



Florida Department of Environmental Protection

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COMPREHENSIVE EVERGLADES RESTORATION PLAN REGULATION ACT (CERPRA) PERMIT-CONSTRUCTION AND INTERIM OPERATIONS AUTHORIZATION

PERMITTEE:

U.S. Army Corps of Engineers, Jacksonville District
701 San Marco Boulevard
Jacksonville, FL 32207

ATTENTION:

Mr. Eric Summa
Chief, Environmental Branch
Planning Division

Permit Number: 0296895-001-GL

Project: Site 1 Impoundment (Fran Reich Preserve)

County: Palm Beach

Date of Issue: March 25, 2010

Expiration Date: March 24, 2015

This permit is issued under the authority of the Comprehensive Everglades Restoration Plan Regulation Act (CERPRA), Section 373.1502, Florida Statutes (F.S.); Title 62, Florida Administrative Code (F.A.C.); and pursuant to the Department of Environmental Protection's (Department) authority under Chapters 373 and 403, F.S. The activity is not exempt from the requirement to obtain a CERPRA Permit.

The above named permittee is hereby authorized to initiate the activities described on the application, associated drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof. The activities authorized by this permit must be conducted in conformance with all the provisions of this permit. Failure to comply with all permit conditions and documents referenced herein shall constitute grounds for revocation of the permit and appropriate enforcement action.

This permit constitutes a finding of consistency with Florida's Coastal Zone Management Program (CZMP), as required by Section 307 of the Coastal Zone Management Act, 14 U.S.C. § 1456, and constitutes certification of compliance with water quality standards under Section 401 of the Clean Water Act, 33 U.S.C. § 1341 authorization pursuant to Chapter 373, F.S. The Department's finding of consistency with Florida's CZMP and water quality standards are both conditioned upon the U.S. Army Corps of Engineers (Corps/permittee) compliance with all the general and specific permit conditions contained herein.

PROJECT DESCRIPTION:

The Site 1 Impoundment Project, also known as the Fran Reich Preserve, is a project component of the Comprehensive Everglades Restoration Plan (CERP) as defined in Section 373.1501(1)(g), F.S. The Water Resources Development Act of 2000 approved CERP under Section 601 as a framework for modifications to the Central and South Florida (C&SF) Project necessary to restore the South Florida ecosystem. The Site 1 Impoundment Project was also identified as an expedited project (formerly Acceler8) which the State of Florida is accelerating the funding, design, and construction of in order to realize immediate environmental benefits.

The President of the United States of America signed into law the American Recovery and Reinvestment Act (ARRA) of 2009 on February 17, 2009. The U.S. Army Corps of Engineers (USACE) is directly appropriated \$4.6 billion in ARRA for its civil works program. The \$4.6 billion provided for the civil works program includes \$2 billion for construction and \$2.075 billion for Operations and Maintenance. The USACE identified potential civil works projects that met the criteria of the legislation for funding, and in March 2009 published a list of projects to receive stimulus package dollars. The Site 1 Impoundment Project was among the selected projects, which will be distributed across the U.S. and across USACE programs to provide the nation with inland and coastal navigation, environmental, flood risk management, hydropower, recreation, and more. The ARRA provides the opportunity to accelerate construction of the project to Fiscal Year 2010, allowing benefits of the project to be received earlier.

The primary objective of the Site 1 Impoundment Project is to capture and store local runoff during wet periods and then use that water to supplement water deliveries to the Hillsboro Canal during dry periods, thus reducing demands for releases from Lake Okeechobee through the Arthur R. Marshall Loxahatchee National Wildlife Refuge (LNWR), also known as Water Conservation Area 1 (WCA-1). Constructing and operating the impoundment will reduce the need for releases from the LNWR during the dry season to meet local water demands facilitating more natural, desirable, and consistent water levels within the LNWR. Project features will also reduce groundwater seepage from the adjacent WCAs. In addition there may be benefits to downstream estuaries as a result of reducing peak freshwater flows from local stormwater runoff and releases from Lake Okeechobee.

The Site 1 Impoundment Project includes an above-ground impoundment, pump stations, seepage canal and associated structures to capture, store and release excess water within the Hillsboro Canal drainage basin. For construction purposes, the initial phase of the project will include improvements to the existing L-40 levee (D-525N), the S-530 spillway, and the wildlife wetland area. Clearing and demolition activities within the impoundment site will also be part of the initial work. Construction of the remaining levees, canals, pump stations, structures, and other project features needed for completion of the project are described in this authorization; however, due to anticipated design modifications, a modification to this permit shall be required to authorize the final design of these features and any resulting structural or interim operational changes prior to commencement of their construction.

PROJECT LOCATION:

Site 1 Impoundment Project is located in southwest Palm Beach County, west of the City of Boca Raton within Sections 19, 20, 21, 21 and portions of 28 and 29, Township 47 South, Range 41 East. The project site is approximately 1,800-acres located south and east of the LNWR and east of the South Florida Water Management District's (SFWMD) existing S-39 water control structure. The project site is bordered by the Hillsboro Canal to the south and southwest, the L-40 Levee and Canal to the north and northwest, and the Lake Worth Drainage District's (LWDD) E-1 W-S Canal to the east. The Hillsboro Canal, L-36 Borrow Canal, and LWDD E-1 W-S Canal are designated as Class III receiving water bodies and the LNWR and L-40 Canal are designated as an Outstanding Florida Waters (OFW).

AUTHORIZED PROJECT COMPONENTS:

Site 1 Impoundment Project

- **L-40 Levee Improvements (D-525N)**

A 14,494-linear foot (LF) section of the existing L-40 embankment levee will be improved to serve as a segment of the impoundment. Modifications include replacement of existing soils along the interior and exterior toes with free-draining materials, excavation and re-grading of the interior corridor,

placement of flat-plate soil cement on the interior side slope and installation of an anchored reinforcement mat along the exterior of the levee. The height of the levee will also be raised to 24.5 feet (ft.) NAVD. A short section of the L-40 Levee located between the impoundment and the S-39 structure will also be improved through the clearing of vegetation and construction of an elevated bench area.

- **S-530 Spillway**

The S-530 structure is a 500 ft. long soil-cement and articulated concrete block spillway located within the L-40 Levee and designed to maintain vehicular access along the levee. With a crest elevation of 18.9 ft NAVD, discharges through this spillway into the LNWR shall only result from major meteorological events which cannot be otherwise addressed through operational protocols.

- **Wildlife Wetland Area**

A wildlife wetland feature located on approximately 5.5 acres will be constructed in the western corner of the site outside of the impoundment footprint. Creation of this feature will require lowering the site grades, backfilling with suitable on-site material and connection of the feature to the Hillsboro Canal. This site will also be available to receive any native material from the project that should be relocated, such as pond apple. Connections to the adjacent Aquifer Storage and Recovery pond will also be removed.

- **Miscellaneous Site work**

Vegetation clearing, demolition activities, improvements for a staging area within the area identified for the impoundment, excavation in the designated borrow area, disposal of unusable material into the existing quarry and construction of a temporary bridge over the Hillsboro Canal for construction access are included.

