Exhibit 1

Memoranda asserting jurisdiction over wetlands that are more than 300 feet from a traditional navigable water

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
WATER

MEMORANDUM TO ASSERT JURISDICTION FOR SWG-2008-00648

Subject: Jurisdictional Determination for SWG-2008-00648 on Wetlands Adjacent to Traditional Navigable Waters

Summary

The U.S. Environmental Protection Agency (EPA) is asserting jurisdiction over four wetland complexes as wetlands adjacent to Traditional Navigable Waters (TNWs) for jurisdictional determination (JD) SWG-2008-00648, the Arapaho Holding wetlands. These wetlands fall within the meaning of the term adjacent wetland in the agencies' regulations and policies. This determination is based on EPA's finding that the wetlands are adjacent (as defined at 33 CFR 328.3(c) and 33 CFR 328.3(a)(7)) to the Gulf Intracoastal Waterway, Boggy Bayou, or Powderhorn Lake, all TNWs. This JD is consistent with the Clean Water Act (CWA), the agencies' regulations, relevant case law, and the legal memorandum *Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States ("Rapanos Guidance")*.

Background

This memorandum clarifies the basis for asserting CWA jurisdiction over the adjacent wetlands for JD SWG-2008-0648 in Calhoun County, Texas. The wetlands are adjacent to the Gulf Intracoastal Waterway (GIWW), Boggy Bayou, or Powderhorn Lake, all TNWs. This determination is based upon an examination of a combination of factors, including hydrologic connectivity and proximity.

Location and Setting

The entire project site encompasses approximately 11,000 acres in Port O'Connor, Texas. The subject wetlands are located at approximately 28.4° north latitude and -96.5° west longitude on the Arapaho Holdings site (see Exhibit 1). The wetlands at issue in this memorandum total approximately 802.6 acres in size. The wetlands are located on a barrier peninsula commonly referred to as the Calhoun Peninsula. The peninsula is comprised of 30 -50% wetlands and is surrounded by bays. The site is located on the Ingleside Barrier Strandplain, an ancient Pleistocene barrier island that faced the coast during higher sea levels 50,000 to 75,000 years ago. Due to deposition and lower sea levels, the strandplain has formed from a series of accumulated sandy beach ridges, and wind and water erosion over time have greatly modified the original ridge and swale topography of the area. Due to deposition and lower sea levels, the

strandplain has formed from a series of accumulated sandy beach ridges. The remnant dune-swale community still exists, as it does at the nearby Aransas National Wildlife Refuge Complex. Interdunal wetlands are typically formed as a result of oceanic processes where the wetlands establish in depressions and swales behind relic dune ridges. Several of the swale features that transverse the project site connect the wetlands to each other. Numerous circle upland mounds vegetated with Live oak (*Quercus virginiana*) are surrounded by lower, wetter areas that support freshwater to brackish wetlands and transitional areas. Located next to the GIWW, the environment consists of hummocky upland areas (dunes and mounds) surrounded by wind-tidal flats and salt marshes.

The U.S. Army Corps of Engineers (Corps) is asserting jurisdiction over an additional 317 wetlands on site, totaling 2,476.6 acres in size, which are not at issue in this memorandum. This includes the large "wetland mosaic area" – 1430.856 acres of palustrine scrub-shrub estuarine wetlands. The wetland mosaic lies between the wetlands in question to the north of the site and wetlands in question to the south of the site. The wetland mosaic is part of a wetland complex that continues off the project site and directly abuts Boggy Bayou, and a large channel that is mapped in the National Hydrography Dataset at high resolution flows throughout the length of the wetland mosaic to Boggy Bayou. The mosaic flows west to Boggy Bayou which is channelized to East Matagorda Bay.

The subject wetlands on the site are surrounded by other jurisdictional wetlands (the 2,476.6 acres of wetlands mentioned above) and by the bay system. The wetlands are in close proximity to each other and to the TNWs. The GIWW, Powderhorn Lake, East Matagorda Bay, Boggy Bayou are all subject to the ebb and flow of the tide[1] and thus are all TNWs. The GIWW (a TNW) is to the South of the project site, East Matagorda Bay and Boggy Bayou (both TNWs) are to the East, and Coloma Creek and Powderhorn Lake (both TNWs) are to the North. A stretch of barrier islands separates the site and the GIWW from San Antonio Bay. Additional barrier islands separate San Antonio Bay from Espiritu Santo Bay. Lanes Road and its associated drainage ditch immediately border the project site to the West. A large wetland continuum that is adjacent to Powderhorn Lake (a TNW) and State Highway 185 and its associated drainage ditch immediately border the site to the North. Prior to the construction of the highway, this wetland continuum extended onto the project site, and the wetlands in the northern interdunal wetland complex on the project site remain as part of this wetland continuum.[2]

There is no dispute with the Corps of Engineers that each of the subject wetlands meets the technical criteria laid out in the 1987 Corps of Engineers Wetlands Manual and the Interim Regional Supplement for the Atlantic and Gulf Coastal Plain Region. In addition to the hydrophytic vegetation that encompasses much of the project area, hydric soils also cover a majority of the site. Portions of the tract are mapped as mainly palustrine emergent wetlands (PEM), with a few palustrine scrub-shrub wetlands, in the National Wetlands Inventory (NWI). The NWI lists some of the areas as Upland/PEM—in these areas, there are a mix of both upland and palustrine emergent wetlands.

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[1] *See* 33 C.F.R. § 328.3(a)(1), 40 C.F.R. 230.3(s)(1).

[2] A wetland that has been separated by a road remains part of the same wetland.

CWA Jurisdictional Determination

The wetlands in the four wetland complexes (systems) for JD SWG-2008-00648 are jurisdictional because they are adjacent (as defined at 33 CFR 328.3(c) and 33 CFR 328.3(a)(7)) to the GIWW, Boggy Bayou, or Powderhorn Lake, all TNWs.

Basis for Determination[3]

EPA and Corps regulations define "waters of the United States" to include wetlands adjacent to other covered waters.[4] The regulations state: "The term adjacent means bordering, contiguous or neighboring. Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes, and the like are 'adjacent wetlands.'"[5] The agencies' *Rapanos* Guidance clarifies that finding a continuous surface connection is not required to establish adjacency under this definition.[6] In addition, the Guidance states, "the agencies consider wetlands adjacent if one of [the] following three criteria is satisfied. First, there is an unbroken surface or shallow sub-surface connection to jurisdictional waters. This hydrologic connection may be intermittent. Second, they are physically separated from jurisdictional waters by man-made dikes or barriers, natural river berms, beach dunes, and the like. Or third, their proximity to a jurisdictional water is reasonably close, supporting the science-based inference that such wetlands have an ecological interconnection with jurisdictional waters."[7]

The wetlands comprise four large wetland complexes. The north central subject wetlands are part of an integrated interdunal wetland system that flows south and southeast to the wetland mosaic and Boggy Bayou. The southern wetlands are part of an integrated wetland system that is an extension of the tidal marsh wetlands. The northwestern wetlands are part of an integrated interdunal wetland system that flows south to the GIWW. The northern wetlands are part of integrated interdunal wetland system that flows north to Powderhorn Lake, and Matagorda Bay. This is based on a variety of factors, including: reasonably proximity of the wetlands to each other, physical characteristics (size, shape), and the dominant wetland soils. Though the subject wetlands are grouped into different wetland complexes for purposes of this memorandum, all of the wetlands on the project site (including the other jurisdictional wetlands on site) act in concert as a critical part of the surrounding bay ecosystem.

The wetlands are adjacent to the GIWW, Boggy Bayou, or Powderhorn Lake. The adjacency determination for the wetlands is supported by their regular, periodic hydrologic connection to surrounding TNWs and their reasonably close proximity to the TNWs, supporting the science-based inference that the wetlands have an ecological interconnection with the TNWs.[8]

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[3] The memorandum summarizes the evidence considered by EPA in reaching this conclusion. Additional information regarding the determination is contained in the administrative record for this action.
[4] 33 C.F.R. 328.3(a)(7) and 40 C.F.R 230.3(s)(7).
[5] 33 C.F.R. 328.3(c) and 40 C.F.R 230.3(b).
[6] *Rapanos Guidance*, page 5.
[7] *Rapanos Guidance*, page 5-6.
[8] Note that the *Rapanos Guidance* states that only one of the three criteria mentioned on pages 5-6 of the Guidance needs to be present in order for a wetland to be adjacent.

The southern wetland system is comprised of the wetlands that lie between the mosaic and the GIWW. Most of the wetlands in the southern wetland system have sandy, saline soils (no aquitard), with a predominance of shoreline vegetation such as *Monanthochloe littoralis, Distchlis spicata, Juncus roemerianus, and Spartina patens*. The vegetative community and soils are very similar to those of the jurisdictional salt marsh wetlands on site, just to the south of this wetland system. These coastal wetlands in the southern wetland system have a periodic hydrologic connection to the bay system via unconfined, directional surface flow during extended hydroperiods and shallow subsurface flows.[9] Based on the topography of the site, the directional surface flow for this southern wetland system is generally to the south to the GIWW. Several wetlands in this southern wetland system have a periodic discrete, direct, surface hydrologic connection to the GIWW during extended hydroperiods, via jurisdictional wetland swales that are part of the jurisdictional salt marshes to the South. These jurisdictional wetland swales serve as hydrologic outlets from the subject wetlands to the GIWW (see Exhibit 2). Most of the soils at the project site are hydric, even in non-wetland areas, and there is likely shallow subsurface flow from the wetlands to the GIWW through the hydric soils, particularly in the spring time when the site is saturated or inundated for a long duration. These wetlands contribute water to the TNW and serve to store floodwaters by intercepting storm and floodwater that would otherwise enter the TNW, and release filtered water to the TNW in a more even and consistent manner throughout the year.[10] The wetlands in the complex are reasonably close to the GIWW (the complex is approximately 2,717 feet from the GIWW), with the jurisdictional salt marshes separating the wetlands from the TNW. The wetlands in the complex are also reasonably close to each other (the wetlands range from approximately eight to 2,041 feet from each other[11]).

The Ingleside Barrier Strandplain ecosystem is an ancient barrier island, and remnant dune-swale complexes still exist at the site, generally to the north of the jurisdictional wetlands mosaic. The interdunal wetlands in question comprise three large wetland complexes, which differ mainly in the general topography of the wetlands and where they flow. As described above, the north central subject wetlands are part of an integrated interdunal wetland complex that flows south and southeast to the wetland mosaic and Boggy Bayou; the northwestern wetlands are part of an integrated interdunal wetland complex that generally flows south to the GIWW; and the northern wetlands are part of integrated interdunal wetland complex that flows north to Powderhorn Lake and Matagorda Bay. The three interdunal wetland systems are comprised largely of freshwater depressional wetlands dominated by *Sesbania drummondii*. Many of the wetlands in the systems have a clay aquitard at approximately 12 inches and would pond water 1-3 feet deep during hydroperiods. These wetlands appear to be the wetlands referenced in the Environmental Geologic Atlas of Texas as forming local, shallow aquifers,

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[9] *See, e.g.*, McKinney, L.D. 2003. Texas Parks & Wildlife. Comment Letter on the Advance Notice of Proposed Rulemaking on the Clean Water Act Regulatory Definition of "Waters of the United States." Docket ID: EPA-HQ-OW-2002-0050-2781. pp. 8-9, 14-15.

[10] Although the wetlands in this jurisdictional determination are not within the mapped Federal Emergency Management Agency (FEMA) 100-year floodplain, there is nothing in the CWA or the agencies regulations or policies that limit adjacency to wetlands within the 100-year floodplain.

[11] The individual wetlands that are most distant from others within their described wetland complex are typically much closer in distance to individual wetlands already determined to be jurisdictional by the Corps.

commonly with perched water tables.[12] The surrounding sandy soils receive lateral shallow, subsurface flow from these local, shallow aquifers, connecting the wetlands on the subsurface to each other and to the nearby TNWs. These wetlands likely provide significant surface and shallow sub-surface flows for long duration during and after hydroperiods to the TNWs either directly or via non-tidal waterbodies. Several swale features that transverse the project site connect the wetlands within each wetland complex to each other and to other wetlands on the project site (Exhibit 3 identifies one such swale; aerial photo interpretation can identify others, and scientific literature documents their role in connecting individual wetlands in a dune-swale typography[13]).

Based on an examination of the site location and characteristics for the project wetlands, the north central interdunal wetlands that lie to the north of the mosaic are part of an integrated interdunal wetland complex that is adjacent to the surrounding TNWs. Generally, the topography in the north central interdunal wetland system slopes to the Southwest, toward the wetland mosaic and Boggy Bayou. These wetlands are acting as an integrated wetland system, with the wetlands in close proximity to each other (the wetlands range from approximately 12 to 1,410 feet from each other; however, those that are further apart are often separated by other jurisdictional wetlands that are not part of the same wetland complex[14]). There is unconfined, directional surface flow between the wetlands and the surrounding TNWs. These wetlands contribute water to the TNW and serve to store floodwaters by intercepting storm and floodwater that would otherwise enter the TNW, and release filtered water to the TNW in a more even and consistent manner throughout the year. In addition, roadside ditches on the project site serve to periodically connect some of the wetlands in the complex to Boggy Bayou and East Matagorda Bay via the wetland mosaic. The wetland complex is approximately 1,605 feet from the channel that runs through the wetland mosaic east to Boggy Bayou and East Matagorda Bay.

Based on an examination of the site location and characteristics for the project wetlands, the northern interdunal wetlands that lie along the northern border of the site are part of an integrated interdunal wetland complex that is adjacent to Powderhorn Lake, a TNW. The northern wetland complex includes the large wetland continuum that lies to the north of the project site and is separated from the project site by State Highway 185. These wetlands are acting as an integrated wetland system, with the wetlands in close proximity to each other and to the TNW (the wetlands range from approximately one to 3,393 feet from each other; however, those that are further apart are separated by jurisdictional wetlands not at issue in this memorandum that are in the same larger wetland complex[15]). Topography in the northern wetland complex generally slopes to the northeast, to Powderhorn Lake, a TNW. However, a few of the interdunal swales in the landscape periodically connect wetlands in the complex to wetlands and TNWs south and southeast of the complex (for example, see Exhibit 4). These wetlands are acting as an integrated wetland system, with the wetlands in close proximity to each other. There is unconfined, directional surface flow between the wetlands and the surrounding TNWs. These wetlands contribute water to the TNW and serve to store floodwaters by

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[12] McGowen, J.H., C.V. Proctor, Jr., L.F. Brown, Jr., T.J. Evans, W.L. Fisher, and C.G. Groat. 1976. *Environmental Geologic Atlas of the Texas Coastal Zone; Port Lavaca Area.* Austin: Bureau of Economic Geology, University of Texas at Austin. p. 48.

[13] *See, e.g.*, Rheinhardt, R.D, and K. Faser. 2001. Relationship between Hydrology and Zonation of Freshwater Swale Wetlands on Lower Hatteras Island, North Carolina, USA. *Wetlands* 21(2): 265-273. p. 266.

[14] See Footnote 11.

[15] See Footnote 11.

intercepting storm and floodwater that would otherwise enter the TNW, and release filtered water to the TNW in a more even and consistent manner throughout the year. Though on the project site, the wetland complex is approximately 4,950 feet from a mapped tributary of Powderhorn Lake, the distance of the entire wetland complex as a whole is much closer to the TNW. This is because the larger wetland complex that includes the northern interdunal wetland system extends north of the project site and neighbors Powderhorn Lake.

Based on an examination of the site location and characteristics for the project wetlands, the northwestern interdunal wetlands that lie along the northwestern corner of the site are part of an integrated interdunal wetland complex that is adjacent to the GIWW. These wetlands are acting as an integrated wetland system, with the wetlands in close proximity to each other and to the TNW (the wetlands range from approximately one to 1,014 feet from each other). Topography in the northwestern wetland complex generally slopes to the south. The wetland complex flows to the GIWW, a TNW, via the roadside ditch system that runs for a length along Lanes Road. The roadside ditch system serves as a periodic discrete, direct, surface hydrologic connection from the wetland complex to the GIWW. However, with the interdunal swale topology at the project site, a few of the interdunal swales in the landscape periodically connect wetlands in the complex to other wetlands and TNWs. Ditches may also periodically connect the wetlands in this complex to Boggy Bayou, via the wetland mosaic. These wetlands are acting as an integrated wetland system, with the wetlands in close proximity to each other. There is unconfined, directional surface flow between the wetlands and the surrounding TNWs. These wetlands contribute water to the TNW and serve to store floodwaters by intercepting storm and floodwater that would otherwise enter the TNW, and release filtered water to the TNW in a more even and consistent manner throughout the year. The northwestern wetland complex is approximately 15,086 feet from the GIWW, but the wetlands flow directly into the roadside ditch system that flows to the GIWW. The ditches and channels are mapped in the National Hydrography Dataset (NHD) at high resolution.

The wetlands in the wetland systems are reasonably close to the Gulf Intracoastal Waterway, Boggy Bayou, or Powderhorn Lake, and have an ecological interconnection with the TNWs. They provide significant natural biological functions including food chain production, general habitat, and nesting, feeding, spawning, rearing and resting sites for aquatic species that can also utilize the surrounding TNWs and RPWs, including GIWW, Boggy Bayou, Powderhorn Lake. For wetlands that are reasonably close, according to the *Rapanos Guidance*, "Because of the scientific basis for this inference [that such wetlands have an ecological interconnection with jurisdictional waters], determining whether a wetland is reasonably close to a jurisdictional water does not generally require a case-specific demonstration of an ecologic interconnection. In the case of a jurisdictional water and a reasonably close wetland, such implied ecological interconnectivity is neither speculative nor insubstantial."[16] Due to close proximity of the wetlands to the TNWs, it is reasonable to infer that amphibians, water snakes, and other aquatic and semi-aquatic organisms likely rear their young in the adjacent wetlands during extended hydroperiods and use the TNWs and the wetlands interchangeably throughout their life stages.

An additional basis for asserting CWA jurisdiction over the wetlands in question is that each wetland, when considered in combination with similarly situated wetlands, has a significant

[16] *Rapanos Guidance*, page 6.

nexus to TNWs. While wetlands adjacent to TNWs are *per se* jurisdictional without the need for a significant nexus evaluation, this memorandum nonetheless discusses the specific functional relationship each wetland has with the nearby TNWs. Each wetland system, which is comprised of many individual wetlands, can be evaluated as similarly situated wetlands in the region. Thus, when considering each individual wetland in combination with similarly situated wetlands in the region (the other wetlands in the wetland system), each wetland system significantly affects the chemical, physical, and biological integrity of traditional navigable waters.[17] The *Rapanos* guidance interprets the phrase similarly situated "to include all wetlands adjacent to the same tributary."[18] The individual wetland systems are similarly situated due to their position in the landscape, their similar vegetation and soil types, and their proximity to each other and to the waters to which they are adjacent. As the primary area of exchange with surrounding bay waters, these high quality coastal wetland systems naturally retain and filter precipitation and runoff from surrounding lands, protecting the physical, chemical and biological integrity of downstream TNWs. The wetlands also support quality habitat for aquatic and semi-aquatic life.

