

DRAFT 2004-2006 Upper Salmon Creek Watershed Water Quality Results

Applicable Water Quality Objectives:

Nitrate-Nitrogen: < 1.0 mg/L

*EPA water quality goal for nitrate-nitrogen

Total Phosphorous: < 0.1 mg/L

*EPA water quality goal for total phosphate in streams and rivers

pH: > 6.5 and < 8.5

*North Coast Water Quality Control Board's Water Quality Basin Plan Objectives

Dissolved Oxygen: > 7.0 mg/L for salmonid streams

*North Coast Water Quality Control Board's Water Quality Basin Plan Objectives

Conductivity: none applicable

*The North Coast Water Quality Control Board's Water Quality Basin Plan Objectives are based on a weekly mean and apply only to the main stem of the Russian River. The data here consists of monthly grab samples, a weekly mean cannot be calculated.

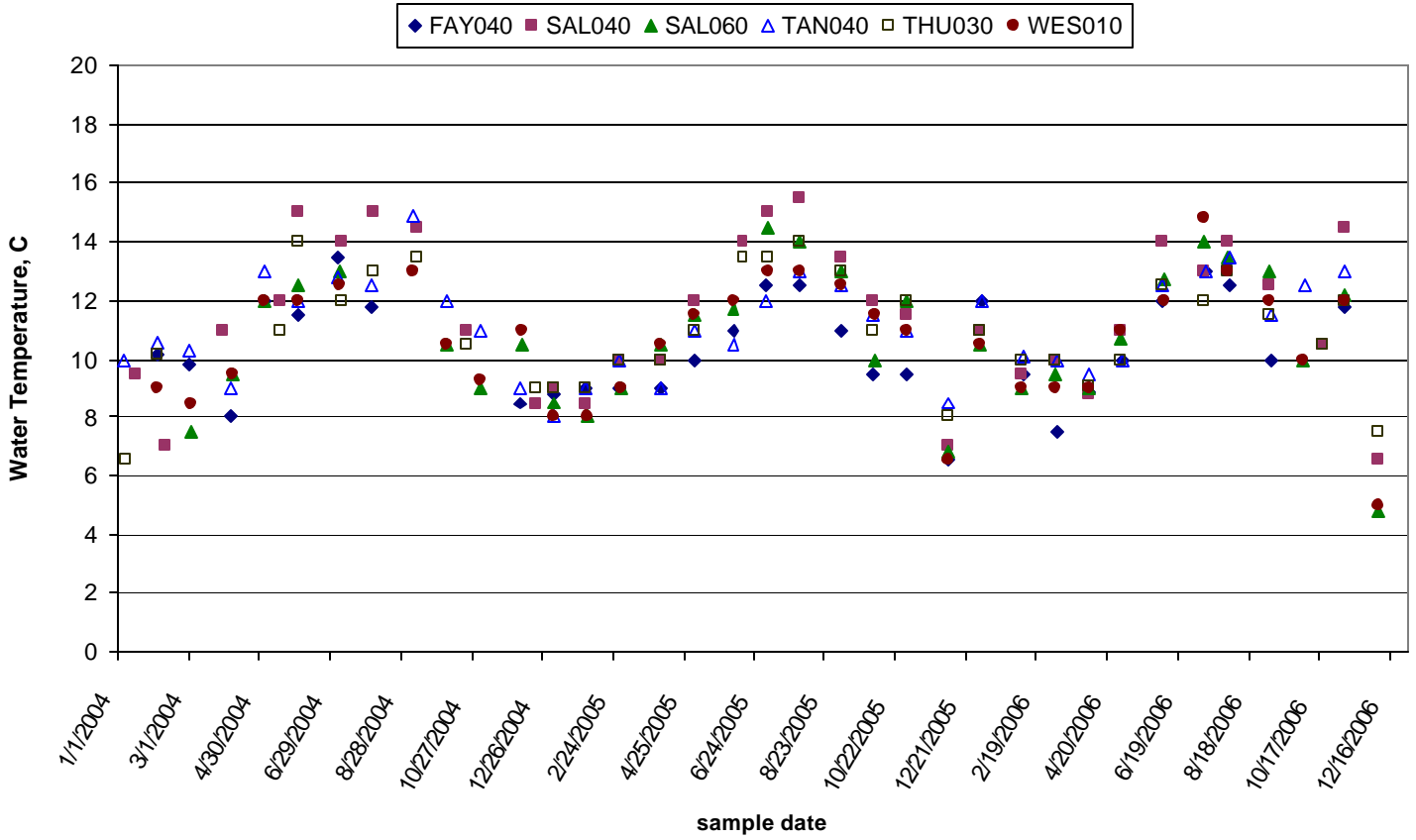
Water Temperature: none applicable

*The North Coast Water Quality Control Board's Water Quality Basin Plan Objectives do not state numerical cutoff values, and applicable standards used in the 2006 303-d list are based on 7-day means. The data here consists of monthly grab samples, a weekly mean cannot be calculated. Proposed standards include an instantaneous max of 21° and a maximum weekly average of daily maximum at 12° to 17° depending on Salmonid lifestage.

