Table B-2 - Water Quality Monitoring Results, 2000

San Diego Regional Water Quality Control Board

25 Samples

Date	Willow Glen - 4 (Station 4)							Date	Riverhouse (Station 5)						
	Flow[1]	Temp	NO_3-N	Total N	PO_4-P	Total P	TDS		Flow[2]	Temp	NO_3-N	Total N	PO_4-P	Total P	TDS
	cfs	°F	mg/L	mg/L	mg/L	mg/L	mg/L		cfs	°F	mg/L	mg/L	mg/L	mg/L	mg/L
1/4/00	0.42	52	7.1	7.7	0.40	0.38		1/4/00		53	11	11	0.23	0.21	
1/18/00	0.38	55	3.7	4	0.35	0.37		1/18/00		58	9.1	9.2	0.21	0.21	
2/1/00	0.5	54	14	15	0.26	0.47		2/1/00		56	17	17	0.31	0.34	
2/15/00	0.85	56	14	15	0.51	0.52		2/15/00		58	14	15	0.40	0.40	
2/29/00	1.4	52	12	12	0.49	0.55		2/29/00		54	12	12	0.42	0.46	
3/15/00	0.85	54	18	19	0.55	0.52	1140	3/15/00		56	18	18	0.45	0.44	1070
3/28/00	0.4	55	13	14	0.32	0.37	1110	3/28/00		58	15	15	0.28	0.36	1140
4/11/00	0.53	54	12	13	0.33	0.34	1130	4/11/00		58	16	17	0.14	0.32	1200
4/25/00	0.56	62	13	13	0.14	0.32	1110	4/25/00		63	14	15	0.15	0.34	1110
5/9/00	0.53	62	11	12	0.37	0.34	1120	5/9/00		63	12	13	0.31	0.31	1140
5/23/00	0.53	NR	9.5	9.9	0.33	0.35	1120	5/23/00		63	12	12	0.21	0.26	1180
6/6/00	0.59	60	21	23	0.43	0.51	1240	6/6/00		61	19	19	0.33	0.41	1210
6/20/00	0.27	64	19	20	0.36	0.38	1190	6/20/00		66	16	17	0.22	0.23	1200
7/5/00	0.1	63	12	12	0.37	0.36	1120	7/5/00		65	16	16	0.23	0.23	1190
7/18/00	0.07	68	7.9	8.6	0.30	0.39	1090	7/18/00		68	15	15	0.19	0.24	1140
8/1/00	0.09	68	8.9	9.4	0.32	0.43	1310	8/1/00		68	14	14	0.17	0.25	1230
8/15/00	0.06	71	4.7	5.3	0.44	0.49	1100	8/15/00	0.13	71	14	15	0.22	0.22	1240
8/22/00	0.07	66	5.6	6.1	0.29	0.39	1000	8/22/00	0.13	68	15	16	0.14	0.27	1180
8/29/00	0.06	66	4.3	5	0.33	0.52	1020	8/29/00	0.15	67	15	15	0.14	0.36	1190
9/5/00	0.05	66	3	3.6	0.41	0.39	1010	9/5/00	0.15	65	15	15	0.14	0.23	1150
9/12/00	0.05	68	3.5	4.1	0.47	0.45	1010	9/12/00	0.16	67	14	14	0.21	0.20	1180
9/19/00	0.05	66	2.8	3.4	0.29	0.49	980	9/19/00	0.15	66	13	14	0.13	0.16	1190
9/26/00	0.06	67	3.2	3.5	0.41	0.44	1060	9/26/00	0.13	68	14	14	0.17	0.20	1240
10/3/00	0.07	NR	2	2.3	0.42	0.46	1070	10/3/00	0.21	NR	13	13	0.17	0.18	1240
10/10/00	0.07	64	1.7	2.1	0.33	0.45	1020	10/10/00	0.18	64	12	12	0.12	0.20	1100
mean	0.3	61	9.1	9.7	0.37	0.43	1098	mean	0.15	63	14.2	14.5	0.23	0.28	1176
st. dev	0.3	6	5.6	5.9	0.09	0.07	83	st. dev	0.03	5	2.2	2.3	0.09	0.09	48
st. error	0.07	1	1.13	1.18	0.02	0.01	19	st. error	0.01	1	0.44	0.45	0.02	0.02	11

Note: These stations include data collected as part of the Algae Presence Survey, January 4 - August 1, 2000. NR not reported

[1] Flow measurements are from USGS Gaging Station (#11044250)

[2] Flow based on USGS measurements, adding calculated flow from WGT1

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Rainbow Creek

Table B-2 - Water Quality Monitoring Results, 2000 – Cont.

San Diego Regional Water Quality Control Board

Date	Rainbow Glen Tributary (RGT1)							Date							
	Flow[4]	Temp	NO_3-N	Total N	PO_4-P	Total P	TDS		Flow[6]	Temp	NO_3-N	Total N	PO_4-P	Total P	TDS
	cfs	°F	mg/L	mg/L	mg/L	mg/L	mg/L		cfs	°F	mg/L	mg/L	mg/L	mg/L	mg/L
8/15/00	0.10	68	2	2.4	< 0.05	< 0.05	890								
8/22/00	0.10	64	2.1	2.5	< 0.05	< 0.05	1210		Margarita Glen Tributary (MGT1)[7]						
8/29/00	0.10	68	2.3	2.7	< 0.05	0.12	890	8/29/00	0.01	66	20	21	< 0.05	0.32	1340
9/5/00	0.08	60	1.9	2.1	< 0.05	< 0.05	710								
9/12/00	0.05	62	2.2	2.6	< 0.05	0.08	880		Jubilee (Upstream ~200 yards)[8]						
9/19/00	0.09	62	1.6	2	< 0.05	< 0.05	790	9/26/00	< 0.01	NR	7.8	8.5	< 0.05	< 0.05	1160
9/26/00	0.10	62	2	2.3	< 0.05	< 0.05	870	10/3/00	< 0.01	66	5	5.3	< 0.05	< 0.05	1200
10/3/00	0.09	NR	2	2.2	< 0.05	< 0.05	900	10/11/00	< 0.01	64	4.8	5.2	< 0.05	< 0.05	1160
10/10/00	0.11	62	2.3	2.6	< 0.05	< 0.05	820	10/17/00	< 0.01	63	5.9	6.5	< 0.05	< 0.05	1170
mean	0.09	64	2.0	2.4		0.10	884			64	6	6			1173
st. dev	0.02	3	0.2	0.2		0.03	137			2	1	2			19
st. error	0.01	1.1	0.07	0.08		0.02	46			1	1	1			9

[4] Flow calculated in the field using the float method (leaf).

NR not reported

[6] Flow calculated in the field using a timed-volume (bucket) method.

[7] The monitoring location was dry and was not sampled. Surface water was found upstream of this location and was sampled on 8/29/00. It was located on the property at the base of the drainage area.

[8] Jubilee Station was found to be dry. Groundwater was found surfacing upstream on 9/26/00 by RB staff. The location was sampled for the remainder of the monitoring period by Hines Nursery.

Date	Hines Nurseries (Station 2)							
	Flow[9]	ADF[10]	Temp	NO_3-N	Total N	PO_4-P	Total P	TDS
	cfs	cfs	°F	mg/L	mg/L	mg/L	mg/L	mg/L
8/15/00								
8/22/00	0	0						
8/29/00	0	0.003						
9/5/00	0	0						
9/12/00	0	0						
9/19/00	*0.41*	*0.279*	*67*	*17*	*22*	*0.96*	*1.7*	*1510*
9/26/00	0	0						
10/3/00	0	0						
10/11/00	0	0						
10/17/00	0	0.025						
mean	0.05	0.03						
st. dev	0.14	0.09						
st. error	0.05	0.03						

[9] Flow measurement recorded at time of sampling. Flow measured by Hines Nursery staff using 24-hr water level recorder and Parshall flume installation. Only one sample was collected from flowing water being discharged from the Hines Property at the time of sample collection.

[10] ADF is average daily flow measured by water level recorder.

Table B-2 - Water Quality Monitoring Results, 2000 – Cont.

San Diego Regional Water Quality Control Board

Date	Oak Crest (Station 3)							Date	Willow Glen Tributary (WGT1)						
	Flow[3]	Temp	NO_3-N	Total N	PO_4-P	Total P	TDS		Flow[4]	Temp	NO_3-N	Total N	PO_4-P	Total P	TDS
	cfs	°F	mg/L	mg/L	mg/L	mg/L	mg/L		cfs	°F	mg/L	mg/L	mg/L	mg/L	mg/L
8/22/00	0.03	70	11	14	1.4	1.5 H	1590	8/15/00	0.07	70	20	20	< 0.05	< 0.05	1420
8/29/00	0.03	68	11	12	1.2	1.3 H	1680	8/22/00	0.11	66	20	20	< 0.05	< 0.05	1370
9/5/00	0.06	70	8.1	9.4	0.59	0.93 L	1580	8/29/00	0.09	66	20	20	< 0.05	0.16	1360
9/12/00	0.03	67	5.1	7.6	0.67	0.78 L	1800	9/5/00	0.10	63	19	19	< 0.05	< 0.05	1250
9/19/00	0.01	67	1.2	3.1	0.52	0.93 L	1580	9/12/00	0.11	67	18	18	< 0.05	0.06	1370
9/26/00	NR	68	13	15	1.1	1.3 H	1940	9/19/00	0.10	64	17	17	< 0.05	0.28	1370
10/3/00	NR	66	9.5	11	0.81	0.99	1830	9/26/00	0.07	66	18	18	< 0.05	< 0.05	1430
10/10/00	0.03	63	12	14	0.71	0.88 L	1640	10/3/00	0.14	NR	17	18	< 0.05	< 0.05	1440
10/17/01	0.03	61	12	13	0.68	1.6 H	1760	10/10/00	0.11	63	17	17	< 0.05	< 0.05	1290
mean	0.03	67	9.2	11.0	0.85	1.13	1711	mean	0.10	66	18.4	18.6		0.17	1367
st. dev	0.02	3	3.9	3.8	0.31	0.30	128	st. dev	0.02	2	1.3	1.2		0.11	64
st. error	0.01	1.0	1.28	1.27	0.10	0.10	45	st. error	0.01	0.6	0.45	0.42		0.06	23

Date	Via Milpas Tributary (VMT1)							Date	Stage Coach (Station 6)						
	Flow[4]	Temp	NO_3-N	Total N	PO_4-P	Total P	TDS		Flow[5]	Temp	NO_3-N	Total N	PO_4-P	Total P	TDS
	cfs	°F	mg/L	mg/L	mg/L	mg/L	mg/L		cfs	°F	mg/L	mg/L	mg/L	mg/L	mg/L
8/15/00	0.11	67	14	14	< 0.05	0.08	1330	8/15/00	0.24	68	13	13	0.18	0.20	1200
8/22/00	0.10	66	16	17	< 0.05	0.1	1320	8/22/00	0.23	68	13	14	0.14	0.21 H	1210
8/29/00	0.11	66	16	17	< 0.05	0.38	1370	8/29/00	0.26	66	14	14	0.14	0.79 H	1240
9/5/00	0.16	62	16	16	< 0.05	0.08	1170	9/5/00	0.31	62	14	(16)	0.20	0.43 H	1110
9/12/00	0.12	64	15	15	< 0.05	< 0.05	1390	9/12/00	0.28	64	13	14	0.22	0.36 H	1260
9/19/00	0.14	62	14	15	< 0.05	< 0.05	1360	9/19/00	0.29	63	12	14	0.13	0.19 L	1200
9/26/00	0.12	64	15	15	< 0.05	< 0.05	1090	9/26/00	0.25	65	13	13	0.16	0.19 L	1260
10/3/00	0.14	NR	15	15	< 0.05	< 0.05	1460	10/3/00	0.35	NR	12	(12)	0.17	0.17 L	990
10/10/00	0.17	62	14	14	< 0.05	< 0.05	1440	10/10/00	0.35	63	12	13	0.12	0.18 L	1170
mean	0.13	64	15.0	15.3		0.16	1326	mean	0.28	65	12.9	13.7	0.16	0.30	1182
st. dev	0.02	2	0.9	1.1		0.15	122	st. dev	0.04	2	0.8	1.1	0.03	0.20	86
st. error	0.01	0.7	0.29	0.37		0.07	41	st. error	0.01	0.8	0.26	0.37	0.01	0.07	29

[3] Flow measured by Hines Nursery staff using 24-hr water level recorder and Parshall flume installation. Flume installation was damaged during a storm event and was out of commission 9/24 through 10/4/00.