CONCEPTUALLY AUTHORIZED PROJECT COMPONENTS:

The following structural components are conceptually approved based on the information submitted to the Department as part of the application process. A modification to this permit to authorize the construction of these features, or a subset of these features, and any resulting change in the proposed interim operations of this project may be required should the re-design of the embankment trigger any substantial changes. As required in General Condition No. 2, the Department shall be consulted upon any changes resulting from the re-design to determine whether a modification to the permit is required. Any modification to this permit resulting through such consultation shall be required prior to construction of said feature and/or interim operations of the project commencing.

- **Impoundment/Embankment Levees (D-525)**

The footprint for the impoundment is approximately 1,660 acres and provides 13,500 acre-feet of storage capacity at the maximum full pool depth of eight feet. Approximately 22,964 LF of embankment levee (D-525) will be constructed to an elevation of 25.5 ft. NAVD on the southern and eastern boundary and will tie into the improved L-40 Levee (D-525N) to complete the above-ground impoundment. The exterior face of the levee will be protected with a reinforcement mat while the interior face and top of the embankment will be armored with soil-cement flat plate and wave energy dissipation steps.

- **S-525 Inflow Pump Station**

This 600-cfs inflow pump station with two 200-cfs pumps and two 100-cfs pumps is located along the south side of the project to pump water from the Hillsboro Canal into the impoundment.

- **S-526 Gated Culverts**

The S-526 structure is comprised of (3) 6 ft. diameter gated culverts with a maximum discharge of 700-cfs into the Hillsboro Canal. Under normal operational conditions, this structure will be limited to the basin discharge criteria for the Hillsboro drainage basin.

- **S-527 Service and Auxiliary Spillway**

The S-527 structure is a combined service and auxiliary spillway, located near the southeastern corner of the impoundment. The service spillway is 19 feet long with an elevation of 16.5 ft. NAVD and the 50 foot long auxiliary spillway is set at elevation 17.9 ft. NAVD. Discharge to the Hillsboro Canal is through (3) 6'x6' box culverts.

- **S-528 Seepage Pump Station**

The S-528 Seepage Pump Station located along the eastern Seepage Canal includes three 15-cfs pumps for a total capacity of 45-cfs. This pump station is designed to control seepage from the impoundment to the east.

- **S-531 Gated Culvert**

The S-531 structure is comprised of (2) 10'x6' gated box culverts with a design capacity of 600-cfs located under Loxahatchee Road at the confluence of the L-36 Borrow Canal and the Hillsboro Canal. This structure, which replaces the existing S-39A structure in this location, is designed to control water levels within the L-36 Borrow Canal for optimal WCA-2A seepage control in addition to conveying discharges from North Springs Improvement District (NSID) to the Hillsboro Canal via the L-36 Borrow Canal.

- **Hillsboro Canal**

The Hillsboro Canal will be deepened and widened as part of this project in order to intercept seepage to the south. This canal is also the source for water that will be pumped into the impoundment for storage as well as the conveyance for releases into the system for water supply.

- **Eastern Seepage Canal (C-525)**

The Eastern Seepage Canal is a north/south canal located along the east side of the impoundment with levels controlled by the Seepage Pump Station.

- **Recreation Area**

A paved parking area and boat ramp will be constructed along the south side of the impoundment for use by the public. This area will be accessed from an existing bridge that will be re-furbished as part of this project.

DECLARATION OF REASONABLE ASSURANCES:

In issuing this permit, the Department finds that the Corps has provided reasonable assurances sufficient to satisfy the requirements of Section 373.1502, F.S. The Department bases these findings on the following documents:

Permittee: U.S. Army Corps of Engineers, Jacksonville District

Project: Site 1 Impoundment Project

File No.: 0296895-001

Page 5 of 28

- 1) United States Army Corps of Engineers, Jacksonville District, Site 1 Impoundment Project, Comprehensive Everglades Restoration Plan Permit Application and associated materials (July 2009);
- 2) United States Army Corps of Engineers, Jacksonville District, Site 1 Impoundment Project Permit Application Request for Additional Information-1 responses (December 2009 through January 2010);
- 3) South Florida Water Management District and United States Army Corps of Engineers, Jacksonville District, Final Integrated Project Implementation Report for Site 1 Impoundment Project (August 2006);
- 4) United States Army Corps of Engineers, Jacksonville District, Site 1 Impoundment Project, Final Design Documentation Report (DDR), Volumes 1 through 11 (February 2009);
- 5) United States Army Corps of Engineers, Jacksonville District, Site 1 Impoundment Area, Pre-final Design Plans and Specifications (December 2009);
- 6) United States Army Corps of Engineers, Jacksonville District, Site 1 Impoundment Project, Draft Project Operating Manual (October 2009);
- 7) United States Army Corps of Engineers, Jacksonville District, Phase I and Phase II Environmental Site Assessment Reports (May & July 1995);
- 8) Preliminary Land Certification Memorandum for the Site 1 Impoundment Project (November 2009).
- 9) United States Army Corps of Engineers, Jacksonville District, Endangered Species Act Site 1 Impoundment Project Biological Assessment (June 2009);
- 10) United States Army Corps of Engineers, Jacksonville District, Draft Construction Phase Monitoring Plan for Site 1 Impoundment (Fran Reich Preserve) (February 2010);
- 11) United States Army Corps of Engineers, Jacksonville District, Draft Interim Monitoring Plan for Site 1 Impoundment (Fran Reich Preserve) (February 2010);
- 12) United States Army Corps of Engineers, Jacksonville District, Site 1 Impoundment Project, Uniform Mitigation Assessment Method documentation (October 2009);
- 13) United States Fish and Wildlife Service, Site 1 Impoundment Project, Fish and Wildlife Coordination Act Report (May 2005); and,
- 14) United States Fish and Wildlife Service, Site 1 Impoundment Project-Biological Opinion (August 2009).

Specifically, there are reasonable assurances, pursuant to Section 373.1502, F.S., that

- “The project component will achieve the design objectives set forth in the detailed design documents submitted as part of the application.” This finding is based on documents on file with the Department, including document 1, document 2, document 3, document 4, and document 5, in their entirety.
- “State water quality standards, including water quality criteria and moderating provisions, will be met. Under no circumstances shall the project component cause or contribute to violation of

state water quality standards.” This finding is based on documents on file with the Department, including document 1, document 2, document 3, document 4, document 7, and document 12.

- “Discharges from the project component will not pose a serious danger to public health, safety, or welfare.” This finding is based on documents on file with the Department, including document 1, document 2, document 3, document 5, document 7, document 10, and document 11.
- “Any impacts to wetlands or threatened or endangered species resulting from implementation of the project component will be avoided, minimized, and mitigated, as appropriate.” This finding is based on documents on file with the Department, including document 1 in its entirety, with emphasis on letters and email communications between the U.S. Fish and Wildlife Service, document 2, document 3, document 7, document 9, document 12, document 13, and document 14.

The Corps agrees to construct the project in accordance with the provisions of this permit, permit application and associated documentation on file with the Department. To the extent sovereign immunity has been waived under 33 U.S.C. §§ 1323 and 1344(t), the Corps’ agreement to construct the project in accordance with the provisions of this permit and supporting documentation is an enforceable condition of this permit.

