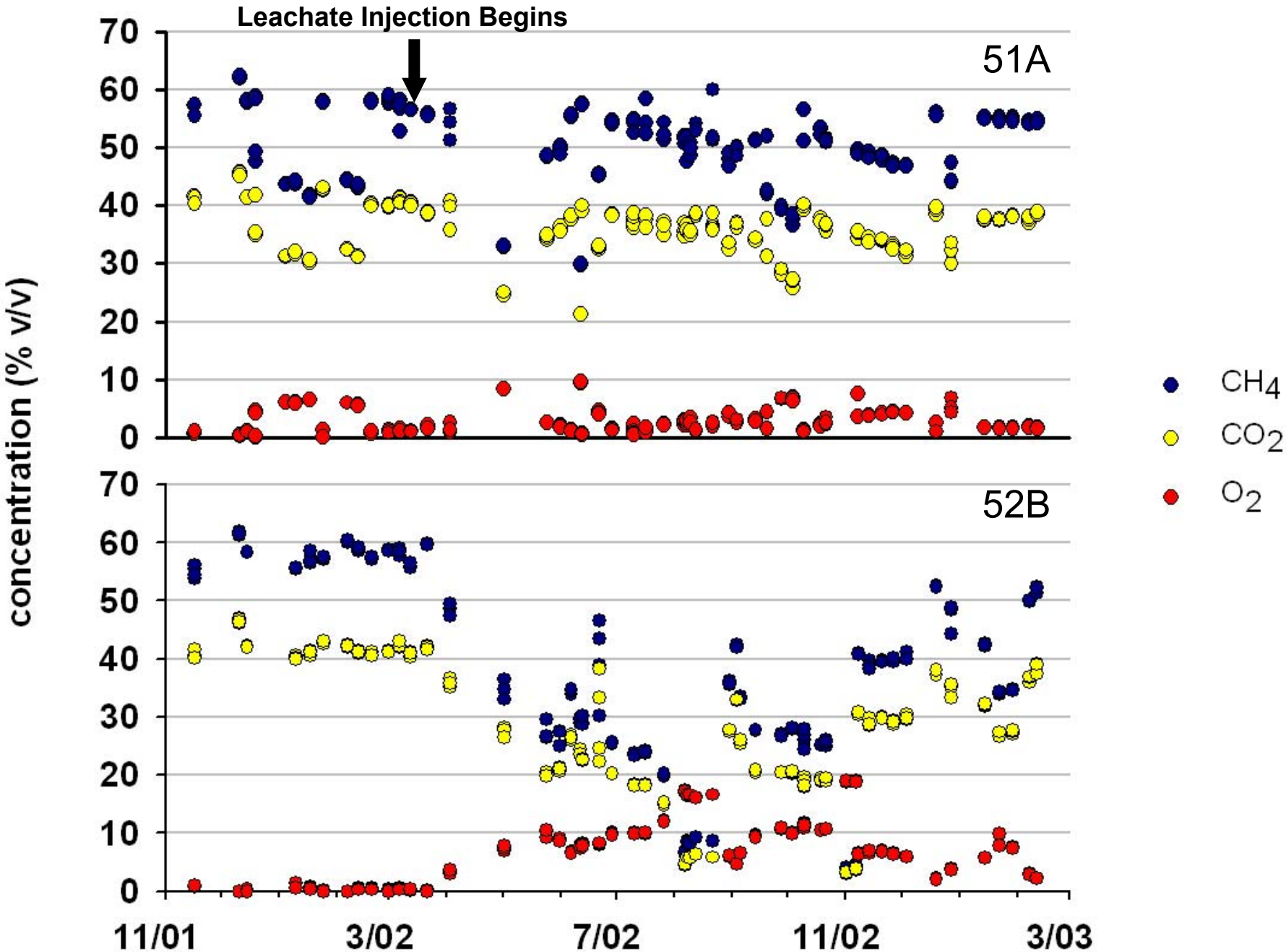

Leachate Injection Begins
51A
52B
concentration (% v/v)
70
60
50
40
30
20
10
0
11/01
3/02
7/02
11/02
3/03
CH_4
CO_2
O_2

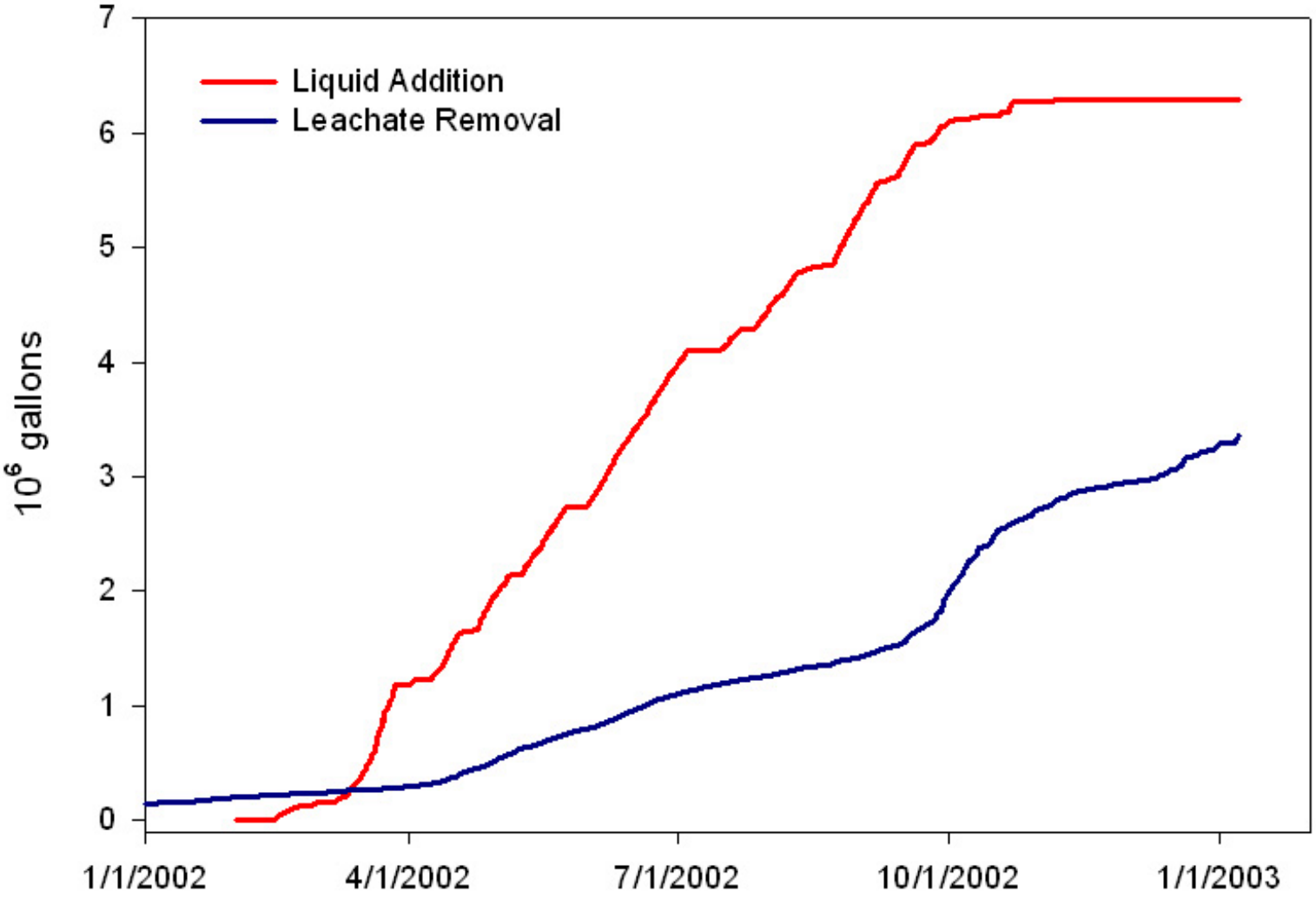
Interim Leachate Results
Unit 5 FLB, Unit 7 AALB