[4] Flow calculated in the field using the float method (leaf).

[5] Flow based on USGS measurements, adding calculated flow from WGT1 and VMT1

NR not reported

Attachment B - Tables

Nutrient TMDL
Rainbow Creek

03/26/02

Table B-1 -Historic Annual Averages for Nitrate, 1970-87

Historic Annual Averages
All Values In mg/L Nitrate

Station: Willow Glen

	NO_3 ave.	# of samples	max	min	median
1970	3.74	10	7.50	0.00	3.90
1971	3.69	11	6.20	0.90	3.50
1972	4.22	11	12.00	0.50	3.50
1973	4.23	12	21.20	0.00	1.05
1974	0.92	12	2.30	0.00	0.60
1975	4.03	12	16.00	0.40	2.65
1976	6.27	12	21.00	3.00	4.60
1977	8.78	9	25.00	3.50	6.50
1978	5.71	11	13.00	2.40	5.00
1979	3.20	11	8.00	1.00	2.40
1980	3.50	11	6.60	1.70	3.10
1981	10.19	12	40.00	0.50	8.10
1982	25.94	12	72.00	1.70	19.00
1983	55.82	11	177.00	0.30	25.00
1984	50.97	7	180.00	14.00	35.00
1986	215.83	11	338.00	22.80	242.50
1987	185.09	8	256.00	77.00	208.50

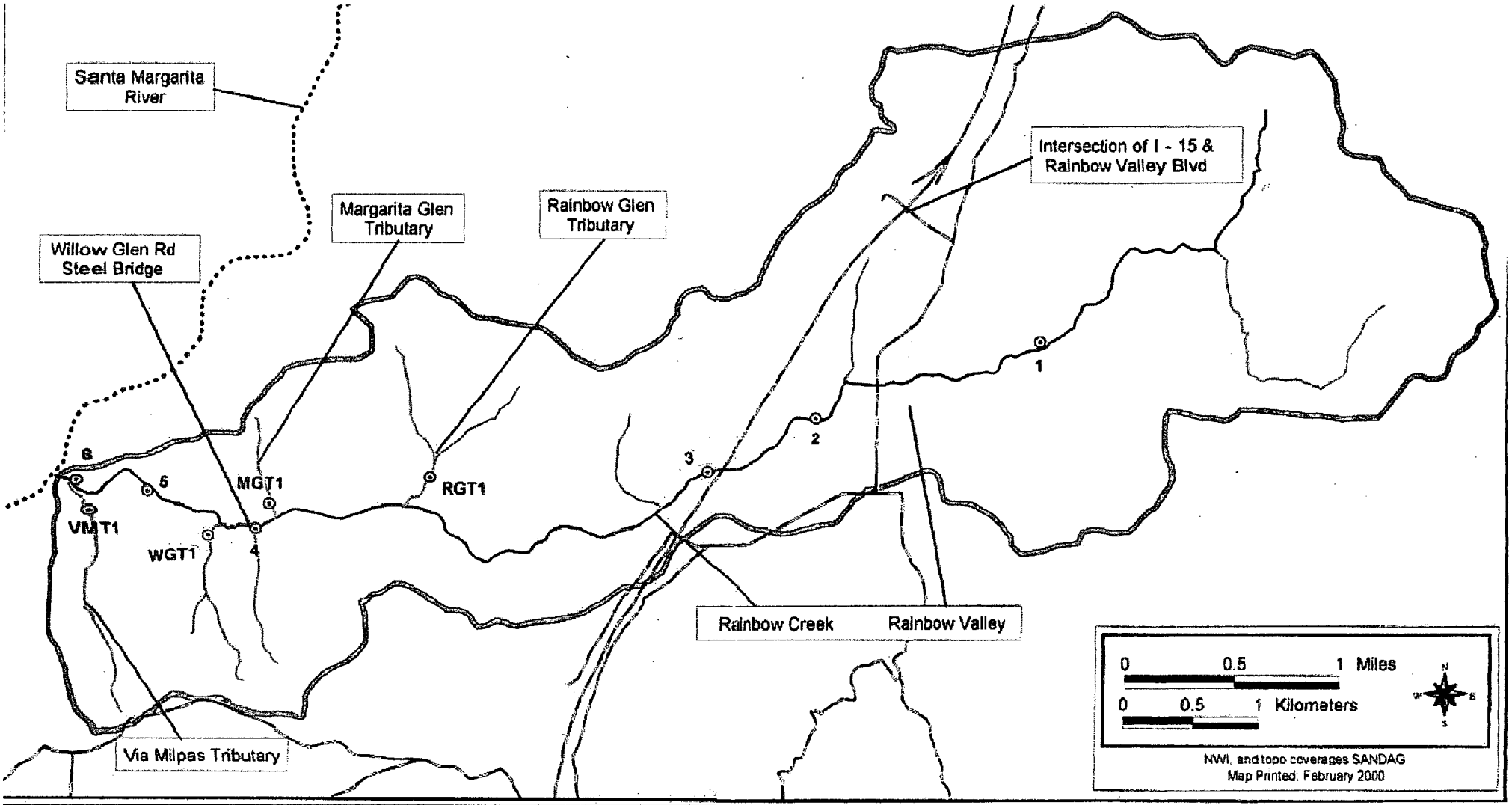
Note: 1985 only contained one sample point, therefore it was included with the 1986 data
Source: Leedshill-Herkenhoff, Inc., 1988

1970-1980 NO_3 ave.	**4.4**
NO_3 as N ave.	0.99
1981-1987 NO_3 ave.	**90.6**
NO_3 as N ave.	20.5

Drinking Water Standard
NO_3 = 45 mg/L
as N = 10 mg/L

Maximum NO_3 Values

Date	Result
Oct-85	319.3
Jun-86	310.3
Jun-86	338



Water Sampling Points

1	Jubilee Way	6	Stagecoach
2	Hines Nursery	RGT1	Rainbow Glen
3	Oak Crest	MGT1	Margarita Glen
4	Willow Glen-4	WGT1	Willow Glen
5	River House	VMT1	Via Milpas

Legend

- Rainbow Creek
- Tributaries of Rainbow Creek
- Santa Margarita River
- 20 foot topographic lines
- Watershed boundary for Rainbow Creek
- Water Sampling Site

Figure A-3: Rainbow Creek *sampling sites with topography* and water courses

2.4 Monitoring Data for Year 2000

From January through October 2000, Regional Board staff and Hines Nurseries monitored water quality to determine whether nutrient concentrations were still being maintained at 1998-99 levels, whether those levels were effectively limiting excessive algal growth and whether they were adequate for maintaining beneficial uses. The 2000 monitoring data are presented in Table B-2 and a map of the monitoring locations can be found in Figure A-3. The monitoring was performed in accordance with protocols described in the respective monitoring plans (SDRWQCB 2000 and Hines Horticulture Inc. 2000).

The following observations are made about the data:

- The average nitrate concentrations were 9.2 mg NO_3-N/L and the average total nitrogen was 11.0 mg N/L between August and October 2000 at the Oak Crest station.

- The average orthophosphate concentration was 0.85 mg PO_4-P/L and the average total phosphorus (organic and inorganic) was 1.13 mg P/L between August and October 2000 at the Oak Crest station.

- The average nitrate concentration was 9.1 mg NO_3-N/L and the average total nitrogen was 9.7 mg N/L between January through October 2000 at the Willow Glen-4 station.

- The average nitrate concentration at the Willow Glen-4 station was 13.6 mg NO_3-N/L February through July. Concentrations during this time are assumed to be attributable to polluted runoff and irrigation return flows from orchards, commercial nurseries, and septic tank disposal systems. Erosion events leading to increased turbidity may also be a cause. (See Section 4.0 Source Identification).

- Concentrations of nitrate in the lower reaches, illustrated in Figure A-3, exceeded the objective for nitrates in drinking water throughout the entire sampling period and appear to be influenced by the two tributaries, below the Willow Glen-4 location. The two tributaries provide natural drainage of irrigation return flows from orchard and residential land uses.

- The average phosphate concentrations at the Willow Glen-4 station were 0.37 mg PO_4-P/L and the average total phosphorus was 0.43 mg P/L.

- Concentrations of both nitrogen and phosphorus appear to fluctuate considerably over the course of the monitoring period and indicate seasonal variation.

2.5 Water Quality Objectives

The Basin Plan has several water quality objectives that address nutrient concentrations in inland surface waters. The numeric water quality objectives applicable to Rainbow Creek are presented in Table 2-1 below.

Table 2-1 Applicable Water Quality Objectives

Water Quality Objective	Constituent	Established Level[1]
Inorganic Chemicals in Municipal Supply:		
Nitrate	Nitrate, as N	**10 mg NO_3-N/L**
Nitrate + Nitrite	Nitrate + Nitrite, summed as N	10 mg N/L
Nitrite	Nitrite, As N	1 mg NO_2-N/L
Un-Ionized Ammonia	Ammonia, As N	0.025 NH_3-N/L
Biostimulatory Substances	Total Nitrogen	**1.0 mg N/L**
	Total Phosphorus	**0.1 mg P/L**

[1] Levels in bold are addressed by the proposed TMDLs.

The objective for inorganic chemicals in municipal supplies states that nitrate in domestic or municipal supply is not to exceed 10 mg NO_3-N/L, nitrate plus nitrite summed as nitrogen is not to exceed 10 mg N/L, and nitrite is not to exceed 1 mg NO_2-N/L. This objective is based on the maximum contaminant levels (MCLs) set forth in California Code of Regulations, Title 22. The nitrate and nitrite MCLs are based on human health toxicity in infants and are applicable to surface waters designated as domestic water supplies. Nitrite data was reported in quantities that were less than the laboratory detection limit of 0.1 mg NO_2-N/L in Rainbow Creek during the 2000 monitoring period.

