L-8 Reservoir Pilot Test - Preliminary Flow and Water Quality Monitoring Results

Provisional Data for Discussion Purposes Only
3-28-11

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South Florida Water Management District
Location of Flow Monitoring Sites =

- City of WPB Control 2 Pump Station
- L-8 Reservoir Pump (88 cfs)
- Discharge to L-8 Canal
- Lainhart Dam
- West Palm Beach Control 2 Pump Station (150 cfs)

M-Canal
Summary of L-8 Reservoir Pilot Test Flows

Volume  Acre Feet
L-8 Reservoir  3,082
Control 2              4,934
Control 3 (est)     4,046
Control 4              1,979
G-161                      814
G-160                   1,182

Flow (cubic feet per second)

Start of Pilot test

CWPB Control 2 Pump Station
Control 3 (Est) - water entering western GWP
L-8 Reservoir
Control 4 (CWPB Water Supply)
G-160
G-161

Volume Acre Feet
L-8 Reservoir 3,082
Control 2 4,934
Control 3 (est) 4,046
Control 4 1,979
G-161 814
G-160 1,182
### Stream Flow Measurements at G-92 and Lainhart Dam

<table>
<thead>
<tr>
<th>Volume (Acre Feet)</th>
<th>G-161</th>
<th>G-160</th>
<th>G-92</th>
<th>Lainhart Dam</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>814</td>
<td>1,182</td>
<td>1,454</td>
<td>841</td>
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</tbody>
</table>

- **Flow (cubic feet/second)**
- **MFL**
- **ADCP measurement at G-92 on 3/14/11 = 44.9 cfs**
- **ADCP measurement at Lainhart Dam on 3/14/11 = 42.7 cfs**
- **Difference of ~16 cf**

**Graph Notes:**
- **Start of L-8 Pilot test**
- **Stream Flow Measurements taken on 3/14/11**
Flow Losses for Reach # 1 (Control 2 to Control 3)  
3/17/11

Provisional Data

18% Loss (29 cfs)

Reach #1 (9.3 miles)

WPB Control 2 
Pump Station

M-Canal

158 cfs

129 cfs

Control 3

Grassy Waters 
Preserve

Lake Mangonia

Clear Lake

Northlake Blvd.

Southern Blvd.
Reach # 2 (Control 3 to “4 Point Area” in Grassy Water Preserve)

Provisional Data

Reach # 2 (Control 3 to “4 Point Area” in Grassy Water Preserve)

M-Canal

Control 3

129 cfs

57% loss (73 cfs) due to storage, ET & seepage

56 cfs

Northlake Blvd.

G-161

G-161

Grassy Waters Preserve

Reach # 2 (3.5 miles)

“4 Point Area”

129 cfs

56 cfs

57% loss (73 cfs) due to storage, ET & seepage
Flow Distribution within “4 Point Area”

“4 Point Area”

56 cfs

30 cfs

14 cfs

12 cfs

Note: Control 4 closed during flow measurements
Water Quality Monitoring

(Chlorides & Total Phosphorus)
Pilot Test WQ Monitoring Sites, L-8 Reservoir, L-8 Canal & M-Canal

Legend:
- = WQ Monitoring station
Pilot Test WQ Monitoring Sites located in Grassy Waters Preserve & Lake Mangonia
Baseline: Chloride Concentrations* prior to L-8 Reservoir Pilot Test (mg/l) (2/26/11)

Provisional Data

WPB Control 2 Pump Station

M-Canal

Grassy Waters Preserve

GW 4

GW 3

GW 7

Grassy Waters Preserve

GW 8

G-161

LM 1

L-8 Reservoir

Northlake Blvd.

Southern Blvd.

Note: Class I Water Quality Standard (Drinking Water), chloride levels shall not exceed 250 ppm

* Chlorides calculated from regression equations

Legend:

● = Established Water quality station as per Exemption
Week 1: Chloride Data (mg/l) from L-8 Reservoir Pilot Test (3/7/11)

Provisional Data

Note: Class I Water Quality Standards (for drinking water), chloride levels shall not exceed 250 mg/l.

Legend:
○ = Established Water quality station as per Exemption
Week 2: Chloride Data (mg/l) from L-8 Reservoir Pilot Test (3/15/2011)

Note: Class I Water Quality Standards (for drinking water), chloride levels shall not exceed 250 mg/l

*Some of the calculated chloride reading at L8MZBS & L8MZBN may have been affected by low canal levels

Legend:
- = Established Water quality station as per Exemption
= Grab sample collected on 3/15/11
Most Recent Chloride Data (mg/l) from L-8 Reservoir Pilot Test (3/23/11)

Provisional Data

Note: Class I Water Quality Standards (for drinking water), chloride levels shall not exceed 250 mg/l

Legend:

= Established Water quality station as per Exemption
Chloride Levels within L-8 Reservoir, L-8 Canal and M-Canal

Chlorides (calculated) (mg/L)

DATE


L8MZBS L8MZBN L8RES L8043 L8MCNL

Start of Pump Test
Total Phosphorus Levels
Baseline Total P Data (ppb) from L-8 Reservoir Pilot Test (2/25/11)

Provisional Data

Units = parts per billion (ppb)

Legend:
- Established Water quality station as per Exemption
Pumping for 3 days: Total P Data (ppb) from L-8 Reservoir Pilot Test (3/3/11)

Units = parts per billion (ppb)

Legend:
- Established Water quality station as per Exemption
Pumping for 9 days: Total P Data (ppb) from L-8 Reservoir Pilot Test (3/9/11)

Units = parts per billion (ppb)

Legend:
- Established Water quality station as per Exemption
Total Phosphorus in L-8 Reservoir, L-8 Canal and Control 2 Pump Station
(2/25/11-3/09/11)

Provisional Data

TP (parts per billion)

Start of Pilot Test
Total Phosphorus for Grassy Waters Preserve, G-161 and LM 1
2/25/11 – 3/09/11

TP (parts per billion)

Provisional Data

Start of Pilot Test
Next Steps

- Following completion of the 2011 Pilot Test:
  - A report will be prepared summarizing the L-8 Reservoir pilot test and its flow and water quality results for submission to FDEP
  - The inter-agency technical team will reconvene to discuss a plan of study for the 2012 Pilot test (Option 1B) and other longer term options previously identified by the District
  - A work plan for Option 1B is currently being considered by management as part of the 2012 budget process