APPENDIX C

Storm Sampling Results

Table C-1. Results Summary Table – Constituents detected at creekmouths

		Eagle	Tecolote	Bell	Devereaux	Glen Annie	Carneros	San Pedro	Old San Jose	San Jose	Atascadero	Arroyo Burro	Montecito	Oak	San Ysidro	Romero	Toro Canyon	Garrapata	Arroyo Paredon	Santa Monica	Franklin	Carpinteria	Rincon	Orcutt (OR 1)	Orcutt (OR 5)	Lowest standard	No standard known
	# of times creek was sampled	1	4	4	4	4	4	4	2	4	4	4	4	4	3	4	3	4	4	4	4	4	4	4	4		
Dissolved Metals	Arsenic																					1				MUN	
	Chromium			1																			1	1	1	MUN	
	Copper		1	3	3	3	3	1		2	4	2	3	2	2		2	2	1	4	2	2	3	4		CCC	
	Lead																1									CCC	
	Mercury			2	2	1			1		1		1	1		2	1	1		1	1	1	2	1	1	Chr	
	Nickel	1		2	1	1	1				2												1	1		CCC	
	Zinc		1	1	2	2	1	4	2	2	2	2	2	3		1	1	1	3	4	4	2	2	1	3	C/W	
Nutrients	Ammonical Nitrogen		2	3	3	4	4	3		2	2	3	4	3	2	3	3	4	3	1	3	2	3	3	4		X
	Nitrate as Nitrogen (NO3-N)		4	4	4	4	4	4		4	3	4	3	4	2	4	3	4	4	4	4	4	4	4	1	MUN	
	Nitrite as Nitrogen (NO2-N)																				1						X
	Phosphorus as Phosphorus (PO4-P)																		2	2	3	1					X
	Total Phosphorus	1	4	4	4	4	4	4	2	4	4	4	4	4	3	4	3	4	4	4	4	4	4	4	4		X
	Total Kjeldahl Nitrogen	1	4	4	4	4	3	4	4	4	4	4	4	4	3	4	3	4	4	1	4	4	4	4	3		X
Others	Total Recoverable Petroleum Hydrocarbons													2			1					1					X
	Oil and Grease								2			1		2			1	2		1	1	1			1		X
Pesticides	Glyphosate		1	3	1	3	3	4	1	2	2	1	3	3	1	2	3	4	3	2	4	4	2		1	MUN	
	Chlorpyrifos		1	2		2	3	1			2		2	1	1		2	1	2		3	3	1		1	CCC	
	Diazinon		3	2	2		2	4	2	4	4	3	3	3		3	1	4	4	1	4	3		2	2	CMC	
	Malathion		1		1			2		1		2		2	2	1						2				CCC	
	# of times creek was sampled	1																		4							
	4,4'-DDT																			1						CCC	
	Endosulfan I																			3						CCC	
	Endosulfan II																			3						CCC	
	Endosulfan Sulfate																			3							X
	# of times creek was sampled			4					1			4															
	4-Isopropyltoluene											1															X

1	= detected during 1 storm
2	=detected during 2 storms
3	=detected during 3 storms
4	=detected during 4 storms

	= exceeded minimum standard during 1 storm
	= exceeded minimum standard during 2 storms
	= exceeded minimum standard during 3 storms
	= exceeded minimum standard during 4 storms

MUN Municipal and Domestic Water Supply (RWQCB Basin Plan)
CMC Criteria Maximum Concentration (EPA Revised Criteria)
CCC Criteria Continuous Concentration (EPA Revised Criteria)

Chr Chronic toxicity level (EPA Goldbook)
C/W Cold or Warm Fresh Water Habitat (RWQCB Basin Plan)

Table C-2. Detections of Analytes for Which Standards Exist

	Glyphosate	Endosulfan I	Endosulfan II	Chlorpyrifos	Diazinon	Malathion	Nitrate as Nitrogen
Total samples	113	9	9	113	113	113	113
Number of detections	67	3	3	30	65	16	94
Percentage of detections	59.3%	33.3%	33.3%	26.5%	57.5%	14.2%	83.2%
Minimum	0.009	0.00004	0.00005	0.00004	0.00004	0.0001	0.5
Average	0.034	0.00009	0.00008	0.00030	0.00042	0.0002	4.8
Maximum	0.160	0.00017	0.00011	0.00290	0.00840	0.0007	24
Standard Deviation	0.029	0.00007	0.00003	0.00055	0.00120	0.0002	5.2
Objective or standard	MUN	CCC	CCC	CCC	CMC	CCC	MUN
Value	0.7	0.000056	0.000056	0.000041	0.00000009	0.0001	45
Number of exceedances	**0**	**1**	**2**	**26**	**65**	**11**	**0**

	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Zinc
Total samples	134	134	134	134	134	134	134
Number of detections	1	5	63	2	32	13	71
Percentage of detections	0.7%	3.7%	47.0%	1.5%	23.9%	9.7%	53.0%
Minimum	0.05	0.01	0.01	0.013	0.00009	0.01	0.01
Average	0.05	0.02	0.03	0.014	0.00043	0.02	0.09
Maximum	0.05	0.03	0.47	0.015	0.00110	0.09	0.33
Standard Deviation	0	0.01	0.06	0.001	0.00025	0.02	0.09
Objective or standard	MUN	CCC	CCC	CCC	Chr	CCC	C/W
Value	0.05	0.74	0.009	0.0025	0.000012	0.052	0.004
Number of exceedances	**0**	**0**	**63**	**2**	**32**	**2**	**71**

Table C-3. Comparison of 1999-2000 and 2000-01 Results

		1999-2000					2000-01				
		Minimum	Average	Maximum	Standard Deviation	# of Detections	Minimum	Average	Maximum	Standard Deviation	# of Detections
Pesticides	Glyphosate	0.0098	0.067	0.57	0.11	41	0.009	0.034	0.160	0.029	67
	4,4'-DDE	0.00003	0.00003	0.00003	0	1	-	-	-	-	-
	4,4'-DDT	-	-	-	-	-	0.00004	0.00004	0.00004	0	1
	Endosulfan I	0.00005	0.00005	0.00005	0	1	0.00004	0.00009	0.00017	0.00007	3
	Endosulfan II	0.00003	0.00003	0.00003	0	1	0.00005	0.00008	0.00011	0.00003	3
	Endosulfan sulfate	0.00005	0.000065	0.00008	0.00002	2	0.00004	0.00007	0.00011	0.00004	3
	Chlorpyrifos	0.00004	0.000196	0.00052	0.0002	5	0.00004	0.00030	0.00290	0.00055	30
	Diazinon	0.00004	0.00065	0.018	0.003	39	0.00004	0.00042	0.00840	0.00120	65
	Malathion	0.00007	0.0002	0.00048	0.0002	6	0.00010	0.00025	0.00070	0.00017	16
VOCs	2,4-D	0.006	0.006	0.006	0	1	-	-	-	-	-
	Chloroform	0.0007	0.0007	0.0007	0	1	-	-	-	-	-
	4-Isopropyltoluene	0.0007	0.0014	0.0021	0.00099	2	0.007	0.007	0.007	0	1
	Naphthalene	0.0032	0.0032	0.0032	0	1	-	-	-	-	-
	Toluene	0.0006	0.00105	0.0015	0.000636	2	-	-	-	-	-
	1,2,4-Trimethylbenzene	0.0011	0.0011	0.0011	0	1	-	-	-	-	-
	Xylenes	0.0011	0.0011	0.0011	0	1	-	-	-	-	-
Metals	Arsenic	0.05	0.07	0.12	0.03	9	0.05	0.05	0.05	0	1
	Chromium	0.01	0.07	0.42	0.08	56	0.01	0.02	0.03	0.01	5
	Copper	0.01	0.05	0.27	0.06	62	0.01	0.03	0.47	0.06	63
	Lead	0.01	0.01	0.04	0.01	46	0.013	0.014	0.015	0.001	2
	Mercury	0	0	0.01	0	3	0.00009	0.00043	0.00110	0.00025	32
	Nickel	0.01	0.03	0.27	0.05	41	0.01	0.02	0.09	0.02	13
	Zinc	0.02	0.11	0.68	0.11	68	0.01	0.09	0.33	0.09	71
Nutrients	Ammonical Nitrogen	0.1	0.7	3.8	0.9	48	0.1	0.4	1.8	0.3	78
	Nitrate as Nitrogen (NO3-N)	0.5	4.4	22	5.3	68	0.5	4.8	24.0	5.2	94
	Nitrite as Nitrogen (NO2-N)	0.5	1	1.8	0.6	4	0.5	0.5	0.5	0	1
	Phosphorus as Phosphorus (PO4-P)	1	1.8	3.4	0.8	13	1.1	1.9	2.7	0.6	10
	Total Phosphorus	0.02	1.4	13	2	73	0.02	1.20	8.40	1.56	110
	Total Kjeldahl Nitrogen	0.2	2.5	12	2.2	73	0.5	2.6	13.0	2.0	103

		1999-2000					2000-01				
		Minimum	**Average**	**Maximum**	**Standard Deviation**	**# of Detections**	**Minimum**	**Average**	**Maximum**	**Standard Deviation**	**# of Detections**
Other	Total Recoverable Petroleum Hydrocarbons	1	1.4	1.9	0.4	7	1	1.3	1.7	0.3	6
	Total Organic Carbon	1.7	22	130	23	62	3.2	24.1	110.0	17.3	100
	Oil and Grease	1	2	4	1	12	1.0	2.7	8.5	2.2	22
	Hardness	32	425	2400	561	74	8	329	2200	339	113
	Specific Conductance	69	2324	52000	7405	74	28	850	10000	1213	113
	Total Dissolved Solids	140	1685	26000	4098	74	22	607	4700	690	113
	Total Suspended Solids	10	587	18000	2215	72	5	425	4000	815	102
	Biochemical Oxygen Demand	3	15	84	15	69	5	18	73	14	63
	Turbidity (NTU)	2	97	950	184	42	2.1	286.8	3700.0	665.3	110

Figure C-1. Fecal Coliform (E. coli)

