Water Quality in the Las Vegas Wash

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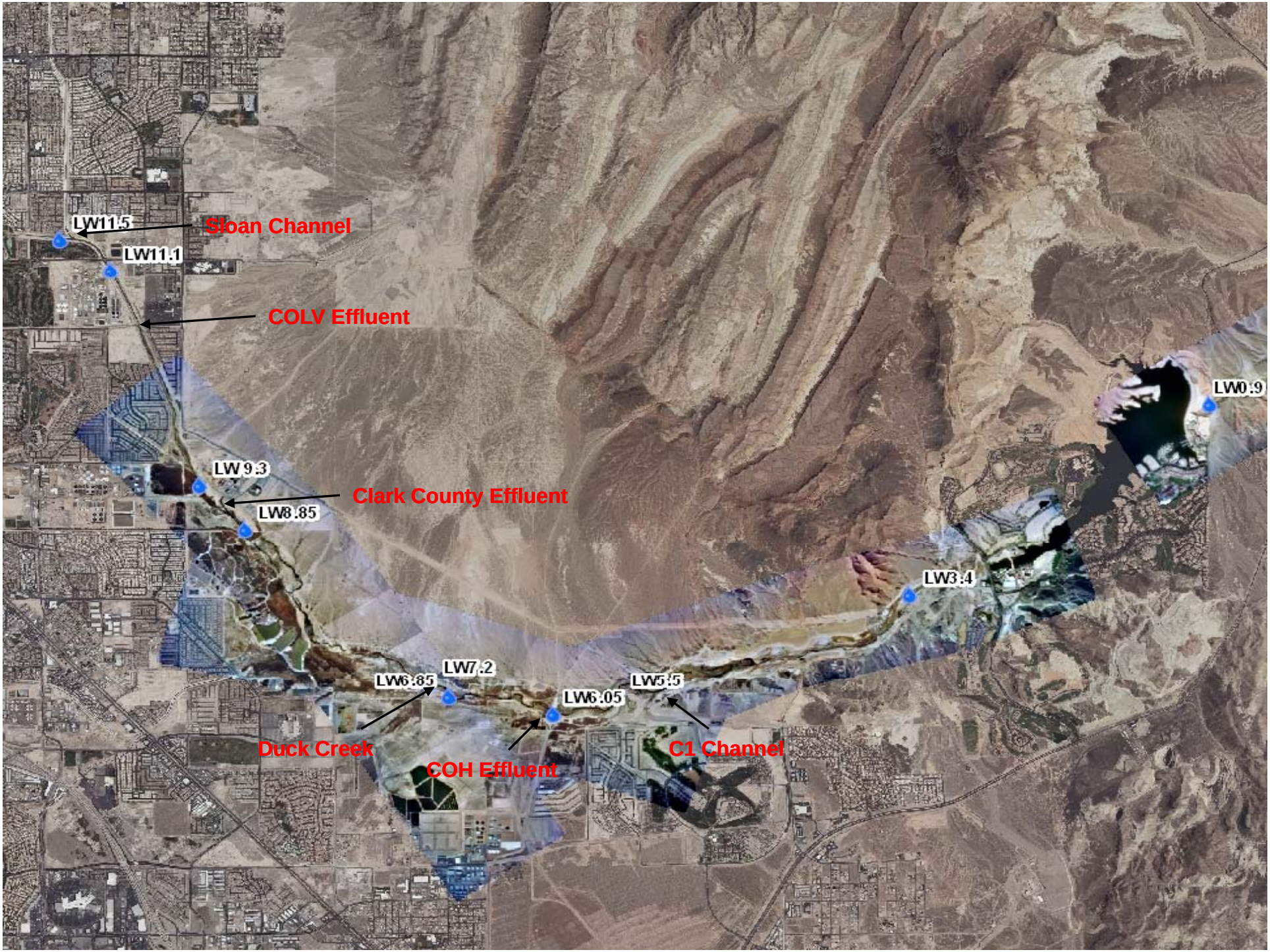
Major inflows to the Wash:

- LW11.5 is the combined flows of Flamingo Wash and Upper Las Vegas Wash (Las Vegas Creek).
- LW11.1 includes addition of flow from Sloan Channel (Now includes CNLV Effluent Discharge).
- LW9.3 includes addition of COLV Effluent Discharge
- LW8.85 includes Clark County Effluent Discharge
- LW7.2 further downstream of Clark County Effluent and Ducks Unlimited Ponds, but upstream of Confluence with Duck Creek
- LW6.85 includes flow from Duck Creek
- LW6.05 includes addition of COH Effluent Discharge (last site downstream of a major inflow source.

