

**FACT SHEET
FOR
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
INDUSTRIAL WASTEWATER FACILITY PERMIT**

Permit No.: FL0473804-001-IW7A

Permit Writer: John Hallas

Application No.: FL0473804

Application Date: December 23, 2003

1. SYNOPSIS

a. Name and Address of Applicant:

South Florida Water Management District
3301 Gun Club Road
West Palm Beach, FL 33406

For:
Stormwater Treatment Area 6 (STA-6)

b. Type of Facility:

Primary SIC: 3822 Environmental controls
Secondary SIC: Standard Industrial Codes not available.

The facility is a designed and engineered flow through marsh system which utilizes natural biological processes to remove excess phosphorus in stormwater runoff. STA-6 is a stormwater management system (SMS) as defined in Subsection 373.403(10), Florida Statutes (F.S.). Structural, operational and vegetation enhancements have been conducted in accordance with the October 2003 *Everglades Protection Area Tributary Basins Long-Term Plan for Achieving Water Quality Goals* and subsequent revisions (Long-Term Plan). These enhancements are designed to optimize performance as needed to achieve the phosphorus water quality standard. Additional enhancements to STA-6 may occur as part of the adaptive implementation process envisioned in the Long-Term Plan.

c. Design Capacity of Facility

The facility's distribution components have an inflow design capacity of 4,800 cfs. The treatment area is designed to provide 2,170 acres of effective treatment area with a design capacity of 3,250 cfs. The inflow to STA-6 consists almost entirely of agricultural stormwater runoff, and as such, varies considerably on a daily, monthly, seasonal and annual basis. The simulated long-term average inflow to the treatment area for the 1998-2005 period of record used in establishing the technology-based effluent limitation was 78,600 acre feet per year (Goforth et al., 2007).

d. Applicant's Receiving Water

Monitoring Group D-001 (G-352B): Discharges to L-3 Borrow Canal, Class III Fresh waters.

Latitude: 26° 22' 15" N Longitude: 80° 52' 53" W

Monitoring Group D-002 (G-396B): Discharges to L-3 Borrow Canal, Class III Fresh waters.

Latitude: 26° 22' 15" N Longitude: 80° 52' 53" W

Monitoring Group D-003 (G-353B): Discharges to L-3 Borrow Canal, Class III Fresh waters.

Latitude: 26° 21' 53" N Longitude: 80° 52' 52" W

Monitoring Group D-004 (G-354C): Discharges to the L-3 Borrow Canal, Class III Fresh waters.

Latitude: 26° 21' 00" N Longitude: 80° 52' 85" W

Monitoring Group D-005 (G-393B): Discharges to the L-3 Borrow Canal, Class III Fresh waters.

Latitude: 26° 20' 19" N Longitude: 80° 52' 93" W

e. Associated Documents

The following documents are associated with the NPDES Permit No. FL0473804-002-IW7A:

1. **Administrative Order AO-012-EV**- This Order details a compliance schedule for achieving the conditions set forth in this permit. A summary of the associated schedules can be found in the Administrative Order section of this Fact Sheet.
2. **Exhibit A:** Technical Support Document for the STA-6 TBEL¹- This document establishes TBEL limits and identifies factors which may impact flows and loads associated with the treatment system.
3. **Exhibit B:** Dissolved Oxygen Site Specific Alternative Criteria Technical Support Document²- This document establishes an alternative criterion for dissolved oxygen in the Everglades Protection Area pursuant to Section 62-302.800, F.A.C.
4. **Exhibit C:** Stormwater Treatment Area 5 & 6 Pollution Prevention Plan (PPP)³- The PPP provides a summary of operations for STA-6, and describes factors which may impact those operations.
5. **Exhibit D:** The Everglades Protection Area Tributary Basins Long-Term Plan for Achieving Water Quality Goals⁴- The Long-Term Plan includes structural, vegetative, and operational improvements and enhancements which will aid in the optimization of the hydraulic distribution and phosphorous removal of the project. The Long-Term Plan also includes detailed schedules associated with the identified improvements and enhancements. Revisions to the Long-Term Plan are available on the District's webpage for the Long-Term Plan: <http://www.sfwmd.gov/sta>.
6. **Exhibit E:** Treatment Wetlands⁵- This document provides background on the characteristics of wetland treatment systems.
7. **Exhibit F:** Test for Determining Achievement of 50 Part Per Billion Phosphorus Initial TBEL For Everglades Stormwater Treatment Areas⁶

f. Facility Description

The individual Everglades Construction Project (ECP) components included in STA-6 are as follows: STA-6 Inflow Structures and Inflow Works Modification, STA-6 Interior Treatment Works, STA-6 Outflow Structures, STA-6 Discharge Canal and Discharge Canal Relocation, Levee Bridge, Structure Removal, G-407 Diversion Structure.

