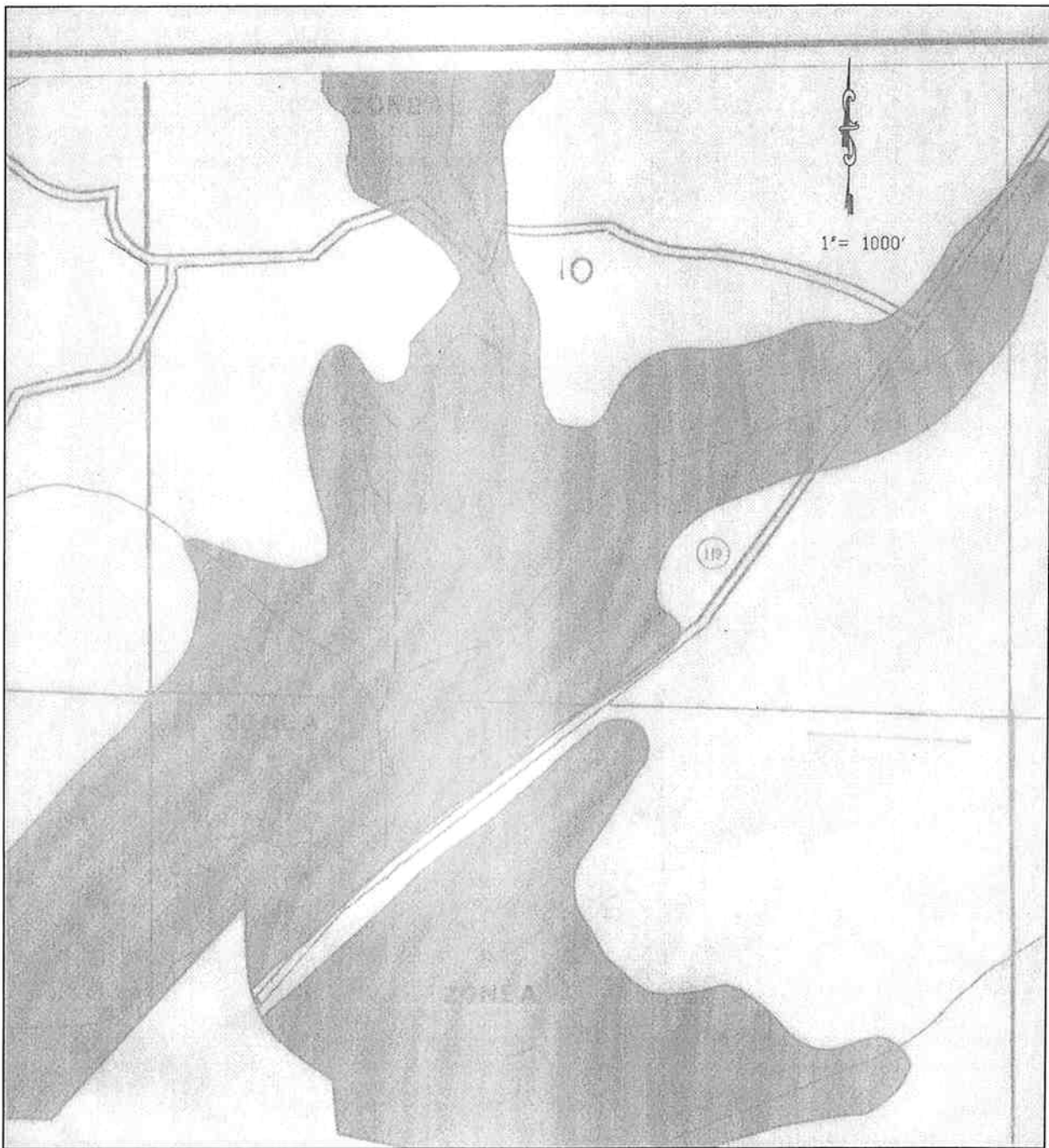
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 256-268-0766

Project: Shoal Creek Zone A

Sheet No.

Client: Conrad & Rachel Fowler

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FIRM - FLOOD INSURANCE RATE MAP  
 SHELBY COUNTY, ALABAMA  
 (UNINCORPORATED AREAS)

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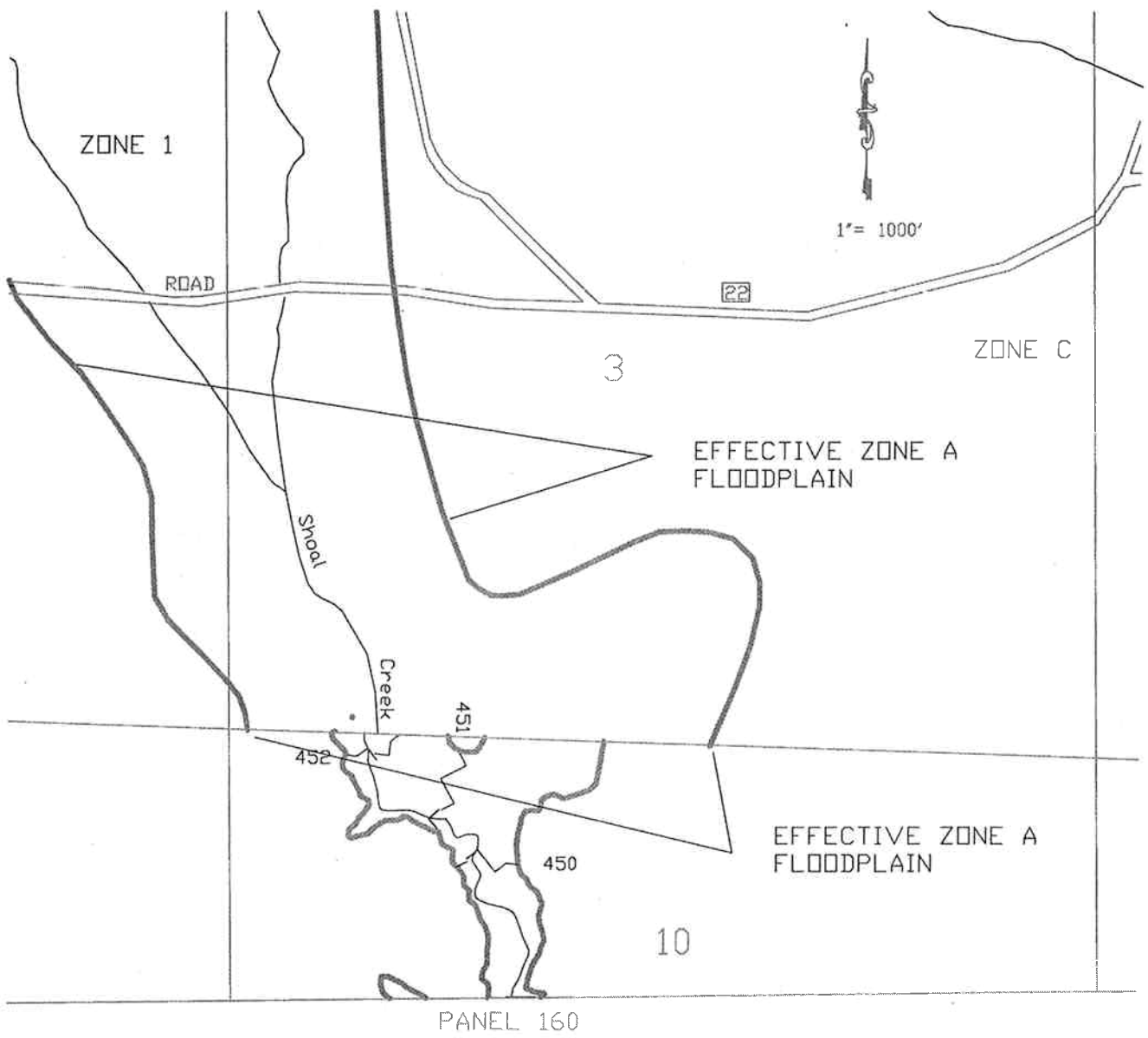
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Project: Shoal Creek Zone A

Client: Conrad & Rachel Fowler

Sheet No.

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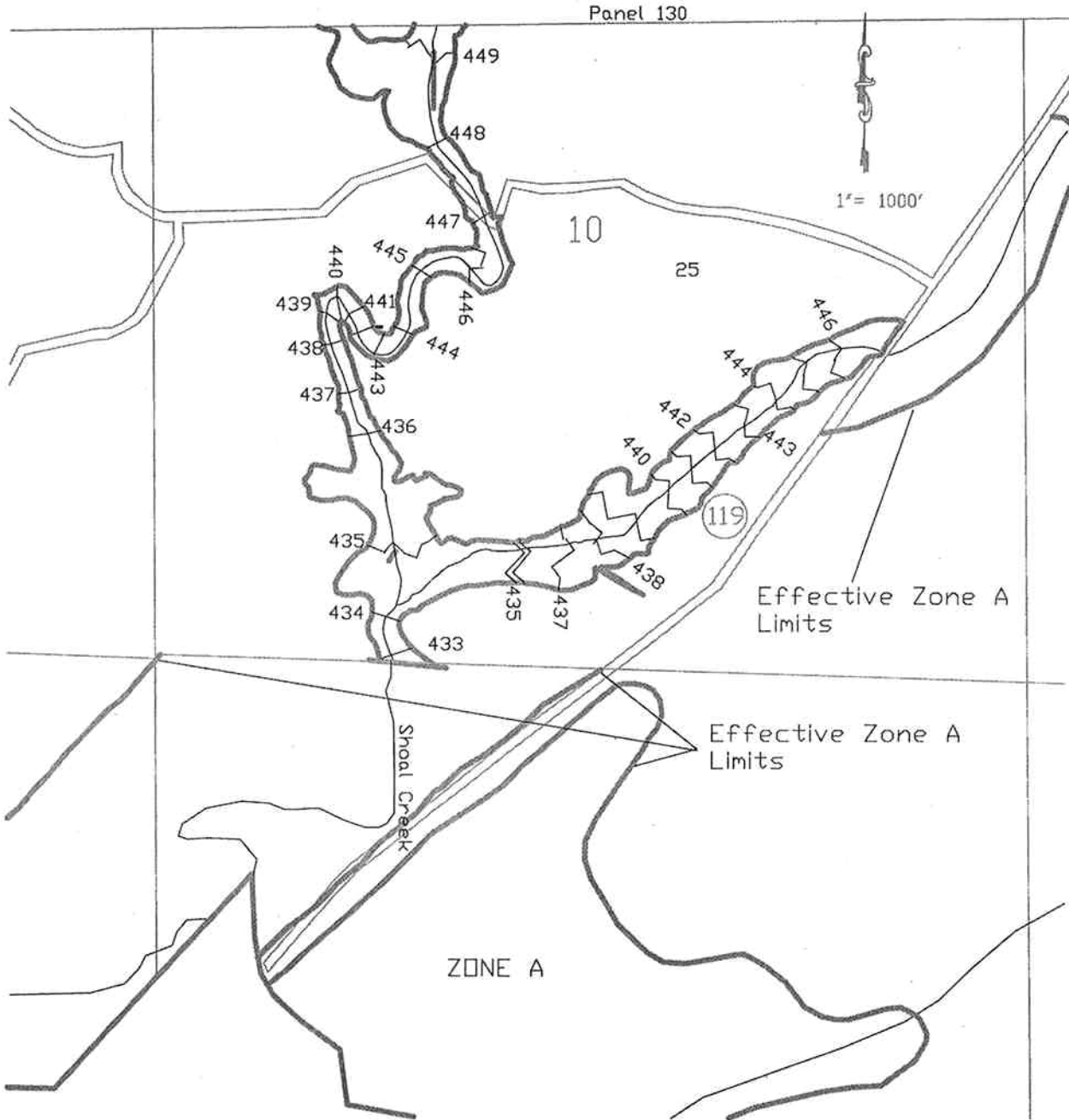
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FIRM - FLOOD INSURANCE RATE MAP  
 SHELBY COUNTY, ALABAMA  
 (UNINCORPORATED AREAS)

PANEL 130 OF 195

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PROPOSED  
 FIRM - FLOOD INSURANCE RATE MAP  
 SHELBY COUNTY, ALABAMA  
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PANEL 160 OF 195

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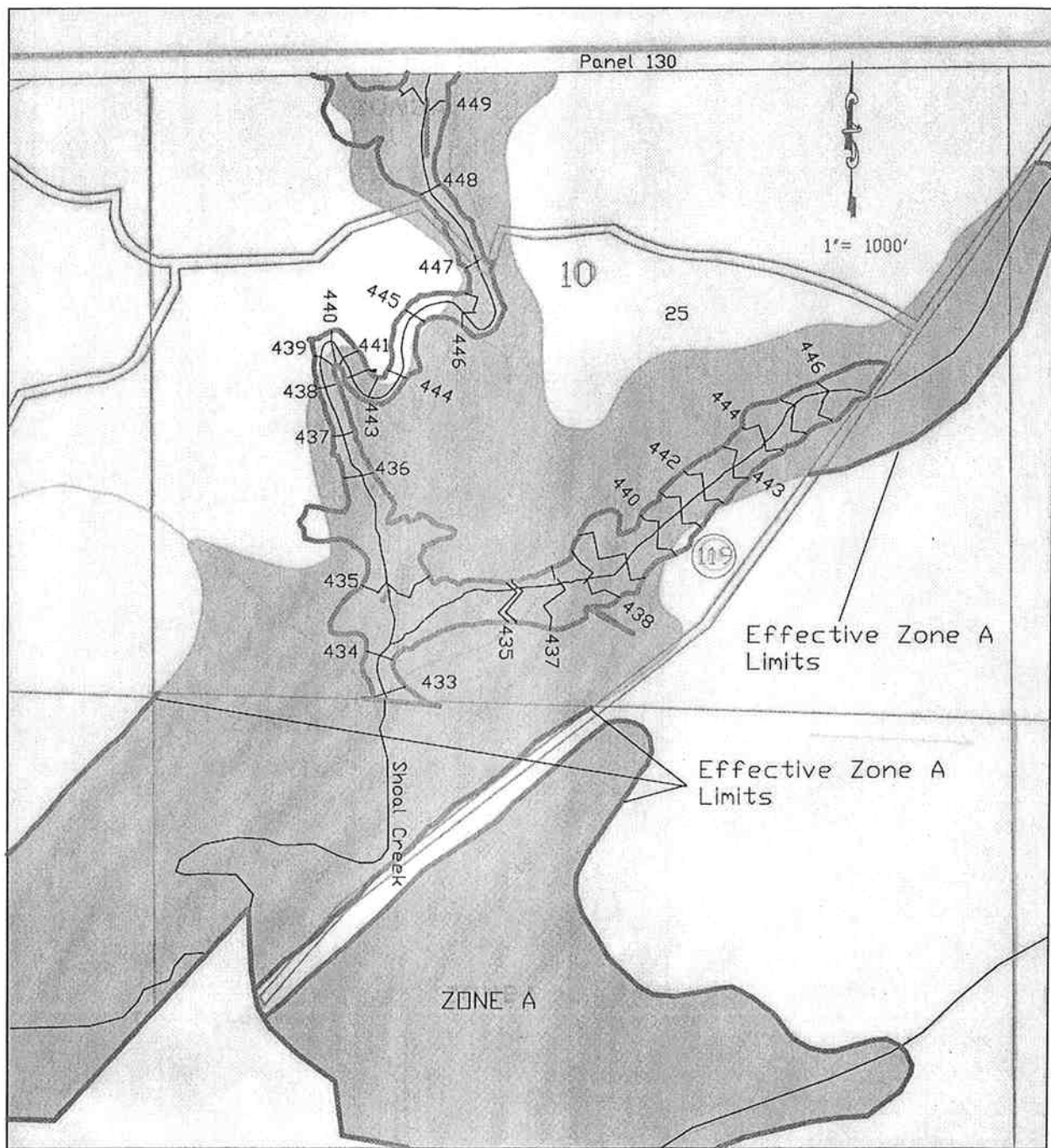
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Project: Shoal Creek Zone A

Client: Conrad & Rachel Fowler

Sheet No.

1/1



PROPOSED

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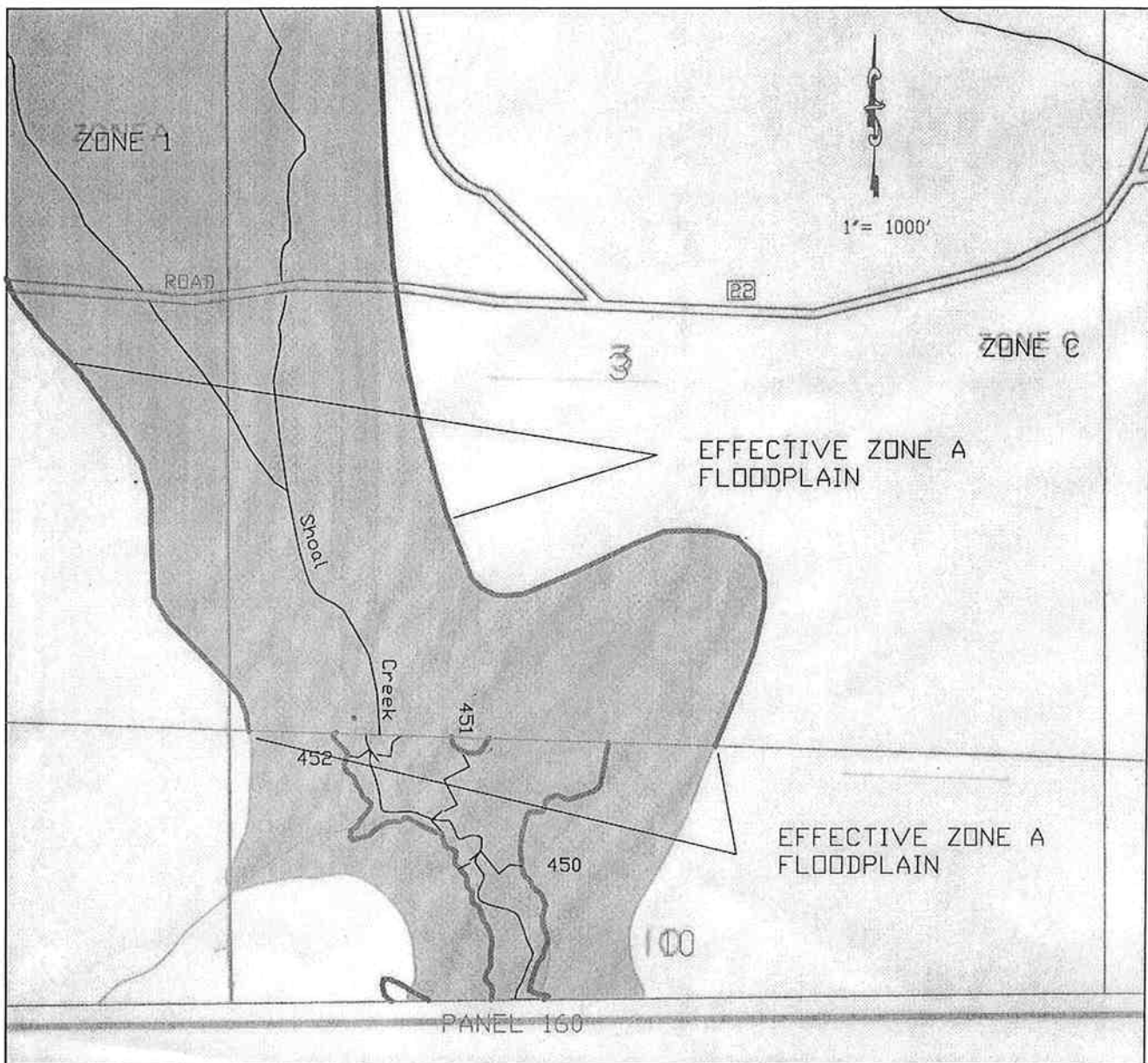
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Sheet No.

