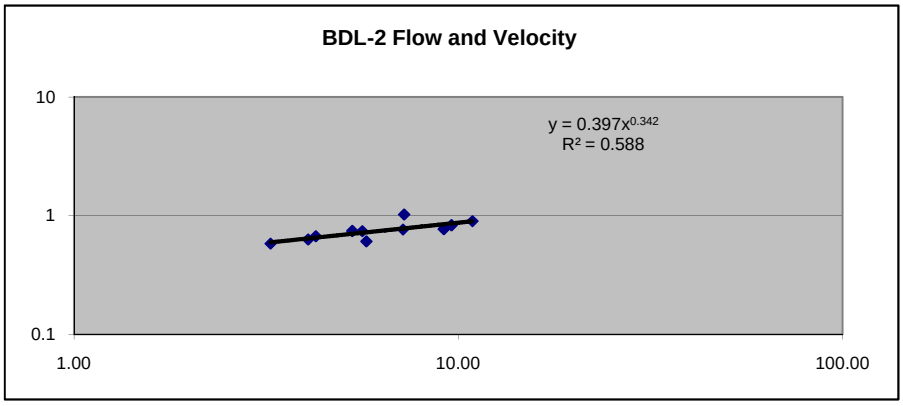
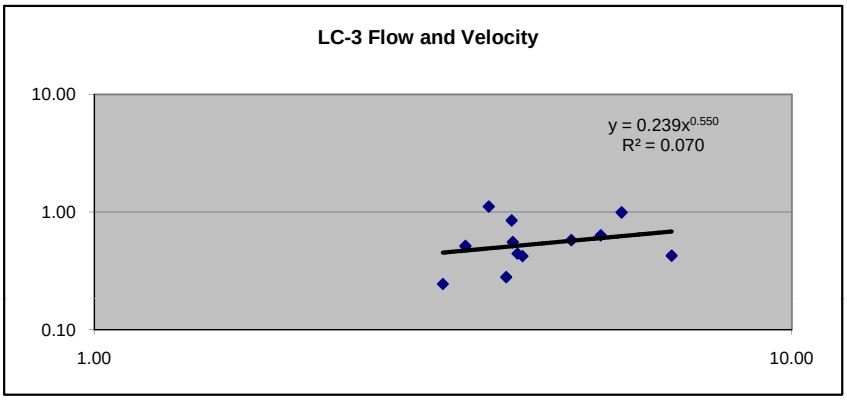
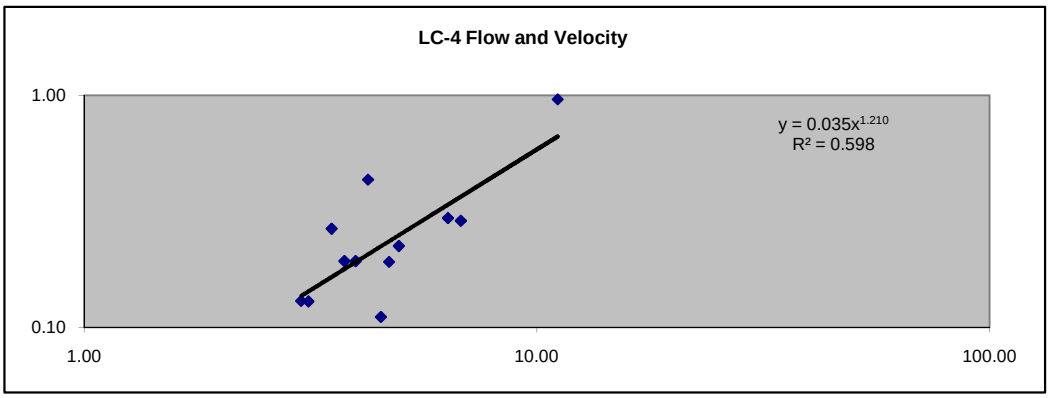
log log plot