STA-6 Inflow Structures and Inflow Works

Flows to STA-6, Section 2 will be delivered into a new inflow canal through a gated structure, G-351, at the L-3 Canal. This structure includes two 9' x 10' box culverts with remotely-operated, single-panel gate systems. An inflow canal will be constructed along the west side of the treatment cell extending from the L-3 Canal north to the limits of the cell. A plug in the

¹ Exhibit A: Goforth, G., N. Ircanin, S. Hill, S. Xue, T. Piccone, F. Nearhoof, and Ken. Weaver, *Technical Support Document for the STA-6 TBEL*. 2007.

² Exhibit B: Weaver, Ken, Florida Department of Environmental Protection, *Dissolved Oxygen Site Specific Alternative Criteria Technical Support Document*, January 2004.

³ Exhibit C: South Florida Water Management District, *Stormwater Treatment Area 6 Pollution Prevention Plan*, April 1999 and subsequent revisions

⁴ Exhibit D: South Florida Water Management District, *Everglades Protection Area Tributary Basins Long-Term Plan for Achieving Water Quality Goals*, October 2003 and subsequent revisions.

⁵ Exhibit E: Kadlec, Robert and Robert Knight, *Treatment Wetlands*, Boca Raton, pg. 474-475, 1996.

⁶ Exhibit F (Nearhoof *et al*, 2005)

inflow canal to the south of G-351 will be placed to ensure that flows through G-351 are strictly routed to the Section 2 inflow structures described below.

Inflows to the STA-6, Section 2 treatment cell will be controlled by three gated 8'x8' box culverts (G-396A, G-396B and G-396C) installed within the west levee of the treatment cell. These gated culverts and associated internal distribution canals will direct water from the inflow canal into the treatment cell. Inflow structures will have remotely-operated, single-panel gates.

With the addition of STA-6, Section 2 and future build-out considerations, delivery of stormwater to the Section 1 inflow canal is no longer feasible in the current configuration. Inflow works modifications will include construction of three 8'x 8' gated box culverts (G-353A, G-353B and G-353C) within the east levee of the L-3 Canal to direct untreated water from the L-3 to the existing inflow canal. Inflow structures will have remotely-operated, single-panel gates. Structures G-353A and G-353B will control discharge to Cell 5 inflow canal; structure G-353C will control discharge to Cell 3. Existing Weirs, structures G-601, G-602 and G-603, will be removed.

STA-6 Interior Treatment Works

STA-6 consists of a wetland marsh system which utilizes biological treatment technology in the removal of nutrients from stormwater that enters the facility. Wetland vegetation within STA-6 is managed in conjunction with hydrologic operations to maintain optimal performance levels within the facility. The structural works involved in the operation of STA-6 consist of inflow and discharge conveyance canals, treatment cell divide levees, and independent treatment cells. The combination of all treatment paths provides an effective treatment area of 2,170 acres.

STA-6 Outflow Structures

A series of six internal outflow structures (Cell 3: G-393A-C; Cell 5: G-354A-C) located along the discharge canal, release treated water which flows to the L-4 Borrow Canal.

In Section 2, the G-352 A, B, and C structures are situated along the east perimeter levee of the STA and convey outflows to the discharge canal, which is exterior of the STA. Outflow structures in Section 2 include multi-leaf operable gates to allow release of water from the upper section of the water column to reduce scouring of the collection canal.

The G-352 outflow structures will be regularly operated to maintain STA-6 interior stages at desired levels. The structures will be fully closed only when interior stages fall below prescribed levels, for maintenance or when it is desirable to prevent STA-6 discharges.

STA-6 Discharge Canal and Discharge Canal Relocation

Flows will pass through the existing treatment cells from west to east and will be directed to the STA-6 discharge canal, located adjacent to the east perimeter levee of STA-6, via the six outflow control structures. The discharge canal for Section 2 will be a continuation northward of the existing discharge canal for STA-6 Section 1, and will direct treated water from the entire STA south into the L-3 Canal. The discharge canal and associated levees will be constructed parallel to the east levee of the STA for the full length of the project.

With the additional treatment volume from STA-6 Section 2, the existing culverts at the discharge canal and the L-3 Canal are no longer adequate. Considering the flow patterns around this canal confluence and anticipating future buildout of the upstream area, a portion of the STA-6 discharge canal will be relocated as part of this project. This relocation requires removal of a 210' wide section of the L-3 Canal levee.

