

**DRAFT PROSPECTUS
RED CHUTE MITIGATION BANK
BOSSIER PARISH, LOUISIANA**

Prepared for
U.S. Army Corps of Engineers
Vicksburg District
Vicksburg, Louisiana

Submitted by
Fifth Louisiana Resource, L.L.C.
c/o Resource Environmental Solutions
412 N. Fourth Street, Suite 300
Baton Rouge, Louisiana 70802

Prepared by
Resource Environmental Solutions
1200 Camellia Blvd., Suite 220
Lafayette, Louisiana 70508

TABLE OF CONTENTS

Section	Page
1 OBJECTIVES	2
1.1 Current Habitat Types and Land Use	2
1.2 Proposed Mitigation Bank Habitat Types	2
1.3 Aquatic Functions to be Restored	3
1.4 Water Quality	3
2 BANK ESTABLISHMENT	4
2.1 Management Summary	4
2.1.1 Silvicultural Ditches	4
2.1.2 Soil Preparation	4
2.1.3 Vegetative Plantings	4
2.1.4 Invasive/Noxious Species Control	5
2.1.5 Monitoring	5
2.2 Proposed Service Area	5
2.3 General Bank Need and Technical Feasibility	5
2.4 Future Ownership and Long-Term Management Strategy	6
2.4.1 Sponsor/Operations Manager/Long-Term Management	6
2.4.2 Landowner/Long-Term Ownership	6
2.4.3 Agent	6
2.4.4 Perpetual Site Protection Mechanism	7
2.4.5 Sponsor Qualifications	7
3 ECOLOGICAL AND SITE SUITABILITY	7
3.1 Summary of Current Site Conditions	7
3.1.1 Current and Previous Land Uses	7
3.1.2 Current Vegetation	7

3.1.3	Current Hydrology	8
3.1.4	Mapped Soil Types.....	9
3.1.5	Property Encumbrances.....	10
3.1.6	Zoning and Adjacent Property Development.....	10
3.1.7	Preliminary Jurisdictional Determination	10
3.2	Water Rights and Hydrological Influences.....	10
3.2.1	Water Rights.....	10
3.2.2	Structural Hydrological Management	10
3.2.3	General Watershed Characteristics	11
4	CONCLUSION.....	12
5	REFERENCES	13

FIGURES:

- Figure 1: Site Location Map**
- Figure 2: U.S.G.S. 24k Quad Map**
- Figure 3: Watershed & Proximity Map**
- Figure 4: Existing Conditions Map**
- Figure 5: Existing Elevations Map**
- Figure 6: Drainage Area Map**
- Figure 7: Soils Map**
- Figure 8: Mitigation Plan Map**
- Figure 9: 1947 Aerial**
- Figure 10: 1976 Aerial**
- Figure 11: 1998 Aerial**
- Figure 12: 2004 Aerial**
- Figure 13: Proposed Service Area Map**

Appendix A: PRELIMINARY JURISDICTIONAL DETERMINATION

DRAFT PROSPECTUS

DRAFT PROSPECTUS
Fifth Louisiana Resource, L.L.C.
Red Chute Mitigation Bank
Bossier Parish, Louisiana

Fifth Louisiana Resource, L.L.C. (hereinafter the Sponsor), submits this draft prospectus to the U.S. Army Corps of Engineers, Vicksburg District (Vicksburg District) and Interagency Review Team (IRT) to initiate evaluation of the proposed Red Chute Mitigation Bank (RCMB) in accordance with 33 CFR 332.8(d)(2). The details pertaining to the use and operation of this site as a mitigation bank will be specified in the subsequent mitigation banking instrument (MBI). The proposed bank is located on a tract which the Sponsor owns in western Bossier Parish, one mile northwest of Benton, Louisiana (Figures 1, 2 and 3). The 726.2-acre tract is located approximately 1.5 miles east of the Red River and 0.5 miles west of Louisiana Highway 3, and is centered on the point 32.722714° N, 93.74873° W, within:

- Township 20 South, Range 13 West, Sections 7, 18, and 19

The goal of RCMB is the cumulative re-establishment, rehabilitation, and preservation of 939.8 acres of bottomland hardwood (BLH) wetland. The remaining 41.7 acres of non-mitigation features will be comprised of existing access roads and rights-of-way (ROW).

RCMB is located in the Red River Alluvial Floodplain. Much of the Red River floodplain consisted historically of BLH, bald cypress sloughs, and shrub swamps. However, as with many floodplains much of this area was deforested and converted to agricultural and silvicultural uses. The Red River floodplain also represents an important flyway for migratory bird species such as waterfowl and neotropical migrants.

The site was historically BLH (Figure 9), and site conditions are conducive to restoration utilizing commonly-used methods (i.e. planting trees, removing hydrologic impediments, and back filling ditches). Given these activities coupled with the size of the project, these restoration efforts will require little long-term management or maintenance, which provides for self-sustainability of this aquatic resource.

1 OBJECTIVES

1.1 Current Habitat Types and Land Use

The entire site is under silvicultural management of loblolly pine (*Pinus taeda*). A wetland delineation (and subsequent Jurisdictional Determination) of the site indicates that a portion of the pine plantation meets the criteria for classification as wetland, while a portion is currently upland (Appendix A). Buffers of mature BLH exist along stream corridors. There are four different age stands of pine within the tract. The years that the individual stands were established are 1991, 1993, 1996, and 1998. The site is crossed from southwest to northeast by a powerline corridor. This width of the corridor is approximately 150 feet, and it is maintained free of woody vegetation. Two pipeline corridors and an access road also cross the site, and are maintained to a width of approximately 30 feet. Existing habitat types and land use are presented in Table 1 and Figure 4.

Table 1. Current habitat types and land use.

		Acres	Total Acres
Wetlands	BLH	36.1	572.6
	Pine Plantation	536.5	
Other Waters	Intermittent Stream	1.9	1.9
Uplands	Pine Plantation	367.2	367.2
Linear Features	Access Road	0.5	39.8
	Utility ROW	39.3	
Total			981.5

1.2 Proposed Mitigation Bank Habitat Types

Areas that are currently wetland and planted in loblolly pine will be converted to BLH, and classified as rehabilitation. The upland pine plantation areas will be re-established as BLH. Existing BLH will be preserved. The access road, utility ROW, and other waters will remain in their existing condition, and are considered non-mitigation areas. Proposed mitigation types and non-mitigation areas are presented in Table 2 and Figure 8.

Table 2. Proposed habitat types and land use.

Mitigation Type	Habitat Type	Acres	Total Acres
Rehabilitation	BLH	536.5	939.8
Re-Establishment	BLH	367.2	
Preservation	BLH	36.1	
Non-Mitigation	Utility ROW and Access Road	39.8	41.7
	Existing Other Waters	1.9	
Total			981.5

1.3 Aquatic Functions to be Restored

The existing drainage and hydrology is described in Section 3.1.3.

The degradation and filling of ditches and bedded pine plantation will restore natural sheetflow across the property and flow through natural sloughs. Water that is currently routed through man-made ditches and forestry bedding will again be allowed to sheetflow across the property and to flow through natural depressions, thereby retaining surface water and upper soil saturation as it did historically. Sheetflow and filling ditches will increase the water retention time on the site, and reduce excess water downstream during periods of high water.

Soil preparation and vegetative plantings will be used to restore natural vegetation across the property. Long-term maintenance will be provided to prevent colonization by noxious plants, erosion along interfaces of drainageways, and trespass vandalism. Vegetative plantings, as well as the restoration of the historic hydroperiod across the property, will create improved wildlife habitat, as well as benefiting water quality as described below in Section 1.4.

1.4 Water Quality

The RCMB project area is located in the Black Bayou Reservoir Subsegment (100405) designated by Louisiana Department of Environmental Quality (LDEQ). This subsegment covers approximately 25 square miles. Black Bayou flows through the proposed Bank site, then into Black Bayou Reservoir approximately 4 miles downstream. The most recent LDEQ 303(d) List of Impaired Waterbodies (2014) characterizes Subsegment 100405 as fully supporting each of its LDEQ-designated uses: swimming (Primary Contact Recreation), boating (Secondary Contact Recreation), fishing (Fish and Wildlife Propagation), and agriculture.

The Black Bayou Subsegment has been listed in the LDEQ 303(d) List of Impaired Waterbodies in the past (e.g. in 2004) as not fully supporting the designated use of fish and wildlife propagation due to low levels of dissolved oxygen (DO). Non-point sources of pollutants, including forestry activities were identified as a potential contributor to DO impairment.

Filling ditches and planting trees for this project will result in overall water quality improvements due to increased filtration and plant uptake. Elimination of current forestry activity is expected to reduce the potential for impairment of the Subsegment.

2 BANK ESTABLISHMENT

2.1 Management Summary

2.1.1 *Silvicultural Ditches and Forestry Bedding*

Silvicultural ditches and forestry bedding throughout the property will be degraded to the maximum extent practicable. Small drains will be cross-disked with a tractor to reduce their functionality, these drains will also be plugged where they empty into a larger drain. Bedding will be eliminated following complete logging of the pine plantation on the tract.

2.1.2 *Soil Preparation*

Following removal of access roads and filling of ditches, soils within the project area will be mechanically prepared for vegetative plantings. Deep-ripping may be used to alleviate soil compaction and encourage air and water pore space for root growth. Bedding, as referenced above, will be degraded as part of this process.

2.1.3 *Vegetative Plantings*

Following soil preparation, an appropriate combination of hard and soft mast producing bare-root stock will be planted. Species to be planted in the BLH habitat will include native species such as Overcup oak (*Quercus lyrata*), Nuttall oak (*Quercus nuttallii*), willow oak (*Quercus phellos*), water oak (*Quercus nigra*), cherrybark oak (*Quercus pagoda*), pecan (*Carya illinoensis*), water hickory (*Carya aquatica*), sweetgum (*Liquidambar styraciflua*), Drummond's maple (*Acer rubrum var. drummondii*), bald cypress (*Taxodium distichum*), western mayhaw (*Crataegus opaca*), sugarberry (*Celtis laevigata*), American elm (*Ulmus americana*), common persimmon (*Diospyros virginiana*), and green ash (*Fraxinus pennsylvanica*) (all plant names based on U.S. Department of Agriculture – Natural Resources Conservation Service 2016). Planting success rates, escrow or bond sum release rates, and monitoring requirements will be consistent with other recently implemented Vicksburg District approved mitigation banks.

