Mine # C/007/0005
File Incoming
Record # 0042
Doc. Date 5·22·06
Recd. Date 5·23·06

The analysis reports are arranged by seam, i.e., McKinnon, Upper O'Connor, and Lower O'Connor A; and then by sample location, e.g., roof, floor.

The locations of the exploration holes at which these samples were taken are shown on Plate 2.3.6-1.

Obtaining ground water data from abandoned mines in the area has been investigated but found not practical. The only abandoned portal in the permit area is the old Eccles Canyon Mine. This portal was sealed and covered during construction of the Skyline portal area surface facilities and is no longer accessible.

There are several abandoned mines in the adjacent area, located in Winter Quarters, Pleasant Valley and Boarding House Canyons. A search of UDOH and EPA (Storet) records did not reveal any discharge data from these old portals.

2.3.7 Groundwater Monitoring Program

The ground water monitoring program outlined in this section is a continuation of a program approved with the original Mining and Reclamation Permit Application. It incorporates practices designed to provide the baseline data necessary to validate the determination of the probable hydrologic consequences of proposed and existing mining and reclamation operations. The program also is designed to meet site specific requirements and incorporates the flexibility for change if necessary. Selection of the monitoring sites was an arduous process using the following criteria. An original baseline survey or Hydrologic Inventory was compiled in 1979, utilizing data collected from 1974 through 1979, where all possible springs, seeps and streams were monitored. Additional water monitoring data was collected for the North Lease from 1991 through 1993. Following the completion of the inventory and consultation with both DOGM and the U.S. Forest Service (USFS), representative monitoring sites were selected. Important parameters included geologic unit, critical area where damage may occur, quantity of flow, reasonable year round access, and representative distribution. A monitoring program is being conducted at each of the ground water stations identified on Table 2.3.7-3 and depicted on Plate 2.3.6-1. Samples are collected quarterly, with the 1st Quarter (January-March) having a shortened list of sites due to inaccessibility during winter months. Also due to weather conditions, sampling in the 2nd quarter (April-June) can be conducted through July 15 in years when snow melt conditions prohibit monitoring completion by July 1. Baseline laboratory analyses are conducted during the 3rd Quarter (July-September) every five (5) years beginning in 2010 and successively in 2015, 2020, 2025, etc.

In other that the stated years, 3rd Quarter sampling will be identical to 2nd and 4th Quarter laboratory analyses. 4th Quarter monitoring (October-December) should be conducted prior to December due to snow conditions eliminating access. ~~Except where noted, samples are obtained at the monitoring sites three times a year. The monitoring periods are defined by the seasons. Samples are collected during the high flow season, April through June and the low flow season in August through September.~~

~~Late fall samples are obtained in October through November. These time periods were selected because the sites are usually inaccessible until late June and after November due to snow depth and frozen water courses. Several sites on Eccles Creek are monitored in December through February since they are adjacent to a maintained road and the water discharged from the mine normally keeps the stream from freezing over.~~

Water quality samples are collected from the 25 selected springs in the project area. The samples are comprehensively analyzed each year for the parameters listed in Table 2.3.7-1 and Table 2.3.7-2. All water samples collected for use in this permit have been collected and analyzed according to methods in either the "Standard Methods for the Examination of Water and Wastewater" or the 40 CFR parts 136 and 434. A listing identifying the station types is shown on Table 2.3.7-3.

In addition to the collection of the outlined water quality data, water level data has been collected from each of the wells (if functional) as scheduled on Tables 2.3.7-1, 2.3.7-2, ~~2.3.7-2A~~ and 2.3.7-3, and noted on Plate 2.3.6-1. Water quality samples will be collected from the Waste Rock Disposal Site Well 92-91-03. ~~in accordance with the schedule and parameter list shown on Table 2.3.7-5.~~ Summary information on these observation wells is found on Table 2.3.7-4. ~~Three~~Four wells, W79-10-1A, 79-14-2B and 79-22-2-1 and 79-22-2-2 have experienced casing failures, and are currently nonfunctional. There are no plans to replace these wells.

The amount of water discharged from each mine on each monitoring occasion will also be monitored at the mine mouth through the use of a totalizing flow meter or similar device. Significant changes in the source of water in the mine will be noted during the period of

operation. Underground water pumped from each mine will be monitored for water quality. Mine #1 discharge is sampled at Station CS-14. Mine #3 discharge is sampled at Station CS-12.Mine #2 water is discharged at JC-3.

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completed in August 2002. ~~but the interim report is not yet available. Skyline will submit this first and subsequent first progress reports for this project with its annual reports.~~ Annual updates to the study have been submitted with the annual reports. This study concluded after the 2005 information was submitted based on the initial parameters of the study which indicated the study would last through one (1) year after discharge from the mine decreased to a sustained flow less than 5,000 gpm.

Samples obtained at the MC-sites ~~will be~~ were monitored for total flow, TDS, TSS, and total phosphorous. In addition a stream stability cross-section and reach survey will be conducted approximately 75 yards downstream of the MC-6 monitoring location. The results of these analyses will be reported with the other mine water quality monitoring reports.

Sites MD-1, JC-1, JC-3, and ELD-1 were also added to the monitoring site list. MD-1 is a compostie sample of the all the water discharged from Skyline Mine to Eccles Creek. JC-1 and JC-3 are samples of the water discharged from the two James Canyon ground and mine dewatering wells. ELD-1 reports the total flow-only from both JC-1 and JC-3. MD-1 and ELD-1 are monitored for total flow and the results are reported to the Division on a montly basis. Quarterly, MD-1, JC-1, and JC-3 are also monitored for TSS, TDS, and total phosphorous. Since JC-3 is a PacifiCorp UPDES site, it is monitored each month for flow, TSS, TDS, oil and grease, and total iron. The UPDES sampling results are

should be accessible for the next several years. The results of the analyses will be monitored for changes in ages that may indicate changes in the source of the mine water inflows. These samples will be obtained as outlined in Table 2.3.7-1.

Samples of water discharging from springs 8-253 (Flat Canyon area), 2-413 (James Canyon), S24-1 (Sulfur Spring in Huntington Canyon), and S15-3 (Upper Huntington Creek) will be collected during the 2nd Quarter ~~high spring~~ (April - June) and ~~late fall~~ 4th Quarter(October - ~~November~~December) monitoring period and analyzed for tritium content. Additional tritium samples will be obtained from EL-1 (inflow to Electric Lake above JC-1 and JC-3 discharge) and EL-2 (outflow from Electric Lake) during the ~~high spring, low summer (August - September), and late fall~~ 2nd, 3rd, and 4th Quarter water monitoring periods. These samples will be collected for a period of three years beginning in the spring of 2004. The purpose of collecting these tritium samples, along with the tritium samples from JC-1, is to monitor the change in tritium content, if any, in the local aquifers and Electric Lake during spring, summer, and fall and over the three year period.

Table 2.3.7-1
Comprehensive Water Quality Analytical Schedule
~~(Surface and Ground Water Stations)~~

~~Streams~~	~~Protocol~~	~~Comments~~
~~GS-1~~	~~A 12~~	
~~GS-3~~	~~A 1, 2, 6, 7~~	
~~GS-4~~	~~A 1, 2, 6, 7~~	
~~GS-6~~	~~A' 1, 2, 3, 6, 7, 10~~	
~~GS-7 (F-5)~~	~~A 12~~	
~~GS-8~~	~~A 12~~	
~~GS-9~~	~~A 1, 2, 6,7~~	
~~GS-10~~	~~A 12~~	
~~GS-11~~	~~A 1, 2, 6, 7~~	
~~GS-12~~	~~A' 1, 2, 3, 6, 7~~	
~~GS-13~~	~~A' 1, 2, 3, 6,7~~	
~~GS-14~~	~~A' 1, 2, 3, 6,7~~	
~~GS-15~~	~~A 13~~	
~~GS-16~~	~~A 12~~	
~~GS-17~~	~~A 12~~	
~~GS-18~~	~~A 12~~	
~~GS-19~~	~~A 1, 2~~	
~~GS-20~~	~~A 1, 2~~	
~~GS-21~~	~~A 1, 2~~	
~~GS-22~~	~~D 11~~	
~~GS-23~~	~~D 11~~	
~~MD-1~~	~~A'1, 2,~~	~~(Mine discharge - GS-12 and GS-14 combined)~~
~~SRD-1~~	~~B~~	~~(Same as MD-1)~~
~~F-9~~	~~G 12~~	
~~F-10~~	~~A 1, 2 and G~~	
~~UP&L-10~~	~~A 1, 2~~	
~~VC-6~~	~~A' 1, 2, 3, 6,7,9~~	
~~VC-9~~	~~A' 1, 2, 3, 6,7,8,9~~	~~Flow is sum of GS-6 and GS13~~
~~VC10~~	~~A' 12~~	
~~VC11~~	~~D 10~~	
~~VC12~~	~~D 10~~	
~~MC-1~~	~~A' 4~~	
~~MC-2~~	~~A' 4~~	
~~MC-3~~	~~A' 4~~	
~~MC-4~~	~~A' 4~~	
~~MC-5~~	~~A' 4~~	
~~MC-6~~	~~A' 4~~	
~~NL-1 through NL-40~~	~~F 12~~	~~North Lease Subsidence Points~~
~~WRDS #1~~	~~A 1, 2, 6, 7~~	
~~WRDS #2~~	~~A 1, 2, 6, 7~~	
~~WRDS #3~~	~~A 1, 2, 6, 7~~	
~~WRDS #4~~	~~A 1, 2, 6, 7~~	
~~EL-1~~	~~A 13~~	~~Sample spring, summer, and fall for~~
~~EL-2~~	~~A 13~~	~~3 years beginning in 2004~~

~~Table 2.3.7-1 (cont.)~~
~~Comprehensive Water Quality Analytical Schedule~~
~~(Surface and Ground Water Stations)~~

~~Springs~~	~~Protocol~~	~~Comments~~
~~S10-1~~	~~A 1, 2~~	
~~S12-1~~	~~A 1, 2~~	
~~S13-2~~	~~A 12~~	
~~S13-7~~	~~A 1, 2~~	
~~S14-4~~	~~A 12~~	
~~S15-3~~	~~A 12, 13 (13 - spring and fall for 3 years starting in 2004)~~	
~~S17-2~~	~~A 1, 2~~	
~~S22-5~~	~~A 12~~	
~~S22-11~~	~~A 12~~	
~~S23-4~~	~~A 12~~	
~~S24-1 Sulfur Spring~~	~~A 1, 2, 13 (13 - spring and fall for 3 years starting in 2004)~~	
~~S24-12~~	~~A 12~~	
~~S26-13~~	~~A 12~~	
~~S34-12~~	~~A 12~~	
~~S35-8~~	~~A 12~~	
~~S36-12~~	~~A 12~~	
~~2-413~~	~~A 12, 13 (13 - spring and fall for 3 years starting in 2004)~~	
~~3-290~~	~~A 12~~	
~~8-253~~	~~G 13~~	~~Sampled spring and fall for 3 years starting in 2004~~
~~WQ1-39~~	~~A 1, 2~~	
~~WQ3-6~~	~~A 1, 2~~	
~~WQ3-26~~	~~A 1, 2~~	
~~WQ3-41~~	~~A 1, 2~~	
~~WQ3-43~~	~~A 1, 2~~	
~~WQ4-12~~	~~A 1, 2~~	
-		
~~Wells~~		
~~JC-1~~	~~A 5 and B~~	
~~JC-3~~	~~A 4 and B~~	
~~ELD-1~~	~~B~~	~~(JC-1 and JC-3 combined)~~
~~W79-10-1B~~	~~E 11~~	
~~W79-14-2A~~	~~E 11~~	
~~W79-26-1~~	~~E 11~~	
~~W79-35-1A~~	~~E 11~~	
~~W79-35-1B~~	~~E 11~~	
~~W2-1 (98-2-1)~~	~~E 11~~	
~~W20-4-1~~	~~E 11~~	
~~W20-4-2~~	~~E 11~~	
~~W99-4-1~~	~~E 11~~	
~~W99-21-1~~	~~E 11~~	
~~W99-28-1~~	~~E 11~~	
~~W20-28-1~~	~~E 11~~	
~~91-26-1~~	~~E 11~~	
~~91-35-1~~	~~E 11~~	

~~Table 2.3.7-1 (cont.)~~
~~Comprehensive Water Quality Analytical Schedule~~
~~(Surface and Ground Water Stations)~~

~~**Field and Laboratory Measurement Protocol**~~

~~Water Level and Flow Measurements~~

~~A Stream and Springs: high spring (April - June), low summer flow (August - September), and late fall (October - November)~~
~~A' Stream and Springs: winter season (December - February) monitoring included~~
~~B Stream, Springs, and Wells: monthly discharge measurements, reported in first 7 days following end of month~~
~~C Stream and Springs: monthly flows when accessible.~~
~~D Stream: seasonal discharge measurements (April - June, August - September, October - November)~~
~~E Monitoring well: seasonal water level measurement (April - June, August - September, October - November)~~
~~F Streams: monthly flows June through October, earlier and later if accessible. To be monitored one year prior to, during, and one year following undermining.~~
~~G Springs: high spring and late fall sampling~~

~~Water Quality~~

~~1 High spring and late fall (April - June and October - November) water quality field and operational laboratory measurements~~
~~2 Low summer flow (August - September) water quality field and operational laboratory measurements~~
~~3 Winter season (December - February) water quality field and operational laboratory measurements~~
~~4 Seasonal water quality field measurements, TDS, TSS, and total phosphorous~~
~~5 Seasonal water quality field measurements, TDS, TSS, and total phosphorous, C14, tritium, and stable isotopes deuterium and oxygen 18~~
~~6 Also oil and grease, phenols~~
~~7 Total organic carbon and cyanide (low summer flow only)~~
~~8 Also total phosphorous~~
~~9 Also dissolved oxygen~~
~~10 Seasonal flow only~~
~~11 Seasonal water levels~~
~~12 Field parameters only**~~
~~13 Tritium~~

~~** Sites with at least two (2) years of lab analysis data will be sampled once every five (5) years for the currently approved laboratory parameters beginning in 2010. If field parameter monitoring indicates any trending changes, regular laboratory analysis may be resumed until trend is adequately characterized.~~

Table 2.3.7-2
Water Quality Analytical Schedule
~~Streams and Springs~~
~~High Spring (April - June),~~
~~Late Fall (October - November), and~~
~~Winter (December - February) Flows~~

Field Measurements
Flow or Depth to Water
pH
Specific Conductance
~~Temperature, Air~~
Temperature, Water
~~Turbidity~~

Laboratory Measurements
~~Ammonia~~
Bicarbonate
Carbonate
Calcium, dissolved
Chloride
Iron, Total ~~and dissolved~~
Magnesium, dissolved
Manganese, total ~~and dissolved~~
Nitrate + Nitrite
~~Phosphate (Orthophosphate)~~ Phosphorus, Total
Potassium, dissolved
Sodium, dissolved
Sulfate
Total Alkalinity
Total Hardness
Total Suspended Solids
Total Dissolved Solids

Baseline Laboratory Measurements
Acidity
Alkalinity, Total
Barium, dissolved
Boron, dissolved
Bicarbonate
Calcium, dissolved
Carbonate
Cation / Anion balance
Chloride
Hardness, Total
Iron, Total and dissolved
Lead, dissolved
Magnesium, dissolved
Manganese, Total and dissolved
Nitrate + Nitrite

Phosphorus, Total
Potassium, dissolved
Sodium, dissolved
Sulfate
Total Suspended Solids
Total Dissolved Solids

~~Table 2.3.7-2A~~
~~Water Quality Analytical Schedule~~
~~Streams and Springs~~
~~-Low Summer Flow-~~
~~(August - September)~~

~~Field Measurements~~
~~Flow~~
~~Dissolved Oxygen~~
~~pH~~
~~Specific Conductance~~
~~Temperature, Air~~
~~Temperature, Water~~
~~Turbidity~~

~~Laboratory Measurements~~
~~Acidity~~
~~Alkalinity~~
~~Bicarbonate~~
~~Ammonia~~
~~Barium, Total and dissolved~~
~~Boron Total and dissolved~~
~~Calcium, dissolved~~
~~Chloride~~
~~Copper, total and dissolved~~
~~Fluoride~~
~~Iron, total and dissolved~~
~~Lead, total and dissolved~~
~~Magnesium, dissolved~~
~~Manganese, total and dissolved~~
~~Nitrate~~
~~Phosphate (Orthophosphate)~~
~~Potassium, dissolved~~
~~Sodium, dissolved~~
~~Sulfate~~
~~Suspended Solids~~
~~Total Dissolved Solids~~

TABLE 2.3.7-3
MONITORING STATION IDENTIFICATION

ECCLES CANYON/MUD CREEK DRAINAGES

STREAM STATIONS - 22 Stations

CS-1	CS-3	CS-4	CS-6	CS-9	CS-11	CS-15
VC-6	VC-9	VC-10	MC-1	MC-2	MC-3	MC-4
MC-5	MC-6	CS-19	CS-20	CS-21	VC-11	VC-12

MINE DISCHARGE STATIONS - 4 Stations

CS-12 (Mine #3) CS-14 (Mine #1) MD-1 (Composite CS-12 & CS-14)
SRD-1 (Total Mine Site Discharge to Eccles Creek/Scofield Reservoir)*

FRENCH DRAIN STATIONS - 1 Station

CS-13

HUNTINGTON CANYON

STREAM STATIONS - 12 Stations

CS-7 (F-5)	CS-8	CS-1	CS-16	CS-17	CS-18	CS-22
CS-23	UPL-3*	UPL-10 F-9	F-10	EL-1	EL-2	

*Discontinued Spring, 1989

WASTEROCK DISPOSAL SITE

STREAM STATIONS - 4 Stations

WRDS #1 WRDS #2 WRDS #3 WRDS #4

GROUNDWATER STATIONS

SPRINGS - 25 Stations

S10-1	S12-1	S13-2	S13-7	S14-4	S15-3	S17-2
S22-5	S22-11	S23-4	S24-1 Sulfur	S24-12	S26-13	S34-12
S35-8	S36-12	2-413	3-290	WQ1-39	WQ3-6	WQ3-26
WQ3-41	WQ3-43	WQ4-12	8-253			

WELLS (MONITORING) - 19 Well Stations

~~W79-10-1A~~	W79-10-1B	W79-14-2A	W79-26-1	W79-35-1A
W79-35-1B	92-91-03	W2-1(98-2-1)	W20-4-1	W20-4-2
W99-4-1	W99-21-1	W99-28-1	W20- 28-1	JC-1
JC-3	ELD-1 (Total of JC-1 and JC-3)*	91-26-1	91-35-1	

WELLS, CULINARY -Referenced but not monitored

W13-1 W13-2 W17-1 W17-3 W24-1

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)

001 Portal Area 002 Loadout Area 003 Waste Rock Area JC-3 James Canyon

* Sites are monitored for total flow only and the results are reported to the Division on a monthly basis.

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~~TABLE 2.3.7-5~~

~~COMPREHENSIVE WATER QUALITY ANALYTICAL SCHEDULE~~
~~WASTE ROCK DISPOSAL SITE - WELL NUMBER 92-91-03~~

~~Monitoring Frequency - Three Times per Year~~
~~- Spring (May - June)~~
~~- Summer (August - September)~~
~~- Fall (October - November)~~

~~LABORATORY MEASUREMENTS~~	~~FIELD MEASUREMENTS~~	
~~Dissolved Solids~~	~~Lead (pb)~~	~~Water Level~~
~~pH~~	~~*Total Hardness (as $CaCO_3$)~~	~~*Magnesium (mg)~~
~~Specific Conductance~~	~~* Alkalinity~~	
	~~Aluminum (A1)~~	~~*Mangan~~ ~~Diss.~~ ~~& total~~
	~~Anion/Cation Balance~~	
~~Temperature, Air~~	~~Arsenic (As)~~	~~Molybdenum (Mo)~~
~~Temperature, Water~~	~~Boron (B)~~	~~Ammonia (NH_3)~~
	~~*Carbonate (CO_3)~~	~~Nitrite (NO_2)~~
	~~*Bicarbonate (HCO_3)~~	~~Nitrate (NO_3)~~
		~~Oil & Grease~~
	~~Cadmium (Cd)~~	~~*Potassium (K)~~
	~~*Calcium (Ca)~~	~~Phosphate (PO_4)~~
	~~*Chloride (Cl)~~	~~Selenium (Se)~~
	~~*Specific Conductance~~	~~*Sodium (Na)~~
	~~Copper (Cu)~~	~~*Sulfate (SO_4)~~
	~~*Iron (Fe) Diss. & total~~	~~Zinc (Zn)~~

~~*Notes~~ - ~~All constituents identified as Laboratory Measurements will be analyzed through 1994 season, after which, only the asterisked items will be monitored.~~

- ~~All trace metals will be analyzed in dissolved form only except iron and manganese which will also be analyzed for total concentrations.~~

area and in the adjacent Upper Huntington Creek since 1981 as a part of the surface water monitoring program. Eight flumes, F-1 through F-8 (Plate 2.3.6-1) were installed and are presently being monitored as part of the modified subsidence study. However, only one flume, F-5, is currently part of the quarterly water monitoring program. Flume F-5 is the same sampling point as CS-7 of the quarterly water monitoring program. In general, stream flow rates in this part of the permit area are decreasing. This is likely due to the present drought conditions (Climatology, Volume 4). Water samples from all four monitoring stations are of a calcium-bicarbonate character. Chemical concentrations have remained relatively consistent through time.