The Corps is the federal sponsor of this project. The Corps and its designees are responsible for activities performed during the period of construction and interim operations. If interim operations or additional activities authorized by this permit are performed by any non-federal sponsors, then the permit may be transferred in advance of such activities, or an additional authorization may be required. All conditions found herein apply to the Corps.

GENERAL CONDITIONS:

1. This permit, including its general and specific conditions, shall be construed in light of the February 2006 Interagency Cooperative Agreement for Civil Works Projects (ICA) between the Department and the Corps. As recognized in the ICA, the Department has the authority to include reasonable conditions in this permit. All of the conditions in this permit, both general and specific, are enforceable to the extent sovereign immunity has been waived under 33 U.S.C. §§ 1323 and 1344(t). The ICA is incorporated herein by reference.
2. All activities approved shall be implemented as set forth in the drawings incorporated by reference and in compliance with the conditions and requirements of this document. The Corps shall notify the Department in writing of any anticipated changes in:
 - A. operational plans;
 - B. project dimensions, size, or location;
 - C. ability to adhere to permit conditions;
 - D. project description included in the permit, and;
 - E. monitoring plans.

If the Department determines that a modification to the permit is required then the Corps shall apply for and obtain the modification. Department approval of the modification shall be obtained prior to implementing the change, unless the change is determined by the Department to reduce the

scope of work from that authorized under the original permit, and will not effect compliance with permit conditions or monitoring requirements.

3. If, for any reason, the Corps does not comply with any condition or limitation specified herein, the Corps shall immediately provide the Department with a written report containing the following information:
 - A. a description of and cause of noncompliance;
 - B. the period of noncompliance, including dates and times;
 - C. impacts resulting or likely to result from the non-compliance;
 - D. steps being taken to correct the non-compliance, and;
 - E. the steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

Compliance with the provisions of this condition shall not preclude the Department from taking any enforcement action allowed under state law with respect to any non-compliance.

4. The Corps shall obtain any applicable licenses, permits, or other authorizations, which may be required by federal, state, local or special district laws and regulations. Nothing herein constitutes a waiver or approval of other Department permits or authorizations that may be required for other aspects of the total project.
5. Nothing herein conveys to the Corps or creates in the Corps any property right, any interest in real property, any title to land or water, constitutes State recognition or acknowledgment of title, or constitutes authority for the use of Florida's sovereign submerged lands seaward of the mean high-water line or an established erosion control line, unless herein provided, and the necessary title, lease, easement, or other form of consent authorizing the proposed use has been obtained from the State.
6. Any delineation of the extent of a wetland or other surface water submitted as part of the application, including plans or other supporting documentation, shall not be considered specifically approved unless a specific condition of this authorization or a formal determination under section 373.421(2), F.S., provides otherwise.
7. Nothing herein authorizes any entrance upon or activities on property, which is not owned or controlled by the Corps or local sponsor, or conveys any vested rights or any exclusive privileges.
8. This document or a copy thereof, complete with all conditions, attachments, modifications, and time extensions shall be kept at the work site of the authorized activity. The Corps shall require the contractor to review this document prior to commencement of the authorized activity.
9. The Corps specifically agrees to allow Department personnel with proper identification, at reasonable times and in compliance with Corps specified safety standards access to the premises where the authorized activity is located or conducted for the purpose of ascertaining compliance with the terms of this document and with the rules of the Department and to have access to and copy any records that shall be kept; to inspect the facility, equipment, practices, or operations regulated or required; and to sample or monitor any substances or parameters at any location reasonably necessary to assure compliance. Reasonable time may depend on the nature of the concern being investigated.

10. At least forty-eight (48) hours prior to the commencement of authorized activity, the Corps shall submit to the Department a written notice of commencement of activities indicating the anticipated start date and the anticipated completion date.
11. If historic or archaeological artifacts such as, but not limited to, Indian canoes, arrow heads, pottery or physical remains, are discovered at any time on the project site, the Corps shall immediately stop all activities which disturb the soil and notify the Department and the State Historic Preservation Officer.
12. Within a reasonable time after completion of construction activities authorized by this permit, the Corps shall submit to the Department a written statement of completion. This statement shall notify the Department that the work has been completed as authorized and shall include a description of the actual work completed. The Department shall be provided a copy, if requested, of any as-built drawings required of the contractor or survey performed by the Corps.

SPECIFIC CONDITIONS:

1. **Addresses.** Reports and notices submitted to the Department in accordance with this permit, unless otherwise specified, shall be submitted to the Department's Division of Environmental Assessment and Restoration, Restoration Planning and Permitting Section, 2600 Blair Stone Road, MS 3560, Tallahassee, Florida 32399-2400, telephone number (850) 245-8346. Electronic copies and notices required by this permit shall also be sent to RPPS_Comp@dep.state.fl.us.
2. **Threatened and Endangered Species.** The permittee shall coordinate with both the Florida Fish and Wildlife Conservation Commission (FWC) and the U.S. Fish and Wildlife Service (FWS) for appropriate guidance, recommendations, and/or necessary authorizations to avoid, minimize, or mitigate impacts to listed species. The Corps shall comply with applicable federal and state law with regard to protected species and agree to consider input from and to comply with any applicable requirements of the FWC to the extent that to do so would not create an irreconcilable conflict with the Corps' federal responsibilities. Should a potential conflict between FWC's requirements and the Corps' federal responsibilities be identified, the Corps shall coordinate with all involved federal and state agencies to determine and implement reasonable alternatives, to the maximum extent practicable, in order to avoid such a conflict. The Corps shall adhere to all the "Terms and Conditions" contained within the Biological Opinion (BO) so as to avoid and mitigate any impacts to the species identified within. In addition, the permittee shall submit an Environmental Protection Plan to the Department which addresses compliance with the requirements of the BO prior to commencement of construction activities in accordance with Specific Condition No. 8.
3. **Contaminated Sites and Residual Agrichemicals.** The permittee shall coordinate with the local sponsor, the South Florida Water Management District (District), and the Department concerning assessment and remediation of any contamination, including agricultural chemical residuals (hereafter collectively referred to as "contamination"), identified within the project footprint. The permittee shall coordinate with the District to redress any contamination within the project footprint so that 1) any detrimental impacts to Threatened or Endangered species are minimized to the maximum extent practicable and 2) state water quality standards are not violated by construction of the project and interim operations period covered by this permit. Any information on identification and delineation of the extent of the contamination shall be promptly provided to the Department. The permittee shall coordinate with the District and provide any District proposed remedial action plan to redress the contamination to the Department no later than 90 days prior to the initial

operation or use of the completed project, unless the Department approves an alternative schedule, whichever is earlier. All assessment and remedial activities shall be performed in accordance with applicable Federal and State law. When contamination has been identified in the project footprint, interim operation of the facility shall not commence until the Department has reasonable assurance that interim operation of the project will not cause the contamination to result in a violation of water quality standards for those particular contaminants of concern and that impacts to threatened or endangered species have been sufficiently addressed. If contamination is discovered after initial operations, any operations which may result in a violation of water quality standards shall cease until the permittee coordinates with the District to provide an assessment and remedial action plan for Department at the address listed in Specific Condition No. 1. Operations which may cause or contribute to a violation of water quality standards shall not re-commence until the Department has provided concurrence on the proposed remediation plan.

