



FPL Turkey Point Monitoring Plan Update

**South Miami-Dade Water Issues Coordination
Roundtable Discussion - March 1, 2011**

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Everglades Restoration and Capital Projects*

Completed Items to Date

- Monitoring stations installed and operational
 - Agency coordination, site access, permits, contractor hiring, construction, instrumentation and station surveys



Completed Items to Date (Cont.)

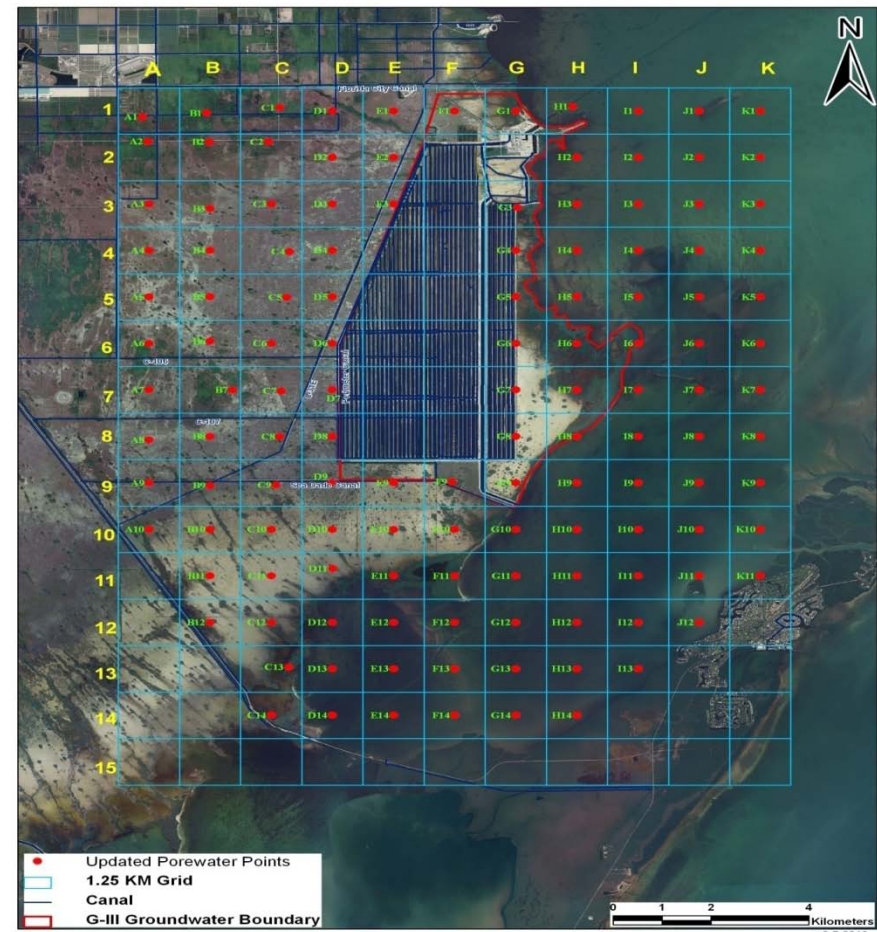
- 42 monitoring wells
- 70 automated 'continuous' monitoring sites
 - Surface water, groundwater and meteorologic



Completed Items to Date (Cont.)

■ Porewater sampling

- Broad-scale survey
 - 200 sites sampled during dry season 2010
 - 100 Bay sites sampled in wet season 2010
 - Temperature, specific conductance, salinity
- Bay Bottom Cooling Canal System (CCS) Tracer Suite
 - 30 sites (subset of original Bay sites) sampled in wet season 2010



Completed Items to Date (Cont.)

- Water quality sampling (>2,000 analyses per sampling event)
 - Three quarterly sampling events conducted
 - Surface and groundwater sites
 - QA/QC procedures implemented

Laboratory	Analysis
Test America	Standard parameters
University of Miami RSMAS	Carbon isotopes
University of Miami L7 Isotope	Hydrogen and oxygen isotopes
USGS Tritium	Tritium
USGS Strontium	Strontium isotope
KLN Laboratories	Gross alpha