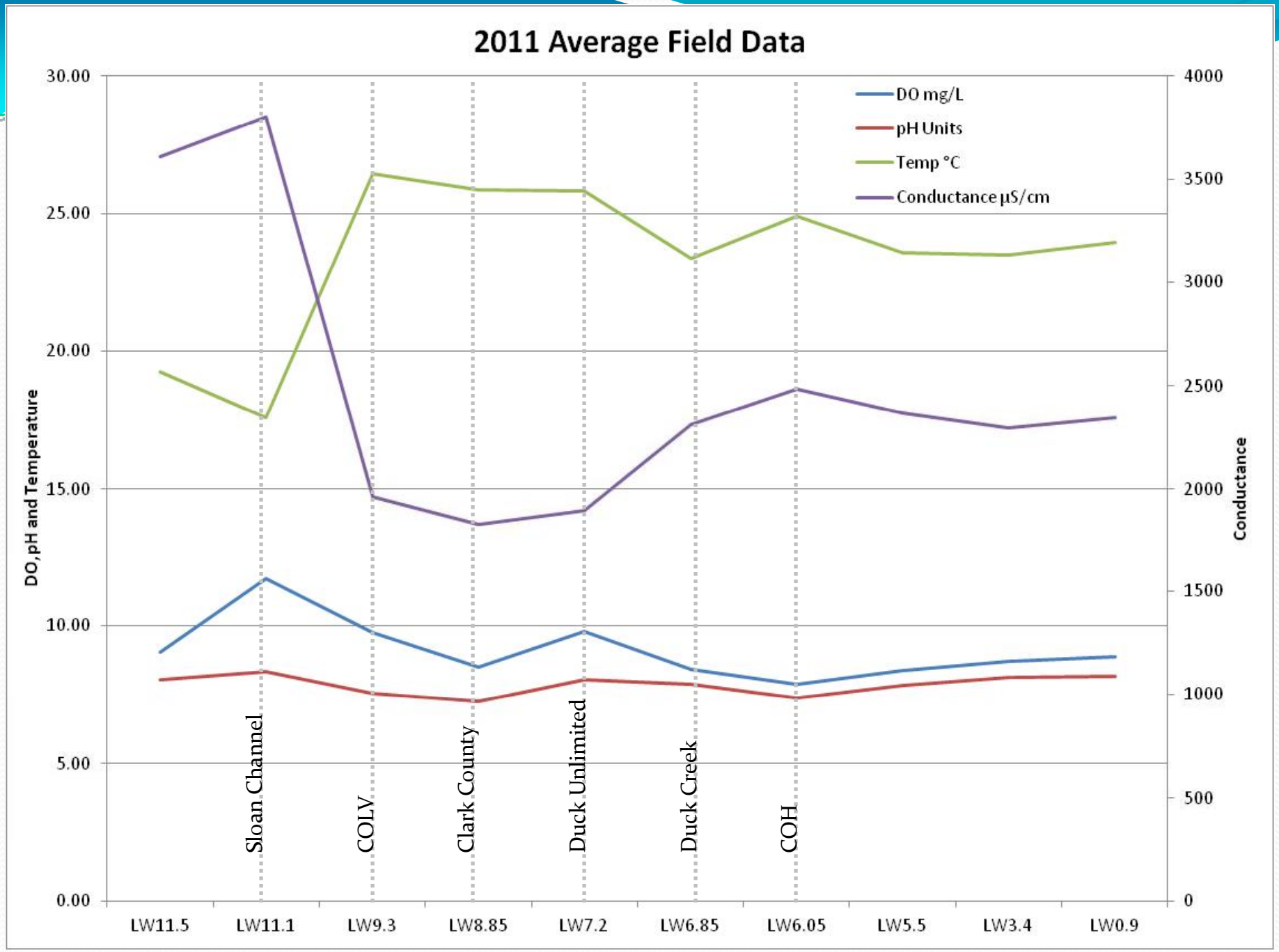
LW11.5
LW11.1
LW9.3
LW8.85
LW7.2
LW6.85
LW6.05
LW5.5
LW3.4
LW0.9

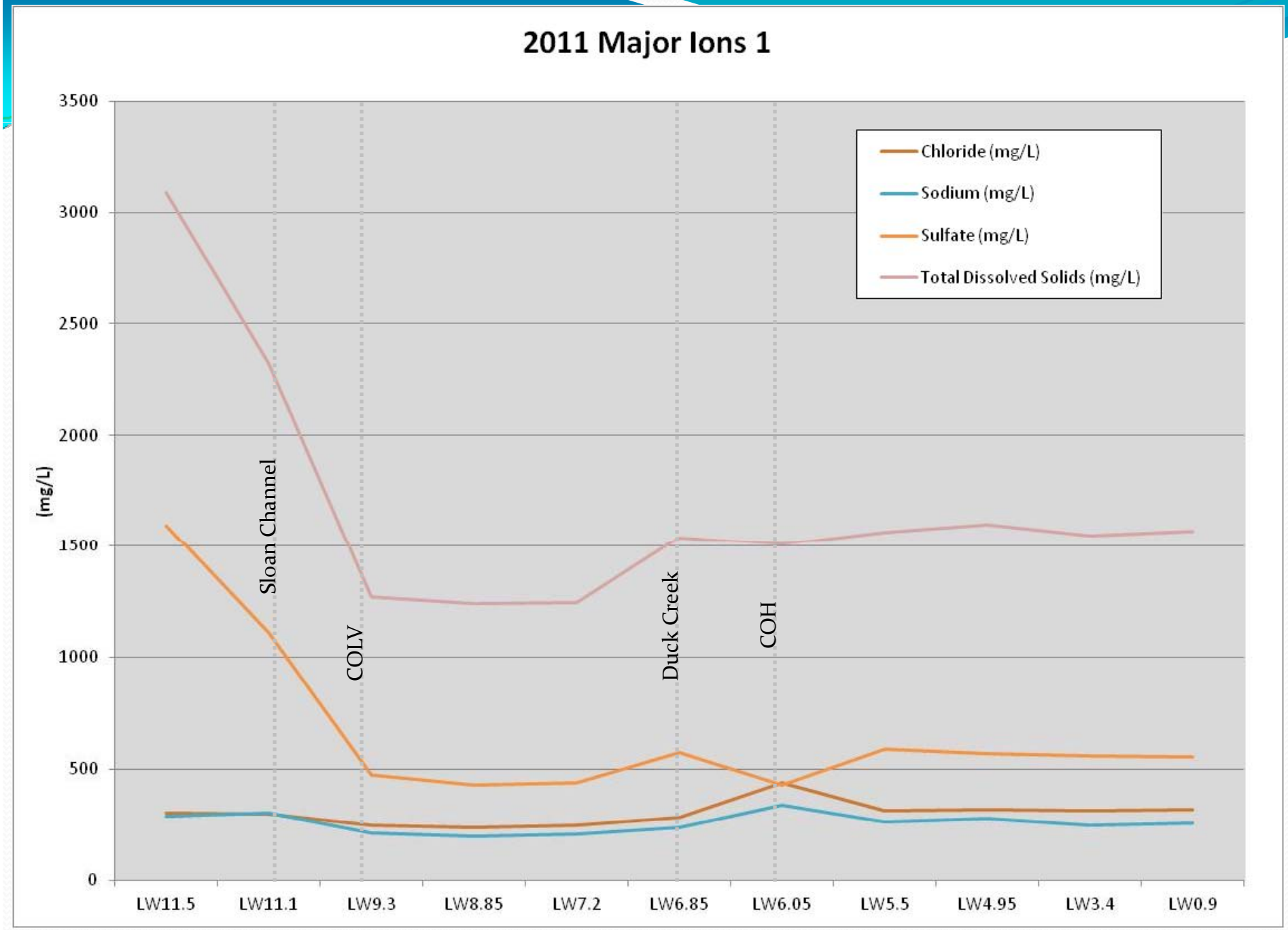
LW11.5
Sloan Channel
LW11.1
COLV Effluent
LW9.3
Clark County Effluent
LW8.85