4. **Wetland Impact and Restoration.** This project is expected to result in permanent and temporary impacts to low-quality wetlands within the construction limits with a total impacted area of 1,774 acres. The project is intended to capture and store local basin run-off which reduces discharges to tide and provides water supply for delivery to the Hillsboro Canal during the dry season reducing demand on regional water supply sources including WCA-1. Maintaining optimal water levels in the impoundment and within the L-36 Borrow Canal will also reduce seepage from adjacent natural areas. At this time, the Department does not require any mitigation to offset the functional loss of wetland areas. However, if construction or operations are discontinued once impacts have occurred and the project has not been accepted by the local sponsor, the Corps shall coordinate with the Department to obtain a modification to the permit prior to renewal or expiration of the permit to address these impacts. As a result of the modification, the Department may require restoration or additional activities necessary to offset the functional loss of any impacted wetlands, acknowledging that future federal authorization and appropriations may be required.
5. **Real Estate.** Copies of all real estate authorizations (i.e., right-of-way(s), leases, easements, land certifications by the local sponsor or other legal agreements that authorize the applicant to perform the activities described herein) shall be provided to the Department, at the address listed in Specific Condition No. 1, prior to initiation of construction or operational activities. All real estate information should include the tract numbers, folio numbers, section/township/range, and the status of the tracts. Construction activities shall not be permitted to commence on properties beyond public rights-of-way where real estate authorizations have not been received.

Construction

6. **Embankment Design (D-525).** Upon completion of plans and calculations for the re-design of the D-525 embankment, the permittee shall apply for a modification to this permit. The information to be submitted to the Department shall include, at a minimum, the following:
 1. Modifications to design plans and specifications associated with the removal of the wave break steps.
 2. Supporting documentation and calculations demonstrating that the revised embankment section meets dam safety criteria.

3. A determination from US FWS and FFWCC that identifies the design modifications as being consistent with the re-design objectives.

The permittee shall coordinate closely with the Department to determine whether any additional information or modifications to the permit are necessary as a result of the re-design.

7. **Authorized Construction.** This permit allows for the construction of the L-40 levee (D-525N), the S-530 spillway, the wildlife wetland area, miscellaneous site work and the conceptual authorization of the remaining pump stations, water control structures, levees, canal improvements, and other features as outlined in the "Project Components" section of this permit. In accordance with Specific Condition No. 6, the Corps shall also apply for a modification to this permit for the re-design of the south and east embankment levees. Construction of this feature shall not commence until authorization, in the form of a modification to this permit, has been received by Department. The permittee shall submit final plans and technical specifications to the Department for all components of the Site 1 Impoundment Project for consistency review at least 60 days prior to initiating the construction of such features. Upon review of the submitted plans and specifications, the Department will determine whether a permit modification will be required.
8. **Instructions to Contractors.** The permittee shall ensure that the permit conditions are explained to all construction personnel working on the project component and shall give a copy of this permit to each contractor and subcontractor before the authorized work begins. Prior to construction, the permittee shall schedule a pre-construction meeting for attendance by the contractor(s), and representatives from the Corps, the Department, and other environmental regulatory agencies. The Department shall receive at least two weeks' notice of the meeting. Within 30 days from the Notice-to-Proceed to the Contractor or upon Corps approval of a proposed construction schedule, whichever occurs first, the Corps shall provide the proposed construction schedule to the Department. Any modified schedules shall be provided to the Department at the earliest possible date.
9. **Environmental Protection Plan.** The permittee shall submit an Environmental Protection Plan to the Department to the addresses listed in Specific Condition No. 1, at least 30 days prior to commencement of any construction activities. The Department will review and provide a determination of whether or not the plan is consistent with Department statutes and rules. In accordance with Specific Condition No. 2, the plan shall describe the methods used to protect environmental resources, including fish and wildlife and adjacent marsh areas, to ensure that there shall be no unauthorized impacts to listed species, wetland plants or water quality as a direct result of construction activities. Prior to commencement of activities in the L-40 Canal (WCA-1), the Department shall receive verification that the proposed work plan was authorized with a special use permit issued by the LNWR.
10. **Site Inspections and Construction Meetings.** Throughout the construction of the Site 1 Impoundment Project phases, the Department intends to conduct periodic site inspections to ensure permit compliance and to monitor progress. The Department will coordinate with the Construction Manager or other Corps representative prior to performing any on-site inspections. Representatives of the Department may be accompanied by a third-party inspector and/or consultant at any time. Upon, or prior to, receipt of the written statement of completion and certification, the Department shall conduct substantial and final inspections as defined in the Technical Specifications for the project. It is anticipated that this activity may be completed in conjunction with other regulatory agencies and may be accomplished in stages as the project progresses.

11. **Construction Quality Assurance/Control.** For quality control purposes, the Corps Contracting Officer shall ensure that quality control testing and inspections occur during all phases of construction consistent with the accepted Contractor Quality Control plan as outlined in the technical specifications.
12. **Construction Best Management Practices (BMPs).** At all times during the construction, the permittee shall use best management techniques for erosion and sedimentation control. All graded areas shall be stabilized and vegetated immediately after construction to prevent erosion. The permittee shall take all reasonable precautions to minimize the suspension and transport of soils, levee materials, and roadway materials into waters adjacent to or downstream of the construction site. Prior to commencement of each contract, the permittee shall submit a plan to the Department, which details the use of sediment controls to minimize the suspension and transport of soils, levee materials, and roadway materials into waters adjacent to or downstream of the construction site, for review for consistency with Department statutes and rules. Once installation of the erosion controls identified in the submitted plan has been completed, the permittee shall notify the Department at the address listed in Specific Condition No. 1. The barriers shall remain in place until all adjacent construction activities are complete.
13. **Adjacent Wetlands and Preserve Areas.** Wetlands and preserve areas adjacent to construction activities shall be staked and fenced off with construction fencing or other effective physical barriers to prevent encroachment into these wetlands prior to the commencement of construction. During construction and dewatering associated with the L-40 Levee improvements, the limits and extent of the construction activities shall minimize temporary impacts to adjacent wetlands. All areas of exposed soils shall be isolated from wetlands, preserves and surface waters to prevent deposition of sediments into these areas during construction activities. All excavated or dredged material shall be placed strategically to prevent the transport of any material into wetlands, preserve areas and surface waters both during and after completion of the construction. Upon completion of the barrier installation, the Corps shall notify the Department at the address listed in Specific Condition No. 1. The barriers shall remain in place until all adjacent construction activities are complete.
14. **Water Quality Standards.** Under no circumstances shall the construction or operations of the Site 1 Impoundment Project cause or contribute to a violation of state water quality standards. The permittee shall comply with all applicable state water quality standards described in Chapter 62-302, F.A.C.
15. **Water Quantity, Water Quality, and Flooding Impacts.** The Corps shall be responsible for ensuring the project is constructed and operated in the interim so as not to adversely affect adjacent lands outside the Site 1 Impoundment Project boundary with regards to water quantity, water quality, and/or flooding.
16. **NPDES Generic Permit for Stormwater Discharge from Large and Small Construction Activities.** The issuance of this permit does not constitute coverage under the National Pollutant Discharge Elimination System (NPDES) Generic Permit for Stormwater Discharges from Large and Small Construction Activities (CGP) pursuant to Rule 62-621.300(4)(a), F.A.C. Permittee is advised to contact the Department's NPDES Stormwater Program at (850) 245-7522 or toll free at (866) 336-6312 or to download application information at <http://www.dep.state.fl.us/water/stormwater/npdes/construction3.htm#permit> prior to the commencement of any construction.