Client: Conrad & Rachel Fowler

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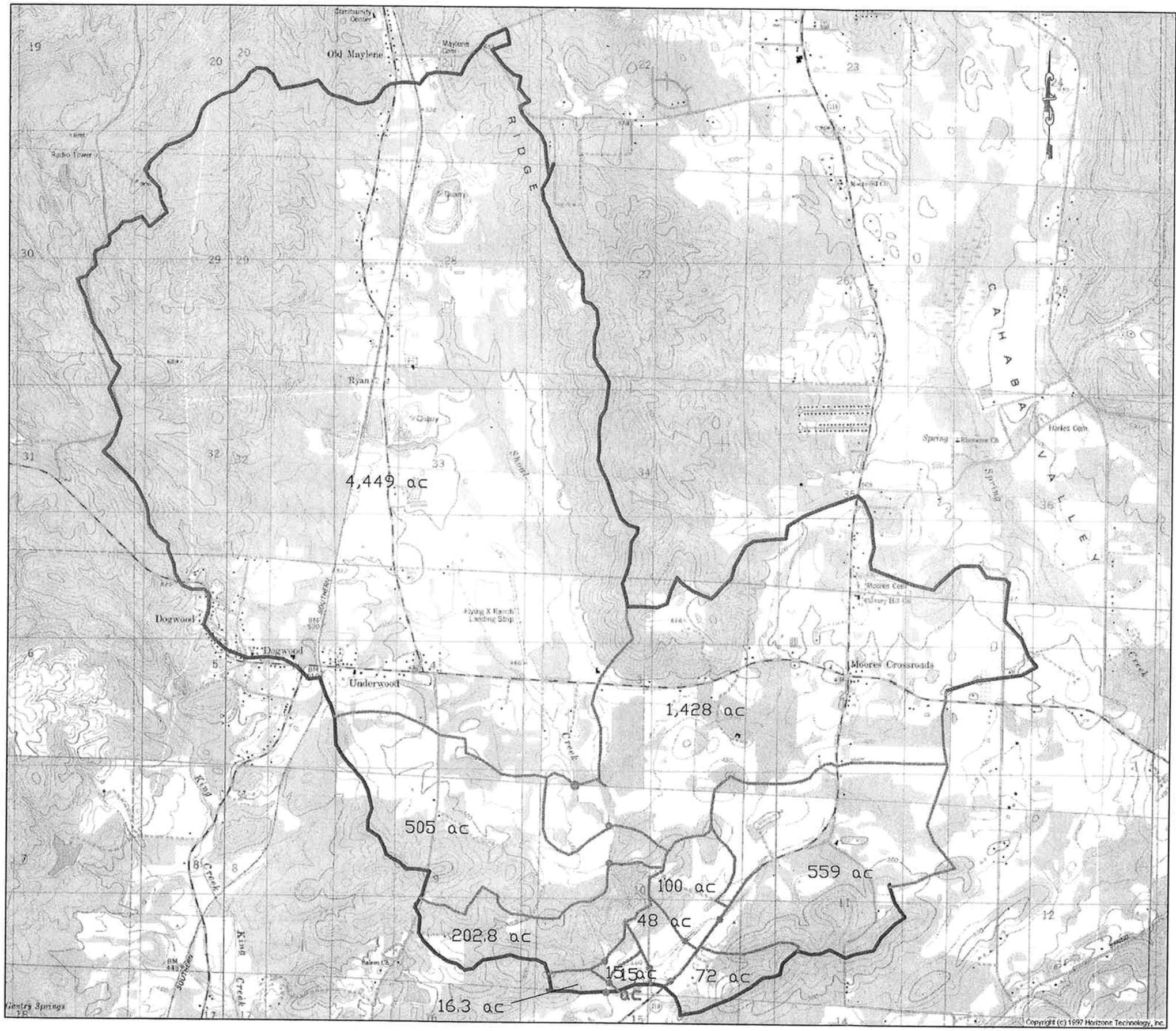
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FIRM - FLOOD INSURANCE RATE MAP  
 SHELBY COUNTY, ALABAMA  
 (UNINCORPORATED AREAS)

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WATERSHED MAP

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CLIENT:		Conrad & Rachel Fowler	
PROJECT:		Shoal Creek Zone A	
CK'D BY:	TDM	MARTIN ENGINEERING COMPANY, INC.	
DRAWING:	wamap.dwg		
SCALE:	1" = 3000'	P.O. Box 939 Cropwell, Alabama 35054 256-268-0766 256-268-2483 (FAX) 205-987-9927 (B'ham)	
JOB NO.			
DATE:	11/28/05		
		www.necronline.com	nar-tineci@aol.com

Martin Engineering Company, Inc.  
 Watershed Analysis  
 Rural Regression Formulae  
 USGS/ Alabama DOT (Atkins WRIR 95-4199)

Job Name: Shoal Creek- Fowler  
 Drainage area (ac)= 4449  
 Location: North Line Section 10

Recurrence Interval, Years	Drainage Area, sm	Region 1 Peak Flow, cfs
2	6.9516	835
5	6.9516	1,368
10	6.9516	1,764
25	6.9516	2,290
50	6.9516	2,709
100	6.9516	3,116
200	6.9516	3,543
500	6.9516	4,129

Drainage area (ac)= 5877  
 Location: Tributary

Recurrence Interval, Years	Drainage Area, sm	Region 1 Peak Flow, cfs
2	9.1828	1,007
5	9.1828	1,649
10	9.1828	2,125
25	9.1828	2,758
50	9.1828	3,265
100	9.1828	3,752
200	9.1828	4,265
500	9.1828	4,970

Drainage area (ac)= 6382  
 Location: Tributary

Recurrence Interval, Years	Drainage Area, sm	Region 1 Peak Flow, cfs
2	9.9719	1,065
5	9.9719	1,742
10	9.9719	2,245
25	9.9719	2,914
50	9.9719	3,450
100	9.9719	3,964
200	9.9719	4,506
500	9.9719	5,250

Martin Engineering Company, Inc.  
 Watershed Analysis  
 Rural Regression Formulae

Job Name: Shoal Creek- Fowler  
 Drainage area (ac)= 6585  
 Location: Tributary

Recurrence Interval, Years	Drainage Area, sm	Region 1 Peak Flow, cfs
2	10.2891	1,087
5	10.2891	1,779
10	10.2891	2,293
25	10.2891	2,975
50	10.2891	3,523
100	10.2891	4,048
200	10.2891	4,600
500	10.2891	5,361

Drainage area (ac)= 7394  
 Location: Tributary

Recurrence Interval, Years	Drainage Area, sm	Region 1 Peak Flow, cfs
2	11.5531	1,175
5	11.5531	1,922
10	11.5531	2,477
25	11.5531	3,215
50	11.5531	3,808
100	11.5531	4,373
200	11.5531	4,970
500	11.5531	5,791

Drainage area (ac)= 7410  
 Location: South Line Section 10

Recurrence Interval, Years	Drainage Area, sm	Region 1 Peak Flow, cfs
2	11.5781	1,177
5	11.5781	1,925
10	11.5781	2,481
25	11.5781	3,219
50	11.5781	3,813
100	11.5781	4,379
200	11.5781	4,977
500	11.5781	5,799

Martin Engineering Company, Inc.  
 Watershed Analysis  
 Rural Regression Formulae  
 USGS/ Alabama DOT (Atkins WRIR 95-4199)

Job Name: Shoal Creek- Fowler  
 Drainage area (ac)= 559  
 Location: Tributary- at Al. 119

Recurrence Interval, Years	Drainage Area, sm	Region 1 Peak Flow, cfs
2	0.8734	207
5	0.8734	342
10	0.8734	440
25	0.8734	573
50	0.8734	675
100	0.8734	781
200	0.8734	890
500	0.8734	1,037

Drainage area (ac)= 659  
 Location: Tributary (at House)

Recurrence Interval, Years	Drainage Area, sm	Region 1 Peak Flow, cfs
2	1.0297	232
5	1.0297	381
10	1.0297	492
25	1.0297	639
50	1.0297	754
100	1.0297	872
200	1.0297	993
500	1.0297	1,157

Drainage area (ac)= 779  
 Location: Tributary

Recurrence Interval, Years	Drainage Area, sm	Region 1 Peak Flow, cfs
2	1.2172	259
5	1.2172	427
10	1.2172	550
25	1.2172	715
50	1.2172	843
100	1.2172	975
200	1.2172	1,110
500	1.2172	1,294

Martin Engineering Company, Inc.  
Watershed Analysis  
Rural Regression Formulae  
USGS/ Alabama DOT (Atkins WRIR 95-4199)

Job Name: Shoal Creek- Fowler  
Drainage area (ac)= 794  
Location: Confluence

Recurrence Interval, Years	Drainage Area, sm	Region 1 Peak Flow, cfs
2	1.2406	262
5	1.2406	432
10	1.2406	557
25	1.2406	724
50	1.2406	854
100	1.2406	987
200	1.2406	1,124
500	1.2406	1,310

HEC-RAS Version 3.1.2 April 2004  
U.S. Army Corp of Engineers  
Hydrologic Engineering Center  
609 Second Street  
Davis, California

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X  X XXXXXX  XXXX  XXXX  XX  XXXX
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PROJECT DATA

Project Title: Shoal Creek  
Project File : sc.prj  
Run Date and Time: 11/23/2005 9:31:45 AM

Project in English units

PLAN DATA

Plan Title: Plan 02  
Plan File : C:\HEC Data\RAS\sc.p02

Geometry Title: Existing  
Geometry File : C:\HEC Data\RAS\sc.g01

Flow Title : Existing  
Flow File : C:\HEC Data\RAS\sc.f01

Plan Summary Information:

Number of: Cross Sections = 33 Multiple Openings = 0  
Culverts = 0 Inline Structures = 0  
Bridges = 2 Lateral Structures = 0

Computational Information

Water surface calculation tolerance = 0.01  
Critical depth calculation tolerance = 0.01  
Maximum number of iterations = 20  
Maximum difference tolerance = 0.3  
Flow tolerance factor = 0.001

Computation Options

Critical depth computed only where necessary  
Conveyance Calculation Method: At breaks in n values only  
Friction Slope Method: Average Conveyance  
Computational Flow Regime: Subcritical Flow

FLOW DATA

Flow Title: Existing  
Flow File : C:\HEC Data\RAS\sc.f01

Flow Data (cfs)

River	Reach	RS	PF 1	PF 2	PF 3	PF 4
Shoal Creek	1	7650	1765	2710	3115	4130
Shoal Creek	1	6150	2125	3265	3755	4970
Shoal Creek	1	5105	2245	3450	3965	5250
Shoal Creek	1	890	2295	3525	4050	5360
Shoal Creek	2	250	2480	3810	4375	5790
Shoal Creek	2	0	2480	3815	4380	5800
Tributary	1	13	440	675	780	1040
Tributary	1	10	495	755	875	1160
Tributary	1	6	550	845	975	1295
Tributary	1	1	560	855	990	1310

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Shoal Creek	2	PF 1		Normal S = 0.004
Shoal Creek	2	PF 2		Normal S = 0.004
Shoal Creek	2	PF 3		Normal S = 0.004
Shoal Creek	2	PF 4		Normal S = 0.004

GEOMETRY DATA

Geometry Title: Existing  
 Geometry File : C:\HEC Data\RAS\sc.g01

Reach Connection Table

River	Reach	Upstream Boundary	Downstream Boundary
Shoal Creek	1		J1
Shoal Creek	2	J1	
Tributary	1		J1

JUNCTION INFORMATION

Name: J1  
 Description:  
 Energy computation Method

Length across Junction		Tributary		Length	Angle
River	Reach	River	Reach		
Shoal Creek	1	to Shoal Creek	2	440	0
Tributary	1	to Shoal Creek	2	0	0

CROSS SECTION

RIVER: Shoal Creek  
 REACH: 1 RS: 7650



INPUT

Description:

Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	460	180	450	300	449.8	582	450	638	450.5
684	450	696	448	708	446	744	446	754	448
762	450	855	452	912	454	1030	456	1134	458
1197	460								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	684	.045	762	.08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.  
 684 762 110 225 530 .1 .3

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	452.10	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.	0.080	0.045	0.080
W.S. Elev (ft)	451.92	Reach Len. (ft)	110.00	225.00	530.00
Crit W.S. (ft)		Flow Area (sq ft)	1016.19	379.85	85.81
E.G. Slope (ft/ft)	0.002216	Area (sq ft)	1016.19	379.85	85.81
Q Total (cfs)	3115.00	Flow (cfs)	1356.65	1685.31	73.04
Top Width (ft)	705.92	Top Width (ft)	538.58	78.00	89.33
Vel Total (ft/s)	2.10	Avg. Vel. (ft/s)	1.34	4.44	0.85
Max Chl Dpth (ft)	5.92	Hydr. Depth (ft)	1.89	4.87	0.96
Conv. Total (cfs)	66169.3	Conv. (cfs)	28818.1	35799.7	1551.5
Length Wtd. (ft)	196.96	Wetted Per. (ft)	538.64	78.78	89.36
Min Ch El (ft)	446.00	Shear (lb/sq ft)	0.26	0.67	0.13
Alpha	2.59	Stream Power (lb/ft s)	0.35	2.96	0.11
Frctn Loss (ft)	0.29	Cum Volume (acre-ft)	57.70	68.27	65.98
C & E Loss (ft)	0.02	Cum SA (acres)	18.86	7.62	16.47

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Shoal Creek

REACH: 1 RS: 7425

INPUT

Description:

Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	460	160	450	300	449.8	562	450	638	450.5
724	450	848	448	857	446	865	444	904	444
907	446	913	448	1013	450	1045	452	1084	454
1142	456	1214	458	1256	460				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	848	.045	913	.08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.  
 848 913 775 800 450 .1 .3

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	451.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.	0.080	0.045	0.080
W.S. Elev (ft)	451.67	Reach Len. (ft)	775.00	800.00	450.00
Crit W.S. (ft)		Flow Area (sq ft)	1296.18	442.66	289.53
E.G. Slope (ft/ft)	0.001033	Area (sq ft)	1296.18	442.66	289.53
Q Total (cfs)	3115.00	Flow (cfs)	1150.84	1664.44	299.72
Top Width (ft)	906.49	Top Width (ft)	714.75	65.00	126.75
Vel Total (ft/s)	1.54	Avg. Vel. (ft/s)	0.89	3.76	1.04
Max Chl Dpth (ft)	7.67	Hydr. Depth (ft)	1.81	6.81	2.28
Conv. Total (cfs)	96901.2	Conv. (cfs)	35800.2	51777.3	9323.8
Length Wtd. (ft)	754.24	Wetted Per. (ft)	714.82	66.40	126.82
Min Ch El (ft)	444.00	Shear (lb/sq ft)	0.12	0.43	0.15
Alpha	3.37	Stream Power (lb/ft s)	0.10	1.62	0.15
Frctn Loss (ft)	1.23	Cum Volume (acre-ft)	54.78	66.14	63.70
C & E Loss (ft)	0.04	Cum SA (acres)	17.28	7.25	15.16

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Shoal Creek  
 REACH: 1 RS: 6625

INPUT

Description:

Station Elevation Data num= 10

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	449	97	448	123	446	130	444	136	442
160	442	175	444	193	446	223	448	253	450

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	130	.045	175	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	130	175	275	475	385	.1	.3	

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	450.52	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.55	Wt. n-Val.	0.080	0.045	0.080
W.S. Elev (ft)	449.97	Reach Len. (ft)	275.00	475.00	385.00
Crit W.S. (ft)		Flow Area (sq ft)	254.35	337.56	207.52
E.G. Slope (ft/ft)	0.002967	Area (sq ft)	254.35	337.56	207.52
Q Total (cfs)	3115.00	Flow (cfs)	399.86	2311.18	403.96
Top Width (ft)	252.52	Top Width (ft)	130.00	45.00	77.52
Vel Total (ft/s)	3.90	Avg. Vel. (ft/s)	1.57	6.85	1.95
Max Chl Dpth (ft)	7.97	Hydr. Depth (ft)	1.96	7.50	2.68
Conv. Total (cfs)	57182.6	Conv. (cfs)	7340.3	42426.7	7415.6
Length Wtd. (ft)	430.53	Wetted Per. (ft)	131.33	45.46	77.76
Min Ch El (ft)	442.00	Shear (lb/sq ft)	0.36	1.38	0.49
Alpha	2.34	Stream Power (lb/ft s)	0.56	9.42	0.96
Frctn Loss (ft)	0.47	Cum Volume (acre-ft)	40.99	58.98	61.13
C & E Loss (ft)	0.12	Cum SA (acres)	9.76	6.24	14.10

Warning: The cross-section end points had to be extended vertically for the computed water surface.  
 Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Shoal Creek  
 REACH: 1 RS: 6150

INPUT

Description:

Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	450	43	448	75	446	156	444	168	442
177	440	218	440	240	442	272	444	321	446
361	448	396	450						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	168	.045	240	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	168	240	550	445	250	.1	.3	

CROSS SECTION OUTPUT Profile #PF 3

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	449.93				
Vel Head (ft)	0.14	Wt. n-Val.	0.080	0.045	0.080
W.S. Elev (ft)	449.79	Reach Len. (ft)	550.00	445.00	250.00
Crit W.S. (ft)		Flow Area (sq ft)	593.49	674.01	591.91
E.G. Slope (ft/ft)	0.000613	Area (sq ft)	593.49	674.01	591.91
Q Total (cfs)	3755.00	Flow (cfs)	643.55	2439.62	671.83
Top Width (ft)	387.88	Top Width (ft)	163.52	72.00	152.36
Vel Total (ft/s)	2.02	Avg. Vel. (ft/s)	1.08	3.62	1.14
Max Chl Dpth (ft)	9.79	Hydr. Depth (ft)	3.63	9.36	3.88
Conv. Total (cfs)	151722.5	Conv. (cfs)	26003.0	98574.0	27145.4
Length Wtd. (ft)	400.69	Wetted Per. (ft)	163.82	72.31	152.56
Min Ch El (ft)	440.00	Shear (lb/sq ft)	0.14	0.36	0.15
Alpha	2.19	Stream Power (lb/ft s)	0.15	1.29	0.17
Frctn Loss (ft)	0.31	Cum Volume (acre-ft)	38.31	53.46	57.60
C & E Loss (ft)	0.01	Cum SA (acres)	8.83	5.61	13.08

CROSS SECTION

RIVER: Shoal Creek  
 REACH: 1 RS: 5705

INPUT

Description:

Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	450	36	442	46	440	50	439.4	75	439.4
85	440	111	442	170	444	225	446	258	448
285	450								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	46	.045	85	.08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.  
 46 85 585 600 725 .1 .3

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	449.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.20	Wt. n-Val.	0.080	0.045	0.080
W.S. Elev (ft)	449.42	Reach Len. (ft)	585.00	600.00	725.00
Crit W.S. (ft)		Flow Area (sq ft)	208.09	386.60	934.35
E.G. Slope (ft/ft)	0.000989	Area (sq ft)	208.09	386.60	934.35
Q Total (cfs)	3755.00	Flow (cfs)	340.32	1850.12	1564.56
Top Width (ft)	274.57	Top Width (ft)	43.39	39.00	192.18
Vel Total (ft/s)	2.46	Avg. Vel. (ft/s)	1.64	4.79	1.67
Max Chl Dpth (ft)	10.02	Hydr. Depth (ft)	4.80	9.91	4.86
Conv. Total (cfs)	119430.1	Conv. (cfs)	10824.0	58844.2	49761.9
Length Wtd. (ft)	643.72	Wetted Per. (ft)	44.40	39.06	192.44
Min Ch El (ft)	439.40	Shear (lb/sq ft)	0.29	0.61	0.30
Alpha	2.10	Stream Power (lb/ft s)	0.47	2.92	0.50
Frctn Loss (ft)	0.82	Cum Volume (acre-ft)	33.25	48.05	53.22
C & E Loss (ft)	0.01	Cum SA (acres)	7.53	5.04	12.10

CROSS SECTION

RIVER: Shoal Creek  
 REACH: 1 RS: 5105

INPUT

Description:

Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	450	10	448	17	446	35	444	61	442
66	440	68	438.6	98	438.6	104	440	119	442
167	444	241	446	346	448	428	450		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	66	.045	104	.08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.  
 66 104 310 375 490 .1 .3

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	448.79	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.34	Wt. n-Val.	0.080	0.045	0.080
W.S. Elev (ft)	448.45	Reach Len. (ft)	310.00	375.00	490.00
Crit W.S. (ft)		Flow Area (sq ft)	251.64	368.66	784.76
E.G. Slope (ft/ft)	0.001655	Area (sq ft)	251.64	368.66	784.76
Q Total (cfs)	3965.00	Flow (cfs)	499.29	2229.22	1236.49
Top Width (ft)	356.65	Top Width (ft)	58.24	38.00	260.40
Vel Total (ft/s)	2.82	Avg. Vel. (ft/s)	1.98	6.05	1.58
Max Chl Dpth (ft)	9.85	Hydr. Depth (ft)	4.32	9.70	3.01
Conv. Total (cfs)	97462.0	Conv. (cfs)	12272.9	54795.4	30393.7
Length Wtd. (ft)	388.74	Wetted Per. (ft)	59.14	38.60	260.63
Min Ch El (ft)	438.60	Shear (lb/sq ft)	0.44	0.99	0.31
Alpha	2.74	Stream Power (lb/ft s)	0.87	5.97	0.49
Frctn Loss (ft)	0.66	Cum Volume (acre-ft)	30.16	42.84	38.91
C & E Loss (ft)	0.01	Cum SA (acres)	6.85	4.51	8.33

CROSS SECTION

RIVER: Shoal Creek  
 REACH: 1 RS: 4730

INPUT

Description:

Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	450	13	446	30	444	46	442	61	440
71	438	110	438	119	440	128	442	137	444
146	446	164	450						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	61	.045	119	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	61	119		375	355	340	.1	.3

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	448.11	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.48	Wt. n-Val.	0.080	0.045	0.080
W.S. Elev (ft)	447.63	Reach Len. (ft)	375.00	355.00	340.00
Crit W.S. (ft)		Flow Area (sq ft)	222.51	539.49	130.96
E.G. Slope (ft/ft)	0.001746	Area (sq ft)	222.51	539.49	130.96
Q Total (cfs)	3965.00	Flow (cfs)	444.33	3276.50	244.18
Top Width (ft)	145.63	Top Width (ft)	53.29	58.00	34.33
Vel Total (ft/s)	4.44	Avg. Vel. (ft/s)	2.00	6.07	1.86
Max Chl Dpth (ft)	9.63	Hydr. Depth (ft)	4.18	9.30	3.81
Conv. Total (cfs)	94889.8	Conv. (cfs)	10633.6	78412.7	5843.6
Length Wtd. (ft)	355.01	Wetted Per. (ft)	53.91	58.42	35.17
Min Ch El (ft)	438.00	Shear (lb/sq ft)	0.45	1.01	0.41
Alpha	1.58	Stream Power (lb/ft s)	0.90	6.11	0.76
Frctn Loss (ft)	0.64	Cum Volume (acre-ft)	28.48	38.94	33.76
C & E Loss (ft)	0.00	Cum SA (acres)	6.45	4.10	6.67

CROSS SECTION

RIVER: Shoal Creek  
 REACH: 1 RS: 4375

INPUT

Description:

Station Elevation Data num= 10

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	450	28	442	44	440	50	438	53	437.1
77	437.1	92	438	122	440	132	442	161	450

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	50	.045	92	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	50	92		550	445	775	.1	.3