Levee Bridge

A bridge over the discharge canal will replace the relocated section of the L-3 Canal levee to provide greater flow capacity and access to the L-3 Canal levee.

Structure Removal

After relocation of the discharge canal and construction of new facilities in the area, two existing structures, the G-155 and G-604, will no longer be needed for system operations and will be removed as part of this project.

G-407 Diversion Structure

The G-407 Diversion Structure will divert excess flows to WCA-3A when flows cannot be treated by STAs prior to the Build-out phase. Under normal operation, the structure will remain closed to divert water into the upstream stormwater treatment areas and isolate L-3 from the rest of the L-canals. During certain events that compromise the safe operation of the facilities, when stage elevations of waters, rates of inflows, or the duration of sustained inundation creates conditions threatening the survival of marsh vegetation and the treatment efficiency of the project or when water supply needs require it, the structure will be operated allowing diversion around the STAs and continue south in the L-3 Canal. This structure also provides access over the L-3 Canal. G-407 is located near the southwest corner of STA-6 Section 1.

Structural, Operational and Vegetation Enhancements

In accordance with the EFA, the District is in the process of completing structural, operational and vegetation enhancements to STA-6 designed to achieve compliance with state water quality standards. These are described in detail in the District's Long-Term Plan and are summarized below:

- Construction of a new water supply pumping station (G-401) for irrigation of STA-6;
- Construction of STA-6, Section 2 for the capture and treatment of runoff from the C-139 Basin and the C-139 Annex located just west of the L-2/L-3 borrow canal;
- Structural modifications to STA-6 Section 1, to optimize the operation of the STA-5/ STA-6 system.

Recreational Facilities

In fulfillment of the public access and recreation requirements of the EFA Subsection 373.4592 (4)(a) F.S., and as further described in Subsections 373.1391(1)(a) and (b) F.S., recreational facilities are proposed at STA-6. The proposed recreational facilities shall be designed to ensure compatibility with the restoration goals of the ECP and the water quality and hydrological purposes of the STAs. The proposed STA-6 facilities may include:

- an asphalt parking area large enough to accommodate vehicles with trailers.
- a trail head, composting toilets, informational kiosks, landscaping, and viewing towers.
- one multi-use trail on top of the levee to accommodate all user groups, hiking, biking, equestrian, and bird watching.
- pedestrian gates, signage and fencing as needed to define public access areas and to protect sensitive equipment are also proposed.

STA Operations Summary.

Operation and maintenance activities authorized by this permit involve maintaining water levels within the STA to optimize efficiency of the treatment area. Optimization of the treatment wetland is defined by its performance at removing the pollutants, particularly phosphorus, for which the project was designed. Other operation and maintenance activities include: water quality and vegetation monitoring; preparation and submittal of monitoring reports; vegetation maintenance; and maintenance of the water control structures (including canals and levees).

Currently, run-off from approximately 10,400 acres of adjacent agricultural lands are routed through STA-6 and are discharged into the L-4 Borrow Canal. Once flow-through activities for Section 2 commence, the STA-6 facility shall have the ability to treat and improve the quality of water discharged from portions of the C-139 Basin tributary to the L-3 Borrow Canal, from United States Sugar Corporation (USSC) Unit 1 (C-139 Annex), and Compartment C (former USSC Unit 2). The runoff shall enter the STA through inflow structures, receive treatment via passive biological technology, and be discharged into the STA-6 Discharge Canal via Section 2 and Section 1 outflow structures. Wetlands and surface waters located within the receiving water body, the northwestern portion of WCA-3A, the L-4 Borrow Canal, and L-3 Canal Extension are Class III waters.

g. Description of Discharges (as reported by applicant)

Monitoring Group D-001: Discharge of treated stormwater from the C-139 Annex, C-139 Basin and Compartment C.
 Monitoring Group D-002: Discharge of treated stormwater from the C-139 Annex, C-139 Basin and Compartment C.
 Monitoring Group D-003: Discharge of treated stormwater from the C-139 Annex, C-139 Basin and Compartment C.
 Monitoring Group D-004: Discharge of treated stormwater from the C-139 Annex, C-139 Basin and Compartment C.
 Monitoring Group D-005: Discharge of treated stormwater from the C-139 Annex, C-139 Basin and Compartment C.

2. BASIS FOR EFFLUENT LIMITS AND MONITORING REQUIREMENTS

The following table provides the basis for Part I. A. provisions.