17. **NPDES General Permits.** The issuance of this permit does not constitute coverage under the NPDES General Permit for the Discharge of Produced Ground Water from any Non-Contaminated Site Activity pursuant to Rule 62-621.300(2), F.A.C. or any other NPDES General Permit. If any offsite discharges will occur due to construction dewatering activities, then coverage under the aforementioned General Permit may be required and the permittee is advised to review Rule 62-621.300(2), F.A.C. Before discharge of produced ground water can occur, analytical tests on samples of the proposed discharge water shall be performed to determine if contamination exists. If the analytical results comply with applicable criteria for use of the General Permit, then a short summary of the proposed activity and copy of the analytical tests shall be sent to the addresses in Specific Condition No. 1 within one week after discharge begins, and the permittee may proceed with the project component while abiding by all conditions of the General Permit.
18. **Dewatering.** For construction dewatering activities that are anticipated to occur, the permittee shall submit site-specific dewatering information for determination of consistency with Department rules and statutes at least 30 days prior to commencement of dewatering activities. The information submitted to the Department shall meet the requirements of Rules 40E-2 and 40E-20, F.A.C., for on-site and offsite dewatering activities. Prior to dewatering, the Corps will coordinate with the District restoration permitting group. Any information submitted to the Department shall also, at a minimum, contain the following:
- Site plan of the project component with the location of the proposed discharge point(s), water quality monitoring plan and the associated water quality monitoring locations;
 - Location and type of turbidity control devices and methods necessary to ensure state water quality standards shall be met;
 - Calculations estimating the area of influence of dewatering; the depth of dewatering, pumpage rates, duration and volumes, and a demonstration that the requested allocations represent reasonable dewatering needs;
 - Reasonable assurance that the dewatering water will remain onsite. If it is not technically feasible to retain dewatering water onsite, then the plan shall also include:
 - a) Demonstration and documentation that the permittee is authorized to discharge to the receiving water body and/or adjacent lands;
 - b) Operational plan, which demonstrates that the discharge to the receiving water body shall meet all applicable state water quality standards prior to discharge, and also contains the proposed sampling locations and daily turbidity measurements; and,
 - c) Contingency plan, which includes procedures for ceasing dewatering operations and correcting the situation until water quality standards are met.
19. **Mixing Zone.** A 50-meter (164 feet) temporary mixing zone for turbidity in the L-40 Canal downstream of the construction work area is hereby authorized for a period not to exceed one year in accordance with Rule 62-4.242 and 62-4.244, F.A.C., during construction activities. Zero nephelometric turbidity units (NTU) above background for turbidity shall be achieved within a 50-meter mixing zone in surface waters downstream of the construction work area. Failure to achieve the OFW requirements for turbidity at the 50-meter boundary or boundaries shall result in the temporary suspension of construction. Construction shall resume only once OFW requirements for turbidity are met at the 50-meter boundary or boundaries and steps are taken to prevent exceedances from occurring. Compliance with the mixing zone criteria shall be measured twice daily during construction of the Site 1 Impoundment Project. Notification of any non-compliance event shall be

submitted electronically within 24 hours of such event to the address in Specific Condition No. 1. The Department may, as a result of any non-compliance event, require the Corps to perform flow and stage monitoring at the boundary or boundaries of the mixing zone. Compliance with the authorized mixing zone shall be reported in the quarterly reports required by Specific Condition No. 20. Expansion of the temporary mixing zone, or extension of the time limit beyond one year, may be authorized upon Department receipt of information that warrants such changes and modification of this permit condition.

20. **Turbidity Monitoring.** Effective means of turbidity control, such as, but not limited to, turbidity curtains shall be employed during all construction activities that may create turbidity so that turbidity shall not exceed 0 NTU above background in receiving waters that are classified as OFW and 29 NTUs above background in Class III receiving waters unless authorized by the Department in accordance with Rule 62-4.244. Turbidity controls shall be maintained around the construction work area, which is not to extend into the marsh of the LNWR, in order to confine turbidity generated by the construction activities within the work area. All turbidity control devices and/or preventive operation procedures shall remain in place until all turbidity has subsided and the turbidity level at the compliance sampling site meets state standards.

Sampling and analyses shall be performed as required by Chapter 62-160, F.A.C. Turbidity monitoring equipment and personnel trained to use it shall be available on site at all times during construction activities that could result in project-generated turbidity levels beyond the construction work area that have the potential to be discharged to the receiving water body. During construction, turbidity levels shall be monitored at least twice daily, with samples taken at a minimum of once every four hours, as follows:

- a. Monitoring samples shall be taken at the following locations, as a minimum:
 1. Background Sample(s)
 - i. L-40 Canal (Background Turbidity): Located within the L-40 Canal, at least 100 feet upstream of the construction work area and clearly outside of the influence of construction activities.
 - ii. Hillsboro Canal (Background Turbidity): Located within the Hillsboro Canal, at least 100 feet upstream of the construction work area and clearly outside the influence of any construction activities. Depending on construction sequencing, this station may be relocated or replaced by another monitoring station once construction activities are near or within the sample site limits.
 - iii. L-36 Borrow Canal (Background Turbidity): Located within the L-36 Borrow Canal, at least 100 feet upstream of the construction work area and clearly outside of the influence of any construction activities.
 2. Compliance Sample(s)
 - i. L-40 Canal (Compliance Turbidity): Located within the L-40 Canal, no more than 164 feet (50 meters) downstream of or radial to the construction work area(s) within the densest portion of any visible turbidity plume.
 - ii. Hillsboro Canal (Compliance Turbidity): Located within the Hillsboro Canal, downstream of the construction work area directly outside of the turbidity curtains and within the densest portion of any visible turbidity plume.
 - iii. L-36 Borrow Canal (Compliance Turbidity): Located within the L-36 Borrow Canal, downstream of the construction work area directly outside of the turbidity curtains and within the densest portion of any visible turbidity plume. Depending on construction sequencing and flow direction within the L-36 Borrow Canal, these

compliance stations may be relocated or replaced by other stations associated with adjacent activities.

- b. Turbidity monitoring results shall be compiled daily and summarized quarterly (every three calendar months) by project component, beginning with the first calendar month in which construction or maintenance projects occur that could generate turbidity in receiving waters and continuing until all construction, dredging, and/or excavation is completed. Monitoring data with supporting documents shall be submitted to the Department quarterly, to the addresses identified in Specific Condition No. 1, during the period of actual construction. If no construction occurs that could generate turbidity during the quarterly monitoring period, the report shall be so noted. The reports shall clearly identify the following information:

- Permit number;
- Dates and time of sampling and analysis;
- Statement describing the methods used in collection, handling, storage and analysis of the samples;
- Statement of compliance/non-compliance with the requirements of Specific Condition 19 and 20;
- Clear description of project component activities taking place at the time of sampling;
- Map indicating the sampling locations;
- Name of individual collecting samples; and a,
- Statement by the individual responsible for implementation of the sampling program concerning the authenticity, precision, limits of detection and accuracy of the data.