2.1.4 Invasive/Noxious Species Control

Invasive and noxious plant species such as Chinese tallow (*Triadica sebifera*) will be removed by mowing and/or herbicidal treatment during initial planting. The percent cover of invasive plants will be recorded during short-term and long-term success monitoring and appropriate action will be taken if needed.

2.1.5 Monitoring

At a minimum, monitoring reports shall be completed in the spring (when new growth makes identification practicable) of years 1, 3, 5, 8, and 10. Reports will be submitted by December 15th of each monitoring year.

2.2 Proposed Service Area

RCMB is proposed to serve the Cataloguing Unit the Bank is located within - Red Chute (11140204); and two adjacent Cataloguing Units that have the same 6-digit code and also include or flow into the Red River; Middle Red-Coushatta (11140202), and Loggy Bayou (11140203). The service area will be limited to the state of Louisiana, and not include the portion of the Loggy Bayou Cataloguing Unit that extends into Arkansas (Figure 13). Use beyond this area will be determined on a case-by-case basis as deemed appropriate by the Vicksburg District.

2.3 General Bank Need and Technical Feasibility

RCMB is proposed to provide compensatory mitigation for Vicksburg District approved projects within Cataloguing Units 11140202, 11140203, and 11140204 (Figure 13). Currently there are no mitigation banks located within 11140202, three banks within 11140203, and three banks within 11140204 (one of which has been inactive since 2009 and has only 0.89 credits available). An additional four banks have service areas that extend into these Cataloguing Units (two of which have two phases). This area needs additional mitigation bank options for projects that might impact wetlands within this watershed.

In addition to providing mitigation for activities associated with continued population growth, the proposed service area has a history of oil and gas exploration and production, including the ongoing development of the Haynesville Shale formation in northwest Louisiana.

Historically this area was dominated by hardwood wetlands with braided sheetflow draining slowly into Black Bayou. In order to convert it to pine

plantation, silvicultural practices such as bedding and facilitated drainage were instituted. The central goal of restoring this area to its historical wetland characteristics revolves around the removal of anthropogenic changes due to its current silvicultural state and reintroduction of appropriate bottomland hardwood species. All of these activities are generally typical and basic level mitigation banking actions.

2.4 Future Ownership and Long-Term Management Strategy

2.4.1 Sponsor/Operations Manager/Long-Term Management

Fifth Louisiana Resource, L.L.C.
c/o Resource Environmental Solutions, LLC
412 N. Fourth Street, Suite 300
Baton Rouge, Louisiana 70802
(337) 443-6933
rgreig@res.us
POC: Richard Greig

2.4.2 Landowner/Long-Term Ownership

Fifth Louisiana Resource, L.L.C.
c/o Resource Environmental Solutions, LLC
412 N. Fourth Street, Suite 300
Baton Rouge, Louisiana 70802
(337) 443-6933
rgreig@res.us
POC: Richard Greig

2.4.3 Agent

Resource Environmental Solutions, LLC
1200 Camellia Blvd., Suite 220
Lafayette, Louisiana 70508
(337) 443-6933
rgreig@res.us
POC: Richard Greig

2.4.4 Perpetual Site Protection Mechanism

RCMB will be protected in perpetuity by Conservation Servitude, pursuant to Louisiana Revised Statute 9:1271 *et seq.* The Conservation Servitude will be held by a conservation-oriented 501(c)(3) organization to be determined, and will inure and run with the property title.

The Conservation Servitude will prohibit activities, such as clear cutting, fill discharges, cattle grazing, or other commercial surface development that would diminish the quality or quantity of restored wetlands.

2.4.5 Sponsor Qualifications

Fifth Louisiana Resource, L.L.C. is managed by Resource Environmental Solutions, LLC (RES) which will be the entity responsible for bank land management and office operations. RES has restored over 32,000 wetland acres and over 155 miles of stream across 9 states and has 110 mitigation projects currently in progress. RES works with 15 U.S. Army Corps of Engineer districts and more than 78 regulatory agencies across the country, and a company profile can be viewed at www.res.us.

3 ECOLOGICAL AND SITE SUITABILITY

3.1 Summary of Current Site Conditions

3.1.1 Current and Previous Land Uses

The entire RCMB tract is currently under silvicultural management of loblolly pine (*Pinus taeda*). Buffers of mature bottomland hardwoods exist along stream corridors and on adjacent tracts. RCMB lands were historically BLH and were cleared for silvicultural use between 1990 and 1998 (Figure 10 and Figure 11). Three utility line corridors and an access road traverse the site.

3.1.2 Current Vegetation

Three habitat types are present within the RCMB mitigation areas; upland loblolly pine forest, wetland loblolly pine forest, and mature bottomland hardwood forest.

The vegetation growing within the overstory of the upland loblolly pine forests is dominated by loblolly pine and contains a small percentage of

white oak (*Quercus alba*), willow oak, and cherrybark oak. The sapling and shrub layer in the upland habitat is dominated by the aforementioned species as well as cedar elm (*Ulmus crassifolia*), water oak, green ash, pignut hickory (*Carya glabra*), sweetgum, eastern red cedar (*Juniperus virginiana*), American beautyberry (*Callicarpa americana*), eastern baccharis (*Baccharis halimifolia*), winged sumac (*Rhus copallinum*), and devil's walkingstick (*Aralia spinosa*). The dominant species in the herbaceous and vine layers include sawtooth blackberry (*Rubus argutus*), eastern poison ivy (*Toxicodendron radicans*), muscadine (*Vitis rotundifolia*), Alabama supplejack (*Berchemia scandens*), Virginia creeper (*Parthenocissus quinquefolia*), littlehead nutrush (*Scleria oligantha*), Asiatic dayflower (*Commelina communis*), and Japanese honeysuckle (*Lonicera japonica*). Vegetation growing within upland areas immediately adjacent to wetlands were often similar to the vegetation growing within the wetland. Significant vegetation changes only occurred on slopes or in the highest elevation areas.

The dominant vegetation growing in the overstory of the wetland loblolly forests consists primarily of loblolly pine, with some cherrybark oak, cedar elm, willow oak, water oak, and overcup oak. The sapling and shrub layer consist of the aforementioned species as well as green ash, parsley hawthorn (*Crataegus marshallii*), pignut hickory, eastern baccharis, American elm, and possumhaw (*Ilex decidua*). The dominant species within the herbaceous and vine layers include eastern poison ivy, common rush (*Juncus effusus*), greater bladder sedge (*Carex intumescens*), laurel greenbrier (*Smilax laurifolia*), and Indian woodoats (*Chasmanthium latifolium*).

The canopy of the bottomland hardwood wetland forests found along drainages is dominated by willow oak, water oak, overcup oak, cherrybark oak, and sweetgum. The sapling and shrub layer consist of the aforementioned species as well as green ash, common persimmon, cedar elm, and American elm. The herbaceous layer was comprised of several dominant species including littlehead nutrush, laurel greenbrier, Indian woodoats, Virginia creeper, greater bladder sedge, and sawtooth blackberry.

3.1.3 Current Hydrology

The on-site surface hydrology flows generally from north to south and is directed in to one of the swales that runs east-west. These swales are eventually directed into Black Bayou which runs north-south, along the east side of the property. Hydrology on the site is primarily precipitation driven with the exception of wetland areas adjacent to Black Bayou and its tributaries which receive occasional backwater flooding after heavy rain events. Additional surface water enters the site via overland flow and drainage of adjacent parcels to the north and west.

3.1.4 Mapped Soil Types

The U.S. Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS [2015]) soil survey indicates that the following mapped soil types are present within the proposed RCMB site:

- 72 percent of the site - Ashford silty clay, 0-1% slopes (AsA);
- 18 percent - Gore silt loam, 1-5% slopes (GoC);
- 9 percent Guyton-Ouachita silt loam, frequently flooded (GYA); and
- the remaining 1 percent made up of:
 - Wrightsville silt loam, 0-1% slopes (WrA);
 - Bowie fine sandy loam, 1-5% slopes (BoC); and
 - Kolin silt loam, 1-5% slopes (KoC).

Figure 7 presents the locations of soil types present within the project area.

The Ashford series consists of very deep, poorly drained, very slowly permeable soils that formed in clayey alluvium. These nearly level soils are on stream terraces.

The Gore series consists of very deep, moderately well drained, very slowly permeable soils that formed in thick clayey fluvial sediments on Pleistocene age terraces. These soils are found on stream terraces.

The Guyton-Ouachita series consists of very deep, poorly drained and very poorly drained, slowly permeable soils that formed in thick loamy sediments. These soils are on Coastal Plain local stream flood plains and in depressional areas on late Pleistocene age terraces.

The Wrightsville series consists of very deep, poorly drained, very slowly permeable soils that formed in old silty and clayey alluvium. These soils are on level to depressional areas on old stream terraces.

The Bowie series consists of very deep, well drained, moderately slowly permeable soils that formed in loamy Coastal Plain deposits. These soils are on broad very gently sloping to moderately sloping interfluves.

The Kolin series consists of very deep, somewhat poorly drained, very slowly permeable soils that formed in loamy alluvial sediments overlying clayey sediments. These soils are on uplands and terraces of Pleistocene Age.

3.1.5 Property Encumbrances

Two pipelines and an electric line ROW traverse the site, these areas are non-mitigation: Southwestern Electric Power Company – 150' wide Electric Line ROW; Gulf South Pipeline – 30' wide pipeline ROW; and Mid-Valley Pipeline Company – 30' wide pipeline ROW. The property is also subject to four Oil, Gas and Mineral Leases without waivers of surface rights.

3.1.6 Zoning and Adjacent Property Development

RCMB and adjacent property is within unincorporated land and is absent of zoning regulations. Areas immediately adjacent to the site are primarily forested, with some low-density residential development. The area to the northeast of the site is undeveloped BLH. Louisiana State Highway 3 is located near the southeastern boundary of the site, and the town of Benton is located approximately 1 mile to the south.