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	447.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.47	Wt. n-Val.	0.080	0.045	0.080
W.S. Elev (ft)	447.00	Reach Len. (ft)	550.00	445.00	775.00
Crit W.S. (ft)		Flow Area (sq ft)	187.63	407.57	345.14
E.G. Slope (ft/ft)	0.001876	Area (sq ft)	187.63	407.57	345.14
Q Total (cfs)	3965.00	Flow (cfs)	418.57	2645.49	900.94
Top Width (ft)	139.60	Top Width (ft)	39.49	42.00	58.11
Vel Total (ft/s)	4.22	Avg. Vel. (ft/s)	2.23	6.49	2.61
Max Chl Dpth (ft)	9.90	Hydr. Depth (ft)	4.75	9.70	5.94
Conv. Total (cfs)	91538.3	Conv. (cfs)	9663.3	61075.4	20799.6
Length Wtd. (ft)	557.81	Wetted Per. (ft)	40.64	42.16	59.06
Min Ch El (ft)	437.10	Shear (lb/sq ft)	0.54	1.13	0.68
Alpha	1.70	Stream Power (lb/ft s)	1.21	7.35	1.79
Frctn Loss (ft)	0.84	Cum Volume (acre-ft)	26.71	35.08	31.90
C & E Loss (ft)	0.06	Cum SA (acres)	6.05	3.69	6.31

CROSS SECTION

RIVER: Shoal Creek  
 REACH: 1 RS: 3910

INPUT

Description:

Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	450	18	440	23	438	27	436	59	436
64	438	67	440	112	441	128	440	155	439
177	440	204	446	214	448	239	449		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	23	.045	64	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	23	64		410	445	380	.1	.3

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	446.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.28	Wt. n-Val.	0.080	0.045	0.080
W.S. Elev (ft)	446.29	Reach Len. (ft)	410.00	445.00	380.00
Crit W.S. (ft)		Flow Area (sq ft)	72.06	412.91	796.86
E.G. Slope (ft/ft)	0.001240	Area (sq ft)	72.06	412.91	796.86
Q Total (cfs)	3965.00	Flow (cfs)	117.37	2208.21	1639.42
Top Width (ft)	198.77	Top Width (ft)	16.32	41.00	141.45
Vel Total (ft/s)	3.09	Avg. Vel. (ft/s)	1.63	5.35	2.06
Max Chl Dpth (ft)	10.29	Hydr. Depth (ft)	4.41	10.07	5.63
Conv. Total (cfs)	112604.4	Conv. (cfs)	3333.3	62712.3	46558.8
Length Wtd. (ft)	420.53	Wetted Per. (ft)	18.34	41.86	142.83
Min Ch El (ft)	436.00	Shear (lb/sq ft)	0.30	0.76	0.43
Alpha	1.86	Stream Power (lb/ft s)	0.50	4.08	0.89
Frctn Loss (ft)	0.75	Cum Volume (acre-ft)	25.07	30.89	21.74
C & E Loss (ft)	0.03	Cum SA (acres)	5.70	3.26	4.54



Manning's n Values num= 3  
 Sta n Val Sta n Val Sta n Val  
 0 .08 104 .045 138 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.  
 104 138 485 410 260 .1 .3

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	444.69	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.54	Wt. n-Val.	0.080	0.045	0.080
W.S. Elev (ft)	444.15	Reach Len. (ft)	485.00	410.00	260.00
Crit W.S. (ft)		Flow Area (sq ft)	259.36	313.66	354.43
E.G. Slope (ft/ft)	0.002584	Area (sq ft)	259.36	313.66	354.43
Q Total (cfs)	3965.00	Flow (cfs)	560.45	2299.60	1104.96
Top Width (ft)	165.22	Top Width (ft)	73.85	34.00	57.37
Vel Total (ft/s)	4.28	Avg. Vel. (ft/s)	2.16	7.33	3.12
Max Chl Dpth (ft)	9.45	Hydr. Depth (ft)	3.51	9.23	6.18
Conv. Total (cfs)	77996.5	Conv. (cfs)	11024.7	45235.9	21735.8
Length Wtd. (ft)	381.84	Wetted Per. (ft)	74.91	34.36	59.08
Min Ch El (ft)	434.70	Shear (lb/sq ft)	0.56	1.47	0.97
Alpha	1.89	Stream Power (lb/ft s)	1.21	10.80	3.02
Frctn Loss (ft)	1.18	Cum Volume (acre-ft)	21.12	24.56	13.70
C & E Loss (ft)	0.03	Cum SA (acres)	4.77	2.61	3.10

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  
 This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Shoal Creek  
 REACH: 1 RS: 2665

INPUT

Description:

Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	450	13	448	26	440	34	436	39	434
76	434	79	436	85	436	103	436	108	438
116	440	167	442	206	444	228	446	250	448
276	450								

Manning's n Values num= 3  
 Sta n Val Sta n Val Sta n Val  
 0 .08 34 .045 79 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.  
 34 79 690 500 240 .1 .3

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	443.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.87	Wt. n-Val.	0.080	0.045	0.080
W.S. Elev (ft)	442.61	Reach Len. (ft)	690.00	500.00	240.00
Crit W.S. (ft)		Flow Area (sq ft)	42.36	379.26	300.88
E.G. Slope (ft/ft)	0.003793	Area (sq ft)	42.36	379.26	300.88
Q Total (cfs)	3965.00	Flow (cfs)	101.79	3148.22	714.99
Top Width (ft)	157.05	Top Width (ft)	12.23	45.00	99.81



Vel Total (ft/s)	5.49	Avg. Vel. (ft/s)	2.40	8.30	2.38
Max Chl Dpth (ft)	8.61	Hydr. Depth (ft)	3.46	8.43	3.01
Conv. Total (cfs)	64378.3	Conv. (cfs)	1652.7	51116.5	11609.0
Length Wtd. (ft)	486.49	Wetted Per. (ft)	13.92	45.99	100.50
Min Ch El (ft)	434.00	Shear (lb/sq ft)	0.72	1.95	0.71
Alpha	1.86	Stream Power (lb/ft s)	1.73	16.21	1.68
Frctn Loss (ft)	2.89	Cum Volume (acre-ft)	19.44	21.30	11.74
C & E Loss (ft)	0.09	Cum SA (acres)	4.29	2.24	2.63

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

### CROSS SECTION

RIVER: Shoal Creek

REACH: 1 RS: 2165

### INPUT

Description:

Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	444	18	442	32	440	46	438	93	436
112	434	117	432	151	432	157	434	164	436
169	438	174	440	179	442	184	444		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	112	.045	157	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	112	157	285	340	350	.1	.3	

### CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	440.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.81	Wt. n-Val.	0.080	0.045	0.080
W.S. Elev (ft)	438.68	Reach Len. (ft)	285.00	340.00	350.00
Crit W.S. (ft)		Flow Area (sq ft)	150.67	289.71	34.77
E.G. Slope (ft/ft)	0.010583	Area (sq ft)	150.67	289.71	34.77
Q Total (cfs)	3965.00	Flow (cfs)	475.54	3370.44	119.02
Top Width (ft)	129.48	Top Width (ft)	70.78	45.00	13.71
Vel Total (ft/s)	8.34	Avg. Vel. (ft/s)	3.16	11.63	3.42
Max Chl Dpth (ft)	6.68	Hydr. Depth (ft)	2.13	6.44	2.54
Conv. Total (cfs)	38542.0	Conv. (cfs)	4622.5	32762.6	1156.9
Length Wtd. (ft)	333.37	Wetted Per. (ft)	70.97	45.71	14.50
Min Ch El (ft)	432.00	Shear (lb/sq ft)	1.40	4.19	1.58
Alpha	1.67	Stream Power (lb/ft s)	4.43	48.72	5.42
Frctn Loss (ft)	2.13	Cum Volume (acre-ft)	17.91	17.46	10.82
C & E Loss (ft)	0.30	Cum SA (acres)	3.63	1.73	2.32

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than

0.7 or greater than 1.4. This may indicate the need for additional cross sections.  
 Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  
 This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Shoal Creek  
 REACH: 1 RS: 1825

INPUT

Description:

Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	440	6	438	11	436	17	434	56	432
63	430	109	430	116	432	124	434	134	436
145	438	151	440						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	56	.045	116	.08

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	56	116	170	165	150	.1	.3	

CROSS SECTION OUTPUT Profile #PF 3

	E.G. Elev (ft)	438.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.82	Wt. n-Val.	0.080	0.045	0.080	
W.S. Elev (ft)	437.24	Reach Len. (ft)	170.00	165.00	150.00	
Crit W.S. (ft)		Flow Area (sq ft)	180.68	420.35	60.53	
E.G. Slope (ft/ft)	0.004287	Area (sq ft)	180.68	420.35	60.53	
Q Total (cfs)	3965.00	Flow (cfs)	526.55	3307.02	131.43	
Top Width (ft)	132.91	Top Width (ft)	48.10	60.00	24.82	
Vel Total (ft/s)	5.99	Avg. Vel. (ft/s)	2.91	7.87	2.17	
Max Chl Dpth (ft)	7.24	Hydr. Depth (ft)	3.76	7.01	2.44	
Conv. Total (cfs)	60555.7	Conv. (cfs)	8041.7	50506.7	2007.3	
Length Wtd. (ft)	164.88	Wetted Per. (ft)	48.71	60.56	25.37	
Min Ch El (ft)	430.00	Shear (lb/sq ft)	0.99	1.86	0.64	
Alpha	1.47	Stream Power (lb/ft s)	2.89	14.62	1.39	
Frctn Loss (ft)	0.51	Cum Volume (acre-ft)	16.82	14.69	10.44	
C & E Loss (ft)	0.09	Cum SA (acres)	3.24	1.32	2.16	

CROSS SECTION

RIVER: Shoal Creek  
 REACH: 1 RS: 1660

INPUT

Description:

Station Elevation Data num= 13

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	440	5	438	11	436	23	432	52	430
58	428.7	105	428.7	113	430	121	432	139	434
146	436	152	438	158	440				

Manning's n Values num= 3  
 Sta n Val Sta n Val Sta n Val  
 0 .08 52 .045 113 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.  
 52 113 395 405 400 .1 .3

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	437.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.53	Wt. n-Val.	0.080	0.045	0.080
W.S. Elev (ft)	436.94	Reach Len. (ft)	395.00	405.00	400.00
Crit W.S. (ft)		Flow Area (sq ft)	208.71	493.32	133.22
E.G. Slope (ft/ft)	0.002330	Area (sq ft)	208.71	493.32	133.22
Q Total (cfs)	3965.00	Flow (cfs)	522.87	3159.51	282.61
Top Width (ft)	140.62	Top Width (ft)	43.81	61.00	35.81
Vel Total (ft/s)	4.75	Avg. Vel. (ft/s)	2.51	6.40	2.12
Max Chl Dpth (ft)	8.24	Hydr. Depth (ft)	4.76	8.09	3.72
Conv. Total (cfs)	82143.7	Conv. (cfs)	10832.5	65456.3	5855.0
Length Wtd. (ft)	403.04	Wetted Per. (ft)	44.68	61.24	36'60
Min Ch El (ft)	428.70	Shear (lb/sq ft)	0.68	1.17	0.53
Alpha	1.50	Stream Power (lb/ft s)	1.70	7.50	1.12
Frctn Loss (ft)	1.31	Cum Volume (acre-ft)	16.06	12.96	10.10
C & E Loss (ft)	0.03	Cum SA (acres)	3.06	1.09	2.06

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Shoal Creek  
 REACH: 1 RS: 1255

INPUT

Description:

Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	440	26	438	56	436	86	434	118	432
134	430	141	428	145	427.3	166	427.3	169	428
173	430	231	432	290	434	319	436	357	438
395	440								

Manning's n Values num= 3  
 Sta n Val Sta n Val Sta n Val  
 0 .08 134 .045 173 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.  
 134 173 400 365 370 .1 .3

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	436.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.78	Wt. n-Val.	0.080	0.045	0.080
W.S. Elev (ft)	435.35	Reach Len. (ft)	400.00	365.00	370.00
Crit W.S. (ft)		Flow Area (sq ft)	158.19	292.64	403.60
E.G. Slope (ft/ft)	0.004830	Area (sq ft)	158.19	292.64	403.60

Q Total (cfs)	3965.00	Flow (cfs)	357.03	2535.38	1072.59
Top Width (ft)	243.70	Top Width (ft)	68.19	39.00	136.51
Vel Total (ft/s)	4.64	Avg. Vel. (ft/s)	2.26	8.66	2.66
Max Chl Dpth (ft)	8.05	Hydr. Depth (ft)	2.32	7.50	2.96
Conv. Total (cfs)	57051.4	Conv. (cfs)	5137.3	36481.0	15433.2
Length Wtd. (ft)	376.92	Wetted Per. (ft)	68.42	39.89	136.63
Min Ch El (ft)	427.30	Shear (lb/sq ft)	0.70	2.21	0.89
Alpha	2.34	Stream Power (lb/ft s)	1.57	19.16	2.37
Frctn Loss (ft)	0.59	Cum Volume (acre-ft)	14.40	9.31	7.64
C & E Loss (ft)	0.20	Cum SA (acres)	2.55	0.62	1.27

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

### CROSS SECTION

RIVER: Shoal Creek  
 REACH: 1 RS: 890

#### INPUT

Description:

Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	437.1	71	436	75	434	134	432	312	430
329	428	334	426.5	363	426.5	366	428	369	430
425	432	436	434	448	436	462	438	475	440

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.04	312	.045	369	.08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.  
 312 369 200 200 155 .1 .3

### CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	435.34	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.13	Wt. n-Val.	0.040	0.045	0.080
W.S. Elev (ft)	435.22	Reach Len. (ft)	200.00	200.00	155.00
Crit W.S. (ft)		Flow Area (sq ft)	882.44	440.76	264.84
E.G. Slope (ft/ft)	0.000773	Area (sq ft)	882.44	440.76	264.84
Q Total (cfs)	4050.00	Flow (cfs)	2172.82	1558.90	318.28
Top Width (ft)	370.72	Top Width (ft)	239.43	57.00	74.29
Vel Total (ft/s)	2.55	Avg. Vel. (ft/s)	2.46	3.54	1.20
Max Chl Dpth (ft)	8.72	Hydr. Depth (ft)	3.69	7.73	3.56
Conv. Total (cfs)	145653.2	Conv. (cfs)	78142.7	56063.8	11446.7
Length Wtd. (ft)	195.58	Wetted Per. (ft)	239.76	58.30	74.61
Min Ch El (ft)	426.50	Shear (lb/sq ft)	0.18	0.36	0.17
Alpha	1.26	Stream Power (lb/ft s)	0.44	1.29	0.21
Frctn Loss (ft)	0.15	Cum Volume (acre-ft)	9.62	6.24	4.80
C & E Loss (ft)	0.00	Cum SA (acres)	1.14	0.22	0.37

### CROSS SECTION

RIVER: Shoal Creek  
 REACH: 1 RS: 690

INPUT

Description:

Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	437	84	436	159	434	200	432	324	430
377	428	379	426	412	426	414	428	416	430
498	432	541	434	561	436	578	438	592	440

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.04	377	.045	416	.08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

377	416	480	440	415	.1	.3
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CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	435.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.13	Wt. n-Val.	0.040	0.045	0.080
W.S. Elev (ft)	435.06	Reach Len. (ft)	440.00	440.00	440.00
Crit W.S. (ft)		Flow Area (sq ft)	931.22	343.50	427.68
E.G. Slope (ft/ft)	0.000781	Area (sq ft)	931.22	343.50	427.68
Q Total (cfs)	4050.00	Flow (cfs)	2275.16	1297.67	477.17
Top Width (ft)	432.55	Top Width (ft)	257.91	39.00	135.64
Vel Total (ft/s)	2.38	Avg. Vel. (ft/s)	2.44	3.78	1.12
Max Chl Dpth (ft)	9.06	Hydr. Depth (ft)	3.61	8.81	3.15
Conv. Total (cfs)	144887.1	Conv. (cfs)	81392.9	46423.5	17070.7
Length Wtd. (ft)	440.00	Wetted Per. (ft)	258.02	41.49	135.77
Min Ch El (ft)	426.00	Shear (lb/sq ft)	0.18	0.40	0.15
Alpha	1.43	Stream Power (lb/ft s)	0.43	1.53	0.17
Frctn Loss (ft)	0.55	Cum Volume (acre-ft)	5.46	4.44	3.57
C & E Loss (ft)	0.04	Cum SA (acres)			

CROSS SECTION

RIVER: Shoal Creek  
 REACH: 2 RS: 250

INPUT

Description:

Station Elevation Data num= 18

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	440	10	438	20	436	35	434	51	432
73	430	86	428	91	426	101	424.4	137	424.4
141	426	145	428	191	430	202	432	214	434
225	436	237	438	246	440				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	86	.045	145	.08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

86	145	195	250	280	.1	.3
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CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	434.60	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.55	Wt. n-Val.	0.080	0.045	0.080
W.S. Elev (ft)	434.05	Reach Len. (ft)	195.00	250.00	280.00
Crit W.S. (ft)		Flow Area (sq ft)	149.67	534.88	278.61
E.G. Slope (ft/ft)	0.002149	Area (sq ft)	149.67	534.88	278.61
Q Total (cfs)	4375.00	Flow (cfs)	261.59	3509.03	604.38
Top Width (ft)	179.68	Top Width (ft)	51.39	59.00	69.29
Vel Total (ft/s)	4.54	Avg. Vel. (ft/s)	1.75	6.56	2.17
Max Chl Dpth (ft)	9.65	Hydr. Depth (ft)	2.91	9.07	4.02
Conv. Total (cfs)	94368.2	Conv. (cfs)	5642.4	75689.4	13036.4
Length Wtd. (ft)	247.13	Wetted Per. (ft)	51.76	60.29	69.68
Min Ch El (ft)	424.40	Shear (lb/sq ft)	0.39	1.19	0.54
Alpha	1.71	Stream Power (lb/ft s)	0.68	7.81	1.16
Frctn Loss (ft)	0.71	Cum Volume (acre-ft)	1.04	2.61	1.44
C & E Loss (ft)	0.03	Cum SA (acres)	0.36	0.29	0.40

CROSS SECTION

RIVER: Shoal Creek  
 REACH: 2 RS: 0

INPUT

Description:

Station Elevation Data num= 20

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	440	10	438	36	436	50	434	83	432
115	430	176	428	179	426	182	424	183	423.5
213	423.5	214	424	216	426	218	428	253	430
266	432	278	434	293	436	313	438	360	440

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	176	.045	218	.08

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	176	218		0	0	0	.1	.3	

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	433.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.86	Wt. n-Val.	0.080	0.045	0.080
W.S. Elev (ft)	433.01	Reach Len. (ft)			
Crit W.S. (ft)	431.32	Flow Area (sq ft)	317.02	373.80	169.38
E.G. Slope (ft/ft)	0.004006	Area (sq ft)	317.02	373.80	169.38
Q Total (cfs)	4380.00	Flow (cfs)	755.93	3199.17	424.91
Top Width (ft)	205.66	Top Width (ft)	109.62	42.00	54.04
Vel Total (ft/s)	5.09	Avg. Vel. (ft/s)	2.38	8.56	2.51
Max Chl Dpth (ft)	9.51	Hydr. Depth (ft)	2.89	8.90	3.13
Conv. Total (cfs)	69204.5	Conv. (cfs)	11943.7	50547.2	6713.6
Length Wtd. (ft)		Wetted Per. (ft)	109.74	45.10	54.34
Min Ch El (ft)	423.50	Shear (lb/sq ft)	0.72	2.07	0.78
Alpha	2.12	Stream Power (lb/ft s)	1.72	17.74	1.96
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

CROSS SECTION

RIVER: Tributary  
 REACH: 1 RS: 13

INPUT

Description:

Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	451	4	450	11	448	106	446	113	444
115	443.6	119	443.6	121	444	226	446	281	448
323	450	352	452						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	113	.045	121	.06

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.  
 113 121 305 280 245 .1 .3

CROSS SECTION OUTPUT Profile #PF 3

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	447.00		0.080	0.045	0.060
Vel Head (ft)	0.24	Wt. n-Val.			
W.S. Elev (ft)	446.76	Reach Len. (ft)	305.00	280.00	245.00
Crit W.S. (ft)		Flow Area (sq ft)	26.23	24.52	193.31
E.G. Slope (ft/ft)	0.008601	Area (sq ft)	26.23	24.52	193.31
Q Total (cfs)	780.00	Flow (cfs)	32.20	157.36	590.43
Top Width (ft)	177.34	Top Width (ft)	43.31	8.00	126.02
Vel Total (ft/s)	3.20	Avg. Vel. (ft/s)	1.23	6.42	3.05
Max Chl Dpth (ft)	3.16	Hydr. Depth (ft)	0.61	3.06	1.53
Conv. Total (cfs)	8410.2	Conv. (cfs)	347.2	1696.7	6366.3
Length Wtd. (ft)	271.58	Wetted Per. (ft)	43.60	8.08	126.06
Min Ch El (ft)	443.60	Shear (lb/sq ft)	0.32	1.63	0.82
Alpha	1.51	Stream Power (lb/ft s)	0.40	10.46	2.52
Frctn Loss (ft)	1.16	Cum Volume (acre-ft)	22.05	5.69	10.88
C & E Loss (ft)	0.04	Cum SA (acres)	12.59	1.27	7.45

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Tributary  
 REACH: 1 RS: 12

INPUT

Description:

Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	452	8	450	57	448	119	446	183	444
267	444	323	444	326	441.9	349	441.9	352	444
415	446	454	448	482	450	512	452		

Manning's n Values num= 3  
 Sta n Val Sta n Val Sta n Val  
 0 .08 323 .045 352 .06

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.  
 323 352 230 345 650 .1 .3

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	445.81	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.	0.080	0.045	0.060
W.S. Elev (ft)	445.69	Reach Len. (ft)	230.00	345.00	650.00
Crit W.S. (ft)		Flow Area (sq ft)	282.33	103.61	44.99
E.G. Slope (ft/ft)	0.002536	Area (sq ft)	282.33	103.61	44.99
Q Total (cfs)	780.00	Flow (cfs)	339.00	390.87	50.14
Top Width (ft)	276.32	Top Width (ft)	194.09	29.00	53.24
Vel Total (ft/s)	1.81	Avg. Vel. (ft/s)	1.20	3.77	1.11
Max Chl Dpth (ft)	3.79	Hydr. Depth (ft)	1.45	3.57	0.85
Conv. Total (cfs)	15489.1	Conv. (cfs)	6731.7	7761.8	995.6
Length Wtd. (ft)	388.98	Wetted Per. (ft)	194.11	30.32	53.27
Min Ch El (ft)	441.90	Shear (lb/sq ft)	0.23	0.54	0.13
Alpha	2.39	Stream Power (lb/ft s)	0.28	2.04	0.15
Frctn Loss (ft)	1.48	Cum Volume (acre-ft)	20.97	5.28	10.21
C & E Loss (ft)	0.01	Cum SA (acres)	11.76	1.15	6.95

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.  
 Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Tributary  
 REACH: 1 RS: 11

INPUT

Description:

Station Elevation Data num= 12

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	450	32	448	60	446	112	444	198	442
201	440	208	440	211	442	371	444	529	446
576	448	654	450						

Manning's n Values num= 3  
 Sta n Val Sta n Val Sta n Val  
 0 .08 198 .045 211 .06

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.  
 198 211 355 390 215 .1 .3

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	444.32	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.23	Wt. n-Val.	0.080	0.045	0.060
W.S. Elev (ft)	444.10	Reach Len. (ft)	355.00	390.00	215.00
Crit W.S. (ft)		Flow Area (sq ft)	94.32	47.24	175.61
E.G. Slope (ft/ft)	0.006348	Area (sq ft)	94.32	47.24	175.61
Q Total (cfs)	780.00	Flow (cfs)	145.63	276.82	357.55



Top Width (ft)	269.01	Top Width (ft)	88.48	13.00	167.53
Vel Total (ft/s)	2.46	Avg. Vel. (ft/s)	1.54	5.86	2.04
Max Chl Dpth (ft)	4.10	Hydr. Depth (ft)	1.07	3.63	1.05
Conv. Total (cfs)	9789.7	Conv. (cfs)	1827.7	3474.3	4487.6
Length Wtd. (ft)	305.93	Wetted Per. (ft)	88.50	14.21	167.54
Min Ch El (ft)	440.00	Shear (lb/sq ft)	0.42	1.32	0.42
Alpha	2.40	Stream Power (lb/ft s)	0.65	7.72	0.85
Frctn Loss (ft)	1.55	Cum Volume (acre-ft)	19.97	4.68	8.57
C & E Loss (ft)	0.02	Cum SA (acres)	11.01	0.99	5.30

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  
This may indicate the need for additional cross sections.