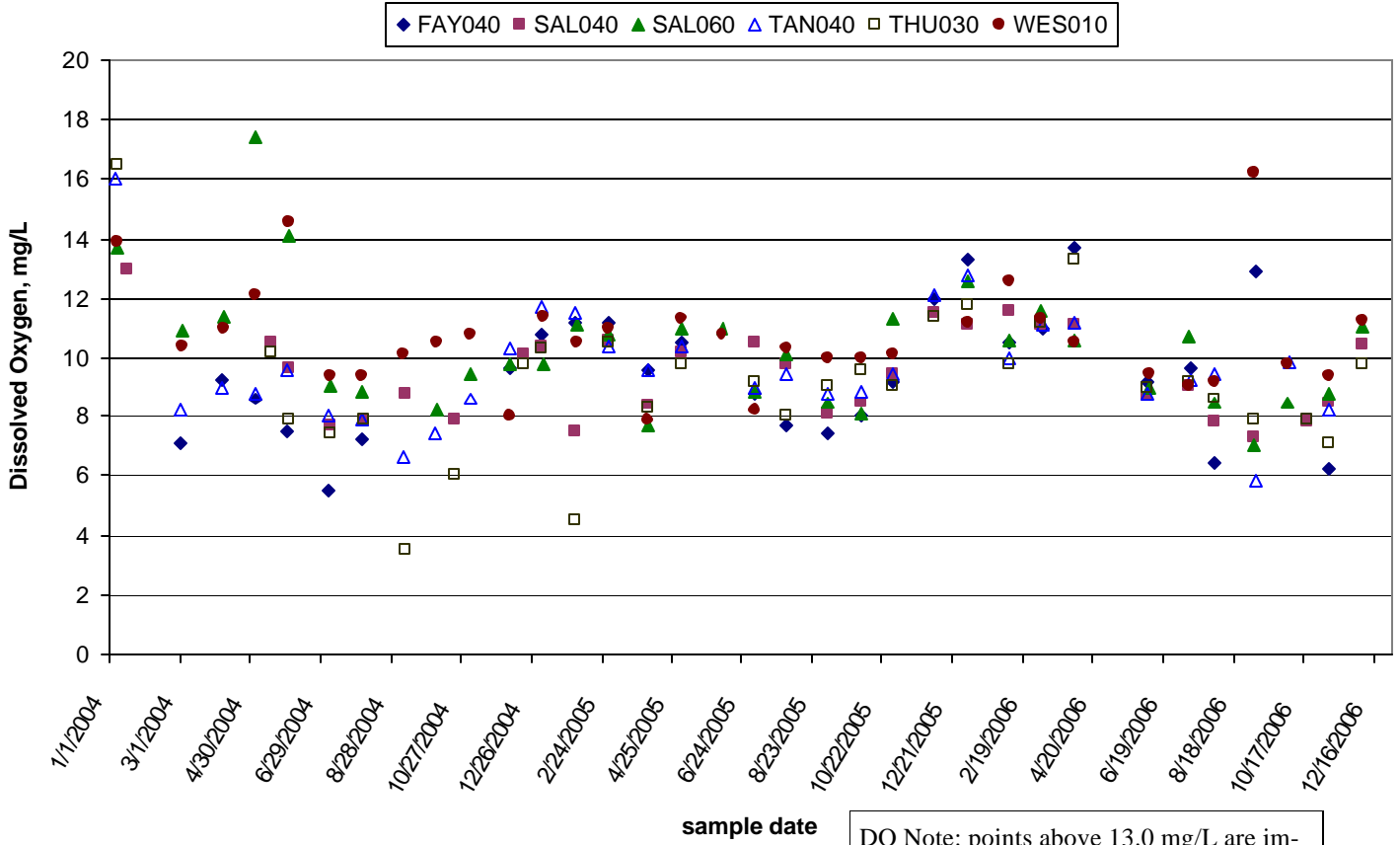
Turbidity: <25 NTU

*John W Sigler's 1984 paper "The Effects of Chronic Turbidity on Density and Growth of Steelheads and Coho Salmon", used in 2006 303-d list.