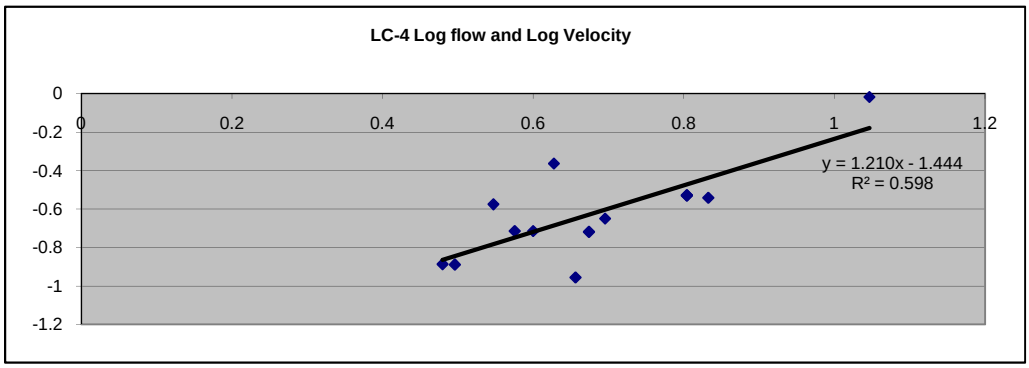
$U = aQ^b$ typical b value 0.45, range 0.3 to 0.7

| Segment | Date | Q = steady flow rate | U = mean velocity | | |
|---|---|---|---|---|---|
| BDL-2 | 4/13/2010 | 5.63 | 0.74 | BDL-2 | |
| BDL-2 | 2/16/2010 | 10.89 | 0.9 | U=0.3976Q^0.3422 | |
| BDL-2 | 11/18/2009 | 9.61 | 0.83 | | |
| BDL-2 | 6/17/2009 | 3.25 | 0.58 | | |
| BDL-2 | 6/3/2009 | 4.07 | 0.63 | | |
| BDL-2 | 5/28/2009 | 4.26 | 0.67 | | |
| BDL-2 | 5/22/2009 | 5.77 | 0.61 | | |
| BDL-2 | 5/15/2009 | 9.17 | 0.77 | | |
| BDL-2 | 4/28/2009 | 5.30 | 0.74 | | |
| BDL-2 | 4/21/2009 | 7.23 | 1.03 | | |
| BDL-2 | 4/16/2009 | 7.19 | 0.76 | | |
| | | | | | |
| LC-3 | 4/13/2010 | 4.04 | 0.44 | | |
| LC-3 | 2/16/2010 | 6.73 | 0.43 | | |
| LC-3 | 11/18/2009 | 3.98 | 0.56 | | |
| LC-3 | 8/4/2009 | 4.83 | 0.58 | | |
| LC-3 | 6/16/2009 | 3.97 | 0.85 | | |
| LC-3 | 6/3/2009 | 4.11 | 0.42 | | |
| LC-3 | 5/28/2009 | 3.68 | 1.11 | | |
| LC-3 | 5/22/2009 | 3.41 | 0.51 | | |
| LC-3 | 5/15/2009 | 5.71 | 0.99 | | |
| LC-3 | 4/28/2009 | 3.90 | 0.28 | | |
| LC-3 | 4/21/2009 | 3.16 | 0.25 | | |
| LC-3 | 4/16/2009 | 5.33 | 0.63 | | |
| | | | | | |
| LC-4 | 4/13/2010 | 6.37 | 0.30 | 0.804003 | -0.52913 |
| LC-4 | 2/16/2010 | 6.80 | 0.29 | 0.832445 | -0.54107 |
| LC-4 | 11/18/2009 | 4.53 | 0.11 | 0.656098 | -0.95503 |
| LC-4 | 8/3/2009 | 11.13 | 0.96 | 1.046378 | -0.01773 |
| LC-4 | 6/17/2009 | 4.24 | 0.43 | 0.627468 | -0.36351 |
| LC-4 | 6/3/2009 ? | 3.53 | 0.27 | 0.547282 | -0.57487 |
| LC-4 | 5/28/2009 | 3.02 | 0.13 | 0.479719 | -0.88606 |
| LC-4 | 5/22/2009 | 3.13 | 0.13 | 0.49596 | -0.88845 |
| LC-4 | 5/15/2009 | 4.96 | 0.22 | 0.695482 | -0.64934 |
| LC-4 | 4/28/2009 | 3.76 | 0.19 | 0.575534 | -0.71427 |
| LC-4 | 4/21/2009 | 3.98 | 0.19 | 0.599992 | -0.71427 |
| LC-4 | 4/16/2009 | 4.72 | 0.19 ? | 0.674034 | -0.71799 |
| LC-4 | 4/13/2009 | 6.37 | 0.30 | 0.804003 | -0.52913 |