Baseline concentrations of various constituents were normally well within the State of Utah standards for waters of the Skyline project area.

A summary documenting the water quality data in the mine area may be found in Volume 4.

Additional baseline data has been collected in the James Canyon drainage as part of the Burnout Canyon study. Flows have been obtained from flume F-9 since 1993 in James Canyon. This information is contained in Volume A-1, Hydrology. ~~Water quality samples have not been collected from this stream since no surface facilities are located in this drainage.~~ Laboratory Analysis was added to Stream Site F-10 due to the facilities associated with the construction of the JC-wells drill pad. ~~Also,~~ Water quality samples collected since the early 80's and 90's from streams that have been undermined by the Skyline Mines (Burnout, Eccles, other tributaries of Upper Huntington Creek, Plate 2.3.6-1 and 2.3.6-1a) indicate water quality is not noticeably affected by underground mining activities.

Mining at the Skyline Mines and Recommendations for Surface and Groundwater Monitoring" by Mayo and Associates, recommended some changes to the original monitoring plan. These changes were made by Mayo and Associates after a careful review of local hydrogeology, monitoring conditions, sampling parameters, and sampling data. The changes proposed by Mayo and Associates are considered valid and reasonable and are therefore incorporated herein. An evaluation of UPDES and waste rock disposal site monitoring stations were not included within the scope of work completed by Mayo, but continue to be an integral part of the water monitoring program.

A copy of the 1996 PHC evaluation is included within Appendix A-1 Volume 2 of this MRP. An update to the PHC, "Addendum to the PHC, July 2002" has also been included in this M&RP. Since the modifications to the PHC have taken place over time and conditions within the mine have changed, it should be assumed that where the most recent text conflicts with text in earlier modifications or original text, the latest supercedes the earlier.

Surface water monitoring programs are conducted at each of the appropriate stations identified in Tables 2.3.7-1, 2.3.7-2, ~~2.3.7-2A~~ and 2.3.7-3 and shown on Drawings 2.3.6-1 and 2.3.6-2. ~~Except where noted, samples are obtained at the monitoring sites three times a year. The monitoring periods are defined by the seasons. Samples are collected during the high flow season, April through June and the low flow season in August through September. Late fall samples are obtained in October through November. These time periods were selected because the sites are usually inaccessible until late June and after November due to snow depth and frozen water courses. Several sites on Eccles Creek are monitored in December through February since they are adjacent to a maintained road and the water discharged from the mine normally keeps the stream from~~

~~freezing over.~~ Samples are collected quarterly, with the 1st Quarter (January-March) having a shortened list of sites due to inaccessibity during winter months. Also due to weather conditions, sampling in the 2nd quarter (April-June) can be conducted through July 15 in years when snowmelt conditions prohibit monitoring completion by July 1. Baseline laboratory analyses is conducted during the 3rd Quarter (July-September) every five (5) years beginning in 2010 and successively in 2015, 2020, 2025, etc. In other thatn the stated years, 3rd Quarter sampling will be identical to 2nd and 4th Quarter laboratory analyses. 4th Quarter monitoring (October-December) should be conducted prior to December due to snow conditions eliminating access.

Surface water stations in Eccles Canyon were sampled more frequently than those on Huntington Creek during the initial phases of mining.

Eccles Canyon stream stations are shown on Table 2.3.7-3 and are analyzed for those constituents identified in Tables 2.3.7-2 ~~and Table 2.3.7-2A~~ with an annual monitoring as per Table 2.3.7-1. ~~South Fork tributary station CS-15 will be monitored for flow only beginning fall 1988. The purpose of this station is to check for subsidence effects from longwall mining.~~

Sampling will continue at all surface water stations throughout the post-mining period and until the reclamation effort is determined successful by the regulatory authority. Samples will also continue to be analyzed for the parameters outlined in Tables 2.3.7-1, 2.3.7-2, ~~2.3.7-2A~~ and 2.3.7-3~~A~~ throughout the post-mining period, unless deletions in the list of parameters is determined to be appropriate.

Several monitoring stations were added to the monitoring schedule with the incorporation of the North Lease Tract. CS-19 and CS-21 have been

added to monitor the quantity and quality of the water in Woods Canyon Creek and CS-20 has been added to monitor the quantity and quality of the water in Winter Quarters Creek.

As part of the Skyline Mine subsidence monitoring plan, a total of 42 new water monitoring sites have been identified in the North Lease area (Table 2.3.7-2A). Sites NL-1 through NL-42 have been selected to monitor flows on the perennial reaches of both Winter Quarters and Woods Canyon drainages one year prior to , during,

and one year following longwall undermining of the perennial section of stream . The sites will be monitored monthly in June through October. If

accessible earlier than June or later than October, the mine will monitor the sites. The results of the monitoring will be reported with the other required monitoring data. The purpose of this monitoring is to determine the effects, if any, on the stretches of perennial streams in the Winter Quarters Creek and Woods Canyon Creek drainage that will be subsided due to mining. Monitoring points, in perennial reaches running perpendicular to the longwall panels, are positioned above the gate-roads and center of each panel. Longwall panels are approximately 850-feet wide, creating a flow-monitoring spacing of approximately 425-feet. Monitoring points in perennial reaches running parallel to the longwall panels are spaced at approximately 850-feet. Since monitoring is dependent on the timing of mining, monitoring points will be added and dropped as mining advances. As mining advances through the perennial sections of the drainage, and the monitoring indicates no affects to flow, the Permittee may modify the spacing of the monitoring points. This monitoring will also help indicate if mitigation is required for loss of surface or ground water and, subsequently, habitat associated with the water.

Skyline has conducted field studies to determine the location of the perennial portions of both Winter Quarters and Woods Canyon Creeks, though no mining is currently planned within the next five years in the

Woods Canyon drainage. The perennial nature of the streams were determined using a variety of parameters including vegetation and surface flow monitoring. Field studies were initiated and completed in October and November 2002 and October 2003. Copies of the studies are included in Volume A-1 Hydrology Section. The studies will be used by the Forest in their environmental assessment of the potential effects of undermining Winter Quarters and Wood Canyon Creeks.

Sampling will continue according to Tables 2.3.7-1, 2.3.7-2, ~~2.3.7-2A,~~ and 2.3.7-3 as approved at all surface water stations throughout the post-mining period and until the reclamation effort is determined successful by the regulatory authority. Changes will be made to the monitoring program only when additions or deletions to the list of parameters and/or schedule is determined to be appropriate, and when approved by the regulatory agency.

In addition to the above outlined monitoring program, UPDES discharge permits have been acquired as necessary. Monitoring and operation of all surface water discharges are conducted in accordance with conditions of this permit. Discharges of water from disturbed areas will be in compliance with all Utah and federal water quality laws and regulations and with effluent limitations for coal mining contained in 40 CFR part 434. A copy of this permit (UPDES No UT-0023540) is appended to Volume A-1, Hydrology Section. The monitoring locations are shown on Map 2.3.6-1.

As required, water quality data collected from the surface water monitoring stations will be submitted to the Utah Division of Oil, Gas, and Mining. Such reports will normally be submitted within 90 days of the completion of each quarterly monitoring program.

The volume of water discharged from the mine increased significantly in August 2002 after large volumes of ground water were encountered within the mine. The mine was concerned about what effects the increased flows might have on Eccles and Mud Creeks. EarthFax Engineering, Inc. was contracted to perform a stream bank stability analysis on the streams using flows ranging between 5,000 and 30,000 gpm. The initial results of the report indicated that the stream banks would be stable at flows up to 30,000 gpm. Further study was requested by the Division and EarthFax was again contracted to continue the study of the effects on Mud and Eccles Creeks of sustained increased discharges from the Skyline Mine. The study will continue as long as the mine is discharging flows in excess of the pre-September 2001 rates plus one year. Mine discharge decreased below a sustained 5,000 fpm in December 2003. The last update was submitted with the 2005 Annual Report. The study consist~~s~~ed of the following:

Reference sites have been established on Eccles and Mud Creeks corresponding to cross sections used in previous investigations (EarthFax Engineering, 2002). The reference sites were established in general conformance to the recommendations of Harrelson et al. (1994). This involved the following:

- Establishing benchmarks at each site. Benchmarks will consist of cement or boulder monuments, with a metal marker stamped with the site number.
- Establishing monumented cross sections. The endpoints of cross sections will be marked with roof bolts or steel reinforcing bar that has been driven into the ground. These bars will be painted to increase visibility.
- Surveying the channel at each site. Surveying will be performed using a level and survey rod, with both the cross section and longitudinal profile of the stream being surveyed.

levels). Channel cross sections and longitudinal profiles will be collected from each reference site annually during the same period. The study was discontinued after the 2005 data collection and report.

The analysis reports are arranged by seam, i.e., McKinnon, Upper O'Connor, and Lower O'Connor A; and then by sample location, e.g., roof, floor.

The locations of the exploration holes at which these samples were taken are shown on Plate 2.3.6-1.

Obtaining ground water data from abandoned mines in the area has been investigated but found not practical. The only abandoned portal in the permit area is the old Eccles Canyon Mine. This portal was sealed and covered during construction of the Skyline portal area surface facilities and is no longer accessible.

There are several abandoned mines in the adjacent area, located in Winter Quarters, Pleasant Valley and Boarding House Canyons. A search of UDOH and EPA (Storet) records did not reveal any discharge data from these old portals.

2.3.7 Groundwater Monitoring Program

The ground water monitoring program outlined in this section is a continuation of a program approved with the original Mining and Reclamation Permit Application. It incorporates practices designed to provide the baseline data necessary to validate the determination of the probable hydrologic consequences of proposed and existing mining and reclamation operations. The program also is designed to meet site specific requirements and incorporates the flexibility for change if necessary. Selection of the monitoring sites was an arduous process using the following criteria. An original baseline survey or Hydrologic Inventory was compiled in 1979, utilizing data collected from 1974 through 1979, where all possible springs, seeps and streams were monitored. Additional water monitoring data was collected for the North Lease from 1991 through 1993. Following the completion of the inventory and consultation with both DOGM and the U.S. Forest Service (USFS), representative monitoring sites were selected. Important parameters included geologic unit, critical area where damage may occur, quantity of flow, reasonable year round access, and representative distribution. A monitoring program is being conducted at each of the ground water stations identified on Table 2.3.7-3 and depicted on Plate 2.3.6-1. Samples are collected quarterly, with the 1st Quarter (January-March) having a shortened list of sites due to inaccessibity during winter months. Also due to weather conditions, sampling in the 2nd quarter (April-June) can be conducted through July 15 in years when snowmelt conditions prohibit monitoring completion by July 1. Baseline laboratory

analyses is conducted during the 3rd Quarter (July-September) every five (5) years beginning in 2010 and successively in 2015, 2020, 2025, etc. In other that the stated years, 3rd Quarter sampling will be identical to 2nd and 4th Quarter laboratory analyses. 4th Quarter monitoring (October-December) should be conducted prior to December due to snow conditions eliminating access.

Water quality samples are collected from the 25 selected springs in the project area. The samples are comprehensively analyzed each year for the parameters listed in Table 2.3.7-1 and Table 2.3.7-2. All water samples collected for use in this permit have been collected and analyzed according to methods in either the "Standard Methods for the Examination of Water and Wastewater" or the 40 CFR parts 136 and 434. A listing identifying the station types is shown on Table 2.3.7-3.

In addition to the collection of the outlined water quality data, water level data has been collected from each of the wells (if functional) as scheduled on Tables 2.3.7-1, 2.3.7-2,and 2.3.7-3, and noted on Plate 2.3.6-1. Water quality samples will be collected from the Waste Rock Disposal Site Well 92-91-03. Summary information on these observation wells is found on Table 2.3.7-4. Four wells, W79-10-1A,79-14-2B and 79-22-2-1 and 79-22-2-2 have experienced casing failures, and are currently nonfunctional. There are no plans to replace these wells.

The amount of water discharged from each mine on each monitoring occasion will also be monitored at the mine mouth through the use of a totalizing flow meter or similar device. Significant changes in the source of water in the mine will be noted during the period of operation. Underground water pumped from each mine will be monitored for water quality. Mine #1 discharge is sampled at Station CS-14. Mine #3 discharge is sampled at Station CS-12.Mine #2 water is discharged at JC-3.

completed in August 2002. Annual updates to the study have been submitted with the annual reports. This study concluded after the 2005 information was submitted based on the initial parameters of the study which indicated the study would last through one (1) year after discharge from the mine decreased to a sustained flow less than 5,000 gpm.

Samples obtained at the MC-sites were monitored for total flow, TDS, TSS, and total phosphorous. In addition a stream stability cross-section and reach survey will be conducted approximately 75 yards downstream of the MC-6 monitoring location. The results of these analyses will be reported with the other mine water quality monitoring reports.

Sites MD-1, JC-1, JC-3, and ELD-1 were also added to the monitoring site list. MD-1 is a composite sample of the all the water discharged from Skyline Mine to Eccles Creek. JC-1 and JC-3 are samples of the water discharged from the two James Canyon ground and mine dewatering wells. ELD-1 reports the total flow-only from both JC-1 and JC-3. MD-1 and ELD-1 are monitored for total flow and the results are reported to the Division on a monthly basis. Quarterly, MD-1, JC-1, and JC-3 are also monitored for TSS, TDS, and total phosphorous. Since JC-3 is a PacifiCorp UPDES site, it is monitored each month for flow, TSS, TDS, oil and grease, and total iron. The UPDES sampling results are forwarded to the Division monthly.

Spring monitoring sites WQ1-39, WQ3-6, WQ3-26, WQ3-41 WQ3-43, and WQ4-12 were added to the permit. Surface water sites CS-19, CS-20, and CS-21 were added as were wells 91-26-1 and 91-35-1. All of these sites are in the North Lease area. Location of these samples sites are illustrated on Drawing 2.3.6-1.

Skyline Mine has also obtained numerous water samples from within the mine for age-dating purposes. Samples have been analyzed for both stable and unstable isotopes; the majority being analyzed for tritium and carbon 14 content. The analyses results of these samples is discussed in detail in the July 2002 Addendum to the PHC. The results of repeated tritium sampling and analysis in a few location in the mine, specifically those in the 9 and 10 Left panel areas that began in August 2001, suggest that the majority of the water is not younger than 50 years. Only a few carbon 14 samples have been obtained from these

should be accessible for the next several years. The results of the analyses will be monitored for changes in ages that may indicate changes in the source of the mine water inflows. These samples will be obtained as outlined in Table 2.3.7-1.

Samples of water discharging from springs 8-253 (Flat Canyon area), 2-413 (James Canyon), S24-1 (Sulfur Spring in Huntington Canyon), and S15-3 (Upper Huntington Creek) will be collected during the 2nd Quarter (April - June) and 4th Quarter (October - December) monitoring period and analyzed for tritium content. Additional tritium samples will be obtained from EL-1 (inflow to Electric Lake above JC-1 and JC-3 discharge) and EL-2 (outflow from Electric Lake) during the 2nd, 3rd, and 4th Quarter water monitoring periods. These samples will be collected for a period of three years beginning in the spring of 2004. The purpose of collecting these tritium samples, along with the tritium samples from JC-1, is to monitor the change in tritium content, if any, in the local aquifers and Electric Lake during spring, summer, and fall and over the three year period.

Table 2.3.7-1
Comprehensive Water Quality Analytical Schedule
(Surface and Ground Water Stations)

Sample Site	1st Quarter						2nd[2] / 3rd[3] / 4th Quarters												
	Lab Analysis[a]	Field parameters only*[1]	Monthly Flow	Dissolved Oxygen	TDS,TSS, T-P	O & G	Lab Analysis[a]	Qtrly Field parameters* only[1]	Quarterly Flow	Monthly Flow	Monthly Seasonal Flow	Quarterly Water Level Only	Dissolved Oxygen	TDS,TSS, T-P	O & G	Carbon 14	Tritium	Deuterium	Oxygen 18
Streams																			
CS-3							X								X				
CS-4							X								X				
CS-6	X			X			X						X						
CS-7 (F-5)								X											
CS-8								X											
CS-9							X												
CS-10								X											
CS-11							X												
CS-12	X						X												
CS-13	X						X												
CS-14	X						X												
CS-16								X											
CS-17								X											
CS-18								X											
CS-19							X												
CS-20							X												
CS-21							X												
CS-22									X										
CS-23									X										
MD-1			X		X					X				X					
SRD-1			X							X									
F-9								X			X								
F-10							X				X								
UP&L-10							X												
VC-6	X			X		X	X						X		X				
VC-9	X			X		X	X						X		X				
VC-10		X						X											
VC-11									X										
VC-12									X										
NL-1 through NL-42 (See Section 2.4.4)											X								

Table 2.3.7-1
Comprehensive Water Quality Analytical Schedule
(Surface and Ground Water Stations)
(continued)

Sample Site	1st Quarter						2nd[2] / 3rd[3] / 4th Quarters												
	Lab Analysis*[a]	Field parameters only*[1]	Monthly Flow	Dissolved Oxygen	TDS,TSS, T-P	O & G	Lab Analysis*[a]	Qtrly Field parameters* only[1]	Quarterly Flow	Monthly Flow	Monthly Seasonal Flow	Quarterly Water Level Only	Dissolved Oxygen	TDS,TSS, T-P	O & G	Carbon 14	Tritium	Deuterium	Oxygen 18
Streams (cont.)																			
WRDS #1							X								X				
WRDS #2							X								X				
WRDS #3							X								X				
WRDS #4							X								X				
EL-1																	X		
EL-2																	X		
Springs																			
S10-1							X												
S12-1							X												
S13-2								X											
S13-7							X												
S14-4								X											
S15-3								X									X		
S17-2							X												
S22-5								X											
S22-11								X											
S23-4								X											
S24-1 Sulfur Spring								X									X		
S24-12								X											
S26-13								X											
S34-12								X											
S35-8								X											
S36-12								X											
2-413								X									X		
3-290								X											
8-253																	X		
WQ1-39							X												
WQ3-6							X												
WQ3-26							X												
WQ3-41							X												
WQ3-43							X												
WQ4-12							X												

Table 2.3.7-1
Comprehensive Water Quality Analytical Schedule
(Surface and Ground Water Stations)
(continued)

Sample Site	1st Quarter						2nd[2] / 3rd[3] / 4th Quarters												
	Lab Analysis[a]	Field parameters only*[1]	Monthly Flow	Dissolved Oxygen	TDS,TSS, T-P	O & G	Lab Analysis[a]	Qtrly Field parameters* only[1]	Quarterly Flow	Monthly Flow	Monthly Seasonal Flow	Quarterly Water Level Only	Dissolved Oxygen	TDS,TSS, T-P	O & G	Carbon 14	Tritium	Deuterium	Oxygen 18
Wells																			
JC-1			X					X		X				X		X	X	X	X
JC-3			X					X		X				X					
ELD-1			X							X									
W79-10-1B												X							
W79-14-2A												X							
W79-26-1												X							
W79-35-1A												X							
W79-35-1B												X							
W2-1(98-2-1)												X							
W20-4-1												X							
W20-4-2												X							
W99-4-1												X							
W99-21-1												X							
W99-28-1												X							
W20-28-1												X							
91-26-1												X							
91-35-1												X							
92-91-03							X												

* Field Measurements and Laborotory Analyses are defined in Table 2.3.7-2

[a]Field parameters will be taken in conjunction with samples collected for Lab Analyses

[1]Sites with at least two (2) years of laboratory analysis data will be sampled once every five (5) years for the currently approved laboratory parameters in Table 2.3.7-2 beginning in 2010. If field parameter monitoring indicates any trending changes, regular laboratory analysis may be resumed until trend is adequately characterized.