Upper Salmon Creek Water Temperature

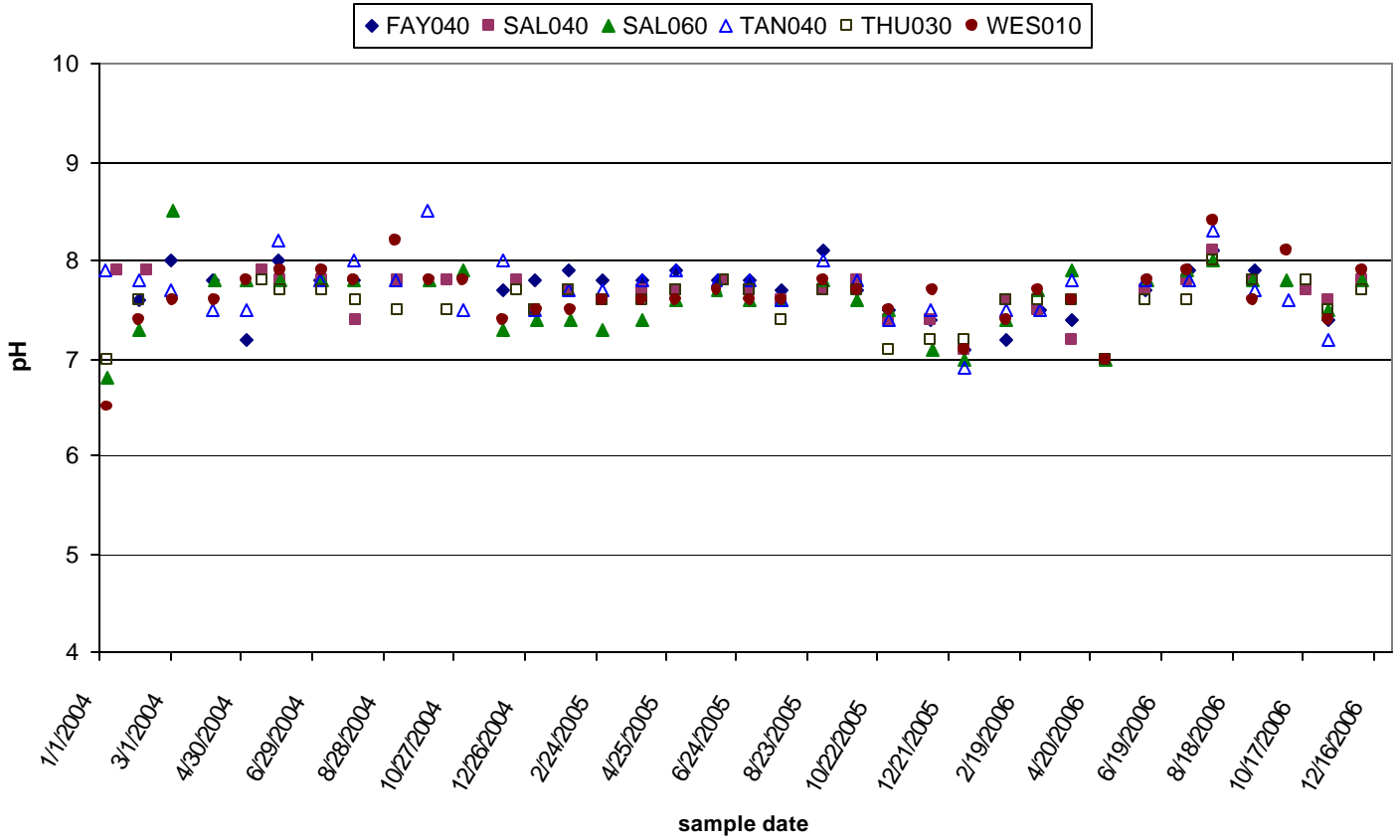


Upper Salmon Creek Dissolved Oxygen

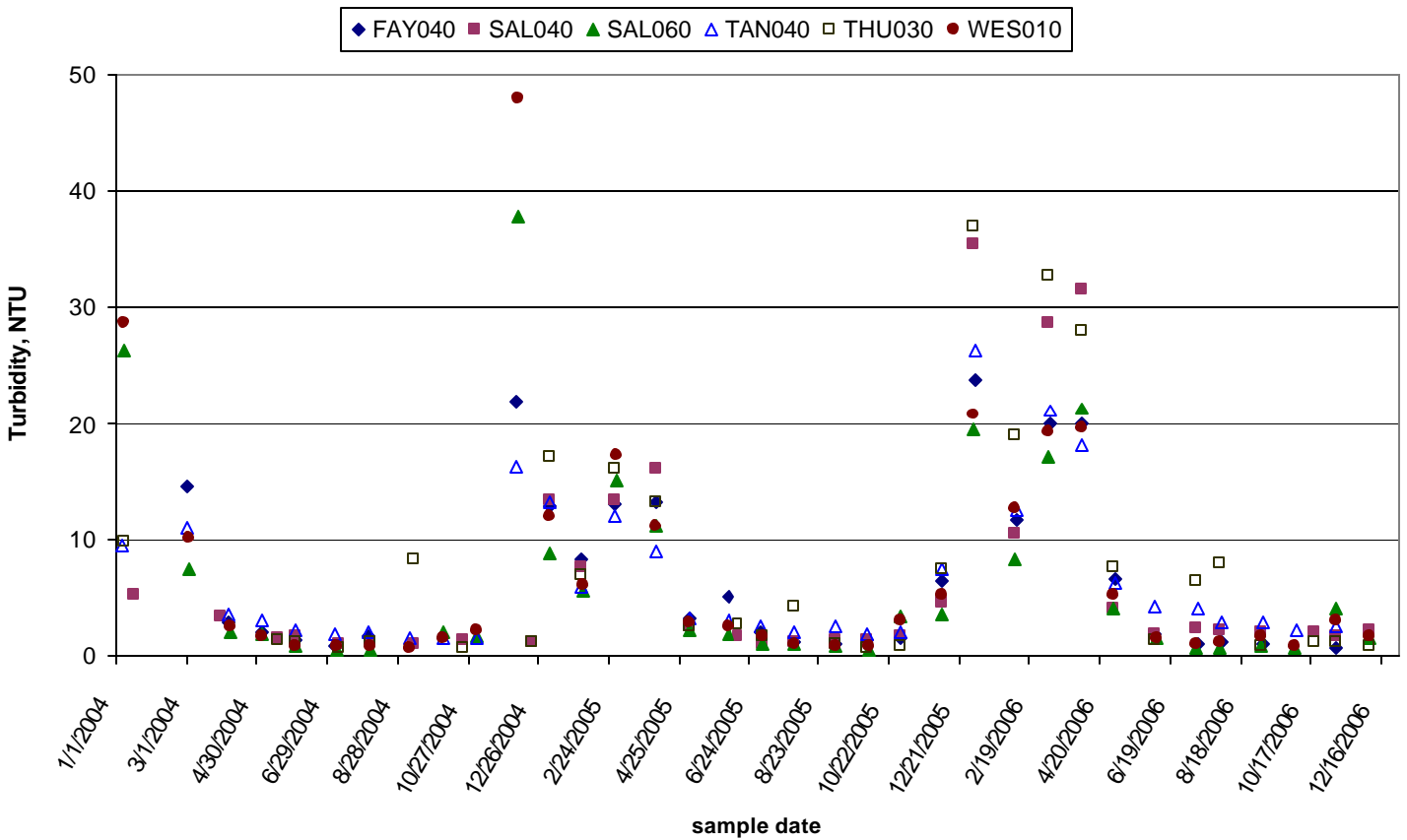


DO Note: points above 13.0 mg/L are improbable and may indicated a problem with the instrument or operation.