BDL-2 Flow and Velocity
y = 0.397x^0.342
R² = 0.588
10
1
0.1
1.00
10.00
100.00


LC-3 Flow and Velocity
y = 0.239x^0.550
R² = 0.070
10.00
1.00
0.10
1.00
10.00

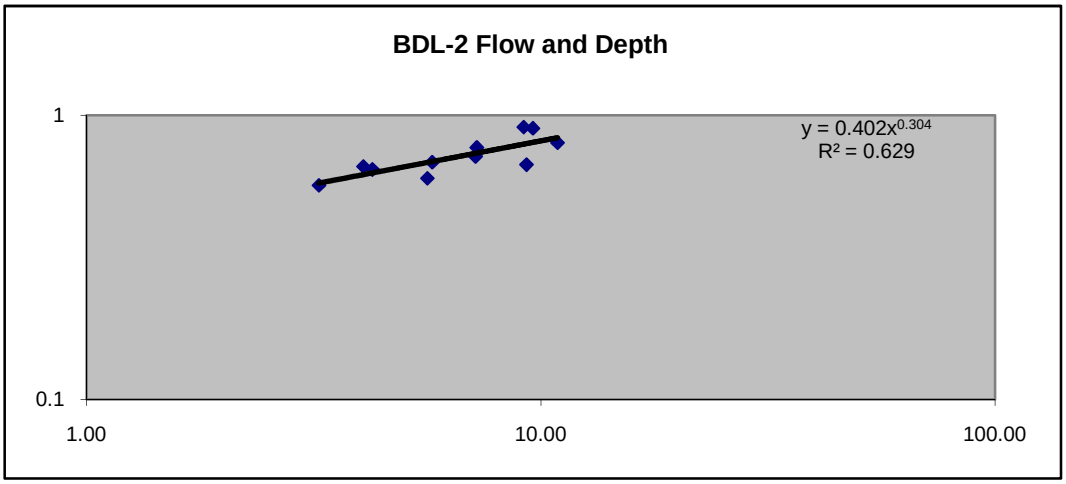

LC-4 Flow and Velocity
y = 0.035x^1.210
R² = 0.598
1.00
0.10
1.00
10.00
100.00

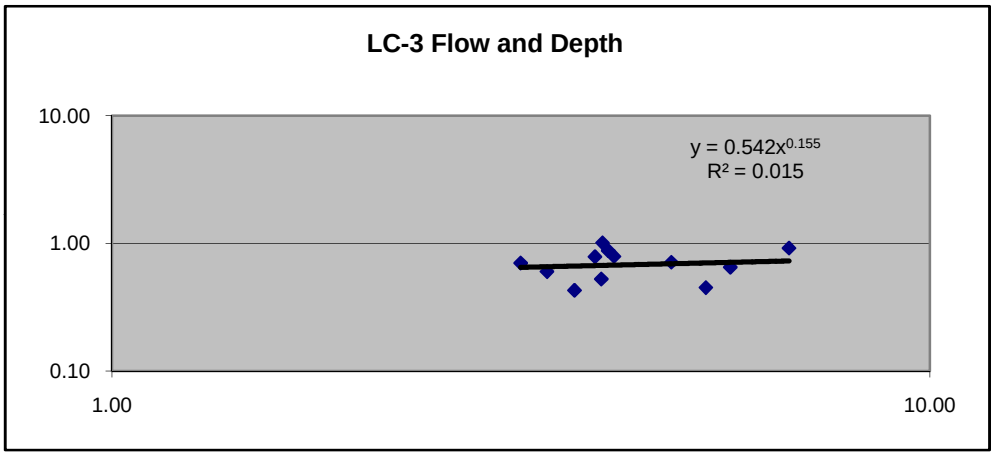

LC-4 Log flow and Log Velocity
0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
0
0.2
0.4
0.6
0.8
1
1.2
y = 1.210x - 1.444
R² = 0.598