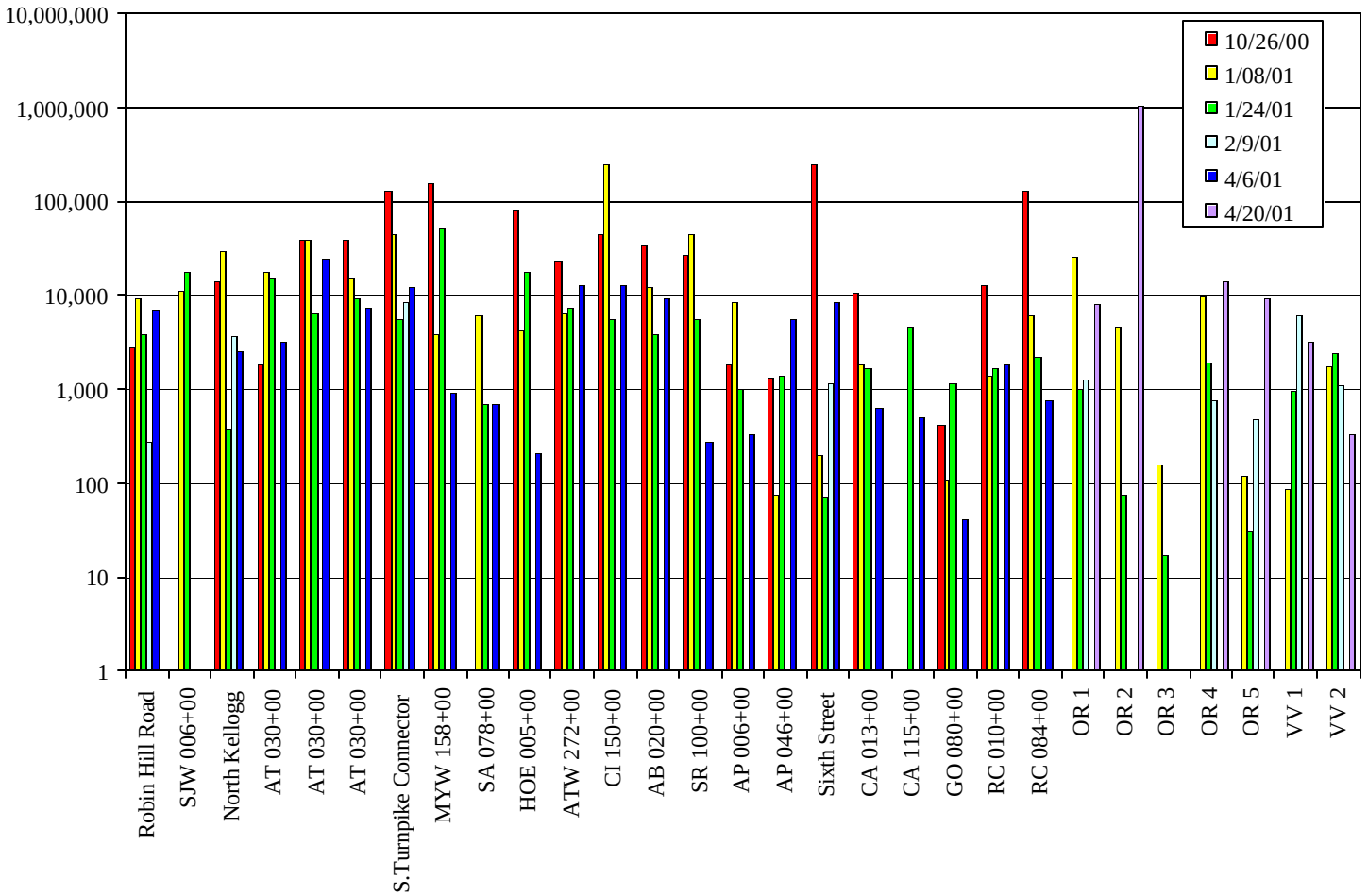

Figure C-2. Total Coliform

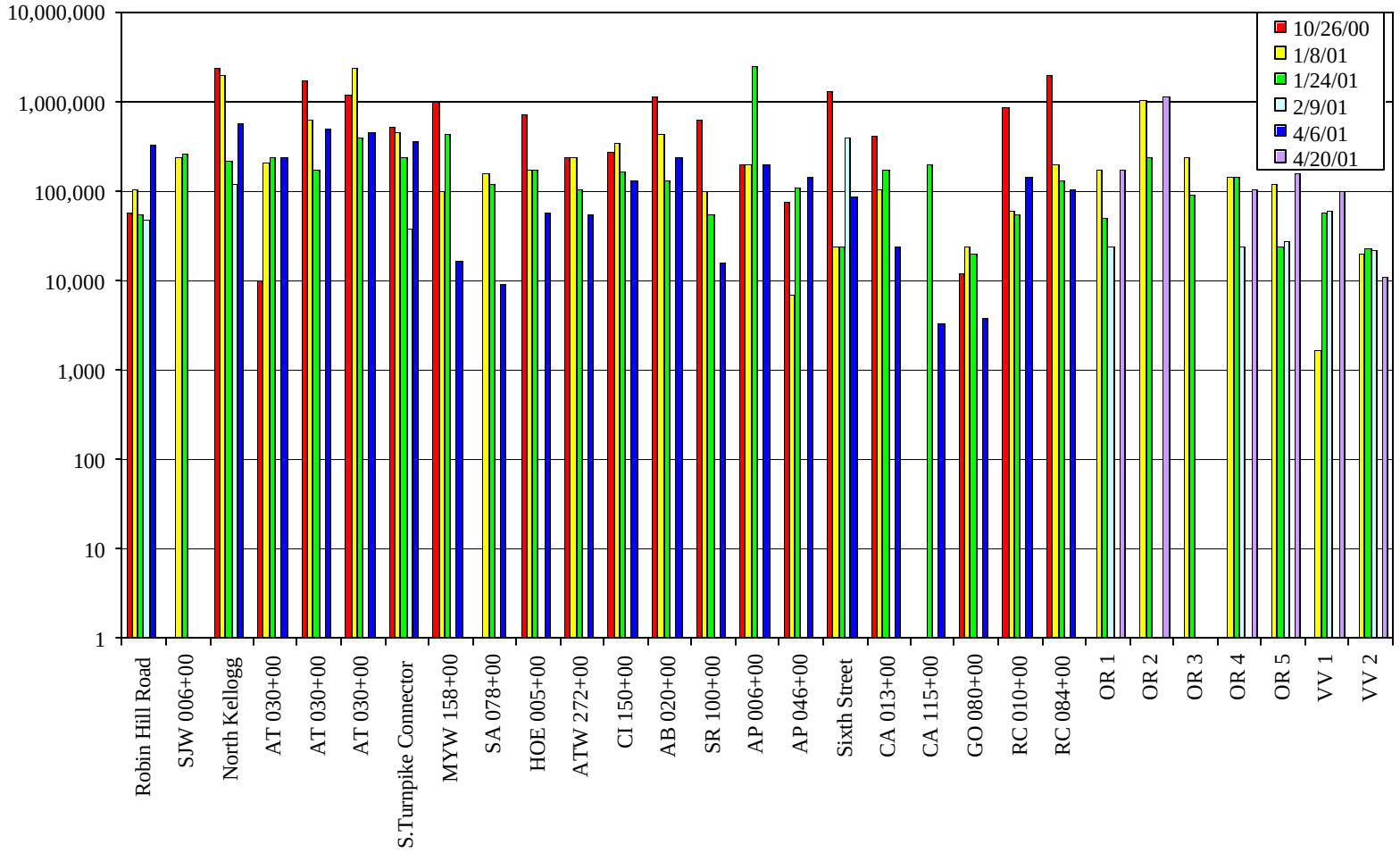

Figure C-3. Enterococcus

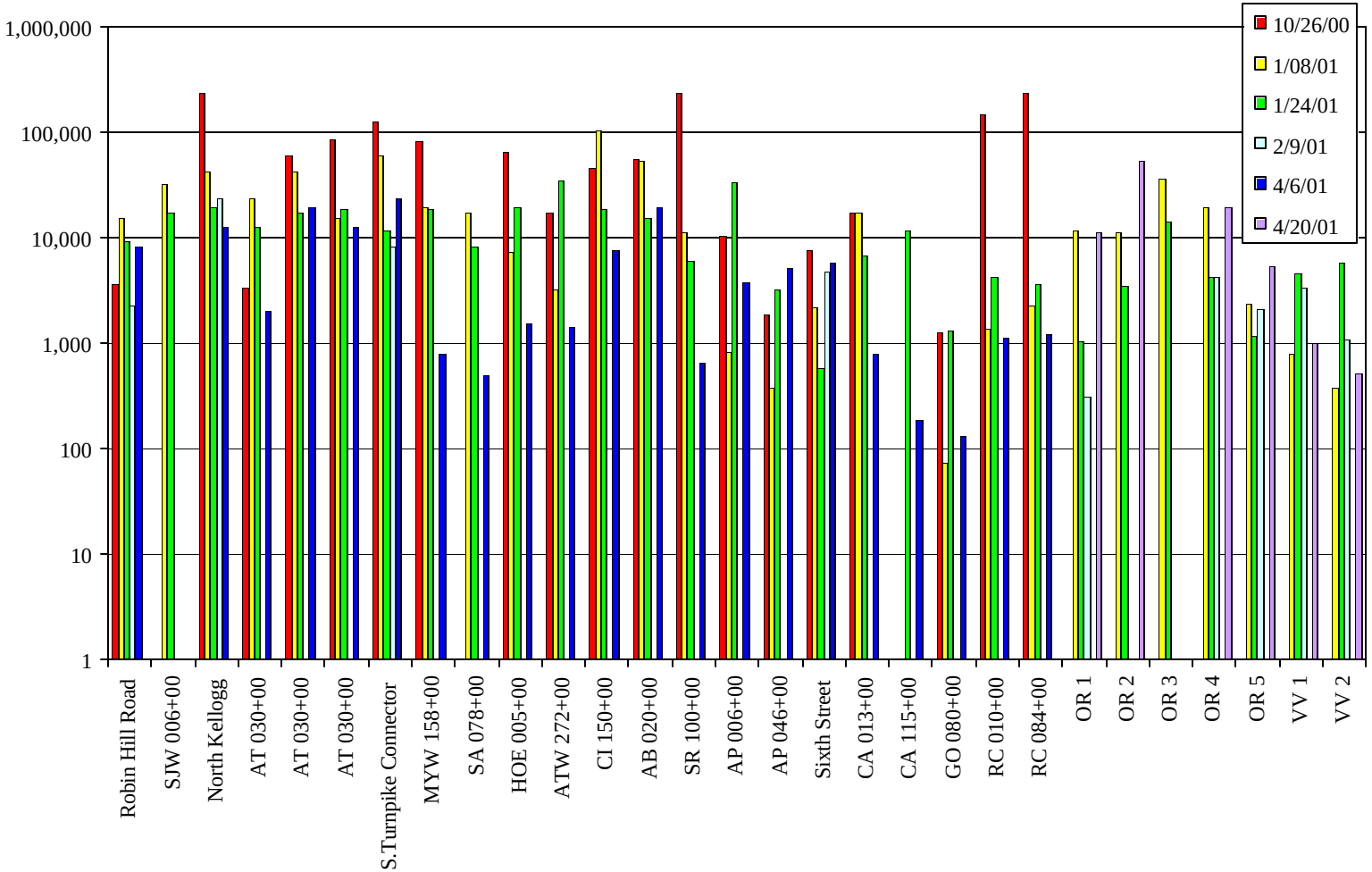

Figure C-4. Glyphosate

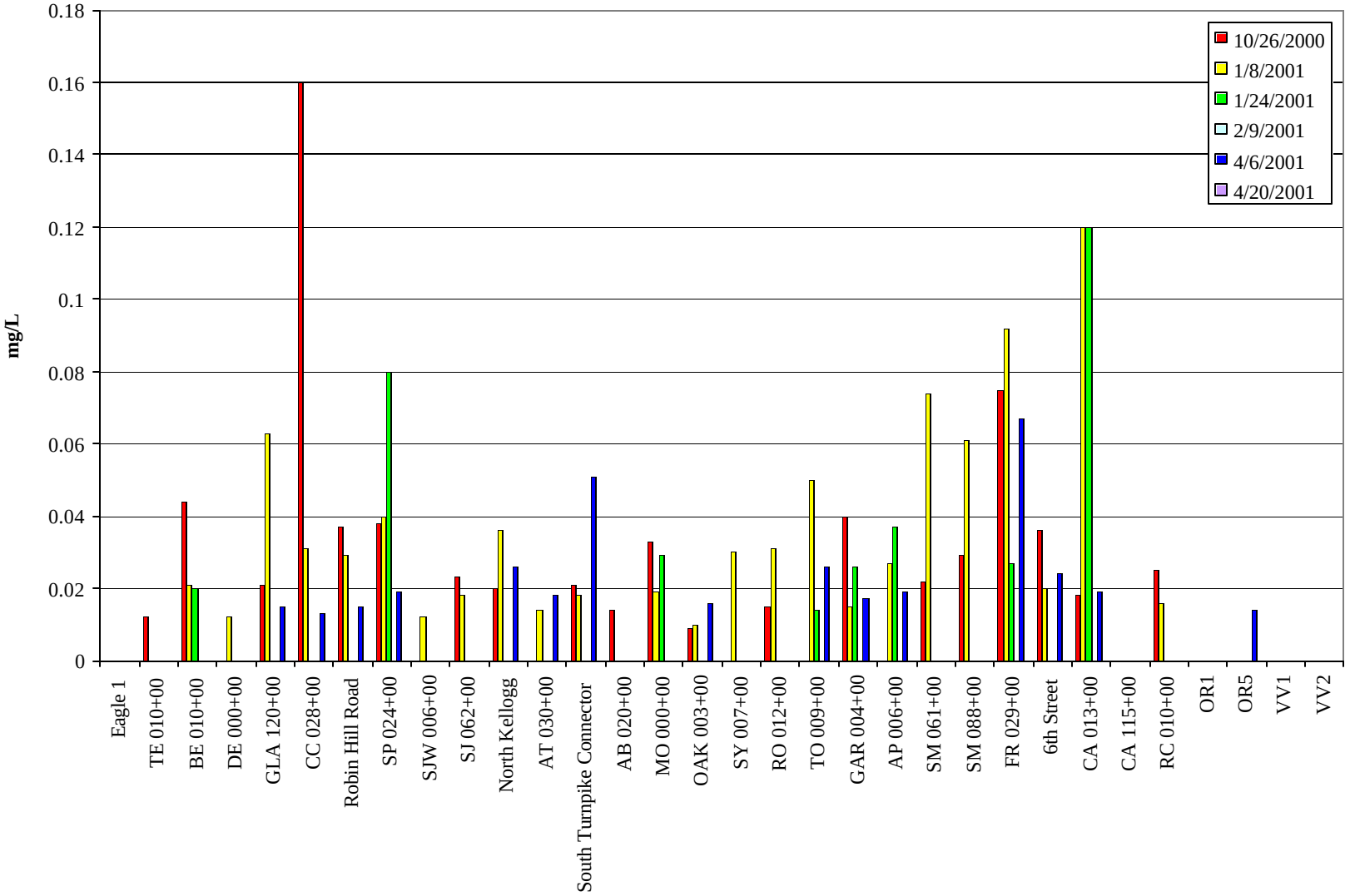

Figure C-5. Diazinon