[2]2nd Quarter sampling may extend to July 15 in years when spring snow conditions do not allow access before June.

[3] Baseline Lab Analysis will be conducted every five (5) years beginning in 2010 in the 3rd quarter. (ie. Years 2010, 2015, 2020, etc.)

Table 2.3.7-2
Water Quality Analytical Schedule

Field Measurements
Flow or Depth to Water
pH
Specific Conductance
Temperature, Water

Laboratory Measurements
Bicarbonate
Carbonate
Calcium, dissolved
Chloride
Iron, Total
Magnesium, dissolved
Manganese, total
Nitrate + Nitrite
Phosphorus, Total
Potassium, dissolved
Sodium, dissolved
Sulfate
Total Alkalinity
Total Hardness
Total Suspended Solids
Total Dissolved Solids

Baseline Laboratory Measurements
Acidity
Alkalinity, Total
Barium, dissolved
Boron, dissolved
Bicarbonate
Calcium, dissolved
Carbonate
Cation / Anion balance
Chloride
Hardness, Total
Iron, Total and dissolved
Lead, dissolved
Magnesium, dissolved
Manganese, Total and dissolved
Nitrate + Nitrite
Phosphorus, Total
Potassium, dissolved
Sodium, dissolved
Sulfate
Total Suspended Solids
Total Dissolved Solids

TABLE 2.3.7-3
MONITORING STATION IDENTIFICATION

ECCLES CANYON/MUD CREEK DRAINAGES

STREAM STATIONS - 22 Stations

CS-1	CS-3	CS-4	CS-6	CS-9	CS-11	CS-15
VC-6	VC-9	VC-10	MC-1	MC-2	MC-3	MC-4
MC-5	MC-6	CS-19	CS-20	CS-21	VC-11	VC-12

MINE DISCHARGE STATIONS - 4 Stations
CS-12 (Mine #3) CS-14 (Mine #1) MD-1 (Composite CS-12 & CS-14)
SRD-1 (Total Mine Site Discharge to Eccles Creek/Scofield Reservoir)*

FRENCH DRAIN STATIONS - 1 Station
CS-13

HUNTINGTON CANYON

STREAM STATIONS - 12 Stations

CS-7 (F-5)	CS-8	CS-1	CS-16	CS-17	CS-18	CS-22	
CS-23	UPL-3*	UPL-10 F-9	F-10	EL-1	EL-2		

*Discontinued Spring, 1989

WASTEROCK DISPOSAL SITE

STREAM STATIONS - 4 Stations
WRDS #1 WRDS #2 WRDS #3 WRDS #4

GROUNDWATER STATIONS

SPRINGS - 25 Stations

S10-1	S12-1	S13-2	S13-7	S14-4	S15-3	S17-2
S22-5	S22-11	S23-4	S24-1 Sulfur	S24-12	S26-13	S34-12
S35-8	S36-12	2-413	3-290	WQ1-39	WQ3-6	WQ3-26
WQ3-41	WQ3-43	WQ4-12	8-253			

WELLS (MONITORING) - 19 Well Stations

W79-10-1B	W79-14-2A	W79-26-1	W79-35-1A	W79-35-1B
92-91-03	W2-1(98-2-1)	W20-4-1	W20-4-2	W99-4-1
W99-21-1	W99-28-1	W20- 28-1	JC-1	JC-3
	ELD-1 (Total of JC-1 and JC-3)*	91-26-1	91-35-1	

WELLS, CULINARY -Referenced but not monitored
W13-1 W13-2 W17-1 W17-3 W24-1

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
001 Portal Area 002 Loadout Area 003 Waste Rock Area JC-3 James Canyon

* Sites are monitored for total flow only and the results are reported to the Division on a monthly basis.

area and in the adjacent Upper Huntington Creek since 1981 as a part of the surface water monitoring program. Eight flumes, F-1 through F-8 (Plate 2.3.6-1) were installed and are presently being monitored as part of the modified subsidence study. However, only one flume, F-5, is currently part of the quarterly water monitoring program. Flume F-5 is the same sampling point as CS-7 of the quarterly water monitoring program. In general, stream flow rates in this part of the permit area are decreasing. This is likely due to the present drought conditions (Climatology, Volume 4). Water samples from all four monitoring stations are of a calcium-bicarbonate character. Chemical concentrations have remained relatively consistent through time.

Baseline concentrations of various constituents were normally well within the State of Utah standards for waters of the Skyline project area.

A summary documenting the water quality data in the mine area may be found in Volume 4.

Additional baseline data has been collected in the James Canyon drainage as part of the Burnout Canyon study. Flows have been obtained from flume F-9 since 1993 in James Canyon. This information is contained in Volume A-1, Hydrology. Laboratory Analysis was added to Stream Site F-10 due to the facilities associated with the construction of the JC-wells drill pad. Water quality samples collected since the early 80's and 90's from streams that have been undermined by the Skyline Mines (Burnout, Eccles, other tributaries of Upper Huntington Creek, Plate 2.3.6-1 and 2.3.6-1a) indicate water quality is not noticeably affected by underground mining activities.

Prior to March 1999, Skyline Mine discharged water to Eccles Creek at an average rate of approximately 350 gpm. From March 1999 through November 2002, the discharge rate gradually increased to between 9,500 and 10,500

Groundwater Monitoring" by Mayo and Associates, recommended some changes to the original monitoring plan. These changes were made by Mayo and Associates after a careful review of local hydrogeology, monitoring conditions, sampling parameters, and sampling data. The changes proposed by Mayo and Associates are considered valid and reasonable and are therefore incorporated herein. An evaluation of UPDES and waste rock disposal site monitoring stations were not included within the scope of work completed by Mayo, but continue to be an integral part of the water monitoring program.

A copy of the 1996 PHC evaluation is included within Appendix A-1 Volume 2 of this MRP. An update to the PHC, "Addendum to the PHC, July 2002" has also been included in this M&RP. Since the modifications to the PHC have taken place over time and conditions within the mine have changed, it should be assumed that where the most recent text conflicts with text in earlier modifications or original text, the latest supercedes the earlier.

Surface water monitoring programs are conducted at each of the appropriate stations identified in Tables 2.3.7-1, 2.3.7-2, ~~2.3.7-2A~~ and 2.3.7-3 and shown on Drawings 2.3.6-1 and 2.3.6-2. Samples are collected quarterly, with the 1st Quarter (January-March) having a shortened list of sites due to inaccessibity during winter months. Also doe to weather conditions, sampling in the 2nd quarter (April-June) can be conducted through July 15 in years when snowmelt conditions prohibit access prior to June 1. Baseline laboratory analyses is conducted during the 3rd Quarter (July-September) every five (5) years beginning in 2010 and successively in 2015, 2020, 2025, etc. In other thatn the stated years, 3rd Quarter sampling will be identical to 2nd and 4th Quarter laboratory analyses. 4th Quarter monitoring (October-December) should be conducted prior to December due to snow conditions eliminating access.

Surface water stations in Eccles Canyon were sampled more frequently than those on Huntington Creek during the initial phases of mining.

Eccles Canyon stream stations are shown on Table 2.3.7-3 and are analyzed for those constituents identified in Tables 2.3.7-2 with an annual monitoring as per Table 2.3.7-1.

Sampling will continue at all surface water stations throughout the post-mining period and until the reclamation effort is determined successful by the regulatory authority. Samples will also continue to be analyzed for the parameters outlined in Tables 2.3.7-1, 2.3.7-2, and 2.3.7-3~~A~~ throughout the post-mining period, unless deletions in the list of parameters is determined to be appropriate.

Several monitoring stations were added to the monitoring schedule with the incorporation of the North Lease Tract. CS-19 and CS-21 have been added to monitor the quantity and quality of the water in Woods Canyon Creek and CS-20 has been added to monitor the quantity and quality of the water in Winter Quarters Creek.

As part of the Skyline Mine subsidence monitoring plan, a total of 42 new water monitoring sites have been identified in the North Lease area (Table 2.3.7-2A). Sites NL-1 through NL-42 have been selected to monitor flows on the perennial reaches of both Winter Quarters and Woods Canyon drainages one year prior to , during,

and one year following longwall undermining of the perennial section of stream . The sites will be monitored monthly in June through October. If

accessible earlier than June or later than October, the mine will monitor the sites. The results of the monitoring will be reported with the other required monitoring data. The purpose of this monitoring is to determine the effects, if any, on the stretches of perennial streams in the Winter Quarters Creek and Woods Canyon Creek drainage that will be subsided due to mining. Monitoring points, in perennial reaches running perpendicular to the longwall panels, are positioned above the gate-roads and center of each panel. Longwall panels are approximately 850-feet wide, creating a flow-monitoring spacing of approximately 425-feet. Monitoring points in perennial reaches running parallel to the longwall panels are spaced at approximately 850-feet. Since monitoring is dependent on the timing of mining, monitoring points will be added and dropped as mining advances. As mining advances through the perennial sections of the drainage, and the monitoring indicates no affects to flow, the Permittee may modify the spacing of the monitoring points. This monitoring will also help indicate if mitigation is required for loss of surface or ground water and, subsequently, habitat associated with the water.

Skyline has conducted field studies to determine the location of the perennial portions of both Winter Quarters and Woods Canyon Creeks, though no mining is currently planned within the next five years in the Woods Canyon drainage. The perennial nature of the streams were determined using a variety of parameters including vegetation and surface flow monitoring. Field studies were initiated and completed in October and November 2002 and October 2003. Copies of the studies are included in Volume A-1 Hydrology Section. The studies will be used by the Forest in their environmental assessment of the potential effects of undermining Winter Quarters and Wood Canyon Creeks.

Sampling will continue according to Tables 2.3.7-1, 2.3.7-2, and 2.3.7-3 as approved at all surface water stations throughout the post-mining period and until the reclamation effort is determined successful by the

study will continue as long as the mine is discharging flows in excess of the pre-September 2001 rates plus one year. Mine discharge decreased below a sustained 5,000 fpm in December 2003. The last update was submitted with the 2005 Annual Report. The study consisted of the following:

Reference sites have been established on Eccles and Mud Creeks corresponding to cross sections used in previous investigations (EarthFax Engineering, 2002). The reference sites were established in general conformance to the recommendations of Harrelson et al. (1994). This involved the following:

- Establishing benchmarks at each site. Benchmarks will consist of cement or boulder monuments, with a metal marker stamped with the site number.
- Establishing monumented cross sections. The endpoints of cross sections will be marked with roof bolts or steel reinforcing bar that has been driven into the ground. These bars will be painted to increase visibility.
- Surveying the channel at each site. Surveying will be performed using a level and survey rod, with both the cross section and longitudinal profile of the stream being surveyed.
- Establishing photo points. As recommended by Harrelson et al. (1994), convenient locations will be selected to take photographs upstream, downstream, and across the channel at each cross section location.
- Collecting streamflow data. The flow will be measured at each site, using standard procedures, with a rotating-cup flow meter. Indicators of bankfull stage will also be gathered.

Samples of the bed and bank materials were collected at the newly established stations to evaluate geomorphic and stability relationships at those locations. Similar samples were collected in February 2002 at the remaining sites (EarthFax Engineering, 2002) and are still considered valid.

these samples are analyzed for total dissolved solids (TDS), total suspended solids (TSS), and total phosphorus.

As field information is gathered, sufficient data will be gathered to determine the bank erodibility hazard (Rosgen, 1996; 2001) for each reference site. These data will include measurements of the following values:

- Bank height
- Bankfull depth
- Rotting depth
- Root density
- Bank slope
- Degree of surface protection of the bank

The in-stream velocity gradient (between the core of maximum velocity and the stream bank) and the ratio of average hydraulic stress and near-bank hydraulic stress will also be calculated. Each of these indexes will be compared with typical values provided by Rosgen (1996; 2001) to provide another assessment of bank stability in addition to that provided previously (EarthFax Engineering, 2002).

Flow and water-quality data (TDS, TSS, total phosphorus) are collected at the monitoring points on a seasonal basis and will continue to be until one year following a sustained reduction in mine-water discharge to a rate of 5,000 gpm or less (i.e., pre-September 2001 levels). Channel cross sections and longitudinal profiles will be collected from each reference site annually during the same period. The study was discontinued after the 2005 data collection and report.

Ammonia Data

SITE NAME	DATE	NH3 mg/l
CS-12	10/26/2005	0.2
CS-12	6/23/2005	< .1
CS-12	2/2/2005	1.3
CS-12	6/18/2003	1.6
CS-12	9/24/2002	< .1
CS-12	6/19/2002	0.3
CS-12	2/28/2002	< .1
CS-12	10/30/2001	0.2
CS-12	9/6/2001	0.4
CS-12	6/20/2001	< .5
CS-12	2/27/2001	< .5
CS-12	10/8/2000	< .5
CS-12	8/9/2000	< .5
CS-12	10/30/1996	< .5
CS-12	9/25/1996	< .5
CS-12	10/16/1995	< .5
CS-12	9/5/1995	< .5
CS-12	6/20/1995	1
CS-12	10/27/1993	0.32
CS-12	8/30/1993	0.61
CS-12	6/23/1993	0.33
CS-12	10/22/1992	1.12
CS-12	9/8/1992	0.96
CS-12	6/15/1992	0.42
CS-12	2/17/1992	1.5
CS-12	11/5/1991	1.46
CS-12	9/17/1991	0.85
CS-12	6/11/1991	0.18
CS-12	2/14/1991	0.64
CS-12	10/25/1990	0.06
CS-12	9/11/1990	0.05
CS-12	6/6/1990	< .03
CS-12	1/17/1990	0.06
CS-12	10/30/1989	< .03
CS-12	9/12/1989	0.05
CS-12	8/14/1989	< .03
CS-12	6/22/1989	0.12
CS-12	2/27/1989	< .03
CS-12	11/3/1988	0.15
CS-12	8/15/1988	0.14
CS-12	6/9/1988	0.13
CS-12	10/19/1987	0.31
CS-12	8/20/1987	0.15
CS-12	7/9/1987	< .03
CS-12	6/11/1987	0.16
CS-12	10/21/1986	0.64
CS-12	8/20/1986	0.25
CS-12	6/24/1986	0.16
CS-12	10/16/1985	< .01
CS-12	8/22/1985	0.15
CS-12	6/20/1985	< .01
CS-12	10/23/1984	< .01
CS-12	8/24/1984	0.28
CS-12	6/28/1984	0.26
CS-12	11/30/1983	1.8

SITE NAME	DATE	NH3 mg/l
CS-13	11/16/2005	< .1
CS-13	9/27/2005	< .1
CS-13	6/30/2005	< .1
CS-13	9/25/2003	< .1
CS-13	6/26/2003	< .1
CS-13	2/26/2003	< .1
CS-13	10/21/2002	< .1
CS-13	8/28/2002	< .1
CS-13	6/18/2002	< .1
CS-13	10/30/2001	< .1
CS-13	9/6/2001	< .1
CS-13	6/20/2001	< .5
CS-13	3/1/2001	< .5
CS-13	10/8/2000	< .5
CS-13	8/9/2000	< .5
CS-13	6/28/2000	< .5
CS-13	10/7/1999	< .5
CS-13	8/16/1999	< .5
CS-13	7/5/1999	< .5
CS-13	10/11/1998	< .5
CS-13	8/17/1998	< .5
CS-13	6/16/1998	< .5
CS-13	10/12/1997	< .5
CS-13	8/14/1997	< .5
CS-13	6/24/1997	< .5
CS-13	10/30/1996	< .5
CS-13	9/25/1996	< .5
CS-13	6/26/1996	< .5
CS-13	10/16/1995	< .5
CS-13	9/6/1995	< .5
CS-13	10/28/1993	< .05
CS-13	8/26/1993	< .05
CS-13	6/23/1993	< .05
CS-13	10/23/1992	0.06
CS-13	9/9/1992	< .05
CS-13	6/15/1992	< .05
CS-13	10/17/1991	< .06
CS-13	9/17/1991	0.05
CS-13	6/11/1991	0.07
CS-13	2/14/1991	< .03
CS-13	11/14/1990	< .03
CS-13	9/13/1990	< .03
CS-13	6/6/1990	0.12
CS-13	10/31/1989	< .03
CS-13	9/13/1989	< .03
CS-13	6/23/1989	< .03
CS-13	11/3/1988	0.05
CS-13	8/16/1988	< .03
CS-13	6/6/1988	< .03
CS-13	10/22/1987	< .03
CS-13	8/20/1987	< .03
CS-13	6/11/1987	< .03
CS-13	10/22/1986	0.51
CS-13	8/21/1986	0.35
CS-13	6/25/1986	0.36
CS-13	10/16/1985	< .01
CS-13	8/22/1985	0.2
CS-13	6/20/1985	< .01
CS-13	10/23/1984	< .01
CS-13	8/24/1984	0.08
CS-13	6/29/1984	0.19
CS-13	11/10/1983	0.5

SITE NAME	DATE	NH3 mg/l
CS-14	10/26/2005	0.1
CS-14	8/18/2005	0.3
CS-14	6/23/2005	< .1
CS-14	2/2/2005	< .1
CS-14	11/1/2004	< .1
CS-14	9/27/2004	0.1
CS-14	6/29/2004	0.2
CS-14	2/26/2004	0.1
CS-14	11/11/2003	0.2
CS-14	9/30/2003	< .1
CS-14	6/18/2003	0.2
CS-14	2/26/2003	0.2
CS-14	10/22/2002	0.2
CS-14	9/9/2002	0.9
CS-14	6/19/2002	< .1
CS-14	2/28/2002	< .1
CS-14	10/29/2001	< .1
CS-14	9/6/2001	0.1
CS-14	6/20/2001	< .5
CS-14	2/27/2001	< .5
CS-14	10/8/2000	0.8
CS-14	8/9/2000	< .5
CS-14	6/20/2000	< .5
CS-14	10/7/1999	< .5
CS-14	8/16/1999	< .5
CS-14	6/29/1999	< .5
CS-14	10/11/1998	< .5
CS-14	8/16/1998	< .5
CS-14	6/16/1998	< .5
CS-14	10/9/1997	< .5
CS-14	8/13/1997	< .5
CS-14	6/24/1997	< .5
CS-14	10/30/1996	< .5
CS-14	9/25/1996	< .5
CS-14	10/16/1995	< .5
CS-14	9/5/1995	< .5
CS-14	6/20/1995	1.5
CS-14	8/26/1993	< .05
CS-14	6/23/1993	0.12
CS-14	10/22/1992	0.07
CS-14	9/8/1992	0.2
CS-14	6/15/1992	0.31
CS-14	2/17/1992	0.45
CS-14	11/5/1991	0.48
CS-14	9/17/1991	0.97
CS-14	6/11/1991	0.34
CS-14	2/14/1991	1.37
CS-14	10/25/1990	0.58
CS-14	9/12/1990	0.43
CS-14	6/6/1990	0.39
CS-14	1/17/1990	1.2
CS-14	10/30/1989	0.67
CS-14	9/18/1989	0.13
CS-14	6/23/1989	0.17
CS-14	2/27/1989	< .03
CS-14	1/25/1989	0.64

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SITE NAME	DATE	NH3 mg/l
S10-1	10/13/2005	< .1
S10-1	9/7/2005	< .1
S10-1	6/22/2005	< .1
S10-1	6/22/2004	< .1
S10-1	9/17/2003	< .1
S10-1	6/16/2003	0.1
S10-1	6/17/2002	< .1
S10-1	10/23/2001	< .1
S10-1	9/3/2001	< .1
S10-1	6/18/2001	< .5
S10-1	8/7/2000	< .5
S10-1	6/28/2000	< .5
S10-1	8/17/1999	< .5
S10-1	6/29/1999	< .5
S10-1	8/19/1998	< .5
S10-1	6/22/1998	1.9
S10-1	10/9/1997	< .5
S10-1	8/13/1997	< .5
S10-1	6/23/1997	< .5
S10-1	9/11/1996	< .5
S10-1	6/24/1996	< .5
S10-1	9/4/1995	< .5
S10-1	7/17/1995	< .5
S10-1	10/18/1993	< .19
S10-1	8/25/1993	< .05
S10-1	10/20/1992	0.08
S10-1	9/1/1992	< .05
S10-1	6/10/1992	< .05
S10-1	10/15/1991	< .06
S10-1	9/3/1991	0.06
S10-1	6/18/1991	0.03
S10-1	10/24/1990	< .03
S10-1	9/10/1990	0.05
S10-1	6/4/1990	0.06
S10-1	10/16/1989	0.05
S10-1	9/5/1989	< .03
S10-1	10/11/1988	< .03
S10-1	8/17/1988	0.08
S10-1	6/27/1988	< .03
S10-1	10/20/1987	< .03
S10-1	8/17/1987	< .03
S10-1	6/9/1987	0.04
S10-1	10/15/1986	0.08
S10-1	8/19/1986	0.2
S10-1	6/18/1986	< .01
S10-1	10/15/1985	< .01
S10-1	8/27/1985	< .01
S10-1	6/18/1985	< .01
S10-1	8/22/1984	0.11
S10-1	6/26/1984	0.23
S10-1	10/19/1983	< .01
S10-1	8/22/1983	0.1
S10-1	6/29/1983	0.3
S10-1	8/18/1982	0.13
S10-1	8/18/1981	< .01