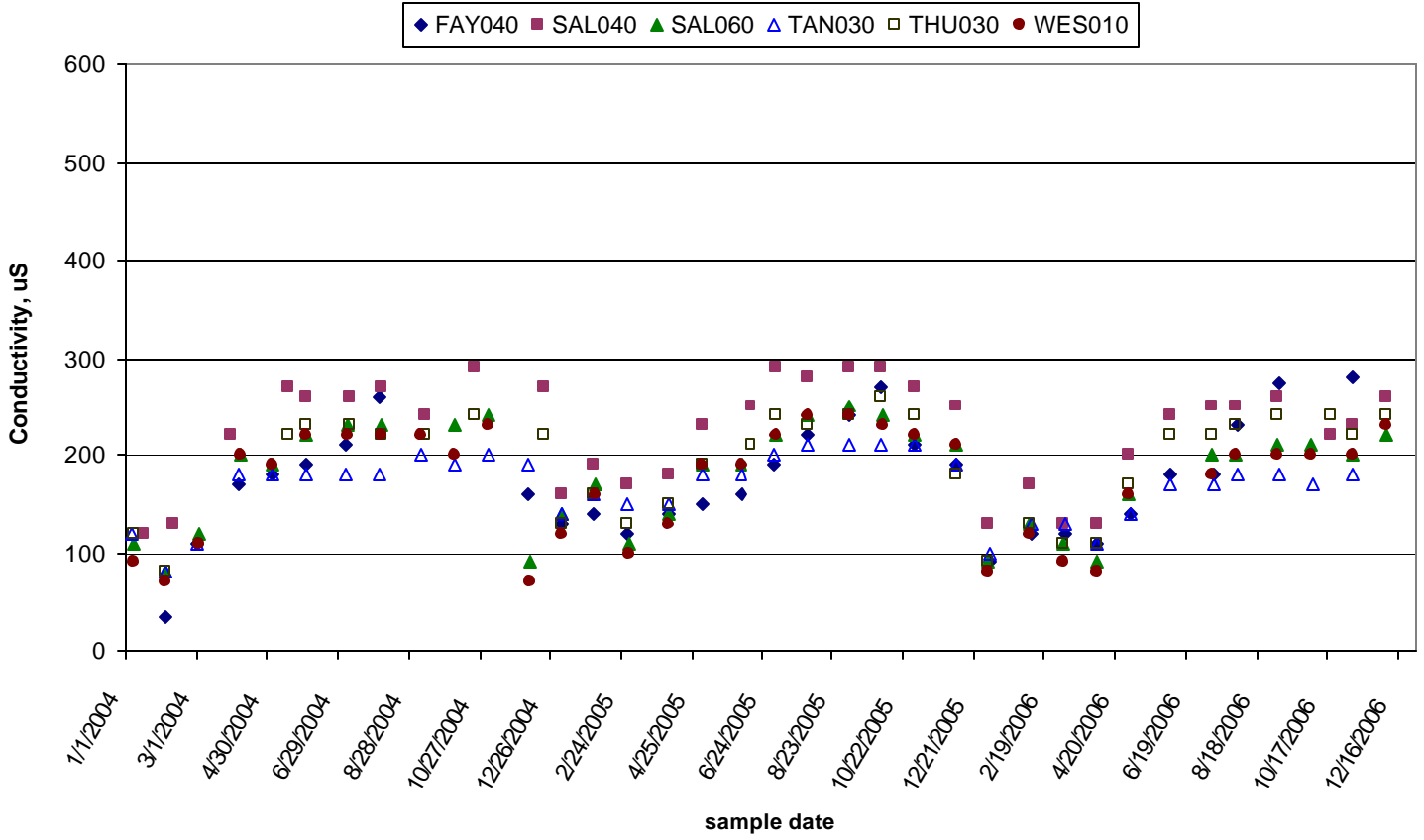
Upper Salmon Creek pH



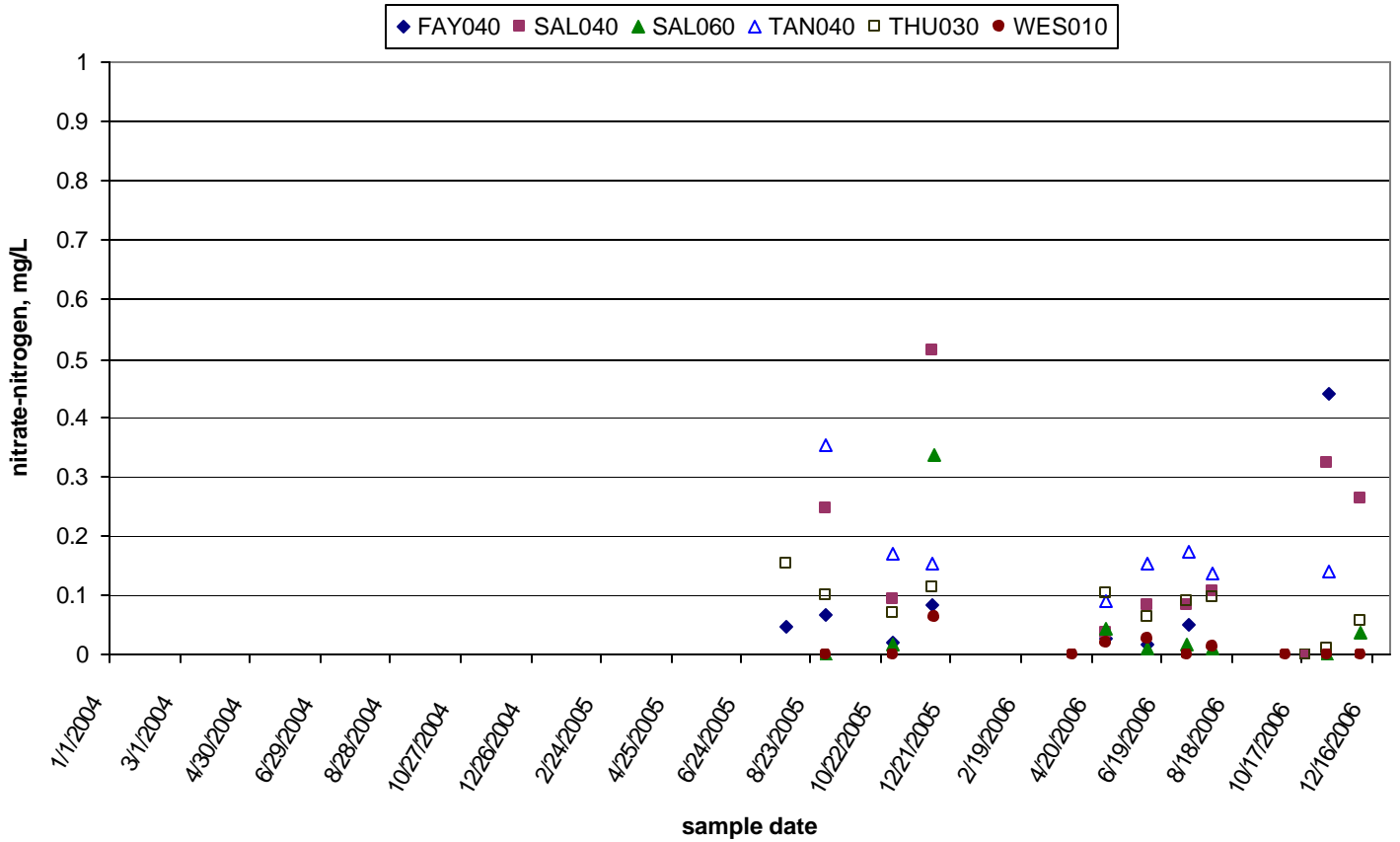
Upper Salmon Creek Turbidity



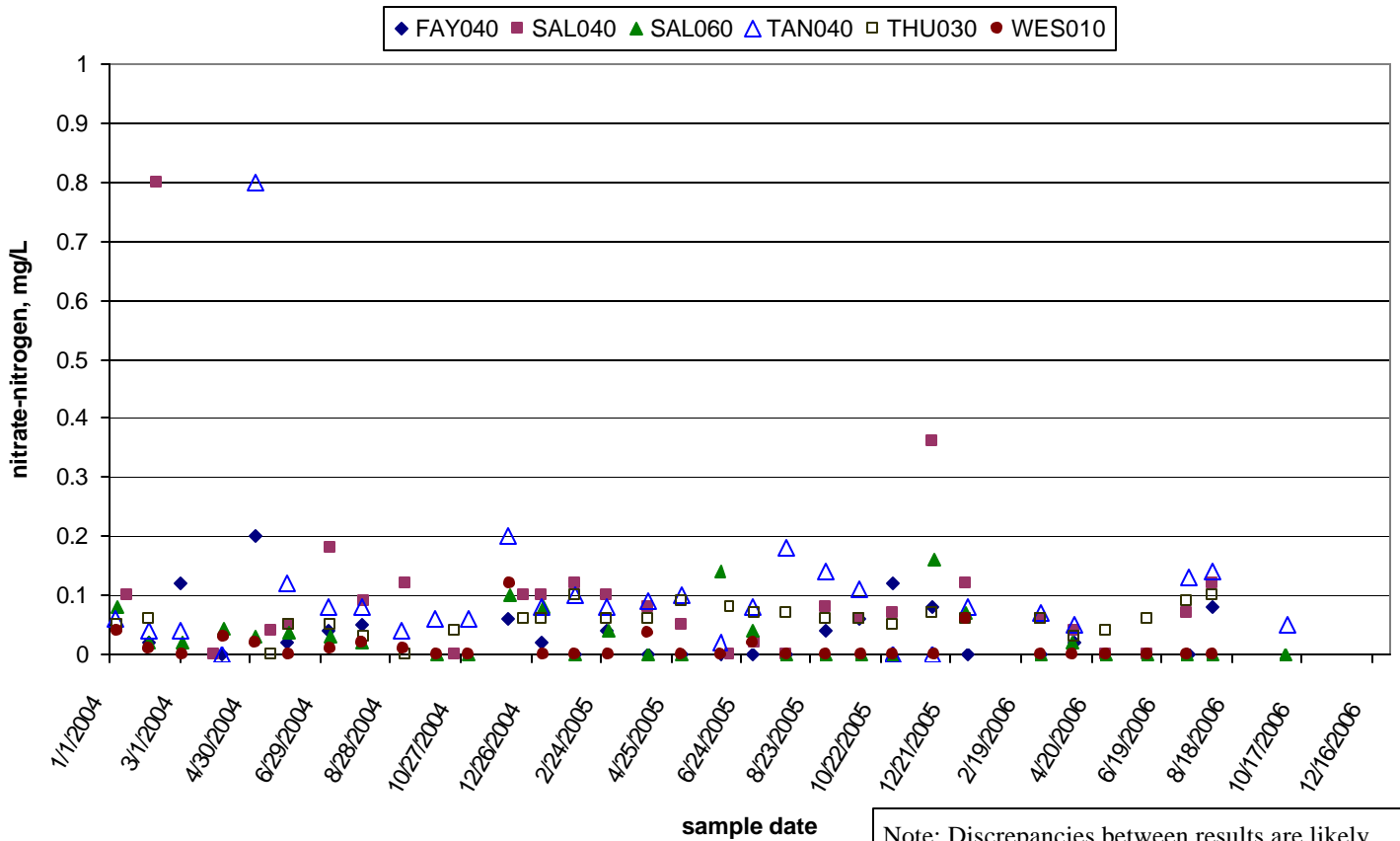
Upper Salmon Creek Conductivity