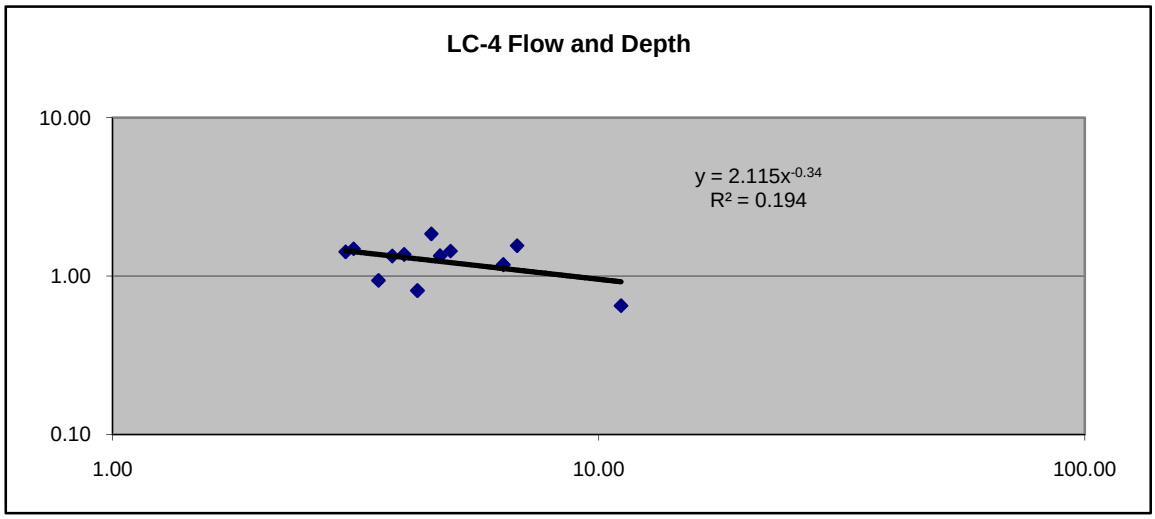
log log plot

$H = \alpha Q^{\beta}$ typical $\beta$ value 0.4, range 0.1 to 0.6

| Segment | Date | Q = steady flow rate | H = mean depth |
|---|---|---|---|
| BDL-2 | 4/13/2010 | 5.63 | 0.6 |
| BDL-2 | 2/16/2010 | 10.89 | 0.8 |
| BDL-2 | 11/18/2009 | 9.61 | 0.9 |
| BDL-2 | 6/17/2009 | 3.25 | 0.57 |
| BDL-2 | 6/3/2009 | 4.07 | 0.66 |
| BDL-2 | 5/28/2009 | 4.26 | 0.64 |
| BDL-2 | 5/22/2009 | 5.77 | 0.68 |
| BDL-2 | 5/15/2009 | 9.17 | 0.91 |
| BDL-2 | 4/28/2009 | 9.30 | 0.67 |
| BDL-2 | 4/21/2009 | 7.23 | 0.77 |
| BDL-2 | 4/16/2009 | 7.19 | 0.72 |
| | | | |
| LC-3 | 4/13/2010 | 4.04 | 0.88 |
| LC-3 | 2/16/2010 | 6.73 | 0.92 |
| LC-3 | 11/18/2009 | 3.98 | 1.01 |
| LC-3 | 8/4/2009 | 4.83 | 0.71 |
| LC-3 | 6/16/2009 | 3.97 | 0.53 |
| LC-3 | 6/3/2009 | 4.11 | 0.79 |
| LC-3 | 5/28/2009 | 3.68 | 0.43 |
| LC-3 | 5/22/2009 | 3.41 | 0.60 |
| LC-3 | 5/15/2009 | 5.71 | 0.65 |
| LC-3 | 4/28/2009 | 3.90 | 0.78 |
| LC-3 | 4/21/2009 | 3.16 | 0.70 |
| LC-3 | 4/16/2009 | 5.33 | 0.45 |
| | | | |
| LC-4 | 4/13/2010 | 6.37 | 1.18 |
| LC-4 | 2/16/2010 | 6.80 | 1.55 |
| LC-4 | 11/18/2009 | 4.53 | 1.85 |
| LC-4 | 8/3/2009 | 11.13 | 0.65 |
| LC-4 | 6/17/2009 | 4.24 | 0.81 |
| LC-4 | 6/3/2009 ? | 3.53 | 0.94 |
| LC-4 | 5/28/2009 | 3.02 | 1.42 |
| LC-4 | 5/22/2009 | 3.13 | 1.49 |
| LC-4 | 5/15/2009 | 4.96 | 1.44 |
| LC-4 | 4/28/2009 | 3.76 | 1.34 |
| LC-4 | 4/21/2009 | 3.98 | 1.37 |
| LC-4 | 4/16/2009 | 4.72 | 1.34 ? |
| LC-4 | 4/13/2009 | 6.37 | 1.18 |