Monitoring reports shall also include the following information for each sample that is taken:

- Water depth;
- Depth of sample;
- Weather conditions; and
- Water level stage in the canal and direction of flow.

In the event that project generated turbidity levels exceed zero NTU above background in waters that are classified as OFWs, or 29 NTUs above background in any other receiving waters, project activities contributing to elevated turbidity shall immediately cease unless otherwise authorized by Specific Condition No. 19, and the Department shall be notified within 24 hours. Work shall not resume until the work can be conducted in compliance with these turbidity limits where applicable.

21. **Future Phases.** This permit does not authorize any construction or long-term operational activities associated with future portions of the Site 1 Impoundment Project. Future phases, including long-term operations, shall require separate review and approval by the Department.

Interim Operations

22. **Interim Operations Responsibility.** The Corps shall submit the final version of the Project Operating Manual to the Department for a determination of consistency with Department statutes and rules as well as CERP Guidance Memorandum, at least 60 days prior to initiation of interim operations. Interim operations, which include the testing and commissioning period and the operational, testing and monitoring period, are anticipated to continue for up to 33 months following construction of the impoundment. During this timeframe, the permittee will be the entity ultimately responsible for operations, possibly with the assistance of third parties. If it is anticipated that the interim operations period will exceed 33 months, an additional operational authorization may be required from the Department in the form of a modification to this permit or separate operational permit.
23. **Initial Pump Testing and Maintenance.** In order to ensure operational readiness, testing and maintenance operations may be required by the construction contractor and/or permittee for the pumps authorized by this permit. Operational readiness requirements of the pump stations include operation of the pumps for approximately two to four hours per month, as necessary, to maintain their mechanical integrity. The permittee shall include all monitoring results for inflow volumes and phosphorous load during interim operations as a part of the annual monitoring requirements of this permit.
24. **Public Health, Safety, and Welfare.** Pursuant to 373.1502, F.S., discharges from the Site 1 Impoundment Project component shall not pose a serious danger to public health, safety, or welfare.

Monitoring

25. **Water Quality Monitoring.** The permittee shall collect and analyze surface water quality monitoring data in accordance with the Construction Monitoring Plan for Site 1 Impoundment (Fran Reich Preserve) and Interim Monitoring Plan for Site 1 Impoundment (Fran Reich Preserve) (Document No. 10 and 11) using the parameters and frequencies identified in Table(s) 1 and 2 of this permit and at the sites shown on Figures 2 and 3. Prior to commencement of construction activities, the Corps shall submit the final water-quality monitoring plans to the Department for review to determine whether modification to the permit is necessary. Any modifications to these documents shall be submitted to the Department for review and for determination as to whether a modification to the permit is required.

A. Quality Assurance and Quality Control. Sampling and monitoring data shall be collected, analyzed, reported and retained in accordance with Chapter 62-160, F.A.C. Any laboratory test required by this permit shall be performed by a laboratory that has been National Environmental Laboratory Accreditation Program (NELAP)-accredited (primary or secondary) with the Florida Department of Health (DOH) under Chapter 64E-1, F.A.C., where such certification is required by Rule 62-160.300, F.A.C. The laboratory must be certified for all specific method/analyte combinations that are used to comply with this permit. The analytical method used shall be appropriate so as to determine if the sample complies with Class III surface water quality standards as specified in Chapter 62-302, F.A.C. All field activities including on-site tests and sample collection, whether performed by a laboratory or another organization, must follow all applicable procedures described in DEP-SOP-001/01 (March 31, 2008). Alternate field procedures and laboratory methods may be used if they have been approved according to the requirements of Rules 62-160.220, and 62-160.330, F.A.C.

B. Method Detection Limits. The sample collection, analytical test methods, and method detection limits (MDLs) applicable to this permit shall be performed and reported in accordance with Rule 62-4.246, F.A.C. A list of Department established analytical methods, and corresponding MDLs and practical quantitation limits (PQLs), which is titled "Florida Department of Environmental Protection Table as Required by Rule 62-4.246(4) Testing Methods for Discharges to Surface Water" dated April 25, 2006, is available from the Department on request. The MDLs and PQLs as described in this list shall constitute the minimum acceptable MDL/PQL values, and the Department shall not accept results for which the laboratory's MDLs or PQLs are greater than those described above unless alternate MDLs and/or PQLs have been specifically approved by the Department for this permit. More stringent MDLs and PQLs may be necessary for specific parameters. If required, these will be identified in the permit monitoring tables (Tables 1 and 2).

26. **Mercury and Other Toxicants Monitoring.** Mercury and other toxicants will be monitored in accordance with Tables 1 and 2 of this permit, CERP Guidance Memorandum (CGM) 42: Toxic Substances Screening Process-Mercury and Pesticides, Documents 10 and 11 and shall be reported as part of any subsequent annual report required under Specific Condition No. 33.
27. **Removal of Monitoring Requirements.** Upon demonstration that a specific parameter(s) is not present or is found consistently in compliance with Class III water quality standards or OFW standards, the permittee may request a modification to the monitoring program as appropriate. A minimum of one year's worth of data, for those parameters being sampled quarterly or more frequently, will be required prior to the Department approving any modification to the monitoring program. The Department may approve a reduction of the monitoring frequency or waive the monitoring requirement for parameters that consistently are reported as in compliance with state water quality standards.
28. **Addition of Monitoring Requirements.** If the Department has reason to believe that additional monitoring may be required or parameters exist that may cause or contribute to water quality violations or degradation of receiving waters, additional monitoring or parameters shall be added to the monitoring section of this permit through a permit modification.

Reports and Notices

29. **Facility Inspection Plan and Reports.** No less than 90 days prior to the initiation of interim operations, the permittee shall submit the draft Operations, Maintenance, Repair, Replacement and Rehabilitation (OMRR&R) Manual to the Department at the address listed in Specific Condition No. 1 for annually evaluating the integrity and functionality of the above-ground levees and structures, including pump stations. The OMRR&R Manual shall follow the guidelines established under the District's Design Criteria Memorandum (DCM-11) during initial operation of the impoundment including inspections, evaluations and report preparation. During interim operations, the permittee shall be responsible for ensuring that facility inspections are completed in accordance with the OMRR&R with a summary included in the Annual Reports (Specific Condition No. 33). Within 30 days of final acceptance and turnover of the project to the local sponsor, the permittee shall provide a digital copy of the final OMRR&R to the Department.
30. **Initial Filling of the Impoundment.** At least 90 days prior to scheduling the initial filling of the impoundment, the permittee shall submit a final Initial Filling Plan to the Department along with an

Emergency Action Plan (EAP), which has been prepared in accordance with DCM 11. Subsequent updates to the EAP, as applicable, shall also be provided to the Department with the Annual Report.