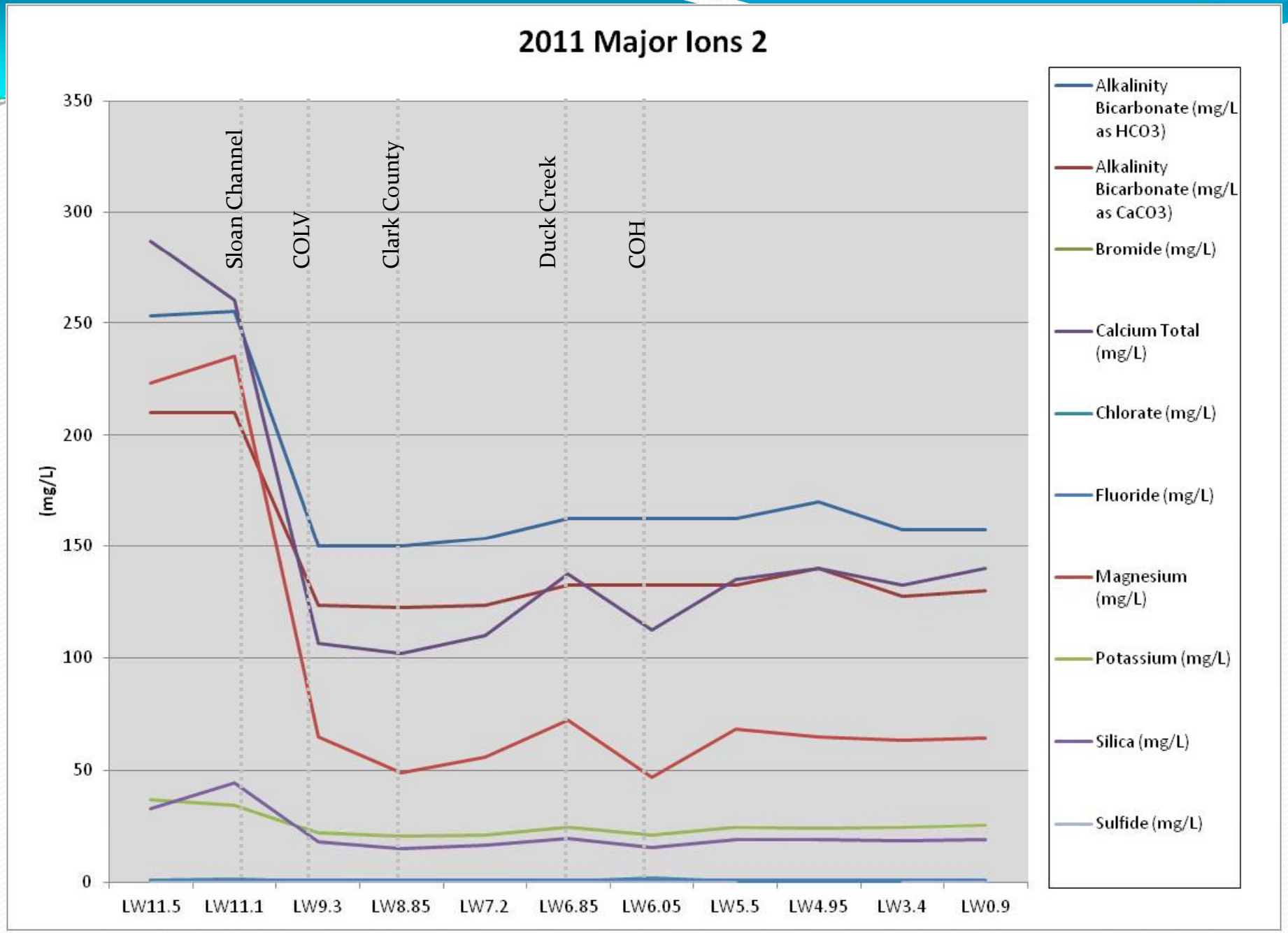
LW7.2
LW6.85
LW6.05
LW5.5
Duck Creek
COH Effluent
C1 Channel