Upper Salmon Creek Nitrate-Nitrogen, ion chromatography

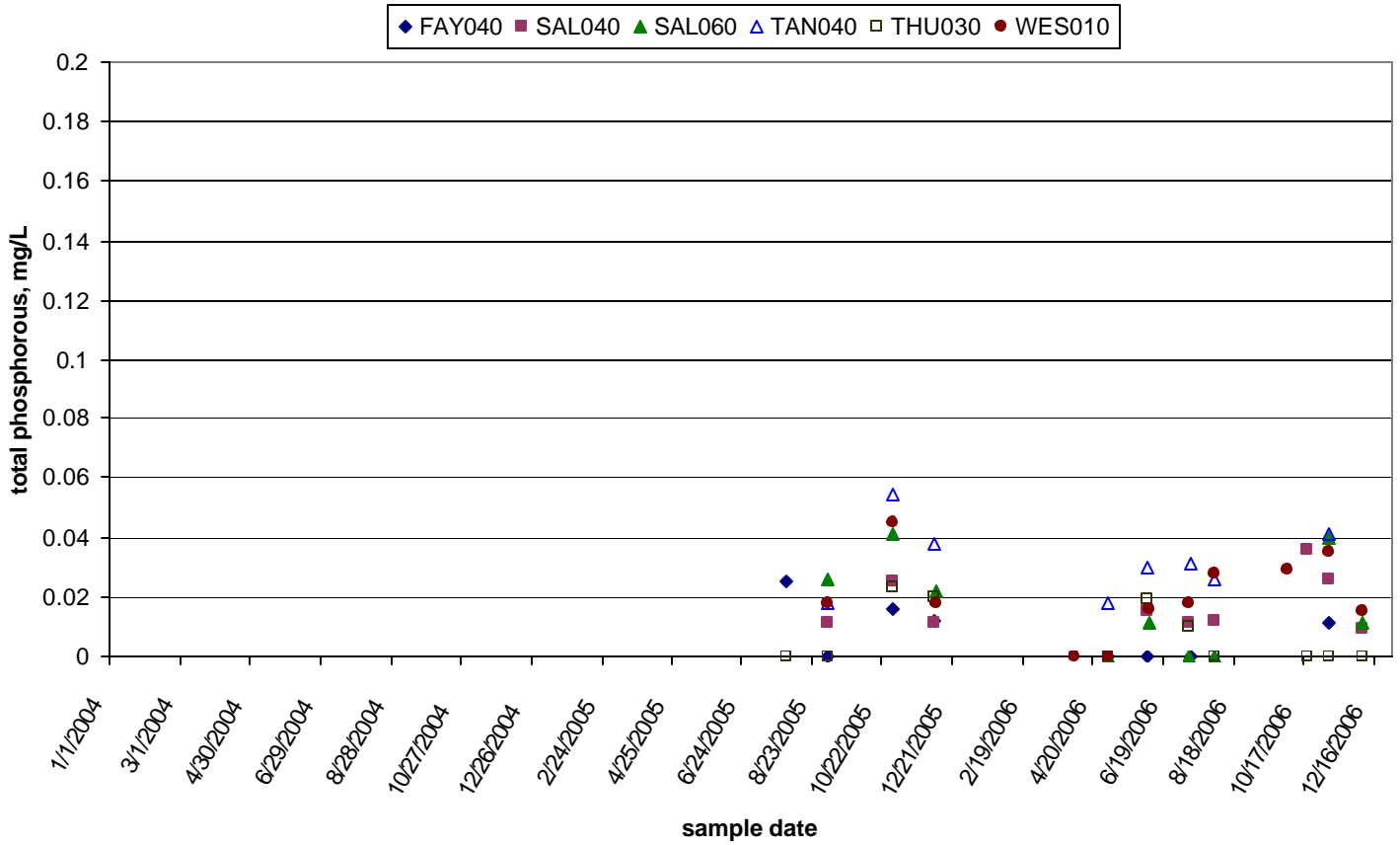


Upper Salmon Creek Nitrate-Nitrogen, colorimetric

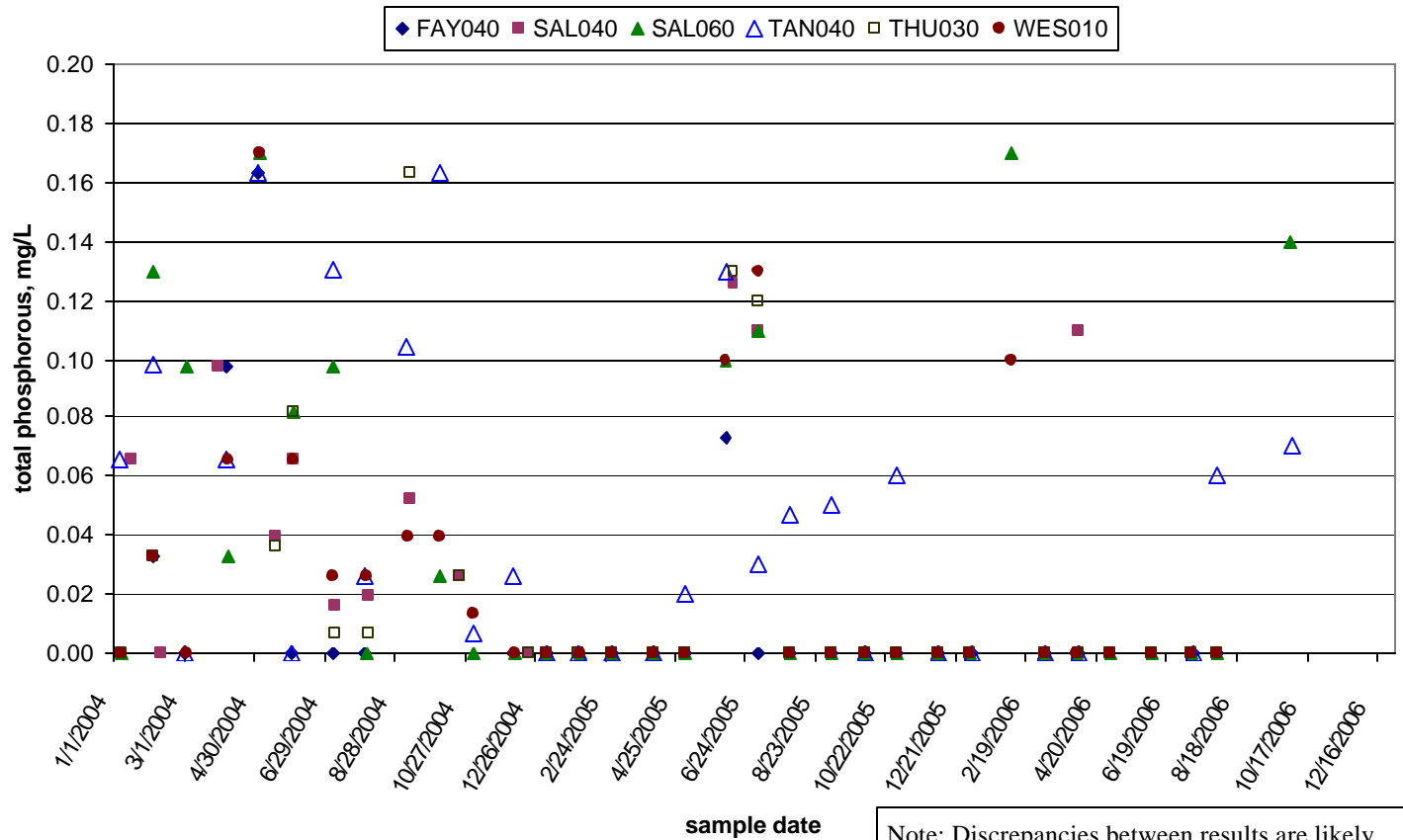


Note: Discrepancies between results are likely due to differences in the methods. Future study of the two methods should clarify this.

Upper Salmon Creek Total Phosphorous, ion chromatography



Upper Salmon Creek Total Phosphorous, colorimetric



Note: Discrepancies between results are likely due to differences in the methods. Future study of the two methods should clarify this.