The objective for un-ionized ammonia states that the discharge of wastes is not to result in concentrations of un-ionized ammonia in excess of 0.025 mg N/L. The fraction of ammonia present as un-ionized ammonia depends on temperature and pH. Un-ionized ammonia is toxic to fish and other aquatic organisms. Ammonia data was reported in quantities that were less than the laboratory detection limit of 0.1 NH_4-N/L in Rainbow Creek during the 2000 monitoring period. The data is not adequate to determine if un-ionized ammonia exceeds the objective.

The objective for biostimulatory substances is narrative and addresses tolerance levels for algal and emergent plant growth. It contains numeric goals for total nitrogen and total phosphorus. The narrative objective states,

> *"Inland surface waters, ... shall not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growths cause nuisance or adversely affect beneficial uses."*

Additionally, it states that "*a desired goal for total phosphorus appears to be 0.1 mg/L total P*" in order to prevent plant nuisance in streams and other flowing waters. Analogous threshold values ~~have~~ were not ~~been~~ set for nitrogen in the Basin Plan. Rather natural ratios of nitrogen to phosphorus (N:P) are to be determined by surveillance and monitoring. However, since data are lacking, the objective ~~allows for~~ requires the use of a weight to weight ratio of 10:1 (N:P) for the determination of an analogous threshold value for total nitrogen of 1.0 mg N/L. These values are not to be exceeded more than 10% of the time unless studies of the waterbody clearly show that water quality objective changes are permissible. The Regional Board must approve such changes.

The numeric goals of 1.0 mg TN/L and 0.1 mg TP/L are consistent with published scientific studies. Using the distribution of nutrient data from more than 1000 temperate streams (primarily in North America and New Zealand), Dodds et al. (1998) defined the lowest third of the distribution as representing the oligotrophic category, the middle third the mesotrophic category, and the top third the eutrophic category. The cumulative frequency distributions suggest that TN and TP levels between 0.7 – 1.5 mg/L and 0.02 – 0.07 mg/L respectively define streams that are mesotrophic. Mesotrophic is a trophic state that has moderate concentrations of nutrients and plant growth. Oligotrophic is a trophic state that is deficient in plant nutrients.

Plotting the data collected from Rainbow Creek in 2000 ...

In another paper, Dodds and Welch (2000) reviewed studies for the purpose of defining potential nutrient criteria that would address the concern of eutrophication. One study showed that TN should remain below 3 mg/L and TP below 0.4 mg/L for benthic chlorophyll to remain below a target level of 200 mg/m^2 (below what is considered to be not aesthetically pleasing or have compromised recreational uses). Levels of 0.9 mg TN/L and 0.04 mg TP/L were recommend based study by Dodds et al. (1998). Set at the median of the cumulative frequency distributions of nutrients, these recommended levels assume that approximately half the systems are impaired by excessive nutrients. Another study found that TN should be 0.47 and TP 0.06 mg/L to ensure that chlorophyll is < 100 mg/m^2 most of the time.

Even with the nitrogen reductions made since the 1990s, both nitrogen and phosphorus concentrations in the creek exceed the numeric goals identified in the objective for biostimulatory substances, and the numeric objective of 10 mg NO_3-N/L for nitrate in drinking water. These nutrient concentrations also appear to be contributing to excessive algal and emergent plant growth during certain times of the year. As mentioned above, field investigations conducted by Regional Board staff on the lower reaches of Rainbow Creek (downstream of Willow Glen-4) in July 1999 identified two locations in the creek that were affected by excessive algal growth. The locations were at the Riverhouse monitoring station and at the property located at 2068 Willow Glen Road approximately 500 to 600 ft upstream of Riverhouse. In 2000, these two locations, as well as the Oak Crest and Willow Glen-4 monitoring stations, were determined to be affected by excessive algae growth. The Riverhouse station also exhibited excess emergent plant growth. Attachment C presents pictures illustrating the condition of the creek at these locations. .

Samples were collected from the creek in Fall 2000 for algae identification by the University of California Cooperative Extension. The following four green algae species were identified: *Cladophora*, *Enteromorpha*, *Odegonium* and *Chaetophora* (Mellano 2000). The sampling reflected the species that were present on the date of collection and does not reflect seasonal changes in species composition. The concentrations of nutrients are likely contributing to the observed excessive algal and emergent plant growth. There was at most limited or no riparian canopy at the sampled locations, allowing for maximum light availability and water temperature increase. A dense canopy of riparian vegetation exists along much of Rainbow Creek. The canopy can limit the availability of sunlight to aquatic plants, effectively limiting their development. Consequently, despite the presence of elevated nutrient concentrations, excessive

qry_SW03 Rainbow

fldRound	fldWell	fldMatrix	fldNewName	fldWell3	fldUnits	fldDL	fldSampleDate	fldSampleMont
05	03	surface water	Zinc	ND	mg/L	0.01	11/9/98	11
11	03	surface water	Zinc	ND	mg/L	0.01	6/1/00	6
07	03	surface water	Zinc	ND	mg/L	0.02	5/11/99	5
03	03	surface water	Zinc	ND	mg/L	0.01	5/26/98	5
01	03	surface water	Zinc	0.015	mg/L	0.0100	12/9/97	12
02	03	surface water	Zinc	ND	mg/L	0.03	3/3/98	3
04	03	surface water	Zinc	ND	mg/L	0.01	8/4/98	8
10	03	surface water	Zinc	0.019J	mg/L	0.01	3/7/00	3
06	03	surface water	Zinc	NS	mg/L	0.01	2/10/99	2
09	03	surface water	Zinc	ND	mg/L	0.03	12/6/99	12
08	03	surface water	Zinc	ND	mg/L	0.03	9/28/99	9
10	03	surface water	Total Organic Carbon	8.1	mg/L	0.1	3/7/00	3
01	03	surface water	Total Organic Carbon	11.1	mg/L	1.00	12/9/97	12
11	03	surface water	Total Organic Carbon	13	mg/L	0.5	6/1/00	6
05	03	surface water	Total Organic Carbon	58.9	mg/L	1	11/9/98	11
07	03	surface water	Total Organic Carbon	5.77	mg/L	1	5/11/99	5
06	03	surface water	Total Organic Carbon	7.31	mg/L	1	2/10/99	2
04	03	surface water	Total Organic Carbon	3.42	mg/L	1	8/4/98	8
02	03	surface water	Total Organic Carbon	8.45	mg/L	1	3/3/98	3
09	03	surface water	Total Organic Carbon	1.4	mg/L	0.5	12/6/99	12
03	03	surface water	Total Organic Carbon	10.3	mg/L	1	5/26/98	5
08	03	surface water	Total Organic Carbon	7.0	mg/L	0.5	9/28/99	9
11	03	surface water	Total Dissolved Solids	1,190	mg/L	5	6/1/00	6
09	03	surface water	Total Dissolved Solids	879	mg/L	10	12/6/99	12
10	03	surface water	Total Dissolved Solids	1,060	mg/L	5	3/7/00	3
08	03	surface water	Total Dissolved Solids	964	mg/L	10	9/28/99	9
02	03	surface water	Total Dissolved Solids	453	mg/L	10	3/3/98	3
05	03	surface water	Total Dissolved Solids	1010	mg/L	10	11/9/98	11
01	03	surface water	Total Dissolved Solids	910	mg/L	10.0	12/9/97	12
07	03	surface water	Total Dissolved Solids	848	mg/L	10	5/11/99	5
03	03	surface water	Total Dissolved Solids	662	mg/L	10	5/26/98	5
04	03	surface water	Total Dissolved Solids	884	mg/L	10	8/4/98	8
06	03	surface water	Total Dissolved Solids	806	mg/L	10	2/10/99	2
01	03	surface water	Total Coliform	>1600	mpn/100ml	2	12/9/97	12
08	03	surface water	Total Coliform	300	mpn/100ml	2	9/28/99	9
09	03	surface water	Total Coliform	1600	mpn/100ml	2	12/6/99	12
05	03	surface water	Total Coliform	>1600	mpn/100ml	2	11/9/98	11
06	03	surface water	Total Coliform	>1600	mpn/100ml	2	2/10/99	2

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fldRound	fldWell	fldMatrix	fldNewName	fldWell3	fldUnits	fldDL	fldSampleDate	fldSampleMont
07	03	surface water	Total Coliform	>23	mpn/100ml	2	5/11/99	5
02	03	surface water	Total Coliform	>1600	mpn/100ml	2	3/3/98	3
04	03	surface water	Total Coliform	>1600	mpn/100ml	2	8/4/98	8
03	03	surface water	Total Coliform	>1600	mpn/100ml	2	5/26/98	5
11	03	surface water	Total Coliform	>1,600	MPN/100 m	2	6/1/00	6
10	03	surface water	Total Coliform	>1,600	MPN/100 m	3.0	3/7/00	3
05	03	surface water	Surfactants (MBAS)	0.113	mg/L	0.1	11/9/98	11
07	03	surface water	Surfactants (MBAS)	ND	mg/L	0.1	5/11/99	5
04	03	surface water	Surfactants (MBAS)	ND	mg/L	0.1	8/4/98	8
02	03	surface water	Surfactants (MBAS)	ND	mg/L	0.1	3/3/98	3
03	03	surface water	Surfactants (MBAS)	ND	mg/L	0.1	5/26/98	5
01	03	surface water	Surfactants (MBAS)	ND	mg/L	0.100	12/9/97	12
10	03	surface water	Surfactants (MBAS)	0.06	mg/L	0.03	3/7/00	3
09	03	surface water	Surfactants (MBAS)	ND	mg/L	0.05	12/6/99	12
11	03	surface water	Surfactants (MBAS)	ND	mg/L	0.03	6/1/00	6
08	03	surface water	Surfactants (MBAS)	ND	mg/L	0.05	9/28/99	9
06	03	surface water	Surfactants (MBAS)	NS	mg/L	0.1	2/10/99	2
07	03	surface water	Sulfate	254	mg/L	50	5/11/99	5
11	03	surface water	Sulfate	314	mg/L	5	6/1/00	6
05	03	surface water	Sulfate	326	mg/L	5	11/9/98	11
06	03	surface water	Sulfate	250	mg/L	5	2/10/99	2
04	03	surface water	Sulfate	252	mg/L	50	8/4/98	8
09	03	surface water	Sulfate	187	mg/L	10	12/6/99	12
10	03	surface water	Sulfate	290	mg/L	5	3/7/00	3
03	03	surface water	Sulfate	134	mg/L	50	5/26/98	5
08	03	surface water	Sulfate	196	mg/L	10	9/28/99	9
02	03	surface water	Sulfate	108	mg/L	4	3/3/98	3
01	03	surface water	Sulfate	269	mg/L	10.0	12/9/97	12
05	03	surface water	Sodium	120	mg/L	0.3	11/9/98	11
02	03	surface water	Sodium	69	mg/L	4	3/3/98	3
11	03	surface water	Sodium	125	mg/L	0.25	6/1/00	6
03	03	surface water	Sodium	83.2	mg/L	0.3	5/26/98	5
08	03	surface water	Sodium	91.9	mg/L	0.5	9/28/99	9
01	03	surface water	Sodium	103	mg/L	0.300	12/9/97	12
09	03	surface water	Sodium	85.6	mg/L	0.5	12/6/99	12
07	03	surface water	Sodium	96	mg/L	0.3	5/11/99	5
10	03	surface water	Sodium	122	mg/L	0.25	3/7/00	3
06	03	surface water	Sodium	102	mg/L	0.3	2/10/99	2