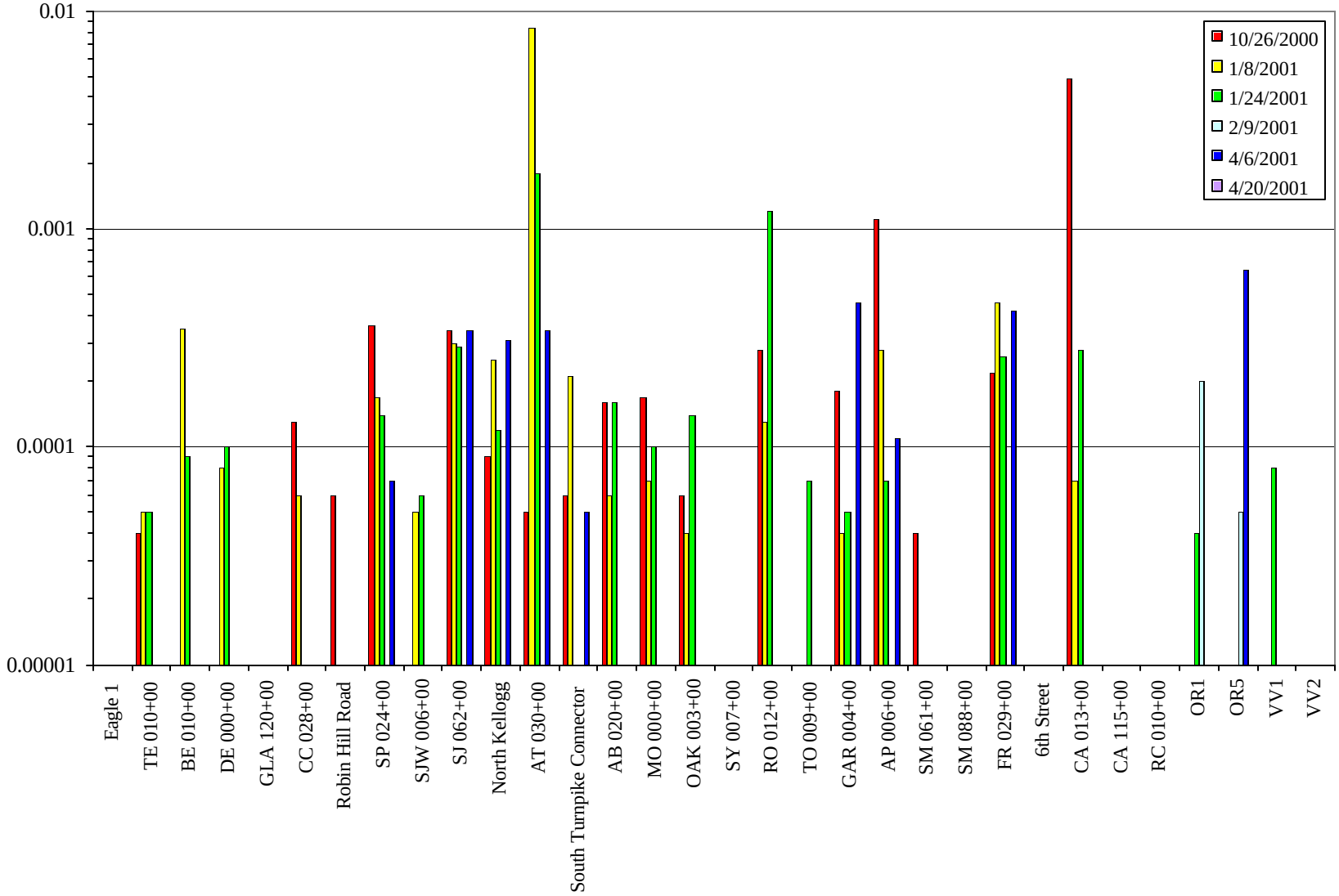

Figure C-6. Chlorpyrifos

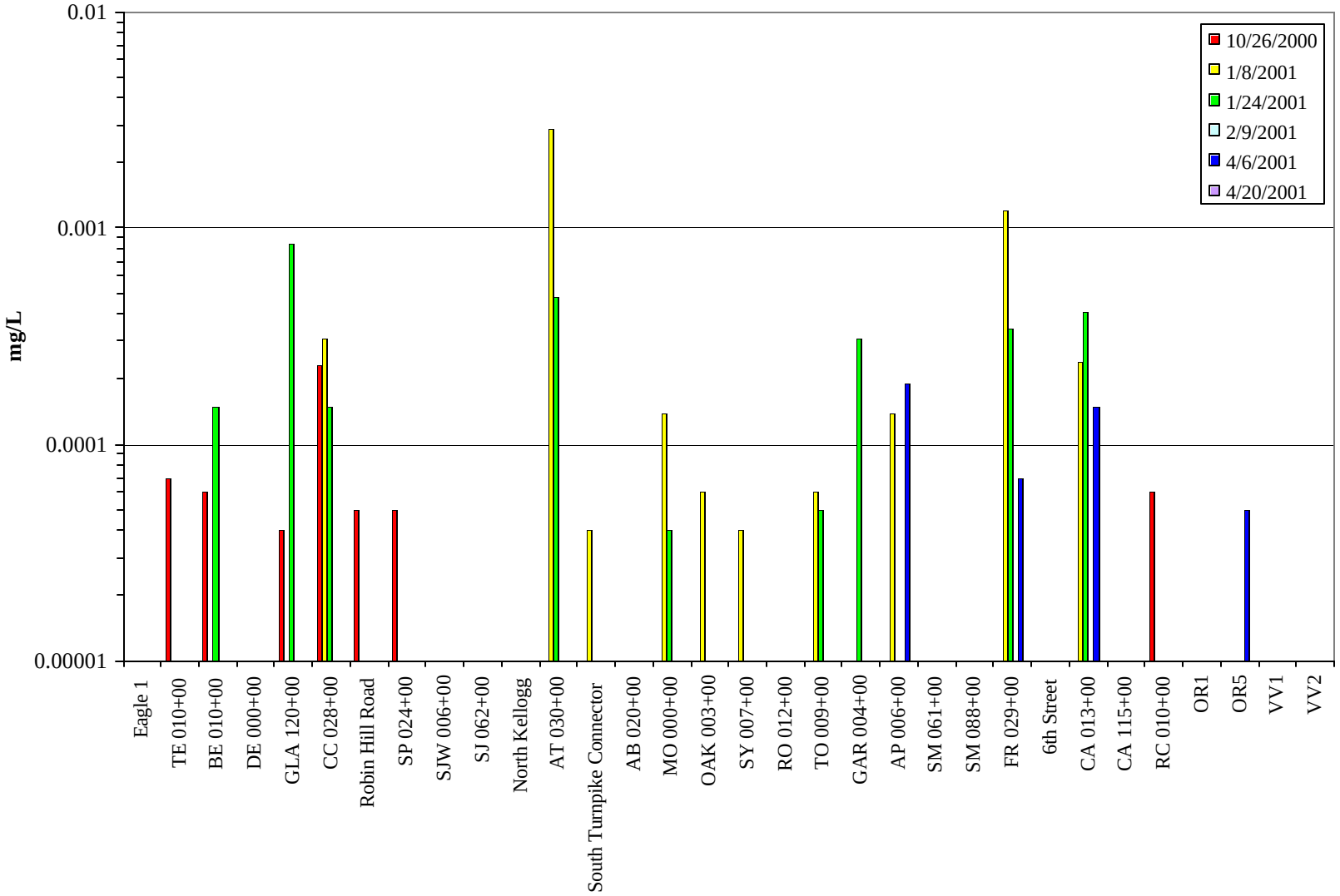

Figure C-7. Malathion

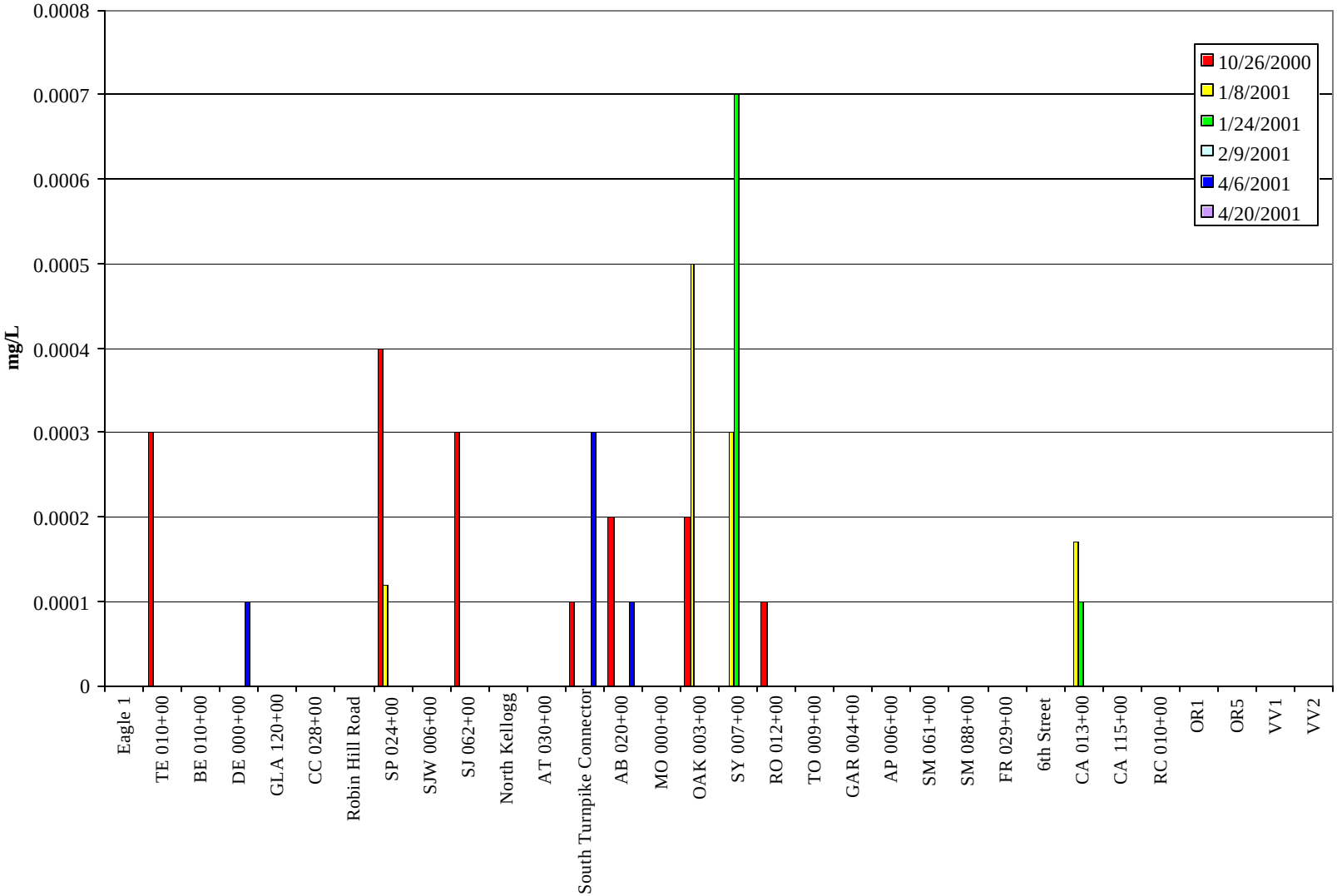

Figure C-8. Dissolved Chromium

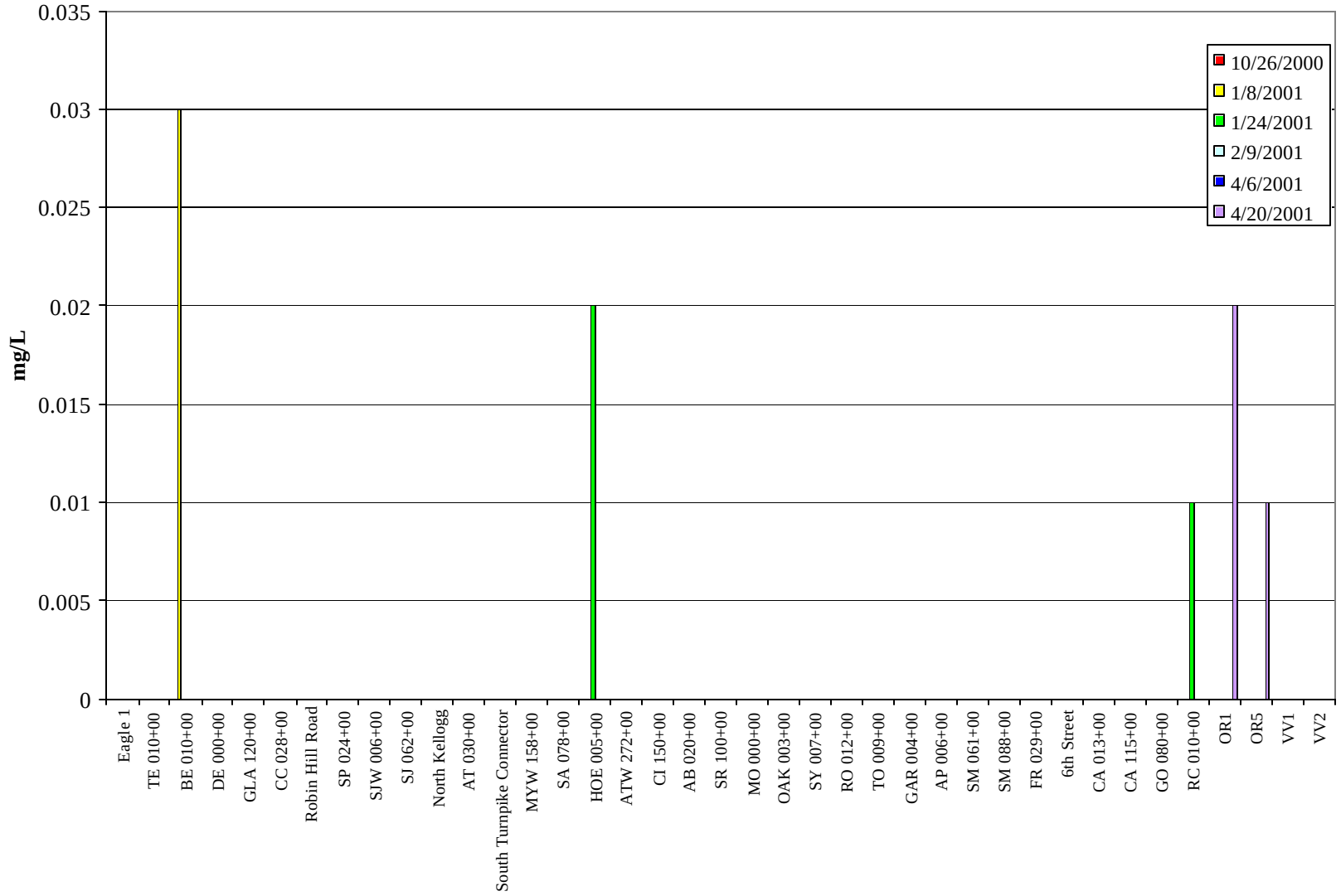