Conclusion

The wetlands for JD SWG-2008-00648 fall within the meaning of the term "wetlands" as defined in the agencies' regulations and policies. EPA has determined that these wetlands are jurisdictional under the CWA because they are adjacent (as defined by 33 CFR 328.3(c) and 33 CFR 328(a)(7)) to the Gulf Intracoastal Waterway, Boggy Bayou, or Powderhorn Lake, all TNWs. This determination is supported by their periodic hydrologic connection to the TNWs and their reasonably close proximity to the TNWs, supporting the science-based inference that the wetlands have an ecological interconnection with the TNWs. While wetlands adjacent to TNWs are *per se* jurisdictional, each wetland complex also has a significant nexus to the TNWs.

Peter S. Silva (Date) 7/9/10
Assistant Administrator
Office of Water
U.S. Environmental Protection Agency

[17] *See* 126 S.Ct. 2208 (2006) at 2248.
[18] *Rapanos Guidance*, page 9.

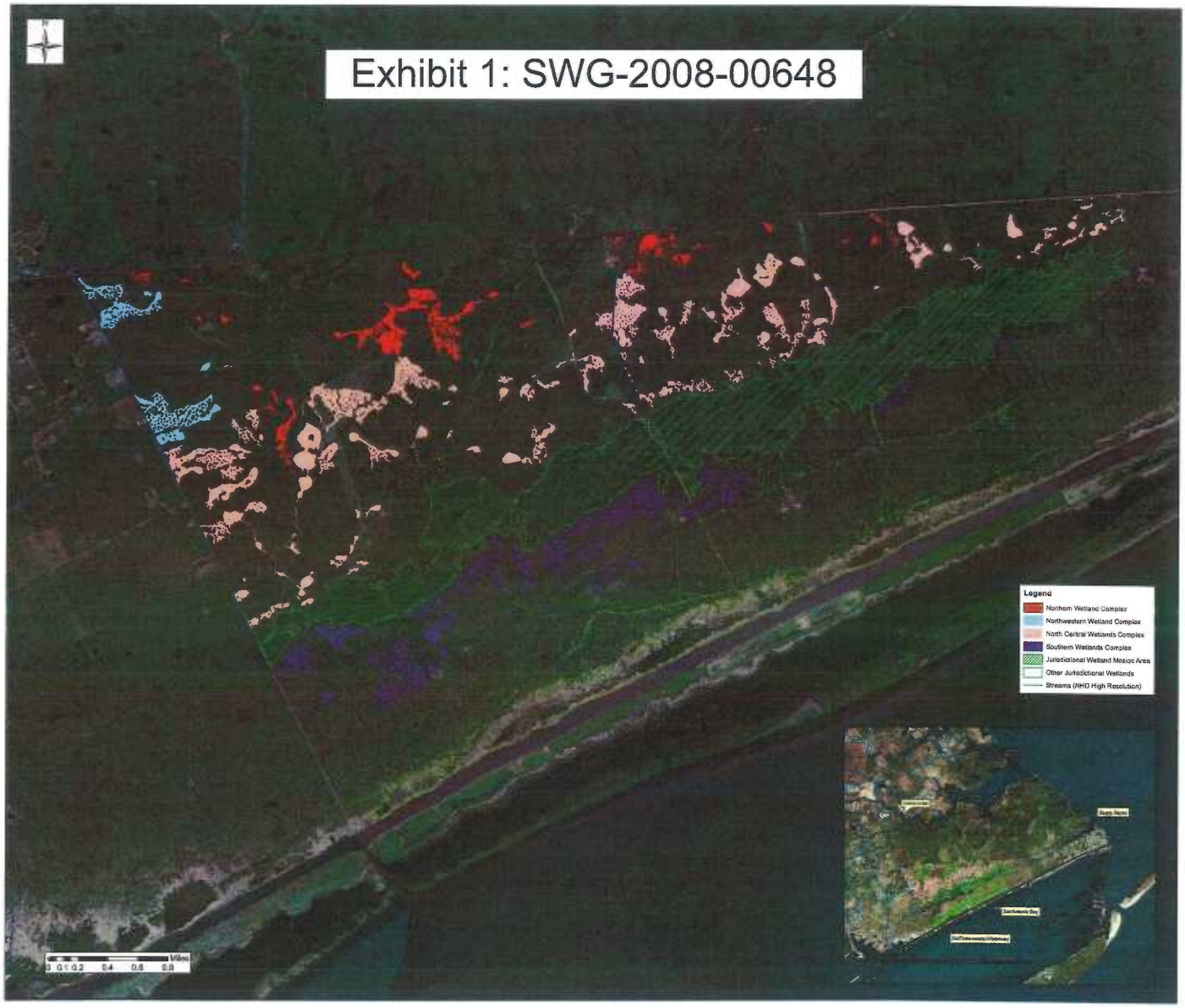
Exhibit 1: SWG-2008-00648
Legend
Northern Wetland Complex
Northwestern Wetland Complex
North Central Wetlands Complex
Southern Wetlands Complex
Jurisdictional Wetland Mosaic Area
Other Jurisdictional Wetlands
Streams (NHD High Resolution)

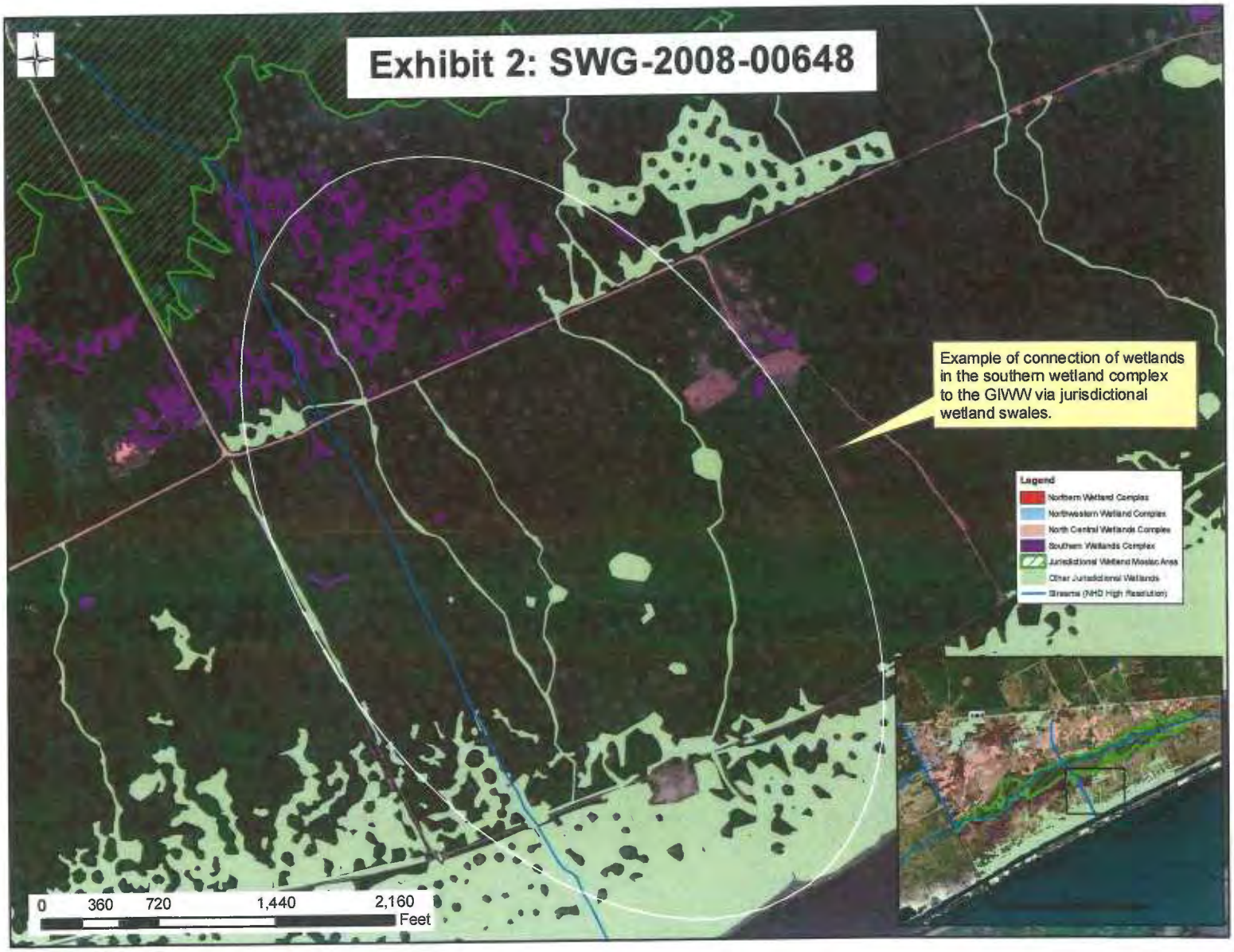
Exhibit 2: SWG-2008-00648
Example of connection of wetlands in the southern wetland complex to the GIWW via jurisdictional wetland swales.
Legend
Northern Wetland Complex
Northwestern Wetland Complex
North Central Wetlands Complex
Southern Wetlands Complex
Jurisdictional Wetland Mosaic Area
Other Jurisdictional Wetlands
Streams (NHD High Resolution)
0 360 720 1,440 2,160
Feet

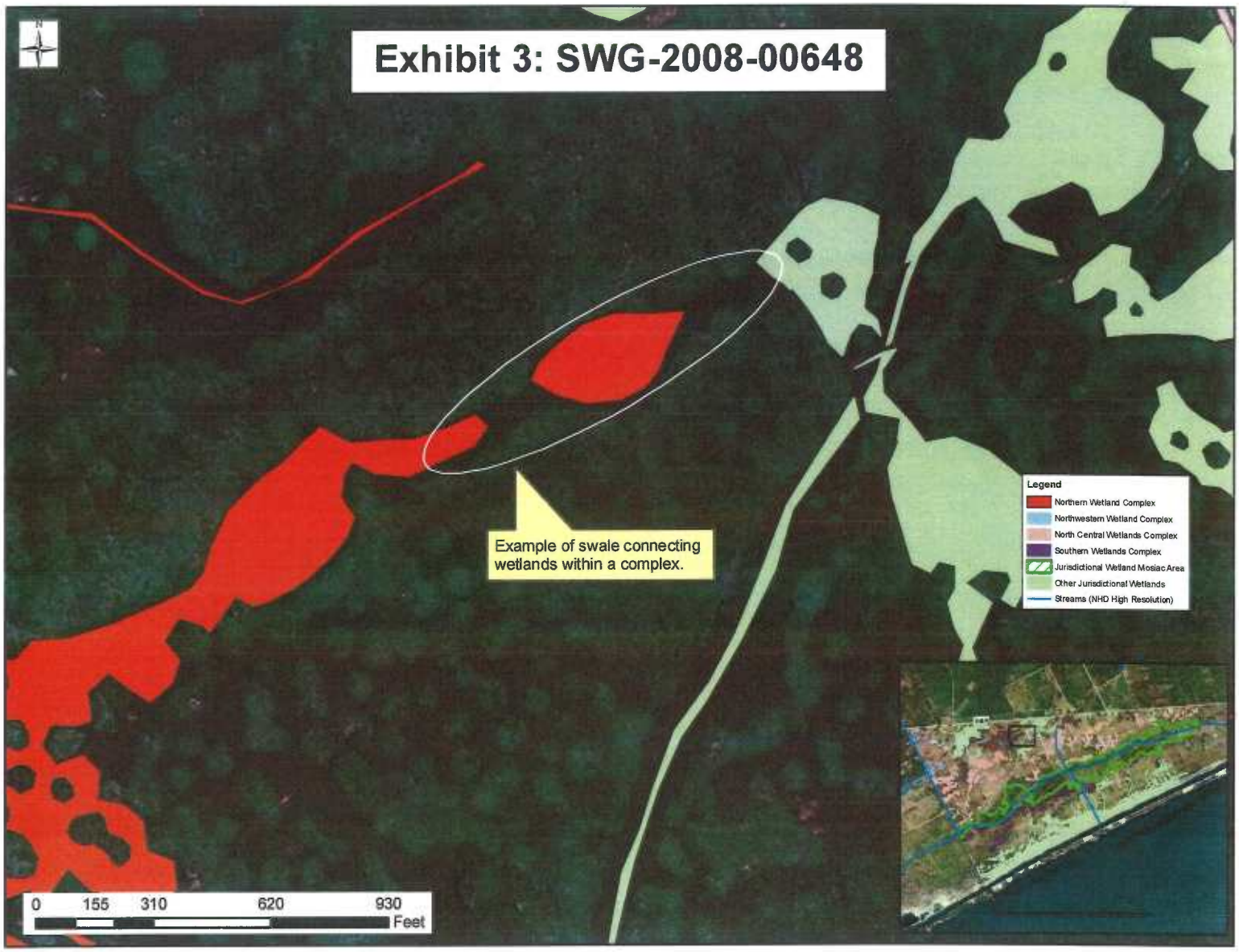
Exhibit 3: SWG-2008-00648
Example of swale connecting wetlands within a complex.
Legend
Northern Wetland Complex
Northwestern Wetland Complex
North Central Wetlands Complex
Southern Wetlands Complex
Jurisdictional Wetland Mosiac Area
Other Jurisdictional Wetlands
Streams (NHD High Resolution)
0 155 310 620 930
Feet

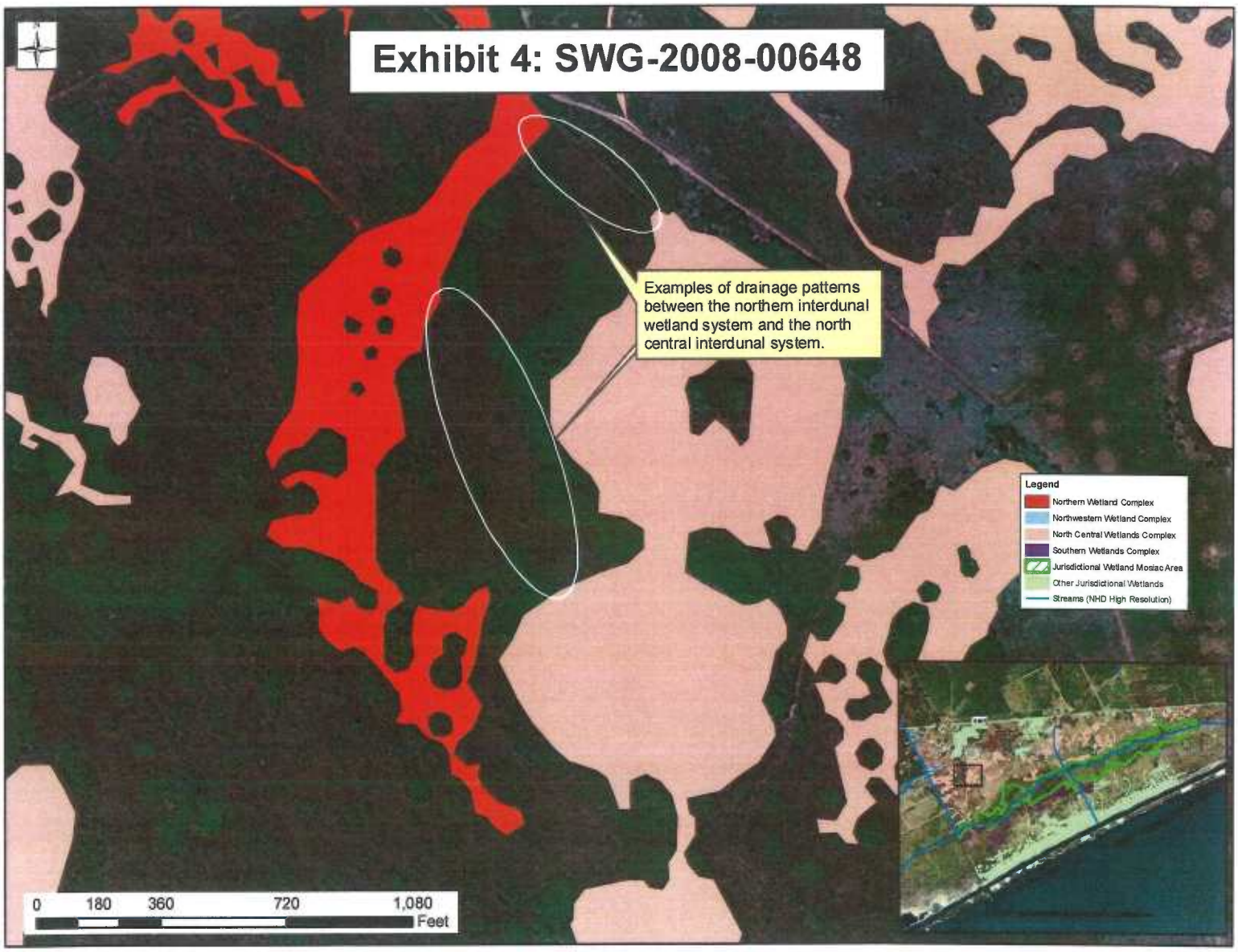
Exhibit 4: SWG-2008-00648
Examples of drainage patterns between the northern interdunal wetland system and the north central interdunal system.
Legend
Northern Wetland Complex
Northwestern Wetland Complex
North Central Wetlands Complex
Southern Wetlands Complex
Jurisdictional Wetland Mosiac Area
Other Jurisdictional Wetlands
Streams (NHD High Resolution)
0 180 360 720 1,080
Feet

MEMORANDUM TO ASSERT JURISDICTION FOR SAS-2007-670

Subject: Jurisdictional Determination (JD) for SAS-2007-670 on Interdunal Wetlands Adjacent to Traditional Navigable Waters (TNWs)

Summary

The U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (Corps) are asserting jurisdiction over 28 interdunal wetlands for JD SAS-2007-670. This determination is based on our finding that these wetlands are adjacent (as defined at 33 CFR 328.3(c) and 33 CFR 328.3(a)(7)) to Julienton River and Little Mud River, both TNWs since they are subject to the ebb and flow of the tide.[1] This JD is consistent with the CWA, the agencies' regulations, relevant case law and the legal memorandum *Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States ("Rapanos Guidance").*

I. Introduction

This memorandum establishes the basis for asserting jurisdiction over 28 interdunal wetlands for JD SAS-2007-670. First, we provide a baseline assessment (in Section II) to demonstrate that all 28 wetlands are functioning as an integrated interdunal system. After the baseline assessment, we provide the basis for determining that the interdunal wetland system is adjacent to the TNWs. This determination is based upon an examination of a combination of factors including proximity, hydrologic connectivity, position in the landscape, and other physical factors that demonstrate the wetlands are adjacent to the TNWs.

II. Baseline Assessment for Interdunal Wetland System

Based on an examination of the site location and characteristics for the project wetlands, all 28 wetlands subject to this JD are part of an integrated interdunal wetland system. This is based on a variety of factors, including: proximity of the wetlands to each other and the TNWs, physical characteristics (size, shape, location in floodplain), and the dominant wetland soils.