fldRound	fldWell	fldMatrix	fldNewName	fldWell3	fldUnits	fldDL	fldSampleDate	fldSampleMont
01	03	surface water	Potassium	10.8	mg/L	0.300	12/9/97	12
10	03	surface water	Potassium	9.8	mg/L	0.5	3/7/00	3
06	03	surface water	Potassium	7.56	mg/L	1	2/10/99	2
02	03	surface water	Potassium	3	mg/L	2	3/3/98	3
03	03	surface water	Potassium	7.21	mg/L	0.3	5/26/98	5
05	03	surface water	Potassium	9.35	mg/L	0.3	11/9/98	11
04	03	surface water	Potassium	5.38	mg/L	0.3	8/4/98	8
11	03	surface water	Potassium	7.9	mg/L	0.5	6/1/00	6
07	03	surface water	Potassium	5.06	mg/L	1	5/11/99	5
08	03	surface water	Potassium	4.6	mg/L	1.0	9/28/99	9
09	03	surface water	Potassium	3.4	mg/L	1.0	12/6/99	12
07	03	surface water	Phosphorus	0.446	mg/L	0.01	5/11/99	5
03	03	surface water	Phosphorus	1.14	mg/L	0.02	5/26/98	5
06	03	surface water	Phosphorus	0.713	mg/L	0.01	2/10/99	2
01	03	surface water	Phosphorus	1.13	mg/L	0.02	12/9/97	12
02	03	surface water	Phosphorus	0.612	mg/L	0.01	3/3/98	3
04	03	surface water	Phosphorus	0.48	mg/L	0.01	8/4/98	8
05	03	surface water	Phosphorus	0.917	mg/L	0.01	11/9/98	11
05	03	surface water	Phosphate	NS	mg/L	0.3	11/9/98	11
07	03	surface water	Phosphate	NS	mg/L	0.3	5/11/99	5
06	03	surface water	Phosphate	NS	mg/L	0.3	2/10/99	2
03	03	surface water	Phosphate	NS	mg/L	0.3	5/26/98	5
04	03	surface water	Phosphate	NS	mg/L	0.3	8/4/98	8
10	03	surface water	Phosphate	2.0	mg/L	0.30	3/7/00	3
09	03	surface water	Phosphate	1.1	mg/L	0.3	12/6/99	12
01	03	surface water	Phosphate	NS	mg/L	0.3	12/9/97	12
02	03	surface water	Phosphate	NS	mg/L	0.3	3/3/98	3
11	03	surface water	Phosphate	1.1	mg/L	0.30	6/1/00	6
08	03	surface water	Phosphate	1.3	mg/L	0.3	9/28/99	9
02	03	surface water	pH	8.12	pH units	2.0-12.5	3/3/98	3
03	03	surface water	pH	7.78	pH units	2.5-12.0	5/26/98	5
01	03	surface water	pH	7.98	pH units	2.0-12.5	12/9/97	12
08	03	surface water	pH	7.91	pH units	1.00	9/28/99	9
04	03	surface water	pH	7.93	pH units	2.5-12.0	8/4/98	8
11	03	surface water	pH	7.39	mg/L	0.01	6/1/00	6
07	03	surface water	pH	7.98	pH units	2.5-12.0	5/11/99	5
10	03	surface water	pH	8.25	mg/L	0.01	3/7/00	3
08	03	surface water	pH	7.91	pH units	1.00	9/28/99	9

fldRound	fldWell	fldMatrix	fldNewName	fldWell3	fldUnits	fldDL	fldSampleDate	fldSampleMont
09	03	surface water	pH	7.62	pH units	1.00	12/6/99	12
09	03	surface water	pH	7.62	pH units	1.00	12/6/99	12
10	03	surface water	pH	8.25	mg/L	0.01	3/7/00	3
11	03	surface water	pH	7.39	mg/L	0.01	6/1/00	6
06	03	surface water	pH	8.06	pH units		2/10/99	2
07	03	surface water	Oil and Grease	0.962	mg/L	0.962	5/11/99	5
08	03	surface water	Oil and Grease	ND	mg/L	1.0	9/28/99	9
10	03	surface water	Oil and Grease	ND	mg/L	0.5	3/7/00	3
11	03	surface water	Oil and Grease	ND	mg/L	0.5	6/1/00	6
03	03	surface water	Oil and Grease	ND	mg/L	0.99	5/26/98	5
11	03	surface water	Oil and Grease	ND	mg/L	0.5	6/1/00	6
05	03	surface water	Oil and Grease	ND	mg/L	1	11/9/98	11
06	03	surface water	Oil and Grease	0.98	mg/L	1	2/10/99	2
08	03	surface water	Oil and Grease	ND	mg/L	1.0	9/28/99	9
09	03	surface water	Oil and Grease	ND	mg/L	1.0	12/6/99	12
04	03	surface water	Oil and Grease	ND	mg/L	1.12	8/4/98	8
09	03	surface water	Oil and Grease	ND	mg/L	1.0	12/6/99	12
10	03	surface water	Oil and Grease	ND	mg/L	0.5	3/7/00	3
01	03	surface water	Oil and Grease	ND	mg/L	1.18	12/9/97	12
02	03	surface water	Oil and Grease	ND	mg/L	1.05	3/3/98	3
06	03	surface water	Nitrogen	NS	mg/L	0.1	2/10/99	2
10	03	surface water	Nitrogen	0.1	mg/L	0.05	3/7/00	3
05	03	surface water	Nitrogen	1.66	mg/L	0.1	11/9/98	11
08	03	surface water	Nitrogen	0.5	mg/L	0.1	9/28/99	9
02	03	surface water	Nitrogen	NS	mg/L	0.1	3/3/98	3
04	03	surface water	Nitrogen	NS	mg/L	0.1	8/4/98	8
03	03	surface water	Nitrogen	2.7	mg/Kg	0.5	5/26/98	5
02	03	surface water	Nitrogen	NS	mg/L	0.1	3/3/98	3
04	03	surface water	Nitrogen	NS	mg/L	0.1	8/4/98	8
06	03	surface water	Nitrogen	NS	mg/L	0.1	2/10/99	2
02	03	surface water	Nitrogen	NS	mg/L	0.1	3/3/98	3
09	03	surface water	Nitrogen	NS	mg/L	0.1	12/6/99	12
04	03	surface water	Nitrogen	NS	mg/L	0.1	8/4/98	8
09	03	surface water	Nitrogen	NS	mg/L	0.1	12/6/99	12
01	03	surface water	Nitrogen	0.483	mg/L	0.100	12/9/97	12
06	03	surface water	Nitrogen	NS	mg/L	0.1	2/10/99	2
07	03	surface water	Nitrogen	0.535	mg/L	0.4	5/11/99	5
08	03	surface water	Nitrite	ND	mg/L	0.02	9/28/99	9

fldRound	fldWell	fldMatrix	fldNewName	fldWell3	fldUnits	fldDL	fldSampleDate	fldSampleMont
09	03	surface water	Nitrite	ND	mg/L	0.02	12/6/99	12
06	03	surface water	Nitrate-N	9.34	mg/L	0.05	2/10/99	2
03	03	surface water	Nitrate-N	10.3	mg/L	5	5/26/98	5
01	03	surface water	Nitrate-N	1.3	mg/L	0.100	12/9/97	12
09	03	surface water	Nitrate-N	4.8	mg/L	0.1	12/6/99	12
10	03	surface water	Nitrate-N	62.9	mg/L	0.05	3/7/00	3
07	03	surface water	Nitrate-N	8.6	mg/L	0.5	5/11/99	5
08	03	surface water	Nitrate-N	4.1	mg/L	0.1	9/28/99	9
02	03	surface water	Nitrate-N	4.95	mg/L	2	3/3/98	3
11	03	surface water	Nitrate-N	15.0	mg/L	0.05	6/1/00	6
04	03	surface water	Nitrate-N	4.54	mg/L	0.25	8/4/98	8
05	03	surface water	Nitrate-N	13.2	mg/L	0.05	11/9/98	11
06	03	surface water	Mercury	NS	mg/L	0.0002	2/10/99	2
11	03	surface water	Mercury	NS	mg/L	0.0002	6/1/00	6
10	03	surface water	Mercury	ND	mg/L	0.0002	3/7/00	3
01	03	surface water	Mercury	ND	mg/L	0.000200	12/9/97	12
05	03	surface water	Mercury	ND	mg/L	0.0002	11/9/98	11
08	03	surface water	Mercury	ND	mg/L	0.0002	9/28/99	9
09	03	surface water	Mercury	NS	mg/L	0.0002	12/6/99	12
04	03	surface water	Mercury	NS	mg/L	0.0002	8/4/98	8
02	03	surface water	Mercury	NS	mg/L	0.0002	3/3/98	3
03	03	surface water	Mercury	ND	mg/L	0.0002	5/26/98	5
07	03	surface water	Mercury	ND	mg/L	0.0002	5/11/99	5
03	03	surface water	Mercury	ND	mg/L	0.0002	5/26/98	5
09	03	surface water	Manganese	0.03	mg/L	0.01	12/6/99	12
08	03	surface water	Manganese	ND	mg/L	0.01	9/28/99	9
01	03	surface water	Manganese	0.027	mg/L	0.0100	12/9/97	12
04	03	surface water	Manganese	0.0329	mg/L	0.01	8/4/98	8
05	03	surface water	Manganese	0.048	mg/L	0.01	11/9/98	11
10	03	surface water	Manganese	0.01	mg/L	0.005	3/7/00	3
06	03	surface water	Manganese	0.0168	mg/L	0.01	2/10/99	2
03	03	surface water	Manganese	0.055	mg/L	0.01	5/26/98	5
07	03	surface water	Manganese	ND	mg/L	0.01	5/11/99	5
11	03	surface water	Manganese	ND	mg/L	0.005	6/1/00	6
02	03	surface water	Manganese	0.05	mg/L	0.01	3/3/98	3
04	03	surface water	Magnesium	55.4	mg/L	0.2	8/4/98	8
09	03	surface water	Magnesium	56.1	mg/L	0.5	12/6/99	12
08	03	surface water	Magnesium	56.2	mg/L	0.5	9/28/99	9