Figure C-9. Dissolved Copper

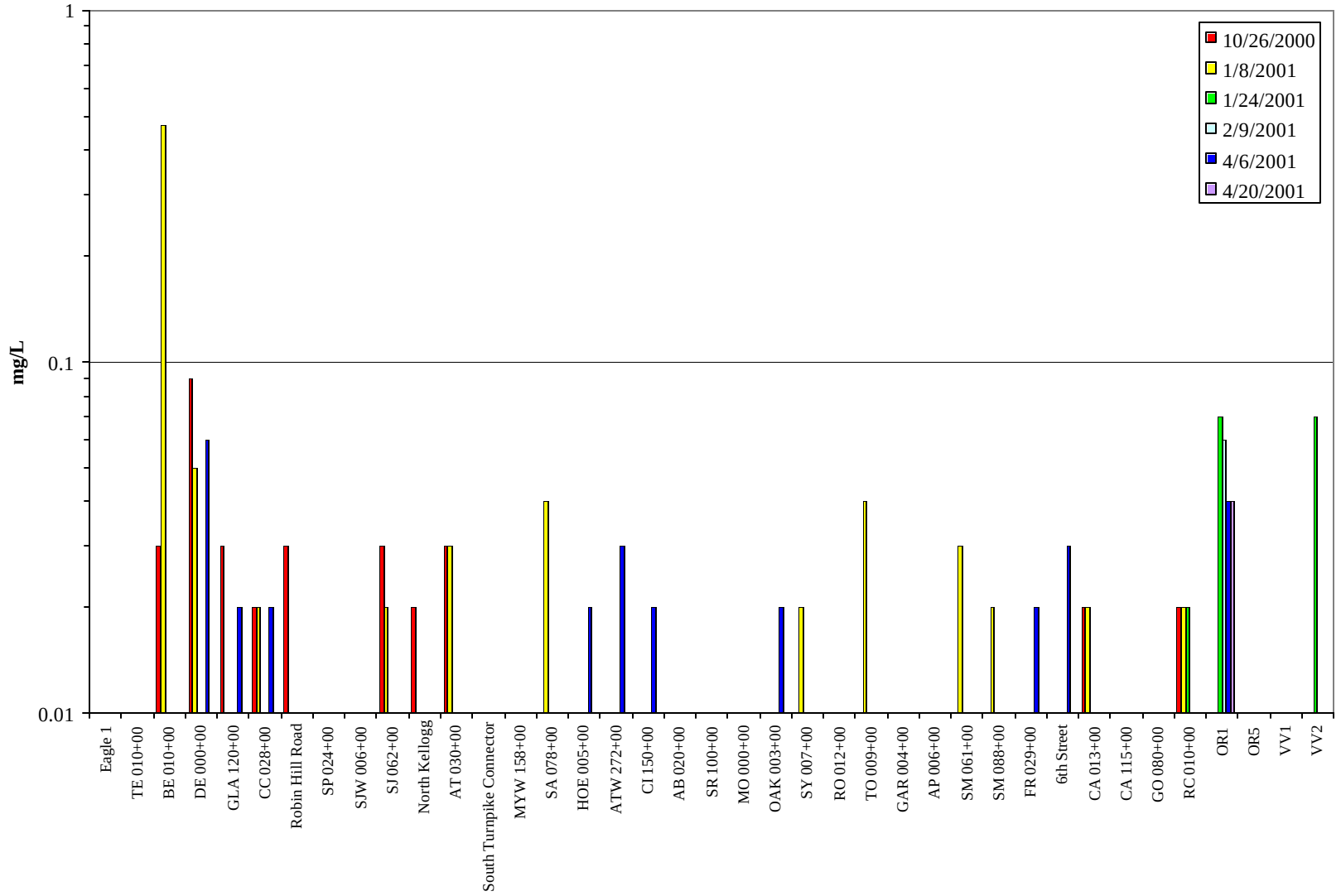

Figure C-10. Dissolved Mercury

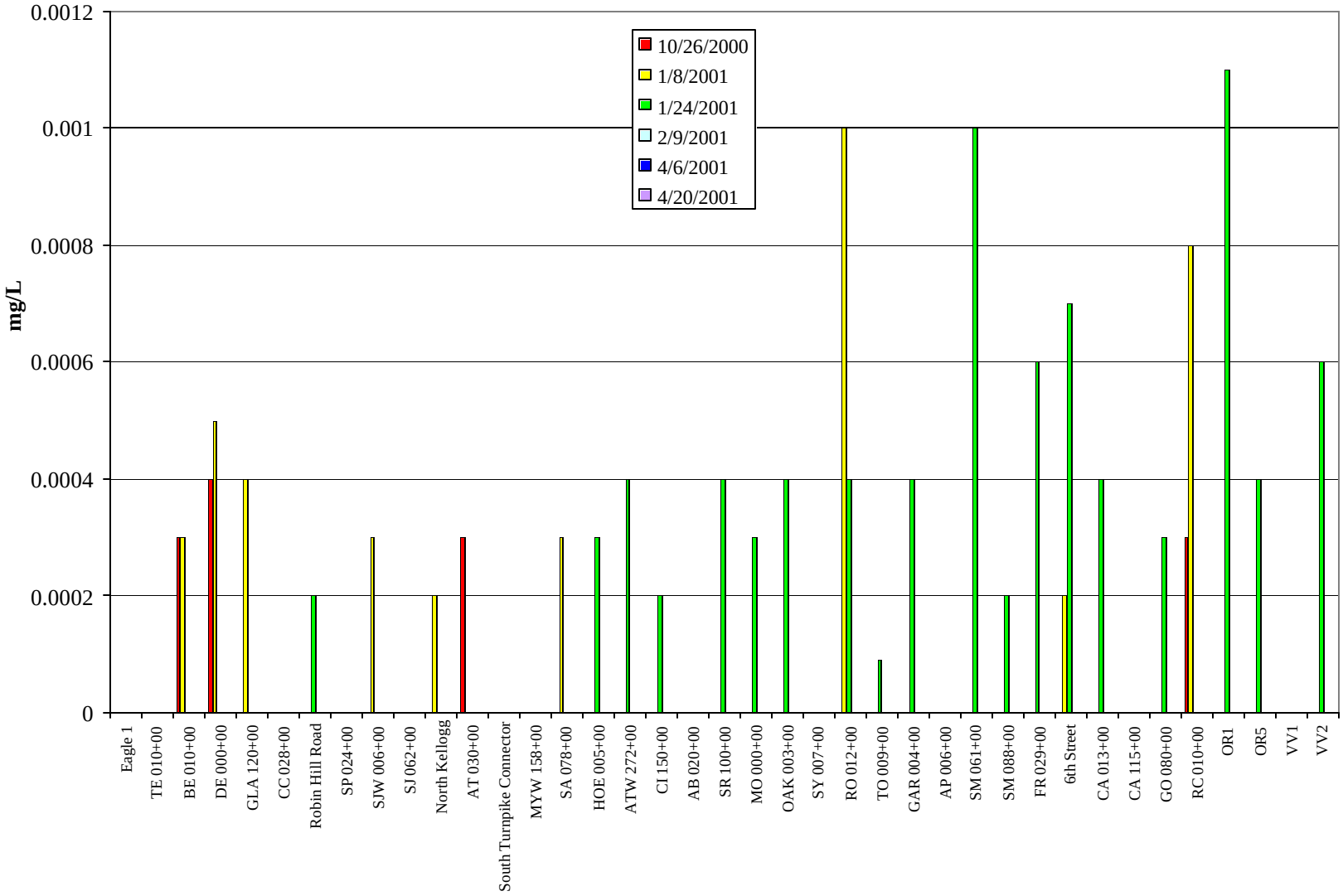

Figure C-11. Dissolved Nickel

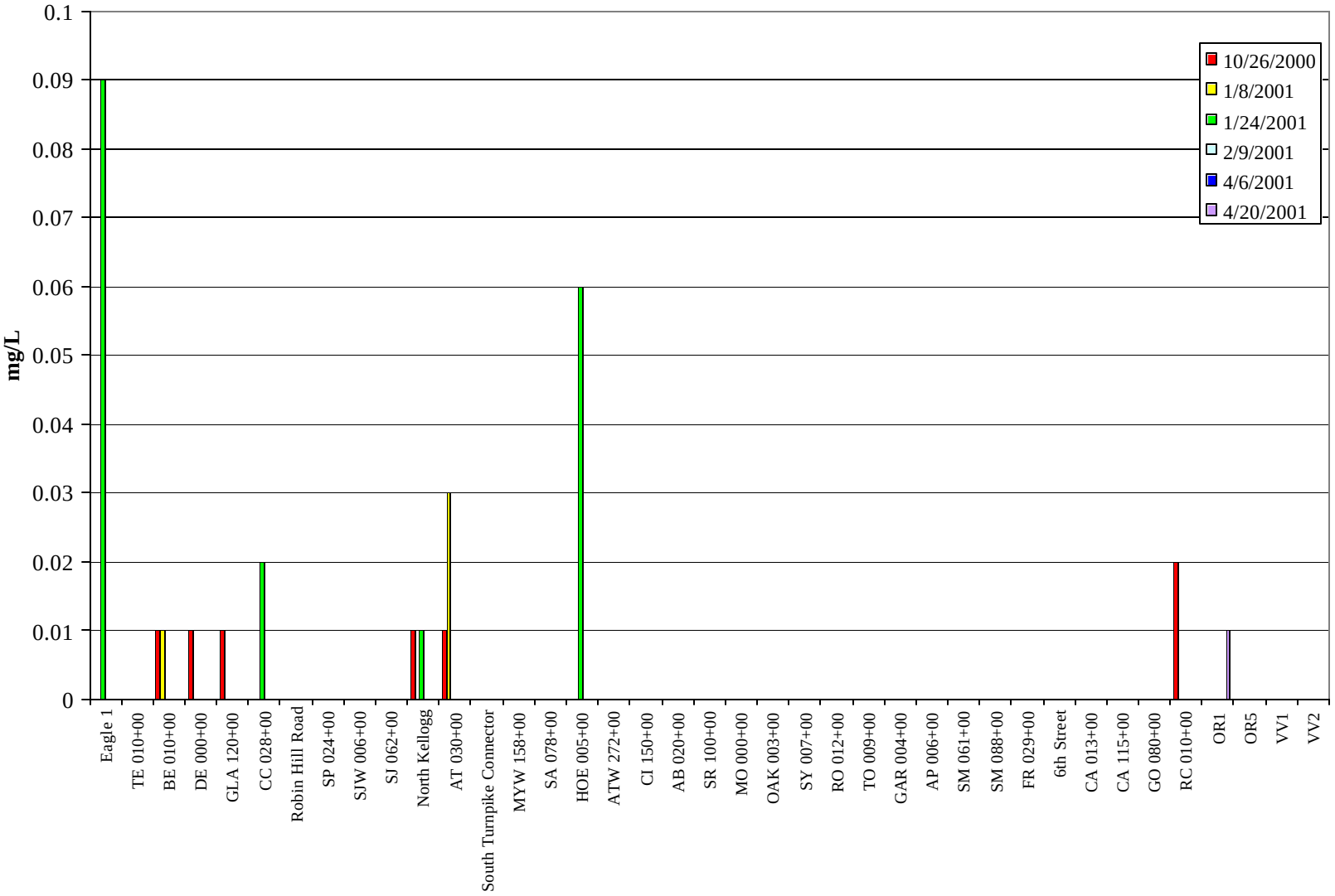

Figure C-12. Dissolved Zinc

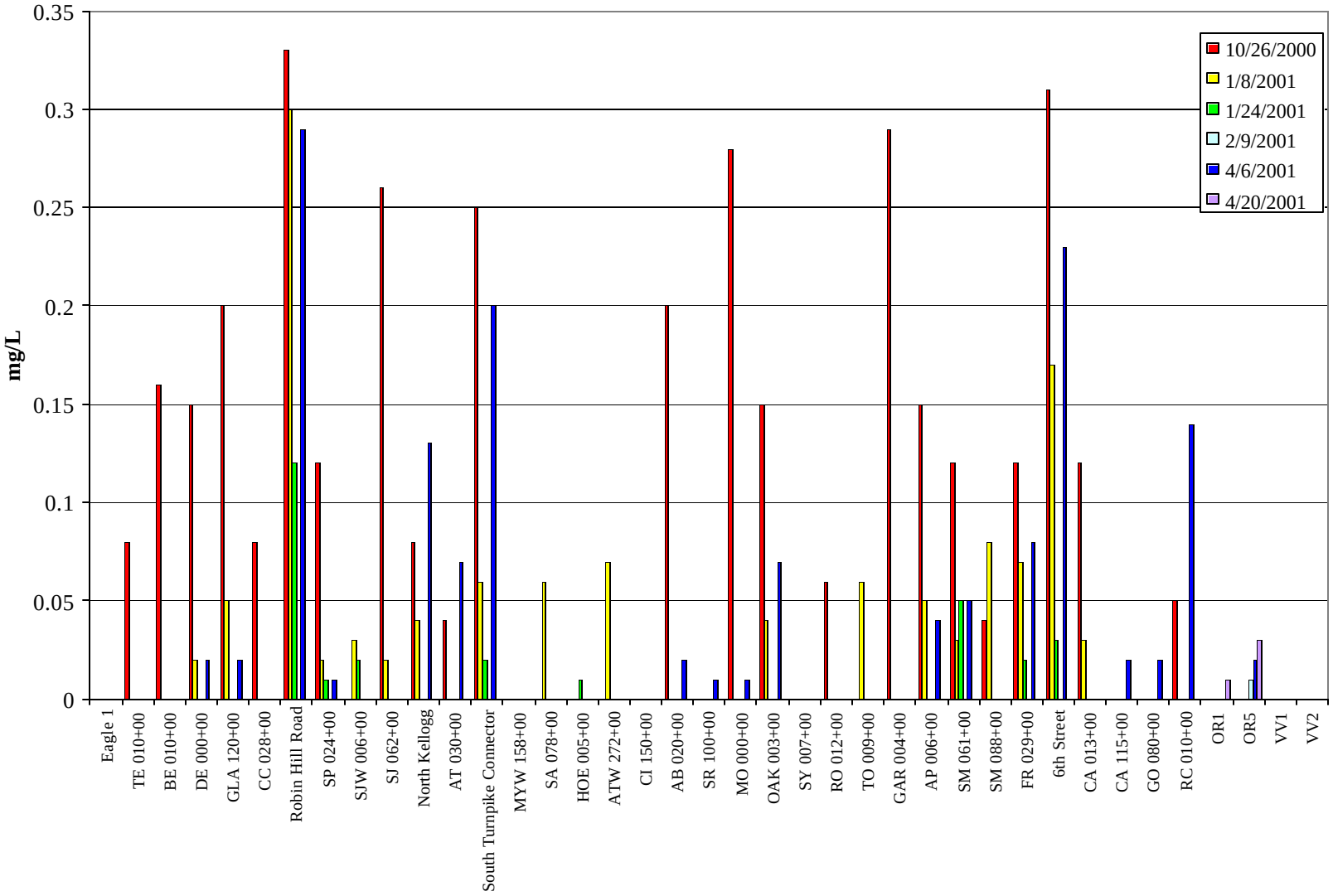