### CROSS SECTION

RIVER: Tributary  
REACH: 1 RS: 10

### INPUT

Description:

Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	450	23	448	33	446	77	444	128	442
223	440	226	438	233	438	236	440	346	442
409	444	471	446	519	448	601	450		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	223	.045	236	.06

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.  
223 236 600 525 420 .1 .3

### CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	442.75	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.	0.080	0.045	0.060
W.S. Elev (ft)	442.58	Reach Len. (ft)	600.00	525.00	420.00
Crit W.S. (ft)		Flow Area (sq ft)	154.65	53.57	179.41
E.G. Slope (ft/ft)	0.004235	Area (sq ft)	154.65	53.57	179.41
Q Total (cfs)	875.00	Flow (cfs)	234.76	278.82	361.41
Top Width (ft)	251.20	Top Width (ft)	109.85	13.00	128.35
Vel Total (ft/s)	2.26	Avg. Vel. (ft/s)	1.52	5.20	2.01
Max Chl Dpth (ft)	4.58	Hydr. Depth (ft)	1.41	4.12	1.40
Conv. Total (cfs)	13446.0	Conv. (cfs)	3607.5	4284.7	5553.8
Length Wtd. (ft)	509.15	Wetted Per. (ft)	109.88	14.21	128.37
Min Ch El (ft)	438.00	Shear (lb/sq ft)	0.37	1.00	0.37
Alpha	2.14	Stream Power (lb/ft s)	0.56	5.19	0.74
Frctn Loss (ft)	2.57	Cum Volume (acre-ft)	18.96	4.23	7.69
C & E Loss (ft)	0.01	Cum SA (acres)	10.20	0.87	4.57

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  
This may indicate the need for additional cross sections.

### CROSS SECTION

RIVER: Tributary  
 REACH: 1 RS: 9

INPUT

Description:

Station Elevation Data num= 16

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	448	6	446	126	444	214	442	304	440
433	438	474	438	476	436.3	482	436.3	484	438
508	438	607	440	640	442	781	444	1020	446
1141	448								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	474	.045	484	.06

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.  
 474 484 405 600 590 .1 .3

CROSS SECTION OUTPUT Profile #PF 3

			Left OB	Channel	Right OB
E.G. Elev (ft)	440.16	Element			
Vel Head (ft)	0.14	Wt. n-Val.	0.080	0.045	0.060
W.S. Elev (ft)	440.02	Reach Len. (ft)	405.00	600.00	590.00
Crit W.S. (ft)		Flow Area (sq ft)	214.57	33.81	149.58
E.G. Slope (ft/ft)	0.006132	Area (sq ft)	214.57	33.81	149.58
Q Total (cfs)	875.00	Flow (cfs)	363.12	182.06	329.83
Top Width (ft)	304.29	Top Width (ft)	170.94	10.00	123.35
Vel Total (ft/s)	2.20	Avg. Vel. (ft/s)	1.69	5.38	2.21
Max Chl Dpth (ft)	3.72	Hydr. Depth (ft)	1.26	3.38	1.21
Conv. Total (cfs)	11174.3	Conv. (cfs)	4637.2	2325.0	4212.1
Length Wtd. (ft)	485.08	Wetted Per. (ft)	170.96	11.25	123.37
Min Ch El (ft)	436.30	Shear (lb/sq ft)	0.48	1.15	0.46
Alpha	1.87	Stream Power (lb/ft s)	0.81	6.19	1.02
Frctn Loss (ft)	2.18	Cum Volume (acre-ft)	16.42	3.70	6.10
C & E Loss (ft)	0.02	Cum SA (acres)	8.27	0.73	3.36

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  
 This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Tributary  
 REACH: 1 RS: 8

INPUT

Description:

Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	445	71	444	106	442	133	440	286	438
350	436	543	436	545	434	551	434	553	436
623	438	714	438	801	440	841	442	877	444

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	543	.045	553	.06

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.  
 543 553 520 182 155 .1 .3

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	437.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.080	0.045	0.060
W.S. Elev (ft)	437.89	Reach Len. (ft)	520.00	182.00	155.00
Crit W.S. (ft)		Flow Area (sq ft)	422.31	34.92	62.61
E.G. Slope (ft/ft)	0.003444	Area (sq ft)	422.31	34.92	62.61
Q Total (cfs)	875.00	Flow (cfs)	646.77	140.58	87.65
Top Width (ft)	329.73	Top Width (ft)	253.53	10.00	66.20
Vel Total (ft/s)	1.68	Avg. Vel. (ft/s)	1.53	4.03	1.40
Max Chl Dpth (ft)	3.89	Hydr. Depth (ft)	1.67	3.49	0.95
Conv. Total (cfs)	14910.5	Conv. (cfs)	11021.3	2395.6	1493.6
Length Wtd. (ft)	407.38	Wetted Per. (ft)	253.56	11.66	66.23
Min Ch El (ft)	434.00	Shear (lb/sq ft)	0.36	0.64	0.20
Alpha	1.60	Stream Power (lb/ft s)	0.55	2.59	0.28
Frctn Loss (ft)	1.02	Cum Volume (acre-ft)	13.45	3.23	4.67
C & E Loss (ft)	0.01	Cum SA (acres)	6.30	0.59	2.08

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  
 This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Tributary  
 REACH: 1 RS: 7

INPUT

Description:

Station Elevation Data num= 14

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	450	102	440	119	438	141	436	280	435.1
396	434	398	432.6	405	432.6	407	434	470	436
546	438	582	440	616	442	657	444		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	396	.045	407	.06

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.  
 396 407 145 245 220 .1 .3

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	436.94	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.	0.080	0.045	0.060
W.S. Elev (ft)	436.89	Reach Len. (ft)	145.00	245.00	220.00
Crit W.S. (ft)		Flow Area (sq ft)	461.34	44.36	133.86
E.G. Slope (ft/ft)	0.001905	Area (sq ft)	461.34	44.36	133.86
Q Total (cfs)	875.00	Flow (cfs)	541.50	153.86	179.64
Top Width (ft)	372.48	Top Width (ft)	264.76	11.00	96.72
Vel Total (ft/s)	1.37	Avg. Vel. (ft/s)	1.17	3.47	1.34
Max Chl Dpth (ft)	4.29	Hydr. Depth (ft)	1.74	4.03	1.38
Conv. Total (cfs)	20047.5	Conv. (cfs)	12406.6	3525.0	4115.8
Length Wtd. (ft)	175.96	Wetted Per. (ft)	264.81	11.88	96.76
Min Ch El (ft)	432.60	Shear (lb/sq ft)	0.21	0.44	0.16

Alpha	1.78	Stream Power (lb/ft s)	0.24	1.54	0.22
Frctn Loss (ft)	0.23	Cum Volume (acre-ft)	8.18	3.06	4.32
C & E Loss (ft)	0.00	Cum SA (acres)	3.20	0.55	1.79

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

### CROSS SECTION

RIVER: Tributary  
 REACH: 1 RS: 6

### INPUT

Description:

Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	450.1	26	440.1	51	434.1	286	434.1	288	432.1
289	430.8	295	430.8	296	432.1	303	434.1	369	436.1
369	460.1								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	286	.045	303	.06

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	286	303		14	14	14	.3	.5	

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	285	434	F
299	369	434	F

### CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	436.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.	0.080	0.045	0.060
W.S. Elev (ft)	436.67	Reach Len. (ft)	1.00	1.00	1.00
Crit W.S. (ft)	435.13	Flow Area (sq ft)	617.19	77.75	103.48
E.G. Slope (ft/ft)	0.000984	Area (sq ft)	617.19	77.75	103.48
Q Total (cfs)	975.00	Flow (cfs)	663.89	203.27	107.83
Top Width (ft)	328.70	Top Width (ft)	245.70	17.00	66.00
Vel Total (ft/s)	1.22	Avg. Vel. (ft/s)	1.08	2.61	1.04
Max Chl Dpth (ft)	5.87	Hydr. Depth (ft)	2.51	4.57	1.57
Conv. Total (cfs)	31085.2	Conv. (cfs)	21166.5	6480.7	3438.0
Length Wtd. (ft)	1.00	Wetted Per. (ft)	246.00	19.39	66.60
Min Ch El (ft)	430.80	Shear (lb/sq ft)	0.15	0.25	0.10
Alpha	1.56	Stream Power (lb/ft s)	0.17	0.64	0.10
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	6.39	2.72	3.72
C & E Loss (ft)	0.04	Cum SA (acres)	2.35	0.47	1.38

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

### BRIDGE

RIVER: Tributary  
 REACH: 1 RS: 5.5

INPUT

Description:

Distance from Upstream XS = 1

Deck/Roadway Width = 12

Weir Coefficient = 2.6

Upstream Deck/Roadway Coordinates

num= 12

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	450		26	440		51	438	
285	434		286	434	433	289	434	433
295	434	433	296	434	433	299	434	
303	434		369	436		369	460	

Upstream Bridge Cross Section Data

Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	450.1	26	440.1	51	434.1	286	434.1	288	432.1
289	430.8	295	430.8	296	432.1	303	434.1	369	436.1
369	460.1								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	286	.045	303	.06

Bank Sta: Left Right Coeff Contr. Expan.

286	303	.3	.5
-----	-----	----	----

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	285	434	F
299	369	434	F

Downstream Deck/Roadway Coordinates

num= 12

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	450		26	440		51	438	
285	434		286	434	433	289	434	433
295	434	433	296	434	433	299	434	
303	434		369	436		369	460	

Downstream Bridge Cross Section Data

Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	450	26	440	51	434	286	434	288	432
289	430.7	295	430.7	296	432	303	434	369	436
369	460								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	286	.045	303	.06

Bank Sta: Left Right Coeff Contr. Expan.

286	303	.3	.5
-----	-----	----	----

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	285	434	F
299	369	434	F

Upstream Embankment side slope = 0 horiz. to 1.0 vertical

Downstream Embankment side slope = 0 horiz. to 1.0 vertical

Maximum allowable submergence for weir flow = .95  
 Elevation at which weir flow begins =  
 Energy head used in spillway design =  
 Spillway height used in design =  
 Weir crest shape = Broad Crested

Number of Bridge Coefficient Sets = 1

Low Flow Methods and Data

Energy

Selected Low Flow Methods = Highest Energy Answer

High Flow Method

Energy Only

Additional Bridge Parameters

Add Friction component to Momentum

Do not add Weight component to Momentum

Class B flow critical depth computations use critical depth  
 inside the bridge at the upstream end

Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION

RIVER: Tributary

REACH: 1 RS: 5

INPUT

Description:

Station Elevation Data num= 11

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	450	26	440	51	434	286	434	288	432
289	430.7	295	430.7	296	432	303	434	369	436
369	460								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	286	.045	303	.06

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	286	303		185	220	220	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	285	434	F
299	369	434	F

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	435.44	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.40	Wt. n-Val.	0.080	0.045	0.060
W.S. Elev (ft)	435.03	Reach Len. (ft)	185.00	220.00	220.00
Crit W.S. (ft)	435.03	Flow Area (sq ft)	244.45	51.62	17.53
E.G. Slope (ft/ft)	0.014286	Area (sq ft)	244.45	51.62	17.53
Q Total (cfs)	975.00	Flow (cfs)	550.26	391.39	33.35
Top Width (ft)	290.31	Top Width (ft)	239.30	17.00	34.02
Vel Total (ft/s)	3.11	Avg. Vel. (ft/s)	2.25	7.58	1.90
Max Chl Dpth (ft)	4.33	Hydr. Depth (ft)	1.02	3.04	0.52
Conv. Total (cfs)	8157.4	Conv. (cfs)	4603.8	3274.6	279.0
Length Wtd. (ft)	201.94	Wetted Per. (ft)	239.42	19.39	34.03

Min Ch El (ft)	430.70	Shear (lb/sq ft)	0.91	2.37	0.46
Alpha	2.70	Stream Power (lb/ft s)	2.05	18.00	0.87
Frctn Loss (ft)	0.36	Cum Volume (acre-ft)	6.33	2.70	3.70
C & E Loss (ft)	0.17	Cum SA (acres)	2.31	0.46	1.36

Warning: The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

### CROSS SECTION

RIVER: Tributary  
REACH: 1 RS: 4

### INPUT

Description:

Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	450	38	440	62	434	78	432	160	432
252	432	264	430	268	428	276	428	287	430
293	432	301	434	361	436	394	438	432	440

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	252	.045	293	.06

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	252	293		310	356	240	.1	.3

### CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	434.78	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.	0.080	0.045	0.060
W.S. Elev (ft)	434.73	Reach Len. (ft)	310.00	356.00	240.00
Crit W.S. (ft)		Flow Area (sq ft)	503.59	206.89	21.81
E.G. Slope (ft/ft)	0.000662	Area (sq ft)	503.59	206.89	21.81
Q Total (cfs)	975.00	Flow (cfs)	455.99	507.81	11.20
Top Width (ft)	263.79	Top Width (ft)	192.92	41.00	29.87
Vel Total (ft/s)	1.33	Avg. Vel. (ft/s)	0.91	2.45	0.51
Max Chl Dpth (ft)	6.73	Hydr. Depth (ft)	2.61	5.05	0.73
Conv. Total (cfs)	37889.3	Conv. (cfs)	17720.2	19733.8	435.3
Length Wtd. (ft)	304.79	Wetted Per. (ft)	193.13	42.14	30.13
Min Ch El (ft)	428.00	Shear (lb/sq ft)	0.11	0.20	0.03
Alpha	1.99	Stream Power (lb/ft s)	0.10	0.50	0.02
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	4.74	2.05	3.60
C & E Loss (ft)	0.01	Cum SA (acres)	1.39	0.32	1.19

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

### CROSS SECTION

RIVER: Tributary  
 REACH: 1 RS: 3

INPUT

Description:

Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	450.1	30	440.1	57	432.1	68	430.1	135	430.1
146	430.1	148	428.1	149	426.4	155	426.4	156	428.1
160	430.1	357	432.1	395	434.1	431	436.1	576	437.1

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	146	.045	160	.06

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.  
 146 160 14 14 14 .3 .5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	145	430	F
159	576	430	F

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	434.67	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.080	0.045	0.060
W.S. Elev (ft)	434.66	Reach Len. (ft)	1.00	1.00	1.00
Crit W.S. (ft)	431.56	Flow Area (sq ft)	405.87	97.74	763.35
E.G. Slope (ft/ft)	0.000194	Area (sq ft)	405.87	97.74	763.35
Q Total (cfs)	975.00	Flow (cfs)	270.50	142.92	561.59
Top Width (ft)	356.71	Top Width (ft)	97.64	14.00	245.07
Vel Total (ft/s)	0.77	Avg. Vel. (ft/s)	0.67	1.46	0.74
Max Chl Dpth (ft)	8.26	Hydr. Depth (ft)	4.16	6.98	3.11
Conv. Total (cfs)	69986.1	Conv. (cfs)	19416.4	10258.7	40310.9
Length Wtd. (ft)	1.00	Wetted Per. (ft)	98.19	17.25	245.15
Min Ch El (ft)	426.40	Shear (lb/sq ft)	0.05	0.07	0.04
Alpha	1.26	Stream Power (lb/ft s)	0.03	0.10	0.03
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	1.51	0.80	1.43
C & E Loss (ft)	0.00	Cum SA (acres)	0.36	0.09	0.44

BRIDGE

RIVER: Tributary  
 REACH: 1 RS: 2.5

INPUT

Description:

Distance from Upstream XS = 1

Deck/Roadway Width = 12

Weir Coefficient = 2.6

Upstream Deck/Roadway Coordinates

num= 17

Sta	Hi	Cord	Lo	Cord	Sta	Hi	Cord	Lo	Cord	Sta	Hi	Cord	Lo	Cord
0	450		30	440	57	432								
68	430		135	430	145	430								
146	430	429	148	430	429	149	430	429						
155	430	429	156	430	429	159	430							



160 430      357 432      395 432  
 431 436      576 437

Upstream Bridge Cross Section Data

Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	450.1	30	440.1	57	432.1	68	430.1	135	430.1
146	430.1	148	428.1	149	426.4	155	426.4	156	428.1
160	430.1	357	432.1	395	434.1	431	436.1	576	437.1

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	146	.045	160	.06

Bank Sta: Left Right Coeff Contr. Expan.

146 160 .3 .5

Ineffective Flow num= 2

Sta L Sta R Elev Permanent

0	145	430	F
159	576	430	F

Downstream Deck/Roadway Coordinates

num= 17

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	450		30	440		57	432	
68	430		135	430		145	430	
146	430	429	148	430	429	149	430	429
155	430	429	156	430	429	159	430	
160	430		357	432		395	432	
431	436		576	437				

Downstream Bridge Cross Section Data

Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	450	30	440	57	432	68	430	135	430
146	430	148	428	149	426.3	155	426.3	156	428
160	430	357	432	395	434	431	436	576	437

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	146	.045	160	.06

Bank Sta: Left Right Coeff Contr. Expan.