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[1] *See* 33 C.F.R. § 328.3(a)(1), 40 C.F.R. 230.3(s)(1).

A. Location

The project site for this JD encompasses 1267.41 acres and is located at 31.575° north latitude and -81.294° west longitude on the Julienton Plantation site on Harris Neck. Harris Neck is a relic barrier island that is now a peninsula to the larger island complex including Harris Neck National Wildlife refuge and surrounding islands and wetlands. The wetlands of Wahoo Island Natural Area, the southern end of St. Catherine's Island (a barrier island) and Sapelo Sound separate the Harris Neck from the Atlantic Ocean. The project site on Harris Neck consists predominately of an interdunal environment, which supports 28 interdunal wetlands totaling approximately 154.72 acres in size. The wetlands are in close proximity to each other and to the surrounding TNWs, with Julienton River to the west and south and Little Mud River to the East. (*See* Exhibit 1.)

B. Site Characteristics for Project Area

The project area is located on a barrier island, which is a narrow strip of sand located some distance offshore of the mainland. Barrier islands form along seacoasts throughout the world whenever there is adequate supply of sand, a low sloping coastal plain, and a wave dominated energy regime with tidal ranges less than three meters.[2] The actions and energy of the ocean initiate the formation of barrier islands and its series of dune ridges, interdunal depressional areas, and freshwater interdunal wetlands. Barrier islands can be very transient in that sea level, anthropogenic effects, and storm events can cause barrier islands to migrate landward, seaward, or laterally with adequate sand supplies and longshore currents. As these barrier islands mature and migrate, they typically form a series of dunes. The primary and secondary dunes generally occur near the shorefront and migrate in direct response to the seasonal stresses of wind and oceanic processes.[3] Behind these more active dune fields, more stable fields generally develop. These areas typically support vegetation, including perennial shrubs, trees and vines. As a result of the more stable environment and increased vegetation, topographic relief in these areas is generally less pronounced than those dunes on the shorefront. In both cases, the environmental conditions may create depressional areas behind the dune ridges; it is in these areas that freshwater interdunal wetlands may occur. Generally, precipitation will easily permeate sand and accumulate within a fresh water zone or freshwater lens beneath the surface of the barrier island. Where this freshwater table intersects the surface of the barrier island, freshwater wetlands may be found in the interdunal depressional areas atop a higher density salt water lens. This interface can be sharp or may grade slowly with depth into salt water in a transition zone discernible by increasing salinity.[4] The project wetlands have formed all over the Harris Neck site, both

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[2] Bascom, W. 1980. *Waves and beaches, the dynamics of the ocean surface*. Anchor Press, Garden City. 366 pp.

[3] For example, during the summer, the beaches and dunes will generally grow in width as the mild summer waves supply the onshore areas with sand and the gentle breezes blow that sand back into the dune fields. During the winter, the processes reverse.

[4] Collins, W.H. III, and D.H. Easley. 1999. Fresh-water Lens Formation in an Unconfined Barrier-Island Aquifer. *Journal of the American Water Resources Association* 35(1): 1-21.

between the NE-SW oriented dune ridges and along the tidal marsh fringe.

The overall land use in the immediate project area consists predominantly of a natural interdunal landscape, where the upland community extends to the marshes and open waters of Julienton River and Little Mud River. A few houses are scattered across the site and four artificial bodies of open water are located on the southwestern end of Harris Neck. Harris Neck in the project area is a peninsula reaching from northeast to southwest. The northeast to southwest length is approximately 12,960 feet and the northwest to southeast width is approximately 5,000 feet at the widest point.

C. Site Characteristics for Project Wetlands

The overall project site consists predominantly of an interdunal environment, supporting freshwater interdunal wetlands ranging from 0.35 acres to 31.71 acres and totaling approximately 154.72 acres. These wetlands are in close geographic proximity to one another and vary in distance from 0 to 1,820 feet from the above listed TNWs. The wetlands are shown on Exhibit 2.

The wetlands are in close proximity to each other and to the surrounding TNWs. The location of the wetlands range from abutting to 4,320 feet from open water or the marsh line of Julienton River and abutting to 4,240 feet from the open water or the marsh line of Little Mud River. However none of the 28 wetlands are further than 1,820 feet from either of TNWs. Eight of the wetlands abut the open water or tidal marshes of the TNWs. The twenty other wetlands lie among the dunes of Harris Neck. The wetlands' size (total of 154.72 acres) and location in relation to the short distance to the TNWs indicates a close physical relationship between the wetland system and the TNWs.

Interdunal wetlands are typically formed as a result of oceanic processes where the wetlands establish behind relic dune ridges. After being separated from the Atlantic Ocean by another barrier island, contemporary Harris Neck is functioning very similarly to a relic dune ridge. The interaction of the sediment laden Julienton River and Little Mud River together with the rise and fall of the tides continue to reshape the marshes, open water spaces, and upland edges of Harris Neck. Harris Neck is relatively protected from wave action. This has allowed the peninsula's dune ridges and interdunal wetlands to become vegetated. Moreover, the upland dune ridges on Harris Neck remain relatively protected, which has allowed these interdunal wetlands to form along both the east and west shores of the peninsula, as well as in between the central dune ridges. Harris Neck is dominated by marine deposited fine sands. Table 1 lists the soils found on Harris

Neck and shows that subsurface flow likely connects all of the wetlands on the peninsula through a free exchange of freshwater through the fine sands of the dunes.

Table 1: Soils of Julienton Plantation

Soil Type	Map Unit Symbol	Parent Material	% Area on Site*	Texture	Depth to Restrictive Feature
Galestown	GrA	Marine Deposits	36.6%	Fine Sand	80 + inches
Klej	KfA	Marine Deposits	0.9%	Fine Sand	80 + inches
Leon	LrA	Marine Deposits	16.9%	Fine Sand	80 + inches
Ona	ObA	Marine Deposits	16.2%	Fine Sand	80 + inches
Palm Beach	PdA	Marine Deposits	15.0%	Fine Sand	80 + inches
Plummer	PeA	Marine Deposits	0.2%	Fine Sand	80 + inches
Rutlege	RkA	Marine Deposits	5.3%	Fine Sand	80 + inches
St. Johns	Stj	Marine Deposits	8.8%	Fine Sand	80 + inches
* Area estimated using NRCS Web Soil Survey 2.0					

Based on an examination of the physical characteristics of this wetland system, these wetlands are functioning as an integrated interdunal wetland system.

III. Jurisdictional Determination

The 28 interdunal wetlands in JD SAS-2007-670 are jurisdictional because they are adjacent (as defined at 33 CFR 328.3(c) and 33 CFR 328.3(a)(7)) to Julienton River, and Little Mud River, both of which are TNWs.

IV. Basis for Determination[5]

EPA and Corps regulations define "waters of the United States" to include wetlands adjacent to other covered waters.[6] According to these regulations, a wetland is "adjacent" when it is "bordering, contiguous or neighboring" another water of the U.S.[7] The regulations further specify that "[w]etlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes, and the like are 'adjacent wetlands'."[8] The *Rapanos Guidance* states that finding a continuous surface connection is not required to establish adjacency under this definition.[9]

The interdunal wetland system (that includes the 28 wetlands subject to this JD) is adjacent to the Julienton River and Little Mud River. This is based on an examination of a combination of factors, including proximity and hydrologic connection (direct and/or indirect) to the Julienton River and Little Mud River found in the natural interdunal system that makes up Harris Neck.

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[5] The memorandum summarizes the evidence considered by the agencies in reaching this conclusion. Additional information regarding the determination is contained in the administrative record for this action.
[6] 33 C.F.R. § 328.3(a)(7).
[7] 33 C.F.R. § 328.3(c).
[8] 33 C.F.R. § 328.3(c).
[9] *See Rapanos Guid*ance, page 5.

As discussed in more detail in Section II above, Harris Neck is essentially a back dunal zone that is generally a stable environment characterized by dunal ridges. These ridges transition across the project site and have created interdunal depressional areas, allowing for the formation of the freshwater wetlands onsite. Topographically, the site has very little relief, varying from 1.5 to 6 feet above sea level with dunes oriented in a Northeast – Southwest direction. Drainage from the site occurs through several wetland paths extending from interior interdunal spaces to the open waters and marshes of surrounding TNWs. The wetlands range in distance from abutting to 4,320 feet to the marsh / open water line of the Julienton River; and range in distance from abutting to 4,240 feet from the marsh / open water line of Little Mud River. Eight of the wetlands directly abut the open water or marshes of Julienton River or Little Mud River. The other wetlands have an indirect hydrologic connection to Julienton River and Little Mud River via overland and subsurface flow during precipitation events. As stated above, the agencies' regulations specify that "[w]etlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes, and the like are 'adjacent wetlands'."[10] even if there is not a continuous surface connection.[11]

V. Conclusion

The agencies have determined that the wetlands for JD SAS-2007-670 are jurisdictional because they are adjacent (as defined by 33 CFR 328.3(c) and 33 CFR 328(a)(7)) to Julienton River and Little Mud River, both TNWs. This determination is based on our finding that all 28 wetlands subject to this JD are part of an interdunal system that is in close proximity to and has a direct and/or indirect hydrologic connection to Julienton River and Little Mud River, and are part of the natural interdunal landscape that makes up Harris Neck.

Brian Frazer, Chief
Wetlands & Aquatic Resources Regulatory Branch
U.S. Environmental Protection Agency

Date: 12 Feb 2008

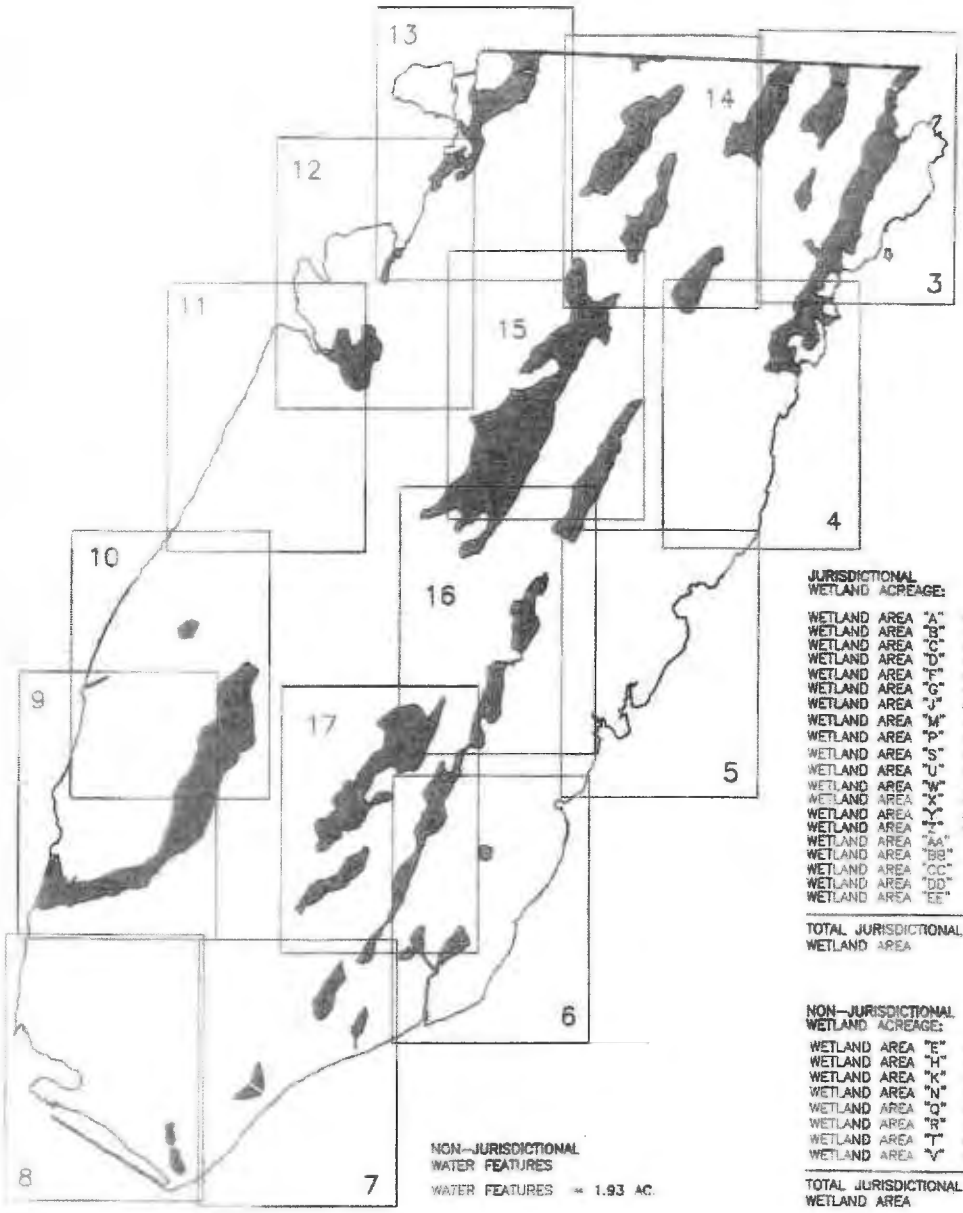
David Olson, Regulatory Program Manager
Regulatory Community of Practice
U.S. Army Corps of Engineers

Date: 12 Feb 2008

[10] 33 C.F.R. § 328.3(c).
[11] *See* Rapanos Guidance, page 5.

Exhibit 1: SAS-2007-670 Julienton Plantation

Exhibit 1: SAS-2007-670 Julienton Plantation



GRID NORTH GA. EAST ZONE (TYPICAL)

JURISDICTIONAL WETLAND ACREAGE:

WETLAND AREA "A"	=	9.58 AC.
WETLAND AREA "B"	=	1.80 AC.
WETLAND AREA "C"	=	1.29 AC.
WETLAND AREA "D"	=	0.56 AC.
WETLAND AREA "E"	=	23.38 AC.
WETLAND AREA "G"	=	0.91 AC.
WETLAND AREA "J"	=	3.47 AC.
WETLAND AREA "M"	=	0.56 AC.
WETLAND AREA "P"	=	8.35 AC.
WETLAND AREA "S"	=	0.46 AC.
WETLAND AREA "U"	=	0.75 AC.
WETLAND AREA "W"	=	1.12 AC.
WETLAND AREA "X"	=	0.37 AC.
WETLAND AREA "Y"	=	2.41 AC.
WETLAND AREA "Z"	=	0.12 AC.
WETLAND AREA "AA"	=	4.80 AC.
WETLAND AREA "BB"	=	0.53 AC.
WETLAND AREA "CC"	=	6.79 AC.
WETLAND AREA "DD"	=	17.29 AC.
WETLAND AREA "EE"	=	0.63 AC.
TOTAL JURISDICTIONAL WETLAND AREA	=	85.17 AC.

NON-JURISDICTIONAL WETLAND ACREAGE:

WETLAND AREA "E"	=	2.81 AC.
WETLAND AREA "H"	=	13.02 AC.
WETLAND AREA "K"	=	7.91 AC.
WETLAND AREA "N"	=	5.55 AC.
WETLAND AREA "Q"	=	3.28 AC.
WETLAND AREA "R"	=	31.71 AC.
WETLAND AREA "T"	=	1.02 AC.
WETLAND AREA "V"	=	4.25 AC.
TOTAL JURISDICTIONAL WETLAND AREA	=	69.55 AC.

NON-JURISDICTIONAL WATER FEATURES

WATER FEATURES = 1.93 AC.

BOUNDARY ACREAGE:

BOUND. TRACT = 1267.41 AC.

TOTAL ACREAGE:

WATER FEATURES	= 1.93 AC.
WETLANDS	= 154.72 AC.
UPLANDS	= 1110.76 AC.
TOTAL	= 1267.41 AC.

UPLAND ACREAGE:

UPLAND AREA "A"	=	0.11 AC.
UPLAND AREA "B"	=	13.08 AC.
UPLAND AREA "C"	=	0.87 AC.
UPLAND AREA "D"	=	0.43 AC.
UPLAND AREA "F"	=	1.96 AC.
UPLAND AREA "F"	=	0.98 AC.
UPLAND AREA "H"	=	0.07 AC.
UPLAND AREA "J"	=	1093.28 AC.
TOTAL UPLAND AREA	=	1110.76 AC.

WETLANDS MAP OF:

JULIENTON PLANTATION

1200 0 1200 2400 3600

GRAPHIC SCALE – FEET

WETLANDS MAP FOR:

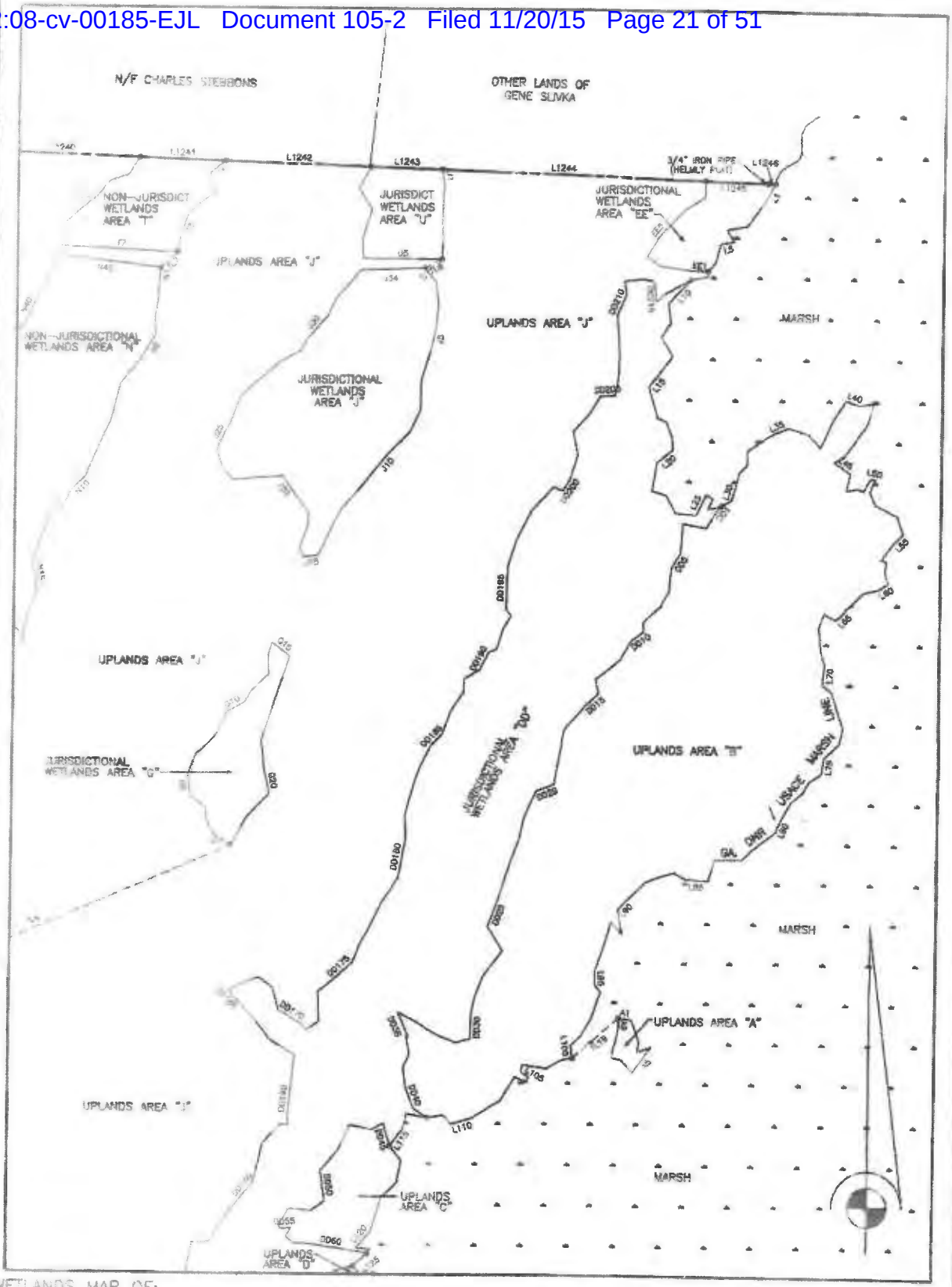
GENE SLIVKA

LOCATION: 22ND G.M.D. McINTOSH CO., GA.
SURVEYED: MARCH 15, 2007
BY: JAMES M. ANDERSON–GA. R.L.S. 2113
SCALE: 1" = 1200'
JN07030.CRD & JN07030.DWG
SHEET 2

"I HEREBY CERTIFY THAT THE WETLANDS AS SHOWN ON THIS SURVEY WERE LOCATED USING GPS EQUIPMENT AT SUB-METER ACCURACY. THE PURPOSE OF THIS SURVEY IS FOR THE LOCATION OF WETLANDS ONLY AND NOT BOUNDARY ESTABLISHMENT OR PROPERTY CONVEYANCE."