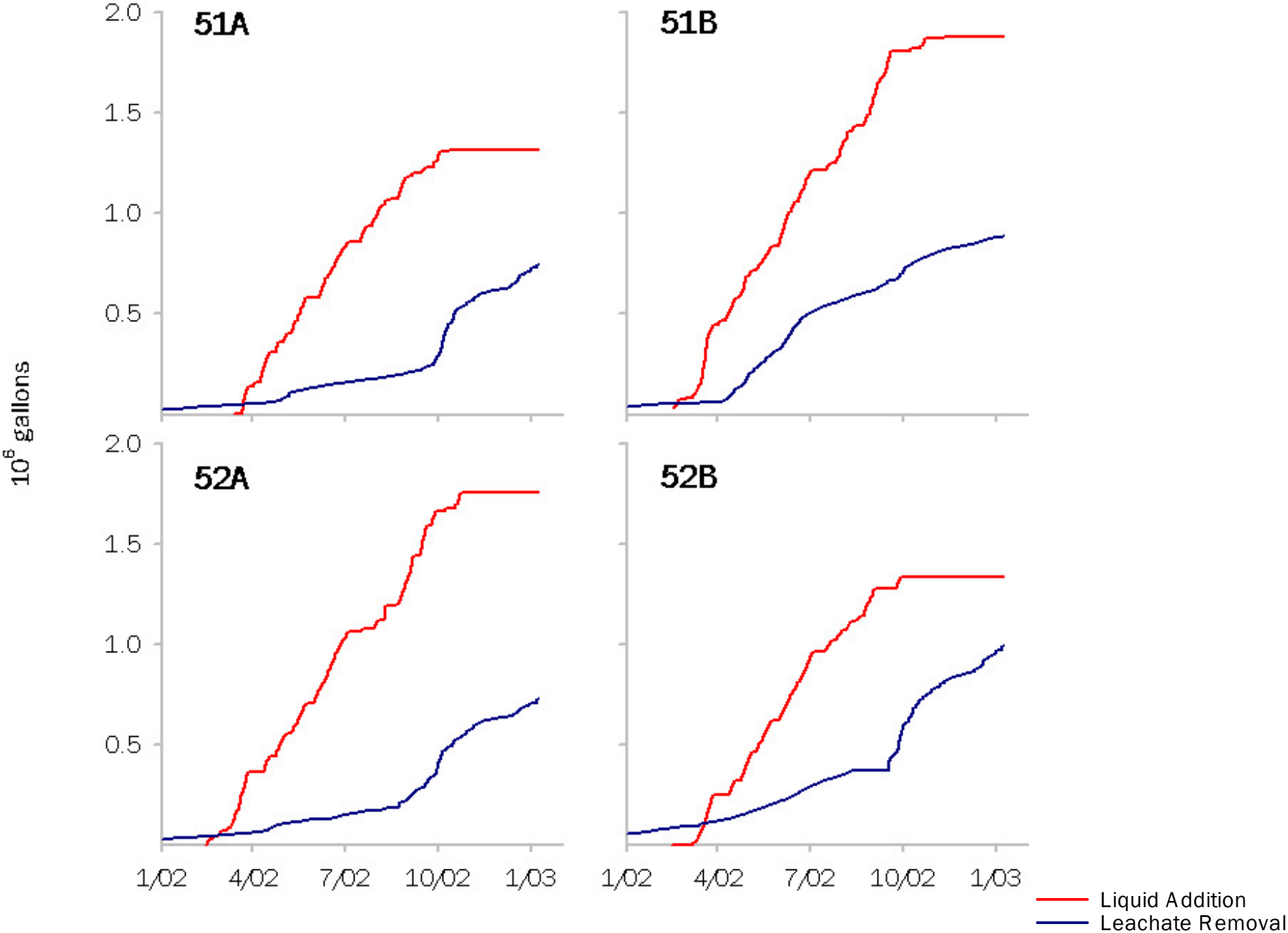
Area 5 Water Balance

- 2.5 million yd^3 in place
- Average moisture content = 35%
- Density = 1,650 lb/yd^3
- Moisture required to achieve 45%
  = 36 gal/yd^3

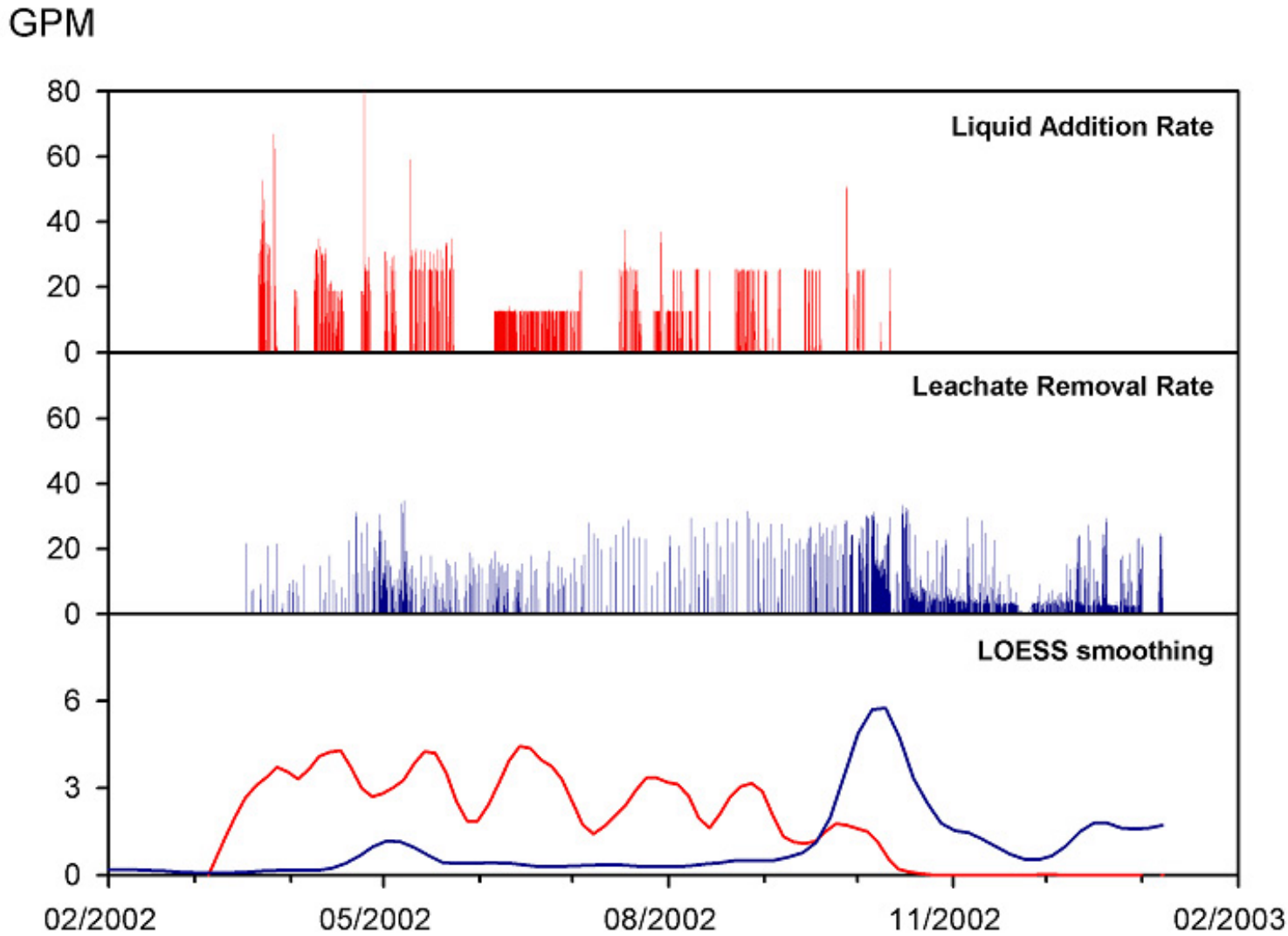
2.5 million yd^3 x 36 gal/yd^3 = 91 Mgal