146 160 .3 .5

Ineffective Flow num= 2

Sta L Sta R Elev Permanent

0	145	430	F
1159	576	430	F

Upstream Embankment side slope = 0 horiz. to 1.0 vertical  
 Downstream Embankment side slope = 0 horiz. to 1.0 vertical  
 Maximum allowable submergence for weir flow = .95  
 Elevation at which weir flow begins =  
 Energy head used in spillway design =  
 Spillway height used in design =  
 Weir crest shape = Broad Crested

Number of Bridge Coefficient Sets = 1

Low Flow Methods and Data

Energy

Selected Low Flow Methods = Highest Energy Answer

High Flow Method

Energy Only

Additional Bridge Parameters

Add Friction component to Momentum

Do not add Weight component to Momentum

Class B flow critical depth computations use critical depth inside the bridge at the upstream end

Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION

RIVER: Tributary

REACH: 1 RS: 2

INPUT

Description:

Station Elevation Data num= 15

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	450	30	440	57	432	68	430	135	430
146	430	148	428	149	426.3	155	426.3	156	428
160	430	357	432	395	434	431	436	576	437

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	146	.045	160	.06

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.  
 146 160 185 176 45 .3 .5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	145	430	F
1159	576	430	F

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	434.67	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.080	0.045	0.060
W.S. Elev (ft)	434.66	Reach Len. (ft)	185.00	176.00	45.00
Crit W.S. (ft)	431.46	Flow Area (sq ft)	415.24	99.08	786.90
E.G. Slope (ft/ft)	0.000179	Area (sq ft)	415.24	99.08	786.90
Q Total (cfs)	975.00	Flow (cfs)	269.41	140.50	565.09
Top Width (ft)	358.76	Top Width (ft)	97.96	14.00	246.80
Vel Total (ft/s)	0.75	Avg. Vel. (ft/s)	0.65	1.42	0.72
Max Chl Dpth (ft)	8.36	Hydr. Depth (ft)	4.24	7.08	3.19
Conv. Total (cfs)	72824.3	Conv. (cfs)	20122.9	10494.3	42207.1
Length Wtd. (ft)	98.95	Wetted Per. (ft)	98.53	17.25	246.88
Min Ch El (ft)	426.30	Shear (lb/sq ft)	0.05	0.06	0.04
Alpha	1.26	Stream Power (lb/ft s)	0.03	0.09	0.03
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	1.38	0.78	1.18
C & E Loss (ft)	0.00	Cum SA (acres)	0.33	0.09	0.36

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Tributary  
 REACH: 1 RS: 1

INPUT

Description:

Station Elevation Data num= 17

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	450	41	440	78	432	91	430	121	428
123	426	124	424.7	147	424.7	148	426	151	428
249	430	342	432	400	432	550	432	585	434
620	436	1105	437						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	121	.045	151	.06

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	121	151		0	0	0	.1	.3	

CROSS SECTION OUTPUT Profile #PF 3

		Element	Left OB	Channel	Right OB
E.G. Elev (ft)	434.66		0.080	0.045	0.060
Vel Head (ft)	0.01	Wt. n-Val.	0.00	0.00	0.00
W.S. Elev (ft)	434.65	Reach Len. (ft)	233.12	285.66	1505.26
Crit W.S. (ft)		Flow Area (sq ft)	233.12	285.66	1505.26
E.G. Slope (ft/ft)	0.000054	Area (sq ft)	82.30	292.94	614.76
Q Total (cfs)	990.00	Flow (cfs)	55.25	30.00	445.35
Top Width (ft)	530.60	Top Width (ft)	0.35	1.03	0.41
Vel Total (ft/s)	0.49	Avg. Vel. (ft/s)	4.22	9.52	3.38
Max Chl Dpth (ft)	9.95	Hydr. Depth (ft)	11238.3	39999.1	83943.1
Conv. Total (cfs)	135180.5	Conv. (cfs)	55.75	32.71	445.47
Length Wtd. (ft)	0.00	Wetted Per. (ft)	0.01	0.03	0.01
Min Ch El (ft)	424.70	Shear (lb/sq ft)	0.00	0.03	0.00
Alpha	1.78	Stream Power (lb/ft s)			
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)			
C & E Loss (ft)	0.05	Cum SA (acres)			

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

SUMMARY OF MANNING'S N VALUES

River: Shoal Creek

Reach	River Sta.	n1	n2	n3
1	7650	.08	.045	.08
1	7425	.08	.045	.08
1	6625	.08	.045	.08
1	6150	.08	.045	.08
1	5705	.08	.045	.08
1	5105	.08	.045	.08
1	4730	.08	.045	.08

1	4375	.08	.045	.08
1	3910	.08	.045	.08
1	3465	.08	.045	.08
1	3075	.08	.045	.08
1	2665	.08	.045	.08
1	2165	.08	.045	.08
1	1825	.08	.045	.08
1	1660	.08	.045	.08
1	1255	.08	.045	.08
1	890	.04	.045	.08
1	690	.04	.045	.08
2	250	.08	.045	.08
2	0	.08	.045	.08

River:Tributary

Reach	River Sta.	n1	n2	n3
1	13	.08	.045	.06
1	12	.08	.045	.06
1	11	.08	.045	.06
1	10	.08	.045	.06
1	9	.08	.045	.06
1	8	.08	.045	.06
1	7	.08	.045	.06
1	6	.08	.045	.06
1	5.5	Bridge		
1	5	.08	.045	.06
1	4	.08	.045	.06
1	3	.08	.045	.06
1	2.5	Bridge		
1	2	.08	.045	.06
1	1	.08	.045	.06

SUMMARY OF REACH LENGTHS

River: Shoal Creek

Reach	River Sta.	Left	Channel	Right
1	7650	110	225	530
1	7425	775	800	450
1	6625	275	475	385
1	6150	550	445	250
1	5705	585	600	725
1	5105	310	375	490
1	4730	375	355	340
1	4375	550	445	775
1	3910	410	445	380
1	3465	360	390	440
1	3075	485	410	260
1	2665	690	500	240
1	2165	285	340	350
1	1825	170	165	150
1	1660	395	405	400
1	1255	400	365	370

1	890	200	200	155
1	690	480	440	415
2	250	195	250	280
2	0	0	0	0

River: Tributary

Reach	River Sta.	Left	Channel	Right
1	13	305	280	245
1	12	230	345	650
1	11	355	390	215
1	10	600	525	420
1	9	405	600	590
1	8	520	182	155
1	7	145	245	220
1	6	14	14	14
1	5.5	Bridge		
1	5	185	220	220
1	4	310	356	240
1	3	14	14	14
1	2.5	Bridge		
1	2	185	176	45
1	1	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS

River: Shoal Creek

Reach	River Sta.	Contr.	Expan.
1	7650	.1	.3
1	7425	.1	.3
1	6625	.1	.3
1	6150	.1	.3
1	5705	.1	.3
1	5105	.1	.3
1	4730	.1	.3
1	4375	.1	.3
1	3910	.1	.3
1	3465	.1	.3
1	3075	.1	.3
1	2665	.1	.3
1	2165	.1	.3
1	1825	.1	.3
1	1660	.1	.3
1	1255	.1	.3
1	890	.1	.3
1	690	.1	.3
2	250	.1	.3
2	0	.1	.3

River: Tributary





Shoal Creek 1 1104.96 165.22	3075	PF 3	444.69	444.15	0.54	1.18	0.03	560.45	2299.60
Shoal Creek 1 863.96 148.14	3465	PF 3	445.78	445.16	0.62	1.06	0.03	777.75	2323.29
Shoal Creek 1 1639.42 198.77	3910	PF 3	446.57	446.29	0.28	0.75	0.03	117.37	2208.21
Shoal Creek 1 900.94 139.60	4375	PF 3	447.47	447.00	0.47	0.84	0.06	418.57	2645.49
Shoal Creek 1 244.18 145.63	4730	PF 3	448.11	447.63	0.48	0.64	0.00	444.33	3276.50
Shoal Creek 1 1236.49 356.65	5105	PF 3	448.79	448.45	0.34	0.66	0.01	499.29	2229.22
Shoal Creek 1 1564.56 274.57	5705	PF 3	449.62	449.42	0.20	0.82	0.01	340.32	1850.12
Shoal Creek 1 671.83 387.88	6150	PF 3	449.93	449.79	0.14	0.31	0.01	643.55	2439.62
Shoal Creek 1 403.96 252.52	6625	PF 3	450.52	449.97	0.55	0.47	0.12	399.86	2311.18
Shoal Creek 1 299.72 906.49	7425	PF 3	451.80	451.67	0.12	1.23	0.04	1150.84	1664.44
Shoal Creek 1 73.04 705.92	7650	PF 3	452.10	451.92	0.18	0.29	0.02	1356.65	1685.31
Tributary 1 614.76 530.60	1	PF 3	434.66	434.65	0.01	0.00	0.05	82.30	292.94
Tributary 1 565.09 358.76	2	PF 3	434.67	434.66	0.01	0.01	0.00	269.41	140.50
Tributary 1 561.59 356.71	2.5								
Tributary 1 11.20 263.79	3	PF 3	434.67	434.66	0.01	0.00	0.00	270.50	142.92
Tributary 1 33.35 290.31	4	PF 3	434.78	434.73	0.05	0.10	0.01	455.99	507.81
Tributary 1 107.83 328.70	5	PF 3	435.44	435.03	0.40	0.36	0.17	550.26	391.39
Tributary 1 179.64 372.48	5.5								
Tributary 1 87.65 329.73	6	PF 3	436.70	436.67	0.04	0.00	0.04	663.89	203.27
Tributary 1 329.83 304.29	7	PF 3	436.94	436.89	0.05	0.23	0.00	541.50	153.86
Tributary 1 361.41 251.20	8	PF 3	437.96	437.89	0.07	1.02	0.01	646.77	140.58
Tributary 1 357.55 269.01	9	PF 3	440.16	440.02	0.14	2.18	0.02	363.12	182.06
Tributary 1 50.14 276.32	10	PF 3	442.75	442.58	0.17	2.57	0.01	234.76	278.82
Tributary 1 590.43 177.34	11	PF 3	444.32	444.10	0.23	1.55	0.02	145.63	276.82
	12	PF 3	445.81	445.69	0.12	1.48	0.01	339.00	390.87
	13	PF 3	447.00	446.76	0.24	1.16	0.04	32.20	157.36



**APPENDIX D**  
**Report of Limited Subsurface Exploration**



engineering and constructing a better tomorrow

October 14, 2005

Mr. Mike Elliot  
Department of Veterans Affairs, National Cemetery Administration  
811 Vermont Avenue, NW  
Washington, D.C. 20005

Subject:           **Report of Limited Subsurface Exploration  
Proposed VA-NCA National Cemetery in  
Montevallo, Alabama  
MACTEC Project No. 6671-05-0316**

Dear Mr. Elliot:

MACTEC Engineering and Consulting, Inc. (MACTEC), is pleased to submit this Report of Limited Subsurface Exploration of a Proposed Veterans Affairs-National Cemetery Administration (VA-NCA) National Cemetery near Montevallo, Alabama. This report presents project information and includes our findings, conclusions and recommendations for further work. The purpose of our services was to check to see if the depth to bedrock was less than 80 inches at a few locations within a portion of the study area by excavating observation pits with a backhoe.

### **Project Information**

The subject property consists of four contiguous tracts totaling approximately 709 acres in Montevallo, Alabama (Figure 1). We understand that the VA-NCA will require, at a minimum, 5 to 6 feet of overburden to conduct routine burials. Additionally, grading may be required that would, at least in some cases, reduce the depth to bedrock. Our experience in the area suggests that the natural overburden thickness within the subject property could be less than the required thickness needed by the VA-NCA. Therefore, MACTEC recommended that invasive testing be conducted in order to evaluate the depth to rock at various locations. It should be noted that the high angle of dip of the strata at various locations and known faults within the subject property make it difficult to interpolate the depth to bedrock from one discrete location to the larger locale.

## **Geologic Background Information**

Geologically, the subject property is located within the foreland fold-thrust belt of the southern Appalachian orogen. The fold-thrust belt consists of Paleozoic sedimentary rocks deformed by faults and folds during the late Paleozoic. The subject property is located within the central part of the fold-thrust belt and is characterized by high-relief folds and thrust fault ramps. Multiple syncline, anticlines, faults and thrust sheets exist in the immediate vicinity of the subject property.

The Paleozoic rocks underlying the study area are the Rome Formation, the Conasauga Formation, and the Briarfield Dolomite. The Rome Formation consists of mudstone, siltstone, sandstone, dolomite and limestone and is intermittently exposed within the subject property. The Conasauga Formation overlies the Rome Formation and underlies the Briarfield Dolomite. The formation consists of massive interbedded limestone and dolomite and interbedded olive-gray shale. The Conasauga Formation is exposed periodically within the subject property. The Briarfield Dolomite is dominantly fine to medium crystalline dolomite with thick to massive beds and abundant horizontal laminations. The presence of cavernous chert on weathered surfaces exists. The Briarfield Dolomite outcrops intermittently in the subject property.

## **Results of Field Reconnaissance**

A limited subsurface exploration of a portion of the subject property was conducted on October 6, 2005. Thirteen observation pits (Observation Pits 1 through 13) were advanced using a backhoe in a portion of the property (Figure 2). The soil profile (from top to bottom of test pit) across the area generally consists of 1 to 3 inches of organic top soil, approximately 50 inches of red clayey silts (ML Unified Soil Classification) and approximately 30+ inches of tan silty clay (CL Unified Soil Classification). Occasional organic layers were encountered within the upper three feet of the observation pits. Additionally, erratic limestone cobbles were encountered within the observation pits at no predictable interval. Groundwater intrusion was observed in the observation pits at a depth of approximately 82 inches below land surface. Bedrock was encountered in observation pits 7, 8, 12 and 13 at approximate depths of 79 inches, 77 inches, 75 inches and 80 inches below land surface, respectively. Bedrock encountered was friable, organic rich shale. The observation pits

encountering bedrock were the southeastern most observation pits in the study area, proximal to Highway 119.

## **Conclusions**

Based on the results of this Limited Subsurface Exploration, the potential for encountering bedrock (or at least a significant number of boulders) within the upper 6 feet below the existing ground surface exists throughout the southeastern section of the portion of the subject property associated with these investigative activities.

High angle dip of strata and differential erosion exists in other portions of the subject property and known faults bisect the central and northern portions of the subject property. Subsidence was also observed across a wide area of the subject property. We note that the presence of surface subsidence features suggests the possibility of voids within the overburden at other locations in the vicinity that have not as yet reached the surface.

Never-the-less, based on the limited number of observation pits advanced within the portion of the study area; it appears that there is potentially adequate overburden for the VA-NCA to conduct routine burials in the area where this limited study was conducted. The potential to encounter bedrock and groundwater at shallower depths increases in a southeastern direction.

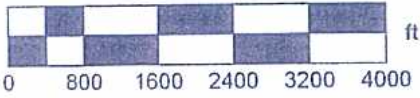
We appreciate your selection of MACTEC for this project and look forward to assisting you further on this and other projects. If you have any questions, please do not hesitate to contact us.

Sincerely,

**MACTEC ENGINEERING AND CONSULTING, INC.**

Brad M. Jinkins, P.G.  
Senior Geologist

Luther H. Boudra, P.E.  
Principal Engineer



SOURCE BASE MAP:  
USGS AERIAL PHOTOGRAPH DATED 1998



FIGURE 1.  
PROJECT LOCATION  
VA-NCA  
AMERICAN VILLAGE  
35-ACRE TRACT  
MACTEC PROJECT  
6671-05-0316

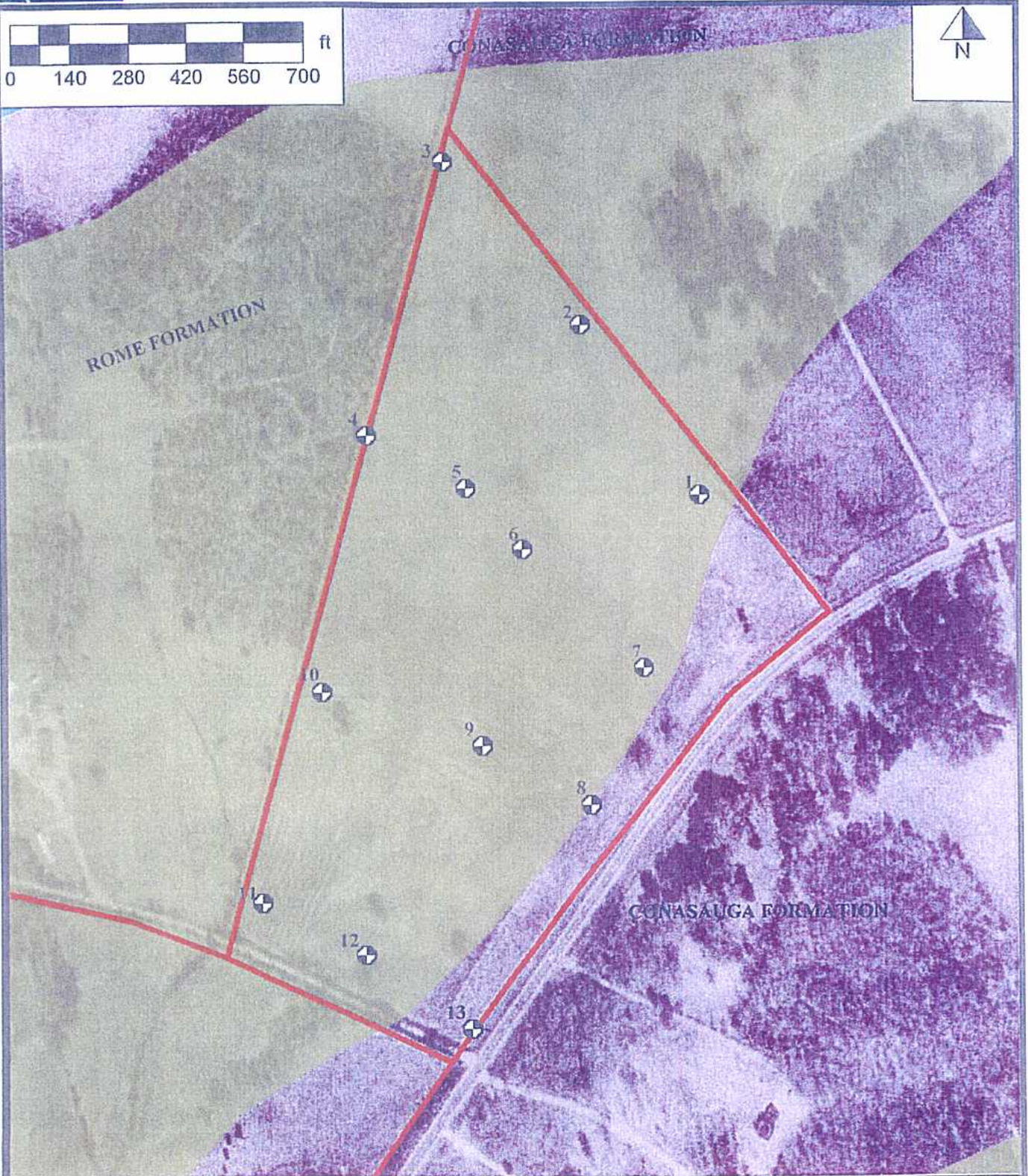
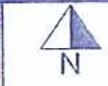
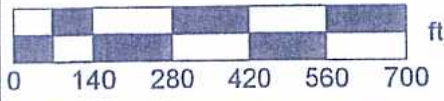


MACTEC Engineering & Consulting  
2100 Riverchase Center, Suite 450  
Birmingham, Alabama 35244 205-733-7600

LEGEND

-  PROPERTY BOUNDARY
-  AMERICAN VILLAGE TRACT

Drawn By:   
Checked By: 



SOURCE BASE MAP:  
USGS AERIAL PHOTOGRAPH DATED 1998

FIGURE 2.  
GEOLOGIC TEST PITS  
VA-NCA  
AMERICAN VILLAGE  
35-ACRE TRACT  
MACTEC PROJECT  
6671-05-0316

**MACTEC**  
MACTEC Engineering & Consulting  
2100 Riverchase Center, Suite 450  
Birmingham, Alabama 35244 205-733-7600

**LEGEND**  
— PROPERTY BOUNDARY  
⊕ TEST PIT

Drawn By:  
Checked By: RA

---

GRAIN SIZE DISTRIBUTION TEST DATA

---

Client: MACTEC Birmingham  
Project: VA American Village  
Project Number: 6671-05-0316

---

Sample Data

---

Source: Bulk  
Sample No.: 004488  
Elev. or Depth: Sample Length (in./cm.):  
Location: Upper 5'  
Description: Brown  
Date: 11/3/05 Natural Moisture: 1.0  
Liquid Limit: Plastic Limit: USCS Class.: ML  
Testing Remarks: Tested by: JM  
Reviewed by: JL

---

Mechanical Analysis Data

---

	Initial	After wash
Dry sample and tare=	209.68	209.02
Tare =	143.09	143.09
Dry sample weight =	66.59	65.93
Minus #200 from wash=	1.0 %	
Tare for cumulative weight retained=	.00	

Sieve	Cumul. Wt. retained	Percent finer
.750 inch	0.00	100.0
50 inch	2.60	96.1
.375 inch	3.50	94.7
# 4	7.70	88.4
# 10	14.16	78.7
# 20	20.26	69.6
# 40	23.14	65.3
# 60	24.96	62.5
# 140	27.72	58.4
# 200	29.15	56.2

---

Hydrometer Analysis Data

---

Separation sieve is #200  
Percent -#200 based upon complete sample= 56.2  
Weight of hydrometer sample: 36.78  
Calculated biased weight= 65.44  
Automatic temperature correction  
Composite correction at 20 deg C = -5.4  
Meniscus correction only=  
Specific gravity of solids= 2.763  
Specific gravity correction factor= 0.976  
Hydrometer type: 152H  
Effective depth L= 16.294964 - 0.164 x Rm

---

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	23.6	39.0	34.4	0.0126	39.0	9.9	0.0281	51.4
5.00	23.6	36.5	31.9	0.0126	36.5	10.3	0.0181	47.6
15.00	23.6	33.0	28.4	0.0126	33.0	10.9	0.0108	42.4
30.00	23.6	30.0	25.4	0.0126	30.0	11.4	0.0078	37.9
60.00	23.6	29.0	24.4	0.0126	29.0	11.5	0.0055	36.4
250.00	23.4	27.0	22.4	0.0127	27.0	11.9	0.0028	33.4
1440.00	23.6	24.5	19.9	0.0126	24.5	12.3	0.0012	29.7