SITE NAME	DATE	NH3 mg/l
S12-1	6/29/2005	< .1
S12-1	6/23/2004	< .1
S12-1	6/16/2003	0.2
S12-1	6/17/2002	< .1
S12-1	6/18/2001	< .5
S12-1	6/20/2000	< .5
S12-1	6/29/1999	< .5
S12-1	7/6/1998	< .5
S12-1	6/23/1997	< .5
S12-1	6/24/1996	< .5
S12-1	7/24/1995	< .5
S12-1	6/23/1993	< .05
S12-1	6/18/1991	0.07
S12-1	6/4/1990	0.04
S12-1	10/16/1989	
S12-1	6/21/1989	0.07
S12-1	6/27/1988	< .03
S12-1	6/9/1987	< .03
S12-1	10/15/1986	0.18
S12-1	8/19/1986	0.21
S12-1	6/18/1986	< .01
S12-1	6/18/1985	< .01
S12-1	8/22/1984	0.11
S12-1	6/26/1984	0.15
S12-1	10/19/1983	< .01
S12-1	8/22/1983	0.25
S12-1	6/29/1983	< .1
S12-1	8/18/1982	0.59
S13-7	10/18/2005	< .1

SITE NAME	DATE	NH3 mg/l
S13-7	9/7/2005	< .1
S13-7	6/29/2005	< .1
S13-7	9/6/2004	< .1
S13-7	6/23/2004	< .1
S13-7	9/18/2003	< .1
S13-7	6/16/2003	< .1
S13-7	6/17/2002	< .1
S13-7	9/3/2001	< .1
S13-7	6/18/2001	< .5
S13-7	6/20/2000	< .5
S13-7	8/17/1999	< .5
S13-7	6/29/1999	< .5
S13-7	8/19/1998	< .5
S13-7	7/6/1998	< .5
S13-7	8/13/1997	< .5
S13-7	7/3/1997	< .5
S13-7	6/27/1996	< .5
S13-7	7/17/1995	< .5
S13-7	6/23/1993	< .05
S13-7	6/9/1992	< .05
S13-7	6/18/1991	0.04
S13-7	6/4/1990	< .03
S13-7	6/21/1989	0.09
S13-7	6/27/1988	< .03
S13-7	6/9/1987	0.04
S13-7	8/19/1986	0.17
S13-7	6/18/1986	< .01
S13-7	6/18/1985	< .01
S13-7	8/22/1984	0.07
S13-7	6/26/1984	0.1
S13-7	8/22/1983	0.5
S13-7	6/29/1983	0.1
S13-7	8/18/1982	0.3

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SITE NAME	DATE	NH3 mg/l
S17-2	11/16/2005	< .1
S17-2	9/26/2005	< .1
S17-2	6/30/2005	< .1
S17-2	11/11/2004	< .1
S17-2	9/28/2004	< .1
S17-2	6/29/2004	< .1
S17-2	11/11/2003	< .1
S17-2	9/25/2003	< .1
S17-2	6/26/2003	< .1
S17-2	10/21/2002	< .1
S17-2	8/28/2002	< .1
S17-2	6/18/2002	< .1
S17-2	10/30/2001	< .1
S17-2	9/6/2001	< .1
S17-2	6/20/2001	< .5
S17-2	10/8/2000	< .5
S17-2	8/9/2000	< .5
S17-2	6/28/2000	< .5
S17-2	10/7/1999	< .5
S17-2	8/16/1999	< .5
S17-2	7/5/1999	< .5
e	10/11/1998	< .5
S17-2	8/17/1998	< .5
S17-2	6/18/1998	< .5
S17-2	10/12/1997	< .5
S17-2	8/14/1997	< .5
S17-2	6/24/1997	< .5
S17-2	6/23/1997	< .05
S17-2	10/30/1996	< .5
S17-2	9/25/1996	< .5
S17-2	6/26/1996	< .5
S17-2	10/16/1995	< .5
S17-2	9/6/1995	< .5
S17-2	6/20/1995	0.5
S17-2	10/28/1993	0.07
S17-2	8/30/1993	< .05
S17-2	10/23/1992	0.26
S17-2	9/9/1992	< .05
S17-2	6/15/1992	< .05
S17-2	10/17/1991	< .06
S17-2	6/11/1991	0.14
S17-2	11/14/1990	< .03
S17-2	9/12/1990	0.08
S17-2	6/6/1990	< .03
S17-2	10/31/1989	< .03
S17-2	9/13/1989	0.07
S17-2	6/23/1989	< .03
S17-2	11/2/1988	< .03
S17-2	8/16/1988	0.06
S17-2	6/6/1988	< .03
S17-2	10/22/1987	< .03
S17-2	8/20/1987	< .03
S17-2	6/11/1987	< .03
S17-2	10/22/1986	0.44
S17-2	8/21/1986	0.63
S17-2	6/25/1986	0.13
S17-2	10/16/1985	< .01
S17-2	8/22/1985	0.05
S17-2	6/20/1985	< .01
S17-2	10/23/1984	< .01
S17-2	8/24/1984	0.1
S17-2	6/29/1984	0.12

SITE NAME	DATE	NH3 mg/l
S17-2	10/26/1983	< .2
S17-2	8/25/1983	0.25
S17-2	6/30/1983	< .1
S17-2	8/18/1982	0.28
S17-2	1/21/1982	2.48
S17-2	12/9/1981	0.62
S17-2	11/11/1981	< .01
WQ1-39	10/13/2005	0.1
WQ1-39	9/6/2005	< .1
WQ1-39	6/22/2005	< .1
WQ1-39	9/2/2004	< .1
WQ1-39	6/22/2004	< .1
WQ1-39	10/28/2003	0.2
WQ1-39	9/17/2003	< .1
WQ1-39	6/16/2003	< .1
WQ1-39	10/16/2002	< .1
WQ1-39	9/11/2002	< .1
WQ1-39	6/18/2002	< .1
WQ3-26	10/18/2005	< .1
WQ3-26	9/15/2005	< .1
WQ3-26	6/23/2005	< .1
WQ3-26	11/10/2004	< .1
WQ3-26	9/6/2004	0.1
WQ3-26	6/23/2004	< .1
WQ3-26	10/30/2003	< .1
WQ3-26	9/18/2003	< .1
WQ3-26	6/17/2003	< .1
WQ3-26	11/4/2002	< .1
WQ3-26	9/5/2002	< .1
WQ3-26	6/17/2002	< .1
WQ3-41	10/13/2005	0.1
WQ3-41	9/6/2005	< .1
WQ3-41	6/22/2005	< .1
WQ3-41	11/11/2004	< .1
WQ3-41	9/2/2004	< .1
WQ3-41	6/22/2004	< .1
WQ3-41	10/28/2003	0.1
WQ3-41	9/17/2003	< .1
WQ3-41	6/16/2003	< .1
WQ3-41	10/16/2002	< .1
WQ3-41	9/11/2002	< .1
WQ3-41	6/18/2002	< .1
WQ3-43	10/13/2005	0.1
WQ3-43	9/6/2005	< .1
WQ3-43	6/22/2005	< .1
WQ3-43	11/12/2004	< .1
WQ3-43	9/2/2004	< .1
WQ3-43	6/22/2004	< .1
WQ3-43	10/28/2003	0.1
WQ3-43	9/17/2003	< .1
WQ3-43	6/16/2003	< .1
WQ3-43	10/16/2002	< .1
WQ3-43	9/11/2002	< .1
WQ3-43	6/18/2002	< .1
WQ3-6	10/18/2005	< .1
WQ3-6	9/15/2005	0.2
WQ3-6	6/23/2005	< .1
WQ3-6	11/10/2004	< .1
WQ3-6	9/6/2004	< .1
WQ3-6	6/23/2004	< .1
WQ3-6	10/30/2003	< .1
WQ3-6	9/18/2003	< .1

SITE NAME	DATE	NH3 mg/l
WQ3-6	6/17/2003	< .1
WQ3-6	11/4/2002	0.1
WQ3-6	9/5/2002	< .1
WQ3-6	6/17/2002	< .1
WQ4-12	10/18/2005	< .1
WQ4-12	9/15/2005	0.3
WQ4-12	6/23/2005	< .1
WQ4-12	11/10/2004	< .1
WQ4-12	9/6/2004	0.2
WQ4-12	6/23/2004	< .1
WQ4-12	10/30/2003	< .1
WQ4-12	9/18/2003	< .1
WQ4-12	6/17/2003	< .1
WQ4-12	11/4/2002	< .1
WQ4-12	9/5/2002	< .1
WQ4-12	6/17/2002	< .1
CS-11	11/15/2005	< .1
CS-11	9/26/2005	< .1
CS-11	6/29/2005	< .1
CS-11	11/1/2004	< .1
CS-11	9/27/2004	0.2
CS-11	6/28/2004	< .1
CS-11	11/11/2003	< .1
CS-11	9/24/2003	< .1
CS-11	6/25/2003	0.1
CS-11	10/21/2002	< .1
CS-11	8/28/2002	0.1
CS-11	6/18/2002	< .1
CS-11	10/25/2001	< .1
CS-11	9/5/2001	< .1
CS-11	6/20/2001	< .5
CS-11	10/8/2000	< .5
CS-11	8/8/2000	< .5
CS-11	6/28/2000	< .5
CS-11	10/7/1999	< .5
CS-11	8/16/1999	< .5
CS-11	10/10/1998	< .5
CS-11	8/16/1998	< .5
CS-11	6/16/1998	< .5
CS-11	10/9/1997	< .5
CS-11	8/13/1997	< .5
CS-11	6/24/1997	< .5
CS-11	10/30/1996	< .5
CS-11	9/16/1996	< .5
CS-11	6/25/1996	< .5
CS-11	10/16/1995	< .5
CS-11	9/6/1995	< .5
CS-11	6/19/1995	1.5
CS-11	10/27/1993	0.06
CS-11	8/26/1993	< .05
CS-11	6/22/1993	0.06
CS-11	10/22/1992	0.06
CS-11	9/8/1992	< .05
CS-11	6/15/1992	< .05
CS-11	10/17/1991	< .06
CS-11	9/16/1991	0.03
CS-11	6/12/1991	0.06
CS-11	9/12/1990	< .03
CS-11	6/6/1990	0.06
CS-11	10/30/1989	< .03
CS-11	9/12/1989	0.04
CS-11	6/22/1989	< .03

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SITE NAME	DATE	NH3 mg/l
CS-11	11/2/1988	< .03
CS-11	8/15/1988	0.05
CS-11	6/6/1988	< .03
CS-11	10/21/1987	< .03
CS-11	8/19/1987	0.05
CS-11	7/8/1987	< .03
CS-11	6/11/1987	< .03
CS-11	10/21/1986	0.47
CS-11	8/20/1986	0.19
CS-11	6/25/1986	0.3
CS-11	10/16/1985	< .01
CS-11	8/26/1985	< .01
CS-11	6/20/1985	< .01
CS-11	8/28/1984	0.03
CS-11	6/27/1984	0.21
CS-11	10/26/1983	< .01
CS-11	8/25/1983	1.05
CS-11	6/29/1983	< .1
CS-11	8/19/1982	0.17
CS-11	11/11/1981	0.1
CS-11	10/22/1981	0.04
CS-11	7/29/1981	< .01
CS-19	10/13/2005	< .1
CS-19	9/6/2005	< .1
CS-19	6/22/2005	< .1
CS-19	11/11/2004	< .1
CS-19	9/2/2004	< .1
CS-19	6/22/2004	< .1
CS-19	10/28/2003	< .1
CS-19	9/17/2003	< .1
CS-19	6/16/2003	< .1
CS-19	10/16/2002	< .1
CS-19	6/18/2002	< .1
CS-20	10/18/2005	< .1
CS-20	9/15/2005	0.3
CS-20	6/23/2005	< .1
CS-20	11/10/2004	< .1
CS-20	9/6/2004	< .1
CS-20	6/23/2004	< .1
CS-20	10/30/2003	< .1
CS-20	9/18/2003	< .1
CS-20	6/17/2003	< .1
CS-20	11/4/2002	< .1
CS-20	6/17/2002	< .1
CS-21	10/13/2005	< .1
CS-21	9/6/2005	< .1
CS-21	6/22/2005	< .1
CS-21	11/11/2004	< .1
CS-21	9/2/2004	< .1
CS-21	6/22/2004	< .1
CS-21	10/28/2003	< .1
CS-21	9/17/2003	0.1

SITE NAME	DATE	NH3 mg/l
CS-3	11/16/2005	< .1
CS-3	9/27/2005	< .1
CS-3	6/23/2005	< .1
CS-3	11/1/2004	< .1
CS-3	9/28/2004	< .1
CS-3	6/28/2004	< .1
CS-3	11/11/2003	< .1
CS-3	9/25/2003	< .1
CS-3	6/25/2003	< .1
CS-3	10/22/2002	0.3
CS-3	9/9/2002	< .1
CS-3	6/19/2002	< .1
CS-3	10/25/2001	< .1
CS-3	9/5/2001	< .1
CS-3	6/20/2001	< .5
CS-3	10/8/2000	< .5
CS-3	8/9/2000	< .5
CS-3	6/28/2000	< .5
CS-3	10/7/1999	< .5
CS-3	8/16/1999	< .5
CS-3	6/29/1999	< .5
CS-3	10/11/1998	< .5
CS-3	8/16/1998	< .5
CS-3	6/16/1998	< .5
CS-3	10/9/1997	< .5
CS-3	8/13/1997	< .5
CS-3	6/24/1997	< .5
CS-3	10/30/1996	< .5
CS-3	9/24/1996	< .5
CS-3	6/25/1996	< .5
CS-3	10/17/1995	< .5
CS-3	9/6/1995	< .5
CS-3	10/27/1993	< .05
CS-3	8/26/1993	< .05
CS-3	6/22/1993	< .05
CS-3	10/22/1992	< .05
CS-3	9/8/1992	< .05
CS-3	6/15/1992	< .05
CS-3	10/17/1991	< .06
CS-3	9/16/1991	0.04
CS-3	6/11/1991	0.07
CS-3	10/25/1990	< .03
CS-3	9/12/1990	< .03
CS-3	6/6/1990	< .03
CS-3	10/30/1989	< .03
CS-3	9/12/1989	0.05
CS-3	6/22/1989	< .03
CS-3	11/2/1988	< .03
CS-3	8/15/1988	0.1
CS-3	6/6/1988	< .03
CS-3	7/8/1987	< .03
CS-3	6/11/1987	0.13
CS-3	10/21/1986	0.42
CS-3	8/20/1986	0.2
CS-3	6/25/1986	0.11
CS-3	10/16/1985	< .01
CS-3	8/26/1985	< .01
CS-3	6/20/1985	< .01
CS-3	10/23/1984	< .01
CS-3	8/28/1984	0.04
CS-3	6/27/1984	0.15
CS-3	10/26/1983	< .01

SITE NAME	DATE	NH3 mg/l
CS-3	8/25/1983	< .1
CS-3	6/29/1983	< .1
CS-3	8/19/1982	0.37
CS-3	12/9/1981	0.13
CS-3	11/11/1981	0.39
CS-3	10/22/1981	0.02
CS-3	7/29/1981	< .01
CS-4	10/18/2005	< .1
CS-4	9/15/2005	< .1
CS-4	6/23/2005	< .1
CS-4	11/1/2004	< .1
CS-4	9/27/2004	< .1
CS-4	6/28/2004	< .1
CS-4	11/11/2003	< .1
CS-4	6/25/2003	0.3
CS-4	10/21/2002	< .1
CS-4	8/28/2002	< .1
CS-4	6/18/2002	< .1
CS-4	10/25/2001	< .1
CS-4	9/5/2001	< .1
CS-4	6/20/2001	< .5
CS-4	10/8/2000	< .5
CS-4	8/8/2000	< .5
CS-4	6/28/2000	< .5
CS-4	8/16/1999	< .5
CS-4	6/29/1999	< .5
CS-4	10/10/1998	< .5
CS-4	8/16/1998	< .5
CS-4	6/16/1998	< .5
CS-4	10/9/1997	< .5
CS-4	8/13/1997	< .5
CS-4	6/24/1997	< .5
CS-4	10/30/1996	< .5
CS-4	9/16/1996	< .5
CS-4	6/25/1996	< .5
CS-4	10/6/1995	< .5
CS-4	9/6/1995	< .5
CS-4	6/19/1995	1
CS-4	10/27/1993	0.08
CS-4	8/26/1993	< .05
CS-4	6/22/1993	< .05
CS-4	10/22/1992	< .05
CS-4	9/8/1992	< .05
CS-4	6/15/1992	0.21
CS-4	10/17/1991	< .06
CS-4	9/16/1991	< .03
CS-4	6/12/1991	0.04
CS-4	10/25/1990	< .03
CS-4	9/11/1990	< .03
CS-4	6/6/1990	< .03
CS-4	10/30/1989	0.05
CS-4	9/12/1989	< .03
CS-4	6/22/1989	0.04
CS-4	11/2/1988	< .03
CS-4	8/15/1988	0.07
CS-4	6/6/1988	< .03
CS-4	8/19/1987	< .03
CS-4	6/11/1987	< .03
CS-4	10/21/1986	0.45
CS-4	8/20/1986	0.24
CS-4	6/25/1986	0.56
CS-4	10/16/1985	< .01

Ammonia Data

SITE NAME	DATE	NH3 mg/l
CS-4	8/26/1985	< .01
CS-4	6/20/1985	< .01
CS-4	10/23/1984	< .01
CS-4	8/27/1984	< .01
CS-4	6/27/1984	0.22
CS-4	10/26/1983	< .01
CS-4	8/24/1983	< .1
CS-4	6/29/1983	< .1
CS-4	8/19/1982	0.35
CS-4	12/8/1981	0.06
CS-4	11/11/1981	0.49
CS-4	10/22/1981	0.02
CS-4	7/29/1981	< .01
CS-6	11/1/2005	0.2
CS-6	9/26/2005	0.2
CS-6	6/30/2005	< .1
CS-6	2/2/2005	0.2
CS-6	11/12/2004	< .1
CS-6	9/28/2004	< .1
CS-6	6/29/2004	< .1
CS-6	2/26/2004	< .1
CS-6	11/11/2003	< .1
CS-6	9/25/2003	< .1
CS-6	6/26/2003	< .1
CS-6	2/26/2003	< .1
CS-6	10/21/2002	< .1
CS-6	8/28/2002	< .1
CS-6	6/18/2002	< .1
CS-6	1/28/2002	< .1
CS-6	10/30/2001	< .1
CS-6	9/6/2001	< .1
CS-6	6/20/2001	< .5
CS-6	3/1/2001	< .5
CS-6	10/8/2000	< .5
CS-6	8/9/2000	< .5
CS-6	6/28/2000	< .5
CS-6	10/7/1999	< .5
CS-6	8/16/1999	< .5
CS-6	7/5/1999	< .5
CS-6	10/11/1998	< .5
CS-6	8/17/1998	< .5
CS-6	6/16/1998	< .5
CS-6	10/12/1997	< .5
CS-6	8/14/1997	< .5
CS-6	6/24/1997	< .5
CS-6	10/30/1996	< .5
CS-6	9/25/1996	< .5
CS-6	6/26/1996	< .5
CS-6	10/16/1995	< .5
CS-6	9/6/1995	< .5
CS-6	6/20/1995	< .5
CS-6	10/28/1993	0.11
CS-6	8/30/1993	< .05
CS-6	6/22/1993	< .05
CS-6	10/23/1992	0.13
CS-6	9/9/1992	0.1
CS-6	6/16/1992	0.18
CS-6	11/5/1991	0.36
CS-6	9/17/1991	0.28
CS-6	6/11/1991	0.13
CS-6	2/14/1991	0.6
CS-6	11/14/1990	0.17