fldRound	fldWell	fldMatrix	fldNewName	fldWell3	fldUnits	fldDL	fldSampleDate	fldSampleMont
01	03	surface water	Magnesium	51.1	mg/L	0.200	12/9/97	12
06	03	surface water	Magnesium	43.8	mg/L	0.2	2/10/99	2
11	03	surface water	Magnesium	64.2	mg/L	0.2	6/1/00	6
03	03	surface water	Magnesium	29.1	mg/L	0.2	5/26/98	5
05	03	surface water	Magnesium	51.5	mg/L	0.2	11/9/98	11
02	03	surface water	Magnesium	20	mg/L	0.1	3/3/98	3
10	03	surface water	Magnesium	54.0	mg/L	0.20	3/7/00	3
07	03	surface water	Magnesium	53.6	mg/L	0.2	5/11/99	5
10	03	surface water	Lead	0.018	mg/L	0.005	3/7/00	3
11	03	surface water	Lead	ND	mg/L	0.005	6/1/00	6
02	03	surface water	Lead	ND	mg/L	0.015	3/3/98	3
07	03	surface water	Lead	ND	mg/L	0.001	5/11/99	5
01	03	surface water	Lead	0.027	mg/L	0.0200	12/9/97	12
03	03	surface water	Lead	0.00106	mg/L	0.001	5/26/98	5
05	03	surface water	Lead	ND	mg/L	0.001	11/9/98	11
06	03	surface water	Lead	NS	mg/L	0.001	2/10/99	2
09	03	surface water	Lead	ND	mg/L	0.05	12/6/99	12
08	03	surface water	Lead	ND	mg/L	0.1	9/28/99	9
04	03	surface water	Lead	ND	mg/L	0.001	8/4/98	8
10	03	surface water	Iron	ND	mg/L	0.03	3/7/00	3
07	03	surface water	Iron	ND	mg/L	0.05	5/11/99	5
02	03	surface water	Iron	0.7	mg/L	0.1	3/3/98	3
05	03	surface water	Iron	0.156	mg/L	0.05	11/9/98	11
11	03	surface water	Iron	ND	mg/L	0.03	6/1/00	6
06	03	surface water	Iron	0.214	mg/L	0.05	2/10/99	2
03	03	surface water	Iron	0.486	mg/L	0.05	5/26/98	5
01	03	surface water	Iron	0.047	mg/L	0.0500	12/9/97	12
09	03	surface water	Iron	0.06	mg/L	0.05	12/6/99	12
04	03	surface water	Iron	ND	mg/L	0.05	8/4/98	8
08	03	surface water	Iron	ND	mg/L	0.05	9/28/99	9
05	03	surface water	Hydroxide	ND	mg/L	0.5	11/9/98	11
11	03	surface water	Hydroxide	ND	mg/L	0.5	6/1/00	6
09	03	surface water	Hydroxide	ND	mg/L	2	12/6/99	12
03	03	surface water	Hydroxide	ND	mg/L	0.5	5/26/98	5
10	03	surface water	Hydroxide	ND	mg/L	0.5	3/7/00	3
04	03	surface water	Hydroxide	ND	mg/L	0.5	8/4/98	8
01	03	surface water	Hydroxide	ND	mg/L	1.00	12/9/97	12
02	03	surface water	Hydroxide	ND	mg/L	0.5	3/3/98	3

fldRound	fldWell	fldMatrix	fldNewName	fldWell3	fldUnits	fldDL	fldSampleDate	fldSampleMont
06	03	surface water	Hydroxide	NS	mg/L	0.5	2/10/99	2
07	03	surface water	Hydroxide	ND	mg/L	0.5	5/11/99	5
08	03	surface water	Hydroxide	ND	mg/L	0.5	9/28/99	9
07	03	surface water	Hardness (CaCO3)	492	mg/L	2	5/11/99	5
06	03	surface water	Hardness (CaCO3)	445	mg/L	1	2/10/99	2
05	03	surface water	Hardness (CaCO3)	562	mg/L	1	11/9/98	11
02	03	surface water	Hardness (CaCO3)	208	mg/L	10	3/3/98	3
01	03	surface water	Hardness (CaCO3)	515	mg/L	10.0	12/9/97	12
03	03	surface water	Hardness (CaCO3)	354	mg/L	5	5/26/98	5
04	03	surface water	Hardness (CaCO3)	564	mg/L	5	8/4/98	8
10	03	surface water	Hardness (CaCO3)	568	mg/L	1	3/7/00	3
08	03	surface water	Hardness (CaCO3)	532	mg/L	2	9/28/99	9
09	03	surface water	Hardness (CaCO3)	530	mg/L	2	12/6/99	12
11	03	surface water	Hardness (CaCO3)	600	mg/L	1	6/1/00	6
09	03	surface water	Fluoride	0.3	mg/L	0.2	12/6/99	12
10	03	surface water	Fluoride	0.4	mg/L	0.1	3/7/00	3
03	03	surface water	Fluoride	0.325	mg/L	0.2	5/26/98	5
04	03	surface water	Fluoride	0.239	mg/L	0.1	8/4/98	8
11	03	surface water	Fluoride	0.5	mg/L	0.1	6/1/00	6
08	03	surface water	Fluoride	0.3	mg/L	0.1	9/28/99	9
07	03	surface water	Fluoride	0.242	mg/L	0.1	5/11/99	5
06	03	surface water	Fluoride	0.294	mg/L	0.1	2/10/99	2
05	03	surface water	Fluoride	0.35	mg/L	0.1	11/9/98	11
01	03	surface water	Fluoride	ND	mg/L	0.200	12/9/97	12
02	03	surface water	Fluoride	0.203	mg/L	0.2	3/3/98	3
02	03	surface water	Fecal Coliform	220	mpn/100ml	2	3/3/98	3
08	03	surface water	Fecal Coliform	80	mpn/100ml	2	9/28/99	9
06	03	surface water	Fecal Coliform	>1600	mpn/100ml	2	2/10/99	2
03	03	surface water	Fecal Coliform	1600	mpn/100ml	2	5/26/98	5
09	03	surface water	Fecal Coliform	900	mpn/100ml	2	12/6/99	12
05	03	surface water	Fecal Coliform	>1600	mpn/100ml	2	11/9/98	11
01	03	surface water	Fecal Coliform	1600	mpn/100ml	2	12/9/97	12
11	03	surface water	Fecal Coliform	130	MPN/mL	2	6/1/00	6
10	03	surface water	Fecal Coliform	1,600	MPN/100 m	2	3/7/00	3
07	03	surface water	Fecal Coliform	>23	mpn/100ml	2	5/11/99	5
04	03	surface water	Fecal Coliform	900	mpn/100ml	2	8/4/98	8
02	03	surface water	Cyanide (Total)	NS	mg/L	0.005	3/3/98	3
09	03	surface water	Cyanide (Total)	NS	mg/L	0.005	12/6/99	12

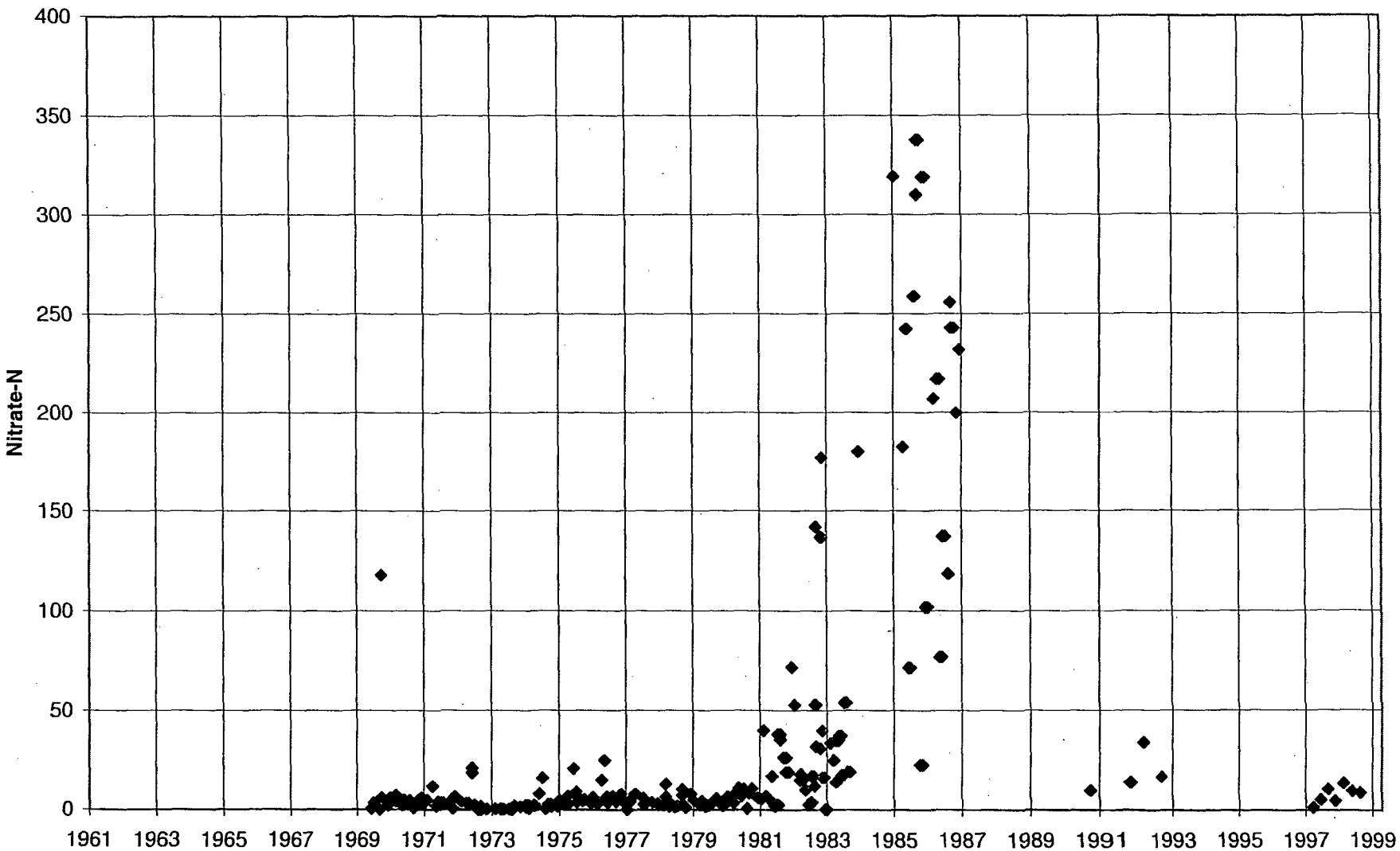
fldRound	fldWell	fldMatrix	fldNewName	fldWell3	fldUnits	fldDL	fldSampleDate	fldSampleMont
06	03	surface water	Cyanide (Total)	NS	mg/L	0.005	2/10/99	2
04	03	surface water	Cyanide (Total)	NS	mg/L	0.005	8/4/98	8
02	03	surface water	Cyanide (Total)	NS	mg/L	0.005	3/3/98	3
03	03	surface water	Cyanide (Total)	ND	mg/L	0.005	5/26/98	5
11	03	surface water	Cyanide (Total)	NS	mg/L	0.01	6/1/00	6
01	03	surface water	Cyanide (Total)	ND	mg/L	0.00500	12/9/97	12
09	03	surface water	Cyanide (Total)	NS	mg/L	0.005	12/6/99	12
04	03	surface water	Cyanide (Total)	NS	mg/L	0.005	8/4/98	8
07	03	surface water	Cyanide (Total)	ND	mg/L	0.005	5/11/99	5
05	03	surface water	Cyanide (Total)	ND	mg/L	0.005	11/9/98	11
08	03	surface water	Cyanide (Total)	ND	mg/L	0.01	9/28/99	9
06	03	surface water	Cyanide (Total)	NS	mg/L	0.005	2/10/99	2
10	03	surface water	Cyanide (Total)	ND	mg/L	0.01	3/7/00	3
05	03	surface water	Copper	0.0058	mg/L	0.005	11/9/98	11
08	03	surface water	Copper	ND	mg/L	0.02	9/28/99	9
09	03	surface water	Copper	0.03	mg/L	0.02	12/6/99	12
06	03	surface water	Copper	0.00511	mg/L	0.005	2/10/99	2
02	03	surface water	Copper	ND	mg/L	0.02	3/3/98	3
04	03	surface water	Copper	0.0063	mg/L	0.005	8/4/98	8
07	03	surface water	Copper	ND	mg/L	0.005	5/11/99	5
03	03	surface water	Copper	0.008	mg/L	0.005	5/26/98	5
11	03	surface water	Copper	ND	mg/L	0.005	6/1/00	6
10	03	surface water	Copper	ND	mg/L	0.005	3/7/00	3
01	03	surface water	Copper	ND	mg/L	0.00500	12/9/97	12
08	03	surface water	Conductivity	1420	umhos/cm	10	9/28/99	9
09	03	surface water	Conductivity	1390	umhos/cm	10	12/6/99	12
10	03	surface water	Conductivity	1,610	mg/L	5	3/7/00	3
11	03	surface water	Conductivity	1,650	mg/L	5	6/1/00	6
07	03	surface water	Conductivity	1420	umhos/cm	1	5/11/99	5
05	03	surface water	Conductivity	1460	umhos/cm	1	11/9/98	11
06	03	surface water	Conductivity	1240	umhos/cm	1	2/10/99	2
01	03	surface water	Conductivity	1470	umhos/cm	1.00	12/9/97	12
04	03	surface water	Conductivity	1400	umhos/cm	1	8/4/98	8
03	03	surface water	Conductivity	848	umhos/cm	1	5/26/98	5
02	03	surface water	Conductivity	641	umhos/cm	1	3/3/98	3
08	03	surface water	Chloride	188	mg/L	1	9/28/99	9
07	03	surface water	Chloride	166	mg/L	1	5/11/99	5
06	03	surface water	Chloride	136	mg/L	1	2/10/99	2