Table 1. Basis for Provisions of Part I.A: Outfall D-001 through D-005

Parameter	Units	Limit	Statistical Basis	Rationale
pH	SU	6.0	Daily Minimum	Rule 62-302.530(52), F.A.C.
pH	SU	8.5	Daily Maximum	Rule 62-302.530(52), F.A.C.
Phosphorus, Total (as P)	ppb	10 ppb ¹ See I.A.5 ² See I.A.6	Report	Section 373.4592, F.S.; Rule 62-302.540 F.A.C.; Rule 62-302.530(48)(b), F.A.C.
Oxygen, Dissolved (DO)	mg/l	See I.A.7 and Report	See attached DO SSAC	Rule 62-302.800, F.A.C.
Flow	CFS	See I.A.6	Daily Average	

The following were used as the basis of the permit limitations/conditions:

A. FAC refers to various portions of the Florida Administrative Code.
 The effective dates of relevant provisions of FAC Rule Chapters cited in the permit and in this document are as follows:

<u>Chapter</u>	<u>Effective Date</u>
62-4	05-01-03
62-160	06-08-04
62-302	01-09-06
62-601	12-24-96
62-620	12-23-04
62-650	12-26-96
62-660	05-10-05

B. FS refers to various portions of the Florida Statutes

¹ Monitoring results for this parameter shall be reported as a monthly average and as an annual average. The “monthly average” is a flow-weighted mean of the weekly effluent samples. The “annual average” shall be computed for each water year (May - April) and is equal to the flow-weighted mean concentration for the water year.

² The 10 ppb effluent limit represents the phosphorus criterion set forth in Rule 62-302.540(4)(a), F.A.C. and is consistent with Section 301(b)(1)(C) of the CWA. A water quality based effluent limitation (WQBEL) for phosphorus will be established in accordance with Rule 62-650 F.A.C. and Section 373.4592 Florida Statutes by December 31, 2010 and will be a major permit modification. It is recognized that the ultimate WQBEL to be developed may be higher than a flow-weighted mean of 10 ppb. The antibacksliding provisions of the CWA and NPDES regulations do not apply to an effluent limitation with a delayed compliance date, until the date of compliance. In this case, restrictions on backsliding would not apply to the 10 ppb permit effluent limit until the established WQBEL takes effect at the end of the compliance schedule.

Parameter	Units	Limit	Statistical Basis	Rationale
C. CFR refers to various portions of the Code of Federal Regulations, Title 40				
D. BPJ refers to Best Professional Judgment				

The Department has concluded that the most appropriate way to measure whether the STA-6 project is achieving the design goal for phosphorus requires consideration of the known characteristics of wetland treatment systems. Wetland treatment systems reach optimal performance only after initial periods called “start-up” and “stabilization” phases. This conclusion is consistent with the findings of Kadlec and Knight (Exhibit E, pg. 474 – 475).

As treatment cells are constructed and managed to optimize performance, they will undergo three operational phases, each with different levels of performance:

Start-Up Phase. During the initial Start-Up Phase of a new cell or new flow-way, the permittee shall monitor phosphorus concentrations within the facility to demonstrate that the project is achieving a net reduction in phosphorus. Portions of STA-6 may operate independently of each other. Under those circumstances, Start-Up Phase operation and monitoring within the treatment area shall be performed as follows:

- i. **Establishment of Marsh Vegetation.** The permittee shall manage water depths in the treatment cells to facilitate the recruitment of marsh vegetation in accordance with the Operations Plan, which may include recirculating waters within the STA.
- ii. **Start-Up Monitoring.** On a weekly basis, the permittee shall monitor total phosphorus at the upstream side of inflow structure(s). Total phosphorus shall also be monitored on a weekly basis on the upstream side of the outflow structures.
- iii. **Phosphorus Start-Up Test.** The Phosphorus Start-Up Test for an individual flow-way or cell is based on when the above samples demonstrate, over a four-week period, a net reduction in phosphorus occurs. This net reduction shall be deemed to occur when the 4-week geometric mean total phosphorus water column concentration from samples collected at the applicable outflow structures is less than the 4-week geometric mean total phosphorus water column concentration collected at the applicable inflow structure(s).
- iv. **Discharge Operations.** Discharge operations, from an individual flow-way or cell that has passed the Phosphorus Start-Up Test described above, may commence once Initial Start-Up Phase documentation and all supporting data and analyses are submitted to the Department via regular or electronic mail. For flow-ways that have not met these tests within six months after issuance of the permit, the permittee shall submit status updates regarding progress toward and identifying strategies and timelines to achieve this test.
- v. **Initiation of Individual Flow-way (Stabilization and Routine Operation) Discharges and Monitoring.** Once flow-through discharges from a flow-way begin, the permittee shall initiate routine water quality monitoring for that flow-way consistent with the monitoring program described in Part I.A.1-7 of the NPDES permit..