SITE NAME	DATE	NH3 mg/l
CS-6	9/12/1990	< .03
CS-6	6/6/1990	0.04
CS-6	1/17/1990	< .03
CS-6	10/31/1989	< .03
CS-6	9/13/1989	0.05
CS-6	6/22/1989	< .03
CS-6	11/2/1988	< .03
CS-6	8/16/1988	0.06
CS-6	6/6/1988	0.07
CS-6	10/22/1987	< .03
CS-6	8/20/1987	< .03
CS-6	6/11/1987	< .03
CS-6	10/22/1986	0.44
CS-6	8/26/1986	0.24
CS-6	6/25/1986	0.11
CS-6	10/16/1985	< .01
CS-6	8/22/1985	0.1
CS-6	6/20/1985	< .01
CS-6	10/25/1984	< .01
CS-6	8/28/1984	0.12
CS-6	6/29/1984	0.16
CS-6	10/26/1983	< .01
CS-6	8/25/1983	< .1
CS-6	6/30/1983	< .1
CS-6	8/19/1982	0.36
CS-6	2/18/1982	< .02
CS-6	1/21/1982	2.65
CS-6	12/9/1981	0.51
CS-6	11/11/1981	3.5
CS-6	10/23/1981	< .01
CS-6	7/29/1981	0.15
CS-9	11/16/2005	< .1
CS-9	9/27/2005	< .1
CS-9	6/29/2005	< .1
CS-9	11/1/2004	< .1
CS-9	9/28/2004	< .1
CS-9	6/28/2004	< .1
CS-9	11/11/2003	< .1
CS-9	9/25/2003	0.3
CS-9	6/25/2003	< .1
CS-9	10/22/2002	0.1
CS-9	9/9/2002	< .1
CS-9	9/6/2001	< .1
CS-9	6/20/2001	< .5
CS-9	10/8/2000	< .5
CS-9	8/9/2000	< .5
CS-9	6/28/2000	< .5
CS-9	10/7/1999	< .5
CS-9	8/16/1999	< .5
CS-9	6/29/1999	< .5
CS-9	10/11/1998	< .5
CS-9	8/16/1998	< .5
CS-9	6/16/1998	< .5
CS-9	10/9/1997	< .5
CS-9	8/13/1997	< .5
CS-9	6/24/1997	< .5
CS-9	9/24/1996	< .5
CS-9	6/25/1996	< .5
CS-9	10/17/1995	< .5
CS-9	9/6/1995	< .5
CS-9	6/20/1995	2
CS-9	10/27/1993	< .05

SITE NAME	DATE	NH3 mg/l
CS-9	8/26/1993	< .05
CS-9	6/22/1993	< .05
CS-9	10/22/1992	0.07
CS-9	9/8/1992	< .05
CS-9	6/15/1992	0.08
CS-9	10/17/1991	< .06
CS-9	9/16/1991	< .03
CS-9	6/11/1991	0.05
CS-9	10/25/1990	< .03
CS-9	9/13/1990	< .03
CS-9	6/6/1990	< .03
CS-9	10/31/1989	< .03
CS-9	9/13/1989	< .03
CS-9	6/22/1989	0.04
CS-9	11/2/1988	< .03
CS-9	8/15/1988	0.08
CS-9	6/6/1988	< .03
CS-9	10/21/1987	< .03
CS-9	9/8/1987	0.04
CS-9	8/19/1987	< .03
CS-9	7/8/1987	0.04
CS-9	6/11/1987	< .03
CS-9	10/21/1986	0.45
CS-9	8/20/1986	0.15
CS-9	6/24/1986	0.19
CS-9	10/16/1985	< .01
CS-9	8/26/1985	< .01
CS-9	6/20/1985	< .01
CS-9	10/23/1984	< .01
CS-9	8/28/1984	0.03
CS-9	6/27/1984	0.12
CS-9	10/26/1983	< .01
CS-9	8/25/1983	< .1
CS-9	6/30/1983	< .1
CS-9	8/19/1982	0.05
CS-9	12/9/1981	0.64
CS-9	11/12/1981	0.91
CS-9	10/23/1981	0.02
CS-9	7/29/1981	0.1
F-10	10/18/2005	0.1
F-10	9/15/2005	< .1
F-10	6/26/2005	< .1
F-10	11/7/2004	< .1
F-10	9/8/2004	< .1
F-10	6/28/2004	< .1
F-10	11/15/2003	0.1
F-10	9/24/2003	< .1
F-10	6/18/2003	< .1
F-10	10/29/2002	< .1
F-10	9/24/2002	< .1
F-10	6/19/2002	< .1
F-10	10/23/2001	0.1
F-10	9/5/2001	< .1
F-10	7/31/2001	< .1
UPL-10	10/20/2005	< .1
UPL-10	9/8/2005	< .1
UPL-10	6/16/2005	< .1
UPL-10	11/8/2004	< .1
UPL-10	9/2/2004	< .1
UPL-10	6/24/2004	< .1
UPL-10	11/6/2003	< .1
UPL-10	9/18/2003	< .1

UPL-10	6/17/2003	< .1
UPL-10	11/14/2002	0.3
UPL-10	8/15/2002	< .1
UPL-10	6/19/2002	< .1
UPL-10	10/25/2001	< .1
UPL-10	9/3/2001	< .1
UPL-10	6/19/2001	< .5
UPL-10	10/9/2000	< .5
UPL-10	8/7/2000	< .5
UPL-10	6/20/2000	< .5
UPL-10	10/6/1999	< .5
UPL-10	8/18/1999	< .5
UPL-10	7/5/1999	0.7
UPL-10	10/8/1998	< .5
UPL-10	8/13/1998	< .5
UPL-10	6/15/1998	< .5
UPL-10	10/9/1997	< .5
UPL-10	8/12/1997	< .5
UPL-10	6/23/1997	< .5
UPL-10	10/28/1996	< .5
UPL-10	9/11/1996	< .5
UPL-10	6/24/1996	< .5
UPL-10	10/18/1995	< .5
UPL-10	9/4/1995	< .5
UPL-10	6/19/1995	1
UPL-10	10/27/1993	0.06
UPL-10	8/26/1993	< .05
UPL-10	6/28/1993	< .05
UPL-10	10/21/1992	< .05
UPL-10	9/2/1992	< .05
UPL-10	6/9/1992	0.06
UPL-10	10/15/1991	< .06
UPL-10	9/5/1991	0.04
UPL-10	6/19/1991	0.09
UPL-10	10/24/1990	< .03
UPL-10	9/11/1990	0.1
UPL-10	6/5/1990	< .03
UPL-10	10/17/1989	< .03
UPL-10	9/7/1989	< .03
UPL-10	6/21/1989	0.05
UPL-10	8/17/1988	0.05
UPL-10	8/20/1987	< .03
UPL-10	8/19/1986	0.2
UPL-10	8/28/1985	< .01
UPL-10	8/24/1984	0.02
UPL-10	8/24/1983	0.9
UPL-10	8/17/1982	0.29
UPL-10	12/8/1981	0.65
UPL-10	11/10/1981	0.3
UPL-10	10/22/1981	< .01
UPL-10	7/30/1981	< .01
VC-6	11/1/2005	< .1
VC-6	9/26/2005	0.2
VC-6	6/30/2005	< .1
VC-6	2/2/2005	0.2
VC-6	11/11/2004	< .1
VC-6	9/27/2004	< .1
VC-6	6/29/2004	0.1
VC-6	2/26/2004	0.1
VC-6	11/11/2003	0.1
VC-6	9/24/2003	< .1
VC-6	6/26/2003	0.1

SITE NAME	DATE	NH3 mg/l
VC-6	2/26/2003	< .1
VC-6	10/21/2002	< .1
VC-6	8/28/2002	0.1
VC-6	6/18/2002	< .1
VC-6	2/28/2002	0.1
VC-6	10/30/2001	< .1
VC-6	9/6/2001	0.2
VC-6	6/20/2001	< .5
VC-6	3/1/2001	< .5
VC-6	10/8/2000	< .5
VC-6	8/9/2000	< .5
VC-6	6/28/2000	< .5
VC-6	10/7/1999	< .5
VC-6	8/16/1999	< .5
VC-6	7/5/1999	< .5
VC-6	10/11/1998	< .5
VC-6	8/17/1998	< .5
VC-6	6/16/1998	< .5
VC-6	10/9/1997	< .5
VC-6	8/13/1997	< .5
VC-6	6/24/1997	< .5
VC-6	10/30/1996	< .5
VC-6	9/26/1996	< .5
VC-6	6/25/1996	< .5
VC-6	10/16/1995	< .5
VC-6	9/5/1995	< .5
VC-6	6/20/1995	0.5
VC-6	10/28/1993	0.3
VC-6	8/30/1993	0.14
VC-6	6/22/1993	< .05
VC-6	10/23/1992	< .05
VC-6	9/9/1992	0.5
VC-6	6/15/1992	0.32
VC-6	2/17/1992	0.82
VC-6	11/5/1991	0.88
VC-6	9/17/1991	0.73
VC-6	6/10/1991	0.13
VC-6	2/14/1991	1.15
VC-6	11/14/1990	0.34
VC-6	9/12/1990	0.28
VC-6	6/6/1990	0.42
VC-6	1/17/1990	0.19
VC-6	10/31/1989	< .03
VC-6	10/5/1989	0.1
VC-6	9/13/1989	0.05
VC-6	6/23/1989	0.07
VC-6	11/2/1988	0.1
VC-6	8/16/1988	0.11
VC-6	6/6/1988	0.05
VC-6	10/21/1987	0.06
VC-6	8/19/1987	0.09
VC-6	7/8/1987	0.09
VC-6	6/11/1987	< .03
VC-6	10/22/1986	0.45
VC-6	8/26/1986	0.11
VC-6	6/25/1986	0.48
VC-6	10/16/1985	< .01
VC-6	8/22/1985	0.15
VC-6	6/20/1985	< .01
VC-6	10/25/1984	< .01
VC-6	8/28/1984	< .01
VC-6	6/28/1984	0.16

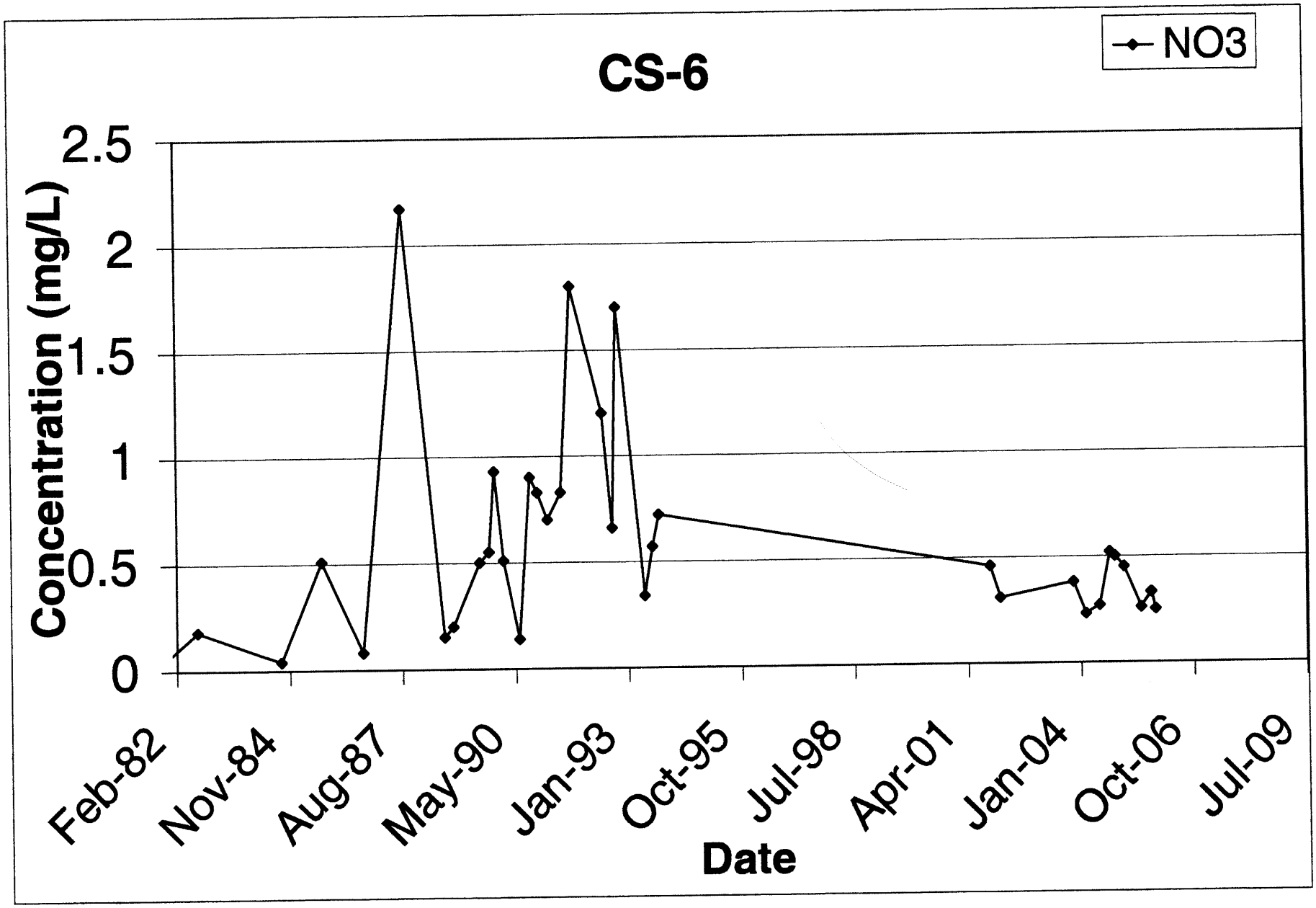
SITE NAME	DATE	NH3 mg/l
VC-6	10/26/1983	< .01
VC-6	8/25/1983	0.15
VC-6	6/30/1983	< .1
VC-6	8/19/1982	0.38
VC-6	12/9/1981	0.62
VC-6	11/11/1981	0.37
VC-6	10/23/1981	< .01
VC-6	7/29/1981	< .01
VC-9	11/1/2005	< .1
VC-9	9/27/2005	< .1
VC-9	6/30/2005	< .1
VC-9	2/2/2005	0.2
VC-9	11/11/2004	> .1
VC-9	9/28/2004	< .1
VC-9	6/29/2004	< .1
VC-9	2/26/2004	< .1
VC-9	11/11/2003	< .1
VC-9	9/25/2003	< .1
VC-9	6/26/2003	0.1
VC-9	2/26/2003	0.1
VC-9	10/21/2002	0.4
VC-9	8/28/2002	< .1
VC-9	6/18/2002	< .1
VC-9	2/28/2002	< .1
VC-9	10/30/2001	< .1
VC-9	6/20/2001	< .5
VC-9	3/1/2001	< .5
VC-9	10/8/2000	< .5
VC-9	8/9/2000	< .5
VC-9	6/28/2000	< .5
VC-9	10/7/1999	< .5
VC-9	8/16/1999	< .5
VC-9	7/5/1999	< .5
VC-9	10/11/1998	< .5
VC-9	8/17/1998	
VC-9	6/18/1998	1.7
VC-9	10/12/1997	< .5
VC-9	8/14/1997	< .5
VC-9	6/24/1997	< .5
VC-9	10/30/1996	0.6
VC-9	9/25/1996	< .5
VC-9	6/26/1996	< .5
VC-9	10/16/1995	< .5
VC-9	9/6/1995	< .5
VC-9	6/20/1995	0.5
VC-9	10/28/1993	0.09
VC-9	8/30/1993	< .05
VC-9	6/22/1993	< .05
VC-9	10/23/1992	< .05
VC-9	9/9/1992	0.08
VC-9	6/15/1992	< .05
VC-9	2/17/1992	0.26
VC-9	11/5/1991	0.29
VC-9	9/17/1991	0.24
VC-9	6/11/1991	0.12
VC-9	2/14/1991	0.52
VC-9	11/14/1990	0.1
VC-9	9/13/1990	< .03
VC-9	6/6/1990	< .03
VC-9	1/17/1990	< .03
VC-9	10/31/1989	< .03
VC-9	9/13/1989	< .03