Nitrate-nitrogen colorimetric							
	FAY040	SAL040	SAL060	TAN040	THU030	WES010	ALL
mean	0.04	0.10	0.03	0.10	0.06	0.01	0.06
median	0.00	0.07	0.00	0.08	0.06	0.00	0.04
std. dev.	0.05	0.15	0.04	0.14	0.02	0.03	0.10
min	0.00	0.00	0.00	0.00	0.00	0.00	0.00
max	0.20	0.80	0.16	0.80	0.10	0.12	0.80
n	25	29	31	30	28	31	174
violations	0	0	0	0	0	0	0
Total phosphorous colorimetric							
	FAY040	SAL040	SAL060	TAN040	THU030	WES010	ALL
mean	0.01	0.02	0.04	0.04	0.02	0.03	0.03
median	0.00	0.00	0.00	0.03	0.00	0.00	0.00
std. dev.	0.04	0.04	0.06	0.05	0.05	0.04	0.05
min	0.00	0.00	0.00	0.00	0.00	0.00	0.00
max	0.16	0.13	0.17	0.16	0.16	0.17	0.17
n	25	29	32	30	28	32	176
violations	2	4	7	5	3	4	25
Nitrate-nitrogen ion chromatography							
	FAY040	SAL040	SAL060	TAN040	THU030	WES010	ALL
mean	0.091	0.194	0.046	0.171	0.085	0.009	0.096
median	0.048	0.107	0.000	0.152	0.094	0.000	0.064
std. dev.	0.144	0.155	0.110	0.078	0.041	0.020	0.117
min	0.000	0.038	0.000	0.091	0.000	0.000	0.000
max	0.441	0.514	0.336	0.352	0.152	0.062	0.514
n	8	9	9	8	10	10	54
violations	0	0	0	0	0	0	0
Total phosphorous ion chromatography							
	FAY040	SAL040	SAL060	TAN040	THU030	WES010	ALL
mean	0.000	0.004	0.009	0.024	0.000	0.007	0.007
median	0.000	0.000	0.000	0.031	0.000	0.000	0.000
std. dev.	0.000	0.011	0.018	0.021	0.000	0.016	0.015
min	0.000	0.000	0.000	0.000	0.000	0.000	0.000
max	0.000	0.036	0.041	0.054	0.000	0.045	0.054
n	8	10	9	8	11	11	57
violations	0	0	0	0	0	0	0

Note: detection limits are set at 0.03 mg/L for phosphorous and 0.02 mg/L for nitrogen. In the above summaries, any samples below the detection limit are expressed as ND, or 0.0. The ion chromatograph is capable of returning numbers under the detection limit, and these are seen on the previous graphs (pg. 4 and 5), however in the above summaries any number below the detection limit was expressed as 0.0.

Conductivity							
	FAY040	SAL040	SAL060	TAN040	THU030	WES010	ALL
mean	173	225	179	167	193	172	185
median	175	245	200	180	220	200	190
std. dev.	59	54	53	34	53	56	55
min	35	120	80	80	80	70	35
max	280	290	250	210	260	240	290
n	30	34	34	35	33	35	201
violations	na						
dissolved oxygen							
	FAY040	SAL040	SAL060	TAN040	THU030	WES010	ALL
mean	9.4	9.5	10.3	9.6	9.2	10.7	9.8
median	9.3	9.6	10.4	9.5	9.2	10.5	9.7
std. dev.	2.2	1.5	2.1	1.9	2.4	1.8	2.0
min	5.5	7.3	7.0	5.8	3.5	7.9	3.5
max	13.7	13.0	17.4	16.0	16.5	16.2	17.4
n	27	30	32	32	30	33	184
violations	2	0	0	2	3	0	7
pH							
	FAY040	SAL040	SAL060	TAN040	THU030	WES010	ALL
mean	7.7	7.7	7.6	7.7	7.6	7.6	7.6
median	7.8	7.7	7.7	7.8	7.6	7.6	7.7
std. dev.	0.3	0.2	0.3	0.3	0.2	0.3	0.3
min	7.1	7.0	6.8	6.9	7.0	6.5	6.5
max	8.1	8.1	8.5	8.5	8.0	8.4	8.5
n	29	33	35	34	33	36	200
violations	0	0	0	0	0	0	0
turbidity							
	FAY040	SAL040	SAL060	TAN040	THU030	WES010	ALL
mean	7.0	6.3	6.4	6.5	7.6	7.2	6.8
median	2.9	2.0	2.0	3.2	2.6	2.5	2.6
std. dev.	7.4	9.2	8.8	6.3	9.8	10.2	8.6
min	0.8	1.0	0.5	1.5	0.7	0.7	0.5
max	23.8	35.4	37.9	26.3	37.0	48.0	48.0
n	29	33	34	34	32	35	197
violations	0	2	1	1	2	2	8
water temperature							
	FAY040	SAL040	SAL060	TAN040	THU030	WES010	ALL
mean	10.4	11.5	10.7	11.2	11.0	10.6	10.9
median	10.0	11.3	10.5	11.0	11.0	11.0	11.0
std. dev.	1.8	2.6	2.3	1.6	1.9	2.1	2.1
min	6.5	6.5	4.8	8.0	6.5	5.0	4.8
max	13.5	15.5	14.5	14.9	14.0	14.8	15.5
n	30	34	32	35	33	34	198
violations	na						