Figure C-13. Ammonical Nitrogen

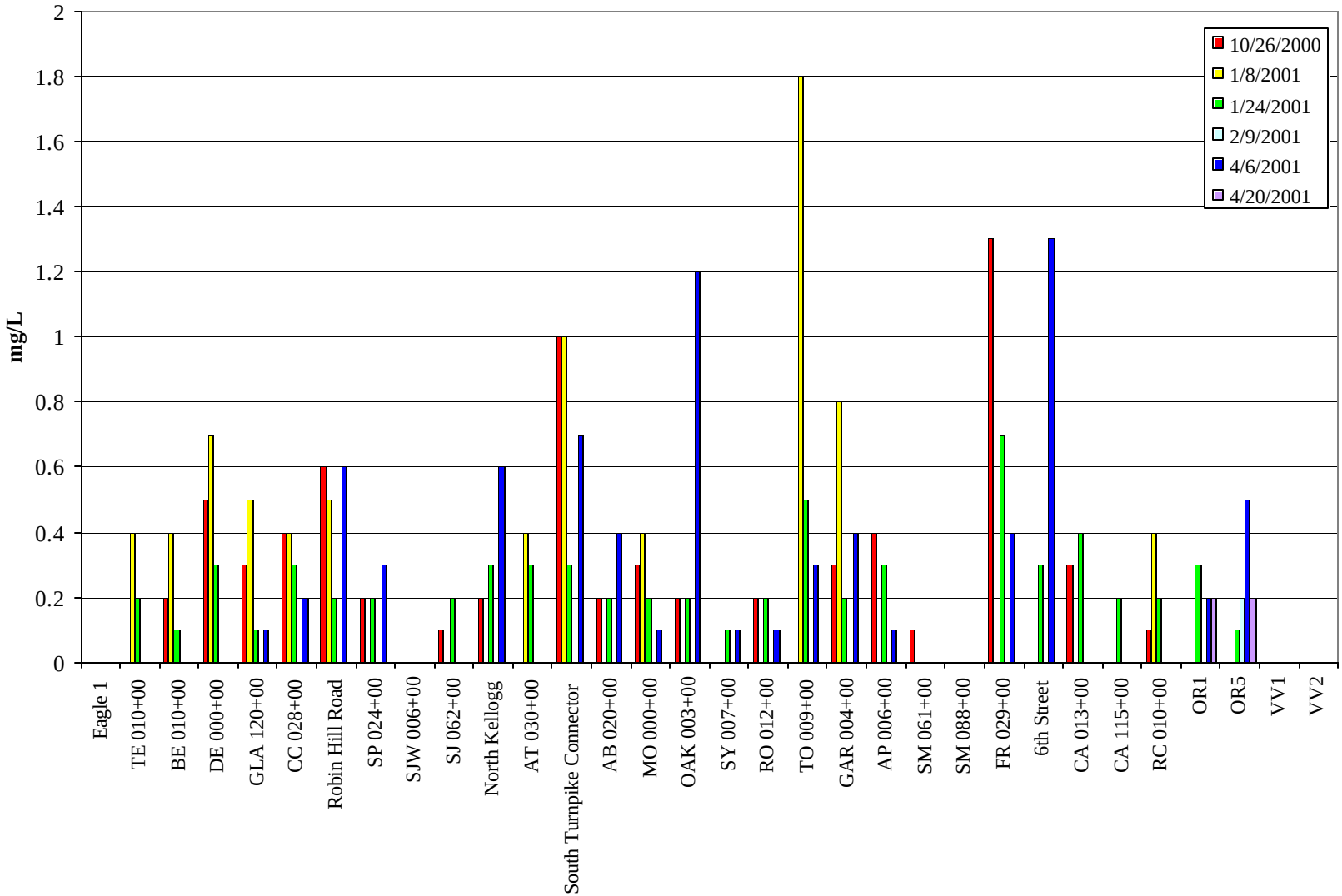

Figure C-14. Nitrate as Nitrogen

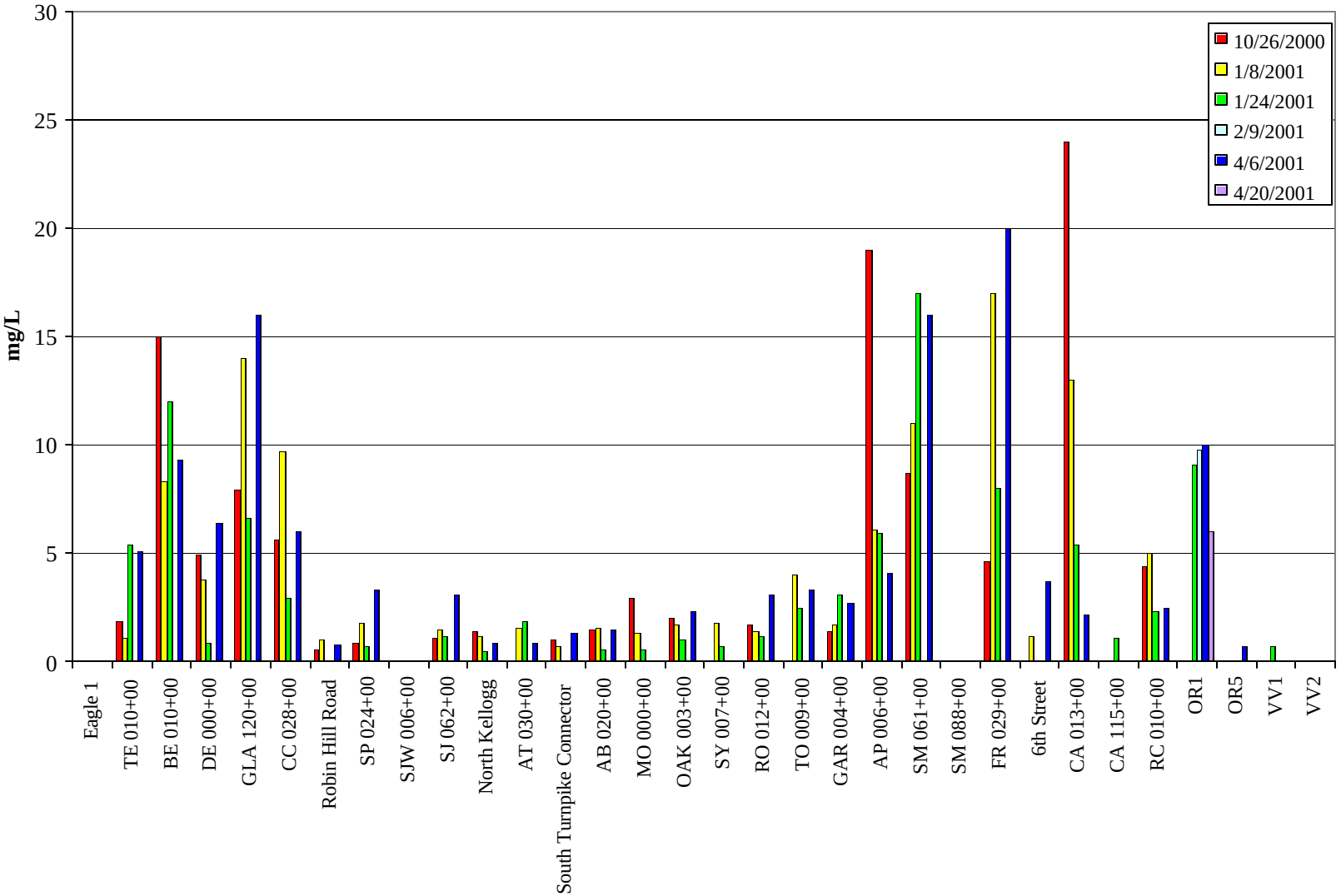

Figure C-15. Total Kjeldahl Nitrogen

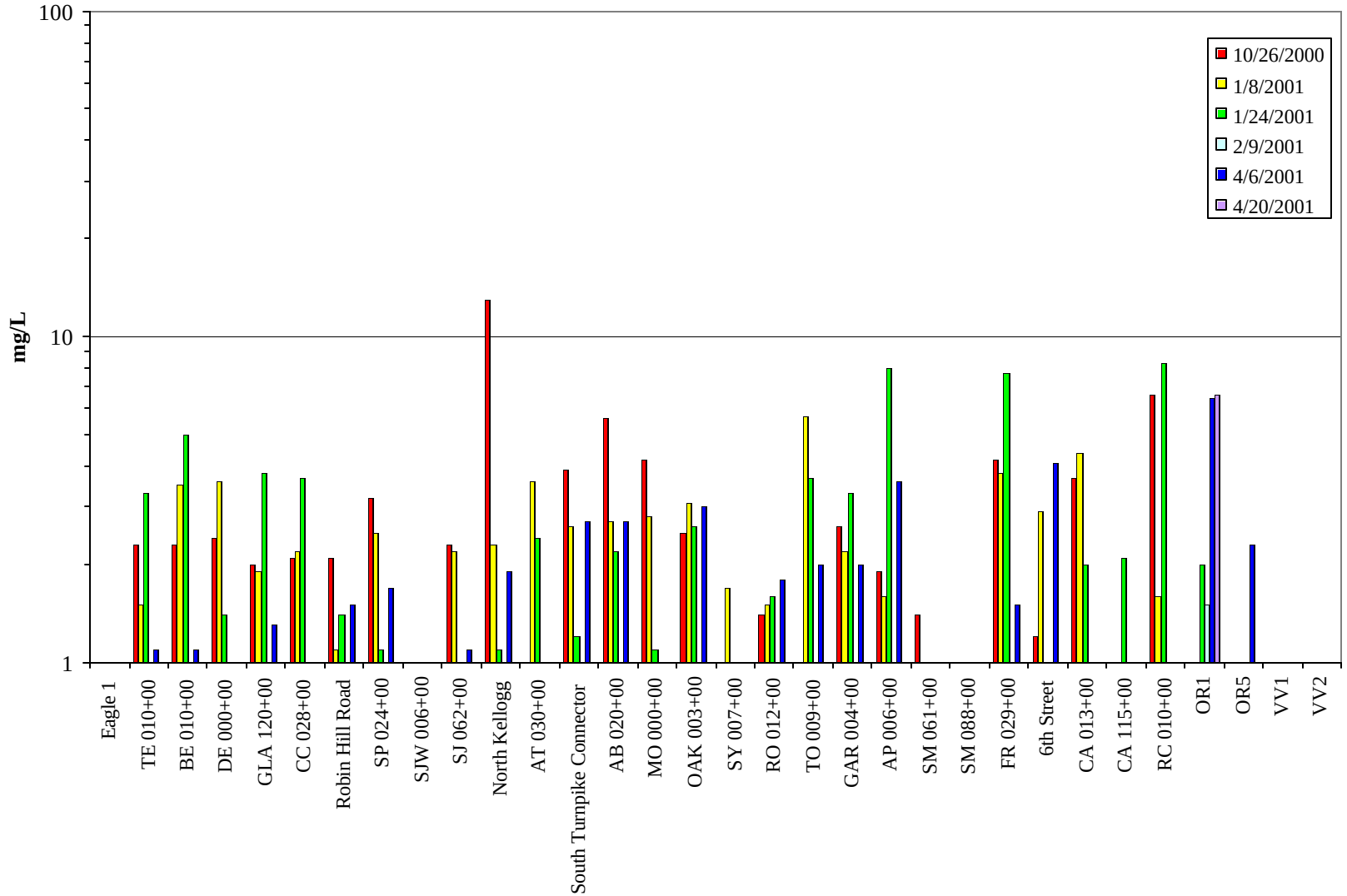