31. **Construction Status Reports.** Construction Status Reports or Construction Meeting Minutes for each project phase shall be provided to the Department upon request and such reports shall continue to be available throughout the construction activities until all disturbed areas are successfully stabilized. These Reports may be requested through the Project Manager, Construction Manager, or obtained at the construction meetings.
32. **Construction Completion and Record Drawings.** In accordance with General Condition No. 12, the permittee shall submit a written statement of construction completion and as-built drawings or equivalent construction documentation to the Department. The statement of completion shall be based on on-site observation of construction and review of the as-built construction drawings for the purpose of determining whether or not the work was completed in compliance with permitted plans and specifications. If there is a deviation from the permitted plans, the construction completion statement shall note these deviations and may require inclusion of revised plan sheets and specifications identifying the changes. Note that major deviations may require a modification to this permit. Plans submitted to the Department shall be clearly labeled as "as-built" or "record" drawings with one electronic copy provided in PDF format and one hard copy. The permittee shall furnish the construction statement and record drawing information to the Department within 60 days or a reasonable timeframe from substantial completion of construction.
33. **Annual Reports.** The permittee shall submit an annual report to the Department detailing the construction and interim operations activities of the components authorized herein. These reports shall be submitted to the Department no later than March 1st of each year. The Corps may request a modification of the annual report submission date, and upon approval by the Department, the Corps may modify the submission date to coincide with other reporting requirements and time periods needed for data acquisition and analysis. At a minimum, the following information should be included in the annual reports:
 - a. **General Information.**
 - i. Permit number;
 - ii. Permit name;
 - iii. Permit administrator;
 - iv. Summary of monitoring results from work conducted under Specific Condition No. 20, 25, and 26;
 - v. Evaluation of project success in achieving its objectives;
 - vi. Problems encountered during period covered;
 - vii. Actions taken to address problems encountered; and,
 - viii. Any additional information specifically required by the conditions of this permit.
 - b. **Construction/Interim Operations.** A construction and/or operations summary shall include, at a minimum:
 - i. Construction/Inspections/Maintenance Progress Report; and,
 - ii. Annual Water Quality Monitoring Summary Report.
 - c. **Water Quality Data.** Data may be obtained from existing and/or proposed sampling locations. For proposed sampling locations, the Corps shall provide a schedule for installation

of all monitoring stations/wells. Records of monitoring information, where applicable, shall include:

- i. Date, location, and time of sampling or measurements;
- ii. Person responsible for performing the sampling or measurements;
- iii. Dates analyses were performed or the appropriate code as required by Chapter 62-160, F.A.C.;
- iv. Person responsible for performing the analyses;
- v. Analytical techniques or methods used, including MDL;
- vi. Results of such analyses, including appropriate data qualifiers;
- vii. Depth of samples;
- viii. Flow conditions, including direction of flow, and weather conditions at time of sampling; and,
- ix. Monthly flow volumes;
- x. For structure G-56, once interim operations commence, an evaluation should be provided that includes the following:
 1. Monthly/seasonal (wet vs. dry)/annual changes in nutrient (TP, NH₄, NO_x, and TKN) concentrations and loads
 2. Monthly/seasonal (wet vs. dry)/annual changes in chlorophyll-a (phaeophytin corrected) concentrations and loads; and,
 3. Comparison of these above calculated values to pre-project data collected at S-39; and,
 4. If results from the analysis conducted above (1-3 of this condition) indicate the need for operational changes, this information, along with proposed operational modifications, shall be provided as part of d(ii) below.
- xi. Analysis, both graphical and narrative, of water-quality data (e.g., NO_x, NH₄, TKN, TP, and chlorophyll-a) collected under Tables 1 and 2 of this permit.

d. **Implementation Schedules.** When appropriate, the permittee shall include information on:

- i. Site 1 Impoundment Project and CERP implementation;
- ii. Program/Project level adaptive management;
- iii. Project design modifications; and,
- iv. Implementation of remedial measures in the event of noncompliance with permit conditions.

Factors Impacting Compliance

34. **Emergency Suspension of Sampling.** Under hurricane, tropical storm warnings, or other extreme weather conditions, the Corps' normal sampling schedule may be suspended if necessary. The Corps shall notify the Department's Restoration Planning and Permitting Section at the address and telephone number listed in Specific Condition No. 1 of any suspension of sampling associated with hurricanes, tropical storms, or other extreme weather events that may require deviation from the normal sampling schedule. Within two days following the cessation of emergency conditions, the Corps shall notify the Department of when normal sampling is expected to resume.

35. **Factors Outside the Permittee's Control.** In the event that non-compliance or failure to achieve performance objectives occurs for any reason other than those listed below, the Corps shall take appropriate remedial measures.

A. Natural Background. Deviations from water quality standards may occur as a result of natural background conditions, in accordance with Section 403.021(11), F.S.

B. Random Variation. The Corps shall report any statistical uncertainty in the methodology using acceptable scientific methods.

C. Other Factors. Unavoidable legal barriers or restraints, including those arising from actions or regulations not under the control of the Corps.

Renewals and Modifications

36. **Permit Modifications.** The permittee shall submit proposed permit modifications of the Site 1 Impoundment Project to the Department, prior to implementation of the modification, for review and approval by the Department.
37. **Permit Renewal.** At least 60 days prior to the expiration of this permit, the permittee shall apply for renewal of this permit. Renewal may be for a period of up to five years in accordance with Subsection (3)(g) of the CERPRA.
38. **Department Review and Approval.** Where conditions in this permit require Department review of remedial actions or plan modifications to be implemented pursuant to this permit, the Department shall consult with the permittee to ascertain whether mutual agreement can be reached. If mutual agreement on the remedial actions or plan modifications cannot be reached, the action of the Department shall be deemed final agency action and shall be subject to judicial or administrative review, as appropriate.

Key for Tables

Sample Type/Collection Method

SW	Surface water
GW	Ground water
G	Grab
IN SITU	In Situ Field Sample
ACF	Flow-Proportional Autosampler
PR	Pump Record
CAL	Calculated Parameter
RG	Rain Gauge
FT	Fish Tissue

Frequency

W	Weekly
M	Monthly
BW	Bi-weekly
DAV	Daily Averages of Continuous Sampling
DAC	Daily Accumulation of Continuous Sampling

Unit

µmhos	Micromhos/cm
NTU	Nephelometric turbidity unit
SU	Standard Units
mg/L	Milligrams per liter
µg/L	Micrograms per liter
°C	Degrees Celsius
ng/l	Nanograms per liter
mg/kg	Milligrams per kilogram

Table 1: Water- Quality Monitoring During Construction ^{1,6}.

Parameter	Units	Sample Type/Collection Method	Sampling Frequency	Sampling Location
Turbidity ¹	NTU	SW	See Specific Condition No. 20.	Hillsboro Canal (D-525 Work Sites) ² , L-40 Canal (Vicinity of L-40 Toe ³ Rehabilitation), and L-36 Borrow Canal ⁴
Beryllium (Be)	µg/l	SW/G	M during dredging activities ⁵	Hillsboro Canal (immediately downstream of the project)
Lead (Pb)	µg/l	SW/G	M during dredging activities ⁵	Hillsboro Canal (immediately downstream of the project)
Antimony (Sb)	µg/L	SW/G	M during dredging activities ⁵	Hillsboro Canal (immediately downstream of the project)

Permittee: U.S. Army Corps of Engineers, Jacksonville District

Project: Site 1 Impoundment Project

File No.: 0296895-001

Page 21 of 28

¹During the first phase of construction, turbidity monitoring will be conducted according to Specific Condition No. 20.

²D-525 work sites include: background location (100-feet upstream) and compliance location.