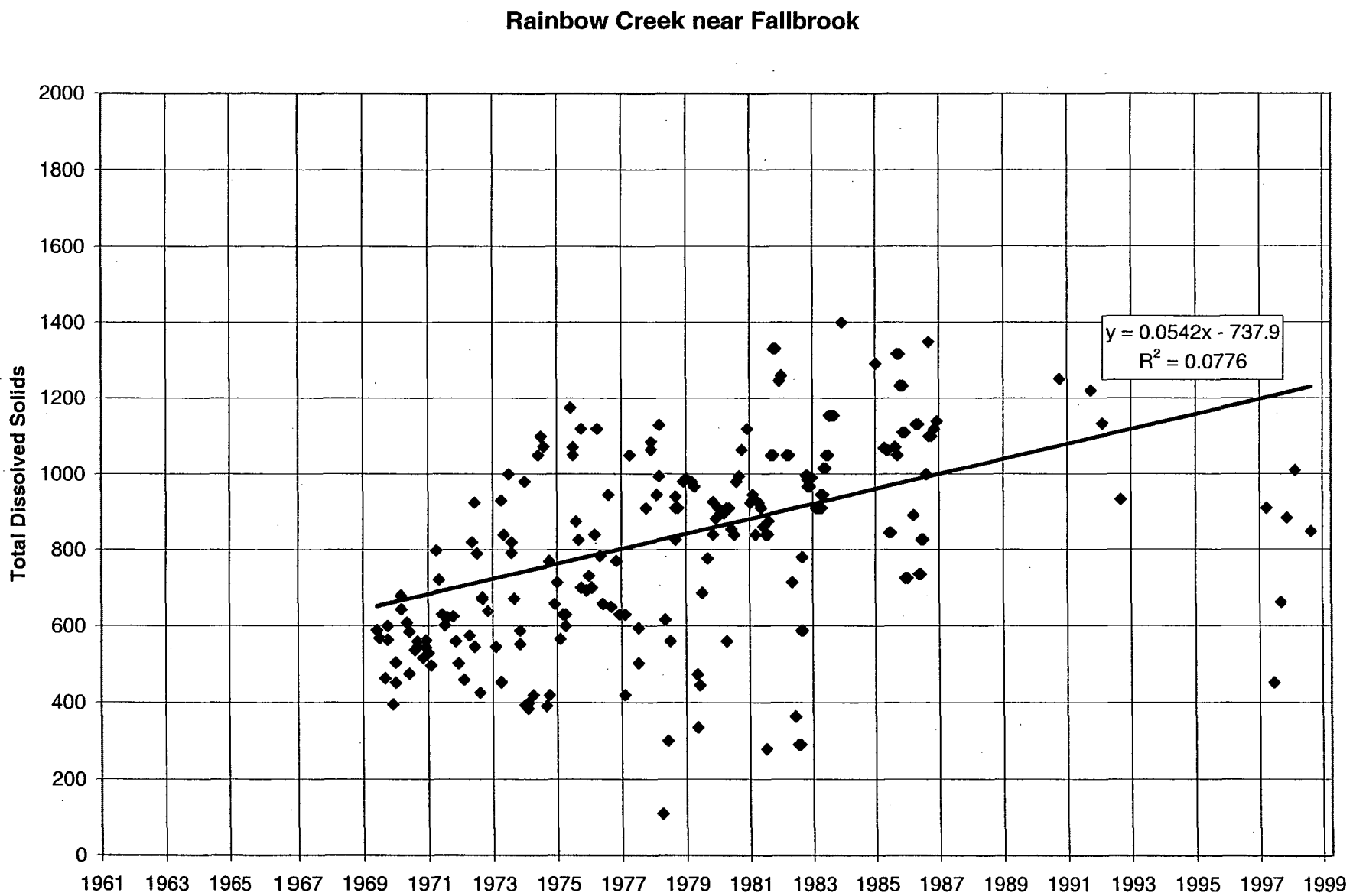
fldRound	fldWell	fldMatrix	fldNewName	fldWell3	fldUnits	fldDL	fldSampleDate	fldSampleMont
05	03	surface water	Chloride	169	mg/L	1	11/9/98	11
11	03	surface water	Chloride	208	mg/L	0.5	6/1/00	6
10	03	surface water	Chloride	197	mg/L	0.5	3/7/00	3
03	03	surface water	Chloride	128	mg/L	50	5/26/98	5
08	03	surface water	Chloride	188	mg/L	1	9/28/99	9
09	03	surface water	Chloride	192	mg/L	1	12/6/99	12
10	03	surface water	Chloride	197	mg/L	0.5	3/7/00	3
09	03	surface water	Chloride	192	mg/L	1	12/6/99	12
04	03	surface water	Chloride	189	mg/L	1	8/4/98	8
01	03	surface water	Chloride	213	mg/L	20.0	12/9/97	12
11	03	surface water	Chloride	208	mg/L	0.5	6/1/00	6
02	03	surface water	Chloride	70.7	mg/L	20	3/3/98	3
04	03	surface water	Carbonate	1.92	mg/L	0.5	8/4/98	8
02	03	surface water	Carbonate	0.757	mg/L	0.5	3/3/98	3
03	03	surface water	Carbonate	0.642	mg/L	0.5	5/26/98	5
07	03	surface water	Carbonate	1.04	mg/L	0.5	5/11/99	5
06	03	surface water	Carbonate	2.18	mg/L	0.5	2/10/99	2
09	03	surface water	Carbonate	ND	mg/L	2	12/6/99	12
10	03	surface water	Carbonate	4	mg/L	0.5	3/7/00	3
11	03	surface water	Carbonate	12	mg/L	0.5	6/1/00	6
08	03	surface water	Carbonate	ND	mg/L	0.5	9/28/99	9
01	03	surface water	Carbonate	1.73	mg/L	1.00	12/9/97	12
05	03	surface water	Carbonate	1.13	mg/L	0.5	11/9/98	11
09	03	surface water	Calcium	113	mg/L	0.5	12/6/99	12
08	03	surface water	Calcium	114	mg/L	0.5	9/28/99	9
05	03	surface water	Calcium	112	mg/L	0.1	11/9/98	11
03	03	surface water	Calcium	65.6	mg/L	0.1	5/26/98	5
10	03	surface water	Calcium	116	mg/L	0.10	3/7/00	3
06	03	surface water	Calcium	91	mg/L	0.1	2/10/99	2
02	03	surface water	Calcium	46	mg/L	0.2	3/3/98	3
11	03	surface water	Calcium	141	mg/L	0.1	6/1/00	6
01	03	surface water	Calcium	122	mg/L	0.100	12/9/97	12
07	03	surface water	Calcium	112	mg/L	0.1	5/11/99	5
04	03	surface water	Calcium	114	mg/L	0.1	8/4/98	8
02	03	surface water	Boron	ND	mg/L	0.5	3/3/98	3
03	03	surface water	Boron	ND	mg/L	0.5	5/26/98	5
11	03	surface water	Boron	0.2	mg/L	0.1	6/1/00	6
01	03	surface water	Boron	ND	mg/L	0.5	12/9/97	12

fldRound	fldWell	fldMatrix	fldNewName	fldWell3	fldUnits	fldDL	fldSampleDate	fldSampleMont
06	03	surface water	Boron	0.173	mg/L	0.1	2/10/99	2
07	03	surface water	Boron	ND	mg/L	0.1	5/11/99	5
09	03	surface water	Boron	ND	mg/L	0.2	12/6/99	12
08	03	surface water	Boron	0.1	mg/L	0.2	9/28/99	9
04	03	surface water	Boron	0.125	mg/L	0.1	8/4/98	8
05	03	surface water	Boron	0.2	mg/L	0.1	11/9/98	11
10	03	surface water	Boron	0.1	mg/L	0.1	3/7/00	3
01	03	surface water	Biochemical Oxygen Dem	ND	mg/L	2.00	12/9/97	12
10	03	surface water	Biochemical Oxygen Dem	ND	mg/L	2	3/7/00	3
04	03	surface water	Biochemical Oxygen Dem	NS	mg/L	2	8/4/98	8
11	03	surface water	Biochemical Oxygen Dem	NS	mg/L	2	6/1/00	6
05	03	surface water	Biochemical Oxygen Dem	ND	mg/L	2	11/9/98	11
09	03	surface water	Biochemical Oxygen Dem	NS	mg/L	2	12/6/99	12
08	03	surface water	Biochemical Oxygen Dem	ND	mg/L	2	9/28/99	9
03	03	surface water	Biochemical Oxygen Dem	4.02	mg/L	2	5/26/98	5
06	03	surface water	Biochemical Oxygen Dem	NS	mg/L	2	2/10/99	2
07	03	surface water	Biochemical Oxygen Dem	ND	mg/L	2	5/11/99	5
02	03	surface water	Biochemical Oxygen Dem	NS	mg/L	2	3/3/98	3
02	03	surface water	Bicarbonate	78.7	mg/L	1	3/3/98	3
06	03	surface water	Bicarbonate	172	mg/L	1	2/10/99	2
03	03	surface water	Bicarbonate	104	mg/L	1	5/26/98	5
09	03	surface water	Bicarbonate	238	mg/L	2	12/6/99	12
01	03	surface water	Bicarbonate	160	mg/L	1.00	12/9/97	12
07	03	surface water	Bicarbonate	221	mg/L	1	5/11/99	5
04	03	surface water	Bicarbonate	240	mg/L	1	8/4/98	8
10	03	surface water	Bicarbonate	168	mg/L	1	3/7/00	3
11	03	surface water	Bicarbonate	204	mg/L	1	6/1/00	6
08	03	surface water	Bicarbonate	234	mg/L	1	9/28/99	9
05	03	surface water	Bicarbonate	162	mg/L	1	11/9/98	11
04	03	surface water	Arsenic	ND	mg/L	0.025	8/4/98	8
11	03	surface water	Arsenic	ND	mg/L	0.025	6/1/00	6
03	03	surface water	Arsenic	ND	mg/L	0.025	5/26/98	5
07	03	surface water	Arsenic	ND	mg/L	0.025	5/11/99	5
10	03	surface water	Arsenic	ND	mg/L	0.025	3/7/00	3
08	03	surface water	Arsenic	ND	mg/L	0.005	9/28/99	9
09	03	surface water	Arsenic	ND	mg/L	0.005	12/6/99	12
01	03	surface water	Arsenic	ND	mg/L	0.0250	12/9/97	12
05	03	surface water	Arsenic	ND	mg/L	0.025	11/9/98	11