---

**Fractional Components**

---

Gravel/Sand based on #4

Sand/Fines based on #200

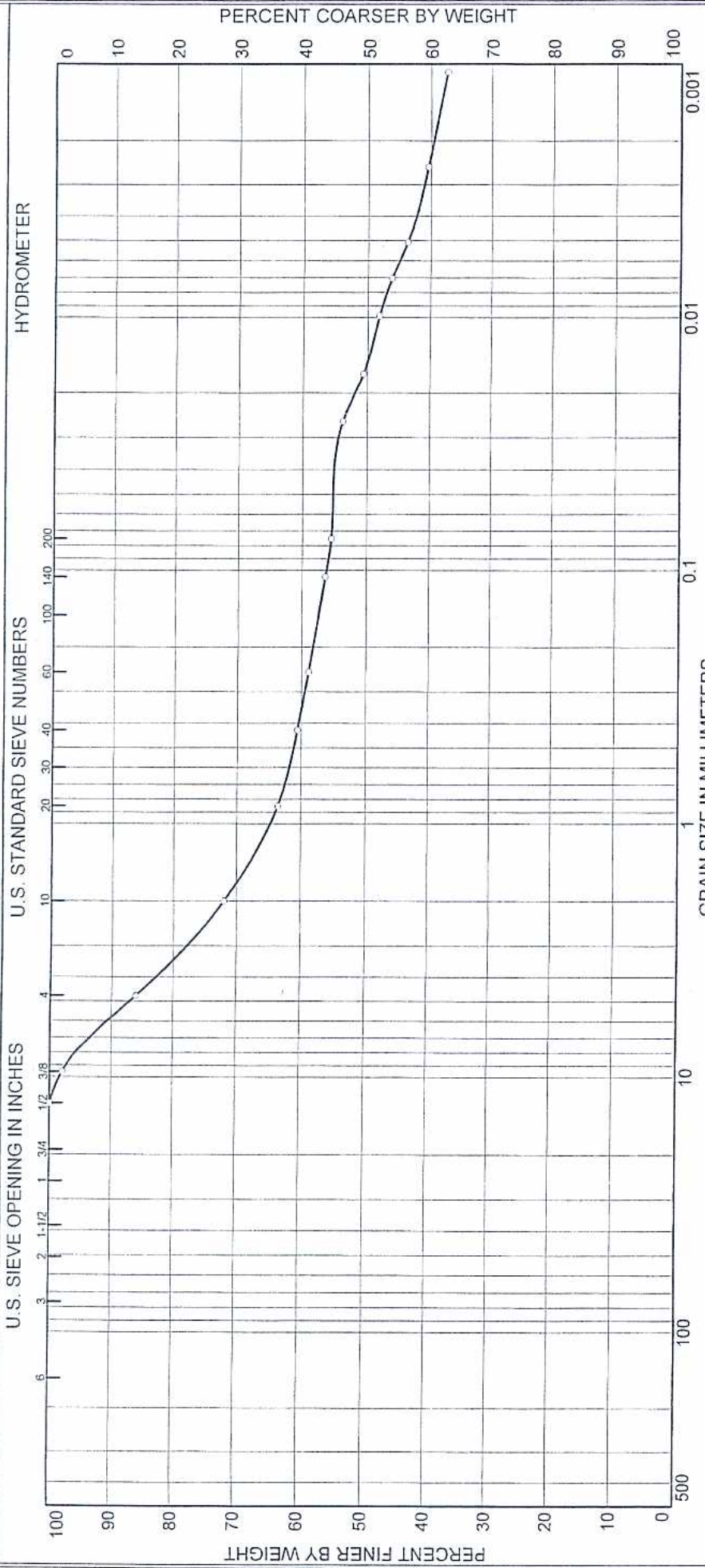
% COBBLES =                   % GRAVEL = 11.6           % SAND = 32.2  
 % SILT = 20.1           % CLAY = 36.1

D<sub>85</sub> = 3.49   D<sub>60</sub> = 0.14   D<sub>50</sub> = 0.02

D<sub>30</sub> = 0.00



# Grainsize Analysis per ASTM D422 / D1140

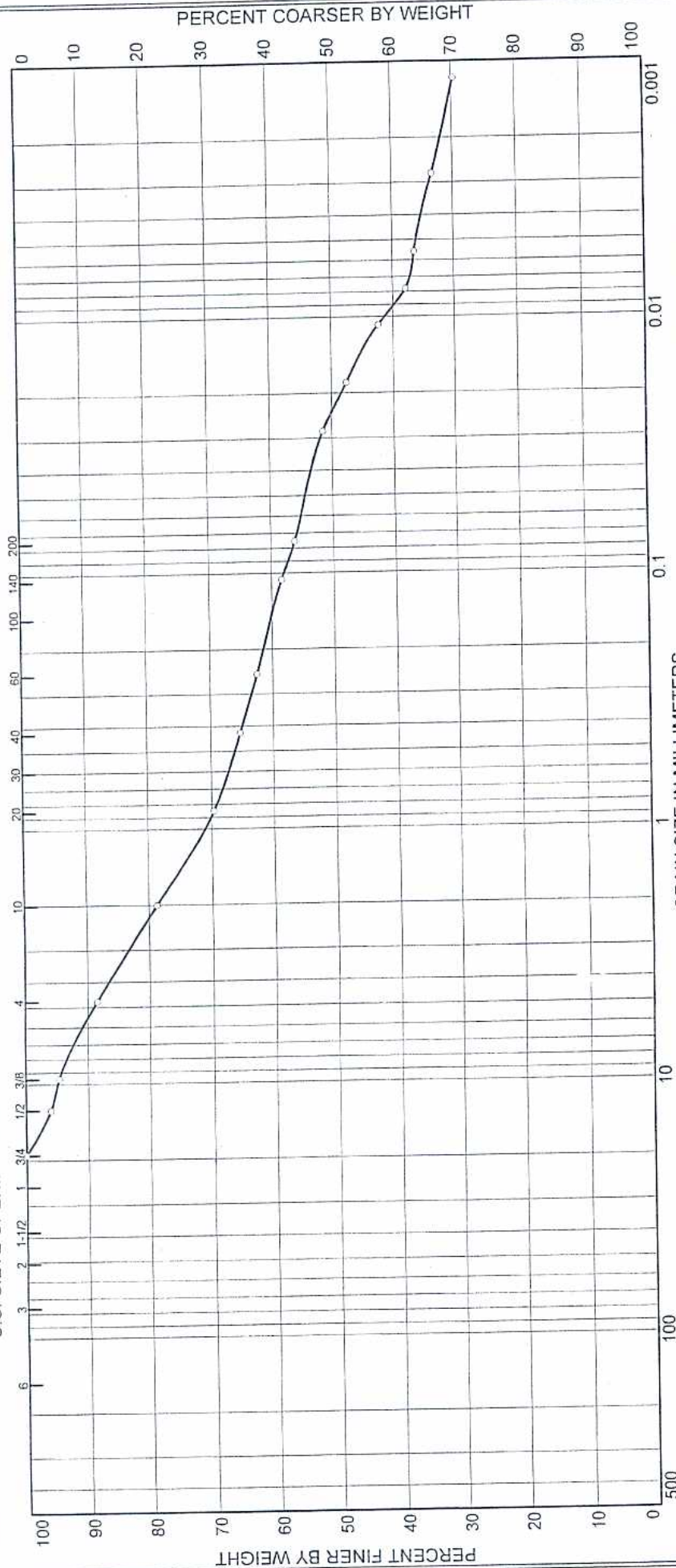


# Grainsize Analysis per ASTM D422 / D1140

U.S. STANDARD SIEVE NUMBERS

U.S. SIEVE OPENING IN INCHES

HYDROMETER



% COBBLES 0.0	% GRAVEL 11.6	% SAND 32.2	% SILT 20.1	% CLAY 36.1																		
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>SOURCE</th> <th>SAMPLE #</th> <th>DEPTH/ELEV.</th> <th>DATE SAMPLED</th> <th>USCS</th> <th>MATERIAL DESCRIPTION</th> <th>NM %</th> <th>LL</th> <th>PL</th> </tr> </thead> <tbody> <tr> <td>Bulk</td> <td>004488</td> <td></td> <td>11/3/05</td> <td>ML</td> <td>Brown</td> <td>1.0</td> <td></td> <td></td> </tr> </tbody> </table>					SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PL	Bulk	004488		11/3/05	ML	Brown	1.0		
SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PL														
Bulk	004488		11/3/05	ML	Brown	1.0																
<p>Client MACTEC Birmingham</p> <p>Project VA American Village</p>																						
<p style="text-align: center;"><b>MACTEC ENGINEERING AND CONSULTING, INC.</b></p>																						
Project No. 6671-05-0316			ID																			

Tested by: JM  
Reviewed by: JL *[Signature]*

**GRAIN SIZE DISTRIBUTION TEST DATA**

Client: MACTEC Birmingham  
 Project: VA American Village  
 Project Number: 6671-05-0316

**Sample Data**

Source: Bulk  
 Sample No.: 004489  
 Elev. or Depth: Sample Length (in./cm.):  
 Location: Lower 3'  
 Description: Tan Brown  
 Date: 11/3/05 Natural Moisture: 1.01  
 Liquid Limit: Plastic Limit: USCS Class.: ML  
 Testing Remarks: Tested by: JM  
 Reviewed by: JL

**Mechanical Analysis Data**

	Initial	After wash
Dry sample and tare=	221.28	220.50
Tare =	143.64	143.64
Dry sample weight =	77.64	76.86
Minus #200 from wash=	1.0 %	
Tare for cumulative weight retained=	.00	
Sieve	Cumul. Wt. retained	Percent finer
.50 inch	0.00	100.0
375 inch	1.44	98.1
# 4	10.88	86.0
# 10	21.72	72.0
# 20	28.25	63.6
# 40	30.62	60.6
# 60	31.88	58.9
# 140	33.82	56.4
# 200	34.53	55.5

**Hydrometer Analysis Data**

Separation sieve is #200  
 Percent -#200 based upon complete sample= 55.5  
 Weight of hydrometer sample: 42.33  
 Calculated biased weight= 76.27  
 Automatic temperature correction  
 Composite correction at 20 deg C = -5.4  
 Meniscus correction only=  
 Specific gravity of solids= 2.810  
 Specific gravity correction factor= 0.967  
 Hydrometer type: 152H  
 Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	23.6	47.0	42.4	0.0125	47.0	8.6	0.0258	53.8
5.00	23.6	44.5	39.9	0.0125	44.5	9.0	0.0167	50.6
15.00	23.6	42.5	37.9	0.0125	42.5	9.3	0.0098	48.1

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
30.00	23.6	41.0	36.4	0.0125	41.0	9.6	0.0070	46.2
60.00	23.6	39.0	34.4	0.0125	39.0	9.9	0.0051	43.7
250.00	23.4	36.5	31.9	0.0125	36.5	10.3	0.0025	40.4
1440.00	23.6	34.0	29.4	0.0125	34.0	10.7	0.0011	37.3

---

**Fractional Components**

---

Gravel/Sand based on #4

Sand/Fines based on #200

% COBBLES =                    % GRAVEL = 14.0                    % SAND = 30.5

% SILT = 11.9                    % CLAY = 43.6

D<sub>85</sub>= 4.51    D<sub>60</sub>= 0.35    D<sub>50</sub>= 0.02



# SPECIFIC GRAVITY TEST

ASTM D854 - 00

Project No. 6671-05-0316

Project Name VA American Village

Tested By JM

Test Date 11/3/2005

Reviewed By JL *JL*

Review Date 11/4/2005

Lab ID#	Sample ID	Boring Depth (ft)	Temperature (°C)	Weight, WF (grams)	Weight, WFS (grams)	Weight of Soil (grams)	Weight, CWF (grams)	Weight, DS (grams)	Specific Gravity (at test temp.)	Specific Gravity (at 20°C)
4488	Upper 5'	Bulk	24.0	279.97	321.08	41.11	366.25	392.48	2.763	2.760
4489	Lower 3'	Bulk	24.0	251.82	293.83	42.01	359.42	386.48	2.810	2.807

WF= Water and Flask

WFS= Water, Flask and Soil

CWF = Calibration Water and Flask

DS = Deaired Sample, Water and Flask

**APPENDIX E**  
**Agency Correspondence**

UNITED STATES

DEPARTMENT OF THE INTERIOR

U.S. FISH AND WILDLIFE SERVICE

1208-B MAIN STREET

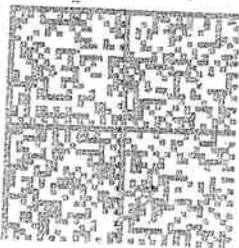
DAPHNE, AL 36526

OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE, \$300

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FEB 13 2006



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Mailed Fr



# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
1208-B Main Street  
Daphne, Alabama 36526

IN REPLY REFER TO:

2006-TA-0310

February 10, 2006

Mr. Robert E. Perry, Senior Scientist  
MACTEC Engineering and Consulting, Inc.  
2100 Riverchase Center, Suite 459  
Birmingham, AL 35244

Dear Mr. Perry:

Thank you for your letter of January 19, 2006, requesting comments on the proposed National Cemetery by the Department of Veterans Affairs on land adjacent to Shoal Creek in the Cahaba River watershed, Shelby County, Alabama. We have reviewed the information and are providing the following comments in accordance with the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. et seq.) and the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

## Endangered Species

We have determined that the following Federally listed species may occur in your project area:

Goldline darter (*Percina aurolineata*) – Threatened  
Flat pebblesnail (*Lepyrium showalteri*) – Endangered  
Round rocksnail (*Leptoxis ampla*) – Threatened  
Finelined pocketbook (*Lampsilis altilis*) – Threatened  
Orange-nacre mucket (*Lampsilis perovalis*) – Threatened  
Tennessee yellow-eyed grass (*Xyris tennesseensis*) – Endangered

Please see the enclosed Fact Sheet for brief descriptions of these species and their habitats.

## Aquatic Species

Our records indicate that all of the above-listed aquatic species occur in the Little Cahaba River (USFWS 2000). Shoal Creek, adjacent to Little Cahaba River, is located within all three project alternatives. Depending on construction methods, best management practices (BMPs), and topography, there may be potential for soil runoff from construction of the cemetery plots and associated building structures to cause sedimentation and turbidity in Shoal Creek, with possible adverse affects on aquatic biota. There is also concern that embalming fluids may leach, causing groundwater and surface water contamination of Shoal Creek. Embalmed bodies receive

[www.fws.gov](http://www.fws.gov)

PHONE: 251-441-5181



FAX: 251-441-6222



- Inspect erosion controls routinely, especially during and immediately following significant rain events, to insure no impacts to nearby surface waters and aquatic habitat.
- Take immediate corrective action if erosion or sedimentation is observed.
- Maintain vegetated buffers adjacent to any ditches or drainages.
- Immediately revegetate disturbed areas with a native species or an annual grass.
- Clear large tracts of land in phases, where practicable, with rapid revegetation upon completion of each phase.

For specific techniques, see "The Alabama Handbook for Erosion Control, Sediment Control and Stormwater Management on Construction Sites and Urban Areas" (2003), available from Alabama Soil and Water Conservation Committee or on-line (2002 version) at:  
[http://www.swcc.state.al.us/pdf/handbook\\_erosionctrl.pdf](http://www.swcc.state.al.us/pdf/handbook_erosionctrl.pdf).

### Summary

We would appreciate receiving the recommended habitat suitability analyses/species survey report and additional project information to complete our review. If additional consultation is necessary under section 7 of the Endangered Species Act, we are ready to provide technical assistance regarding ways to avoid adverse impacts to listed species.

If you have any questions or need additional information, please contact Ms. Jodie Smithem at (251) 441-5842. Please refer to the reference number located at the top of this letter in future phone calls or written correspondence.

Sincerely,



Elaine Snyder-Conn  
Acting Field Supervisor

## References:

- Environment Agency. 2002. Assessing the groundwater pollution potential of cemetery developments. National Groundwater and Contaminated Land Centre, Bristol BS32 4UD, United Kingdom. 20 pp.
- Council for Geoscience. 1997. Cemetery site investigations. Available online at <http://www.geoscience.org/za/divisions/eemg/cemetery.htm>. Accessed on February 9, 2006.
- U.S. Fish and Wildlife Service. 2000. Mobile River Basin Aquatic Ecosystem Recovery Plan. Atlanta, GA. 128 pp.

## Fact Sheet:

### Goldline Darter

A slender, medium-sized fish, the goldline darter is about 3 inches long with brownish-red and amber dorsolateral stripes. It differs from other members of the subgenus *Hadropterus* in the color pattern of its back, which is pale to dusky. The species' white belly has a series of square lateral and dorsal blotches that are separated by a pale or gold-colored longitudinal stripe. The goldline darter prefers a moderate to swift current and water depths greater than 2 feet. It is found over sand or gravel substrate interspersed among cobble and small boulders. Water quality degradation has reduced the goldline's range within the Cahaba River System. Populations have been extirpated by urbanization, sewage pollution, and strip-mining activities. Reservoir construction has fragmented and isolated some populations. A picture of the goldline darter can be seen at:

[http://www.pfmt.org/wildlife/endangered/images/goldline\\_darter.jpg](http://www.pfmt.org/wildlife/endangered/images/goldline_darter.jpg)

### Flat Pebblesnail

The flat pebblesnail is a small snail in the family Hydrobiidae. However, the species has a large and distinct shell, relative to other hydrobiid species. This snail's shell is also distinguished by its depressed spire and expanded, flattened body whorl. The shells are ovate in outline, flattened, and grow to 3.5 to 4.4 mm high and 4 to 5 mm wide. The umbilical area has no opening, and there are 2 to 3 whorls which rapidly expand. The flat pebblesnail is found attached to clean, smooth stones in rapid currents of river shoals. Eggs are laid singly in capsules on hard surfaces. Little else is known of the natural history of this species. Surviving populations are currently threatened by pollutants such as sediments and nutrients that wash into streams from the land surface.

### Round Rocksnail

The round rocksnail grows to about 20 mm in length. The shell is subglobose, with an ovately rounded aperture. The body whorl is shouldered at the suture, and may be ornamented with folds or plicae. Color may be yellow, dark brown, or olive green, usually with four entire or broken

bands. Round rocksnails inhabit riffles and shoals over gravel, cobble, or other rocky substrates. They are currently threatened by pollutants such as sediments and nutrients that wash into streams from the land surface. A picture of the round rocksnail can be seen at:

[http://ecos.fws.gov/docs/recovery\\_plans/2005/050118.pdf](http://ecos.fws.gov/docs/recovery_plans/2005/050118.pdf)

### **Fine-lined Pocketbook**

This medium-sized mussel is suboval in shape and rarely exceeds 100 mm in length. It is yellow-brown to blackish and is found primarily in small river and stream habitats. It has been found in sand, gravel, and gravel-cobble substrates. The ventral margin of the shell is angled posteriorly in females, resulting in a pointed posterior margin. The periostracum is yellow-brown to blackish and has fine rays on the posterior half. The nacre is white, becoming iridescent posteriorly. The fine-lined pocketbook can be distinguished from a similar species, the orange-nacre mucket (*Lampsilis perovalis*), by its more elongate shape, thinner shell, white nacre, pointed posterior, and ray ornamentation. Threats to this species include channel modification for navigation and flood control, impoundment, pollution, and sedimentation. A picture of the fine-lined pocketbook can be seen at:

<http://www.biosci.ohio-state.edu/~molluscs/gallery/images/1242.jpg>

### **Orange-Nacre Mucket**

The orange-nacre mucket is a medium-sized mussel approximately 50-90 mm in length. The shell is oval in shape and moderately thick. The posterior margin of the shell of mature females is obliquely shortened. The inner surface is usually rose colored, pink, or occasionally white. The outer surface ranges from yellow to dark reddish brown, with or without green rays. The orange-nacre mucket is currently restricted to high-quality stream and small-river habitat, and is found on stable sand, gravel or cobble substrate in moderate to swift currents. The general water quality deterioration that has resulted from siltation and other pollutants contributed by coal mining, poor land use practices, and waste discharges are likely responsible for the further decline of this species. A picture of the orange-nacre mucket can be seen at:

<http://bama.ua.edu/~clydeard/clam/lampsilis%20perovalis%202.jpg>

### **Tennessee Yellow-eyed Grass**

This member of the yellow-eyed grass family is a perennial, growing to 2.3-3.3 ft in height. Plants typically occur in clumps and arise from fleshy bulbous bases. Leaves are basal, the outermost scale-like, the larger ones linear, twisted, deep green and 5.5-7.7 inches long. The inflorescence consists of brown conelike spikes 0.4- 0.6 inches in length, occurring singly at the tips of long slender stalks from 1-2 ft long. Flowering occurs from August through September. The pale yellow flowers, are about 0.2 inches long, and unfold in the late morning, withering by mid-afternoon. Fruits are thin-walled capsules containing numerous seeds 0.02 inches in length. This species can be found growing in clumps on seep-slopes, in springy meadows, and on the banks of small streams. It is threatened by roadside management practices, timbering, fire suppression, and conversion of habitat for agricultural use. A picture of Tennessee yellow-eyed grass can be seen at:

<http://www.pfmt.org/wildlife/endangered/ images/tennessee.jpg>.

approximately 3-1/2 gallons of formaldehyde, and there are known occurrences of groundwater contamination (Environment Agency 2002). An incorrectly or poorly sited cemetery can lead to contamination of the groundwater and water supply in general, thus posing a serious health risk to the community and adjacent waterbodies (Council for Geoscience 1997).

We recommend that you contact this office for further discussions if construction and operation of the cemetery could negatively impact Shoal Creek through increases in formaldehyde, nitrates, bacteria or pathogenic organisms, siltation, or other water quality degradation. Retention of a naturally-vegetated buffer of at least 100 feet is recommended adjacent to Shoal Creek to avoid impacts to the creek and the above-listed aquatic species. If such a buffer is planned, together with other BMPs, further consultation on the above-listed aquatic species is unnecessary (although we would appreciate notification of BMPs to be implemented).

### **Tennessee yellow-eyed grass**

A population of Tennessee yellow-eyed grass is known to occur just north of the proposed project site (Mike Hardig, University of Montevallo, pers. comm., 2005). We recommend that surveys for this species be conducted by a qualified botanist if appropriate habitat exists in the project area. Prior experience with this particular species is strongly recommended for the consultant(s) undertaking the survey. A visit to a known population of Tennessee yellow-eyed grass immediately prior to the survey is also recommended to become familiar with the species, habitat, and condition of plants at that time of year. Surveys cannot be accepted if the plant has no above-ground vegetation at the time of the survey. Tennessee yellow-eyed grass can be seen from August to September. Please provide the names of surveyors, their credentials, and a thorough description of survey methods and habitats present, including shrub and forb species observed. If it can be demonstrated that no suitable habitat exists for this species within the project area through a detailed description of the plant community (including grasses, forbs, and shrubs) and/or site photographs showing unsuitable habitat throughout the **entire** project area, a species survey is unnecessary (although we would appreciate notification of habitat suitability survey results).