3.1.7 Preliminary Jurisdictional Determination

The site was delineated April-May, 2015 by Resource Environmental Solutions, LLC. A jurisdictional determination was issued by the Vicksburg District on 08/27/2015. The Corps identification number is MVK-2015-466 (Appendix A).

3.2 Water Rights and Hydrological Influences

3.2.1 Water Rights

Louisiana Civil Code, Article 490, treats water resources under the theory of absolute ownership and rule of capture, provided capture does not result in harm to neighbors. As adjacent properties are already bottomland hardwoods or otherwise undeveloped no harm is anticipated.

3.2.2 Structural Hydrological Management

No culverts, bedding or ditches will remain after hydrologic improvements are made. However, if the implementation of a culvert for access is deemed necessary after a period of time, appropriate action will be taken with IRT approval.

3.2.3 General Watershed Characteristics

3.2.3.1 Water Sources and Losses

The sources of water to the project area are currently direct precipitation and sheet flow from adjacent lands from the north and west. The project area is drained to Black Bayou on the eastern side of the property.

The average annual precipitation in the vicinity of the project area is approximately 48.47 inches. April is the wettest month of the year with an average precipitation of 5.23 inches, and September is the driest month of the year with an average precipitation of 2.38 inches. The average growing season is 222 days. Average annual runoff ranges from 12 to 20 inches in this region. Evaporation exceeds rainfall seven months of the year in this region.

3.2.3.2 Hydroperiod

Hydric soils indicate that the site is either currently inundated or saturated in the upper soil profile for at least 14 consecutive days per year or was subject to these conditions prior to conversion of the site to pasture/agriculture. This site is comprised primarily of Ashford soils, which are described as:

- poorly drained and ponded for long periods during the rainy season; and
- permeability is very slow

3.2.3.3 Drainage Area

The drainage area for the site was estimated based on topographic maps, aerial photography, and LIDAR elevation data. The historic/current drainage area is estimated to be approximately 15.8 square miles (10,112 acres; Figure 6). The drainage area is located between the Red River to the west and Cypress Bayou to the east.

4 CONCLUSION

In summary, the RCMB has the potential to re-establish, rehabilitate, and preserve 939.8 acres of BLH habitat within a 981.5 acre tract. These lands will be protected and maintained by Conservation Servitude. More detailed information regarding financial assurances, monitoring provisions, and credit release schedules will be provided in the subsequent draft MBI and will reflect current standards within the Vicksburg District.

5 REFERENCES

Code of Federal Regulations, Title 33, Parts 325 and 332 and Title 40, Part 230, as published on pages 19594-19704 in the Federal Register dated 10 April 2008.

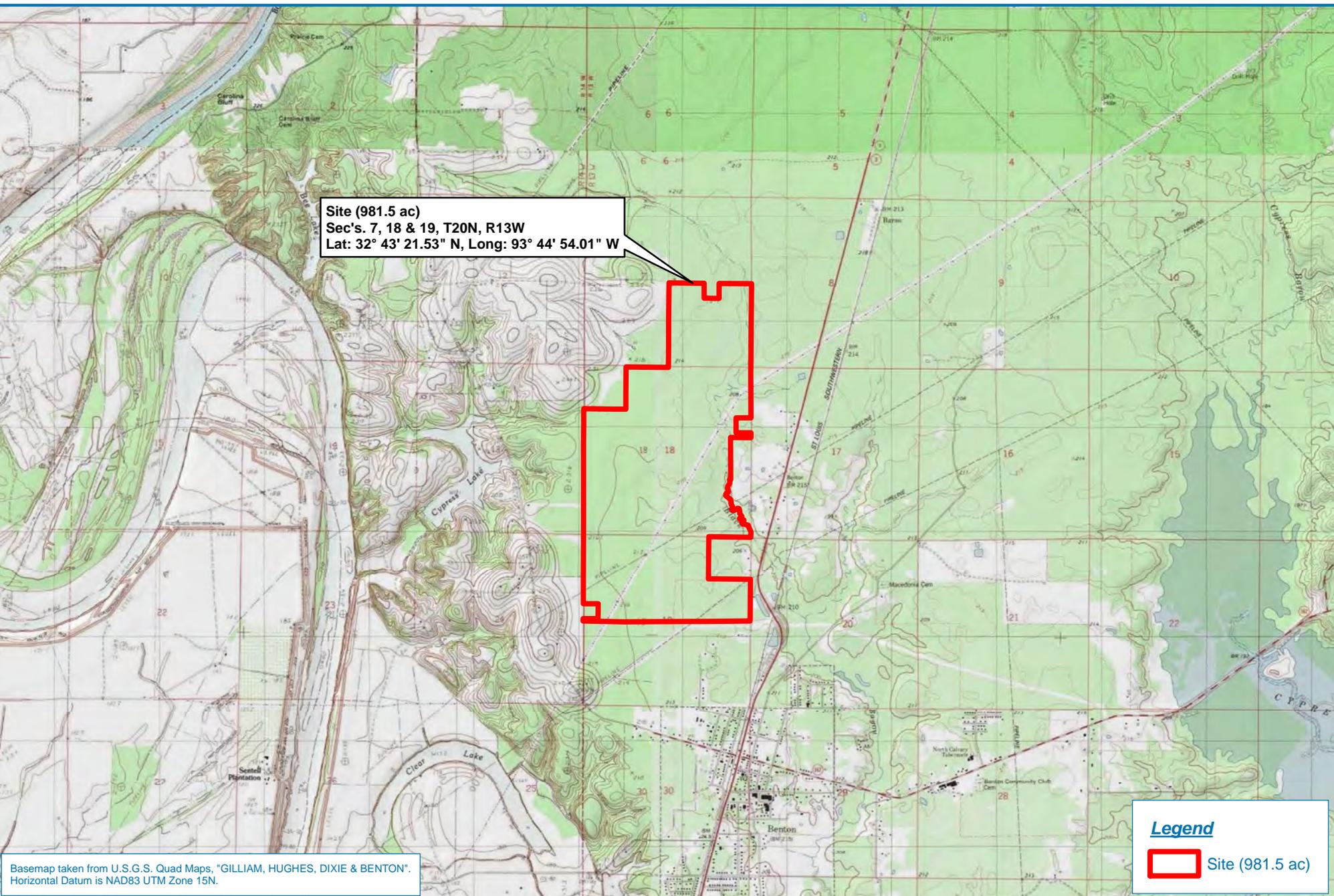
Natural Resources Conservation Service. 2011.
Web Soil Survey [website]. U.S. Department of Agriculture, Natural Resources Conservation Service, Web Soil Survey. Accessed February 29, 2016.
AvailableURL:<http://websoilsurvey.nrcs.usda.gov/app/websoilsurvey.aspx>

Louisiana Department of Environmental Quality 303(d) Impaired Waterbodies List, 2014.

U.S. Army Corps of Engineers-Vicksburg District
List of Approved Mitigation Banks within the Vicksburg District, Retrieved February 2016.

U.S. Department of Agriculture, Natural Resources Conservation Service. 2016. The PLANTS Database (<http://plants.usda.gov>, 29 February 2016). National Plant Data Team, Greensboro, NC 27401-4901 USA. Accessed February 29, 2016.

FIGURES



Basemap taken from U.S.G.S. Quad Maps, "GILLIAM, HUGHES, DIXIE & BENTON".
Horizontal Datum is NAD83 UTM Zone 15N.

Legend

Site (981.5 ac)

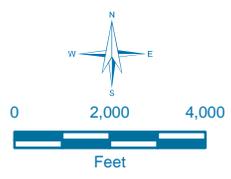


FIGURE 2

RED CHUTE MITIGATION BANK
U.S.G.S. 24K QUAD MAP

BOSSIER PARISH, LOUISIANA

Date: 10/1/2015
Drawn by: BL
Checked by: RG



Document Path: E:\Dgbox\RES\RES\GIS\MapDocs\Chute\ResChute_Map\Map\Map\MCD\Figure2_ResChuteMap_LUSSE\MapDoc.aprx.mxd

Legend

- Site (981.5 ac)
- One FT Contours

DEM data provided by USGS.
Horizontal Datum is NAD83 UTM Zone 15N.