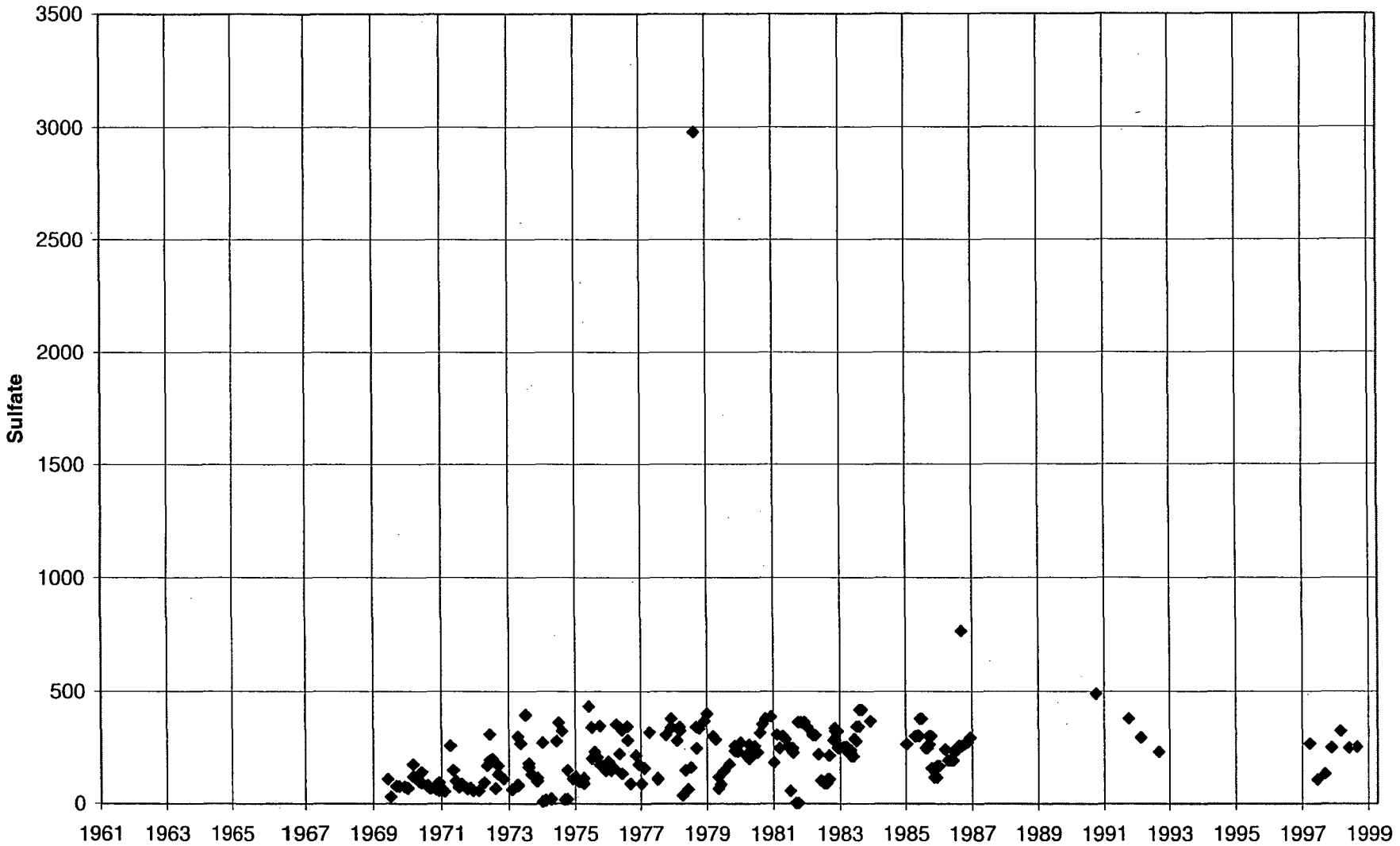
fldRound	fldWell	fldMatrix	fldNewName	fldWell3	fldUnits	fldDL	fldSampleDate	fldSampleMont
06	03	surface water	Arsenic	NS	mg/L	0.025	2/10/99	2
02	03	surface water	Arsenic	ND	mg/L	0.01	3/3/98	3
09	03	surface water	Aluminum	0.2	mg/L	0.1	12/6/99	12
01	03	surface water	Alkalinity (CaCO3)	162	mg/L	1.00	12/9/97	12
02	03	surface water	Alkalinity (CaCO3)	79.5	mg/L	1	3/3/98	3
03	03	surface water	Alkalinity (CaCO3)	114	mg/L	1	5/26/98	5
04	03	surface water	Alkalinity (CaCO3)	242	mg/L	1	8/4/98	8
11	03	surface water	Alkalinity (CaCO3)	216	mg/L	1	6/1/00	6
06	03	surface water	Alkalinity (CaCO3)	174	mg/L	1	2/10/99	2
05	03	surface water	Alkalinity (CaCO3)	163	mg/L	1	11/9/98	11
07	03	surface water	Alkalinity (CaCO3)	222	mg/L	1	5/11/99	5
08	03	surface water	Alkalinity (CaCO3)	234	mg/L	1	9/28/99	9
09	03	surface water	Alkalinity (CaCO3)	238	mg/L	2	12/6/99	12
10	03	surface water	Alkalinity (CaCO3)	172	mg/L	1	3/7/00	3

Rainbow Creek near Fallbrook

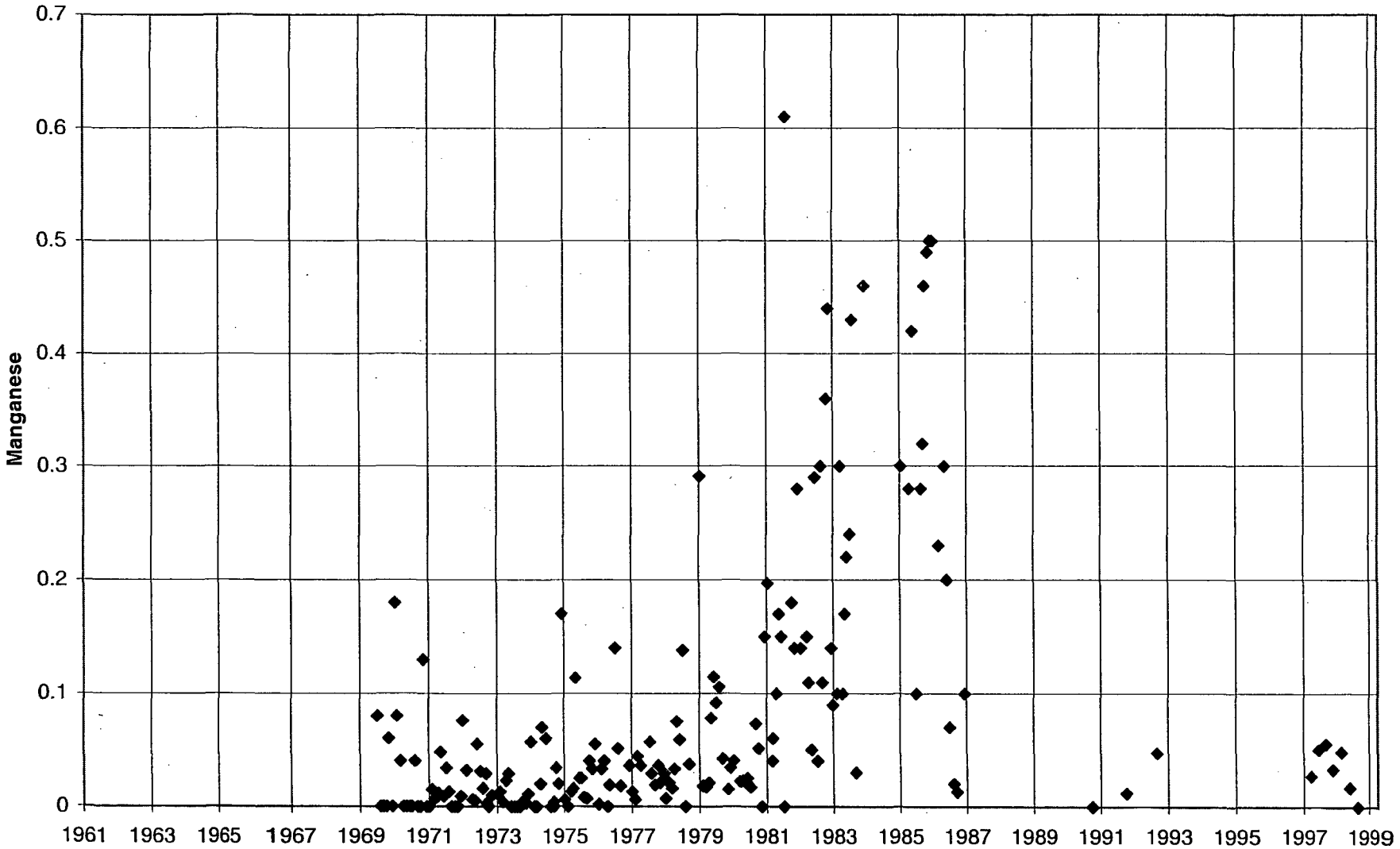



Rainbow Creek near Fallbrook
Total Dissolved Solids
2000
1800
1600
1400
1200
1000
800
600
400
200
0
1961
1963
1965
1967
1969
1971
1973
1975
1977
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
y = 0.0542x - 737.9
R2 = 0.0776