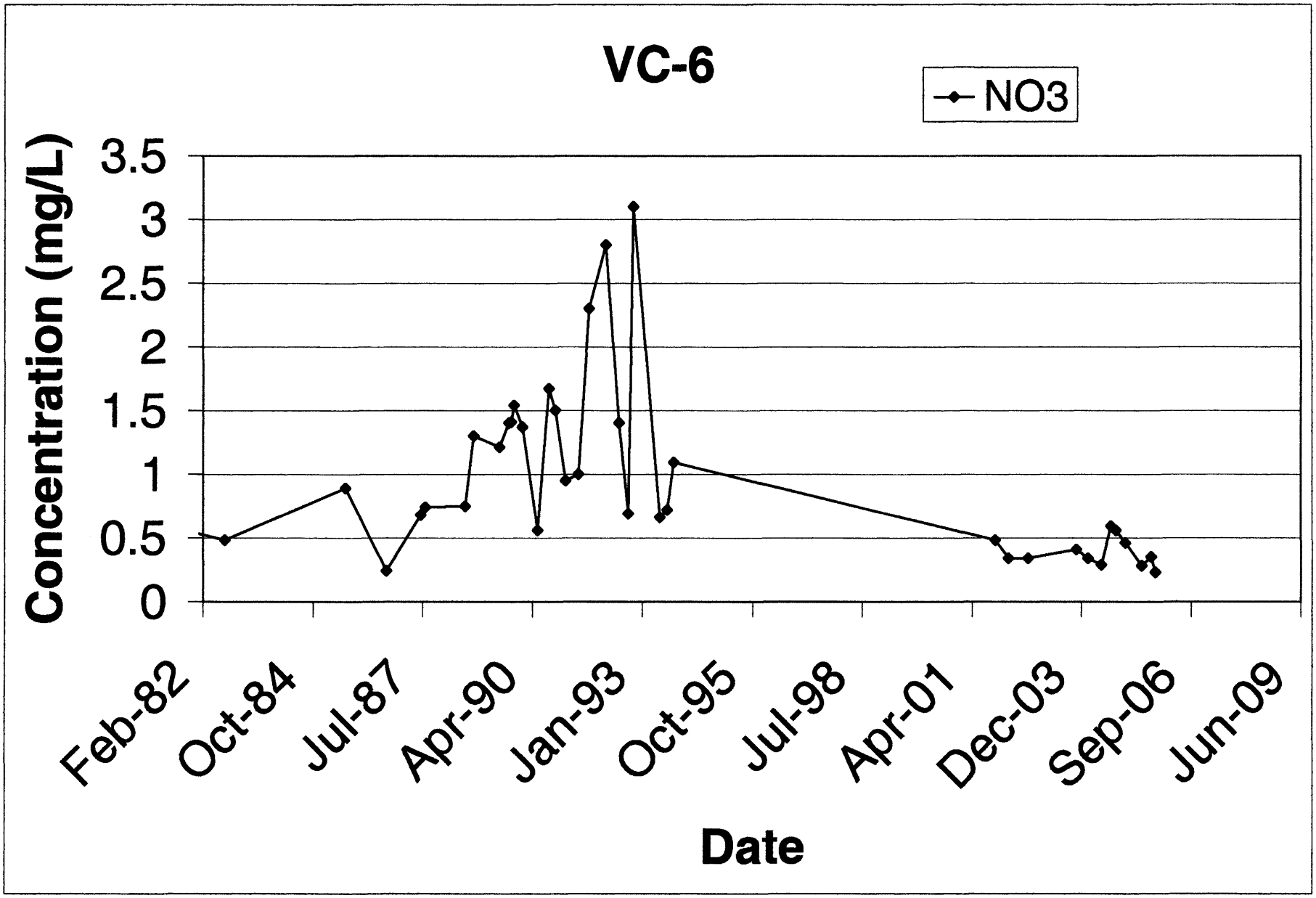
Ammonia Data

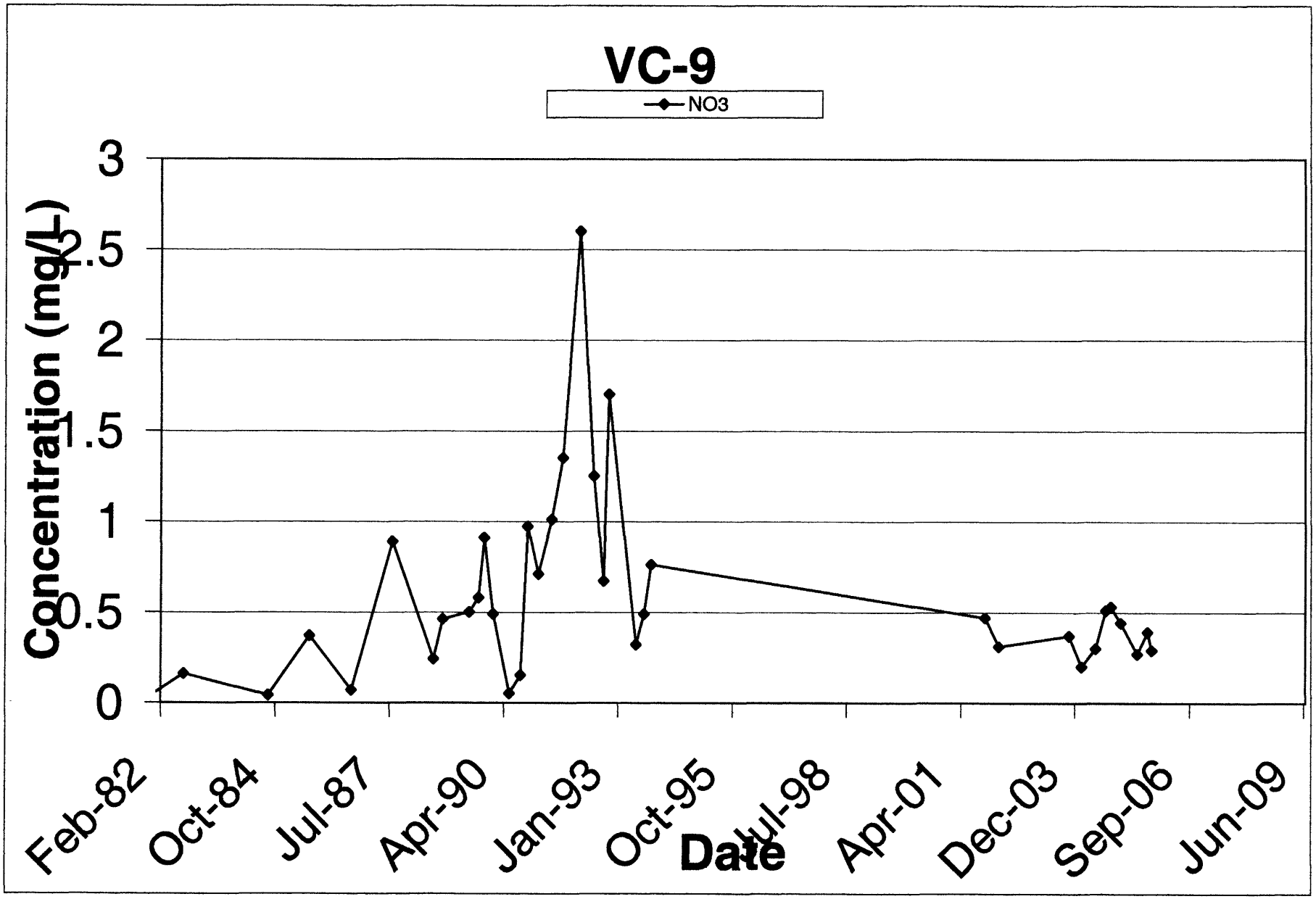
SITE NAME	DATE	NH3 mg/l
VC-9	6/23/1989	< .03
VC-9	11/3/1988	< .03
VC-9	8/16/1988	0.06
VC-9	7/21/1988	
VC-9	6/6/1988	< .03
VC-9	10/22/1987	< .03
VC-9	8/20/1987	0.07
VC-9	6/11/1987	< .03
VC-9	10/22/1986	0.42
VC-9	8/26/1986	0.17
VC-9	6/25/1986	0.2
VC-9	10/16/1985	< .01
VC-9	8/22/1985	0.1
VC-9	6/20/1985	< .01
VC-9	10/25/1984	< .01
VC-9	8/28/1984	0.01
VC-9	6/29/1984	0.26
VC-9	10/26/1983	< .01
VC-9	8/25/1983	0.3
VC-9	6/30/1983	< .1
VC-9	8/19/1982	0.33
VC-9	2/18/1982	< .02
VC-9	1/21/1982	2.46
VC-9	12/9/1981	0.63
VC-9	11/11/1981	1.38
VC-9	10/23/1981	< .01
VC-9	7/29/1981	< .01

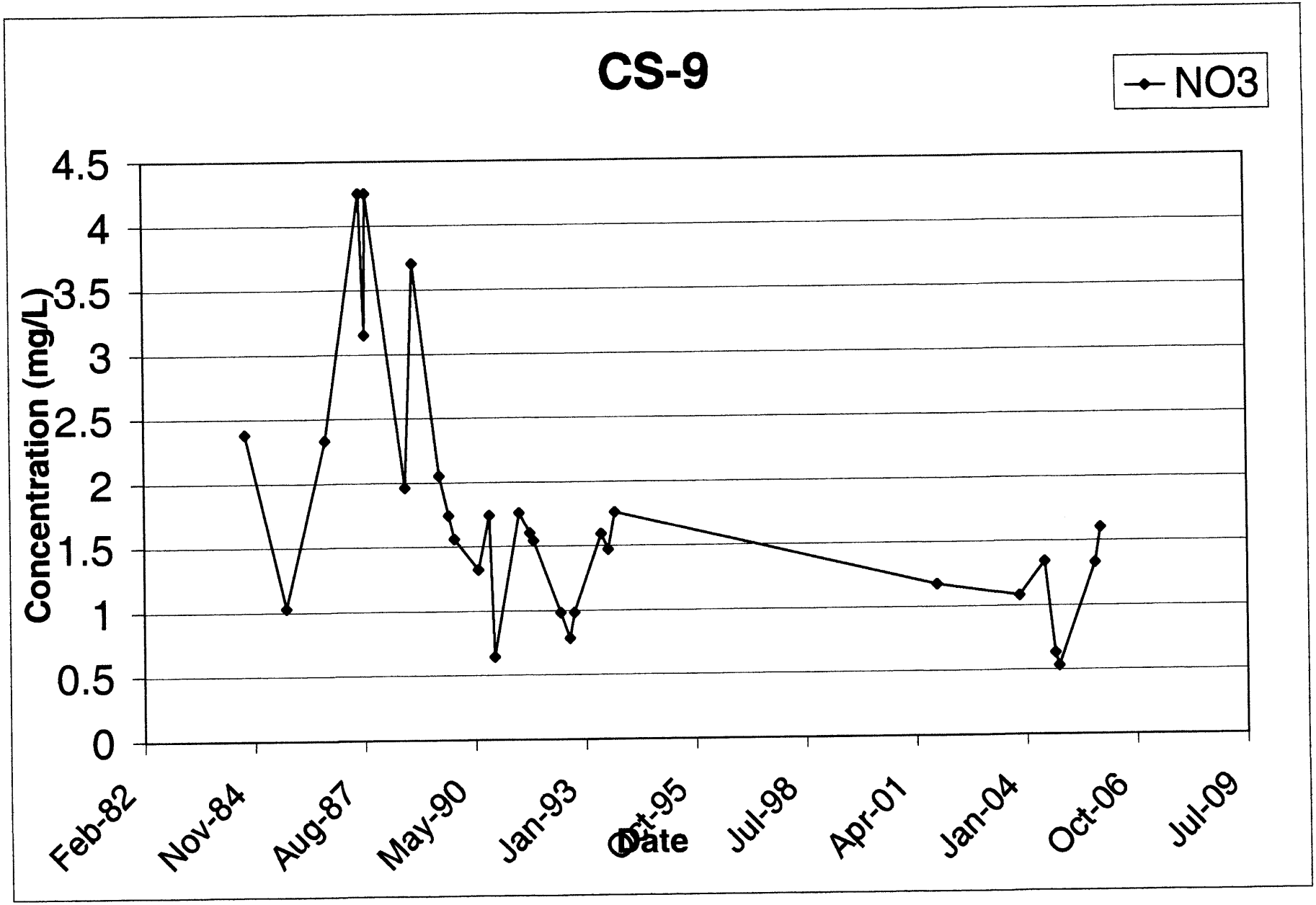
		Scofield Reservoir Storage Capacity 73,600 ac-ft					Electric Lake Storage Capacity 31,500 ac-ft											
		ECCLES CREEK					**ELECTRIC LAKE**										**Discharge to Both Drainages**	
		Discharge to Eccles			Cumulative		JC-1 Well			Cumulative		JC-3 Well			Cumulative		Cumulative	
Month	Days	GPM	CFS	MGD	Gallons	Ac-Ft	GPM	CFS	MGD	Gallons	Ac-Ft	GPM	CFS	MGD	Gallons	Ac-Ft	Gallons	Acre-Feet
Jan-02	31	7,297	16.3	10.51	3,870,198,640	11,877	2,250	5.0	3.24	359,546,100	1,103						4,229,744,740	12,981
Feb-02	28	7,012	15.6	10.10	4,152,926,800	12,745	2,250	5.0	3.24	450,266,100	1,382						4,603,192,900	14,127
Mar-02	31	7,196	16.0	10.36	4,474,142,800	13,731	2,044	4.6	2.94	541,526,100	1,662						5,015,668,900	15,393
Apr-02	30	8,200	18.3	11.81	4,828,382,800	14,818	2,250	5.0	3.24	638,726,100	1,960						5,467,108,900	16,778
May-02	31	7,740	17.2	11.15	5,173,896,400	15,878	2,145	4.8	3.09	734,468,100	2,254						5,908,364,500	18,132
Jun-02	30	8,188	18.2	11.79	5,527,605,040	16,964	2,080	4.6	3.00	824,324,100	2,530						6,351,929,140	19,493
Jul-02	31	8,927	19.9	12.85	5,926,103,440	18,187	2,080	4.6	3.00	917,175,300	2,815						6,843,278,740	21,001
Aug-02	31	8,773	19.5	12.63	6,317,748,880	19,388	1,183	2.6	1.70	970,001,220	2,977						7,287,750,100	22,365
Sep-02	30	9,282	20.7	13.37	6,718,735,600	20,619	2,100	4.7	3.02	1,060,721,220	3,255						7,779,456,820	23,874
Oct-02	31	7,023	15.6	10.11	7,032,262,480	21,581	2,382	5.3	3.43	1,167,065,220	3,582						8,199,327,700	25,163
Nov-02	30	9,846	21.9	14.18	7,457,606,800	22,887	2,540	5.7	3.66	1,276,781,220	3,918						8,734,388,020	26,805
Dec-02	31	9,652	21.5	13.90	7,888,459,120	24,209	4,100	9.1	5.90	1,459,805,220	4,480						9,348,264,340	28,689
Jan-03	31	9,231	20.6	13.29	8,300,520,880	25,473	4,100	9.1	5.90	1,642,829,220	5,042						9,943,350,100	30,515
Feb-03	28	9,267	20.6	13.34	8,674,147,600	26,620	4,062	9.1	5.88	1,807,421,220	5,547						10,481,568,820	32,167
Mar-03	31	9,846	21.9	14.18	9,113,678,800	27,969	3,904	8.7	5.62	1,981,679,220	6,082						11,095,358,020	34,050
Apr-03	30	9,735	21.7	14.02	9,534,229,360	29,259	3,848	8.6	5.54	2,147,927,220	6,592						11,682,156,580	35,851
May-03	31	8,686	19.4	12.51	9,921,950,800	30,449	3,682	8.2	5.30	2,312,307,060	7,096						12,234,257,860	37,546
Jun-03	30	9,001	20.1	12.96	10,310,800,480	31,643	3,203	7.1	4.61	2,450,694,660	7,521						12,761,495,140	39,164
Jul-03	31	8,040	17.9	11.58	10,669,724,800	32,744	3,999	8.9	5.76	2,629,218,660	8,069	552	1.2	0.80	24,660,000	76	13,323,603,460	40,889
Aug-03	31	2,836	6.3	4.08	10,796,341,120	33,133	3,843	8.6	5.53	2,800,750,260	8,595	4,977	11.1	7.17	246,852,300	758	13,843,943,680	42,486
Sep-03	30	2,826	6.3	4.07	10,918,438,120	33,507	1,989	4.4	2.86	2,886,675,152	8,859	4,659	10.4	6.71	448,127,611	1,375	14,253,240,883	43,742
Oct-03	31	5,925	13.2	8.53	11,182,935,880	34,319	521	1.2	0.75	2,909,925,962	8,930	2,440	5.4	3.51	557,035,740	1,709	14,649,897,582	44,959
Nov-03	30	5,720	12.7	8.24	11,430,024,040	35,077	4,062	9.0	5.85	3,085,394,461	9,469	1,794	4.0	2.58	634,535,886	1,947	15,149,954,387	46,494
Dec-03	31	4,493	10.0	6.47	11,630,580,040	35,693	3,839	8.6	5.53	3,256,755,181	9,995	2,700	6.0	3.89	755,081,166	2,317	15,642,416,387	48,005
Jan-04	31	1,150	2.6	1.66	11,681,923,240	35,851	3,777	8.4	5.44	3,425,349,376	10,512	4,764	10.6	6.86	967,725,874	2,970	16,074,998,490	49,332
Feb-04	29	955	2.1	1.38	11,721,806,920	35,973	3,951	8.8	5.69	3,590,361,856	11,018	2,657	5.9	3.83	1,078,681,579	3,310	16,390,850,355	50,302
Mar-04	31	945	2.1	1.36	11,764,011,880	36,102	3,979	8.9	5.73	3,767,966,386	11,563	1,931	4.3	2.78	1,164,860,410	3,575	16,696,838,675	51,241
Apr-04	30	900	2.0	1.30	11,802,878,920	36,222	3,916	8.7	5.64	3,937,149,591	12,083	2,916	6.5	4.20	1,290,810,771	3,961	17,030,839,282	52,266
May-04	31	951	2.1	1.37	11,845,353,160	36,352	4,048	9.0	5.83	4,117,832,720	12,637	2,354	5.2	3.39	1,395,900,744	4,284	17,359,086,624	53,273
Jun-04	30	862	1.9	1.24	11,882,571,400	36,466	4,150	9.2	5.98	4,297,095,125	13,187	1,126	2.5	1.62	1,444,559,982	4,433	17,624,226,507	54,087
Jul-04	31	860	1.9	1.24	11,920,979,080	36,584	4,121	9.2	5.93	4,481,051,653	13,752	272	0.6	0.39	1,456,694,617	4,470	17,858,725,350	54,806
Aug-04	31	941	2.1	1.35	11,962,969,480	36,713	3,965	8.8	5.71	4,658,070,117	14,295	-	0.0	0.00	1,456,694,617	4,470	18,077,734,214	55,479
Sep-04	30	3,125	7.0	4.50	12,097,962,280	37,127	4,073	9.1	5.86	4,834,012,572	14,835	-	0.0	0.00	1,456,694,617	4,470	18,388,669,469	56,433
Oct-04	31	3,526	7.9	5.08	12,255,358,600	37,610	4,047	9.0	5.83	5,014,657,692	15,389	-	0.0	0.00	1,456,694,617	4,470	18,726,710,909	57,470
Nov-04	30	3,535	7.9	5.09	12,408,072,040	38,079	3,902	8.7	5.62	5,183,209,692	15,907	-	0.0	0.00	1,456,694,617	4,470	19,047,976,349	58,456
Dec-04	31	3,602	8.0	5.19	12,568,853,800	38,572	4,028	9.0	5.80	5,362,999,452	16,458	-	0.0	0.00	1,456,694,617	4,470	19,388,547,869	59,501
Jan-05	31	4,376	9.7	6.30	12,764,191,240	39,172	4,000	8.9	5.76	5,541,568,092	17,006	-	0.0	0.00	1,456,694,617	4,470	19,762,453,949	60,649
Feb-05	28	4,380	9.8	6.31	12,940,789,960	39,714	3,977	8.9	5.73	5,701,939,452	17,499	-	0.0	0.00	1,456,694,617	4,470	20,099,424,029	61,683
Mar-05	31	4,034	9.0	5.81	13,120,846,120	40,266	3,963	8.8	5.71	5,878,834,812	18,041	-	0.0	0.00	1,456,694,617	4,470	20,456,375,549	62,778
Apr-05	30	3,664	8.2	5.28	13,279,120,840	40,752	3,681	8.2	5.30	6,037,833,852	18,529	-	0.0	0.00	1,456,694,617	4,470	20,773,649,309	63,752
May-05	31	4,103	9.1	5.91	13,462,268,680	41,314	4,103	9.1	5.77	6,216,801,372	19,079	-	0.0	0.00	1,456,694,617	4,470	21,135,764,669	64,863
Jun-05	30	4,424	9.9	6.37	13,653,368,200	41,901	3,659	8.2	5.27	6,374,877,920	19,564	-	0.0	0.00	1,456,694,617	4,470	21,484,940,736	65,935
Jul-05	31	4,596	10.2	6.62	13,858,555,240	42,530	4,079	9.1	5.87	6,556,974,560	20,123	-	0.0	0.00	1,456,694,617	4,470	21,872,224,416	67,123
Aug-05	31	4,363	9.7	6.28	14,053,309,480	43,128	3,880	8.6	5.59	6,730,179,200	20,654	-	0.0	0.00	1,456,694,617	4,470	22,240,183,296	68,253
Sep-05	30	4,337	9.7	6.24	14,240,509,480	43,703	1,817	4.0	2.62	6,808,779,200	20,895	-	0.0	0.00	1,456,694,617	4,470	22,505,983,296	69,068
Oct-05	31	4,593	10.2	6.61	14,445,541,000	44,332	4,097	9.1	5.90	6,991,669,280	21,457	-	0.0	0.00	1,456,694,617	4,470	22,893,904,896	70,259
Nov-05	30	4,687	10.4	6.75	14,648,019,400	44,953	4,062	9.1	5.85	7,167,147,680	21,995	-	0.0	0.00	1,456,694,617	4,470	23,271,861,696	71,419
Dec-05	31	4,336	9.7	6.24	14,841,578,440	45,547	4,056	9.0	5.84	7,348,207,520	22,551	-	0.0	0.00	1,456,694,617	4,470	23,646,480,576	72,568
Jan-06	31	4,499	10.0	6.48	15,042,413,800	46,163	4,015	8.9	5.78	7,527,437,120	23,101	-	0.0	0.00	1,456,694,617	4,470	24,026,545,536	73,735
Feb-06	28	4,560	10.2	6.57	15,226,273,000	46,728	3,984	8.9	5.74	7,688,072,000	23,594	-	0.0	0.00	1,456,694,617	4,470	24,371,039,616	74,792
Mar-06	31	4,574	10.2	6.59	15,430,456,360	47,354	3,957	8.8	5.70	7,864,712,480	24,136	-	0.0	0.00	1,456,694,617	4,470	24,751,863,456	75,961
Apr-06	31	4,622	10.3	6.66	15,636,782,440	47,988	3,805	8.5	5.48	8,034,567,680	24,657	-	0.0	0.00	1,456,694,617	4,470	25,128,044,736	77,115