Figure C-16. Phosphorus as Phosphorus

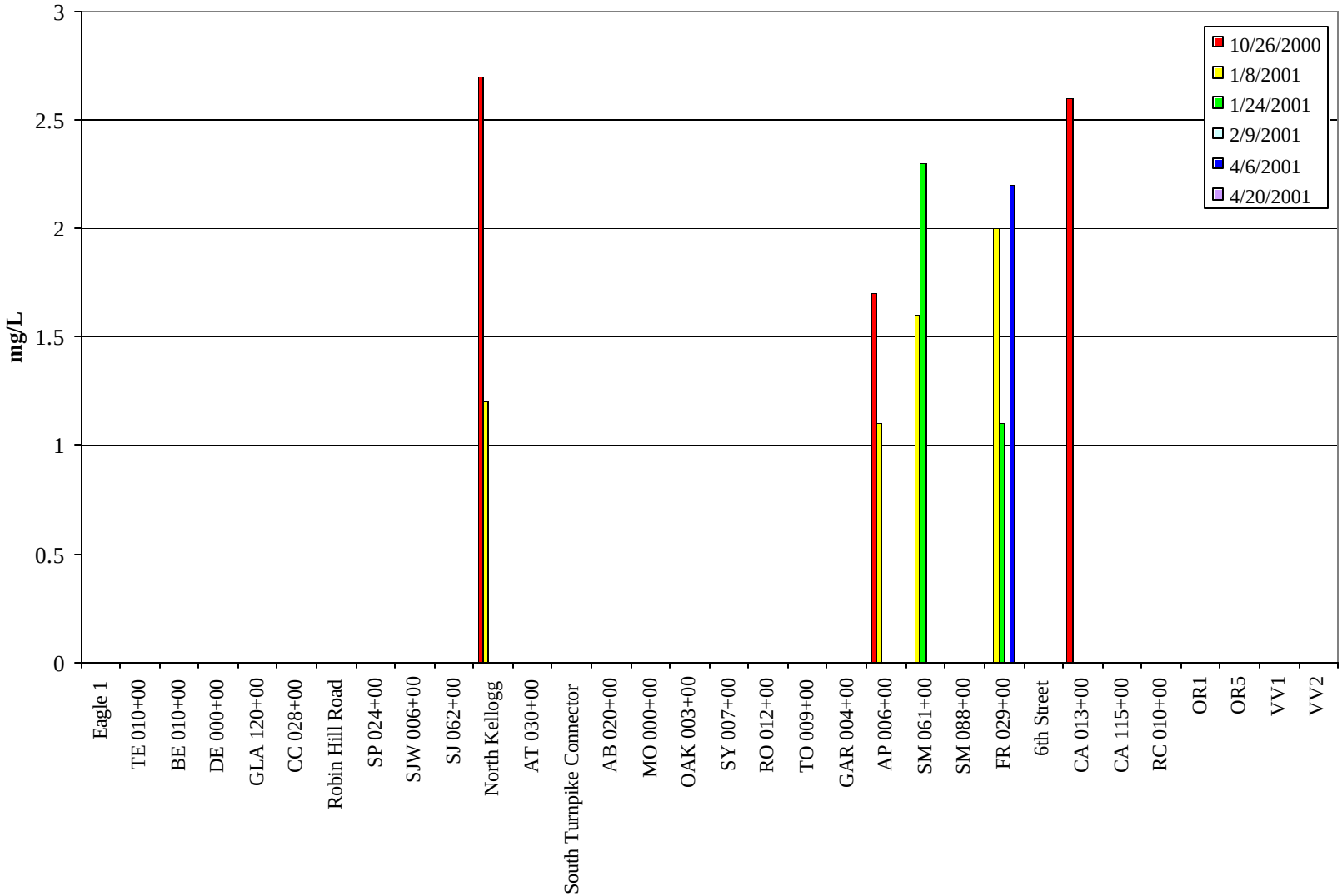

Figure C-17. Total Phosphorus

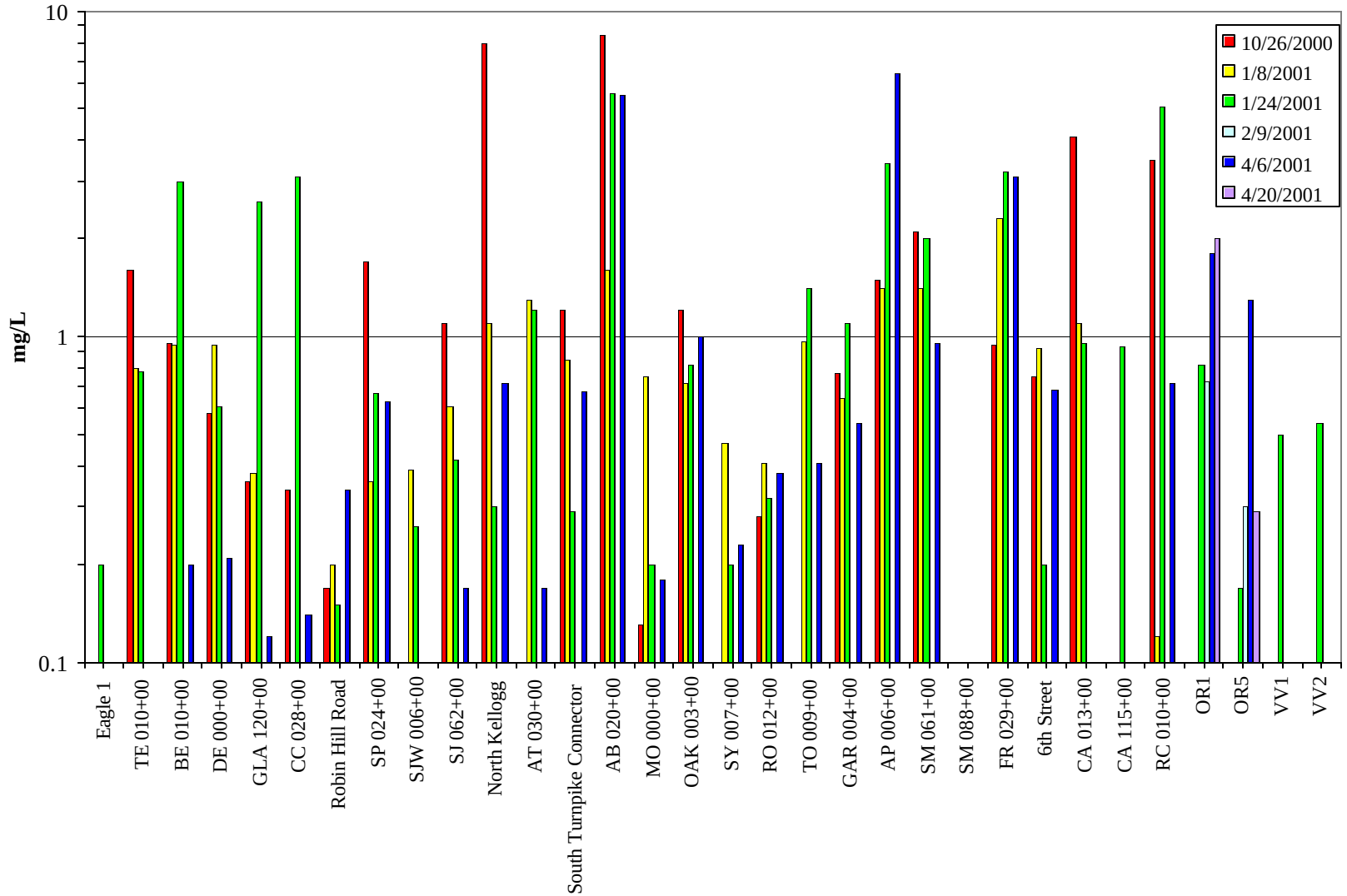

Figure C-18. Total Dissolved Solids

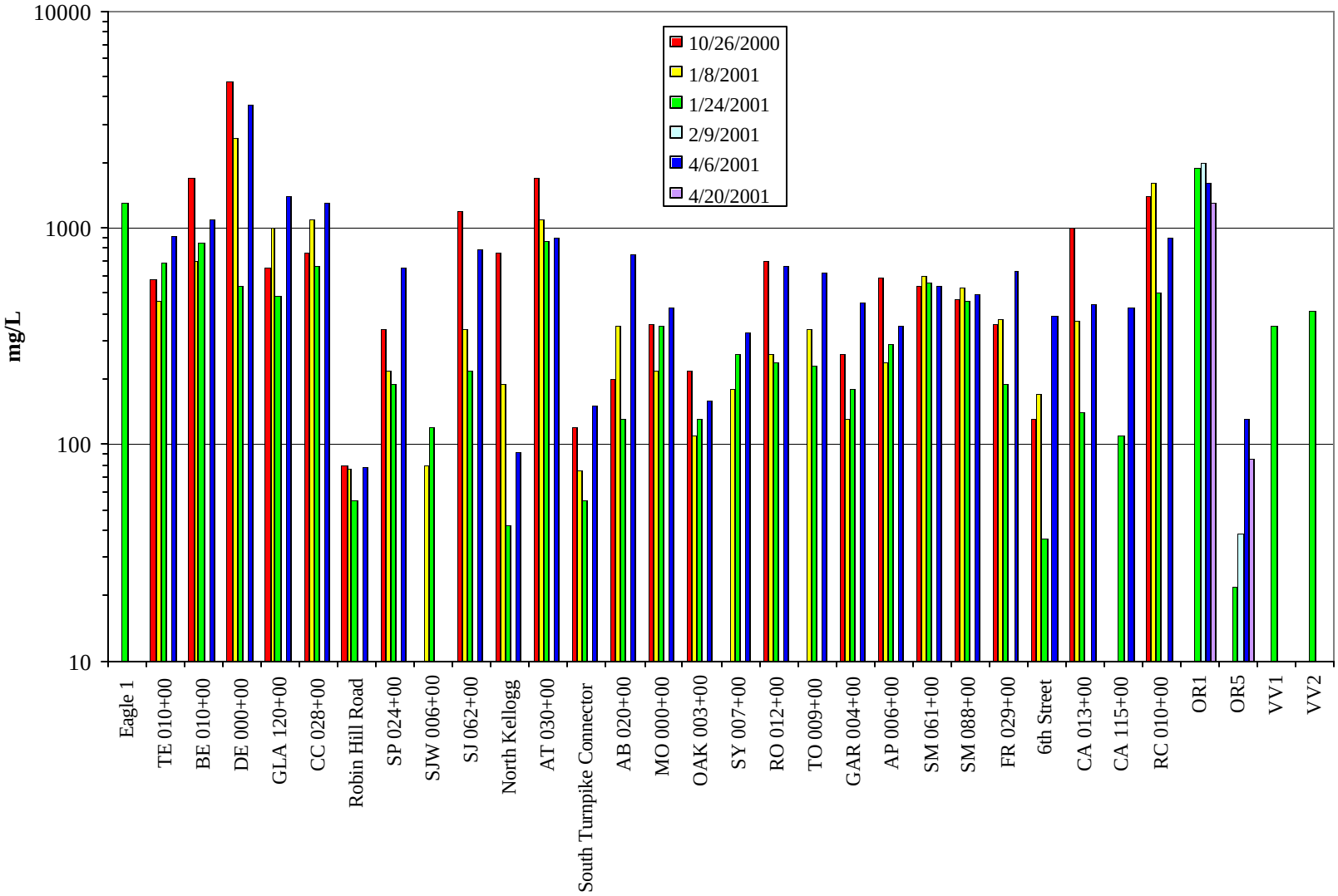

Figure C-19. Total Suspended Solids