Stabilization Phase (Flow-through Operations)– An STA enters the Stabilization Phase after any of four antecedent conditions: (1) once flow-through operations begin following the initial start-up of a new treatment cell; (2) when a treatment cell is taken off-line for implementation of Long-Term Plan enhancements that may have adverse impacts on STA performance, (3) planned/unplanned maintenance activities or (4) when a treatment cell is taken off-line for recovery activities associated with a major event that compromises the structural integrity or performance of the STA. During the Stabilization Phase the treatment vegetation will be maturing and the STA performance will generally be improving toward achieving the TBEL. However, the overall performance of the STA is extremely difficult to evaluate and predict. It is anticipated that the treatment vegetation will require one to three years after flow-through operations

begin for the affected cells to achieve optimal performance. During the stabilization phase the TBEL shall apply. Once the facility achieves the TBEL it shall enter the Routine Operations Phase.

Routine Operations Phase - During the Routine Operations Phase, discharges from the STA shall achieve compliance with the TBEL as described in Section 6 below.

3. **ADDITIONAL WATER QUALITY MONITORING REQUIREMENTS**

In addition to the monitoring requirements set forth in Section I.A. of the permit, the following site specific monitoring requirements were included in Section I.E. of the permit.

As a condition of Order AO-012-EV, all flows, including those diverted through the G-407 structure, shall be monitored and reported consistent with the requirements of the Order. All diversions occurring through the G-407 structure will be monitored for the parameters listed in the table below. The Department shall review and approve such requests on a case by case basis.

Table 2. Required monitoring for All Diversions

Parameter/location	Units	Sample Type	Frequency
Total Phosphorus/G-407	mg/l	Grab	Weekly
Flow/G-407	CFS	Calculated	Daily Average

As a condition of the permit, the District is required to provide an annual assessment as to whether the facility is operating within or outside the operational envelope. It is assumed that the facility will operate routinely around the average values identified within the TBEL document. In order to provide the Department with a tool for monitoring operation within this “operational envelope”, the District shall submit an assessment based on annual inflow volumes and phosphorus loads and in comparison to the corresponding average flow and load values contained in the operational envelope (See Exhibit A Goforth et al, 2007). If the annual inflow volumes or phosphorus loads exceed the corresponding average values of the operational envelope during an annual compliance period, the District shall conduct a review of potential causes and include this review in the annual report.

In addition to the operational envelope requirements of the permit, the associated Administrative Order requires that if annual inflow volumes or phosphorus loads exceed the corresponding maximum values of the operational envelope during an annual compliance period and such an exceedance is determined to have caused or contributed to the facility’s inability to achieve the effluent limitation, the District shall conduct a review of potential causes. This review shall include a comparison of the relationships between rainfall, runoff, and phosphorus loads from the compliance year with the rainfall/runoff/load relationships derived from the data used in deriving the TBEL as a condition of the associated Administrative Order.

4. **REQUESTED VARIANCES OR ALTERNATIVES TO REQUIRED STANDARDS**

Pursuant to the Everglades Forever Act (EFA, Subsection 373.4592(4)(e), F.S.), the Department and the District must evaluate existing water quality standards applicable to the Everglades Protection Area and Everglades Agricultural Area (EAA) canals. Annual assessments of the water quality standards within the Everglades Protection Area determined that dissolved oxygen (DO) concentrations below the current Class III standard of 5 mg/L (62-302.530, F.A.C.) commonly occurred in all areas of the Everglades Protection Area. These frequent excursions below the dissolved oxygen standard were not unexpected since it is widely recognized that DO concentrations in macrophyte dominated wetlands are normally low due to natural marsh processes. In response to these characteristics, the Department adopted the Everglades Marsh Dissolved Oxygen Site Specific Alternative Criteria (DO SSAC) which was adopted by Secretarial Order on January 26, 2004 and approved by the U.S. Environmental Protection Agency as a revision to the Florida’s water quality standards on June 16, 2004. Compliance with the DO SSAC shall be evaluated annually, and reported consistent with the requirements of Section

I.E. 7 of the permit, using a statistical analysis to compare dissolved oxygen levels within facility discharges to predicted model values. The specific methods for determining compliance are set forth in the DO SSAC (Exhibit B).