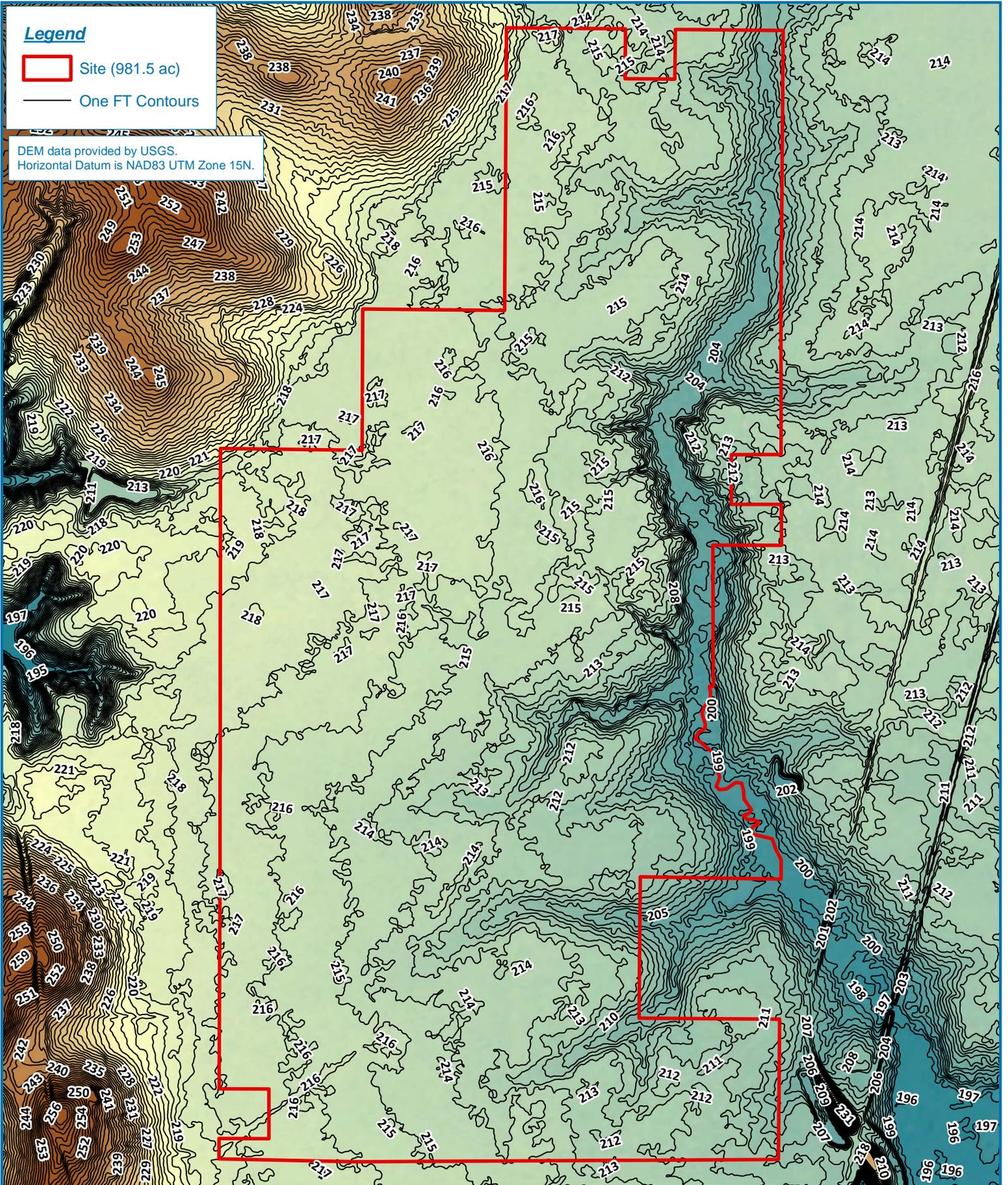


FIGURE 5

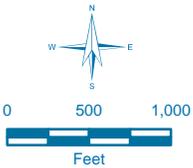
**RED CHUTE MITIGATION BANK
EXISTING ELEVATIONS MAP**

BOSSIER PARISH, LOUISIANA

Date: 9/29/2015

Drawn by: BL

Checked by: RG



Document Path: E:\Desktop (RES)\RES_GBP\res\JalReul_Cheerfield\Draw_Maps\res\res\1007\Figures_Res\Chute\MitB_Elevations\mktm.mxd

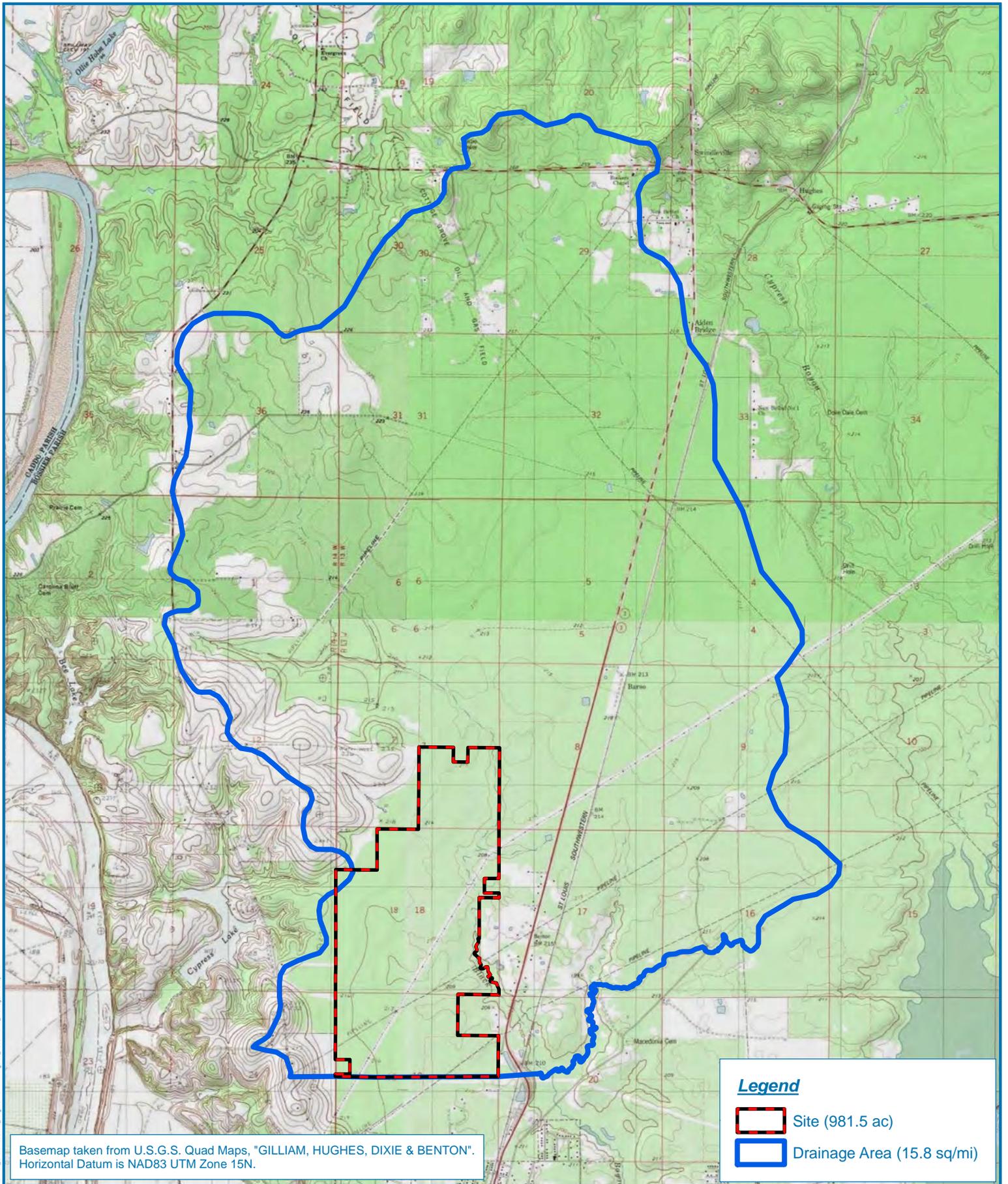


FIGURE 6

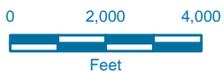
**RED CHUTE MITIGATION BANK
DRAINAGE AREA MAP**

BOSSIER PARISH, LOUISIANA

Date: 10/1/2015

Drawn by: BL

Checked by: RG



Legend

Site (981.5 ac)

MUSYM, MUName

- AsA; Ashford silty clay, 0 to 1 percent slopes
- BoC; Bowie fine sandy loam, 1 to 5 percent slopes
- GYA; Guyton-Ouachita silt loams, frequently flooded
- GoC; Gore silt loam, 1 to 5 percent slopes
- KoC; Kolin silt loam, 1 to 5 percent slopes
- WrA; Wrightsville silt loam, 0 to 1 percent slopes

Soil data provided by SSURGO.
Horizontal Datum is NAD83 UTM Zone 15N.

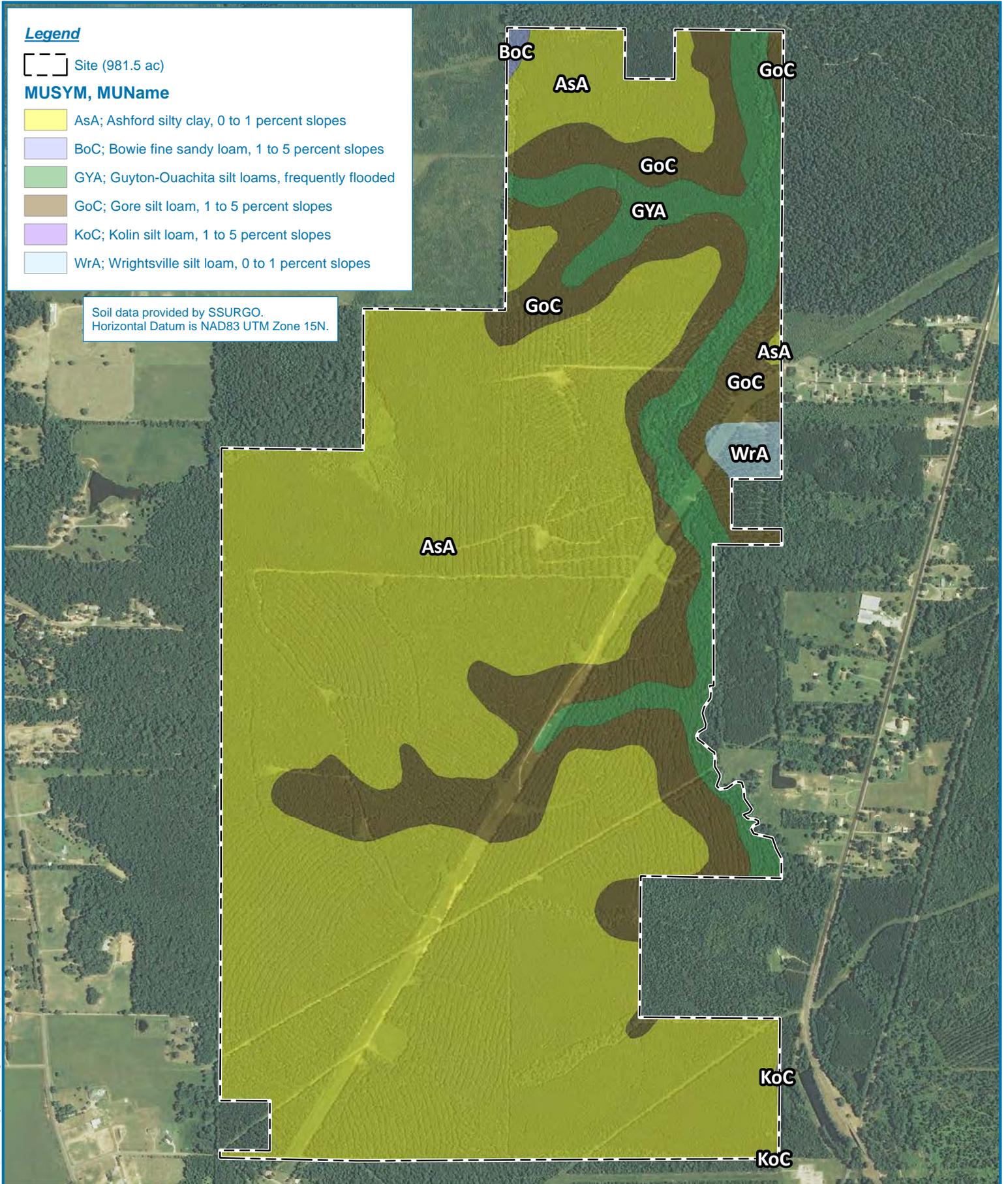


FIGURE 7

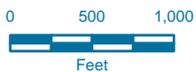
**RED CHUTE MITIGATION BANK
SOILS MAP**

BOSSIER PARISH, LOUISIANA

Date: 10/1/2015

Drawn by: BL

Checked by: RG



Legend

-  Site (981.5 ac)
-  BLH Rehabilitation (536.5 ac)
-  BLH Re-establishment (367.2 ac)
-  Existing BLH Area (36.1 ac)
-  Non-Mitigation Area (41.7 ac)

Horizontal Datum is NAD83 UTM Zone 15N.