³L-40 Canal (Vicinity of L-40 Toe Rehabilitation) work sites include: background location (100-feet upstream) and compliance location (164-feet downstream).

⁴L-36 Borrow Canal work sites include: background location (100-feet upstream) and compliance location.

⁵Parameters shall be sampled monthly during dredging activities and results shall be submitted to the Department within two weeks of sample collection.

⁶Prior to construction activities commencing, monitoring at the G-56 structure shall begin in accordance with Table 2 of this permit.

Table 2: Water-Quality Monitoring During Interim Operations.

Parameter	Units	Collection Method	Sampling Frequency	Sampling Location
Temperature	°C	IN SITU	W, if recorded flow	S-525, S-526, G-56 ³
Specific Conductance	µmhos/cm	IN SITU	W, if recorded flow	S-525, S-526, G-56 ³
Turbidity	NTU	G	W, if recorded flow	S-525, S-526, G-56 ³
pH	SU	IN SITU	W, if recorded flow	S-525, S-526, G-56 ³
Dissolved Oxygen (DO)	mg/l	IN SITU	W, if recorded flow	S-525, S-526, G-56 ³
Ammonia (NH ₄)	mg/l	G	W, if recorded flow	S-525, S-526, G-56 ³
Total Kjeldahl Nitrogen (TKN)	mg/l	G	W, if recorded flow	S-525, S-526, G-56 ³
Nitrate + Nitrite (NO _x)	mg/l	G	W, if recorded flow	S-525, S-526, G-56 ³
Total Phosphorus (TP)	mg/l	ACF/G	W, if recorded flow	S S-525, S-526, G-56 ³
Sulfate (SO ₄)	mg/l	G	BW	S-525, S-526
Chlorophyll-a (Phaeophytin corrected)	µg/l	G	W, if recorded flow	S-525, S-526, G-56 ³
Stage	Feet	Stage recorder	Daily	S-525
Flow	CFS	PR/CAL	DAV	S-525, S-526, S-527 ² , S-528, S-530 ² , G-56 ³
Rainfall	inches	RG	DAC	S-39
THg	ng/l	G	Quarterly	S-525, S-526
MeHg	ng/l	G	Quarterly	S-525, S-526
Mercury (MeHg)	mg/kg	FT (Mosquitofish)	Quarterly	S-525, S-526
Mercury (MeHg)	mg/kg	FT (Sunfish, Largemouth Bass)	Annually	S-525, S-526
Lindane	µg/l µg/kg µg/kg	G FT (Mosquitofish) FT (Sunfish, Largemouth Bass)	Q Q Annually	Immediately downstream of project area
p,p'-DDE	µg/l µg/kg µg/kg	G FT (Mosquitofish)	Q Q Annually	Immediately downstream of project area

Permittee: U.S. Army Corps of Engineers, Jacksonville District

Project: Site 1 Impoundment Project

File No.: 0296895-001

Page 23 of 28

¹ACF samples apply to S-525 and S-526 structures.

²During periods of flow from these structures, water-quality monitoring samples shall be provided from S-526.

³Monitoring at the G-56 structure shall begin prior to construction activities commencing.

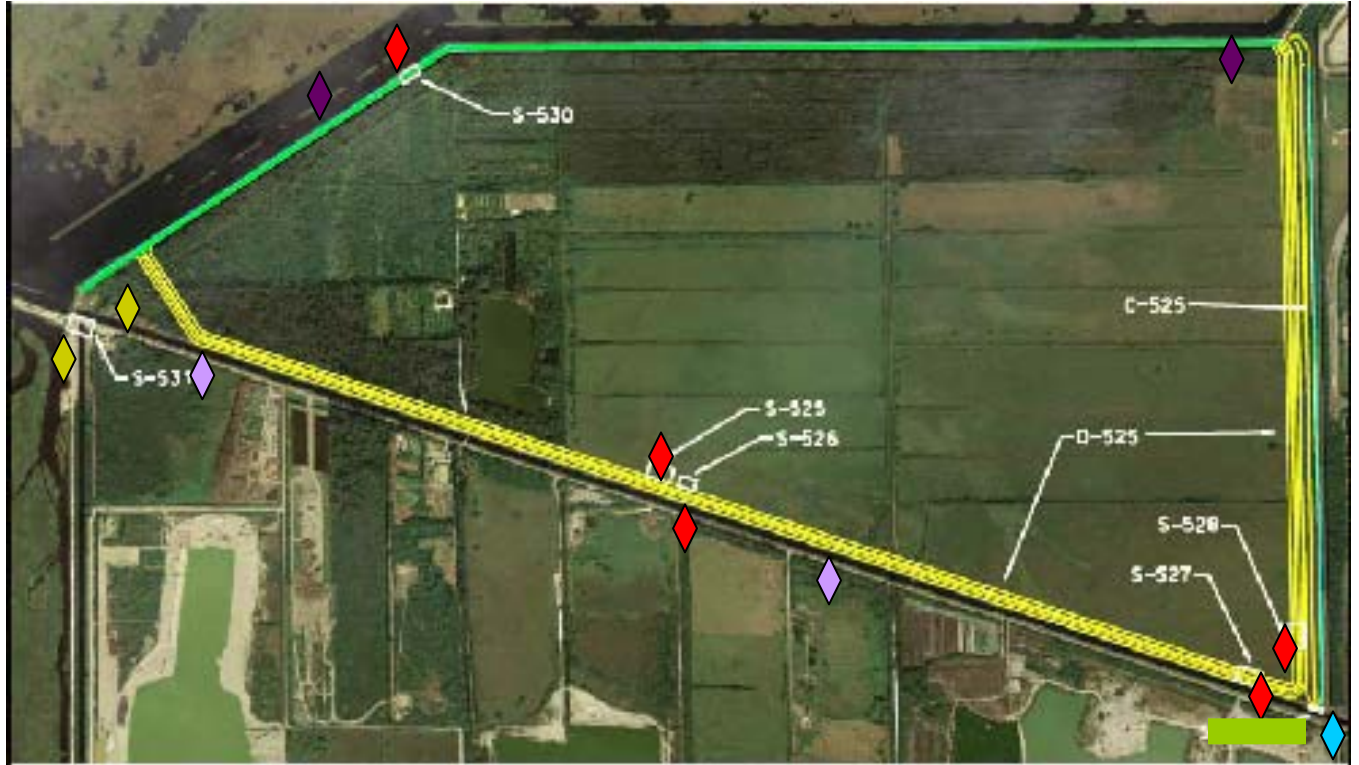
Permittee: U.S. Army Corps of Engineers, Jacksonville District
Project: Site 1 Impoundment Project
File No.: 0296895-001
Page 25 of 28

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Figure 1. Site 1 Impoundment Project Components.



Figure 2. Site 1 Impoundment Project: Construction Monitoring Locations.



- ◆ Construction Phase Monitoring Stations Located at Identified Structures
- ◆ Hillsboro Canal -- Downstream
- ◆ D-525 Worksite -- Background & Compliance
- ◆ L-40 Canal -- Background & Compliance
- ◆ L-36 Borrow Canal - Background and Compliance

Figure 3. Site 1 Impoundment Project: Interim Operations Monitoring Locations.



◆ -- Interim Operations Monitoring Stations