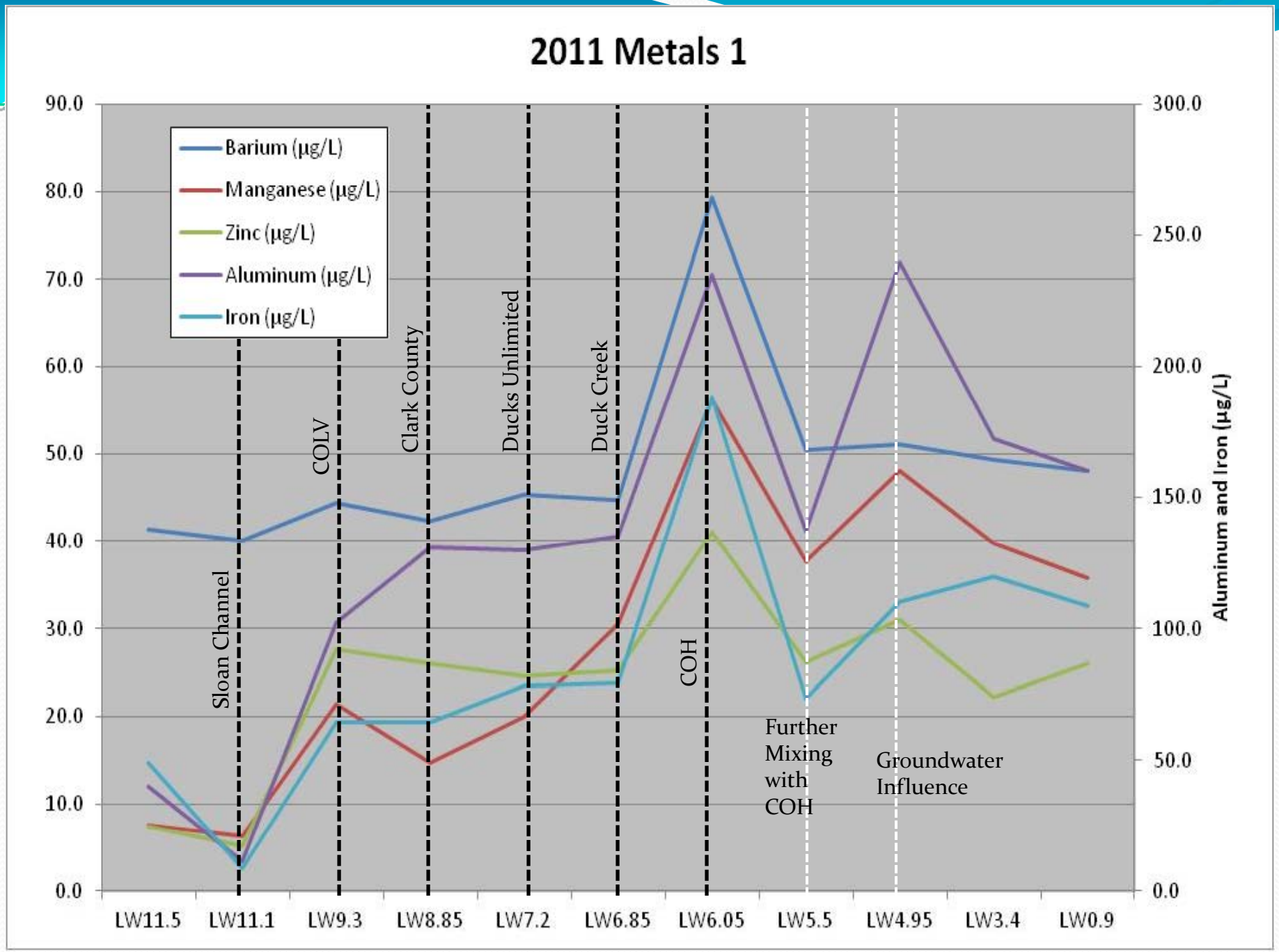

LW11.5
Sloan Channel
LW11.1
COLV Effluent
LW0.9
LW9.3
Clark County Effluent
LW8.85
LW3.4
LW7.2
LW6.85
LW5.5
LW6.05
Duck Creek
C1 Channel
COH Effluent

Water Quality Variations in the Wash due to Major Inflows

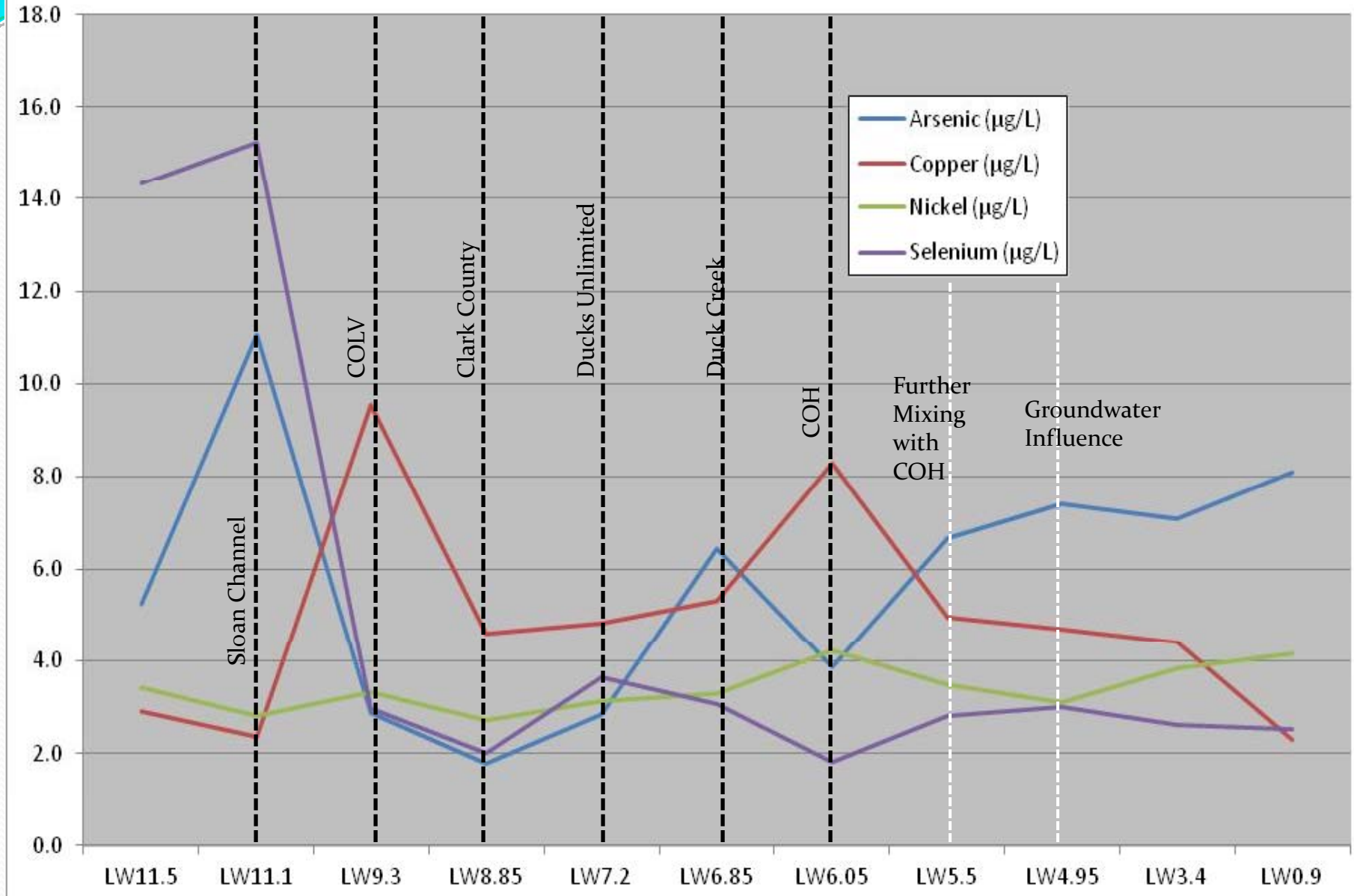

2011 Average Field Data
DO mg/L
pH Units
Temp °C
Conductance µS/cm
DO, pH and Temperature
Conductance
30.00
25.00
20.00
15.00
10.00
5.00
0.00
4000
3500
3000
2500
2000
1500
1000
500
0
Sloan Channel
COLV
Clark County
Duck Unlimited
Duck Creek
COH
LW11.5
LW11.1
LW9.3
LW8.85
LW7.2
LW6.85
LW6.05
LW5.5
LW3.4
LW0.9