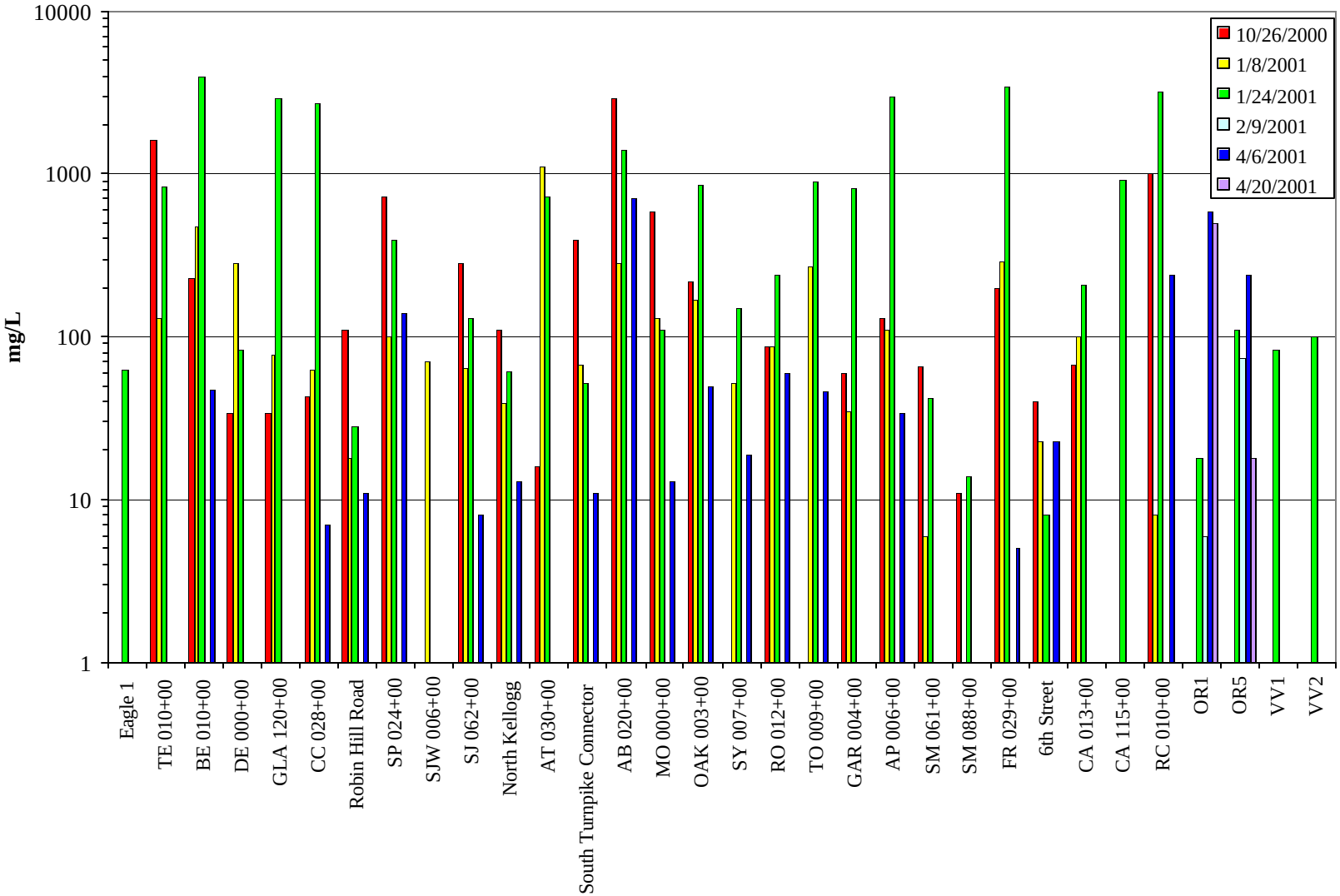

Figure C-20. Specific Conductance

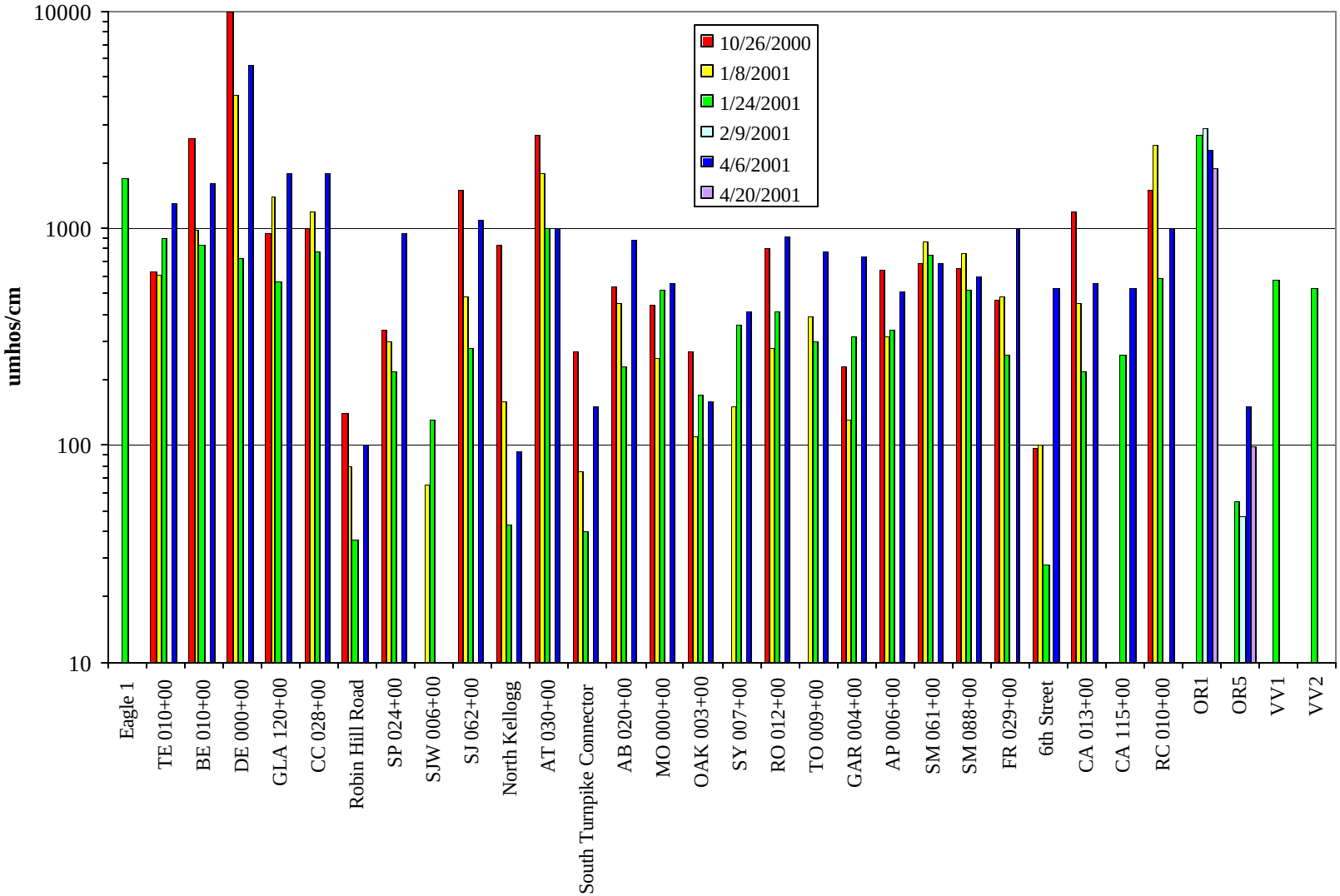

Figure C-21. Hardness

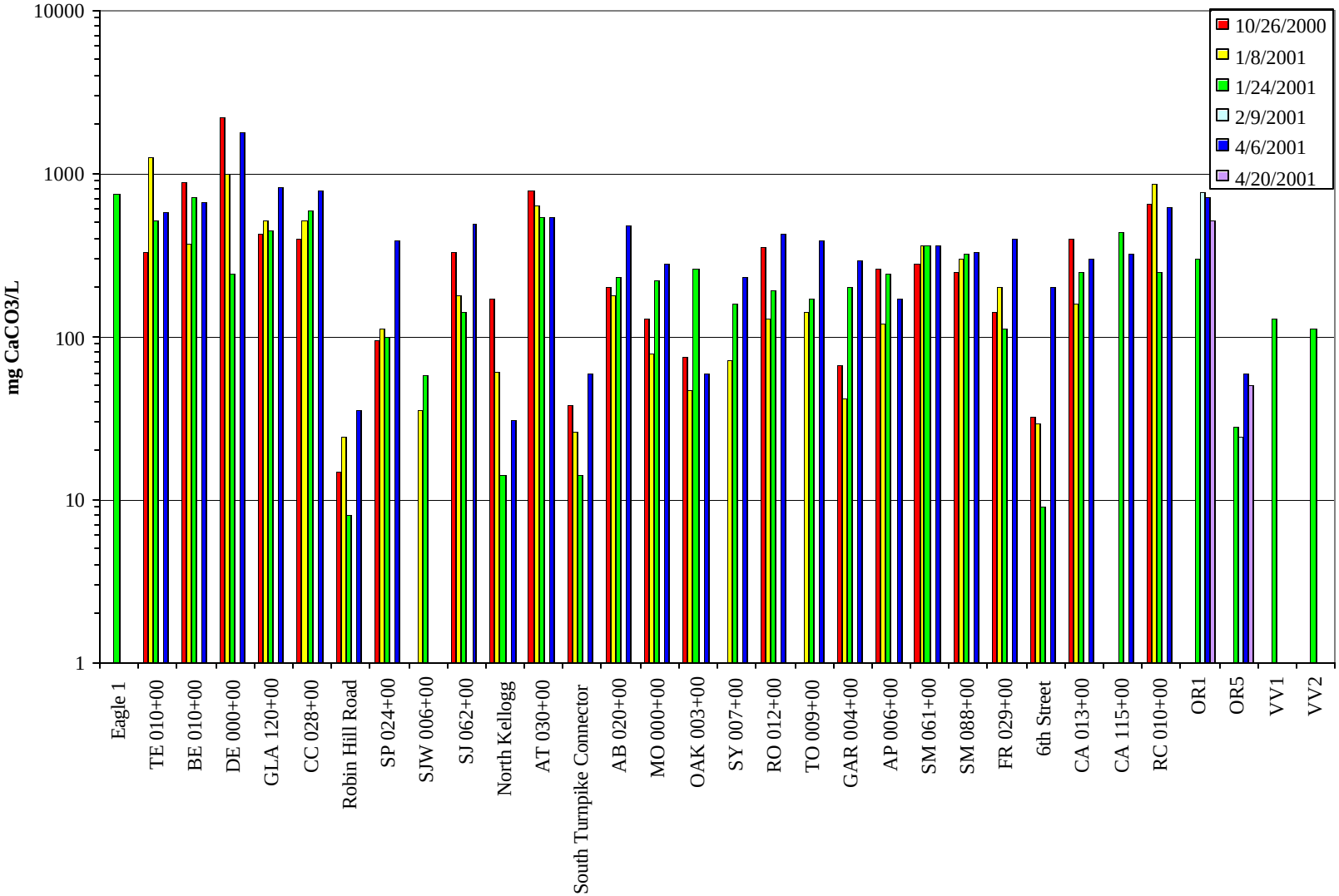

Figure C-22. Total Organic Carbon

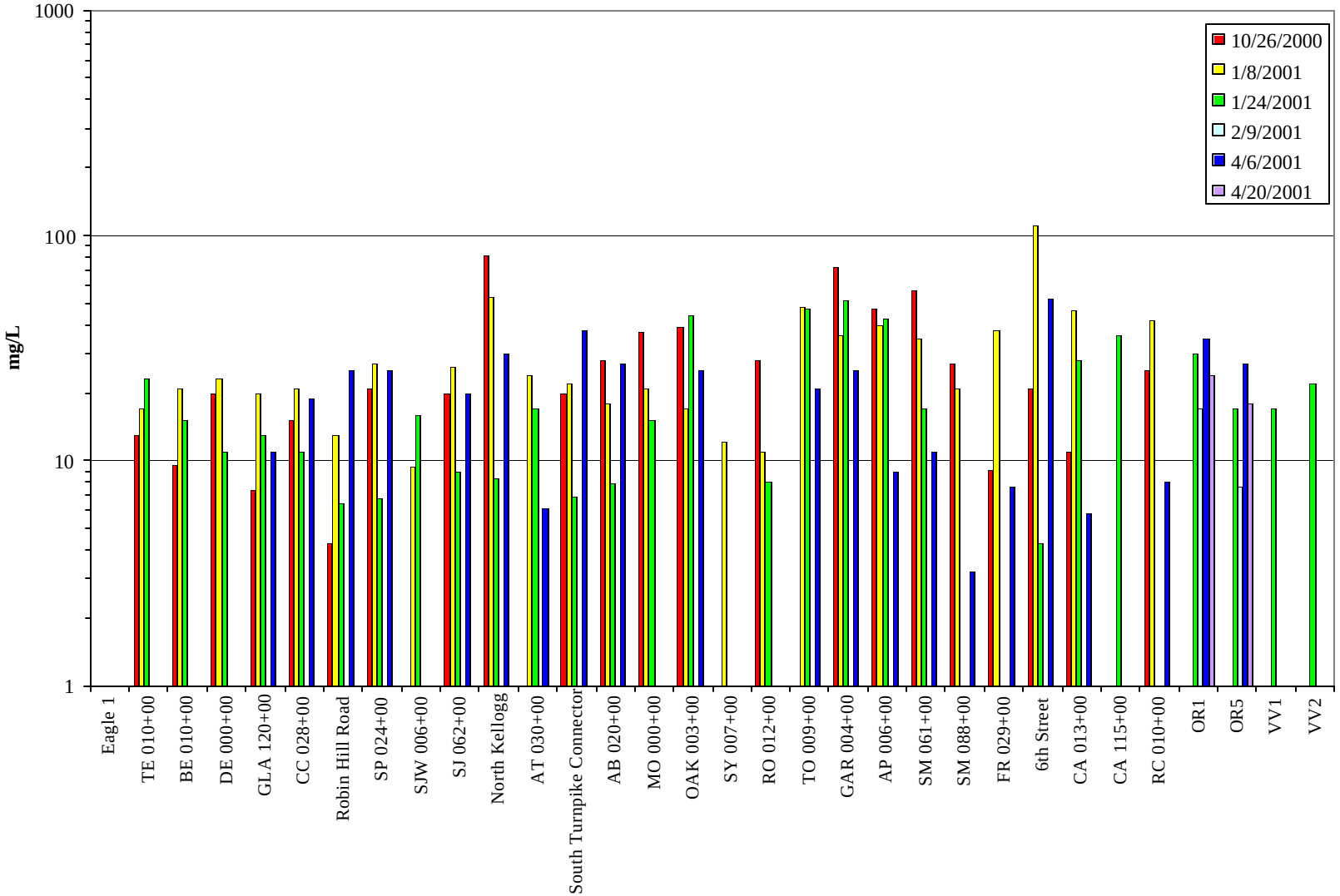