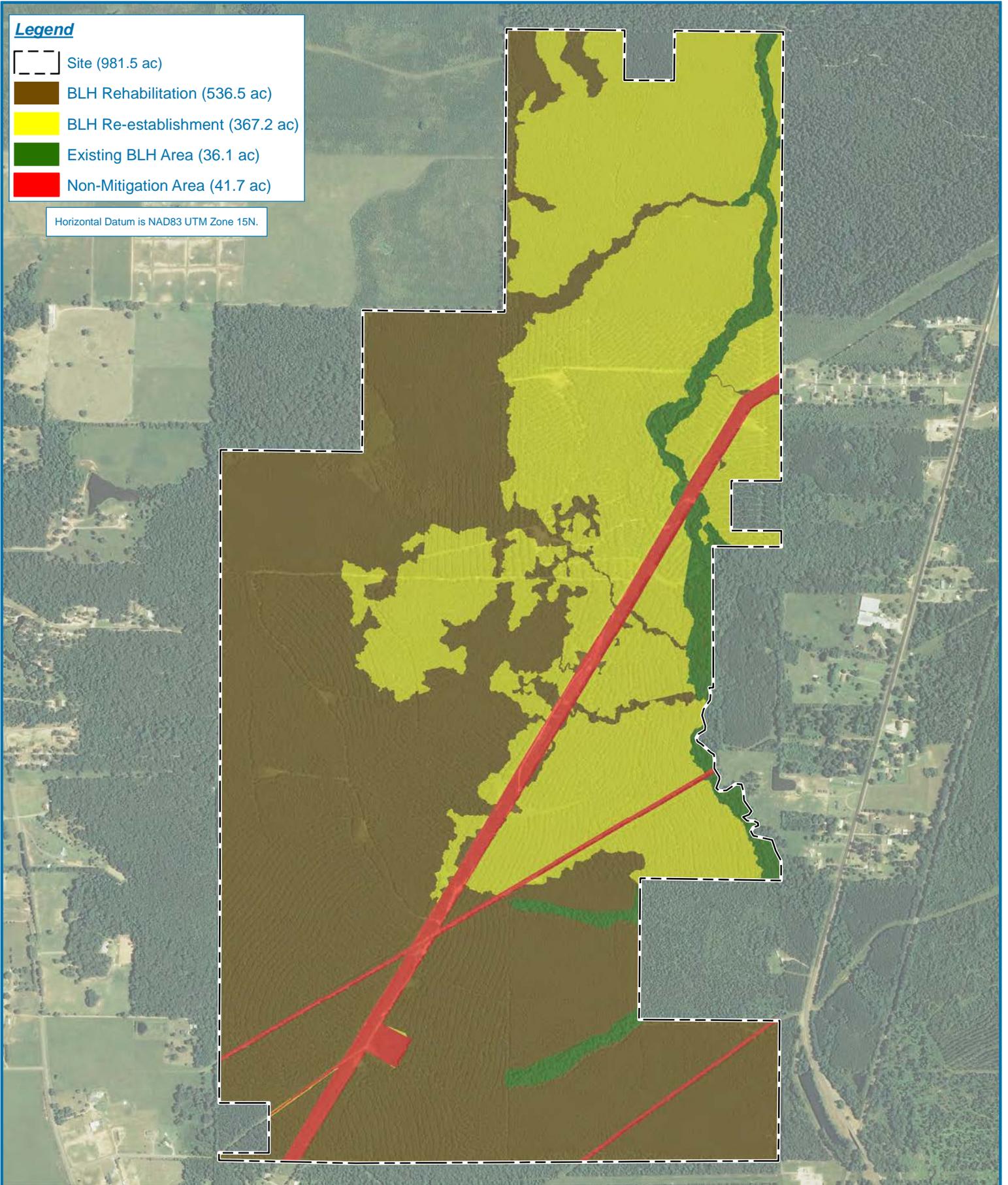


FIGURE 8

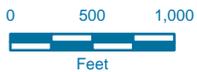
**RED CHUTE MITIGATION BANK
MITIGATION PLAN MAP**

BOSSIER PARISH, LOUISIANA

Date: 10/1/2015

Drawn by: BL

Checked by: xxxxxxxx



Document Path: E:\Desktop (RES)\RES\GIS\Projects\LA\Res_Chute\RedChute_MitigationBank\07\Figure8_RedChute_MitigationBank_082015.mxd

Legend

 Site (981.5 ac)

Imagery provided by USGS EarthExplorer.
Horizontal Datum is NAD83 UTM Zone 15N.

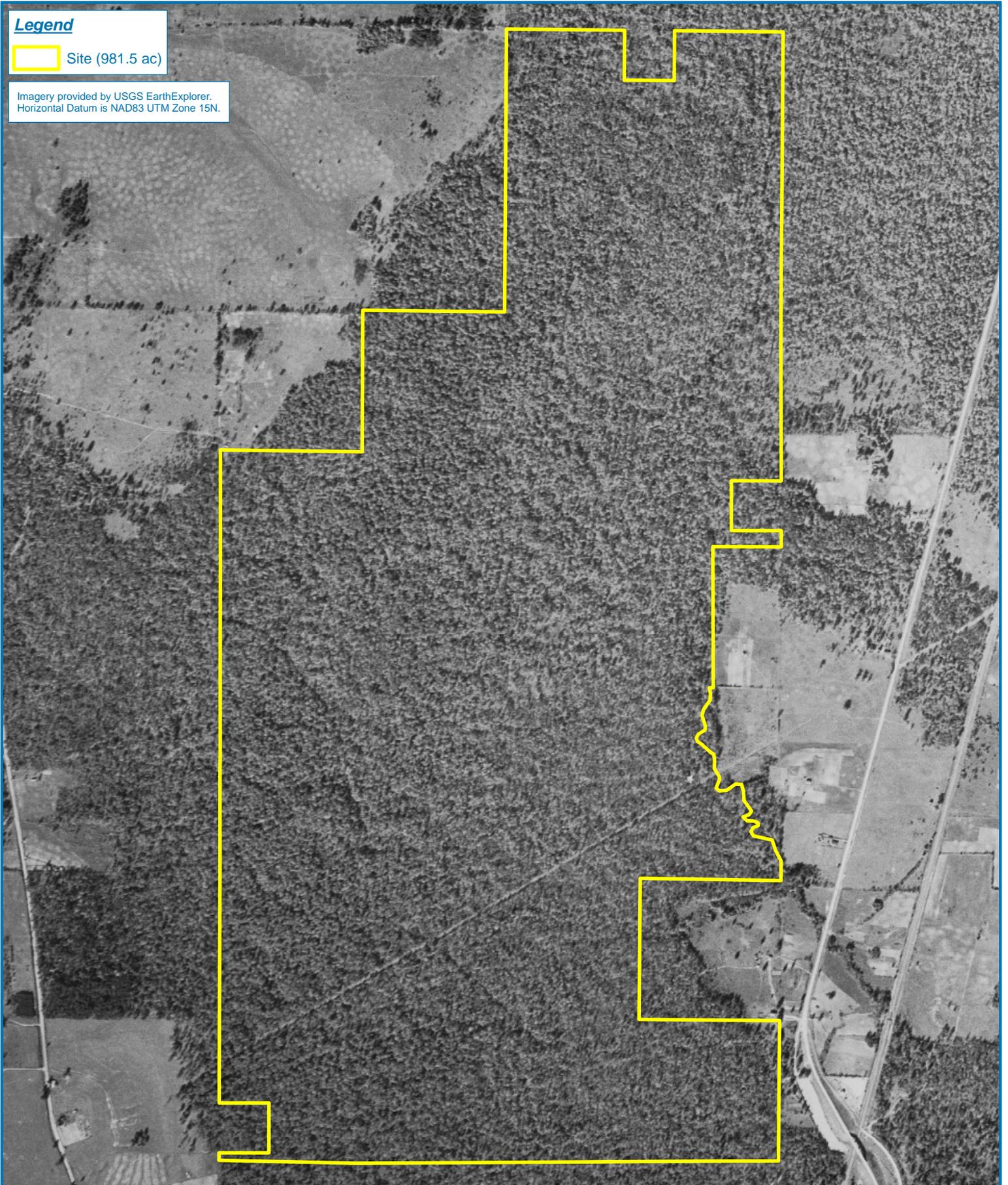


FIGURE -

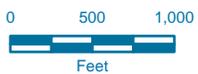
**RED CHUTE MITIGATION BANK
1947 AERIAL**

BOSSIER PARISH, LOUISIANA

Date: 10/1/2015

Drawn by: BL

Checked by: xxxxxxxx



Legend

 Site (981.5 ac)

Imagery provided by USGS EarthExplorer.
Horizontal Datum is NAD83 UTM Zone 15N.