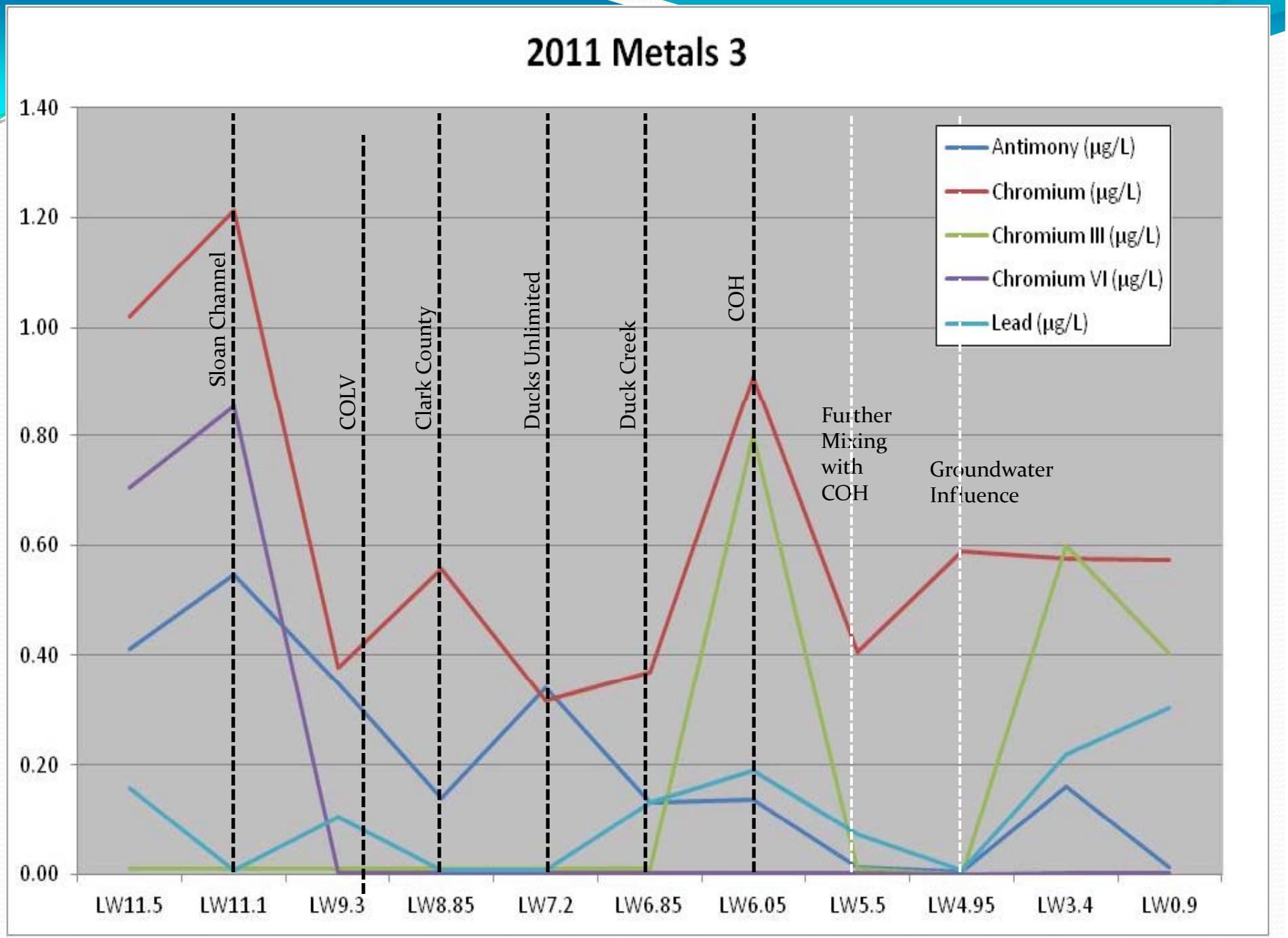

2011 Major Ions 1
3500
3000
2500
2000
1500
1000
500
0
(mg/L)
Chloride (mg/L)
Sodium (mg/L)
Sulfate (mg/L)
Total Dissolved Solids (mg/L)
Sloan Channel
COLV
Duck Creek
COH
LW11.5
LW11.1
LW9.3
LW8.85
LW7.2
LW6.85
LW6.05
LW5.5
LW4.95
LW3.4
LW0.9