James M. Anderson

GEORGIA REGISTERED NO. 2113 LAND SURVEYOR JAMES M. ANDERSON



WETLANDS MAP OF:

JULIENTON PLANTATION

200 0 200 400 600

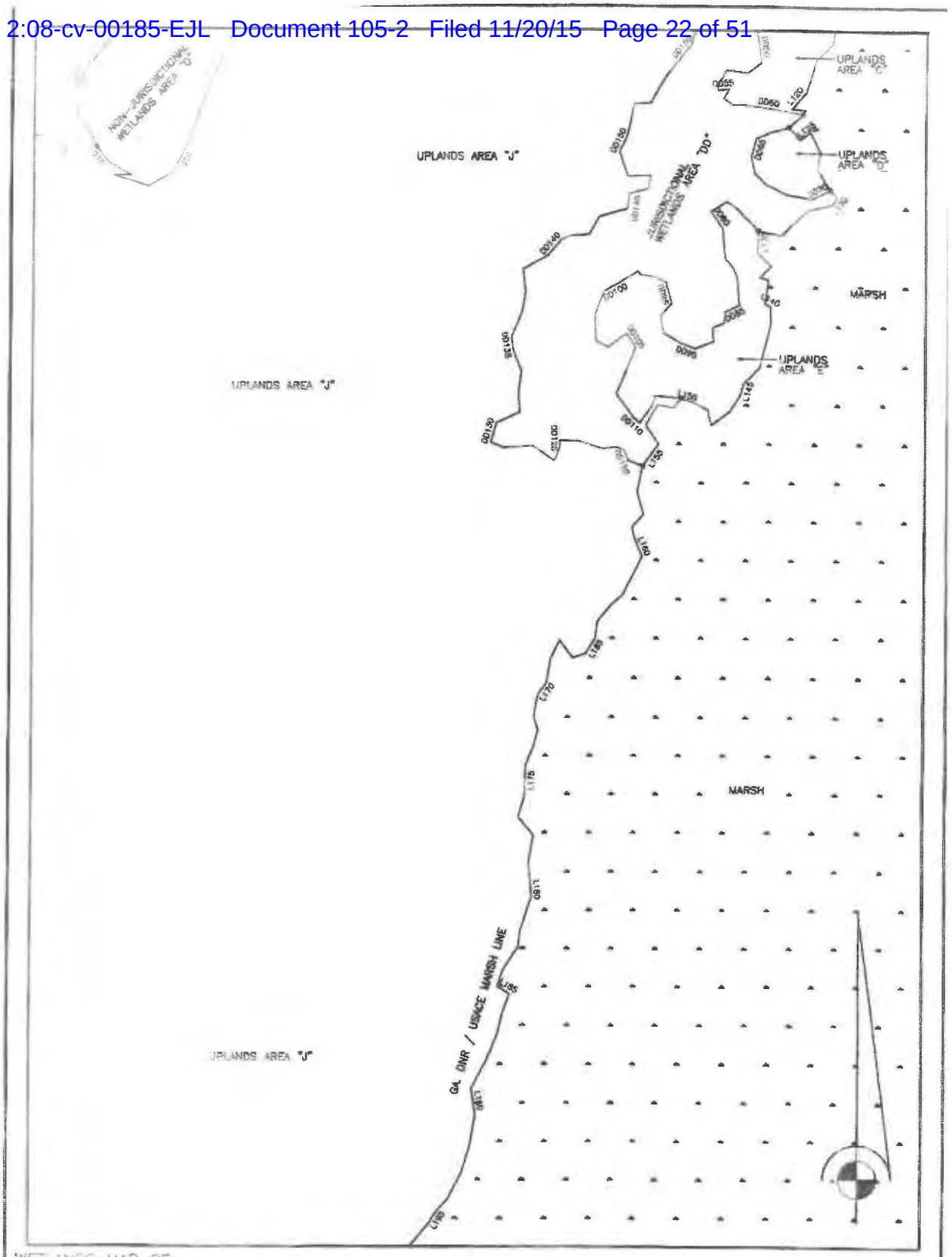
GRAPHIC SCALE – FEET

WETLANDS MAP FOR:

GENE SLIVKA

LOCATION: 22ND. G.M.D. McINTOSH CO., GA.
SURVEYED: MARCH 15, 2007
BY: JAMES M. ANDERSON–GA R.L.S. 2113
SCALE: 1" = 200'
JN07030.CRD & JN07030.DWG
SHEET 1

JAMES M. ANDERSON & ASSOCIATES, INC.
REGISTERED LAND SURVEYORS
P.O. BOX 834 104 OAK STREET
STATESBORO, GA. 30459
PHONE: (912) 764–2002



WETLANDS MAP OF:

JULIENTON PLANTATION

200 0 200 400 600

GRAPHIC SCALE – FEET

WETLANDS MAP FOR:

GENE SLIVKA

LOCATION: 22ND.G.M.D. McINTOSH CO., GA.
SURVEYED: MARCH 15, 2007
BY: JAMES M. ANDERSON–GA. R.L.S. 2113
SCALE: 1" = 200'
JN07030.CRD & JN07030.DWG
SHEET 4

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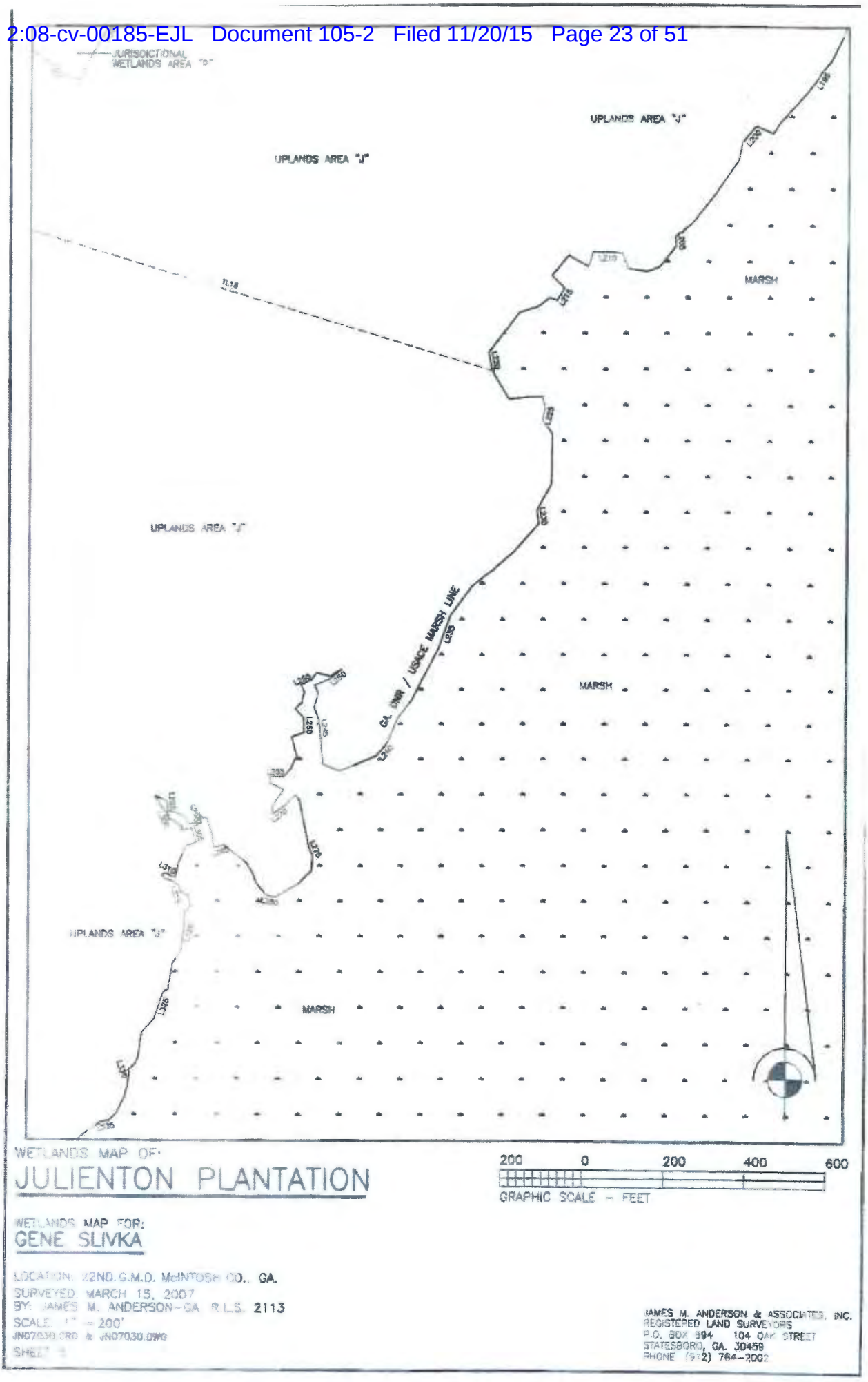
REGISTERED LAND SURVEYORS
P.O. BOX 394 104 OAK STREET
STATESBORO, GA. 30459
PHONE (912) 764–2002



WETLANDS MAP OF:

JULIENTON PLANTATION

WETLANDS MAP FOR:

GENE SLIVKA

LOCATION: 22ND. G.M.D. McINTOSH CO., GA.
SURVEYED: MARCH 15, 2007
BY: JAMES M. ANDERSON - GA R.L.S. 2113
SCALE: 1" = 200'
JN07030.CRD & JN07030.DWG
SHEET 1

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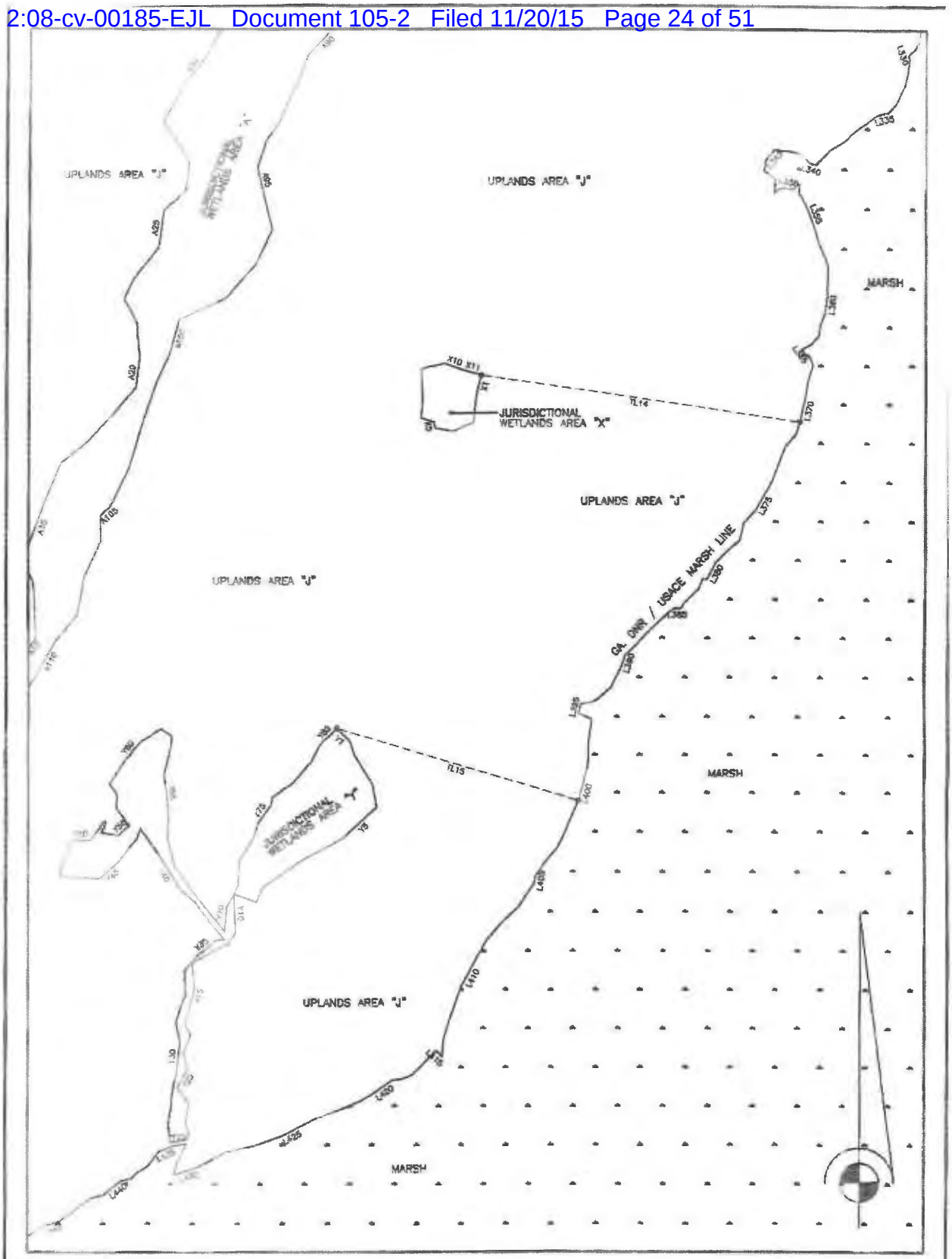
REGISTERED LAND SURVEYORS
P.O. BOX 894 104 OAK STREET
STATESBORO, GA. 30458
PHONE (912) 764-2002



WETLANDS MAP OF:

JULIENTON PLANTATION

200 0 200 400 800

GRAPHIC SCALE – FEET

WETLANDS MAP FOR:

GENE SLIVKA

LOCATION: 22ND.G.M.D. McINTOSH CO., GA.
SURVEYED: MARCH 15, 2007
BY: JAMES M. ANDERSON–GA. R.L.S. 2113
SCALE: 1" = 200'
JN07030.CRD & JN07030.DWG
SHEET 6

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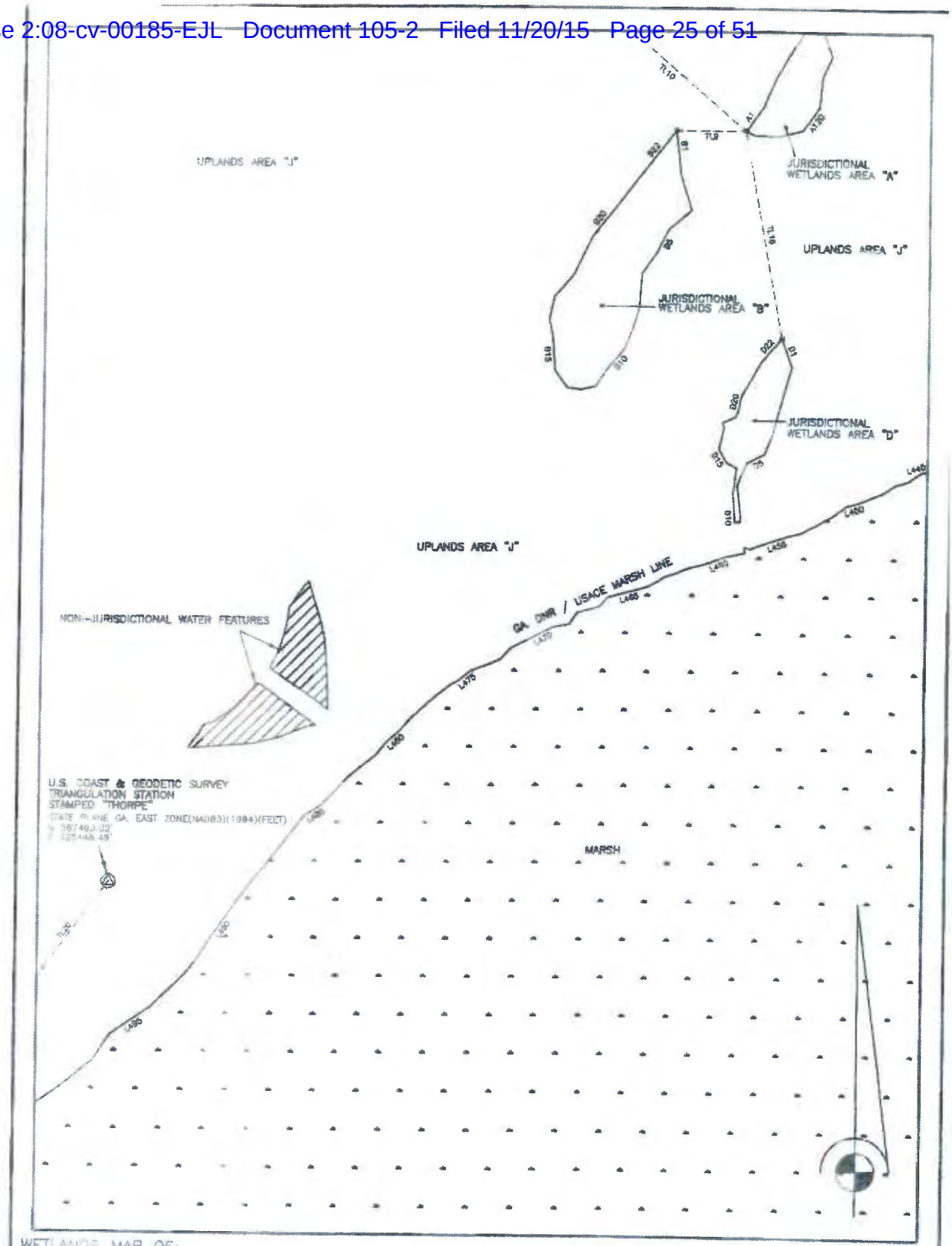
REGISTERED LAND SURVEYORS
P.O. BOX 894 104 OAK STREET
STATESBORO, GA. 30459
PHONE: (912) 764–2002