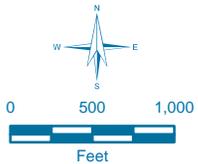
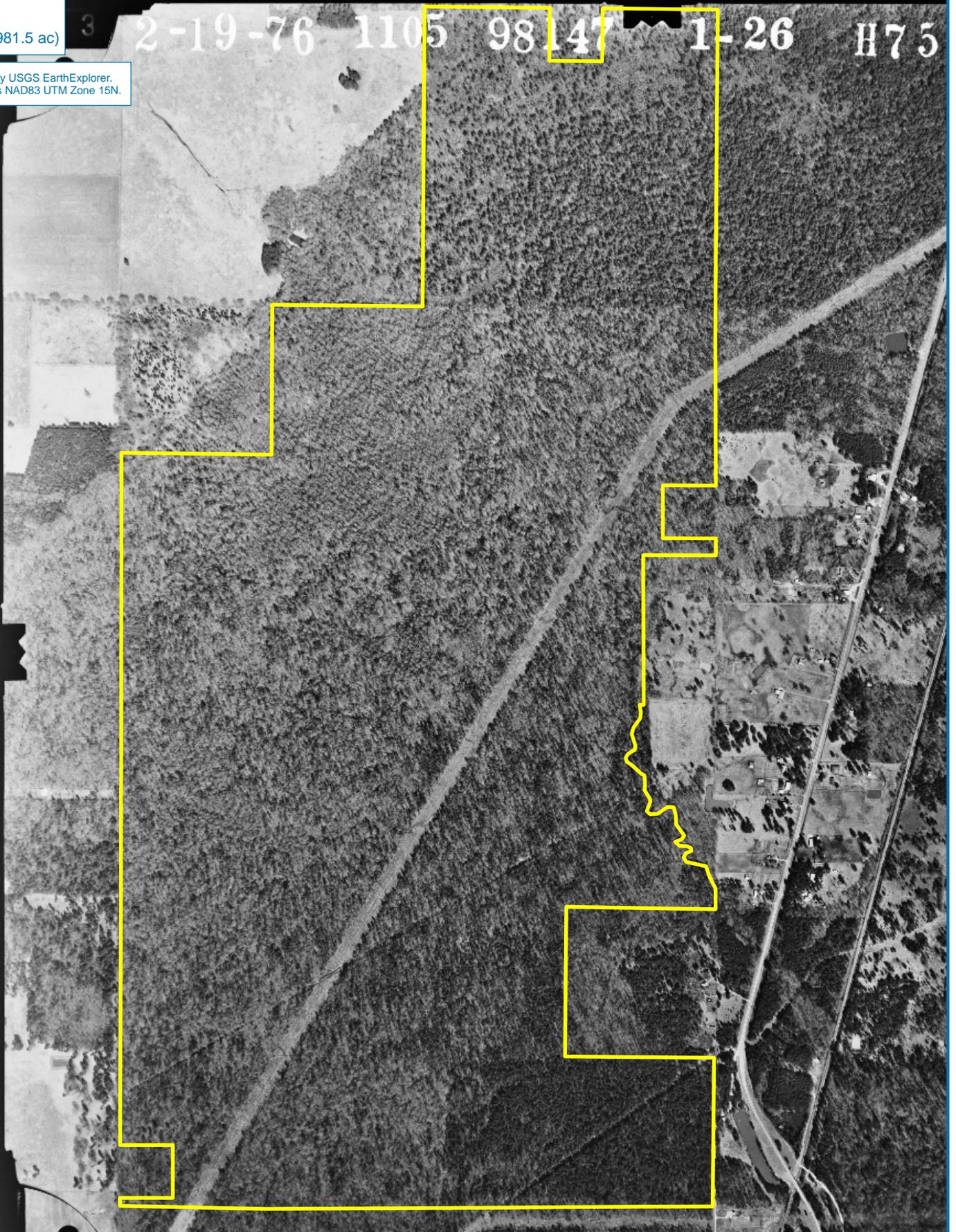


FIGURE -
RED CHUTE MITIGATION BANK
1976 AERIAL
BOSSIER PARISH, LOUISIANA

Date: 10/1/2015
Drawn by: BL
Checked by: xxxxxxxx



Document Path: E:\Desktop (RES)\RES\GIS\Projects\LA\Res_L_CheffedChute_MitigationBank\007\Figure_ResChute_1976Aerial.mxd

Legend

 Site (981.5 ac)

Imagery provided by LOSCO 1998 DOQQ.
Horizontal Datum is NAD83 UTM Zone 15N.

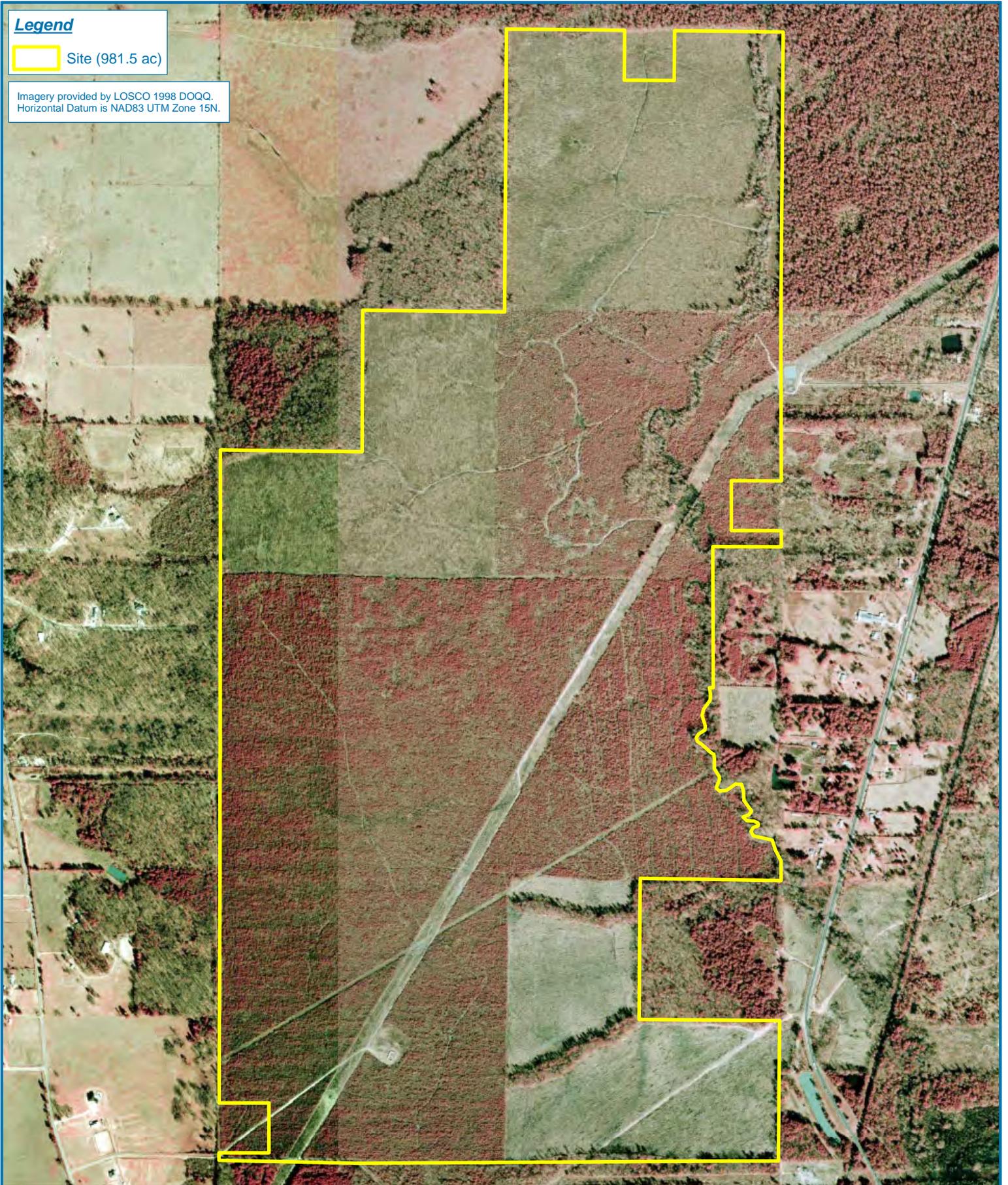


FIGURE -

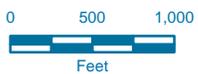
**RED CHUTE MITIGATION BANK
1998 AERIAL**

BOSSIER PARISH, LOUISIANA

Date: 10/1/2015

Drawn by: BL

Checked by: xxxxxxxx



Legend

 Site (981.5 ac)

Imagery provided by LOSCO 2004 DOQQ.
Horizontal Datum is NAD83 UTM Zone 15N.