Figure C-23. Biochemical Oxygen Demand

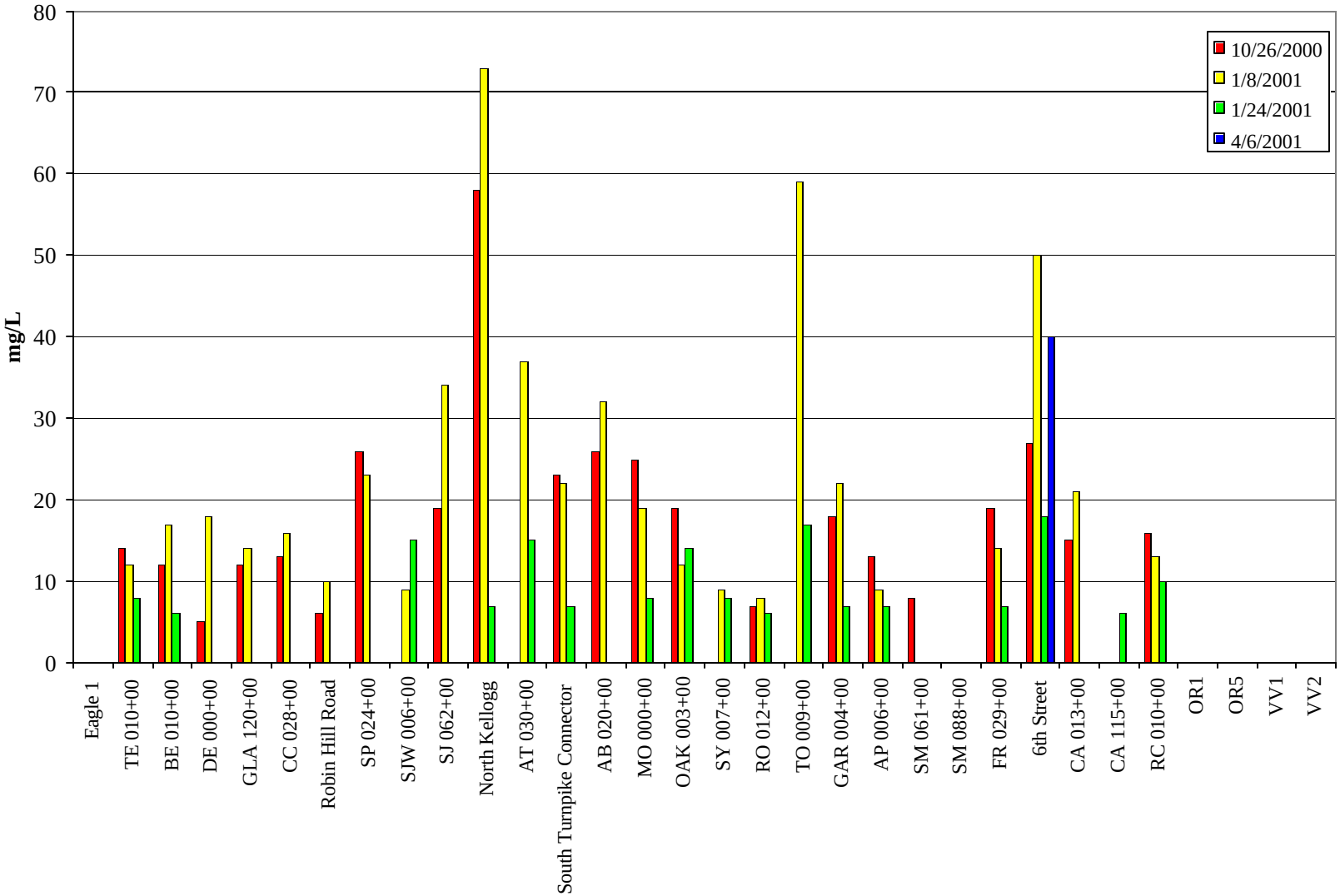

Figure C-24. Total Recoverable Petroleum Hydrocarbons

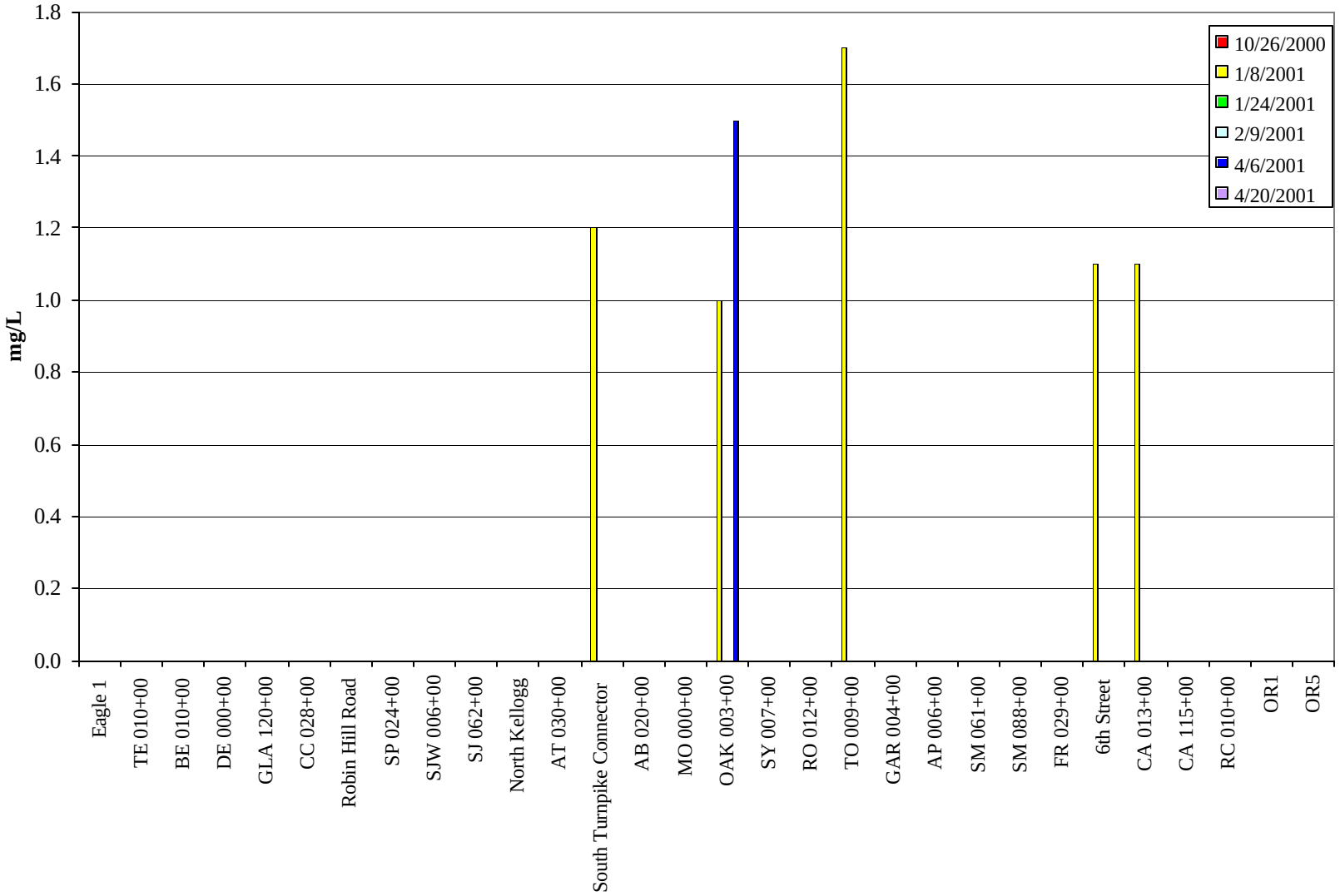

Figure C-25. Oil and Grease

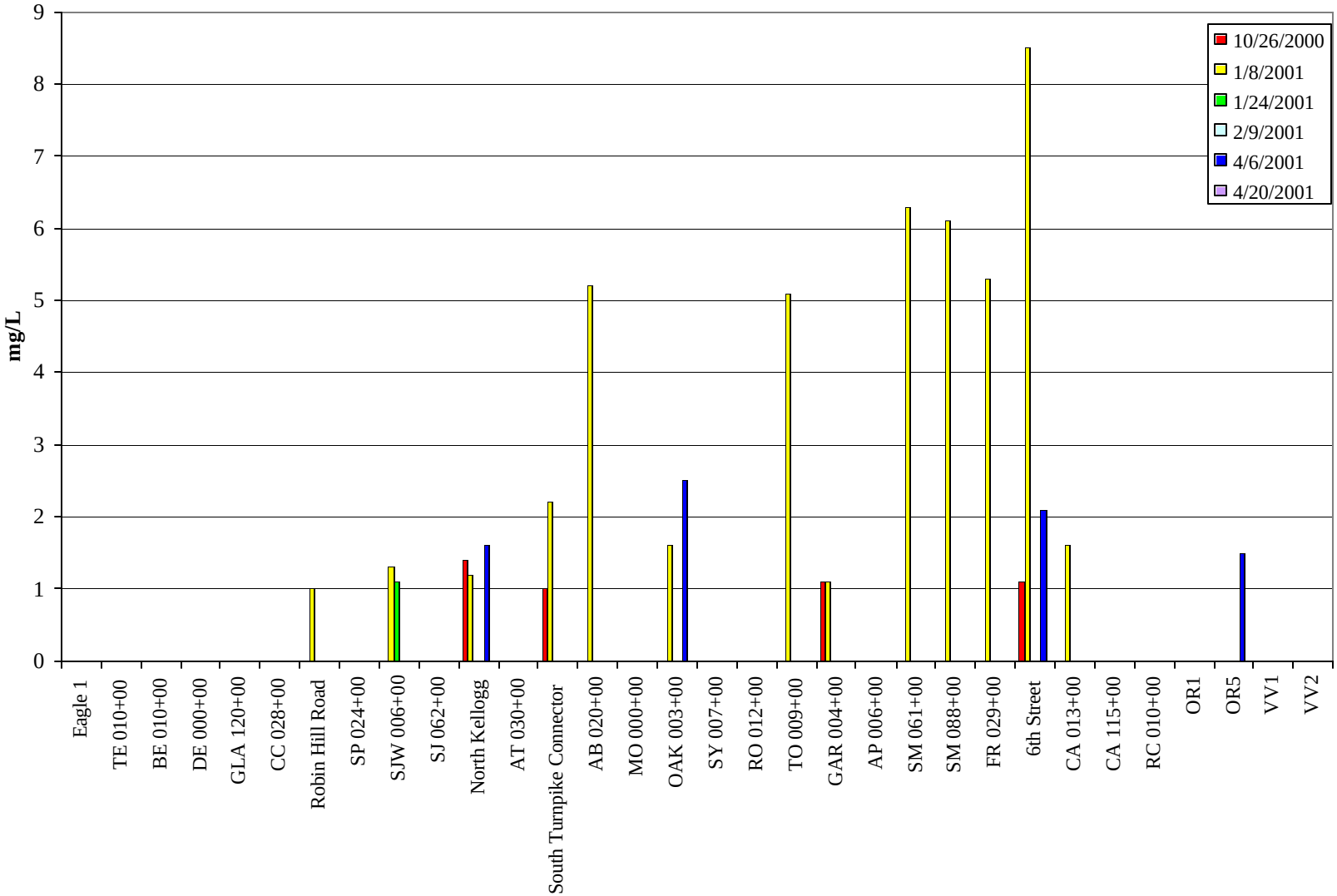

Figure C-26. Turbidity