Cumulative Liquid Addition and Removal for the FLB

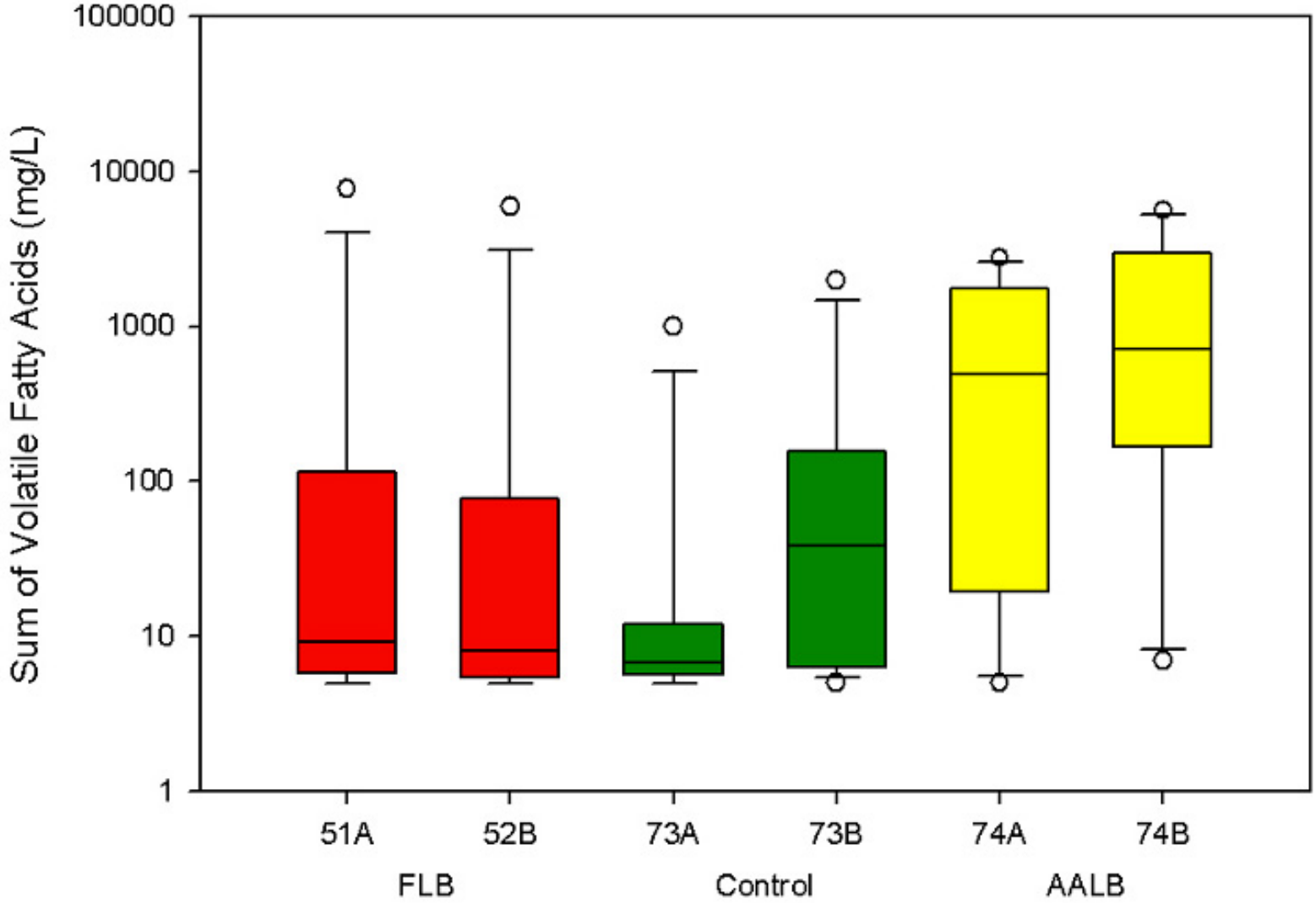


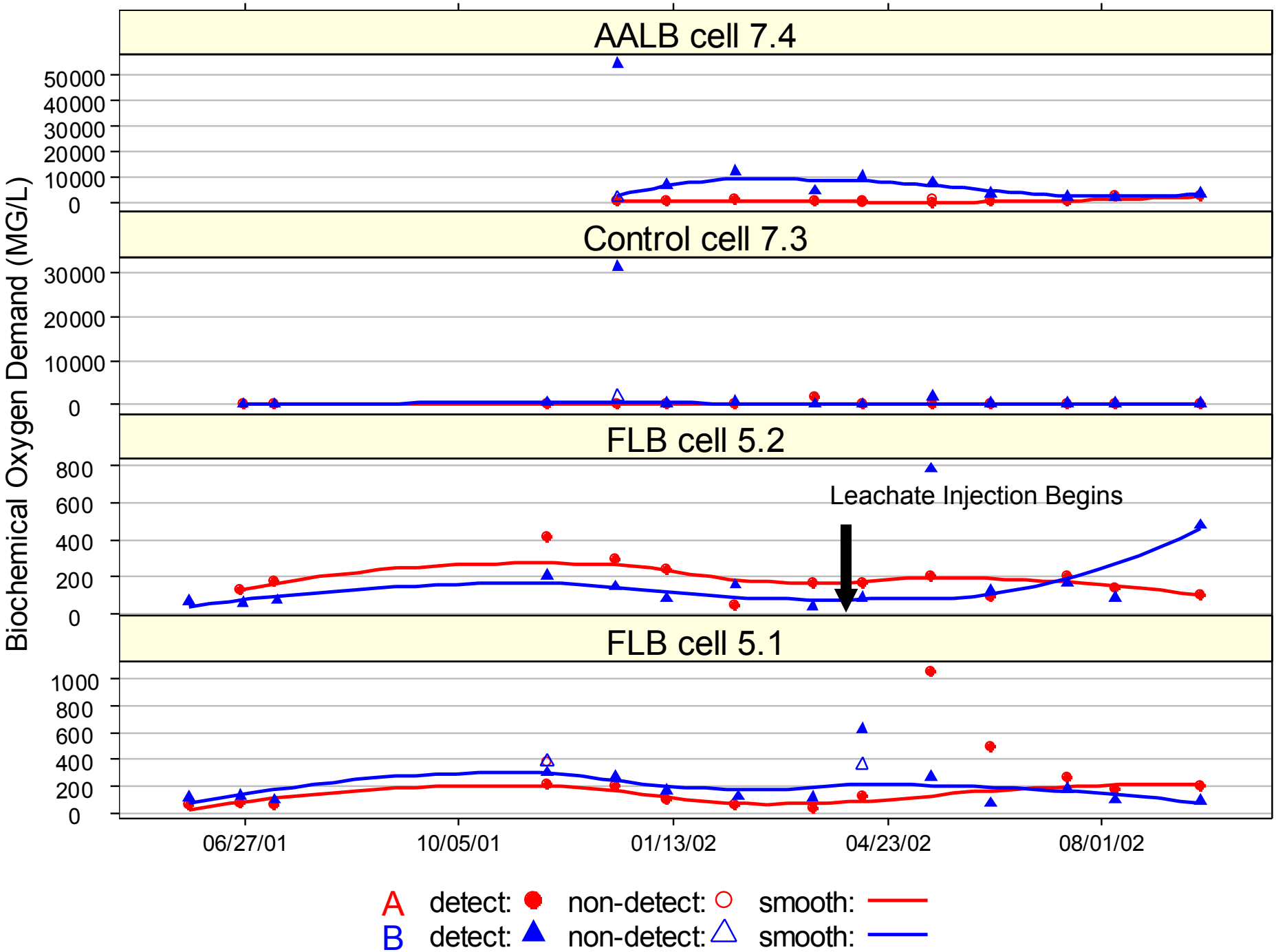

51A
51B
52A
52B
2.0
1.5
1.0