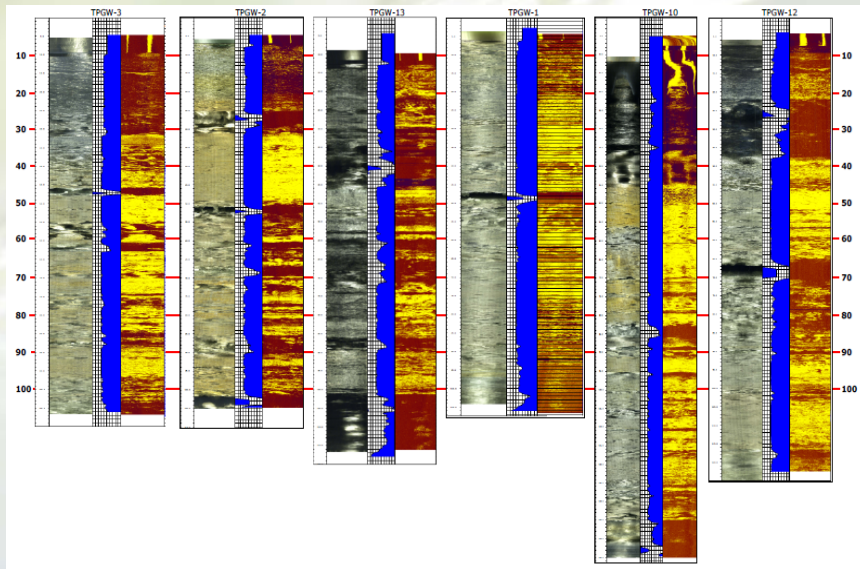
Completed Items to Date (Cont.)

- Ecological
 - Bay and wetlands; floral and fauna
 - First quarterly sampling completed
 - 30 ecological monitoring plots, >150 subplots
 - 60 soil cores collected for nutrient analysis
 - Biscayne Bay: 640 SAV and 80 faunal points
 - 40 bags of seagrass leaves collected for nutrient analysis
 - Reference wetland transect not yet set up (site access issues resolved)



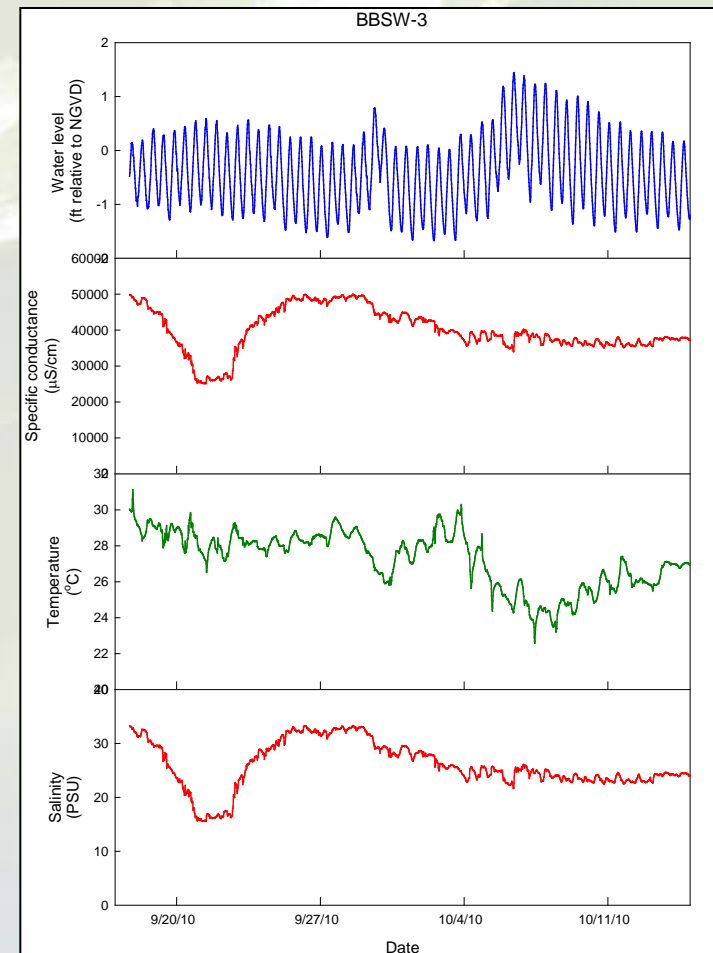
Completed Items to Date (Cont.)