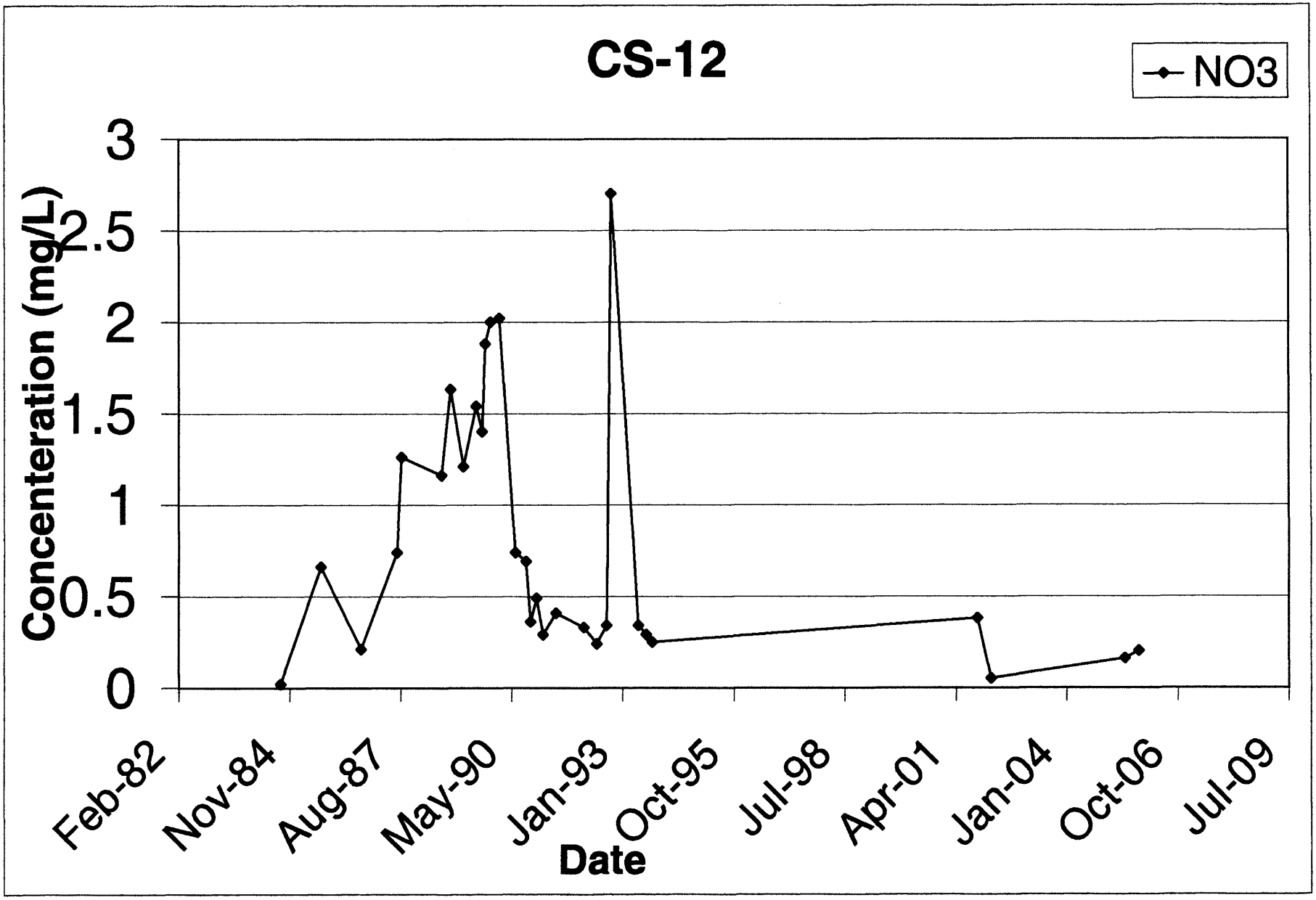
		Scofield Reservoir Storage Capacity 73,600 ac-ft					Electric Lake Storage Capacity 31,500 ac-ft											
		ECCLES CREEK					**ELECTRIC LAKE**										**Discharge to Both Drainages**	
		Discharge to Eccles			Cumulative		JC-1 Well			Cumulative		JC-3 Well			Cumulative		Cumulative	
Month	Days	GPM	CFS	MGD	Gallons	Ac-Ft	GPM	CFS	MGD	Gallons	Ac-Ft	GPM	CFS	MGD	Gallons	Ac-Ft	Gallons	Acre-Feet
Jan-99	31	340	0.8	0.49	15,190,000	47											15,190,000	47
Feb-99	28	229	0.5	0.33	24,430,000	75											24,430,000	75
Mar-99	31	465	1.0	0.67	45,200,000	139											45,200,000	139
Apr-99	30	215	0.5	0.31	54,500,000	167											54,500,000	167
May-99	31	278	0.6	0.40	66,900,000	205											66,900,000	205
Jun-99	30	188	0.4	0.27	75,000,000	230											75,000,000	230
Jul-99	31	181	0.4	0.26	83,060,000	255											83,060,000	255
Aug-99	31	229	0.5	0.33	93,290,000	286											93,290,000	286
Sep-99	30	139	0.3	0.20	99,290,000	305											99,290,000	305
Oct-99	31	243	0.5	0.35	110,140,000	338											110,140,000	338
Nov-99	30	514	1.1	0.74	132,340,000	406											132,340,000	406
Dec-99	31	90	0.2	0.13	136,370,000	419											136,370,000	419
Jan-00	31	722	1.6	1.04	168,610,000	517											168,610,000	517
Feb-00	29	681	1.5	0.98	197,030,000	605											197,030,000	605
Mar-00	31	993	2.2	1.43	241,360,000	741											241,360,000	741
Apr-00	30	1,354	3.0	1.95	299,860,000	920											299,860,000	920
May-00	31	1,181	2.6	1.70	352,560,000	1,082											352,560,000	1,082
Jun-00	30	1,000	2.2	1.44	395,760,000	1,215											395,760,000	1,215
Jul-00	31	1,236	2.8	1.78	450,940,000	1,384											450,940,000	1,384
Aug-00	31	993	2.2	1.43	495,270,000	1,520											495,270,000	1,520
Sep-00	30	1,361	3.0	1.96	554,070,000	1,700											554,070,000	1,700
Oct-00	31	2,354	5.2	3.39	659,160,000	2,023											659,160,000	2,023
Nov-00	30	1,688	3.8	2.43	732,060,000	2,247											732,060,000	2,247
Dec-00	31	2,201	4.9	3.17	830,330,000	2,548											830,330,000	2,548
Jan-01	31	2,569	5.7	3.70	945,030,000	2,900											945,030,000	2,900
Feb-01	28	2,500	5.6	3.60	1,045,830,000	3,210											1,045,830,000	3,210
Mar-01	31	3,542	7.9	5.10	1,203,930,000	3,695											1,203,930,000	3,695
Apr-01	30	4,028	9.0	5.80	1,377,930,000	4,229											1,377,930,000	4,229
May-01	31	3,542	7.9	5.10	1,536,030,000	4,714											1,536,030,000	4,714
Jun-01	30	2,986	6.7	4.30	1,665,030,000	5,110											1,665,030,000	5,110
Jul-01	31	4,514	10.1	6.50	1,866,530,000	5,728											1,866,530,000	5,728
Aug-01	31	4,514	10.1	6.50	2,068,030,000	6,347											2,068,030,000	6,347
Sep-01	30	7,795	17.4	11.23	2,404,786,960	7,380	969	2.2	1.40	41,860,500	128						2,446,647,460	7,508
Oct-01	31	9,000	20.1	12.96	2,806,546,960	8,613	2,136	4.8	3.08	137,198,100	421						2,943,745,060	9,034
Nov-01	30	8,907	19.8	12.83	3,191,314,960	9,794	1,509	3.4	2.17	202,406,100	621						3,393,721,060	10,415
Dec-01	31	7,911	17.6	11.39	3,544,460,560	10,878	1,270	2.8	1.83	259,106,100	795						3,803,566,660	11,673

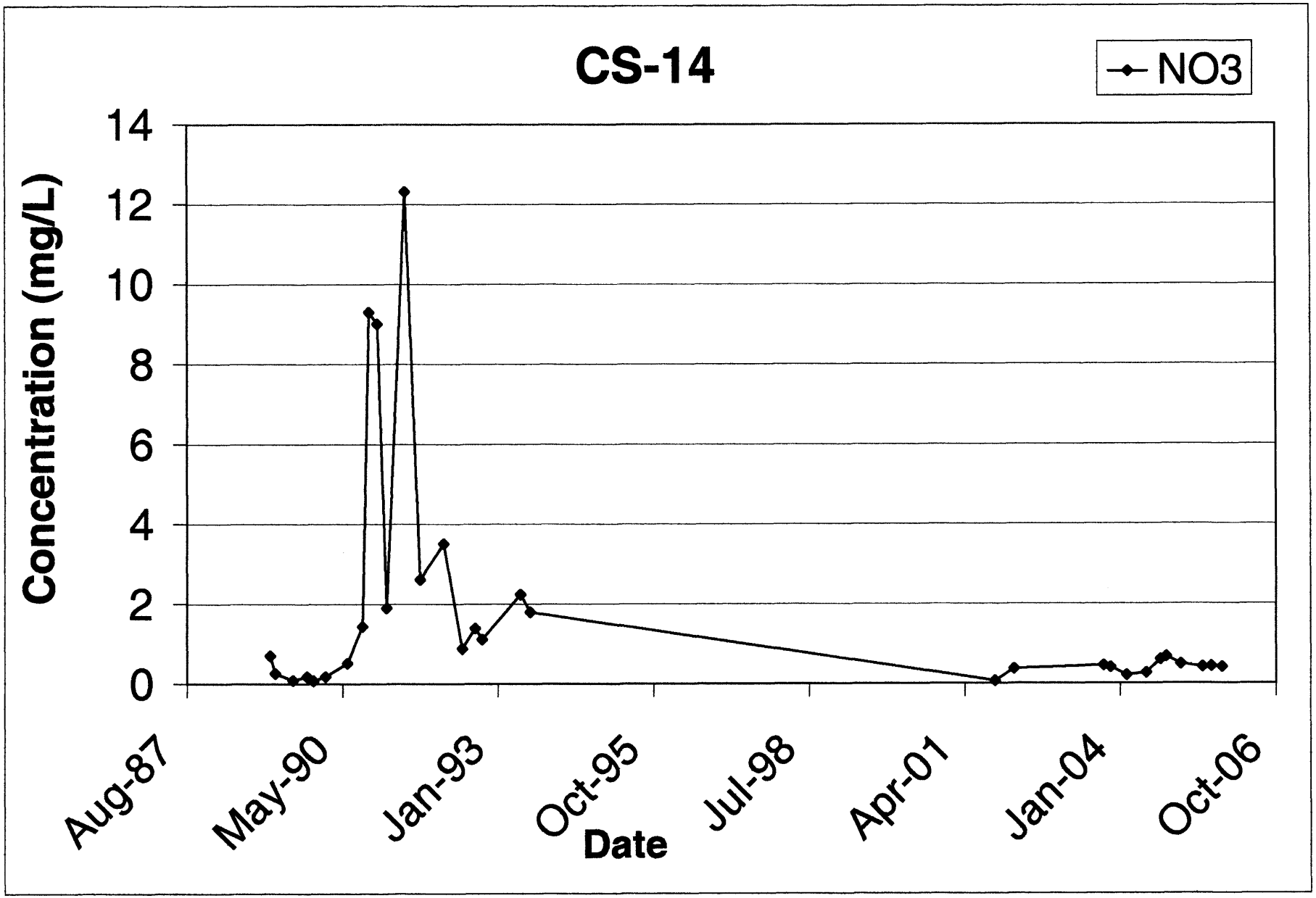

CS-6
NO3
Concentration (mg/L)
2.5
2
1.5
1
0.5
0
Feb-82
Nov-84
Aug-87
May-90
Jan-93
Oct-95
Jul-98
Apr-01
Jan-04
Oct-06
Jul-09
Date

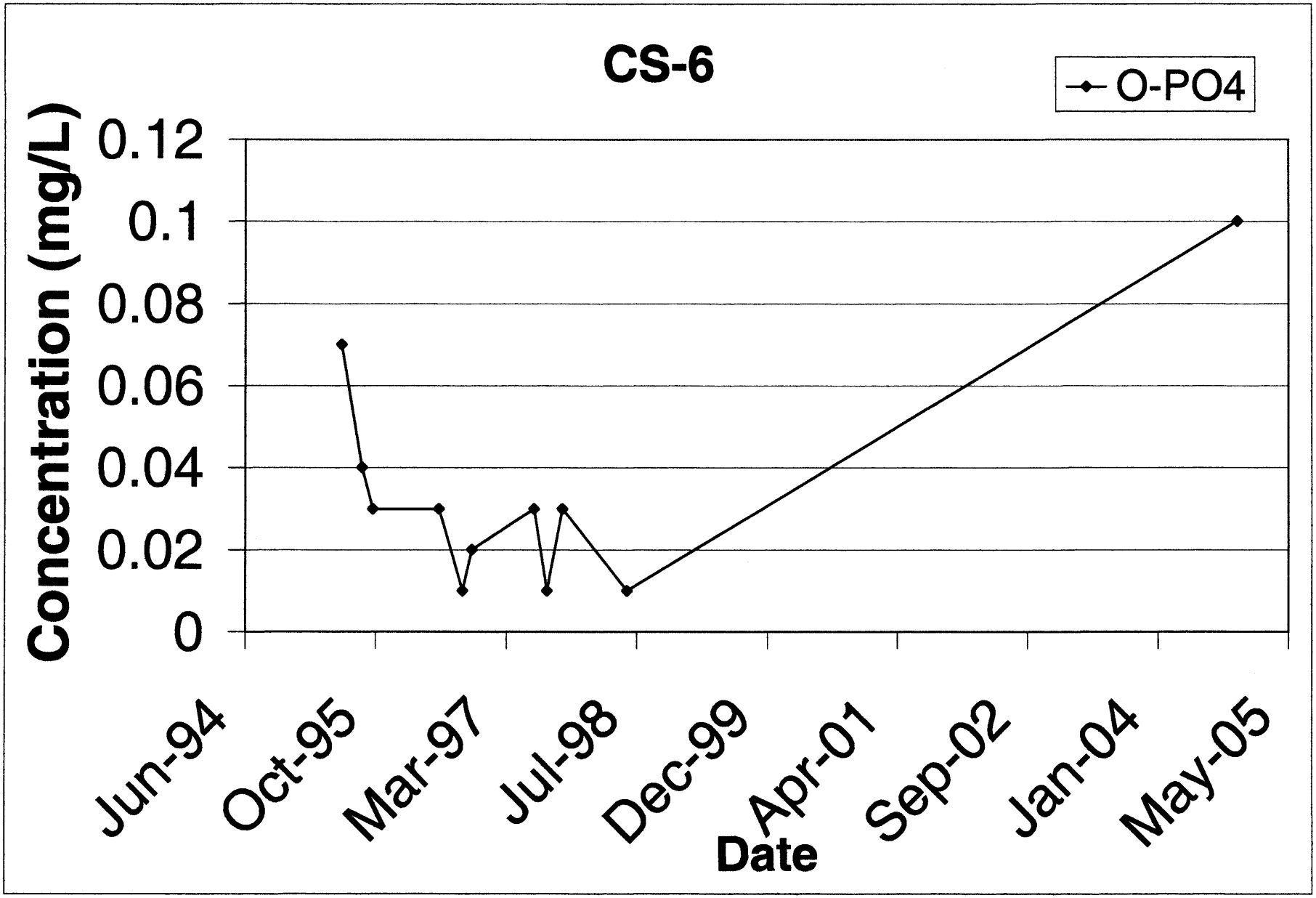

VC-6
NO3
Concentration (mg/L)
3.5
3
2.5
2
1.5
1
0.5
0
Feb-82
Oct-84
Jul-87
Apr-90
Jan-93
Oct-95
Jul-98
Apr-01
Dec-03
Sep-06
Jun-09
Date

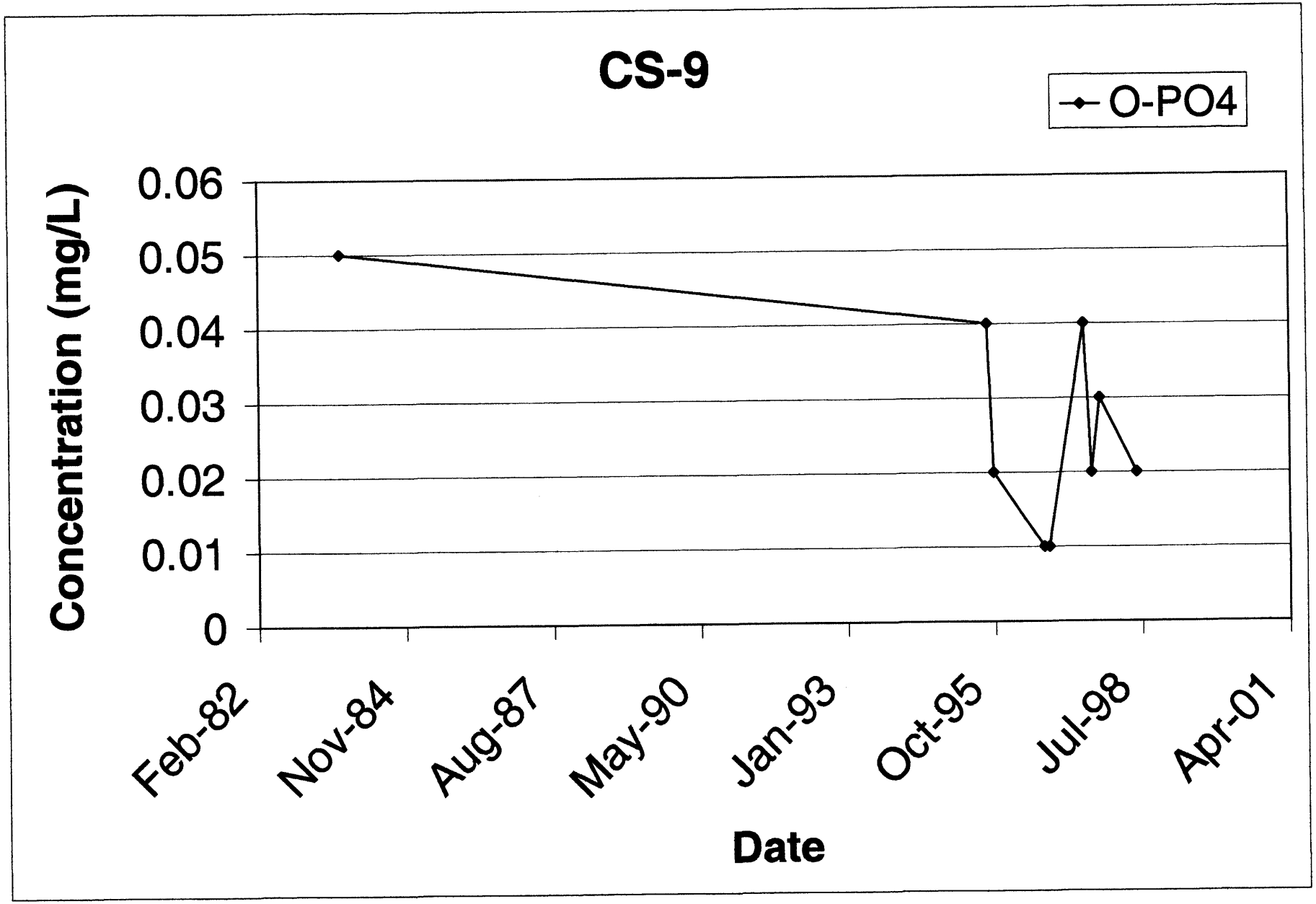

VC-9
NO3
Concentration (mg/L)
3
2.5
2
1.5
1
0.5
0
Feb-82
Oct-84
Jul-87
Apr-90
Jan-93
Oct-95
Jul-98
Apr-01
Dec-03
Sep-06
Jun-09
Date