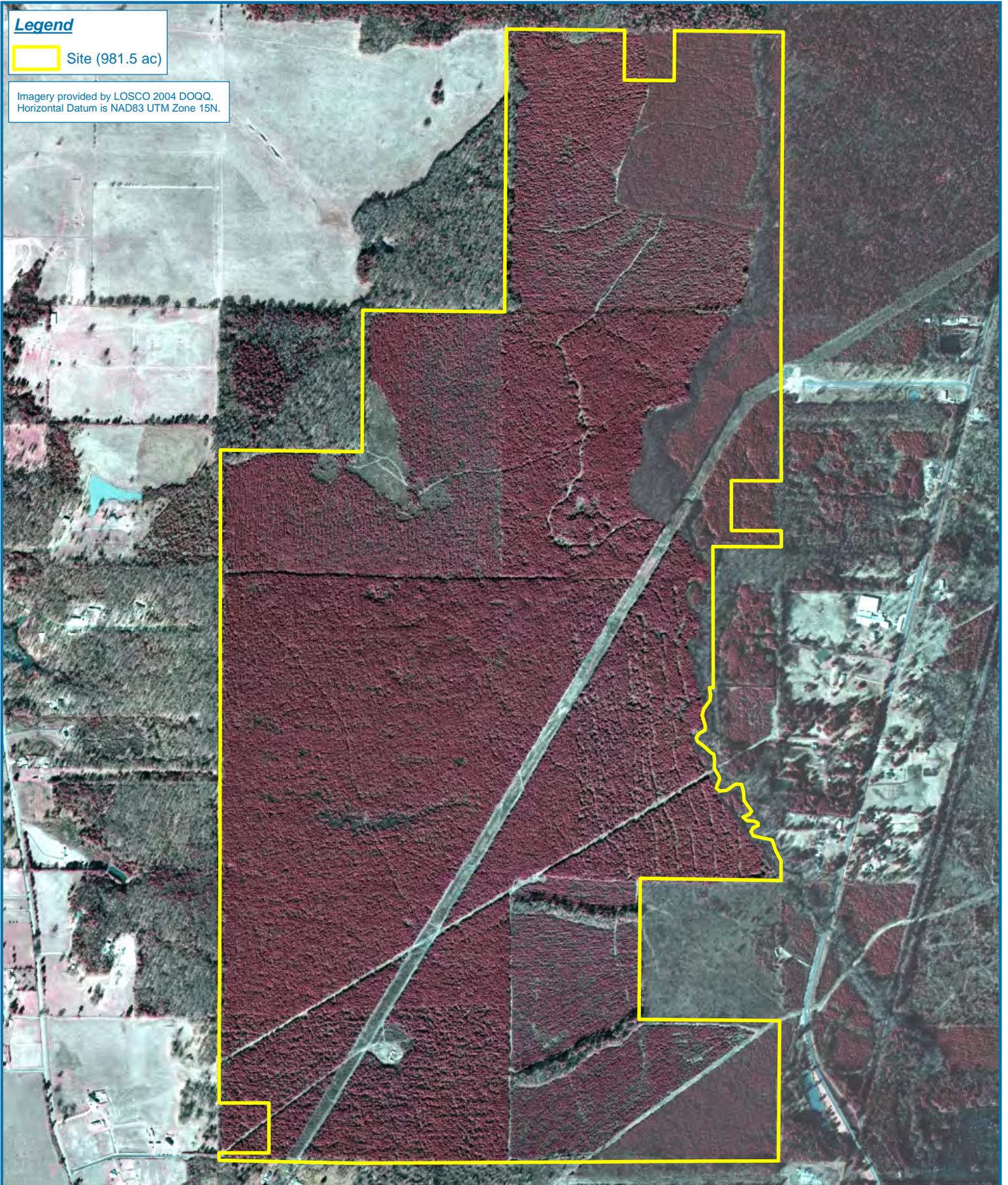


FIGURE -

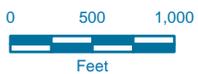
**RED CHUTE MITIGATION BANK
2004 AERIAL**

BOSSIER PARISH, LOUISIANA

Date: 10/1/2015

Drawn by: BL

Checked by: xxxxxxxx



Document Path: E:\Desktop (RES)\RES\GIS\Projects\Aerial_ChertfieldChute_MitigationBank\MO7\Figure_ResChute_2004Aerial.mxd

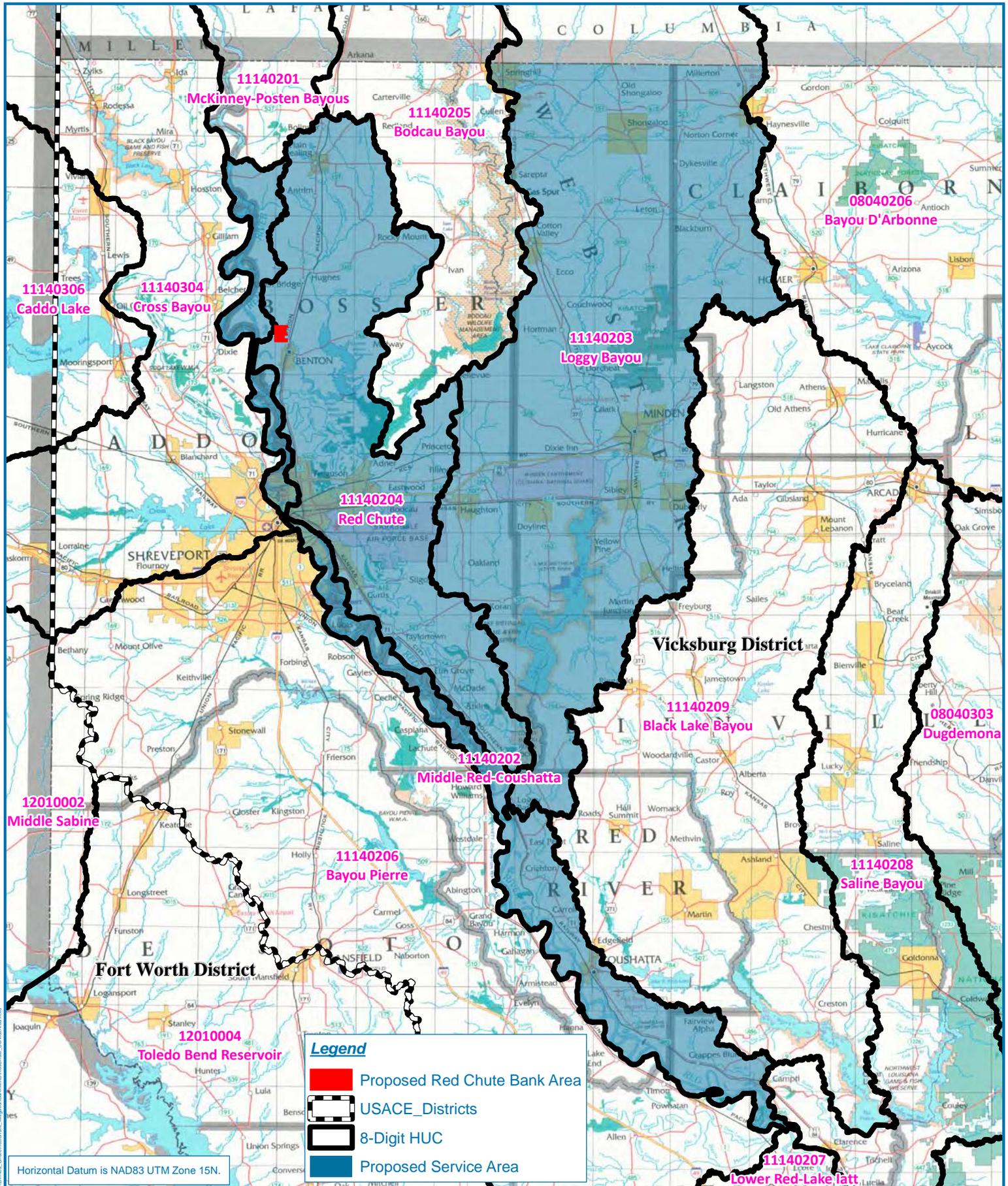


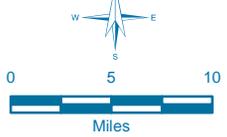
FIGURE 13

**RED CHUTE MITIGATION BANK
PROPOSED SERVICE AREA MAP
BOSSIER PARISH, LOUISIANA**

Date: 7/16/2015

Drawn by: BL

Checked by: xxxxxxxx



Document Path: E:\Desktop (RES)\RES\GIS\MapDocs\MapDocs\MitigationBank\0706\RedChute_ServiceArea.mxd

APPENDIX A



DEPARTMENT OF THE ARMY

VICKSBURG DISTRICT, CORPS OF ENGINEERS

4155 CLAY STREET

VICKSBURG, MISSISSIPPI 39183-3435

REPLY TO
ATTENTION OF:

August 27, 2015

Operations Division

SUBJECT: Determination of Permit Requirements – Resource Environmental Solutions, Red Chute Project Site, (1006.7 Acres) Benton, Louisiana; MVK-2015-466

Mr. Brighton Heard
Resource Environmental Solutions, LLC
412 N. Fourth Street, Suite 300
Baton Rouge, Louisiana 70802

Dear Mr. Heard:

I refer to your letter requesting a determination of Department of the Army permit requirements on the subject project area. The property is located in sections 7, 18, 19, T120N-R13W, Bossier Parish, Louisiana, as depicted on the enclosed map (enclosure 1).

Based upon the information provided, including your recent preliminary delineation, it appears there are jurisdictional areas within the proposed project area subject to regulation pursuant to Section 404 of the Clean Water Act. The approximate extent of jurisdictional waters of the United States is depicted on the enclosed preliminary map (enclosure 2). Any work involving the discharge of dredged or fill material (land clearing, ditching, filling, leveeing, etc.) within the limits of the jurisdictional areas identified will require a Department of the Army Section 404 permit prior to beginning work. Please note that this jurisdictional determination is preliminary and should be used for planning purposes only. A final determination of permit requirements will be made upon submission of a completed application, including final project plans. I have enclosed a copy of an appeals form (enclosure 3).

For your convenience, I am enclosing a Department of the Army permit application (enclosure 4). Your application for any proposed work in wetlands or other waters of the United States should be submitted at least 120 days in advance of the proposed starting date. To expedite the evaluation process, please refer to identification no. MVK-2015-466 when submitting the application or requesting project updates.

If we may be of any further assistance in this matter, please contact Mr. Robert Ulmer of this office, telephone (601) 631-5637, fax (601) 631-5459 or e-mail address: robert.g.ulmer@usace.army.mil.