On December 13, 2006, the District submitted an amendment to its permit application to include the use of moderating provisions pursuant to 62-302.540(6) F.A.C. Pursuant to the Rule, the use of net improvement moderating provisions are authorized until December 31, 2016 for discharges into or within the EPA upon a demonstration by the applicant that; the District will implement or cause to be implemented BAPRT as defined by Subsection 373.4592(2)(a), F.S., and further defined in the Rule, which shall include a continued research and monitoring program designed to reduce outflow concentrations of phosphorus; and, the discharge is into or within an impacted area. The Department is currently proceeding toward the adoption of such moderating provisions and will publish the appropriate public notice for such agency action in the Florida Administrative Weekly. The issuance of an Administrative Order does not constitute agency action on or prejudice the adoption or denial of a moderating provision.

5. ADMINISTRATIVE ORDER AND PERMIT SCHEDULES

This permit is accompanied by an Administrative Order (Order) AO-012-EV, effective May 14, which includes a schedule of compliance. The Order is hereby incorporated by reference.

While significant reductions of phosphorus loads in water delivered to the Everglades Protection Area are anticipated to continue improving along with technological advancements, the Department recognizes that additional time is required in order to further optimize the STA-6 facility, develop and implement future phosphorus reduction measures (if necessary), and comply with the established phosphorus water quality standard. Based on information collected to date identifying performance levels of the ECP components, the ongoing planning and design of regional water management projects, and the mechanism for identifying future improvements and enhancements through the PDE component of the Long-Term Plan, the Department has determined that the issuance of the accompanying Order, is necessary to provide the relief required for the continued success of the STA-6 facility.

Pursuant to Subsection 403.088(2)(f), F.S, the Order accompanying this permit establishes a schedule for achieving compliance with all permit conditions. The Order establishes schedules for the completion of structural, operational, and vegetation improvements and enhancements; schedules for associated project monitoring; schedules for reporting; schedules for coming back into compliance with permit conditions from transitional effects occurring as a direct result of structural, operational, and vegetation improvements and enhancements to the facility and/or any major event that effects the structural integrity of the facility or section(s) of the facility; and schedules for the planning and design of regional water management projects which will directly affect the STA-6 facility. In Addition, the Order recognizes the permittee's inability to achieve the established numeric phosphorus standard and thereby provides relief in the form of a TBEL (Goforth *et al.*, 2007).

40 CFR Part 122.41(l)(2) and General Condition 17 of the permit require that the permittee give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. Since it is expected that implementation of the Long-Term Plan or any planned maintenance activities may have adverse short-term impacts on STA-6's performance, the permit and AO require the permittee to provide the Department with a description of the anticipated activities; the estimated length of anticipated short term performance impacts, to include dates and times; and, strategies and timelines for STA-6 to achieve optimal performance.

6. PROPOSED EFFLUENT LIMITS

Section 373.4592(10), F.S., of the EFA requires the Department and the permittee to take such action as may be necessary to implement the Pre-2006 projects and strategies of the Long-Term Plan by December 31, 2006, so that water delivered to the Everglades Protection Area achieves state water quality standards, including the Everglades Protection Area phosphorus criterion. The Long-Term Plan is a comprehensive program of source controls, STAs (including STA-6), regulatory programs, and integrated Comprehensive Everglades Restoration Plan (CERP) projects to achieve phosphorus reductions for discharges to the Everglades Protection Area. The October 27, 2003 Long-Term Plan contains improvements and enhancements that were identified as part of an adaptive management process. These revisions identified several structural,

vegetative, and operational enhancements for STA-6 to be completed prior to the expiration of the permit and will aid in the optimization of the hydraulic distribution and phosphorous removal of this project. The Post 2006 improvements, enhancements, and strategies, in conjunction with the Pre 2006 projects, which are currently being completed, will continue being developed through the Long-Term Plan process to further optimize the facility's phosphorus reduction capabilities. The Department has determined that the improvements and enhancements identified for STA-6, through the iterative adaptive implementation process contained within the Long-Term Plan, are the most environmentally appropriate and expeditious means of achieving compliance with applicable water quality standards in the Everglades Protection Area.

Consistent with the Long-Term Plan and rule 62-302.540(5)(d), F.A.C., a TBEL for phosphorus has been derived in accordance with state rules, and is consistent with the Federal guidelines for best available technology economically achievable (BAT) set forth in 40 CFR Part 125.3(d). During the Routine and Stabilization Phases discharges from STA-6 via the G-352A-C, G354A-C, G393A-C Pump Station shall meet TBELs in accordance with the accompanying Order. The test for determining achievement of the STA-6 TBEL is set forth in Order AO-012-EV which accompanies this permit. The *Technical Support Document for the STA-6 Technology Based Effluent Limit* (Goforth *et al.*, 2007) further explains the derivation of the STA-6 TBELs, when the interim period limits apply, and factors which may impact flows and loads associated with the treatment system.