0.5
10^6 gallons
1/02
4/02
7/02
10/02
1/03
Liquid Addition
Leachate Removal

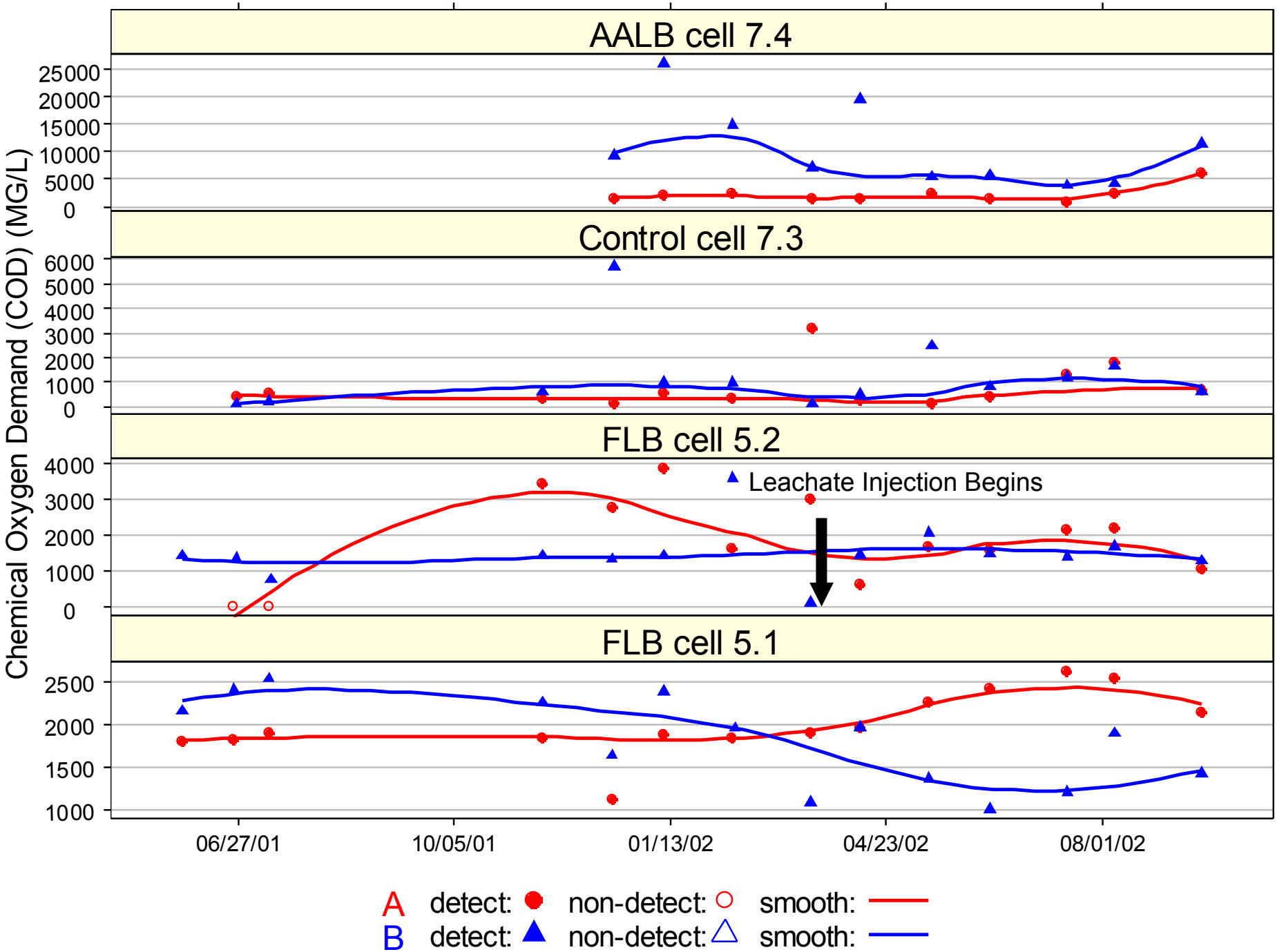
Liquid Addition Rate Summary for Cell 51A