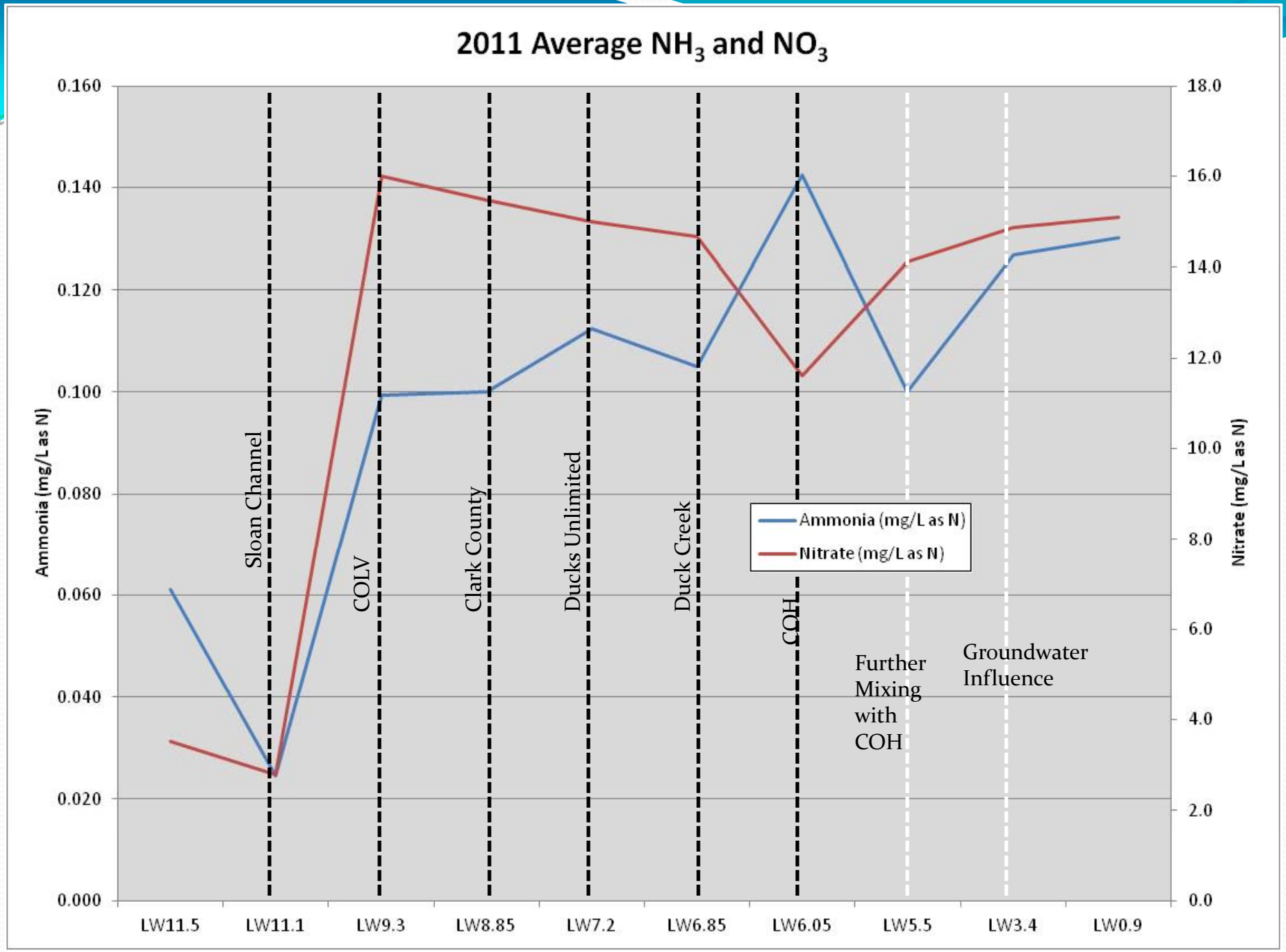

2011 Major Ions 2
(mg/L)
350
300
250
200
150
100
50
0
Sloan Channel
COLV
Clark County
Duck Creek
COH
LW11.5
LW11.1
LW9.3
LW8.85
LW7.2
LW6.85
LW6.05
LW5.5
LW4.95
LW3.4
LW0.9
Alkalinity Bicarbonate (mg/L as HCO3)
Alkalinity Bicarbonate (mg/L as CaCO3)
Bromide (mg/L)
Calcium Total (mg/L)
Chlorate (mg/L)
Fluoride (mg/L)
Magnesium (mg/L)
Potassium (mg/L)
Silica (mg/L)
Sulfide (mg/L)