As part of the phased implementation of the Everglades restoration program, regional water management projects are underway that will influence the flows and phosphorus loads entering STA-6, and therefore its performance, over the life of the 5-year permits (2007-2012), and beyond. Until the regional projects described below are complete, STA-6 will be in one of two Interim Performance Periods.

Interim Performance Period 1. Flow-ways 1 and 2 (Cells 5 and 3, respectively) are presently in Routine Operations, having passed Stabilization. Until the new Flow-way 3 has passed start-up, the flows and loads to STA-6 will be treated in the two existing flow-ways, with higher phosphorus loading rates and higher TP in the outflow than anticipated in the RFS WY1998-2005 data set simulation, which assumed that all three flow-ways had passed through stabilization. The TBELs presented in this document were based on simulated STA performance during Routine Operations. In contrast, there is presently no available tool to accurately predict outflow concentrations from a stormwater treatment wetland during the Stabilization Phase, which complicates the forecasting of STA outflow concentrations. For the purpose of deriving a TBEL for the Interim Performance Period 1, the performance of STA-6 was forecast utilizing the WY1998-2005 inflow data set for Flow-ways 1 and 2.

Interim Performance Period 2. When Flow-way 3 passes Stabilization, the Routine Operations – Interim Performance Period 2 will commence. This performance period will end when the STA enters the Long-term Performance Period .

The following table summarizes the applicability of the two Interim Performance Period TBELs for STA-2. For additional information as to the derivation of the TBEL please refer to the *Technical Support Document for the STA-2 TBEL* (Exhibit A).

Table 3: Interim Performance Period TBEL Application Summary

Phase	Applicable TBEL	Applicable TBEL	Period Initiation	Period end date	No. of Flow-ways Operational
Routine Operations Interim Performance Period 1	TBEL 1	30 –40 ppb	Upon issuance of the Permit	Flow-way 3 passes Stabilization, Facility achieves TBEL 1	2-3
Routine Operations Interim Performance Period 2	TBEL 2	16-23 ppb	Flow-way 3 passes Stabilization, Facility is achieving TBEL 1	All approved regional water management projects and facility improvements and enhancements have been completed and have passed the stabilization test.	3
Routine Operations - Long-Term Performance Period	Long-term TBEL to be promulgated subsequent to completion of regional water management projects construction	Default to TBEL 2 until new TBEL is promulgated	Implementation of all regional water management projects and approved enhancements complete; facility is achieving TBEL 2; Long-term Performance Period TBEL has been approved by the Department.	New TBEL is established or facility meets WQBEL.	3
Stabilization Phase- Interim Performance Period 1	TBEL 1	30 –40 ppb	See Stabilization Phase description in Section 2.d.	Facility is achieving the TBEL	0-3
Stabilization Phase- Interim Performance Period 2	TBEL 2	16-23 ppb	See Stabilization Phase description in Section 2.d.	Facility is achieving the TBEL	0-3

At this time, a Water Quality Based Effluent Limitation (WQBEL) has not been established under 62-650, F.A.C. as necessary to achieve the phosphorus criterion in 62-302.540 F.A.C. Research is currently ongoing to establish this relationship and establish a WQBEL. In the interim, until such a relationship is determined and a WQBEL established, discharges from STA-6, via the G-352A-C, G-354A-C, and G-393A-C Discharge Structures, shall meet the TBEL identified in the Order accompanying this permit. The TBEL shall be revised as appropriate, consistent with the iterative implementation of BAPRT and 62-620.620(3), F.A.C., until such time that the TBEL becomes consistent with the water quality based effluent limitation (WQBEL) established to achieve the numeric phosphorus criterion in the Everglades Protection Area.

As stated above, it is envisioned that a WQBEL will be established under 62-650 F.A.C. to achieve the phosphorus criterion in the Everglades Protection Area established under 62-302.540(4)(a) F.A.C. Thus, the adoption of the WQBEL will be deemed to be a limitation as stringent as necessary to meet the underlying water quality criterion. This is consistent with the requirements of Clean Water Act (CWA) Section 301(b)(1)(C) and 40 Code of Federal Regulations (C.F.R.) Part 122.44(d)(5). This is also consistent with Florida's reasonable assurance requirements under 62-620.620(1)(g) F.A.C.