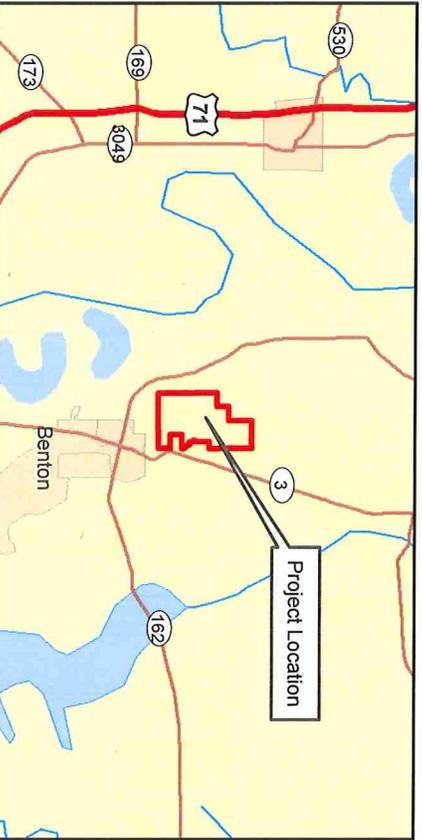
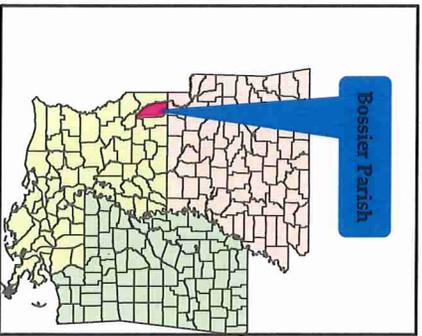
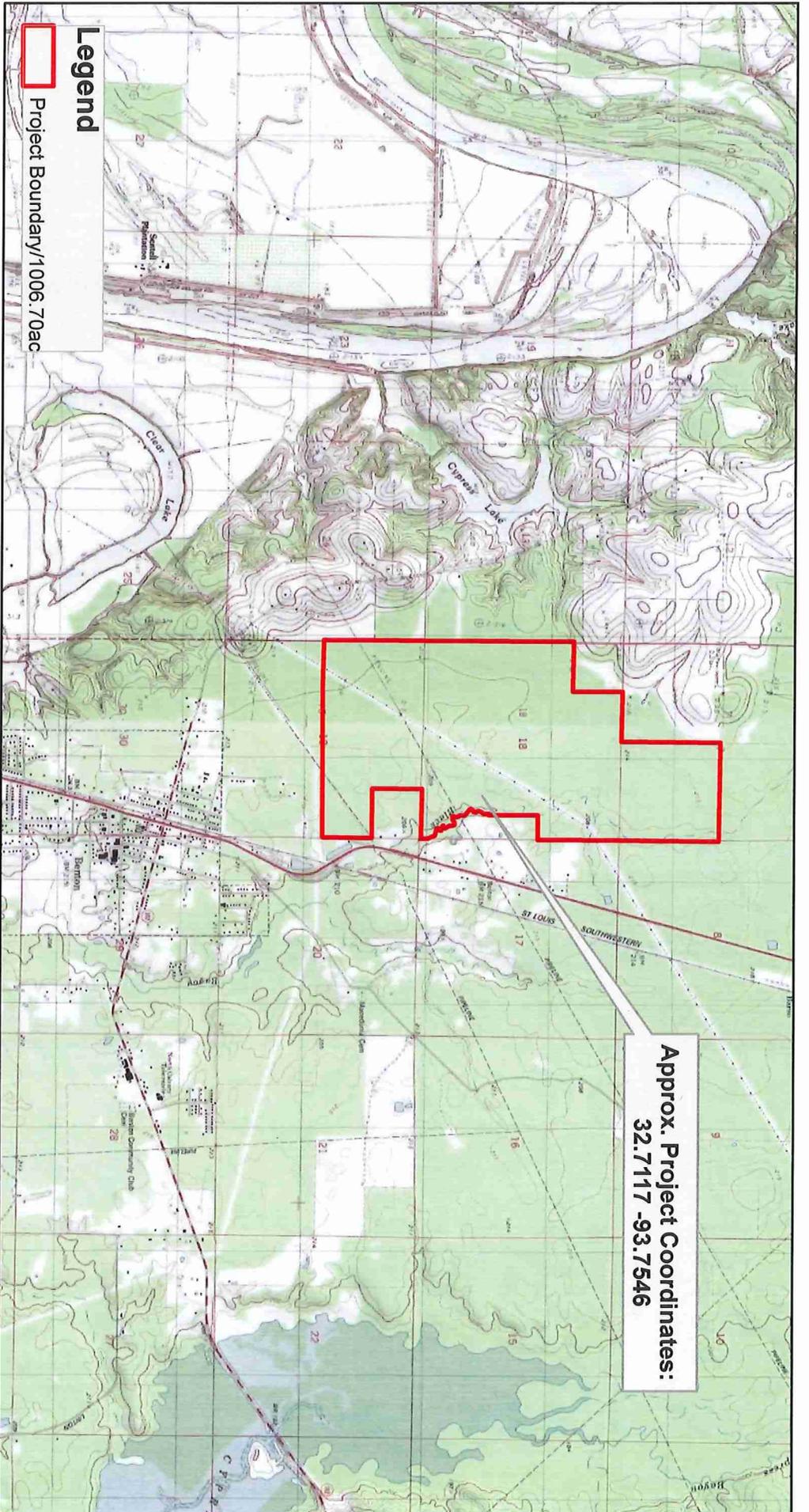
Sincerely,



Charles R. Allred, Jr.
Chief, Enforcement Section
Regulatory Branch

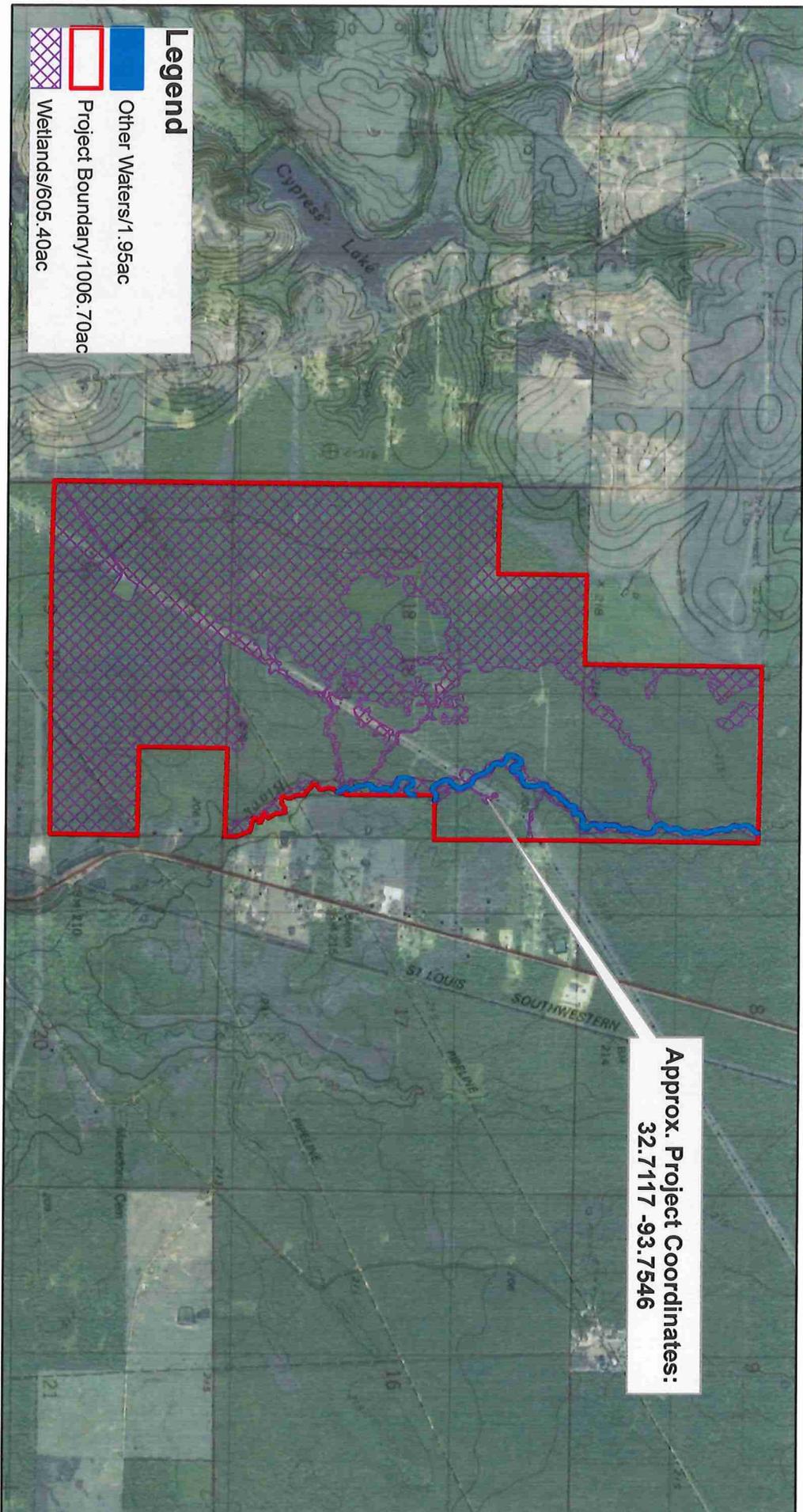
Enclosures

encl (1)



August 27, 2015
MVK-2015-466
 Applicant:
 Resource Environmental Solutions
 Proposed Work:
 Mitigation Bank Site
 Location:
 Sections 7,18,19, 120N-R13W
 Benton, Quadrangle
 Bossier Parish, LA
 Map Background:
 NAD 83 Aerial (2004)
Preliminary
Jurisdictional Determination
 Prepared by:
 Robert C. Ulmer, Jr.

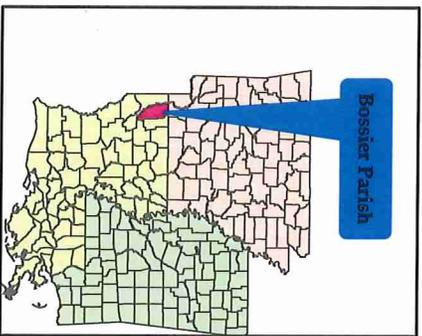

US Army Corps of Engineers
 Regulatory Branch
 Enforcement Section
 0 2,500 5,000
 Feet

Legend

-  Other Waters/1.95ac
-  Project Boundary/1,006.70ac
-  Wetlands/605.40ac

Approx. Project Coordinates:
32.7117 -93.7546



August 27, 2015
MVK-2015-466
 Applicant:
 Resource Environmental Solutions
 Proposed Work:
 Mitigation Bank Site
 Location:
 Sections 7, 8, 19, T20N-R13W
 Benton, Ouadangle
 Bossier Parish, LA
 Map Background:
 NAIP Aerial (2004)
Preliminary
Jurisdictional Determination
 Prepared by:
 Robert G. Ulmer, Jr.


US Army Corps of Engineers



Regulatory Branch
 Enforcement Section

0 1,400 2,800
 Feet