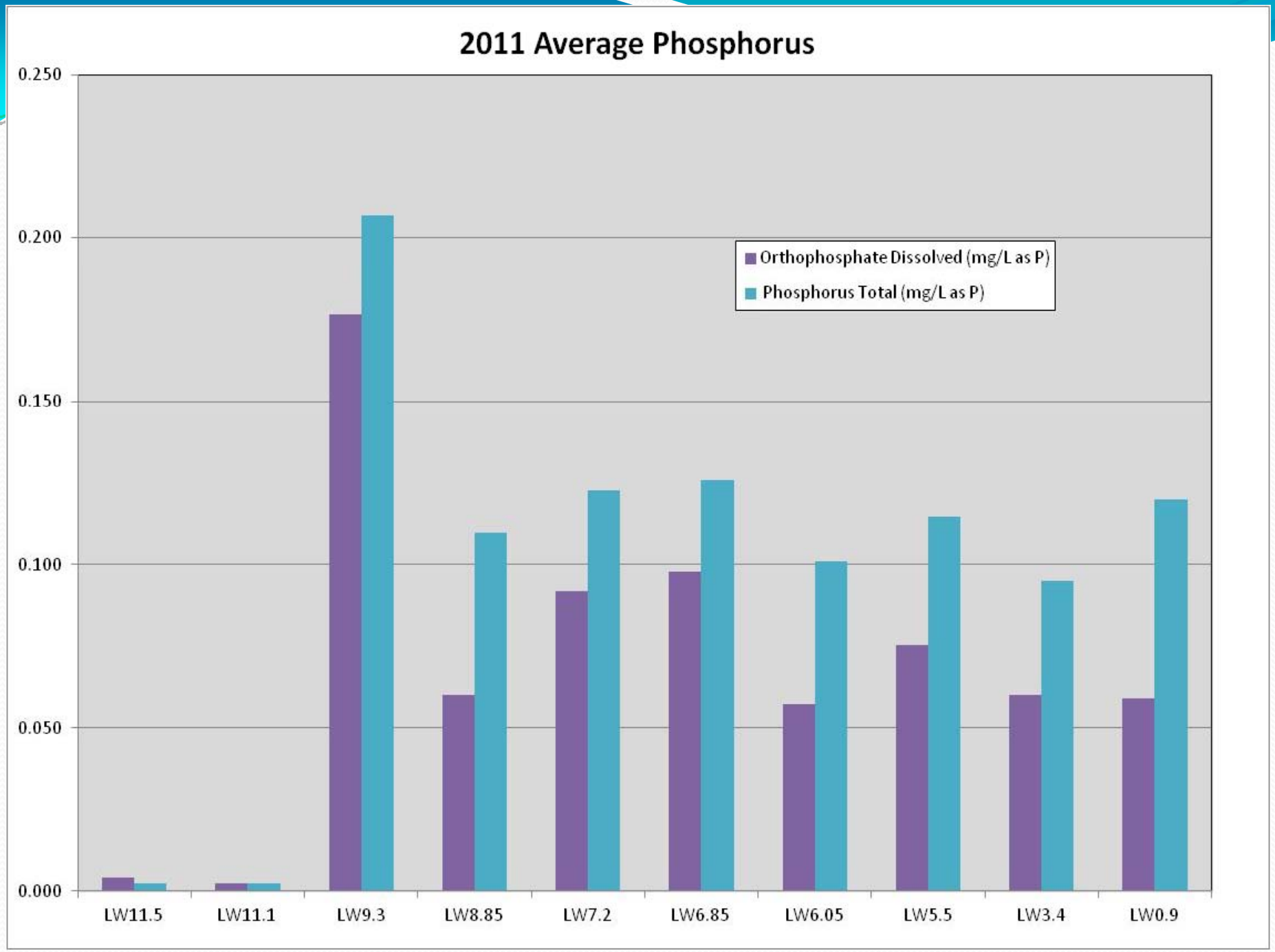

2011 Metals 1
Barium (µg/L)
Manganese (µg/L)
Zinc (µg/L)
Aluminum (µg/L)
Iron (µg/L)
Aluminum and Iron (µg/L)
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
LW11.5
LW11.1
LW9.3
LW8.85
LW7.2
LW6.85
LW6.05
LW5.5
LW4.95
LW3.4
LW0.9
Sloan Channel
COLV
Clark County
Ducks Unlimited
Duck Creek
COH
Further Mixing with COH
Groundwater Influence