BDL-2 Flow and Depth
1
0.1
1.00
10.00
100.00
y = 0.402x^0.304
R² = 0.629

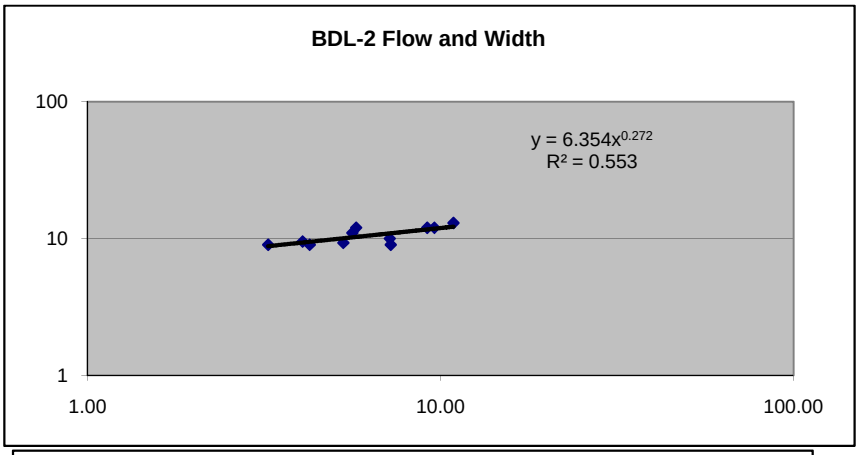

LC-3 Flow and Depth
10.00
1.00
0.10
1.00
10.00
y = 0.542x^0.155
R² = 0.015

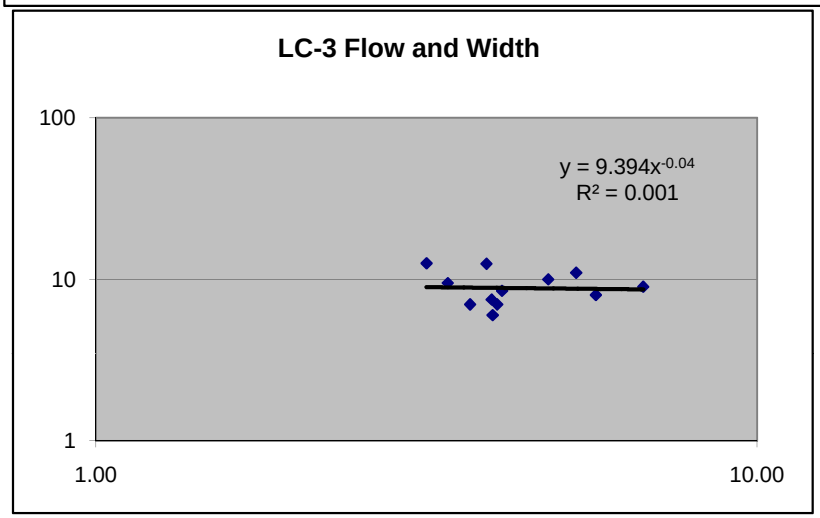