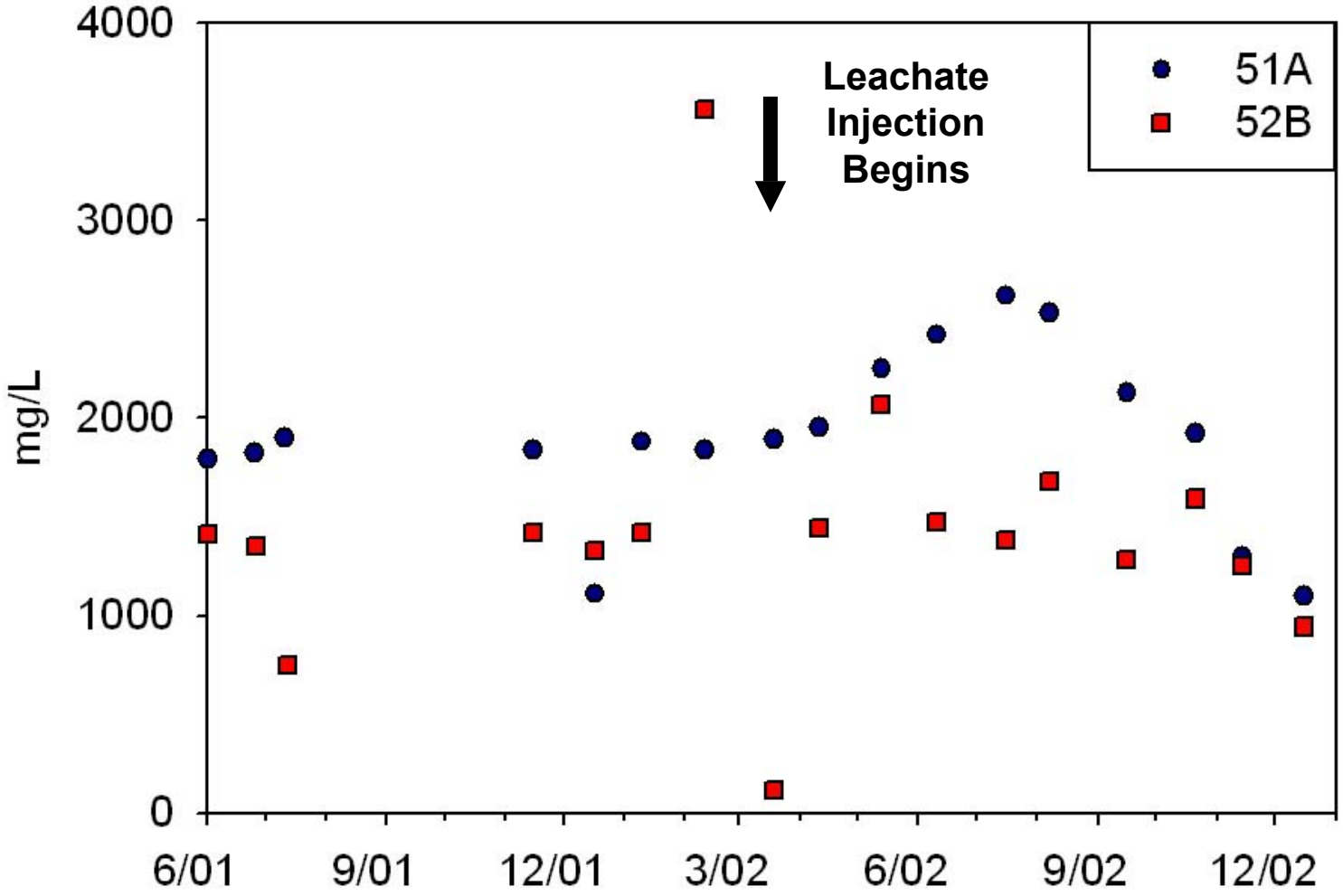
Volatile Organic Acid Comparison

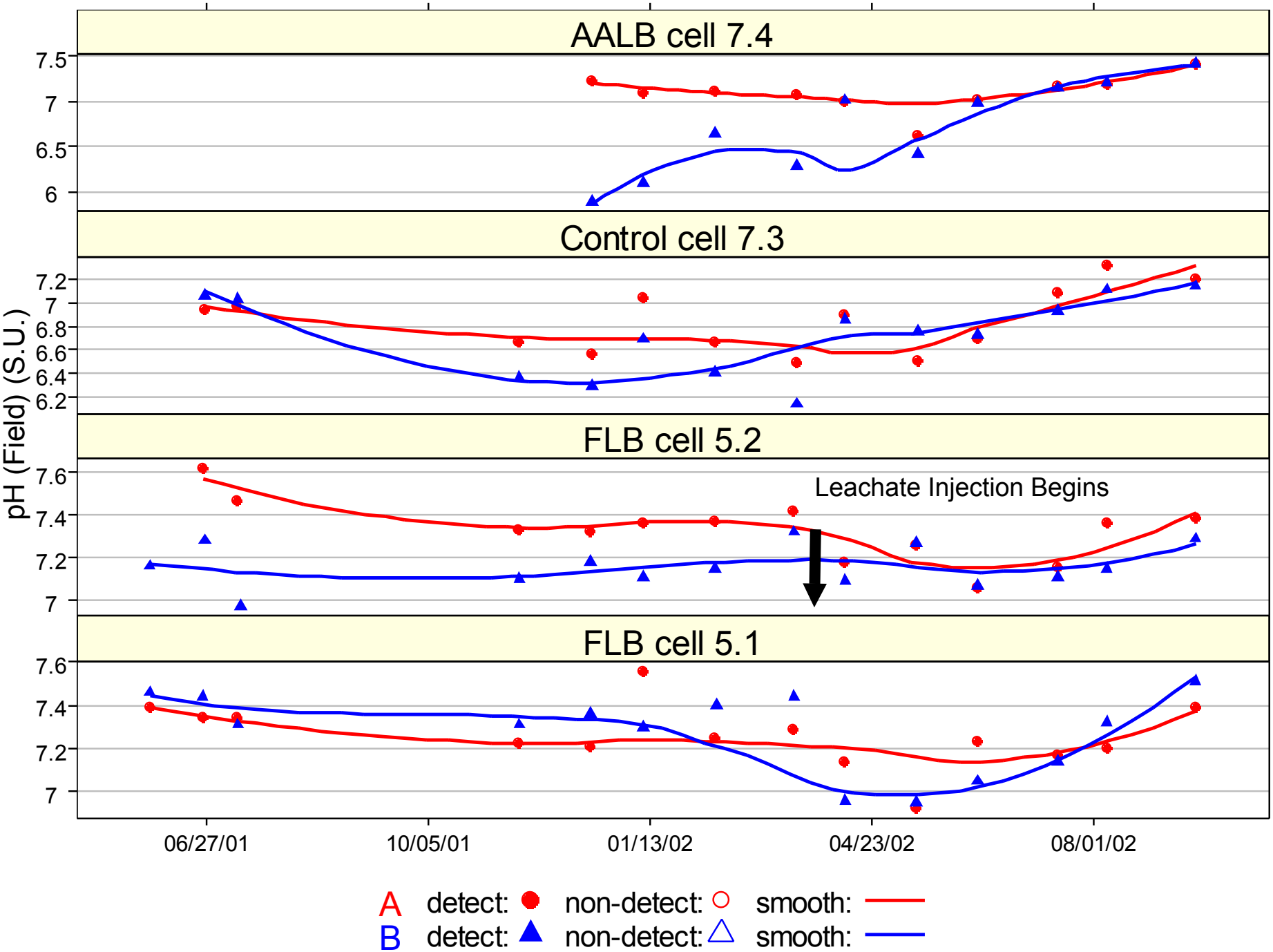


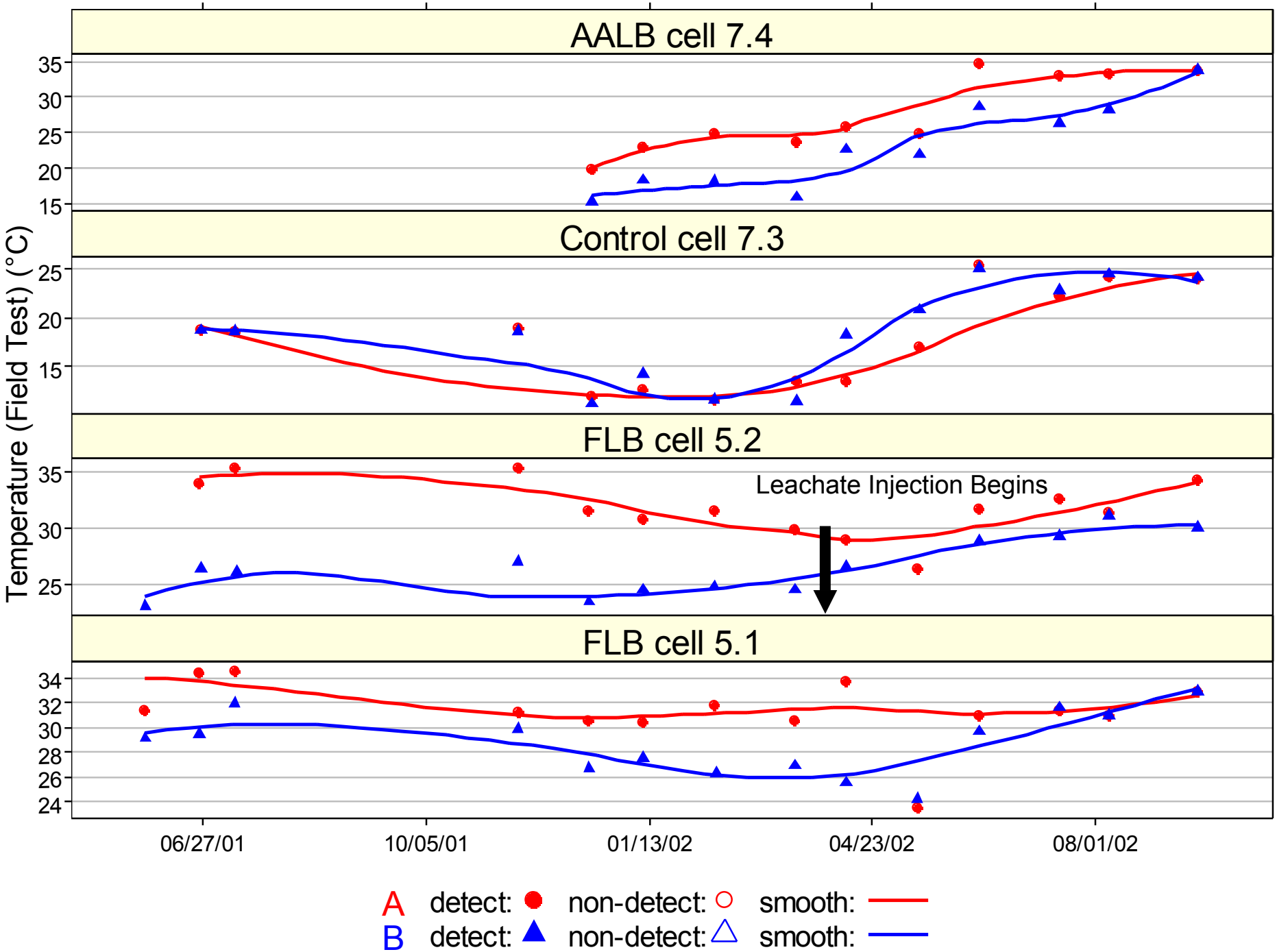

AALB cell 7.4
Control cell 7.3
FLB cell 5.2
FLB cell 5.1
Biochemical Oxygen Demand (MG/L)
Leachate Injection Begins
06/27/01
10/05/01
01/13/02
04/23/02
08/01/02
A detect: non-detect: smooth:
B detect: non-detect: smooth:


AALB cell 7.4
Control cell 7.3
FLB cell 5.2
FLB cell 5.1
Chemical Oxygen Demand (COD) (MG/L)
25000
20000
15000
10000
5000
0
6000
5000
4000
3000
2000
1000
0
4000
3000
2000
1000
0
2500
2000
1500
1000
Leachate Injection Begins
06/27/01
10/05/01
01/13/02
04/23/02
08/01/02
A detect: non-detect: smooth:
B detect: non-detect: smooth:

COD: FLB Cells

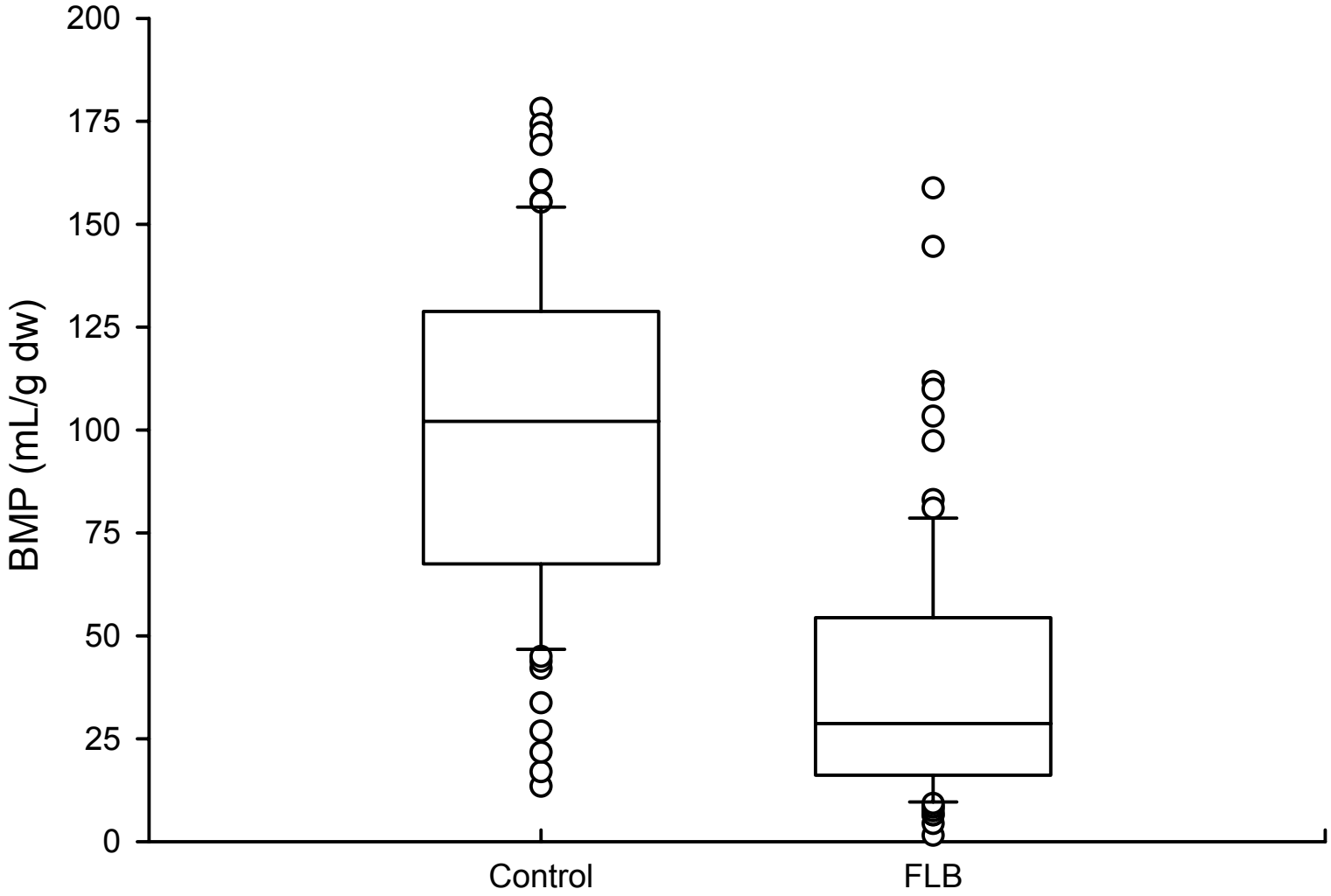



AALB cell 7.4
Control cell 7.3
FLB cell 5.2
FLB cell 5.1
pH (Field) (S.U.)
Leachate Injection Begins
06/27/01
10/05/01
01/13/02
04/23/02
08/01/02
A detect: non-detect: smooth:
B detect: non-detect: smooth:

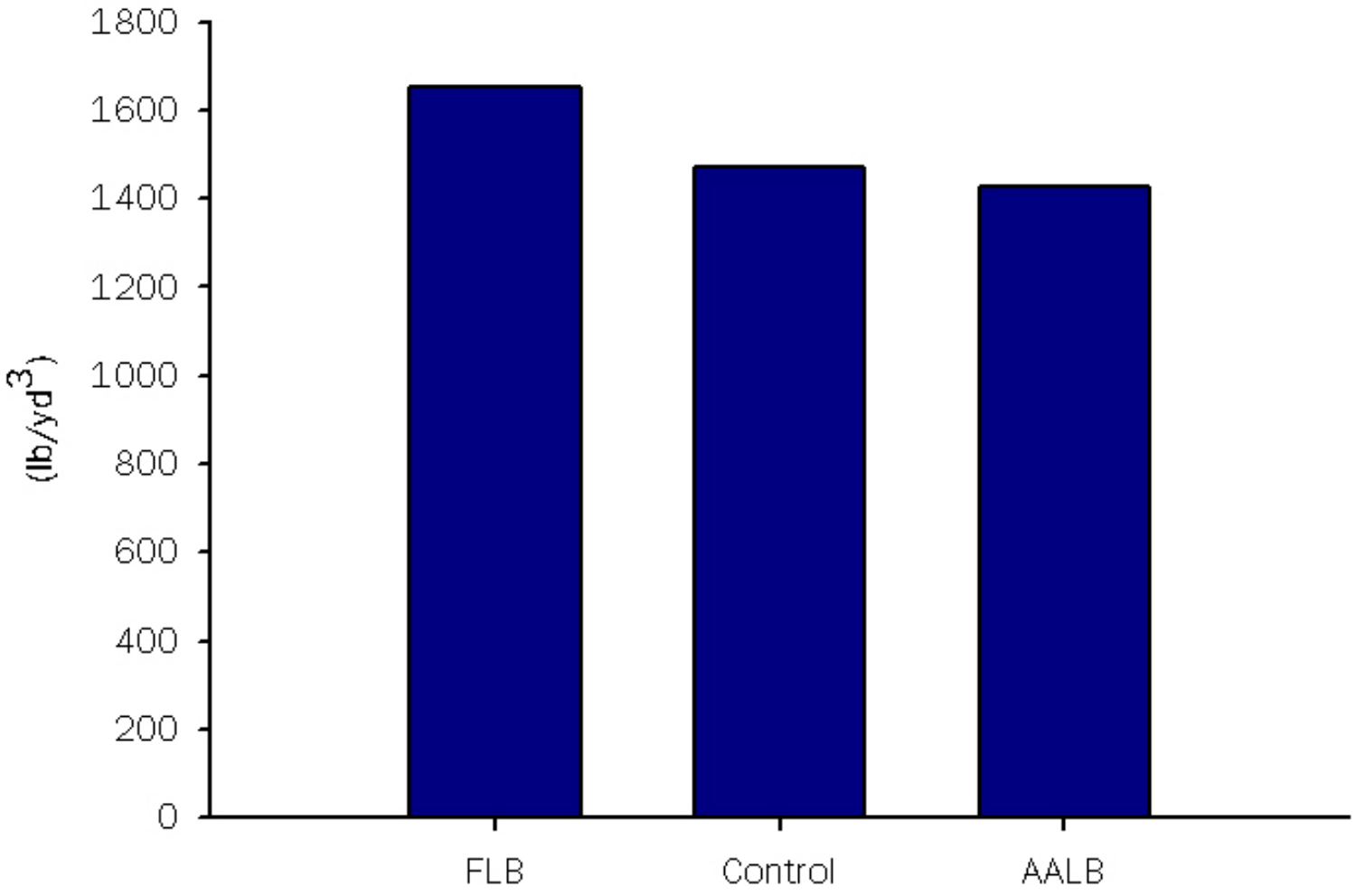

AALB cell 7.4
Control cell 7.3
FLB cell 5.2
FLB cell 5.1
Temperature (Field Test) (°C)
Leachate Injection Begins
06/27/01
10/05/01
01/13/02
04/23/02
08/01/02
A detect: non-detect: smooth:
B detect: non-detect: smooth:

Interim Solids Results

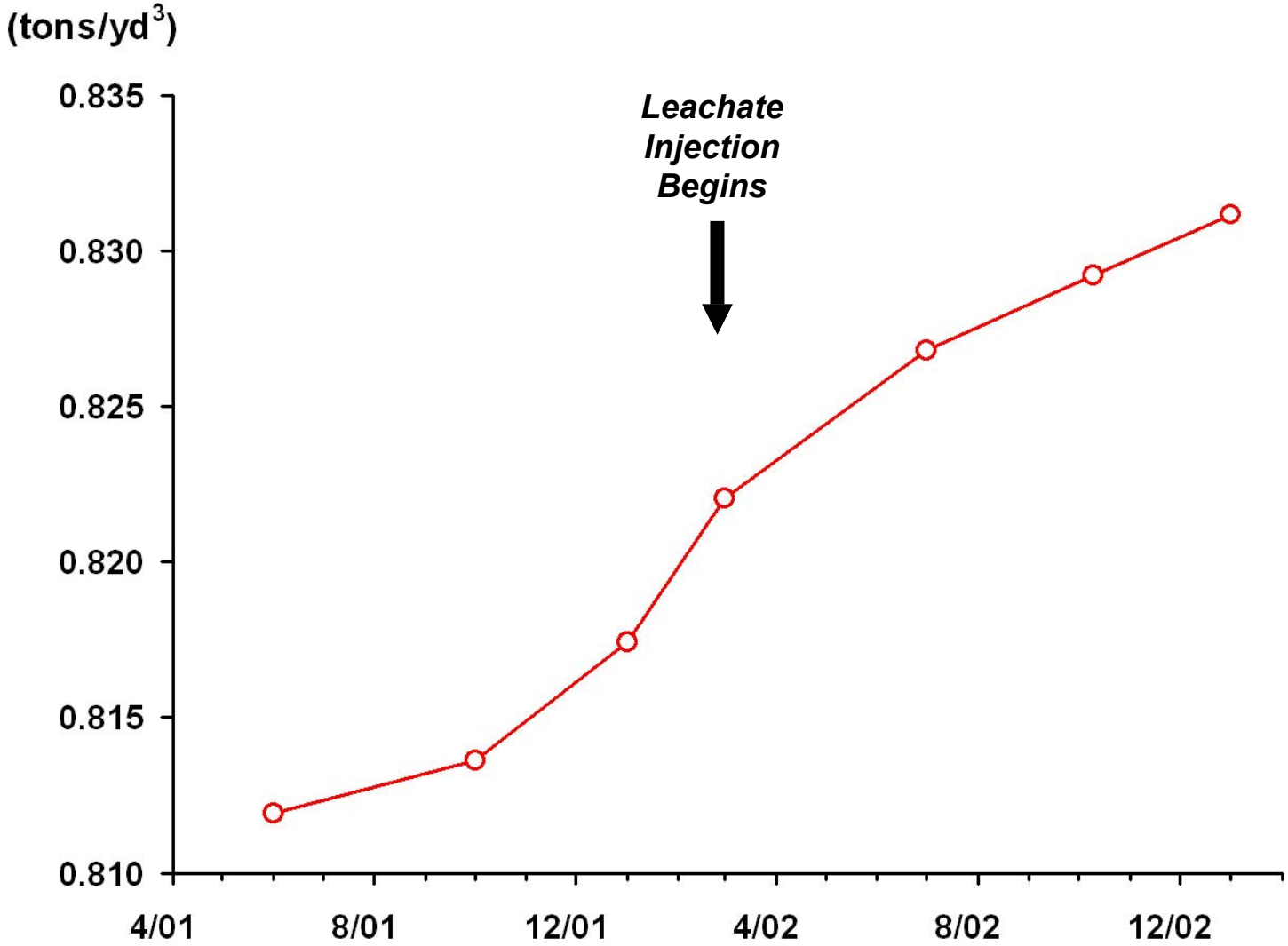
Biochemical Methane Potential: Baseline



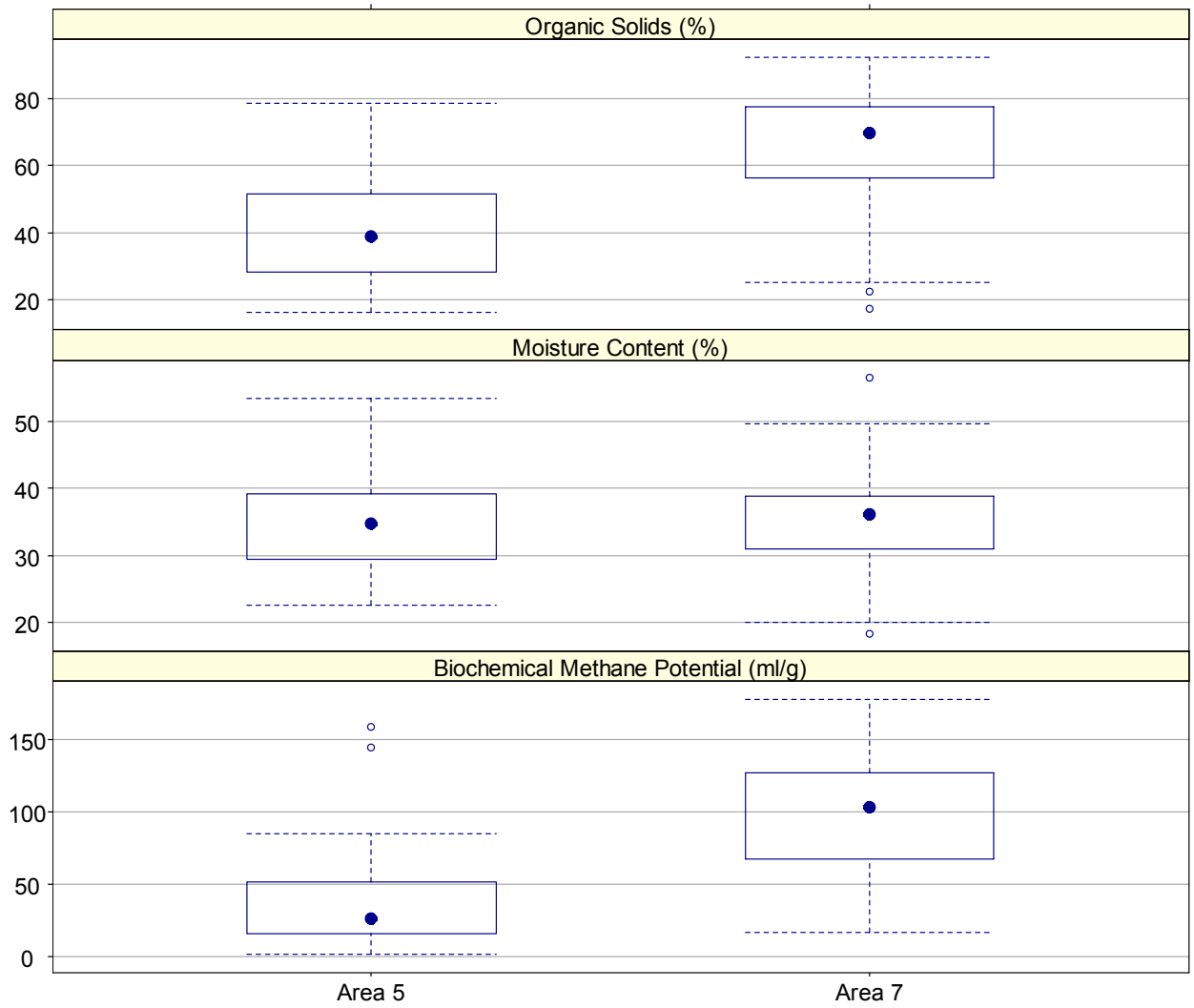
Waste Density Comparison



Waste Density: Unit 5



Organic Solids, Moisture and BMP



Critical Measures as Expected?

Parameter	FLB (Unit 5)	AALB (Unit 7)	Comments
<u>Gas</u> Production Rate, CH_4, CO_2 , O_2 , Balance Gases	Some inhibition may be taking place, injection rate may be too high, O_2 intrusion in desiccated cover	Early stages of experiment	Changes Made in Operations at Unit 5
<u>Leachate</u> Head on liner, Leachate production COD, BOD, Temperature, pH, VOA	Early in process, but as expected	Early stages of experiment	
<u>Waste</u> Temperature, Settlement Density, Volatile solids, BMP, moisture content, pH	Early in process, but as expected	Early stages of experiment	

Future of Project

- Continue monitoring until at least 2005
  - Modify monitoring parameters and/or frequency?
  - Interim Report this year
- Add new bioreactor site(s)?

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- University of Cincinnati
- Neptune Inc.

Thank You

Contacts:

- David Carson: carson.david@epa.gov
  - EPA Bioreactor Website: http://www.epa.gov/epaoswer/non-hw/muncpl/landfill/bioreactors.htm
- Roger Green: rgreen2@wm.com