WETLANDS MAP OF:

JULIENTON PLANTATION

200 0 200 400 600

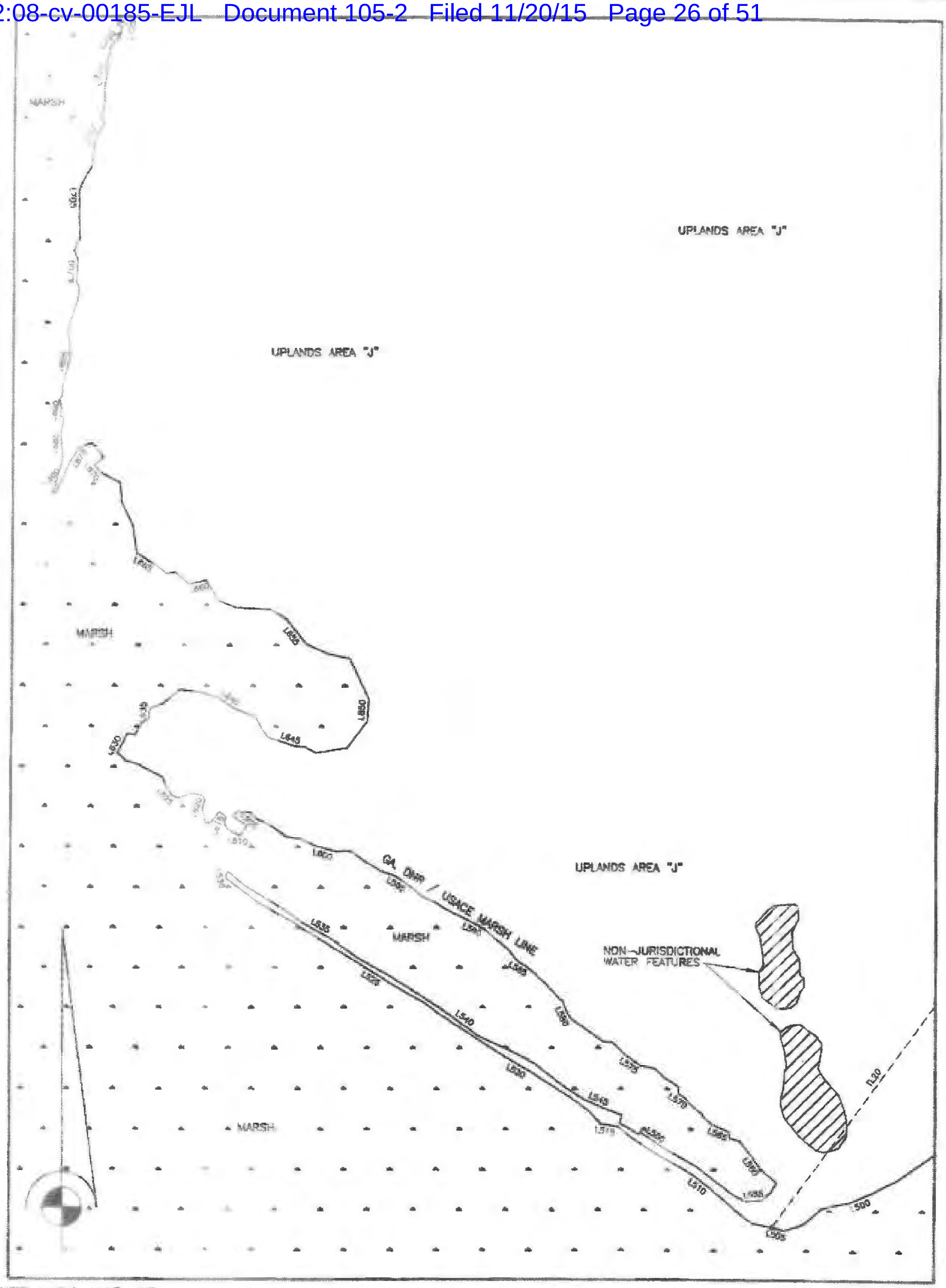
GRAPHIC SCALE – FEET

WETLANDS MAP FOR:

GENE SLIVKA

LOCATION: 22ND. G.M.D. McINTOSH CO., GA.
SURVEYED: MARCH 15, 2007
BY: JAMES M. ANDERSON–GA. R.L.S. 2113
SCALE: 1" = 200'
JN07030.CRD & JN07030.DWG
SHEET 1

JAMES M. ANDERSON & ASSOCIATES, INC.
REGISTERED LAND SURVEYORS
P.O. BOX 894 104 JAY STREET
STATESBORO, GA. 30459
PHONE: (912) 764-2002



WETLANDS MAP OF:

JULIENTON PLANTATION

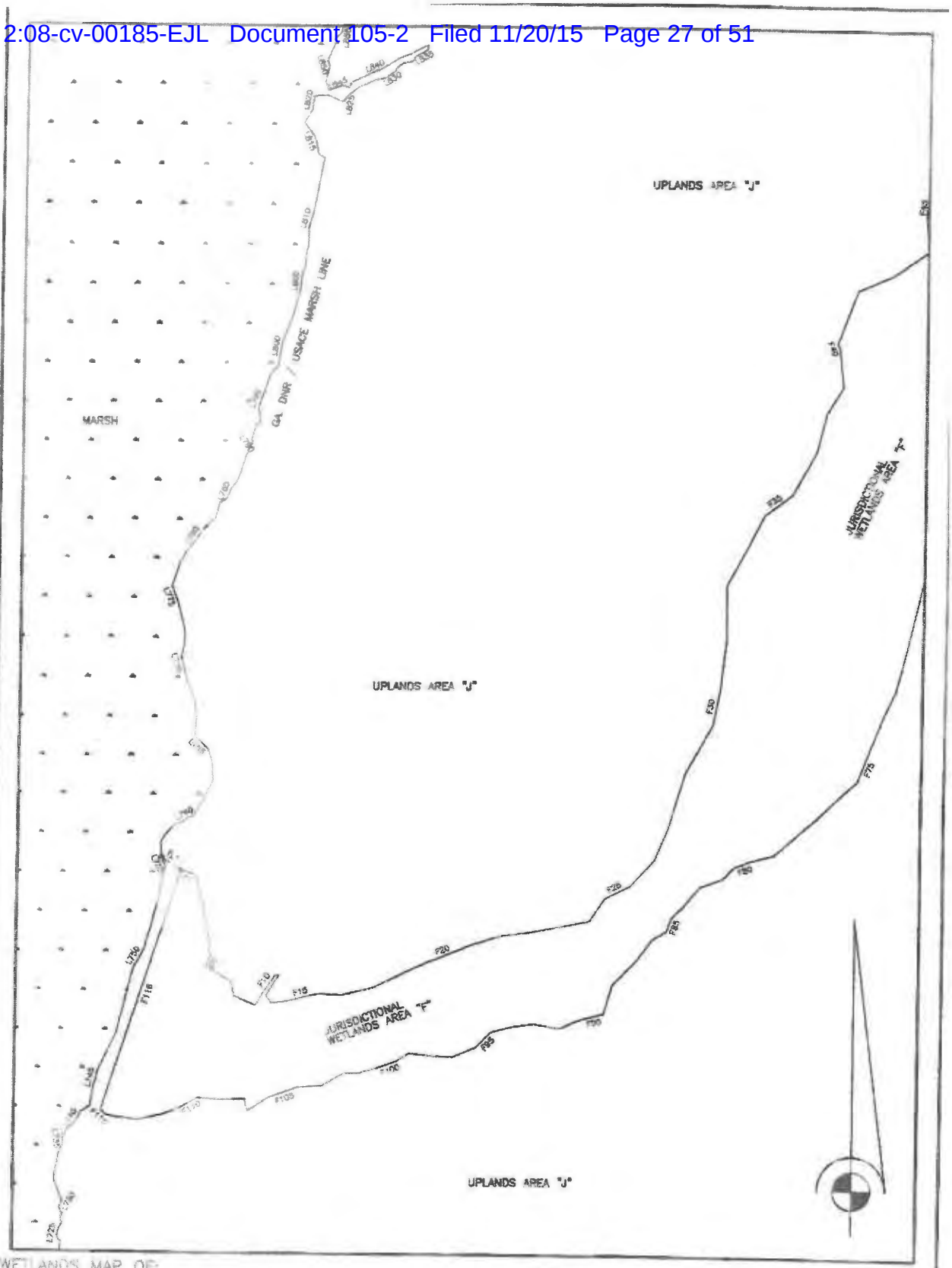
200 0 200 400 600
GRAPHIC SCALE – FEET

WETLANDS MAP FOR:

GENE SLIVKA

LOCATION: 22ND.G.M.D. McINTOSH CO., GA.
SURVEYED: MARCH 15, 2007
BY: JAMES M. ANDERSON - GA. R.L.S. 2113
SCALE: 1" = 200'
JN07030.CRD & JN07030.DWG
SHEET 8

JAMES M. ANDERSON & ASSOCIATES, INC.
REGISTERED LAND SURVEYORS
P.O. BOX 894 104 OAK STREET
STATESBORO, GA. 30459
PHONE (912) 764-2002



WETLANDS MAP OF:

JULIENTON PLANTATION

200 0 200 400 600

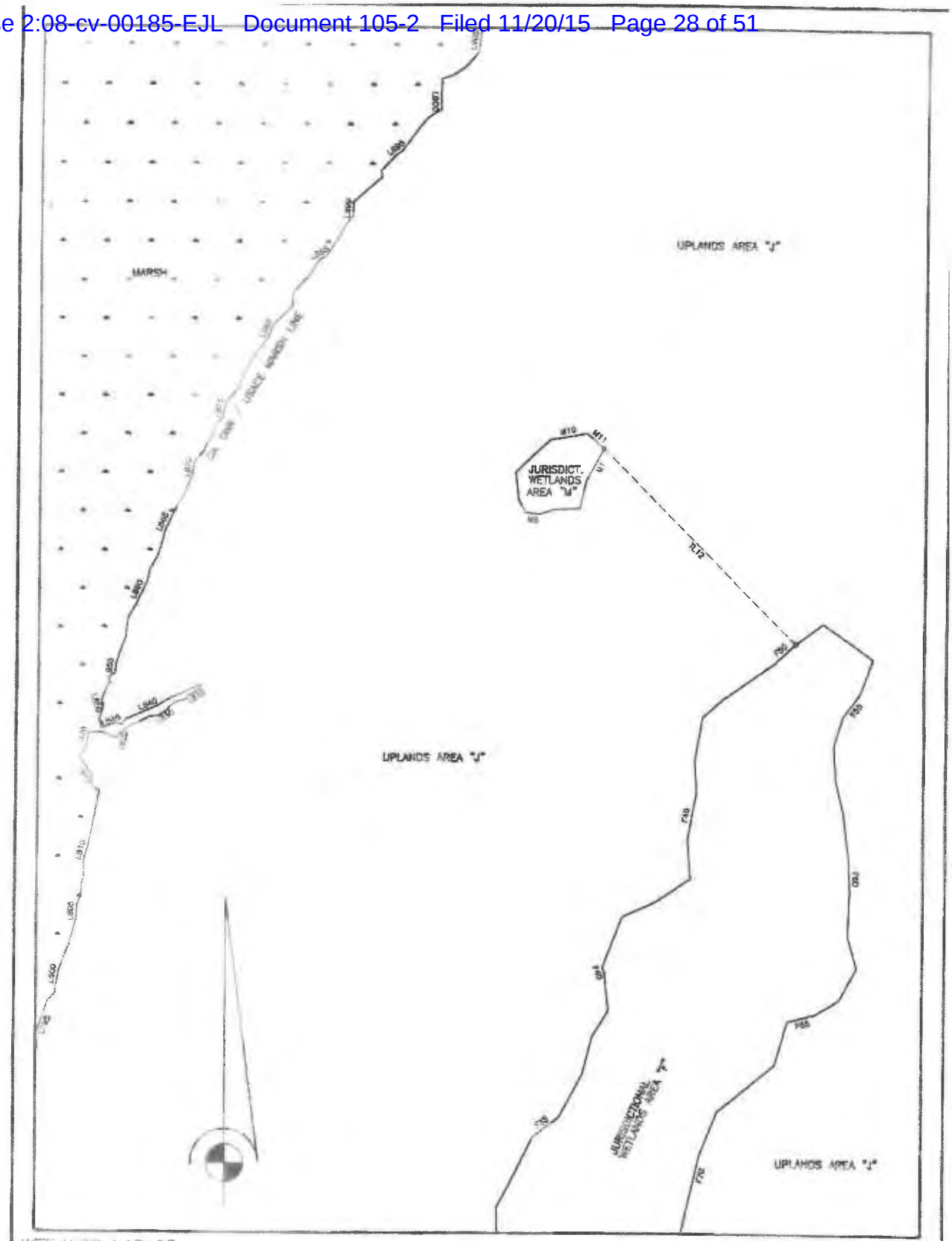
GRAPHIC SCALE – FEET

WETLANDS MAP FOR:

GENE SLIVKA

LOCATION: 22ND G.M.D. McINTOSH CO., GA.
SURVEYED: MARCH 15, 2007
BY: JAMES M. ANDERSON–GA. R.L.S. 2113
SCALE: 1" = 200'
JN07030.CRD & JN07030.DWG
SHEET 9

JAMES M. ANDERSON & ASSOCIATES, INC
REGISTERED LAND SURVEYORS
P.O. BOX 894 104 OAK STREET
STATESBORO, GA. 30459
PHONE: (912) 764-2002



WETLANDS MAP OF:

JULIENTON PLANTATION

200 0 200 400 600

GRAPHIC SCALE – FEET

WETLANDS MAP FOR:

GENE SLIVKA

LOCATION: 22ND. G.M.D. McINTOSH CO., GA.
SURVEYED: MARCH 15, 2007
BY: JAMES M. ANDERSON--GA. R.L.S. 2113
SCALE: 1" = 200'
JN07030.CRD & JN07030.DWG
SHEET 1 OF 1

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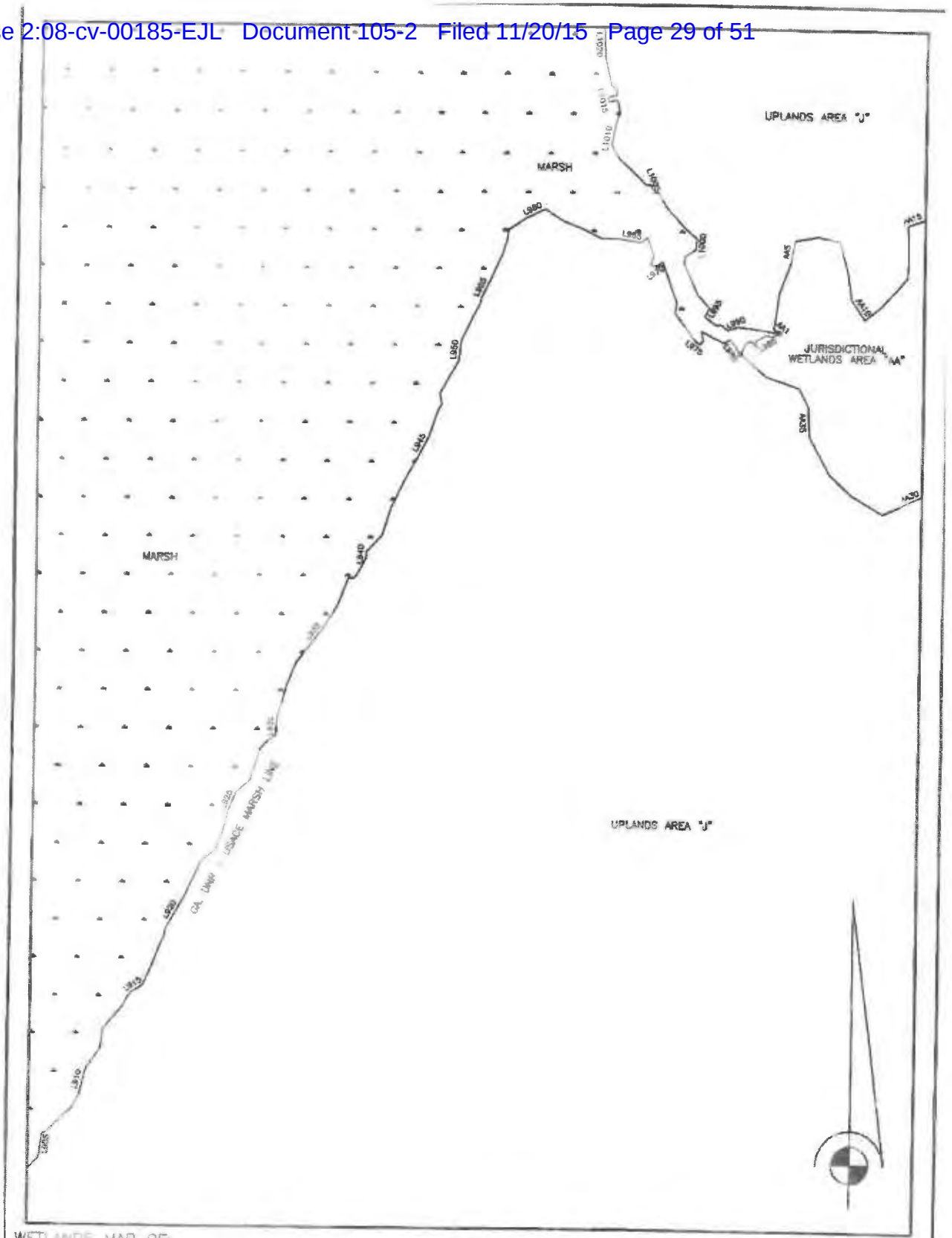
REGISTERED LAND SURVEYORS
P.O. BOX 994 104 OAK STREET
STATESBORO, GA. 30459
PHONE: (912) 764-2002



WETLANDS MAP OF:

JULIENTON PLANTATION

200 0 200 400 600

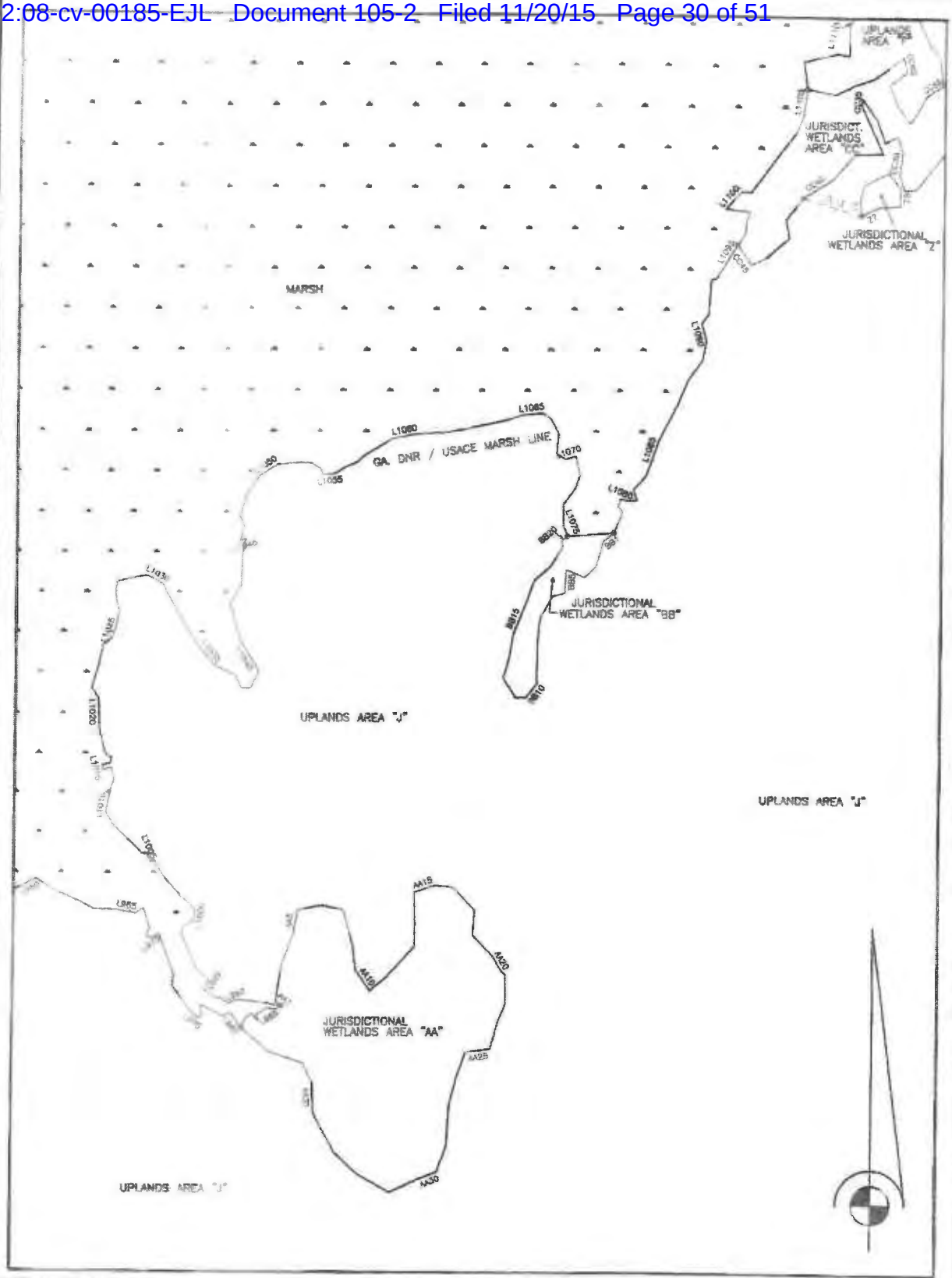
GRAPHIC SCALE – FEET

WETLANDS MAP FOR:

GENE SLIVKA

LOCATION: 22ND G.M.D. McINTOSH CO., GA.
SURVEYED: MARCH 15, 2007
BY: JAMES M. ANDERSON–GA. R.L.S. 2113
SCALE: 1" = 200'
JN07030.3RD & JN07030.DWG
SHEET 1 OF 1

JAMES M. ANDERSON & ASSOCIATES, INC.
REGISTERED LAND SURVEYORS
P.O. BOX 894 104 OAK STREET
STATESBORO, GA. 30459
PHONE: (912) 764–2002



WETLANDS MAP OF:

JULIENTON PLANTATION

200 0 200 400 800

GRAPHIC SCALE – FEET

WETLANDS MAP FOR:

GENE SLIVKA

LOCATION: 22ND. G.M.D. McINTOSH CO., GA.
SURVEYED: MARCH 15, 2007
BY: JAMES M. ANDERSON–GA R.L.S. 2113
SCALE 1" = 200'
JN07030.CRD & JN07030.DWG
SHEET 1 2

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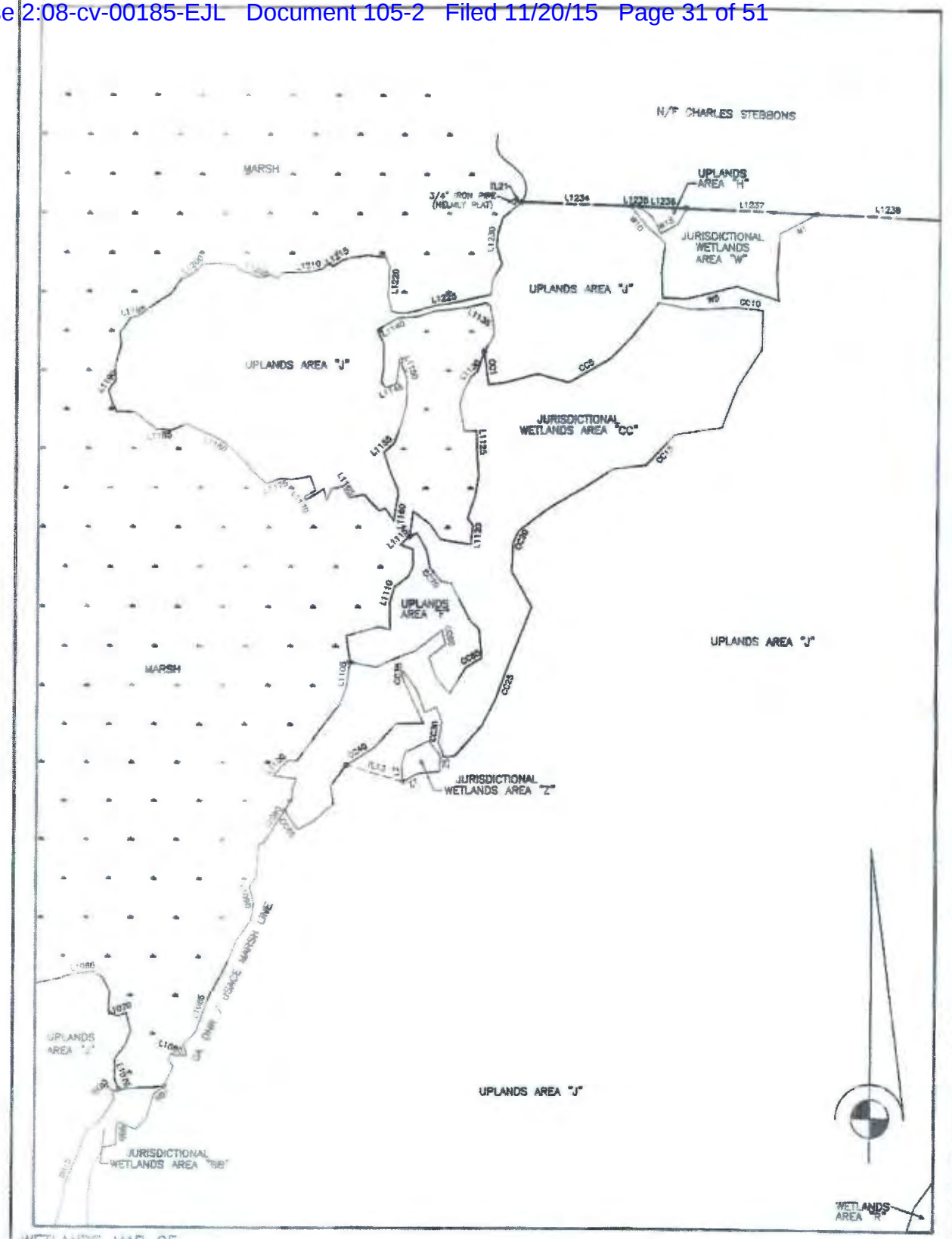
REGISTERED LAND SURVEYORS
P.O. BOX 894 104 OAK STREET
STATESBORO, GA. 30459
PHONE: (912) 764–2002



WETLANDS MAP OF:

JULIENTON PLANTATION

200 0 200 400 600

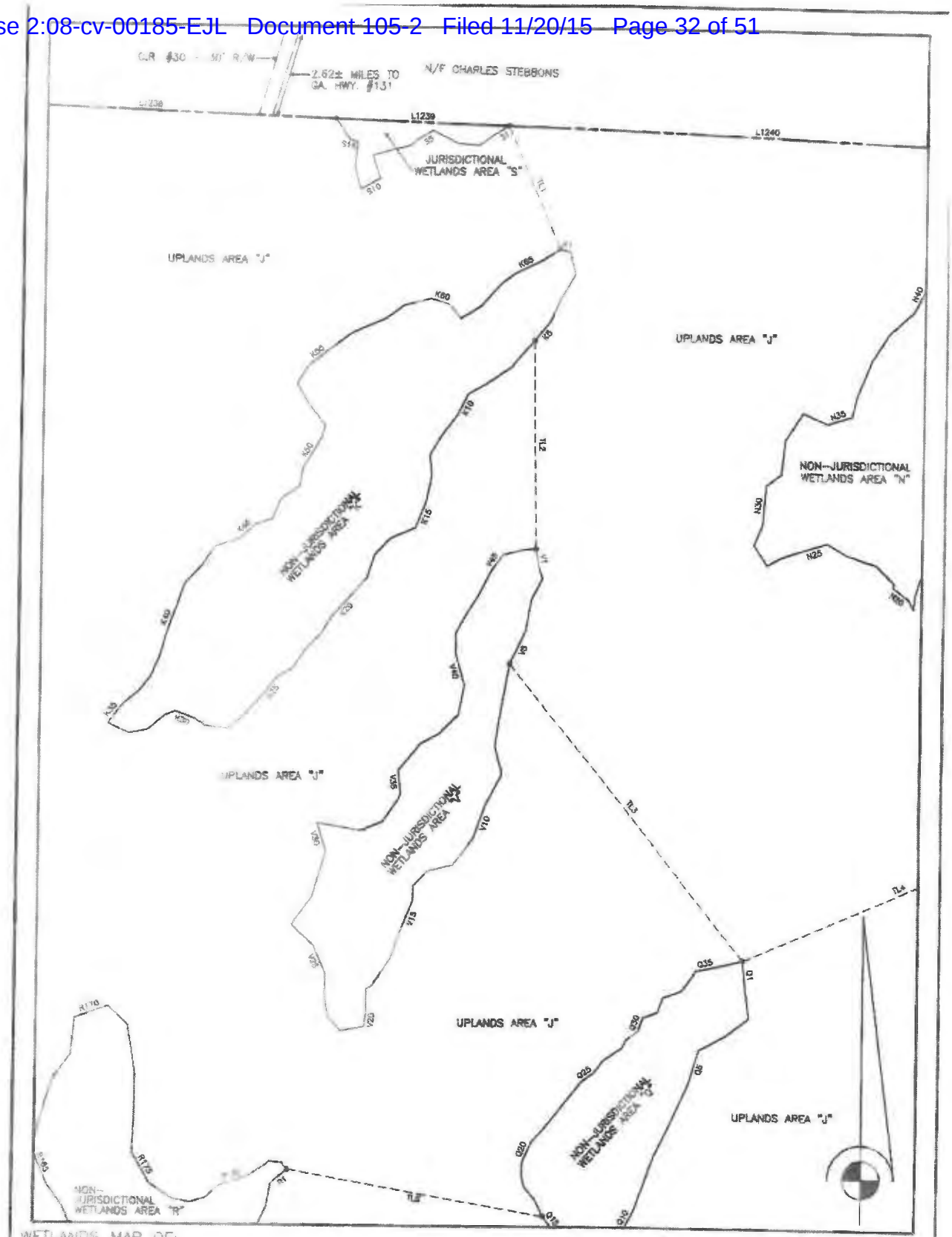
GRAPHIC SCALE - FEET

WETLANDS MAP FOR:

GENE SLIVKA

LOCATION: 22ND. G.M.D. McINTOSH CO., GA.
SURVEYED: MARCH 15, 2007
BY: JAMES M. ANDERSON-GA. R.L.S. 2113
SCALE: 1" = 200'
JN07030.CRD & JN07030.DWG
SHEET 13

JAMES M. ANDERSON & ASSOCIATES, INC.
REGISTERED LAND SURVEYORS
P.O. BOX 894 104 OAK STREET
STATESBORO, GA. 30459
PHONE: (912) 764-3002



WETLANDS MAP OF:

JULIENTON PLANTATION

200 0 200 400 600

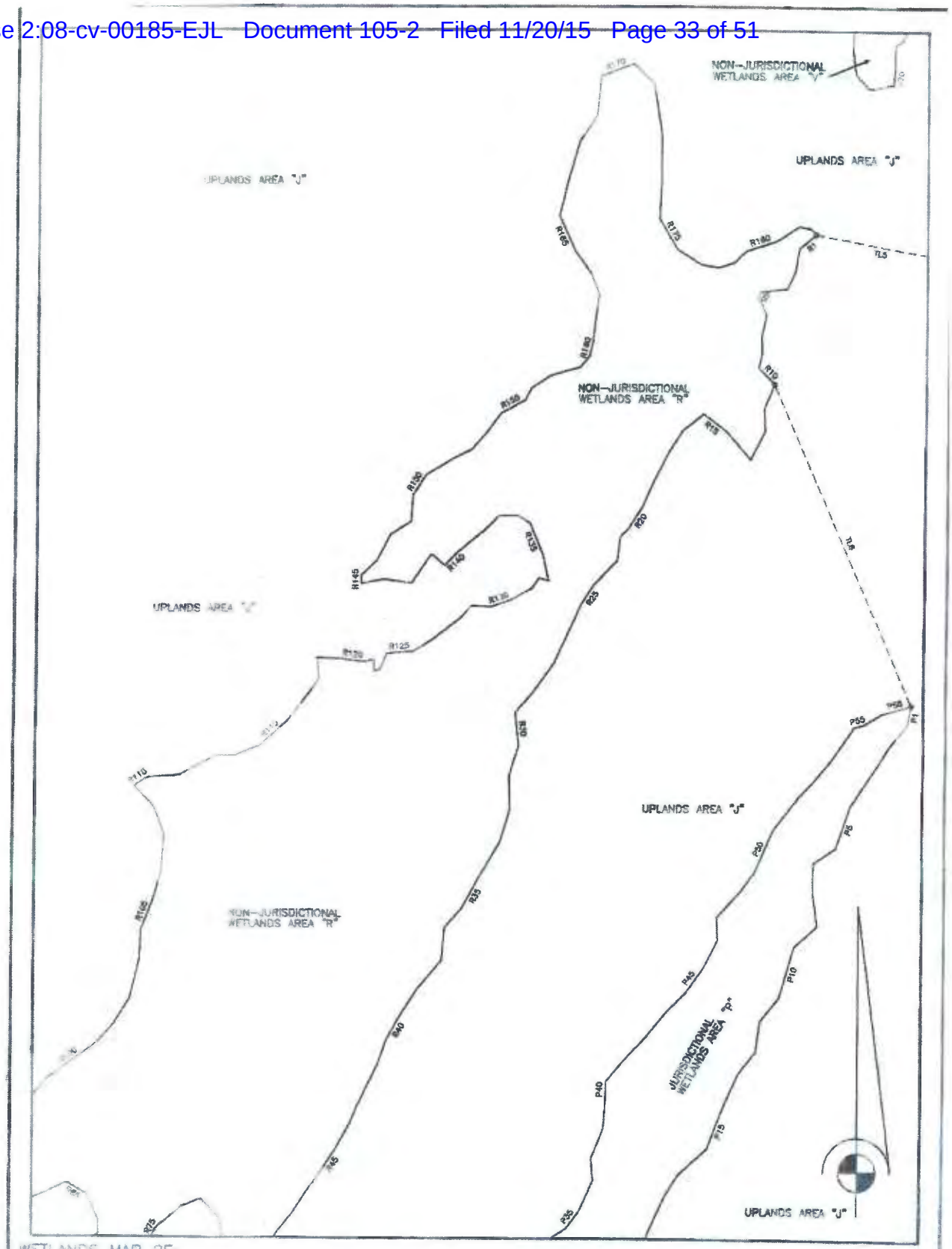
GRAPHIC SCALE – FEET

WETLANDS MAP FOR:

GENE SLIVKA

LOCATION: 22ND. G.M.D. McINTOSH CO., GA.
SURVEYED: MARCH 15, 2007
BY: JAMES M. ANDERSON–GA. R.L.S. 2113
SCALE: 1" = 200'
JN07030.CRD & JN07030.DWG
SHEET 1 of 1

JAMES M. ANDERSON & ASSOCIATES, INC.
REGISTERED LAND SURVEYORS
P.O. BOX 894 104 OAK STREET
STATESBORO, GA. 30459
PHONE: (912) 764–2002



WETLANDS MAP OF:

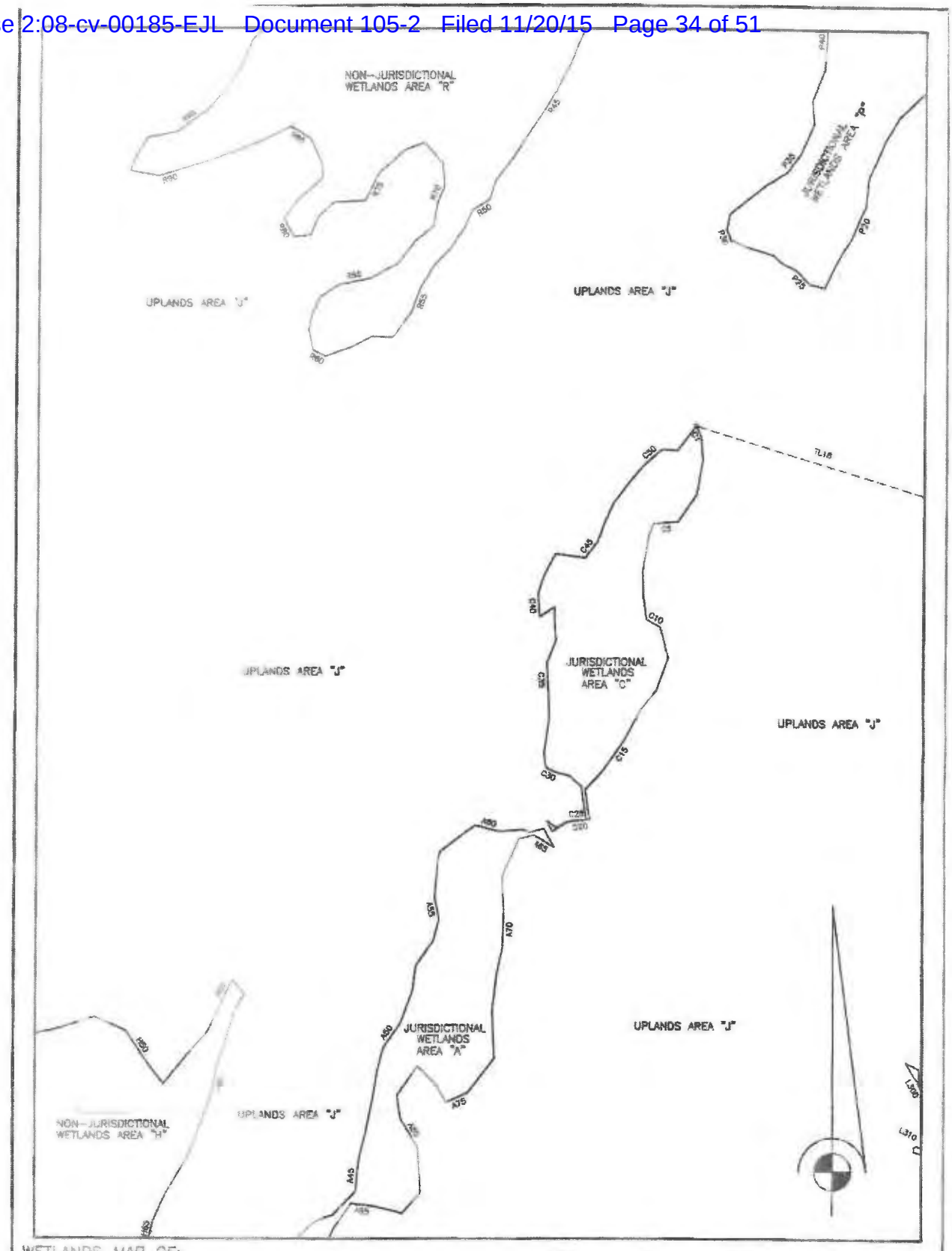
JULIENTON PLANTATION

WETLANDS MAP FOR:

GENE SLIVKA

LOCATION: 22ND. G.M.D. McINTOSH CO., GA.
SURVEYED: MARCH 15, 2007
BY: JAMES M. ANDERSON-GA. R.L.S. 2113
SCALE: 1" = 200'
JN07030.CRD & JN07030.DWG
SHEET 1 OF 1

JAMES M. ANDERSON & ASSOCIATES, INC.
REGISTERED LAND SURVEYORS
P.O. BOX 884 104 OAK STREET
STATESBORO, GA. 30459
PHONE: (912) 764-2002



WETLANDS MAP OF:

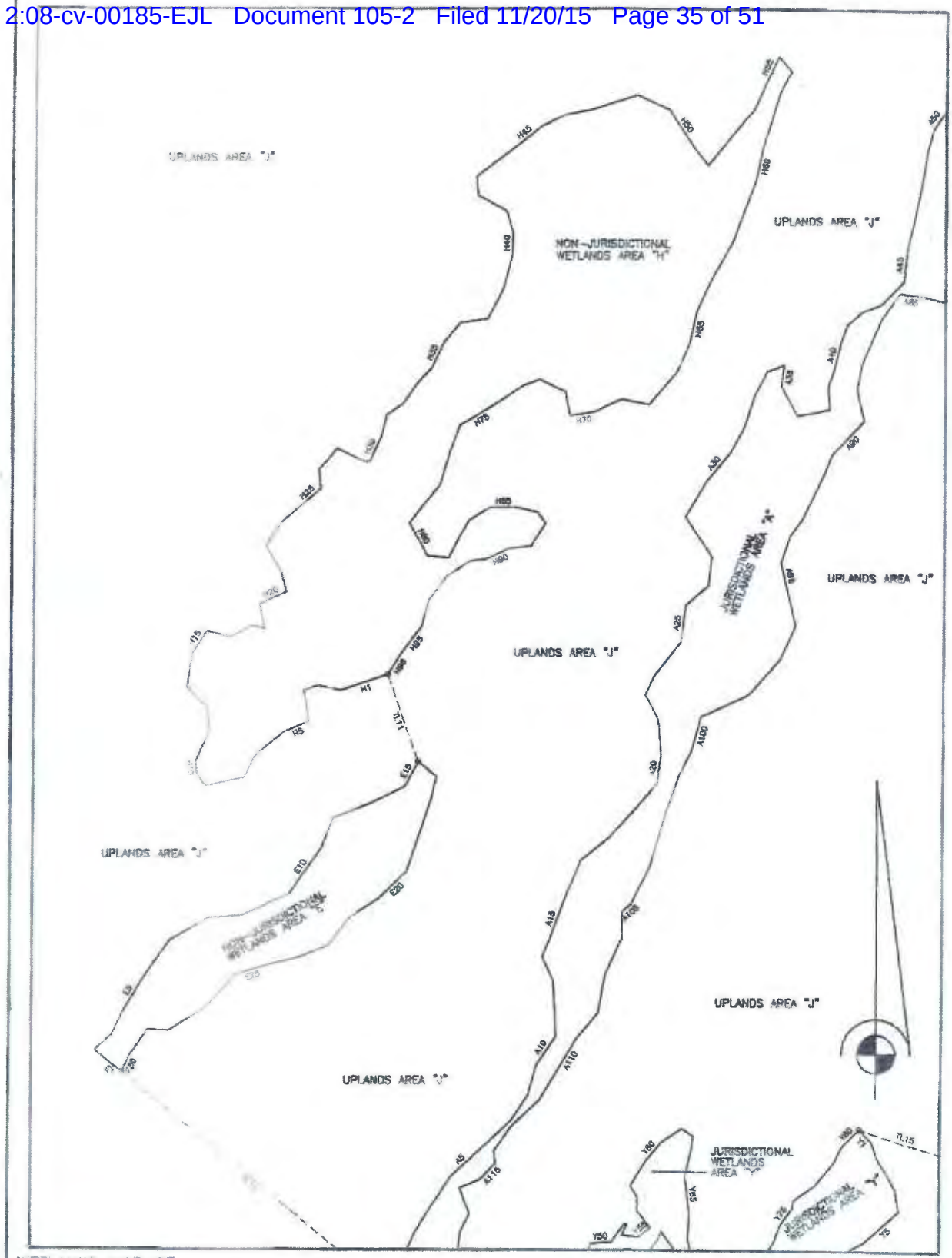
JULIENTON PLANTATION

WETLANDS MAP FOR:

GENE SLIVKA

LOCATION: 22ND. G.M.D. McINTOSH CO., GA.
SURVEYED: MARCH 15, 2007
BY: JAMES M. ANDERSON—GA. R.L.S. 2113
SCALE: 1" = 200'
JN07030.CRD & JN07030.DWG
SHEET 1 OF 1

JAMES M. ANDERSON & ASSOCIATES, INC.
REGISTERED LAND SURVEYORS
P.O. BOX 384 104 OAK STREET
STATESBORO, GA. 30459
PHONE (912) 764-2013



WETLANDS MAP OF:

JULIENTON PLANTATION

200 0 200 400 600

GRAPHIC SCALE – FEET

WETLANDS MAP FOR:

GENE SLIVKA

LOCATION: 22ND. G.M.D. McINTOSH CO., GA.
SURVEYED: MARCH 15, 2007
BY: JAMES M. ANDERSON–GA. R.L.S. 2113
SCALE: 1" = 200'
JN07030.CRD & JN07030.DWG
SHEET 1 OF 1

JAMES M. ANDERSON & ASSOCIATES, INC.
REGISTERED LAND SURVEYORS
P.O. BOX 894 104 OAK STREET
STATESBORO, GA. 30459
PHONE (912) 764-2002

MEMORANDUM TO ASSERT JURISDICTION FOR 2007-657-1JT

Subject: Jurisdictional Determination for 2007-657-1JT on Interdunal Wetlands Adjacent to Traditional Navigable Waters

Summary

The U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (Corps) are asserting jurisdiction over five interdunal wetlands for jurisdictional determination (JD) 2007-657-1JT. This determination is based on our finding that these wetlands are adjacent (as defined at 33 CFR 328.3(c) and 33 CFR 328.3(a)(7)) to Privateer Creek, the North Edisto River, and the Atlantic Ocean, all traditional navigable waters (TNWs).[1] This JD is consistent with the Clean Water Act (CWA), the agencies' regulations, relevant case law, and the legal memorandum *Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States ("Rapanos Guidance").*

I. Introduction

This memorandum establishes the basis for asserting jurisdiction over five interdunal wetlands for JD 2007-657-1JT. First, we provide a baseline assessment (in Section II) to demonstrate that all five wetlands are functioning as an integrated interdunal system. This assessment characterizes the project area and provides an ecological inventory for the site to demonstrate how the wetlands are functioning as an integrated interdunal system. After the baseline assessment, we provide the basis for determining that the interdunal wetland system (that includes the five wetlands) is adjacent to the TNWs. This determination is based upon an examination of a combination of factors including proximity, hydrologic connectivity, position in the landscape, and other physical factors that demonstrate the wetlands are adjacent to the TNWs.

[1] All waters are subject to the ebb and flow of the tide.

II. Baseline Assessment for Interdunal Wetland System

Based on an examination of the site location and characteristics for the project wetlands, all five wetlands subject to this JD are part of an integrated interdunal wetland system. This is based on a variety of factors, including: proximity of the wetlands to each other and the TNWs, physical characteristics (size, shape, location in floodplain), the community profiles, and the dominant wetland soils and plants supported by the interdunal wetland system.

A. Location

The project site for this JD encompasses 227.34 acres and is located at 32.57213° north latitude and -80.18233° west longitude on the Camp Saint Christopher site on Seabrook Island. Seabrook Island is a barrier island located in Charleston County, off the coast of South Carolina. The project site consists predominantly of an interdunal environment, which supports five freshwater interdunal wetlands totaling approximately 13 acres in size. The wetlands are in close proximity to each other and to the surrounding TNWs, with Privateer Creek and the North Edisto River to the north/northwest and the Atlantic Ocean to the South.

B. Site Characteristics for Project Area

The project area is located on a barrier island, which is a narrow strip of sand located some distance offshore of the mainland. Barrier islands form along seacoasts throughout the world whenever there is adequate supply of sand, a low sloping coastal plain, and a wave dominated energy regime with tidal ranges less than three meters.[2] The actions and energy of the ocean initiate the formation of barrier islands and its series of dune ridges, interdunal depressional areas, and freshwater interdunal wetlands. Barrier islands can be very transient in that sea level, anthropogenic effects, and storm events can cause barrier islands to migrate landward, seaward, or laterally with adequate sand supplies and longshore currents. As these barrier islands mature and migrate, they typically form a series of dunes. The primary and secondary dunes generally occur near the shorefront and migrate in direct response to the seasonal stresses of wind and oceanic processes.[3] Behind these more active dune fields, more stable fields generally develop. These areas typically support vegetation, including perennial shrubs, trees and vines. As a result of the more stable environment and increased vegetation, topographic relief in these areas is generally less pronounced than those dunes on the shorefront. In both cases, the environmental conditions may create depressional areas behind the dune ridges; it is in these areas that freshwater interdunal wetlands may occur. Generally,

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[2] Bascom, W. 1980. *Waves and beaches, the dynamics of the ocean surface.* Anchor Press, Garden City. 366 pp.

[3] For example, during the summer, the beaches and dunes will generally grow in width as the mild summer waves supply the onshore areas with sand and the gentle breezes blow that sand back into the dune fields. During the winter, the processes reverse.

precipitation will easily permeate sand and accumulate within a fresh water zone or freshwater lens beneath the surface of the barrier island. Where this freshwater table intersects the surface of the barrier island, freshwater wetlands may be found in the interdunal depressional areas atop a higher density salt water lens. This interface can be sharp or may grade slowly with depth into salt water in a transition zone discernible by increasing salinity.[4] The project wetlands have formed behind the more active dune fields, in the more stable dune environment where the size and shape of the dunes are less pronounced than those occurring in the frontshore.

The overall land use in the immediate project area consists predominantly of a natural interdunal landscape, where the dune system extends to Privateer Creek, the North Edisto River, and the Atlantic Ocean. As the dune system approaches Privateer Creek, the habitat transitions into a salt marsh community, which then transitions into mudflats, and then the open water. As the dune system approaches the North Edisto River, the habitat transitions into the riparian environment, and then into open water. As the dune system approaches the Atlantic Ocean, the habitat transitions into more pronounced dune fields, which transitions to the ocean. Dominant community species are presented in Table 1.

Table 1: Predominant Habitats on the Project Site

Habitat	Dominant Species
Uplands	*Quercus virginiana, Sabal palmetto, Pinus taeda, Magnolia grandiflora, Morella (Myrica) cerifera*
Riparian	Transitional area species include a mix of both upland and wetland plants.
Wetlands	*Quercus laurifolia, Juncus effusus, Persea borbonia, Acer rubrum, Hydrocotyle umbellate Sabal minor, Salix nigra, Saururus cernuus*

C. Site Characteristics for Project Wetlands

The overall project site consists predominantly of an interdunal environment, with the habitat supporting five freshwater interdunal wetlands (wetlands A2, B, C, D, and E) totaling approximately 13 acres in size.

The wetlands are in close proximity to each other. It is believed that wetlands A2 and B were originally one wetland, which was severed by the placement of a small dirt road. Wetlands A2 and B are connected via overland sheet flow and likely shallow subsurface flow, and are functioning as one wetland. Wetlands B and C are approximately 350 feet apart; wetlands B and D are approximately 200 feet apart; and wetlands D and E are approximately 150 feet apart. Wetlands C and E are the farthest apart, at a distance of approximately 1,500 feet.

[4] Collins, W.H. III, and D.H. Easley. 1999. Fresh-water Lens Formation in an Unconfined Barrier-Island Aquifer. *Journal of the American Water Resources Association* 35(1): 1-21.

The wetlands are also in close proximity to the TNWs. The five wetlands are 100, 210, 300, 600, and 800 feet, respectively, away from the TNW closest to that wetland. The wetlands range from 100 to 1,250 feet away from Privateer Creek, and from 300 to 2,000 feet away from the North Edisto River. The Atlantic Ocean is the TNW furthest away from all the wetlands, ranging from 5,600 to 6,500 feet from the wetlands, and is separated by the most developed and stable dune system. The wetlands' size (total of 13 acres) and proximity to one another and to the TNWs indicates a close physical relationship between the interdunal wetland system and the TNWs.

Interdunal wetlands are typically formed as a result of oceanic processes where the wetlands establish behind relic dune ridges. The project wetlands are bowl shaped features that provide short and long term water storage (ranging from 0.86 to 15.15 acre-feet, assuming a water depth of 2 feet), supporting high diversity and structure (70-90% cover) in the plant community. The soil and biological characteristics of the wetlands are summarized in Table 2. As presented in Table 2, the dominant soils and the wetland species in the system are similar in composition as are the riparian and upland habitats.

Table 2: Summary of Biological Characteristics

Wetland	Size (ac)	Dominant Soils	Dominant Vegetation (top 5 sp)	% Vegetative Cover to Wetland	Riparian Community	Upland Community
A2	0.43	Loamy Fine sand, Listed Crevasse-Dawhoo	*Quercus laurifolia, Juncus effusus, Persea borbonia, Acer rubrum, Hydrocotyle umbellata*	90%	Same as upland and dominant wetland vegetation	*Quercus virginiana, Sabal palmetto, Pinus taeda, Magnolia grandiflora, Morella (Myrica) cerifera*
B	2.41	Loamy Fine Sand Listed Crevasee-Dawhoo	*Quercus laurifolia, Juncus effusus, Persea borbonia, Acer rubrum, Hydrocotyle umbellate*	90 %	Same as upland and dominant wetland vegetation	*Quercus virginiana, Sabal palmetto, Pinus taeda, Magnolia grandiflora, Morella (Myrica) cerifera*
C	0.56	Loamy Fine Sand Listed Crevasse-Dawhoo	*Quercus laurifolia, Juncus effusus, Sabal minor, Acer rubrum, Arundinaria gigantea*	90%	Same as upland and dominant wetland vegetation	*Quercus virginiana, Sabal palmetto, Pinus taeda, Magnolia grandiflora, Morella (Myrica) cerifera*
D	4.38	Loamy Fine Sand Listed Crevasse-Dawhoo	*Juncus effusus, Salix nigra, Saururus cernuus, Quercus laurifolia, Hydrocotyle umbellata*	90 %	Same as upland and dominant wetland vegetation	*Quercus virginiana, Sabal palmetto, Pinus taeda, Magnolia grandiflora, Morella (Myrica) cerifera*
E	5.05	Loamy Fine Sand, Listed Crevasse-Dawhoo & Water	*Juncus effusus, Salix nigra, Saururus cernuus, Quercus laurifolia, Hydrocotyle umbellata*	70 %	Same as upland and dominant wetland vegetation	*Quercus virginiana, Sabal palmetto, Pinus taeda, Magnolia grandiflora, Morella (Myrica) cerifera*

Biodiversity value of a wetland is intimately tied to its position on the landscape with respect to other wetlands, and small wetland systems provide greater biological value for some aquatic species than a large wetland.[5] The project wetlands provide a

[5]Semlitsch, Raymond D. 2000. *Size Does Matter: The Value of Small Isolated Wetlands.* National Wetlands Newsletter. January-February 2000. 3 pp.

structural richness in plant diversity, and due to the close proximity of the wetlands in relation to one another and to the TNWs, the overall biodiversity is high. The integrated habitat provides for basic food, shelter, and reproductive requirements for a number of aquatic related animals. Aquatic organisms are expected to include numerous species of insects, amphibians, reptiles and small mammals. In addition, onsite plants and local animals will provide nesting, roosting and forage opportunities for the following groups of birds: shorebirds, wading and marsh birds, passerines, non-passerines, and birds of prey. As a result of this integrated ecological system, species biodiversity in wildlife, including the avifauna, is also high.

Based on an examination of the physical and biological characteristics of this wetland system, these wetlands are functioning as an integrated interdunal wetland system.

III. Jurisdictional Determination

The five interdunal wetlands in JD 2007-657-1JT are jurisdictional because they are adjacent (as defined at 33 CFR 328.3(c) and 33 CFR 328.3(a)(7)) to Privateer Creek, the North Edisto River and the Atlantic Ocean, all TNWs.

IV. Basis for Determination[6]

EPA and Corps regulations define "waters of the United States" to include wetlands adjacent to other covered waters.[7] The regulations state: "The term adjacent means bordering, contiguous or neighboring. Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes, and the like are 'adjacent wetlands.'"[8] The *Rapanos Guidance* states that finding a continuous surface connection is not required to establish adjacency under this definition.[9]

The interdunal wetland system (that includes the five wetlands subject to this JD) is adjacent to Privateer Creek, the North Edisto River, and the Atlantic Ocean. This is based on an examination of a combination of factors, including proximity and hydrologic connection to Privateer Creek and the North Edisto, and the natural interdunal landscape that extends to the Atlantic Ocean.