The applicant is being given a reasonable time to comply with the permit effluent limit (and any derived WQBEL) through the schedule contained in the attached Order. In the interim, compliance with the TBEL is required. Compliance with the TBEL shall be consistent with the provisions of Administrative Order AO-012-EV, which accompanies this permit. If the permittee achieves effluent levels equal to or lower than the WQBEL prior to the end of that schedule, the permittee will be in compliance with the WQBEL and the underlying phosphorus water quality criterion. At any subsequent permit renewal, because the WQBEL has been determined to be that effluent limit that is as stringent as necessary to provide reasonable

assurance that the underlying phosphorus water quality criterion will be met, the permit will continue to require compliance with that WQBEL. There is no basis under the anti-backsliding provisions of CWA Section 122.44(l) to require an effluent limit more stringent than the WQBEL, even if the permittee has demonstrated that such lower effluent limits can be achieved.

7. DISCUSSION OF PREVIOUS PERMIT EFFLUENT LIMITS

Based upon BAPRT, the 1994 Conceptual Design of the ECP identified an initial TBEL for phosphorus at a long-term flow-weighted mean of 50 ppb. Pursuant to Subsection 373.4592(4)(e)2 of the EFA, the Department adopted a 10 ppb numeric criterion for phosphorus in the Everglades Protection Area, which was approved by the U.S. EPA on January 24, 2005. The compliance methodology for this criterion was revised and adopted by the Department on May 5, 2005, and the revised rule was approved by the U.S. EPA on July 27, 2005. Under the Long-Term Plan, the goal is to achieve the phosphorus criterion in the Everglades Protection Area, which will be accomplished through the iterative adaptive implementation process set forth in the Long-Term Plan. Structural, operational and vegetation enhancements are presently underway in accordance with the Long-Term Plan, and are designed to optimize performance as needed to achieve the phosphorus water quality standard. Construction of these improvements and enhancements shall be completed by 2012. Additional enhancements to STA-6 may occur as part of the adaptive implementation process envisioned in the Long Term Plan.

8. NEW OR EXPANDED DISCHARGES TO SURFACE WATERS; ANTIDEGRADATION INFORMATION

The Department has determined that operation and maintenance of the project is consistent with the anti-degradation requirements of Rules 62-4.242(1) and 62-302.300, F.A.C. and is clearly in the public interest pursuant to Subsection 373.4592(9)(a), F.S. and the requirements of Rule 62-4.242(2), F.A.C.

9. EFFECTS OF SURFACE WATER DISCHARGE ON THREATENED OR ENDANGERED SPECIES

The Department does not anticipate adverse impacts on threatened or endangered species as a result of permit issuance.

10. FDEP CONTACT

Additional information concerning the permit may be obtained during normal business hours from:

John Hallas
Environmental Specialist III
Department of Environmental Protection
Water Quality Standards & Special Projects Program
2600 Blair Stone Road, MS 3560
Telephone Number: (850) 245-8052
Fax Number: (850) 412-0766

11. THE ADMINISTRATIVE RECORD

STA-6 is currently operating under Florida Department of Environmental Protection (FDEP) Permit No. 0236905-001. Additional related permits include FDEP Permit No. 0178018, which authorizes temporary dewatering activities for the construction of facilities within STA-1E, STA-1W, STA-6, STA-2, STA-3/4, and STA-5 Hydropattern Restoration Projects, and the United States Army Corps of Engineers (ACOE) 404 Permit No. 199404532.

The administrative record including application, draft permit, fact sheet, public notice (after release), comments received and additional information is available by writing FDEP or for public inspection during normal business hours at the location specified in item 10. Copies will be provided at a minimal charge per page.

The Department held a public meeting for the Notice of Draft Permits for STA-1W1E, STA-2, STA-5, and STA-6 on July 20, 2007, at the Department's Southeast District Office. The Public meeting was noticed in the Florida Administrative Weekly and a paper of general circulation at least 30 days prior to the meeting being held. The Department announced at the public meeting that it would extend the public comment period until July 25, 2007. The Department received written comments both at the public meeting and prior to the July 25, 2007 deadline. All public comments were taken into consideration by the Department prior to issuance of these permits

12. SCHEDULE FOR PERMIT ISSUANCE

Application Complete	March 1, 2005
Draft permit to Applicant and U.S. EPA	June 18, 2007
Applicant to Publish Public Notice by	June 20, 2007
End of Public Comment Period	July 25, 2007
Notice of Intent to Issue	July 31, 2007

-END OF FACT SHEET-