LC-4 Flow and Depth
10.00
1.00
0.10
1.00
10.00
100.00
y = 2.115x^-0.34
R² = 0.194

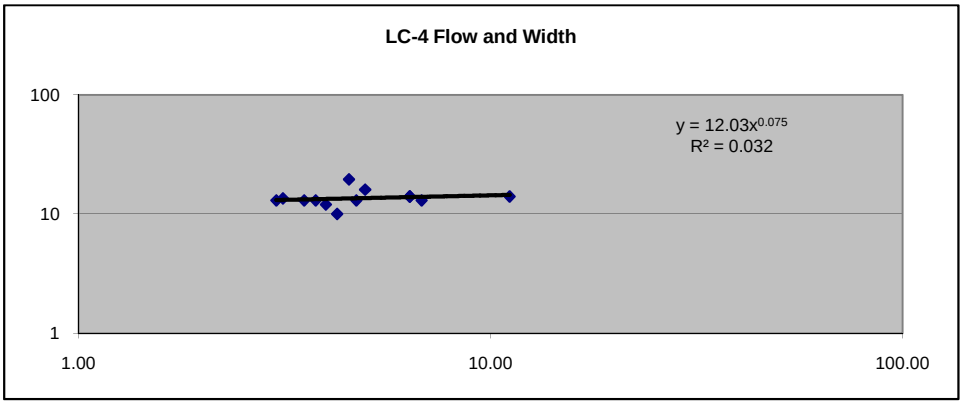
log log plot

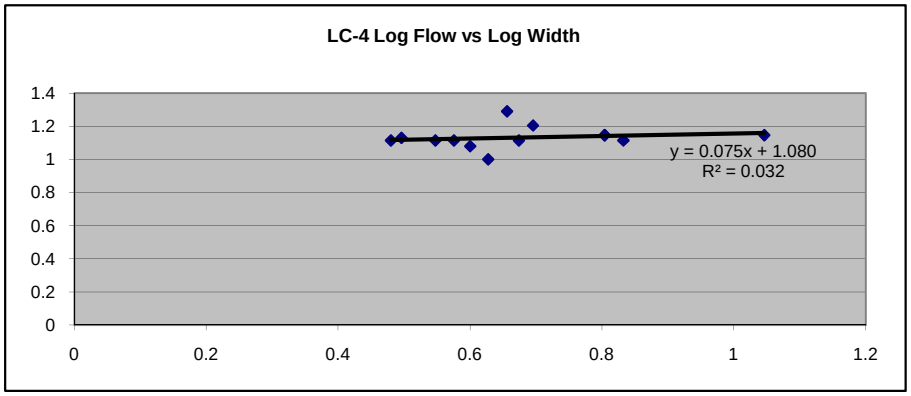
$B = cQ^f$ typical f value 0.15, range 0.05 to 0.25