- Geology and Hydrogeology Report
- Semi-annual Turkey Point Monitoring Report



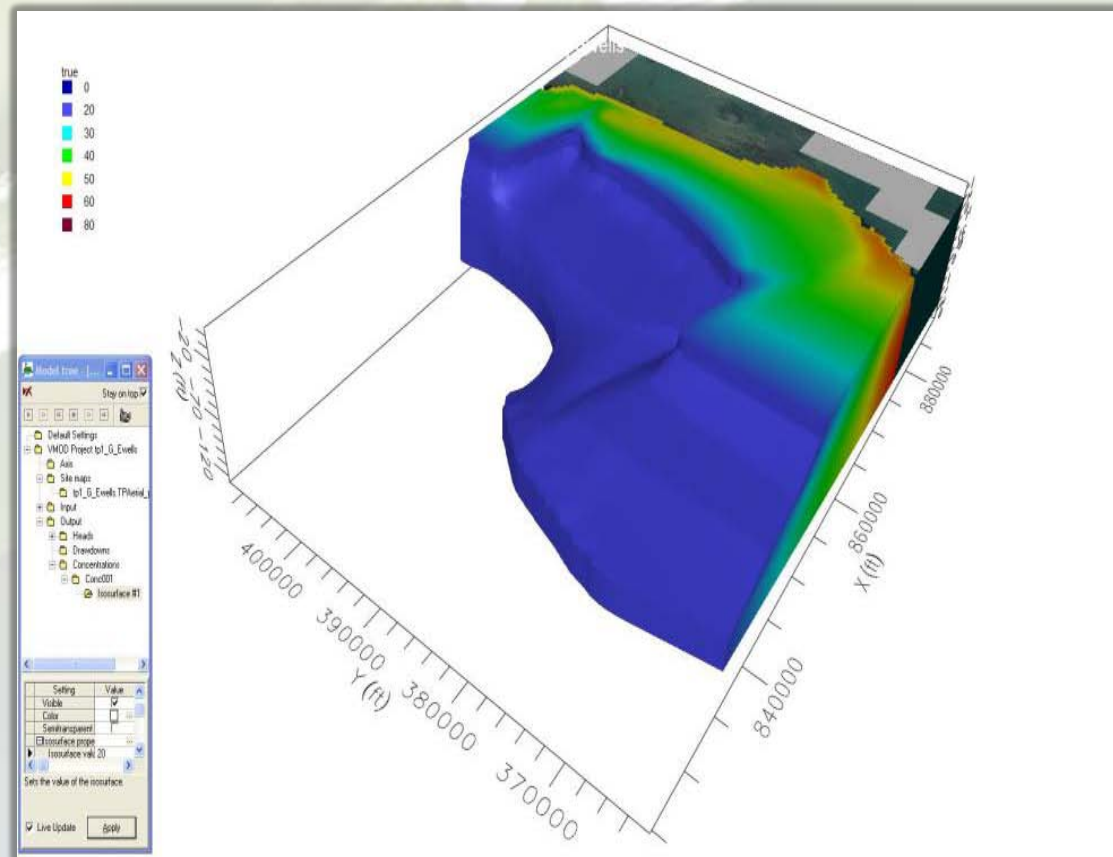
Completed Items to Date (Cont.)

- FPL data storage and retrieval web application
 - Documents/reports
 - Automated station data
 - Laboratory data and QA/QC
 - Interceptor ditch stage data
 - Data processing/sorting functions
 - Proprietary to Agencies identified in Monitoring Plan



Completed Items to Date (Cont.)

- Preliminary baseline salinity assessment
 - Conducted independently by agencies and FPL
 - Using existing data collected in early 1970s prior to operation of the CCS
 - General agreement in results
 - Saline groundwater occurred west of CCS footprint before system became operational
 - Additional refinement and analysis scheduled



Completed Items to Date (Cont.)

- Quarterly Agency Meetings
 - Project status
 - Issue identification
 - Technical trouble shooting
- Startup, trouble shooting, problem solving
 - Equipment/software
 - Telemetry
 - Sensor locations



Upcoming Items and Products

- Cooling canal system water budget calculations
 - Understand where the water is going
 - Volumetric and salt budget calculations
 - Methodology/calculations being finalized
 - Data collection already in place
 - Calculated on monthly basis



Upcoming Items and Products (Cont.)

- Revised Interceptor Ditch Operation Plan
 - Incorporate FPL-initiated improvements to interceptor ditch monitoring and operational protocols
 - Revised assessment methods used to determine the effectiveness of interceptor ditch operations in restricting movement of saline water from the cooling canal westward of the L-31E levee to those amounts which would occur without the existence of the cooling canal system

Upcoming Items and Products (Cont.)

- Identification of the CCS Tracer Suite parameters and methods
 - A subset of the chemical parameters being monitored which would be used to distinguish waters of the cooling canal system from other source waters found in the area surface and ground waters
 - Needed to determine the vertical and horizontal extent of the CCS waters
 - Complex due to similarity in bay water, saline groundwater and CCS water

Upcoming Items and Products (Cont.)

- Biscayne Bay bottom geophysical survey
 - Broad-scale survey to measure conductivity in bottom/shallow groundwater beneath the Bay
- Porewater dry season tracer suite sampling
 - 90 sites total: 30 freshwater wetlands, 30 saline wetlands and 30 bay sites
 - Used to identify potential for influence of CCS water in near-surface sediments
- Complete reference wetland transects
 - Needed for comparisons with sites near the CCS

Upcoming Items and Products (Cont.)

- Fourth quarterly sampling (water quality)
- Dry season ecological sampling
- Initial Ecological Characterization Report
- First Turkey Point Annual Monitoring Report
- Approved final Quality Assurance Project Plans
 - Incorporating revised monitoring locations and protocols

Upcoming Items and Products (Cont.)

- Preliminary evaluation of first year's worth of data
 - Joint Agency and FPL technical team assessments
 - CCS water location and orientation
 - Assessment of uncertainties associated with estimates of CCS water location/orientation
 - Potential revisions to data collection considered



Questions?