A. Privateer Creek and North Edisto River

The wetlands in the interdunal wetland system (that includes the five wetlands subject to this JD) are in close proximity to each other and to Privateer Creek and the

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[6]The memorandum summarizes the evidence considered by the agencies in reaching this conclusion. Additional information regarding the determination is contained in the administrative record for this action.
[7] 33 C.F.R. 328.3(a)(7).
[8] 33 C.F.R. 328.3(c).
[9] *Rapanos Guid*ance, page 5.

North Edisto River. In addition, the wetland system has a hydrologic connection to Privateer Creek and the North Edisto River.

The wetlands are located between 100 to 1,250 feet from the mean high water (MHW) line of Privateer Creek and 300 to 2,000 feet from the MHW line of the North Edisto River. Topographically, the land slopes across the interdunal habitat from east to northwest (i.e., towards Privateer Creek and the North Edisto River). Under normal precipitation events, two of the wetlands have a discrete surface hydrologic connection to Privateer Creek and its adjacent mudflats/marshlands. The other wetlands have a hydrologic connection to Privateer Creek and the North Edisto River via overland flow during normal precipitation events. It is expected that during smaller events, flow is still to the northwest, but more onsite pooling/ponding would occur due to the microtopic relief created by the interdunal habitat. During extreme events (such as the 100-year storm event), it is expected that flow would migrate from Privateer Creek and the North Edisto River and infiltrate the wetlands. Due to the shape of the wetlands and the position in the landscape, the wetlands provide the potential for approximately 31 acre-feet of short and long-term water storage. Thus, the wetlands also provide floodwater storage benefits by intercepting storm and flood water that would otherwise enter the TNWs.

B. Atlantic Ocean

The interdunal wetland system (that includes the five wetlands subject to this JD) is part of the natural interdunal landscape that extends to the Atlantic Ocean. As discussed in more detail in Section II above, this back dunal zone is generally a more stable environment and becomes less stable as it transitions to the shorefront region near the Atlantic Ocean, which is generally characterized by more pronounced dunal ridges. These ridges transition across the project site and have created interdunal depressional areas, allowing for the formation of the freshwater wetlands onsite. It is also expected that there may be a hydrologic connection via overland flow to the Atlantic Ocean under a 100-year storm event.

V. Conclusion

The agencies have determined that the wetlands for JD# 2007-657-1JT are jurisdictional because they are adjacent (as defined by 33 CFR 328.3(c) and 33 CFR 328(a)(7)) to Privateer Creek, the North Edisto River and the Atlantic Ocean, all TNWs. This determination is based on our finding that all five wetlands subject to this JD are part of an interdunal system that is in close proximity to and has hydrologic connections to Privateer Creek and the North Edisto River, and are part of the natural interdunal landscape that extends to the Atlantic Ocean.

Brian Frazer, Chief
Wetlands & Aquatic Resources Regulatory Branch
U.S. Environmental Protection Agency

Date: 12 Feb 08

Russell L. Kaiser, Senior Program Manager
Regulatory Community of Practice
U.S. Army Corps of Engineers

Date: 12 Feb 08

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
WATER

MEMORANDUM TO ASSERT JURISDICTION FOR SWG-2008-00138

Subject: Jurisdictional Determination for SWG-2008-00138 on Wetlands Adjacent to Traditional Navigable Waters

Summary

The U.S. Environmental Protection Agency (EPA) is asserting jurisdiction over six adjacent wetlands for jurisdictional determination (JD) SWG-2008-00138, the La Porte wetlands. This determination is based on our finding that these wetlands are adjacent (as defined at 33 CFR 328.3(c) and 33 CFR 328.3(a)(7)) to Big Island Slough, a traditional navigable waters (TNW).[1] This JD is consistent with the Clean Water Act (CWA), the agencies' regulations, relevant case law, and the legal memorandum *Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States ("Rapanos Guidance").*

Background

This memorandum establishes the basis for asserting jurisdiction over six wetlands for JD SWG-2008-00138 (Wetlands B, C, D, E, F, and G) in La Porte, Texas. The six wetlands are adjacent to Big Island Slough, a TNW and a tributary to Armand Bayou. This determination is based upon a site specific examination of factors including the presence of a man-made berm, hydrologic connectivity, and proximity.

Location and Setting

The entire project site encompasses 170 acres in the city of La Porte, Harris County, Texas, and is divided into a northern portion and a southern portion. The subject wetlands are located in the northern portion of the project site at 29.647683° north latitude and -95.077986° west longitude. Based on a report from the project's consultant, the entire site contains at least 56.2 acres of wetlands and 3.66 acres of a drainage feature.[2] The northern portion of the site is approximately 60 acres and supports the six vegetated wetlands at issue in this memorandum, totaling approximately 10.71 acres in size (see Exhibit 1). The project area is located immediately west of Big Island Slough, a TNW and a tributary of Armand Bayou. A 2-3 foot high man-made berm with breaches is located between the project wetlands and the Slough. The

[1] Big Island Slough is subject to the ebb and flow of the tide and therefore falls under the agencies' jurisdiction as a TNW.
[2] Berg Oliver Associates, Inc. December 2007. *Atypical Wetland Assessment: Jurisdictional Waters of the United States.* Report No. 6787.

wetlands are in close proximity to each other and to Big Island Slough (wetlands are between 100-800 feet from the Slough). From the project site, Big Island Slough flows for approximately 3.75 miles to Armand Bayou, which is also a TNW. Armand Bayou then joins up with Clear Lake and West Galveston Bay approximately 3.6 miles downstream from that confluence.

The six wetlands are part of a once-forested natural wetland complex that has been impacted in the past by channelization (deepening and widening) of Big Island Slough and recently by mechanized land-clearing and excavation of a large detention basin. EPA believes that this reach of Big Island Slough was channelized in the late 1950s, forested wetlands were recently cleared, and a large detention basin was recently constructed immediately downslope of the wetlands that outfalls directly into Big Island Slough. The detention basin is a storm-water detention basin approximately 35 acres in size, built to reduce the risk of flooding in Big Island Slough (see Exhibit 2). Such detention structures are generally constructed to mitigate for the loss of valley storage in the 100-year floodplain. The detention basin contains a channel approximately three-quarters of a mile in length that runs along the northern portion of the basin from 1st Avenue.

Once forested palustrine wetlands, the six wetlands are currently vegetated with cattail (*Typha latifolia*), mountain spikerush (*Eleocharis montana*), shortbristle horned beaksedge (*Rhynchospora corniculata*), swamp smartweed (*Polygonum hydropiperoides*), and broadleaf arrowhead (*Sagittaria latifolia*).

On the southern portion of the project site, the U.S. Army Corps of Engineers (Corps) is asserting jurisdiction over six wetlands (Wetlands AA, AB, H, I, J, and K) that are adjacent to Big Island Slough. These wetlands, totaling 49.33 acres in size, are not at issue in this memorandum, but are similar in vegetation and landscape position to the subject wetlands on the North section of the project site.

Jurisdictional Determination

Wetlands B, C, D, E, F, and G in JD SWG-2008-00138 are jurisdictional because they are adjacent (as defined at 33 CFR 328.3(c) and 33 CFR 328.3(a)(7)) to Big Island Slough, a TNW.

Basis for Determination[3]

EPA has determined that Big Island Slough at the project site is a TNW, as it is subject to the ebb and flow of the tide and is navigable-in-fact for small watercraft. The Texas Commission on Environmental Quality has conducted sampling in Big Island Slough and in the 2008 Water Quality Inventory indicated that the Slough is tidally influenced.[4] Big Island Slough contains public fishing piers and park facilities where the public can access the Slough for recreational

[3]The memorandum summarizes the evidence considered by EPA in reaching this conclusion. Additional information regarding the determination is contained in the administrative record for this action.

[4] Texas Commission on Environmental Quality. 2008 Texas Water Quality Inventory Water Bodies Evaluated (March 19, 2008). http://www.tceq.state.tx.us/assets/public/compliance/monops/water/08twqi/2008_summary.pdf (Last visited September 1, 2009). p. 184. Also, see, for example: http://www.armandbayou.org/documents/00_Armand_Bayou_Watershed_Plan.pdf (Last visited September 1, 2009). See also 33 C.F.R. 328.3(a)(1) and 40 C.F.R. 230.3(s)(1).

activities. The Slough is publicized as a location for canoe trips, and a floating dock on the Slough is planned for the future at Armand Bayou Park.[5]

EPA and Corps regulations define "waters of the United States" to include wetlands adjacent to other covered waters.[6] The regulations state: "The term adjacent means bordering, contiguous or neighboring. Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes, and the like are 'adjacent wetlands.'"[7] The *Rapanos* Guidance states that finding a continuous surface connection is not required to establish adjacency under this definition.[8] In addition, the Guidance states, "the agencies consider wetlands adjacent if one of [the] following three criteria is satisfied. First, there is an unbroken surface or shallow sub-surface connection to jurisdictional waters. This hydrologic connection may be intermittent. Second, they are physically separated from jurisdictional waters by man-made dikes or barriers, natural river berms, beach dunes, and the like. Or third, their proximity to a jurisdictional water is reasonably close, supporting the science-based inference that such wetlands have an ecological interconnection with jurisdictional waters."[9]

The six wetlands subject to this JD are adjacent to Big Island Slough. The adjacency determination for the six wetlands is supported by the physical separation of the wetlands from Big Island Slough by a man-made berm, their periodic hydrologic connection to Big Island Slough, and their reasonably close proximity to the Slough, supporting the science-based inference that the wetlands have an ecological interconnection with the Slough.[10]

Wetlands B, C, D, E, F, and G are separated from Big Island Slough by a 2-3 foot high man-made berm that contains breaches. Wetland C, a vegetated wetland swale, abuts a breach in the berm.

There is unconfined, directional surface flow between the wetlands and the Slough, both through the partial breaches in the berm and through a culverted outfall structure. As previously stated, Wetland C extends right up to a breach in the berm, providing evidence of a periodic discrete, direct hydrologic connection from the wetland to the Slough. Otherwise, due to the berm, water from the wetlands is forced to flow parallel to the channel and into the detention basin immediately downslope of the wetlands, which empties into the Slough via the culverted outfall structure. The wetlands have a hydrologic connection to the Slough via overland flow during normal precipitation events, both through the breaches in the berm and the culverted outfall structure. Based on the topography of the site as interpreted from a LiDAR survey map, the directional flow at the northern portion of the project site is to the south along the berm to either a breach in the berm or to the outfall structure. Wetland G is furthest away from the Slough (~800 feet) but is only about 150 feet from the channel in the detention basin that flows directly to the invert of the outfall structure into the Slough. The LiDAR survey map indicates

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[5] See, for example: http://www.tamug.edu/paddler/bennickslist.html and http://www.bayoupreservation.org/default.aspx?act=documents2.aspx&category=Armand+Bayou&AspxAutoDetectCookieSupport=1 (Last visited August 20, 2009).
[6] 33 C.F.R. 328.3(a)(7) and 40 C.F.R 230.3(s)(7).
[7] 33 C.F.R. 328.3(c) and 40 C.F.R 230.3(b).
[8] *Rapanos Guidance*, page 5.
[9] *Rapanos Guidance*, page 5-6.
[10] Note that the *Rapanos Guidance* states that only one of the three criteria mentioned on pages 5-6 of the Guidance needs to be present in order for a wetland to be adjacent.

that Wetland G during extended hydroperiods flows directly into the detention basin and then to Big Island Slough via the culverted outfall structure. During extreme events (such as the 100-year storm event), it is possible that flow would migrate from Big Island Slough and infiltrate the wetlands, via the breaches in the berm and the detention basin. These wetlands provide flow to the TNW and serve to store floodwaters by intercepting storm and floodwater that would otherwise enter the TNW, and release filtered water to the TNW in a more even and consistent manner throughout the year. Though they are not within the mapped Federal Emergency Management Agency (FEMA) 100-year floodplain, wetlands do not need to be located within the 100-year floodplain to be considered adjacent.

The wetlands are reasonably close to Big Island Slough, with most of the wetlands within 200 feet of the TNW (wetlands are between 100-800 feet from the Slough), and have an ecological interconnection with the Slough. They provide significant natural biological functions including food chain production, general habitat, and nesting, spawning, rearing and resting sites for aquatic species that can also utilize the Slough. For wetlands that are reasonably close, according to the *Rapanos Guidance*, "Because of the scientific basis for this inference [that such wetlands have an ecological interconnection with jurisdictional waters], determining whether a wetland is reasonably close to a jurisdictional water does not generally require a case-specific demonstration of an ecologic interconnection. In the case of a jurisdictional water and a reasonably close wetland, such implied ecological interconnectivity is neither speculative nor insubstantial."[11] Though case-specific information is not necessary, on a site visit on June 23, 2009, EPA staff observed schools of mosquitofish (*Gambusia affinis*) and other fish species near the outfall into Big Island Slough. Mosquitofish do not spawn, but due to close proximity of the wetlands to the Slough, it is reasonable to infer that the wetlands do contribute to their food chain production and that other aquatic species do likely spawn and rear their young in the adjacent wetlands or otherwise utilize the wetlands during extended hydroperiods and then enter Big Island Slough.

Conclusion

EPA has determined that the wetlands for JD SWG-2008-00138 are jurisdictional because they are adjacent (as defined by 33 CFR 328.3(c) and 33 CFR 328(a)(7)) to Big Island Slough, a TNW. This determination is supported by the physical separation of the wetlands from Big Island Slough by a man-made berm, their periodic hydrologic connection to Big Island Slough, and their reasonably close proximity to the Slough, supporting the science-based inference that the wetlands have an ecological interconnection with the Slough.

Pet Sil 9/3/09

Peter S. Silva (Date)
Assistant Administrator
Office of Water
U.S. Environmental Protection Agency

[11] *Rapanos Guidance*, page 6.

Exhibit 1

WETLAND DELINEATION MAP
SITE LOCATION MAP

Project #: 6787
For: Duke Realty Corporation
Location: SE Corner of Fairmont Pkwy & Underwood Rd.
Harris County, Texas

REVISIONS
Nov. 8, 2007 by MDB
Jan. 17, 2008 by LFM
July. 11, 2008 by AWL
Dec. 8, 2008 by MDB

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ENVIRONMENTAL SCIENCE, ENGINEERING
& LAND USE CONSULTANTS
14701 ST. MARY'S LANE, SUITE 400
HOUSTON, TEXAS 77079 PHONE (281)589-0898 http://www.bergoliver.com

Exhibit 2


N
W
E
S
Wetland B
Wetland C
Big Island Slough
Outfall
Culvert
Legend
Three 60" Corrugated metal pipes
NHD Streams (High Res)
Detention Pond
Project Wetlands
Feet
0
355
710
1,420
2,130
2,840

MEMORANDUM TO ASSERT JURISDICTION FOR NWS-2007-749-CRS

Subject: Assertion of Jurisdiction for Jurisdictional Determination (JD) NWS-2007-749-CRS

Summary

The U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers are asserting jurisdiction over three wetlands (identified as Wetlands A, B, and C) adjacent to a non-relatively permanent water (RPW) for jurisdictional determination (JD) NWS-2007-749-CRS. This action is based on an evaluation of significant nexus between the wetlands and the East Fork Lewis River, a traditional navigable water (TNW), based on the statute, the agencies' regulations and the case law, and consistent with the legal memorandum *Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States*.

I. Introduction

The purpose of this memorandum is to document the presence of jurisdictional wetlands adjacent to a non-RPW located near Battle Ground, in Clark County, Washington. The site is located near 45-47-13.4° N latitude and 122-35-45.3° W longitude. Wetland A flows into a ditch (non-RPW), then into a second ditch that leads to an unnamed tributary of the East Fork Lewis River, a TNW, between 10 and 15 river miles downstream from the site. Wetlands B and C are approximately 100 and 300 feet from the non-RPW, respectively.

The Corps identified the lower three miles of the East Fork Lewis River as the TNW, based upon its designation under Section 10 of the Rivers and Harbors Act of 1899. Because the Corps found a significant nexus to this portion of the East Fork Lewis River, there is no need to determine whether a reach further upstream is a TNW for purposes of the significant nexus evaluation. However, the scope of a TNW is not limited to those waters constituting Section 10 waters.[1] Therefore, designation of the Section 10 portion of the East Fork Lewis River as the nearest TNW for purposes of this JD does not preclude the future determination of TNWs upstream if additional information warrants such determination.

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[1] See Appendix D of the Rapanos Guidance package.

II. Jurisdictional Determination

The non-RPW and wetlands A, B, and C are jurisdictional, as they were determined to have a significant nexus to a downstream TNW.

III. Basis for Determination[2]

A. Significant Nexus

Evaluation of the non-RPW and adjacent wetlands A, B, and C in the review area demonstrate the wetlands have a significant nexus to a TNW. One of the site's wetlands (Wetland A) has a direct surface hydrologic connection to the non-RPW. The other two wetlands (Wetlands B and C) are approximately 100 and 300 feet away from the non-RPW, but are considered adjacent to the non-RPW. In a separate JD for Wetland A, the Corps concluded that Wetland A has a significant nexus to the downstream TNW. In making this determination, the Corps considered the flow and functions of the tributary, together with the functions performed by Wetlands B and C.

The agencies will consider the flow and functions of the tributary together with the functions performed by *all* wetlands adjacent to that tributary, to determine whether, collectively, they have a significant nexus with TNWs. Where it is determined that a tributary and its adjacent wetlands collectively have a significant nexus with TNWs, the tributary and all of its adjacent wetlands are jurisdictional. The Corps had previously concluded (in a separate JD) that Wetland A was jurisdictional, based upon the collective contribution of the non-RPW and all adjacent wetlands (Wetlands B and C) and their significant nexus to the downstream TNW. Therefore, the non-RPW and all three wetlands in the review area are jurisdictional waters of the U.S. because, when analyzed together, they have a significant nexus to a TNW. This determination applies to the wetland that has a direct hydrologic connection to the non-RPW (Wetland A), as well as to the other two wetlands that are adjacent to, but do not have a direct hydrologic connection to the non-RPW (Wetlands B and C).

The significant nexus evaluation demonstrates that the non-RPW and its adjacent wetlands impact the physical, chemical, and biological integrity of a downstream TNW. The non-RPW and its adjacent wetlands filter sediments, provide stormwater attenuation functions, maintain stream temperatures, and provide food chain support for anadromous fish populations and other aquatic species that use the East Fork Lewis River and its tributaries.

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[2] The evidence included in this memorandum is a summary of the evidence considered by the agencies in reaching this conclusion. Additional information regarding the determination is contained in the administrative record for this action.

IV. Conclusion

The non-RPW and its adjacent wetlands contribute to protecting and enhancing the chemical, physical and biological integrity of a downstream TNW. Therefore, wetlands A, B, and C are jurisdictional waters of the United States.

Brian Frazer, Chief
Wetlands & Aquatic Resources Regulatory Branch
U.S. Environmental Protection Agency

Date: Oct. 2, 2007

Russell L. Kaiser, Senior Program Manager
Regulatory Community of Practice
U.S. Army Corps of Engineers

Date: Oct 2, 2007