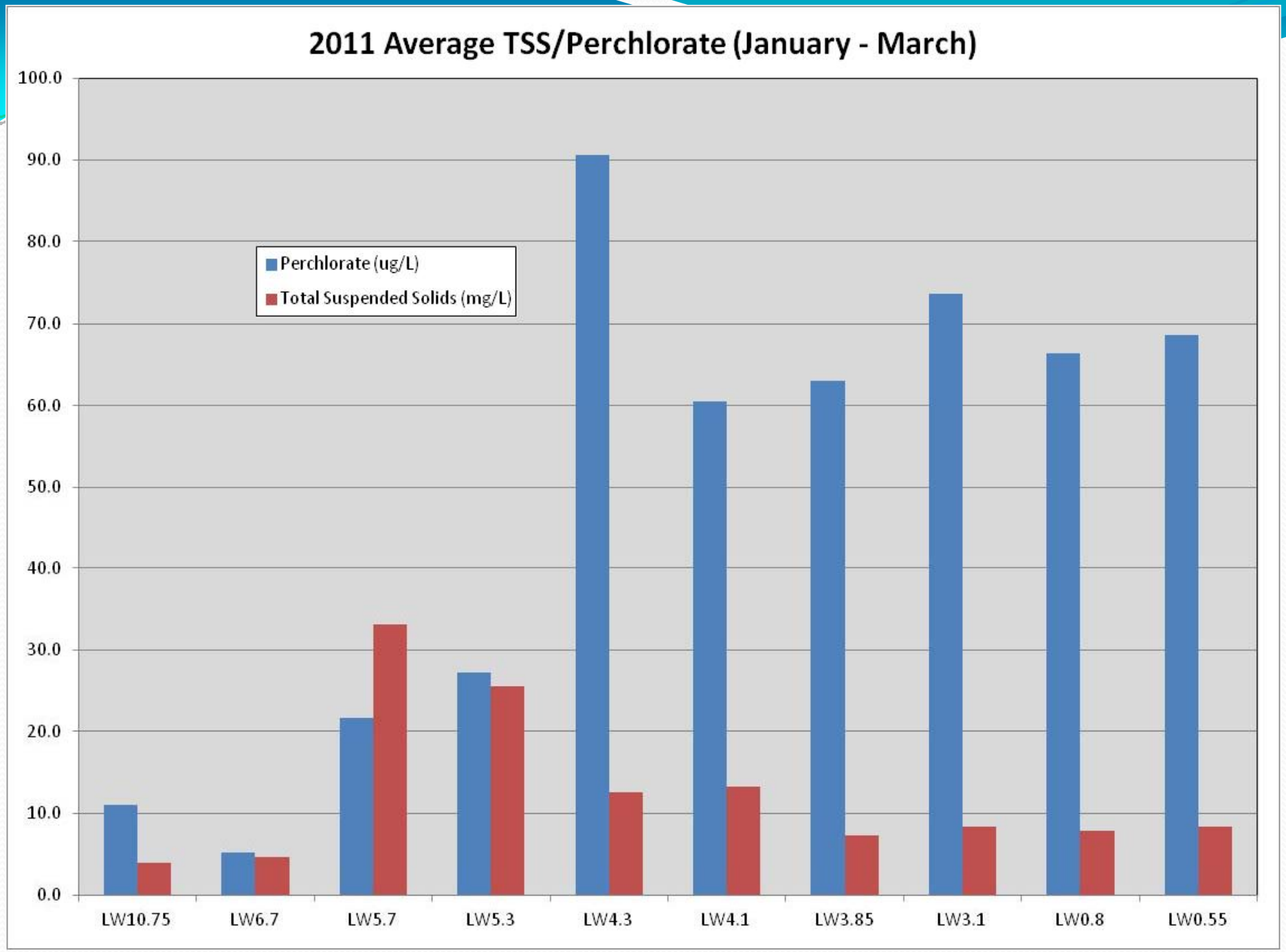
2011 Metals 2

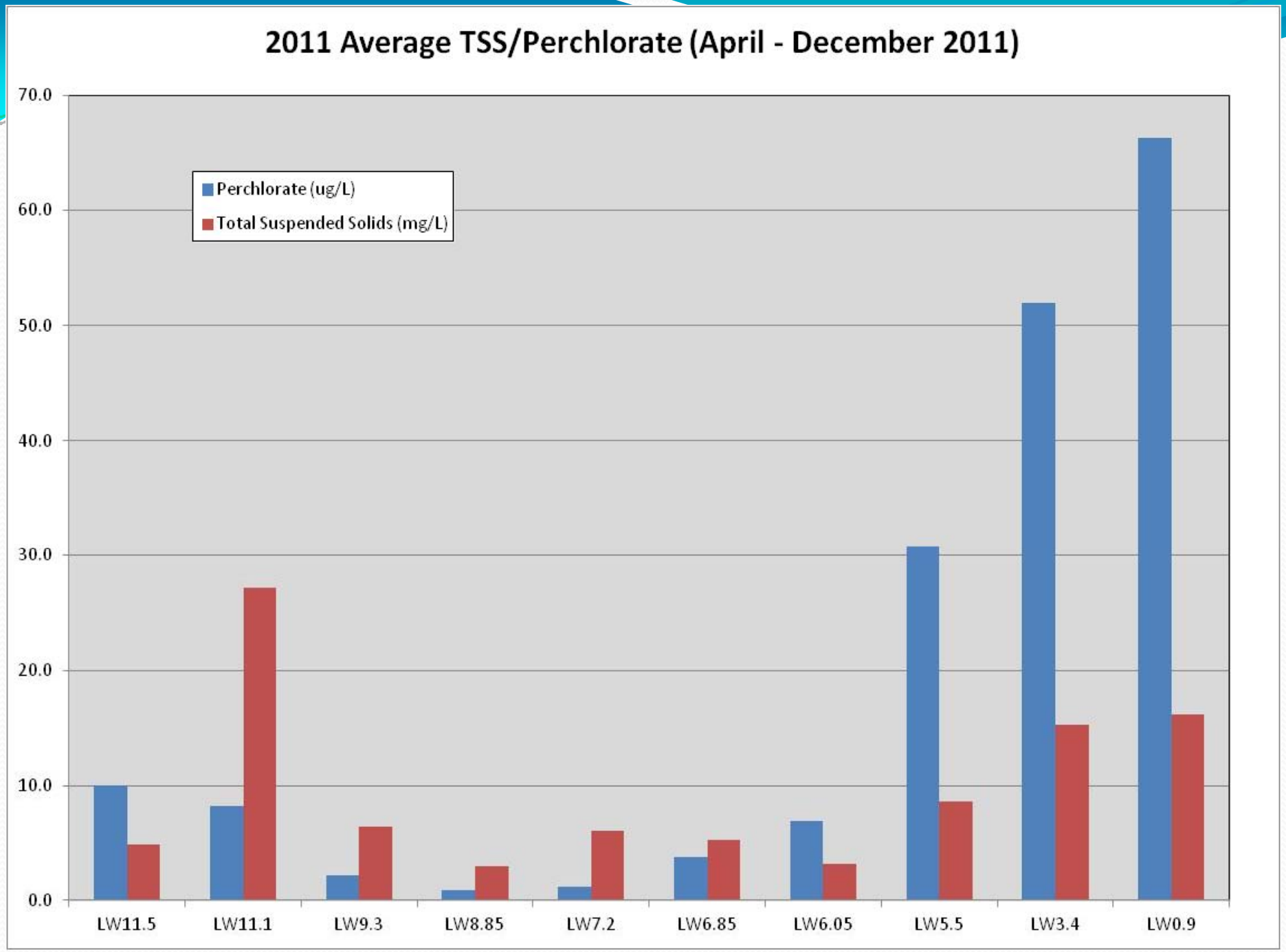



2011 Metals 3
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
LW11.5
LW11.1
LW9.3
LW8.85
LW7.2
LW6.85
LW6.05
LW5.5
LW4.95
LW3.4
LW0.9
Sloan Channel
COLV
Clark County
Ducks Unlimited
Duck Creek
COH
Further Mixing with COH
Groundwater Influence
Antimony (µg/L)
Chromium (µg/L)
Chromium III (µg/L)
Chromium VI (µg/L)
Lead (µg/L)


2011 Average NH3 and NO3
Ammonia (mg/L as N)
Nitrate (mg/L as N)
0.160
0.140
0.120
0.100
0.080
0.060
0.040
0.020
0.000
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
LW11.5
LW11.1
LW9.3
LW8.85
LW7.2
LW6.85
LW6.05
LW5.5
LW3.4
LW0.9
Sloan Channel
COLV
Clark County
Ducks Unlimited
Duck Creek
COH
Further Mixing with COH
Groundwater Influence
Ammonia (mg/L as N)
Nitrate (mg/L as N)


2011 Average Phosphorus
0.250
0.200
0.150
0.100
0.050
0.000
Orthophosphate Dissolved (mg/L as P)
Phosphorus Total (mg/L as P)
LW11.5
LW11.1
LW9.3
LW8.85
LW7.2
LW6.85
LW6.05
LW5.5
LW3.4
LW0.9


2011 Average TSS/Perchlorate (January - March)
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Perchlorate (ug/L)
Total Suspended Solids (mg/L)
LW10.75
LW6.7
LW5.7
LW5.3
LW4.3
LW4.1
LW3.85
LW3.1
LW0.8
LW0.55


2011 Average TSS/Perchlorate (April - December 2011)
Perchlorate (ug/L)
Total Suspended Solids (mg/L)
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
LW11.5
LW11.1
LW9.3
LW8.85
LW7.2
LW6.85
LW6.05
LW5.5
LW3.4
LW0.9

Mass Balance of Key Parameters at LW0.9 for 2011

	Perchlorate	Selenium	Total Phospohorus	TSS	TDS
2011 Average Concentration	66 (µg/L)	2.5 (µg/L)	0.12 (mg/L)	16.1 (mg/L)	1571 (mg/L)
2011 Mean Flow at LW0.9(cfs).	295	295	295	295	295
Mass Loading	105 (lbs/day)	4.0 (lbs/day)	191 (lbs/day)	12.8 (tons/day)	1249 (tons/day)

Questions????