### **Recommended Best Management Practices**

Critical Habitat is designated for the above-listed aquatic species in the Little Cahaba River south of the proposed cemetery operation from the river's confluence with the Cahaba River, Bibb County, Alabama, upstream to the confluence of Mahan and Shoal Creeks, Bibb County, Alabama (50 CFR Part 17, July 1, 2004). We would be concerned if the proposed cemetery operation could potentially alter one or more of the six primary constituent elements of the Critical Habitat designation for the river (50 CFR Part 17, July 1, 2004). The Service is actively working to protect important resources in the Cahaba River and while the proposed National Cemetery appears to be far upstream of the river, soils in the vicinity may be highly erodible. Without adequate BMPs, this project could promote downstream siltation, affecting water quality and aquatic species. We recommend developing an erosion control plan tailored to the site and adaptation of the following BMPs to minimize erosion and prevent stream sedimentation, both during and after construction:



## ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

POST OFFICE BOX 301463 36130-1463 ♦ 1400 COLISEUM BLVD. 36110-2059

MONTGOMERY, ALABAMA

WWW.ADEM.STATE.AL.US

(334) 271-7700

ONIS "TREY" GLENN, III, P.E.

DIRECTOR

BOB RILEY

GOVERNOR

December 15, 2005

Mr. Robert E. Perry  
MACTEC Engineering and Consulting, Inc.  
2100 Riverchase Center, Suite 459  
Birmingham, Alabama 35244

Facsimiles: (334)

Administration: 271-7950  
General Counsel: 394-4332  
Communication: 394-4383  
Air: 279-3044  
Land: 279-3050  
Water: 279-3051  
Groundwater: 270-5631  
Field Operations: 272-8131  
Laboratory: 277-6718  
Mining: 394-4326

RE: Proposed Dept. of Veteran Affairs National Cemetery  
Montevallo, Alabama

Dear Mr. Perry:

We have reviewed your submittal regarding the referenced project. Based on the information you provided, we have no objections to the project as presented. Please ensure that the following general requirements are met:

1. The project must comply with the storm water permitting requirements found at <http://www.adem.state.al.us/FieldOps/Permitting/ConstructionProject.pdf>.
2. The project must comply with all applicable Department regulations.
3. Should the completed facility generate wastes or emissions, the appropriate permits must be obtained from the Department prior to initiation of operation.

This letter should not be construed as an approval on behalf of any other agency. If you have any questions, please contact me at (334) 271-7711.

Sincerely,

Aubrey H. White III, Chief  
SRF, Certification, and General Services Branch  
Permits and Services Division



ADEM

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

POST OFFICE BOX 301463

MONTGOMERY, ALABAMA 36130-1463

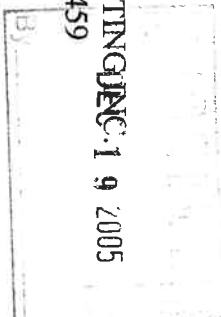


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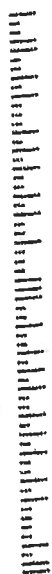


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MR. ROBERT E. PERRY  
MACTEC ENGINEERING & CONSULTING INC. 19 2005  
2100 RIVERCHASE CENTER, SUITE 459  
BIRMINGHAM, AL 35244



35244+185B-93 C023



*4 CMA*  
**U. S. Department of Housing and Urban Development**

Alabama State Office  
Suite 900  
Medical Forum Building  
950 22nd Street, North  
Birmingham, AL 35203

Official Business  
Penalty For Private Use, \$300



332441836-99 0023





U. S. Department of Housing and Urban Development  
Birmingham Office  
Region IV  
Medical Forum Building, Suite 900  
950 22<sup>nd</sup> Street, North  
Birmingham, Alabama 35203-5301

February 1, 2006

Mr. Robert E. Perry  
Senior Scientist  
MACTEC Engineering and  
Consulting, Inc.  
2100 Riverchase Center  
Suite 459  
Birmingham, AL 35244

Dear Mr. Perry:

SUBJECT: Environmental Assessment – Request for Information  
Proposed Department of Veterans Affairs, National Cemetery  
Montevallo, Shelby County, Alabama  
MACTEC Project 6671-05-0316

This responds to your letter dated January 20, 2006, requesting our review of the subject. Our review is limited only to identifying properties in the proposed area of study for which HUD may have a financial interest and on which possible adverse impact could result. Our review did not reveal any projects that would be adversely affected by the proposed subject.

Sincerely,

A handwritten signature in black ink that reads "Cindy S. Yarbrough".

Cindy S. Yarbrough  
Field Office Director

***HUD's mission is to increase homeownership, support community development and increase access to affordable housing free from discrimination.***





December 9, 2005

Mr. Robert Perry  
MACTEC Engineering and Consulting, Inc.  
2100 Riverchase Center, Suite 459  
Birmingham, AL 35244

**RE:** Environmental Assessment – Request for Information  
Proposed Department of Veterans Affairs, National Cemetery  
Montevallo, Shelby County, Alabama  
MACTEC Project 6671-05-0316

Dear Mr. Robert Perry or Mr. Allen Conger

According to the Shelby County Soil Survey, the part of the purposed areas for the National Cemetery is considered “Prime Farmland” as defined in Appendix A of Department Regulation No. DR 9500-3 dated March 22, 1983; and also, meets the prime farmland criteria set forth by the Prime Farmland Policy Act (FPPA) and Land Evaluation Site Assessment (LESA) of June 22, 1982.

The soil map units that are considered Prime Farmland is:

- AnB – Allen loam, 2 to 6 percent slopes
- DeB2 – Dewey clay loam, 2 to 6 percent slopes, eroded
- DuB – Decatur silt loam, 2 to 6 percent slopes

These areas considered to be Prime Farmland are highlighted in green in the enclosed maps. Also, enclosed is a soil map unit legend, shallow excavation interpretation tables, and the prime farmland list foe Shelby County.

In addition, according to the Shelby County Soil Survey, the area of interest site does not contain hydric soils that meet the definition for wetland criteria, as required by 180-V-NFSAM Third Edition, Amend 2, November 1996 part 513.11.a.

However, there are some concerns to be aware of when considering an area for a cemetery. There are some soils that have severe limitations for shallow excavations, i.e. cemeteries. The soils with severe limitations are:

- ToE – Townley silt loam, 12 to 18 percent slopes (steep slopes could cause severe erosion)
- TsE – Townley – Sunlight complex, 12 to 35 percent slopes (Sunlight soil is shallow to soft bedrock, which can be very hard to dig by hand, and soils are on steep slopes)
- Tu – Tupelo loam, frequently flooded (this soil has a high water table that is usually ranges from 10 to 18 inches)
- Tx – Tupelo – Dewey complex (Tupelo soils are severe due to high water table)

Please take into considerations the limitations of the soils when choosing a site for the cemetery. In addition, erosion and sediment control measures should be implemented and maintained during the construction phase to protect land, water, and related resources. Plans for construction should include erosion control practices, including coverage of bare soil as soon as possible by temporary and permanent vegetation and structures.

If you have anymore questions, please call Christopher Ford, Resource Soil Scientist, at (256) 353-6146 ext. 107.

Sincerely,

  
Christopher Ford  
Resource Soil Scientist





# Prime and other Important Farmlands

Shelby County, Alabama

Map symbol	Map unit name	Farmland classification
AnB	Allen loam, 2 to 6 percent slopes	All areas are prime farmland
Ch	Choccolocco loam, occasionally flooded	All areas are prime farmland
DeB2	Dewey clay loam, 2 to 6 percent slopes, eroded	All areas are prime farmland
DuB	Decatur silt loam, 2 to 6 percent slopes	All areas are prime farmland
EtB	Etowah silt loam, 2 to 6 percent slopes	All areas are prime farmland
QuB	Quitman loam, 0 to 4 percent slopes	All areas are prime farmland

# Map Unit Legend

Shelby County, Alabama

Map symbol	Map unit name
AnB	Allen loam, 2 to 6 percent slopes
AnC	Allen loam, 6 to 10 percent slopes
AqC	Allen-Quitman-Urban land complex, 0 to 10 percent slopes
BmF	Bodine-Minvale complex, 25 to 45 percent slopes
BrF	Brilliant very channery loam, 6 to 45 percent slopes
Ch	Chocolocco loam, occasionally flooded
CS	Chocolocco-Sterrett association, frequently flooded
DeB2	Dewey clay loam, 2 to 6 percent slopes, eroded
DeC2	Dewey clay loam, 6 to 10 percent slopes, eroded
DtC	Dewey-Tupelo-Urban land complex, 0 to 8 percent slopes
DuB	Decatur silt loam, 2 to 6 percent slopes
DuC	Decatur silt loam, 6 to 10 percent slopes
DuD	Decatur silt loam, 10 to 15 percent slopes
DuX	Decatur-Urban land complex, 2 to 10 percent slopes
EtB	Etowah silt loam, 2 to 6 percent slopes
EtC	Etowah silt loam, 6 to 10 percent slopes
GrD	Gorgas-Rock outcrop complex, 6 to 15 percent slopes
GvC	Greenville loam, 2 to 10 percent slopes
HvD	Hanceville loam, 6 to 15 percent slopes
MfD	Minvale-Fullerton complex, 6 to 15 percent slopes
MfE	Minvale-Fullerton, complex, 15 to 35 percent slopes
MuE	Minvale-Fullerton-Urban land complex, 6 to 25 percent slopes
NaC	Nauvoo loam, 2 to 8 percent slopes
NaD	Nauvoo loam, 8 to 15 percent slopes
NaE	Nauvoo loam, 15 to 35 percent slopes
NcD	Nauvoo-Sunlight complex, 8 to 15 percent slopes
NcE	Nauvoo-Sunlight complex, 15 to 25 percent slopes
NMS	Nella-Mountainburg association, steep
PmF	Pirum fine sandy loam, 25 to 60 percent slopes
Pt	Pits
QuB	Quitman loam, 0 to 4 percent slopes
SmC	Smithdale sandy loam, 5 to 8 percent slopes
SmD	Smithdale sandy loam, 8 to 15 percent slopes
St	Sterrett silt loam
TaD	Tatum silt loam, 4 to 12 percent slopes
ToD	Townley silt loam, 4 to 12 percent slopes
ToE	Townley silt loam, 12 to 18 percent slopes
TsE	Townley-Sunlight complex, 12 to 35 percent slopes
TtE	Townley-Urban land complex, 4 to 25 percent slopes
Tu	Tupelo loam, frequently flooded
TWS	Tatum-Weogufka association, steep
Tx	Tupelo-Dewey complex
W	Water
WgE	Weogufka very channery sandy loam, 15 to 35 percent slopes
WgF	Weogufka very channery silt loam, 35 to 60 percent slopes

TABLE 9.--BUILDING SITE DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition; it does not eliminate the need for onsite investigation]

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
AnB----- Allen	Moderate: too clayey.	Slight-----	Slight-----	Moderate: slope.	Moderate: low strength.	Slight.
AnC----- Allen	Moderate: too clayey, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: low strength, slope.	Moderate: slope.
AqC*: Allen-----	Moderate: too clayey.	Slight-----	Slight-----	Moderate: slope.	Moderate: low strength.	Slight.
Quitman----- Urban land.	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness, slope.	Moderate: low strength, wetness.	Moderate: wetness.
BmF*: Bodine-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Minvale-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
BrF----- Brilliant	Severe: slope.	Severe: slope, unstable fill.	Severe: slope, unstable fill.	Severe: slope, unstable fill.	Severe: slope, unstable fill.	Severe: small stones, slope.
Ch----- Choccolocco	Moderate: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: low strength, flooding.	Moderate: flooding.
CS*: Choccolocco-----	Moderate: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: low strength, flooding.	Severe: flooding.
Sterrett-----	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
DeB2----- Dewey	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.
DeC2----- Dewey	Moderate: too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope.
DtC*: Dewey-----	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.
Tupelo----- Urban land.	Severe: wetness.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: low strength, flooding, shrink-swell.	Moderate: wetness, flooding.
DuB----- Decatur	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: low strength.	Slight.

See footnote at end of table.

TABLE 9.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
DuC, DuD----- Decatur	Moderate: too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Moderate: low strength, slope.	Moderate: slope.
DuX*: Decatur-----	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: low strength.	Slight.
Urban land.						
EtB----- Etowah	Slight-----	Slight-----	Slight-----	Moderate: slope.	Moderate: low strength.	Slight.
EtC----- Etowah	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: low strength, slope.	Moderate: slope.
GrD*: Gorgas-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Severe: depth to rock.	Severe: thin layer.
Rock outcrop.						
GvC----- Greenville	Moderate: too clayey.	Slight-----	Slight-----	Moderate: slope.	Moderate: low strength.	Slight.
HvD----- Hanceville	Moderate: too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope.
MfD*: Minvale-----	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: low strength, slope.	Moderate: small stones, slope.
Fullerton-----	Moderate: too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Severe: small stones.
MfE*: Minvale-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Fullerton-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: small stones, slope.
MuE*: Minvale-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Fullerton-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: small stones, slope.
Urban land.						
NaC----- Nauvoo	Slight-----	Slight-----	Slight-----	Moderate: slope.	Moderate: low strength.	Slight.
NaD----- Nauvoo	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: low strength, slope.	Moderate: slope.
VaE----- Nauvoo	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

See footnote at end of table.



TABLE 9.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
NcD*: Nauvoo-----	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: low strength, slope.	Moderate: slope.
Sunlight-----	Severe: depth to rock.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, slope.	Severe: thin layer.
NcE*: Nauvoo-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Sunlight-----	Severe: depth to rock.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, slope.	Severe: thin layer.
NMS*: Nella-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Mountainburg----	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: thin layer, slope.
PmF----- Pirum	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Pt*. Pits						
QuB----- Quitman	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: low strength, wetness.	Moderate: wetness.
SmC----- Smithdale	Slight-----	Slight-----	Slight-----	Moderate: slope.	Slight-----	Slight.
SmD----- Smithdale	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.
St----- Sterrett	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness.
TaD----- Tatum	Moderate: slope, too clayey.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope.
ToD----- Townley	Moderate: depth to rock, too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: depth to rock, shrink-swell, slope.	Severe: slope.	Severe: low strength.	Moderate: small stones, slope, thin layer.
ToE----- Townley	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.

See footnote at end of table.

TABLE 9.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
TsE*: Townley-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
Sunlight-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, thin layer.
TtE*: Townley-----	Moderate: depth to rock, too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: depth to rock, shrink-swell, slope.	Severe: slope.	Severe: low strength.	Moderate: small stones, slope, thin layer.
Urban land.						
Tu----- Tupelo	Severe: wetness.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: low strength, flooding, shrink-swell.	Severe: flooding.
TWS*: Tatum-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, low strength.	Severe: slope.
Weogufka-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope, thin layer.
Tx*: Tupelo-----	Severe: wetness.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: low strength, flooding, shrink-swell.	Severe: flooding.
Dewey-----	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: low strength.	Slight.
gE, WgF----- Weogufka	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope, thin layer.

\* See description of the map unit for composition and behavior characteristics of the map unit.



NRC Natural Resources  
Conservation Service

4511 US Hwy 31 South  
Decatur, AL 35603

OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE, \$300

184  
1141  
6053  
00.830  
PB8569178  
DEC 12 05  
MAILED FROM DECATUR AL 35603

DEC 14 2005

*Mr. Robert Perry*

*MARTEL Engineering and Contracting, Inc.*

*2100 Renaissance Center, Suite 459*

*Birmingham, AL 35244*



# Shelby County Environmental Services

504 Highway 70  
Columbiana, Alabama 35051

Robert Kelley  
Environmental Manager

Office: 205-669-3737  
Fax: 205-669-3871

Mactec Engineering Consulting, Inc.  
Attn: Robert Perry  
2100 Riverchase Center, Suite 459  
Birmingham, Alabama 35244

Dear. Mr. Perry:

Thank you for the opportunity to review and comment on the Veteran's Affairs National Cemetery; Project #6671.05-0316. All things considered, this appears to be an ideal site for this project, adjacent to American Village that celebrates and promotes American Heritage and American Ideals. I do not foresee any adverse impacts with the development of this project as proposed. If I can be of further assistance, please call me at 205-669-3737.

Sincerely,

A handwritten signature in black ink that reads "Robert E. Kelley". The signature is written in a cursive style and is positioned above the typed name and title.

Robert E. Kelley  
Environmental Manager

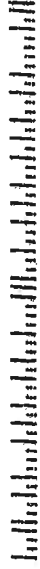
Shelby County Environmental Office  
504 Highway 70  
Columblana, Alabama 35051

DEC 07 2005



Mactec Engineering Consulting, Inc.  
Attn: Robert Perry  
2100 Riverchase Center, Suite 459  
Birmingham, Alabama 35244

35244+1858



December 29, 2005

Robert E. Perry  
Senior Scientist  
MACTEC  
2100 Riverchase Center, Suite 459  
Birmingham, Alabama 35244

Re: AHC 2006-0251; MACTEC Project No. 6671-05-0316, Environmental Assessment, Request for Information, Proposed Department of Veterans Affairs, National Cemetery, Montevallo, Shelby County

Dear ~~Mr. Perry~~ Robert:

Upon review of the above referenced project, the Alabama Historical Commission has determined that there are three known archaeological sites within the area of Alternative A. Alternative B contains five known archaeological sites, and Alternative C contains eight known sites. Therefore the areas have a high probability for the presence of archaeological resources. For this reason, we request that that a cultural resources assessment be conducted by a professional archaeologist for the entire project area when the final project site is chosen. The resulting report should be forwarded to our office for review and comment prior to commencement of ground disturbing activities. In addition, we request photographs and completed survey forms for any structures at least 50 years old within or adjacent to the project area; these locations should be keyed to a good quality map.

We appreciate your efforts on this issue. Should you have any questions, please contact Amanda McBride of our office. Please reference the AHC tracking number above in all correspondence.

Very truly yours,



Elizabeth Ann Brown  
Deputy State Historic Preservation Officer

EAB/ALM/alm

Enclosure: survey form



468 South Perry Street  
Montgomery, Alabama  
36130-0900

tel 334 242•3184  
fax 334 240•3477

[Chimney Configuration continued]

Number of End  
Materials #1 Materials #3  
Materials #2 Materials #4

Number of Front  
Materials #1 Materials #3  
Materials #2 Materials #4

[Exterior Wall Material]

Primary

- Secondary
Replacement

- N/A
Unknown
Other:
Aluminum Siding
Asphalt
Beaded Weatherboard
Board & Batten
Brick-Common Bond
Brick-Flemish Bond
Brick-Mixed Bond
Brick-Other
Brick-Undetermined Bond
Brick-veneer
Cast Iron
Composite
Concrete-Block
Concrete-Cast
Concrete-Molded Block
Concrete-Poured
Corrugated Metal
Curtain Wall
Drop Siding/Novelty Siding
Fiberglass
Flushboard
Glass Block
Log-Diamond notch
Log-Full Dovetail
Log-Half Dovetail
Log-Saddle Notch
Log-Square Notch
Log-V-Notch
Log with Weatherboard
Permastone
Pigmented Structural Glass
Plate Glass
Plastic
Plywood
Porcelain Enameled Metal
Sheet Metal
Stone-Cut
Stone-Natural
Stucco
Terra Cotta
Tile
Vertical Board
Vinyl Siding
Weatherboard
Wood Shingle

[Principal Porch Integrity]

- N/A
Other:
Altered
Not original-contemporary
Not original-historic
Original
Reconstruction
Removed or fallen

[Principal Porch Type]

- N/A
Unknown
Other:
Attached
Door hood
Entry porch
Inset/Loggia
Porte Cochere
Recessed
Scoop

[Foundation Material]

- N/A
Unknown
Other:
Brick
Concrete-Block
Concrete-Poured
Stone
Wood

[Foundation Type]

- N/A
Unknown
Other:
Continuous
Piers
Piers with infill
Slab

[Principal Window Pane Configuration]

(4/4, 6/6, 4/1, etc.) \_\_\_\_\_

[Principal Window Type]

- N/A
Unknown
Other:
Awning
Casement
Double Hung
Fixed
Hopper
Jalousie

[Window Material]

- Other:
Metal
Synthetic
Wood

[Landscape features]

- N/A
Unknown
Other:
Casual/unplanned yard
Designed drives/walks
Designed plantings/beds
Designed fencing/walls
Drainage/irrigation systems
Fence/Hedgerows
Field systems
Formal/geometric features

- Informal/Picturesque
Pasture
Pecan/other groves/orchards
Pond
Terracing/contouring
Woods

[National Register]

- Not listed
Individually Listed
Listed in District
Registered as:

[WRITTEN DESCRIPTION]
[ADDITIONAL INFORMATION]
[SKETCHES]

# Alabama Historical Commission Survey Form

Survey Number:	Section/Township/Range: - -
County:	Quadrangle:
Property Name:	Proximity to Town: <input type="checkbox"/> Unknown <input type="checkbox"/> N/A <input type="checkbox"/> Within town limits <input type="checkbox"/> Within 1 mile <input type="checkbox"/> 1-5 miles <input type="checkbox"/> 5-10 miles
Property Address:	Property Category: <input type="checkbox"/> Building <input type="checkbox"/> District
City: Zip:	Related Resource Group (Mill village, farm, suburb):
Photograph Number: Roll Number(s) Negative Number(s)	Surveyor:
Survey Date:	