| Segment | Date | Q = steady | B = width | | | |
|---|---|---|---|---|---|---|
| BDL-2 | 4/13/2010 | 5.63 | 11 | | | |
| BDL-2 | 2/16/2010 | 10.89 | 13 | | | |
| BDL-2 | 11/18/2009 | 9.61 | 12 | | | |
| BDL-2 | 6/17/2009 | 3.25 | 9 | | | |
| BDL-2 | 6/3/2009 | 4.07 | 9.5 | | | |
| BDL-2 | 5/28/2009 | 4.26 | 9 | | | |
| BDL-2 | 5/22/2009 | 5.77 | 12 | | | |
| BDL-2 | 5/15/2009 | 9.17 | 12 | | | |
| BDL-2 | 4/28/2009 | 5.30 | 9.3 | ? | | |
| BDL-2 | 4/21/2009 | 7.23 | 9 | | | |
| BDL-2 | 4/16/2009 | 7.19 | 10 | ? | | 9.2 |
| | | | | | | |
| LC-3 | 4/13/2010 | 4.04 | 7 | | 8.5 | |
| LC-3 | 2/16/2010 | 6.73 | 9 | | 11.5 | |
| LC-3 | 11/18/2009 | 3.98 | 6 | | | |
| LC-3 | 8/4/2009 | 4.83 | 10 | | 9 | |
| LC-3 | 6/16/2009 | 3.97 | 7.5 | | 7 | |
| LC-3 | 6/3/2009 | 4.11 | 8.5 | | 8 | |
| LC-3 | 5/28/2009 | 3.68 | 7 | | 6 | |
| LC-3 | 5/22/2009 | 3.41 | 9.5 | | 6 | |
| LC-3 | 5/15/2009 | 5.71 | 8 | | | |
| LC-3 | 4/28/2009 | 3.90 | 12.5 | | 10 | |
| LC-3 | 4/21/2009 | 3.16 | 12.6 | | 12 | |
| LC-3 | 4/16/2009 | 5.33 | 11 | | 10 | |
| | | | | | | |
| | | | | | log Q | log width |
| LC-4 | 4/13/2010 | 6.37 | 14 | | 0.804003 | 1.146128 |
| LC-4 | 2/16/2010 | 6.80 | 13 | | 0.832445 | 1.113943 |
| LC-4 | 11/18/2009 | 4.53 | 19.5 | | 0.656098 | 1.290035 |
| LC-4 | 8/3/2009 | 11.13 | 14 | | 1.046378 | 1.146128 |
| LC-4 | 6/17/2009 | 4.24 | 10 | | 0.627468 | 1 |
| LC-4 | 6/3/2009 ? | 3.53 | 13 | | 0.547282 | 1.113943 |
| LC-4 | 5/28/2009 | 3.02 | 13 | | 0.479719 | 1.113943 |
| LC-4 | 5/22/2009 | 3.13 | 13.5 | | 0.49596 | 1.130334 |
| LC-4 | 5/15/2009 | 4.96 | 16 | ? | 0.695482 | 1.20412 |
| LC-4 | 4/28/2009 | 3.76 | 13 | | 0.575534 | 1.113943 |
| LC-4 | 4/21/2009 | 3.98 | 12 | 13? | 0.599992 | 1.079181 |
| LC-4 | 4/16/2009 | 4.72 | 13 | ? | 0.674034 | 1.113943 |
| LC-4 | 4/13/2009 | 6.37 | 14 | | 0.804003 | 1.146128 |


BDL-2 Flow and Width
100
10
1
1.00
10.00
100.00
y = 6.354x^0.272
R² = 0.553


LC-3 Flow and Width
100
10
1
1.00
10.00
y = 9.394x^-0.04
R² = 0.001


LC-4 Flow and Width
100
10
1
1.00
10.00
100.00
y = 12.03x^0.075
R² = 0.032


LC-4 Log Flow vs Log Width
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0
0.2
0.4
0.6
0.8
1
1.2
y = 0.075x + 1.080
R² = 0.032