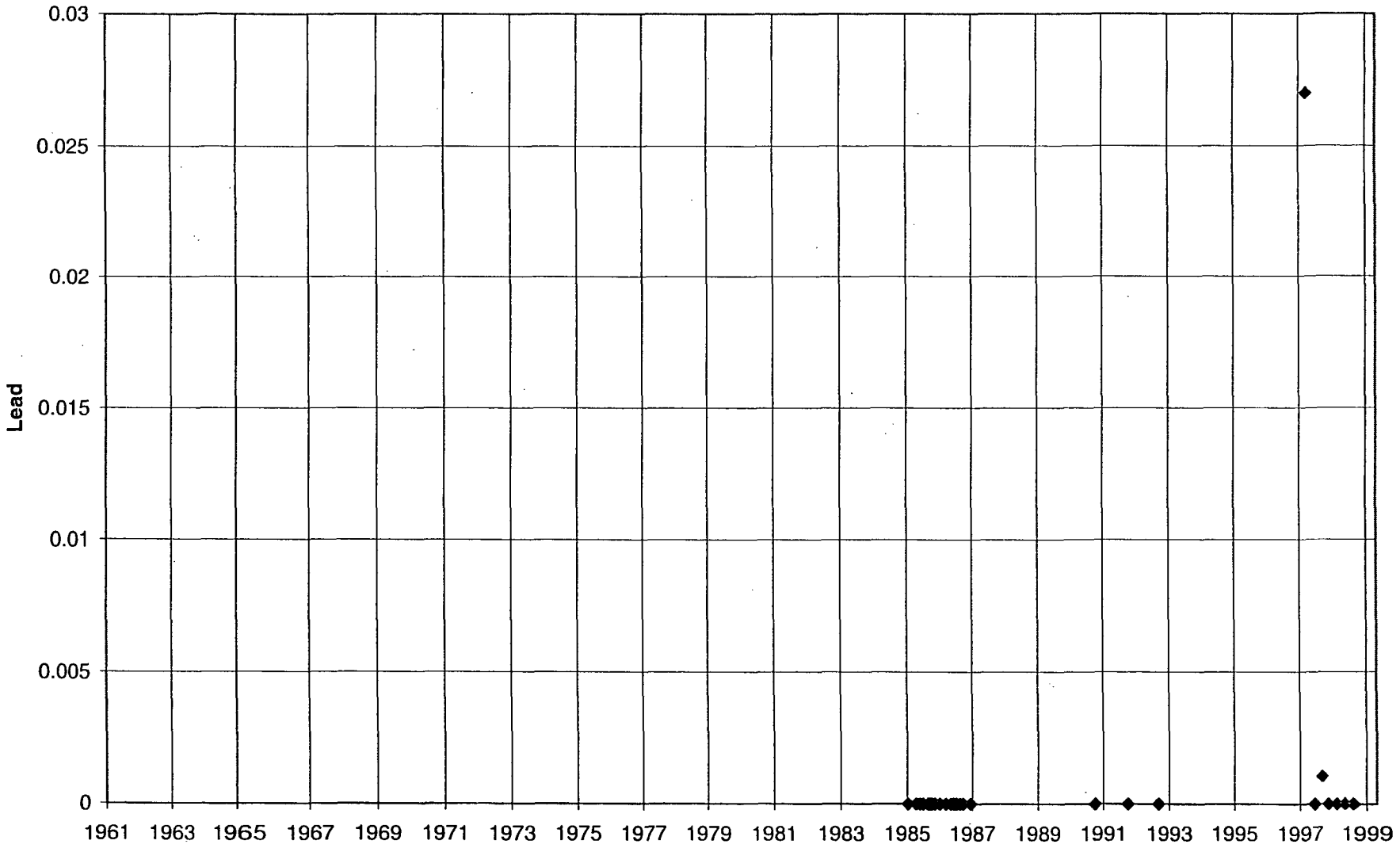
Rainbow Creek near Fallbrook



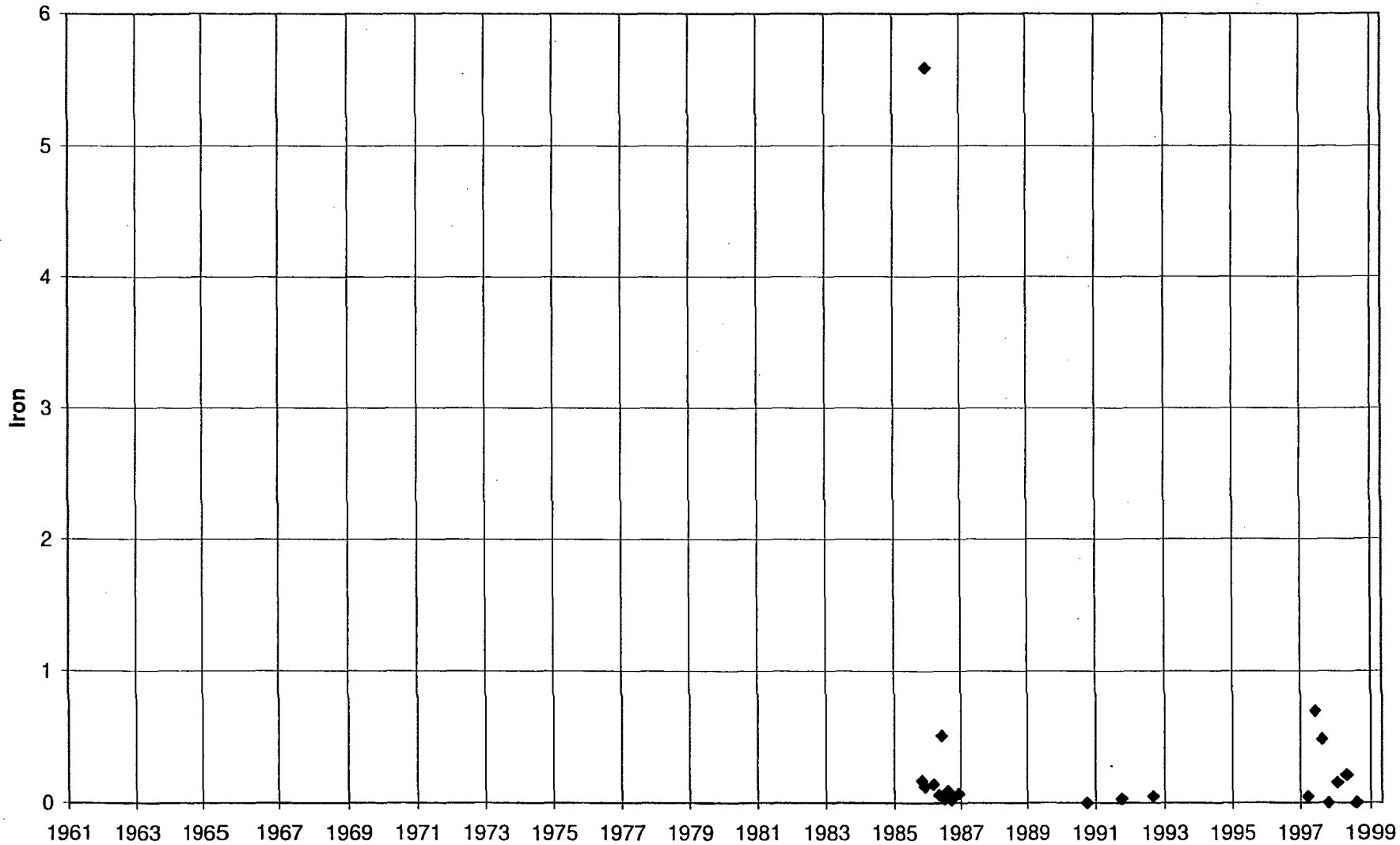
Rainbow Creek near Fallbrook

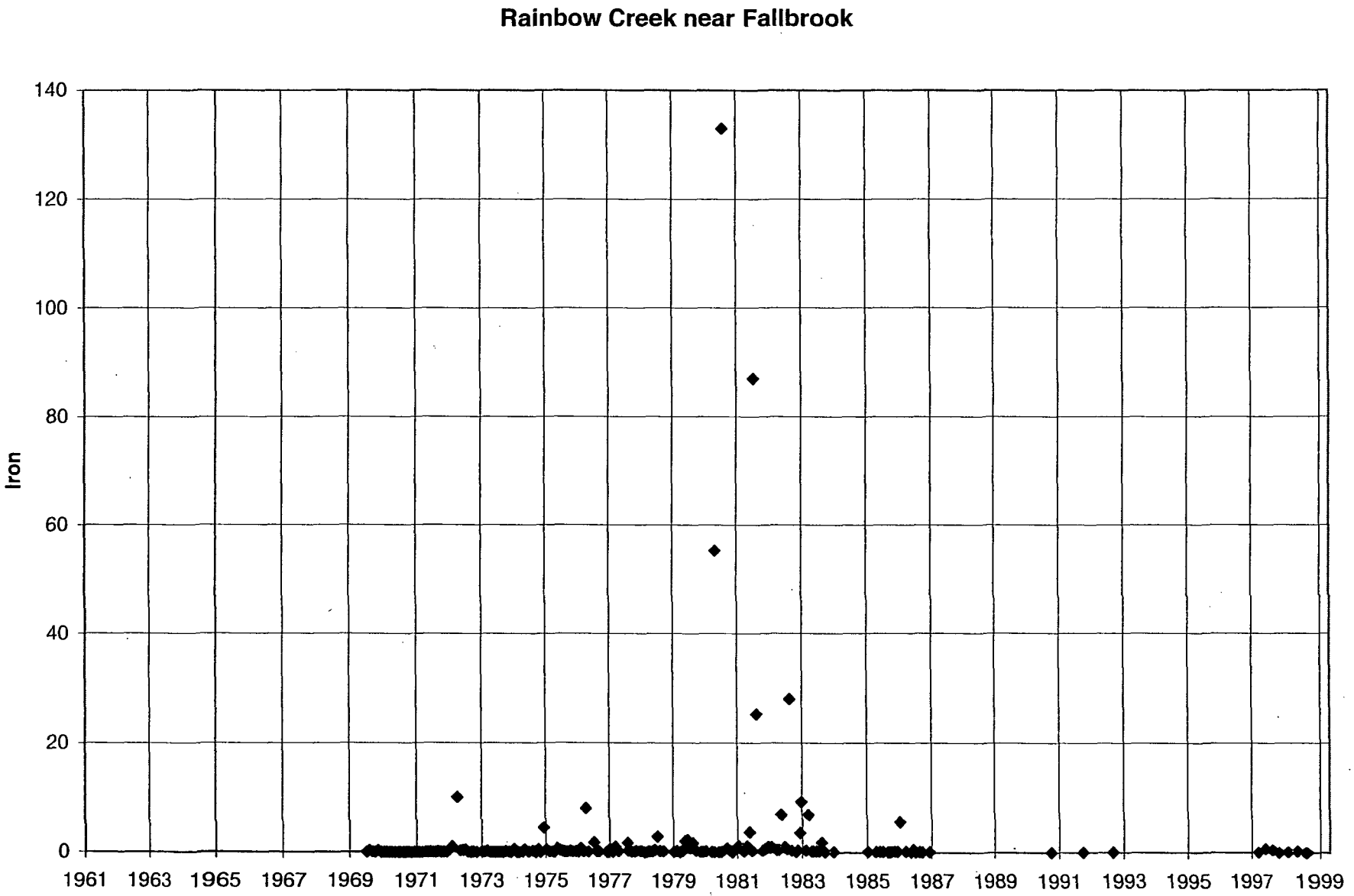


Rainbow Creek near Fallbrook



Rainbow Creek near Fallbrook




Rainbow Creek near Fallbrook
Iron
140
120
100
80
60
40
20
0
1961
1963
1965
1967
1969
1971
1973
1975
1977
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999