<p><b>[Construction Date]</b> <input type="checkbox"/> circa</p> <p><b>[Height]:</b> <input type="checkbox"/> N/A <input type="checkbox"/> Other: <input type="checkbox"/> 1 story <input type="checkbox"/> 1 1/2 story <input type="checkbox"/> 2 story <input type="checkbox"/> 2 1/2 story <input type="checkbox"/> 3 story <input type="checkbox"/> Basement?</p> <p><b>[Use]</b> <b>Historic</b> <b>Current</b></p> <p><input type="checkbox"/> Unknown <input type="checkbox"/> Other <input type="checkbox"/> Agriculture <input type="checkbox"/> Cemetery <input type="checkbox"/> Commerce/Trade <input type="checkbox"/> Defense <input type="checkbox"/> Education <input type="checkbox"/> Government <input type="checkbox"/> Health Care <input type="checkbox"/> Industry/Processing <input type="checkbox"/> Multiple Dwelling <input type="checkbox"/> Recreation/Culture <input type="checkbox"/> Religion <input type="checkbox"/> Secondary Structure <input type="checkbox"/> Single Dwelling—farm <input type="checkbox"/> Single Dwelling—Non farm <input type="checkbox"/> Social <input type="checkbox"/> Transportation <input type="checkbox"/> Vacant/Not in Use</p> <p><b>Historic Function:</b> <b>Current Function:</b></p> <p><b>[Common Form]</b> <b>[Commercial, Religious &amp; Residential]</b> <input type="checkbox"/> Unknown <input type="checkbox"/> N/A <input type="checkbox"/> With Ell <input type="checkbox"/> Other: <input type="checkbox"/> Akron Plan—religious <input type="checkbox"/> Bungalow <input type="checkbox"/> Central Passage(Hall) <input type="checkbox"/> Coastal/Creole Cottage <input type="checkbox"/> Contemporary <input type="checkbox"/> Cross gable—religious—tower in ell <input type="checkbox"/> Dogtrot <input type="checkbox"/> Double pen <input type="checkbox"/> Double Pile <input type="checkbox"/> Double Shotgun <input type="checkbox"/> E-Plan <input type="checkbox"/> Extended I-house <input type="checkbox"/> Foursquare <input type="checkbox"/> Free standing commercial—flat roof <input type="checkbox"/> Free standing commercial—gable front <input type="checkbox"/> Free standing commercial—parapet front <input type="checkbox"/> Front gable—center steeple—religious <input type="checkbox"/> Front gable—central tower—religious <input type="checkbox"/> Front gable—no steeple—religious <input type="checkbox"/> Front gable—side steeple—religious <input type="checkbox"/> Front gable—side tower—religious <input type="checkbox"/> Front gable—twin tower—religious <input type="checkbox"/> Gas Station <input type="checkbox"/> H-plan <input type="checkbox"/> I-house <input type="checkbox"/> Irregular <input type="checkbox"/> L-plan <input type="checkbox"/> Manufactured Home <input type="checkbox"/> Massed plan</p>	<p><input type="checkbox"/> Minimal Traditional <input type="checkbox"/> One-part commercial block <input type="checkbox"/> Pyramidal <input type="checkbox"/> Quonset <input type="checkbox"/> Raised Cottage <input type="checkbox"/> Ranch <input type="checkbox"/> Rectangular Plan <input type="checkbox"/> Rotunda Plan—religious <input type="checkbox"/> Saddlebag <input type="checkbox"/> Shed <input type="checkbox"/> Shotgun <input type="checkbox"/> Side Hall <input type="checkbox"/> Single pen <input type="checkbox"/> Split Level <input type="checkbox"/> Spraddle roof <input type="checkbox"/> Square Plan <input type="checkbox"/> Temple Front—commercial <input type="checkbox"/> Three-part vertical—commercial <input type="checkbox"/> Tidewater Cottage <input type="checkbox"/> T-plan <input type="checkbox"/> Two-part commercial block <input type="checkbox"/> U-Plan <input type="checkbox"/> Vault—commercial <input type="checkbox"/> Vertical block—commercial</p> <p><b>[Style Elements]</b> <input type="checkbox"/> Common Form with no stylistic details <input type="checkbox"/> Common Form with stylistic details [Select all that apply] <input type="checkbox"/> Federal <input type="checkbox"/> Greek Revival <input type="checkbox"/> Italianate <input type="checkbox"/> Gothic Revival <input type="checkbox"/> Queen Anne <input type="checkbox"/> Stick/Eastlake <input type="checkbox"/> Second Empire <input type="checkbox"/> Romanesque Revival <input type="checkbox"/> Renaissance Revival <input type="checkbox"/> Colonial Revival <input type="checkbox"/> Classical Revival <input type="checkbox"/> Tudor Revival <input type="checkbox"/> Mediterranean/Spanish Revival <input type="checkbox"/> Craftsman <input type="checkbox"/> Art Moderne <input type="checkbox"/> Art Deco <input type="checkbox"/> Classical Modern <input type="checkbox"/> International <input type="checkbox"/> Miesian <input type="checkbox"/> New Formalism <input type="checkbox"/> Brutalism <input type="checkbox"/> Other:</p> <p><b>[High Style]</b> [Select all that apply] <input type="checkbox"/> Federal <input type="checkbox"/> Greek Revival <input type="checkbox"/> Italianate <input type="checkbox"/> Gothic Revival <input type="checkbox"/> Queen Anne <input type="checkbox"/> Stick/Eastlake <input type="checkbox"/> Second Empire <input type="checkbox"/> Romanesque Revival <input type="checkbox"/> Renaissance Revival <input type="checkbox"/> Colonial Revival <input type="checkbox"/> Tudor Revival <input type="checkbox"/> Classical Revival <input type="checkbox"/> Mediterranean/Spanish Revival <input type="checkbox"/> Craftsman <input type="checkbox"/> Art Moderne <input type="checkbox"/> Art Deco <input type="checkbox"/> Classical Modern</p>	<p><input type="checkbox"/> International <input type="checkbox"/> Miesian <input type="checkbox"/> New Formalism <input type="checkbox"/> Brutalism <input type="checkbox"/> Other:</p> <p><b>[Main Roof Configuration]</b> <input type="checkbox"/> N/A <input type="checkbox"/> Unknown <input type="checkbox"/> Other: <input type="checkbox"/> Clipped gable <input type="checkbox"/> Conical <input type="checkbox"/> Cross gable <input type="checkbox"/> Flat <input type="checkbox"/> Front gable <input type="checkbox"/> Gable on hip <input type="checkbox"/> Gambrel <input type="checkbox"/> Hip <input type="checkbox"/> Hip on gable <input type="checkbox"/> Hip with cross gables <input type="checkbox"/> Hip with double front gables <input type="checkbox"/> Hip with triple front gables <input type="checkbox"/> Mansard <input type="checkbox"/> Monitor <input type="checkbox"/> Multi-gable <input type="checkbox"/> Pyramidal <input type="checkbox"/> Round <input type="checkbox"/> Sawtooth <input type="checkbox"/> Shed <input type="checkbox"/> Side gable <input type="checkbox"/> Spraddle <input type="checkbox"/> Vaulted</p> <p><b>[Roof Material]</b> <input type="checkbox"/> N/A <input type="checkbox"/> Other: <input type="checkbox"/> Asphalt <input type="checkbox"/> Built-up <input type="checkbox"/> Composite <input type="checkbox"/> Metal <input type="checkbox"/> Slate <input type="checkbox"/> Tar <input type="checkbox"/> Tile <input type="checkbox"/> Wood</p> <p><b>[Features]</b> <input type="checkbox"/> N/A <input type="checkbox"/> Other: <input type="checkbox"/> Belfry <input type="checkbox"/> Decorative dormer <input type="checkbox"/> Decorative gable <input type="checkbox"/> Dormer <input type="checkbox"/> Parapet <input type="checkbox"/> Steeple/Spire <input type="checkbox"/> Tower/Turret</p> <p><b>[Chimney Configuration]</b> <input type="checkbox"/> No chimneys present</p> <p>Number of Exterior Materials #1      Materials #3 Materials #2      Materials #4</p> <p>Number of Interior Materials #1      Materials #3 Materials #2      Materials #4</p> <p>Number of Central Materials #1      Materials #3 Materials #2      Materials #4</p>
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STATE OF ALABAMA  
ALABAMA HISTORICAL COMMISSION  
468 SOUTH PERRY STREET  
P.O. BOX 300900  
MONTGOMERY, ALABAMA 36130-0900

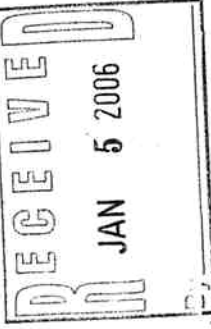
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MR ROBERT E PERRY  
MACTEC  
2100 RIVERCHASE CENTER SUITE 459  
BIRMINGHAM AL 35244

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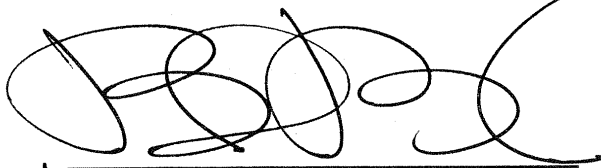


**APPENDIX F**  
**Memorandum for the Record**

August 16, 2006

**MEMORANDUM FOR THE RECORD**

1. The Department of Veterans Affairs (VA) is directed by the National Cemetery Expansion Act, Public Law 108-109, to establish new national cemeteries in six areas of the country in greatest need for a veteran's cemetery. Shelby County (Birmingham area), Alabama is one of those locations.
2. In accordance with the VA's regulations which implement the National Environmental Policy Act (NEPA), the National Cemetery Administration (NCA) conducted an Environmental Assessment (EA) in summer of 2005. The EA analyzed potential environmental impacts associated with development of three alternative sites for the new national cemetery. A Public Notice of Availability of the EA was placed in the major Birmingham newspaper and provided the opportunity to provide comments to the VA for a 30-day period which ended on July 30, 2006.
3. Comments have been received from Shelby County Schools, the Greater Shelby County Chamber of Commerce, and the American Village Citizenship Trust in support of development of the new cemetery. These letters are included in Appendix F of the EA.



Michael C. Elliott  
Director, Project Support Service (41F2)  
Office of Construction Management  
National Cemetery Administration  
Department of Veterans Affairs



**SHELBY**  
COUNTY SCHOOLS  
WHERE LEARNING NEVER ENDS

July 20, 2006

Mr. Mike Elliott, Director, Project Support Service  
National Cemetery Administration  
U.S. Department of Veterans Affairs  
810 Vermont Avenue NW  
Washington, D. C. 20420

Re: Public Notice – Shelby County Reporter – June 28, 2006  
New National Veterans Cemetery – Shelby County, Alabama

Dear Mr. Elliott:

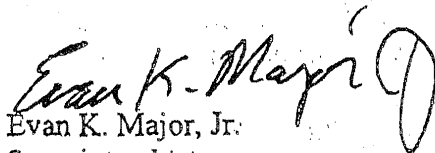
I am writing on behalf of Shelby County Schools to provide comments on the documents associated with the proposed new National Veterans Cemetery in Shelby County, Alabama.

We fully support a finding of no significant adverse impacts under NEPA for the above project. It appears the study was thorough. Therefore, we hope the project will move forward as soon as possible.

We write to assure the Department of Veterans Affairs of overwhelming local support for this vitally important project. Not only do we believe there are no adverse environmental impacts, we also believe there are strong positive reasons for the Department to move forward at the earliest possible date. Among those reasons are broad public support and support by area veterans' organizations, governmental entities, and the public at large.

We pledge our full support to the Secretary, Department, and National Cemetery Administration as you move forward.

Sincerely,

  
Evan K. Major, Jr.  
Superintendent

Evan K. Major, Jr.  
Superintendent

Board of Education

Lee Doebler, Ph.D., President • Steve Martin, Vice President • Peg Hill • Anne Glass • David Nichols, Ed.D.

410 East College Street • Post Office Box 1910 • Columbiana, AL 35051 • (205) 682-7000 Phone • (205) 682-7005 Fax • www.shelbyed.k12.al.us

G R E A T E R  
SHELBY COUNTY  
CHAMBER OF COMMERCE

July 19, 2006

Mr. Mike Elliott, Director, Project Support Service  
National Cemetery Administration  
U. S. Department of Veterans Affairs  
810 Vermont Ave. NW  
Washington, D. C. 20420

Re: Public Notice - Shelby County Reporter - June 28, 2006  
New National Veterans Cemetery - Shelby County, AL

Dear Mr. Elliott:

I am writing on behalf of the proposed new National Veterans Cemetery in Shelby County, Alabama.

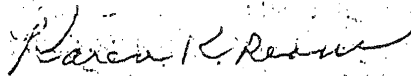
The Greater Shelby County Chamber of Commerce is proud of our growth and accomplishments and confident our nurturing county is a perfect environment for this significant project. I understand that the impact study has been returned and confirms Shelby County environmentally sound and ready.

Shelby County is environmentally friendly and so are the people. The Department of Veterans Affairs should be commended for your dedication to this memorial cemetery and we believe our citizens, government entities, business community and our native veterans would be honored to serve as hosts to the thousands of people who would visit each year.

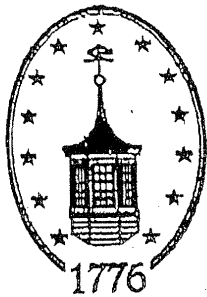
We are excited about this enriching memorial and hope the project will move forward as soon as possible.

Thank you so much for giving Shelby County this consideration.

Sincerely,



Karen K. Ream  
President



**THE AMERICAN VILLAGE**  
CITIZENSHIP TRUST

POST OFFICE BOX 6  
MONTEVALLO, ALABAMA 35115

(205) 665-3535  
TOLL FREE 1-877-811-1776  
FAX: (205) 665-7577

July 27, 2006

Mr. Mike Elliott, Director, Project Support Service  
National Cemetery Administration  
U. S. Department of Veterans Affairs  
810 Vermont Avenue, NW  
Washington, D. C. 20420

Dear Mr. Elliott:

The Board of Trustees of the American Village Citizenship Trust joins us in thanking you and the Department for your work in creation of the new National Veterans Cemetery in Alabama.

After a careful review of the environmental assessment report, we urge the Department to make a determination under NEPA of no significant adverse findings on all three parcels identified by the cemetery process to date. We believe any of the parcels, or a combination of them, would be a fitting and suitable resting place and place of hallowed ground for our Nation's veterans, particularly those from the Alabama area.

The study appears to be well executed and a basis for moving forward, confident of no significant environmental issues. We hope the Department will be able to move forward to property acquisition among the three options identified.

With every good wish, and with our pledge for continued support, we are

The Citizenship Trust at The American Village  
By:

Senator Tom Butler  
Board Chair

Thomas G. Walker, Jr.  
Executive Director

C: Board of Trustees

Nationally Pioneering Civic Education Center and Historical Village  
Renewing the foundations of American liberty and self-government through citizenship education  
[www.americavillage.org](http://www.americavillage.org)

**APPENDIX G**  
**Finding of No Significant Impact (FONSI)**

**FINDING OF NO SIGNIFICANT IMPACT  
SITING OF A NATIONAL CEMETERY  
BIRMINGHAM (SHELBY COUNTY), ALABAMA**

**Agency:** National Cemetery Administration (NCA), Department of Veterans Affairs (VA)

**Background:** On November 11, 2003, the President signed the National Cemetery Expansion Act (Public Law 108-109), which requires the VA to establish six national cemeteries in specific areas of the United States by 2007. Birmingham, Alabama was designated as one of the six areas to receive a national cemetery. Construction of the Shelby County National Cemetery is needed to fulfill the VA's obligation under PL 108-109, as well as to meet the VA National Cemetery Administration's (NCA) goal to provide all eligible United States veterans with reasonable access to VA burial options. The VA considers reasonable access to mean that an open national or state veterans' cemetery is located within 75 miles of a veteran's plan of residence. Currently, the veterans in the Birmingham, Alabama area do not have this access.

In accordance with the President's Council on Environmental Quality (CEQ) regulations, Title 40 Code of Federal Regulations (CFR) Parts 1500-1508, as they implement the requirements of the National Environmental Policy Act (NEPA) of 1969, 42 U.S.C. § 4321, et seq., the Department of Veterans Affairs conducted an assessment of the potential environmental effects associated with construction of a National Cemetery to serve the Birmingham, Alabama area. The environmental assessment considered all potential impacts of the Proposed Action and alternatives. The Finding of No Significant Impact (FONSI) summarizes the results of the evaluation of the Proposed Action and alternatives. The discussion focuses on activities that have the potential to change both the natural and human environments.

**Proposed Action:** The proposed action will construct and operate a National Cemetery in Shelby County, Alabama. Although cemetery design and site planning has not been completed, it is assumed that the proposed action will include the construction of several structures and burial areas. Structures expected to be built include a Public Information Center, Administration/Maintenance Complex, and Committal Service Shelter and interment areas. Cemetery development will occur in phases with the first phase likely to include construction of the first active burial section in addition to the infrastructure necessary to operate the cemetery. Later phases would include new burial sections and the infrastructure required for the section.



**Alternatives:** Seven tracts near Birmingham, Alabama were initially selected using the NCA site selection criteria. Three Sites (the Proposed Alternatives) composed of combinations of five tracts in Shelby County were identified and evaluated during the environmental assessment process. Alternative A is an approximately 237-acre site composed of four separate tracts; Mr. William Jackson (91 acres), Mrs. Barbara Tharp (70 acres), Mr. Kenneth Carter (41 acres), and the American Village (35 acres). Alternative B is an approximately 246-acre site composed of four separate tracts; a portion of the Fowler tract (122 acres), Tharp tract (70 acres), Carter tract (41 acres), and American Village tract (35 acres). Alternative C is an approximately 472-acre site composed of a single tract – the Fowler tract. The No Action Alternative was also evaluated which would result in no construction activities and not meet the requirements of Public Law 108-109. The environmental effects associated with implementation of the Proposed Action are summarized in the following sections:

**Cultural Resources:** Under the Proposed Alternatives, there would be minimal impacts to cultural resources resulting from the development of a cemetery at Alternative A or Alternative B and moderate impacts to cultural resources at Alternative C. One historic mill site was discovered during preliminary field reconnaissance on Alternative A. The previously-mentioned historic mill site, one 19<sup>th</sup> century house site and one prehistoric site were located on Alternative B. Eight previously undiscovered archaeological sites were identified on Alternative C including the mill site, another historic site and six prehistoric sites. All impacts to significant cultural resources will have to be coordinated with the Alabama SHPO.

**Floodplains:** Portions of the sites are designated as 100-year floodplain areas. For Alternatives A, B, and C, the majority of the proposed cemetery would be located outside the 100-year floodplain. Site planning should attempt to minimize construction in the 100-year floodplain. Buildings will be constructed outside of the 100-year floodplain.

**Wetlands:** Under the Proposed Alternatives, it is anticipated that the site chosen for construction of the new cemetery would require filling of limited areas of federal jurisdictional wetlands. Wetland impacts would be mitigated by wetlands creation, restoration, enhancement, preservation, or by mitigation banking. Therefore, there would be minimal net adverse impacts to wetlands. Any activities in wetlands will be appropriately coordinated and permitted.

**Geology:** Under the Proposed Alternatives, there would be moderate impacts to the geology of the area resulting from the development of a cemetery at any of the three proposed sites. Excavations for stormwater basins, burial vaults, and building foundations into the subsoils will be required, but no larger scale excavations into the deeper strata would occur.

**Soils:** Under the Proposed Alternatives, it is anticipated that the development of the site considered would result in a moderate impact to soils. Some soil erosion may occur during construction activities; however, implementation of a sediment and erosion control plan, such as silt fencing and straw bales, would reduce erosion associated with the project. Excavations into and mixing of subsoil layers would result in minor impacts to the near-surface soils profiles.

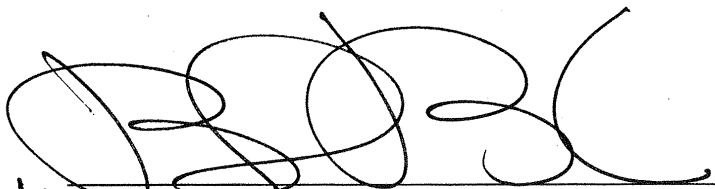
**Hydrology and Water Quality:** Cemetery development should have minimal adverse impacts on the area's surface water resources as the cemetery would be developed and managed according to the standards required by state and federal laws and regulations as they relate to watershed protection.

**Traffic and Transportation:** Under the Proposed Alternatives, there would be moderate adverse impact to traffic and transportation. Funerals and employee and visitor activity at the proposed cemetery would increase the traffic volume at the chosen site.

**Vegetation and Wildlife:** Under the Proposed Alternatives, human disturbances and alterations of Alternatives A and B would have a minimal adverse impact on aquatic and terrestrial species and their habitats, Alternative C would have a moderate adverse impact.

**Other Environmental Concerns:** It was determined that under the Proposed Alternatives there would be minimal impacts to aesthetics, noise, air quality, land use, real property, and solid/hazardous waste; and no negative impacts to community services, economic activity, resident population, and utilities.

**FINDING OF NO SIGNIFICANT IMPACT:** After reviewing the Environmental Assessment for a National Cemetery in Shelby County, Alabama, the implementation of the proposed action as described would not have a significant environmental impact upon the quality of the human environment within the meaning of Section 102(2c) of the National Environmental Policy Act (NEPA) of 1969. Accordingly, the preparation of an Environmental Impact Statement is not required.

  
for Michael Elliott  
Director, Project Support Service  
National Cemetery Administration  
Department of Veterans Affairs

August 18, 2006  
Date



 **MACTEC**

2100 Riverchase  
Center, Suite 450,  
Birmingham, AL 35244