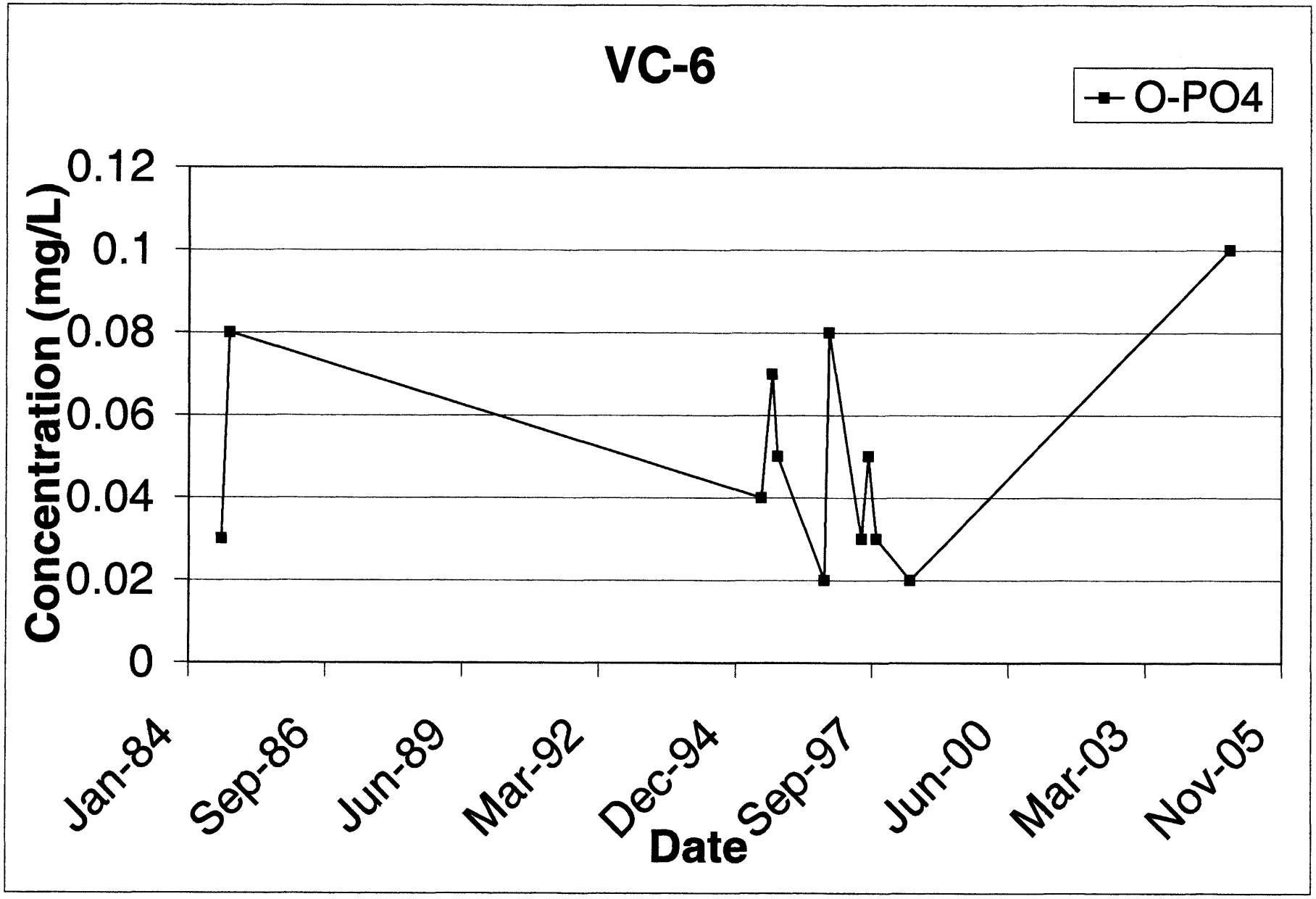

CS-9
NO3
Concentration (mg/L)
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Feb-82
Nov-84
Aug-87
May-90
Jan-93
Oct-95
Jul-98
Apr-01
Jan-04
Oct-06
Jul-09
Date

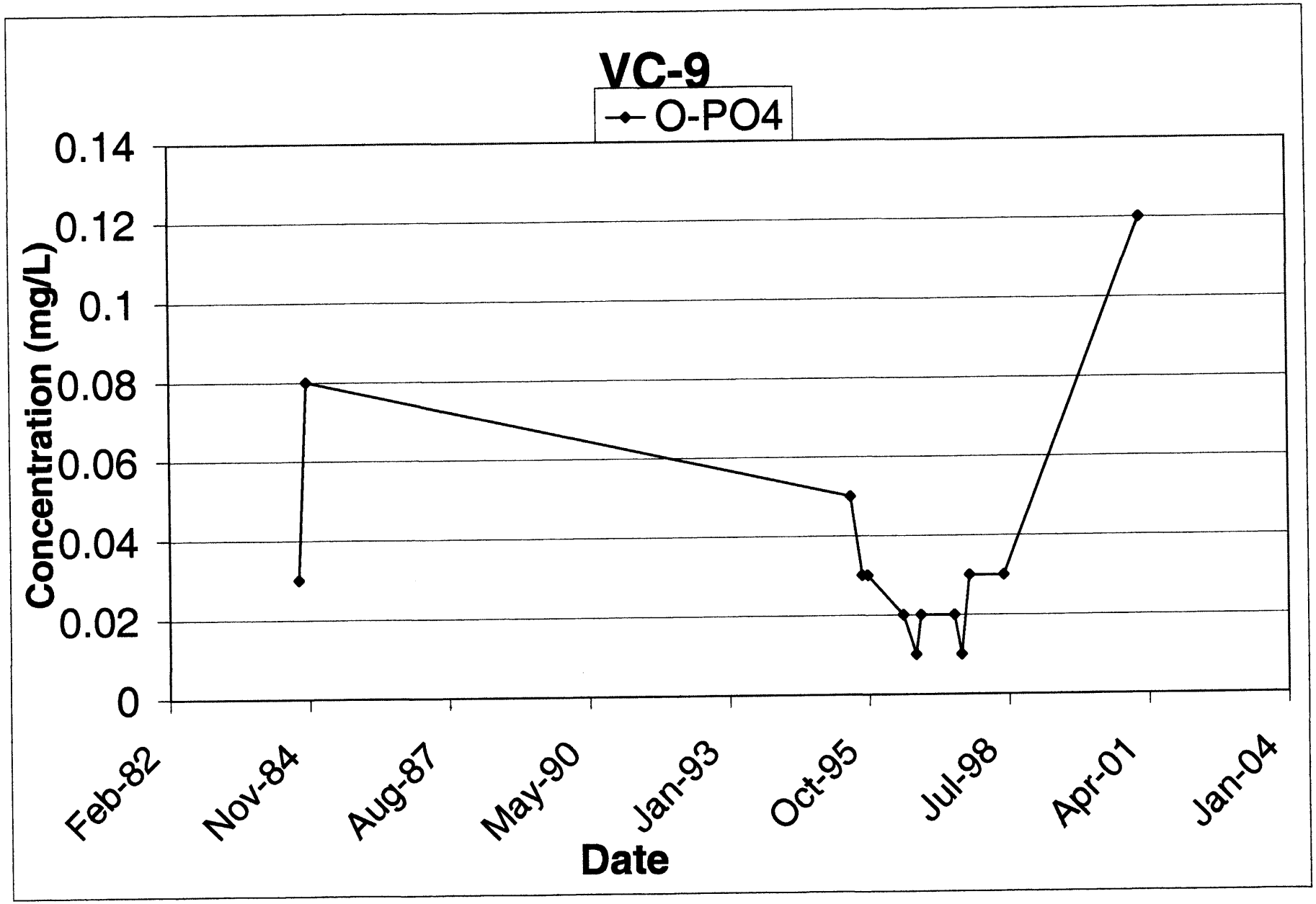

CS-12
NO3
Concenteration (mg/L)
3
2.5
2
1.5
1
0.5
0
Feb-82
Nov-84
Aug-87
May-90
Jan-93
Oct-95
Jul-98
Apr-01
Jan-04
Oct-06
Jul-09
Date


CS-14
NO3
Concentration (mg/L)
14
12
10
8
6
4
2
0
Aug-87
May-90
Jan-93
Oct-95
Jul-98
Apr-01
Jan-04
Oct-06
Date


CS-6
O-PO4
Concentration (mg/L)
0.12
0.1
0.08
0.06
0.04
0.02
0
Jun-94
Oct-95
Mar-97
Jul-98
Dec-99
Apr-01
Sep-02
Jan-04
May-05
Date


CS-9
O-PO4
Concentration (mg/L)
0.06
0.05
0.04
0.03
0.02
0.01
0
Feb-82
Nov-84
Aug-87
May-90
Jan-93
Oct-95
Jul-98
Apr-01
Date


VC-6
O-PO4
Concentration (mg/L)
0.12
0.1
0.08
0.06
0.04
0.02
0
Jan-84
Sep-86
Jun-89
Mar-92
Dec-94
Sep-97
Jun-00
Mar-03
Nov-05
Date


VC-9
O-PO4
Concentration (mg/L)
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
Feb-82
Nov-84
Aug-87
May-90
Jan-93
Oct-95
Jul-98
Apr-01
Jan-04
Date

Baseline Parameters

Notes:

1. All columns that are shaded in light blue there are no charts for. (These columns had no detection.)

2. All squares that are shaded in yellow seem to be discrepancies in the date. A table providing this date is below.

Analysis	Eccles Creek Upper Sample	Eccles Creek Lower Sample	Mine Discharge Sample	Winter Quarters Sample	Woods Canyon Sample	Upper Huntgton Sample
D-Ba	CS-3 9/27/05		CS-14 9/30/03		CS-19 9/2/04 CS-19 9/17/03	
D-B	CS-3 9/27/05		CS-12 9/25/96			
F			CS-12 8/30/93 CS-12 9/8/92			
T-Alk	CS-4 8/19/87					S10-1 6/11/03
T-Turb	CS-4 10/10/98	CS-13 10/11/98 VC-6 8/17/98 VC-9 10/8/00	CS-12 8/9/00 CS-14 10/9/97 CS-14 8/13/97	WQ3-26 9/5/02 WQ4-12 9/6/04	WQ3-41 9/11/02	S13-7 6/17/02
T-Ba	CS-11 9/8/92					
T-Fe	CS-11 5/20/82 CS-3 6/8/83 CS-4 7/21/82 CS-9 5/17/84	CS-6 5/25/83 VC-6 5/25/83 VC-9 5/17/84 VC-9 5/25/83	CS-12 2/28/85 CS-12 6/28/84 CS-14 9/8/92	WQ4-12 11/10/04	WQ3-41 9/11/02	S10-1 6/29/99
T-Pb	CS-3 9/27/05					
T-B	CS-3 9/27/05			WQ3-6 9/5/02 WQ4-12 9/5/02	WQ3-41 9/11/02	

ECCLES CREEK UPPER STREAM

SITE		D-Ba	D-B	D-Cu	D-Pb	Acidity	F	T-Alk	F-Turb.	T-Ba	T-Cu	T-Fe	T-Pb	T-B
NAME	DATE	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	NTU	mg/l	mg/l	mg/l	mg/l	mg/l
CS-11	11/15/2005							267	27.8			0.11		
CS-11	9/26/2005	0.03	0.03	< .01	< .01	< 5.	< .05	245	4.15	0.03	< .01	0.25	< .01	0.03
CS-11	6/29/2005							214	7			0.06		
CS-11	11/1/2004							270	7			0.12		
CS-11	9/27/2004	0.04	0.02	< .01	< .01	< 5.	0.12	235	8	0.04	< .01	0.13	< .01	0.03
CS-11	6/28/2004							238	5			0.1		
CS-11	11/11/2003							251	28			0.482		
CS-11	9/24/2003	0.03	0.022	< .01	.005	< 5.	0.1	256	8.8	0.03	< .01	0.297	< .005	0.03
CS-11	6/25/2003								2.4			< .02		
CS-11	10/21/2002							273	5			0.2		
CS-11	8/28/2002	< .6	0.08	< .1	< .1	< 5.	0.2	247	5	< .6	< .1	< .1	< .1	0.08
CS-11	6/18/2002							200	3			< .1		
CS-11	10/25/2001								19			0.1		
CS-11	9/5/2001	< .6	< .06	< .1	< .1	< 5.	0.06	237	3	< .6	< .1	< .1	< .1	0.1
CS-11	6/20/2001								3			< .1		
CS-11	10/8/2000							258	5			< .1		
CS-11	8/8/2000	< 1.	0.1	< .1	< .1	< 10.	0.11	228	2	< 1.	< .1	< .1	< .1	0.1
CS-11	6/28/2000							248	2.81			< .1		
CS-11	10/7/1999								3			< .1		
CS-11	8/16/1999	< 1.	< .1	0	< .1	< 10.	0.07	255	13	< 1.	< .1	< .1	< .1	0.2
CS-11	6/29/1999								4			< .1		
CS-11	10/10/1998								10.8			0.1		
CS-11	8/16/1998	< 1.	0.2	< .1	< .1	< 10.	0.05	242	4.5	< 1.	< .1	< .1	< .1	0.2
CS-11	6/16/1998								8.35			0.2		
CS-11	10/9/1997								15.5			0.2		
CS-11	8/13/1997	< 1.	< .1	< .1	< .1		0.18	226	22.8	< 1.	< .1	0.3	< .1	< .1
CS-11	6/24/1997											< .1		
CS-11	10/30/1996							242				< .1		
CS-11	9/16/1996	< 1.	0.1	< .1	< .1		0.12	171		< 1.	< .1	7.4	< .1	0.2
CS-11	10/16/1995											0.2		
CS-11	9/6/1995	< 1.	0.1	< .1	< .1		0.2	235		< 1.	< .1	0.4	< .1	0.2
CS-11	6/19/1995							150				0.4		
CS-11	10/27/1993											0.188		
CS-11	8/26/1993	0.02	< .1	< .03	.003		0.18	< 208.		0.01	< .03	0.06	0	< .13
CS-11	6/22/1993											0.07		
CS-11	10/22/1992											< .03		
CS-11	9/8/1992	0.04	< .07	< .01	0.01		< .1	186		36	< .02	0.21	0.01	< .01
CS-11	6/15/1992											0.07		
CS-11	10/17/1991											0.05		
CS-11	9/16/1991	0.02	< .05	0.01	.003		< .2	235		0.03		0.21	< .003	< .05
CS-11	6/12/1991											0.62		
CS-11	9/12/1990	< .01	< .005	< .01	.001		0.15	228		0.03	< .01	0.09	< .002	.005
CS-11	6/6/1990											0.26		
CS-11	10/30/1989											0.28		
CS-11	9/12/1989	0.02	< .01	< .01	.001		0.15	228		0.02		0.05	< .001	< .01
CS-11	6/22/1989											0.09		
CS-11	11/2/1988											0.1		
CS-11	8/15/1988						0.14	202		0.04	0.02	0.19	< .001	.001

SITE		D-Ba	D-B	D-Cu	D-Pb	Acidity	F	T-Alk	F-Turb.	T-Ba	T-Cu	T-Fe	T-Pb	T-B
NAME	DATE	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	NTU	mg/l	mg/l	mg/l	mg/l	mg/l
CS-11	7/20/1988											0.12		
CS-11	6/6/1988											0.14		
CS-11	5/17/1988											8.78		
CS-11	10/21/1987											0.08		
CS-11	9/22/1987											0.1		
CS-11	8/19/1987						0.13	256		0.02	< .01	0.06	< .001	.001
CS-11	7/8/1987											0.11		
CS-11	6/11/1987											0.1		
CS-11	5/19/1987											1.29		
CS-11	10/21/1986											0.15		
CS-11	9/25/1986											0.35		
CS-11	8/20/1986						0.12	216		0.03	< .01	0.07	< .001	0.05
CS-11	7/22/1986											0.06		
CS-11	6/25/1986											1.05		
CS-11	5/28/1986											0.99		
CS-11	10/16/1985											0.1		
CS-11	9/19/1985											0.48		
CS-11	8/26/1985						0.13	206		0.02	0.02	0.18	0	0.07
CS-11	7/9/1985											0.12		
CS-11	6/20/1985											0.12		
CS-11	5/22/1985											1.28		
CS-11	11/13/1984											0.4		
CS-11	10/23/1984											0.73		
CS-11	9/17/1984											0.4		
CS-11	8/28/1984						0.27	240		0.03	0.02	9.1	0	0.04
CS-11	7/26/1984											8.5		
CS-11	6/27/1984											0.69		
CS-11	5/24/1984											3.52		
CS-11	11/11/1983											0.48		
CS-11	10/26/1983											0.23		
CS-11	9/28/1983											1.07		
CS-11	8/25/1983						0.1	230		0.01	0.01	0.85	< .003	0.01
CS-11	7/20/1983											0.21		
CS-11	6/29/1983											0.9		
CS-11	11/9/1982											1.52		
CS-11	10/14/1982											1.87		
CS-11	9/15/1982											1.55		
CS-11	8/19/1982						0.17	239.1		0.03	< .001	3.33	0	0.02
CS-11	7/21/1982							235.3				1.28		
CS-11	6/30/1982											0.1		
CS-11	5/20/1982							123.3				5.15		
CS-11	11/11/1981	0.02	0.015	< .001	.001		0.12	228.7		0.03	< .001	0.165	< .001	0.02
CS-11	10/22/1981							266.6				0.133		
CS-11	7/29/1981											0.115		
CS-3	11/16/2005							230	6.57			0.11		
CS-3	9/27/2005	0.13	0.26	0.12	0.58	< 5.	0.12	210	4.08	0.13	0.12	0.05	0.58	0.26
CS-3	6/23/2005							211	3			< .05		
CS-3	11/1/2004							223	4			< .05		
CS-3	9/28/2004	0.03	0.01	< .01	< .01	< 5.	0.1	200	10	0.03	< .01	0.13	< .01	0.02
CS-3	6/28/2004							201	7			0.09		

SITE		D-Ba	D-B	D-Cu	D-Pb	Acidity	F	T-Alk	F-Turb.	T-Ba	T-Cu	T-Fe	T-Pb	T-B
NAME	DATE	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	NTU	mg/l	mg/l	mg/l	mg/l	mg/l
CS-3	11/11/2003							212	2			0.059		
CS-3	9/25/2003	0.02	0.016	< .01	.005	< 5.	0.11	207	10	0.02	< .01	0.084	< .005	0.02
CS-3	6/25/2003							204	2.7			0.039		
CS-3	10/22/2002							214	7			< .1		
CS-3	9/9/2002	< .6	< .06	< .1	< .1	< 5.	0.07	222	7	< .6	< .1	< .1	< .1	0.06
CS-3	6/19/2002							199	6			< .1		
CS-3	10/25/2001								6			< .1		
CS-3	9/5/2001	< .6	< .06	< .1	< .1	< 5.	0.08	195	2	< .6	< .1	< .1	< .1	0.08
CS-3	6/20/2001								6			< .1		
CS-3	10/8/2000							226	35			0.4		
CS-3	8/9/2000	< 1.	< .1	< .1	< .1	< 10.	0.1	210	3	< 1.	< .1	< .1	< .1	< .1
CS-3	6/28/2000							226	4.69			< .1		
CS-3	10/7/1999								3			< .1		
CS-3	8/16/1999	< 1.	< .1	< .1	< .1	< 10.	0.09	216	23	< 1.	< .1	0.1	< .1	0.1
CS-3	6/29/1999											< .1		
CS-3	10/11/1998								3.25			0.2		
CS-3	8/16/1998	< 1.	0.2	< .1	< .1	< 10.	0.06	222	2.16	< 1.	< .1	< .1	< .1	0.2
CS-3	6/16/1998								5.15			0.1		
CS-3	10/9/1997								2.14			< .1		
CS-3	8/13/1997	< 1.	0.1	< .1	< .1		< .1	206	2.79	< 1.	< .1	< .1	< .1	0.1
CS-3	6/24/1997											< .1		
CS-3	10/30/1996							237				1.4		
CS-3	9/24/1996	< 1.	0.1	< .1	< .1		0.16	226		< 1.	< .1	0.3	< .1	0.2
CS-3	6/25/1996											0.1		
CS-3	10/17/1995											< .1		
CS-3	9/6/1995	< 1.	< .1	< .1	< .1		0.2	210		< 1.	< .1	< .1	< .1	0.2
CS-3	10/27/1993											0.103		
CS-3	8/26/1993	0.01	< .1	< .03	.003		0.18	208		0.02	< .03	< .04	0.01	< .13
CS-3	6/22/1993											0.17		
CS-3	10/22/1992											< .03		
CS-3	9/8/1992	0.04	< .07	< .01	0.01		< .1	193		0.04	< .02	0.11	0.01	< .01
CS-3	6/15/1992											0.1		
CS-3	10/17/1991											0.03		
CS-3	9/16/1991	0.01	< .05	< .006	.003		< .2	233		0.02	< .006	0.03	< .003	< .05
CS-3	6/11/1991											0.44		
CS-3	10/25/1990											0.12		
CS-3	9/12/1990	< .01	< .005	< .01	.001		0.15	227		0.02	< .01	< .03	< .002	.005
CS-3	6/6/1990											0.19		
CS-3	10/30/1989											0.11		
CS-3	9/12/1989	0.01	< .01	< .01	.001		0.15	218		0.01	< .01	< .03	< .001	< .01
CS-3	6/22/1989											0.06		
CS-3	11/2/1988											0.09		
CS-3	8/15/1988						0.18	224		0.03	0.02	0.09	< .001	.001
CS-3	7/20/1988											0.1		
CS-3	6/6/1988											0.1		
CS-3	5/17/1988											0.69		
CS-3	11/18/1987											0.07		
CS-3	10/21/1987											< .01		
CS-3	9/22/1987											0.04		
CS-3	8/19/1987						0.15	240		0.02	< .01	< .01	< .001	.001

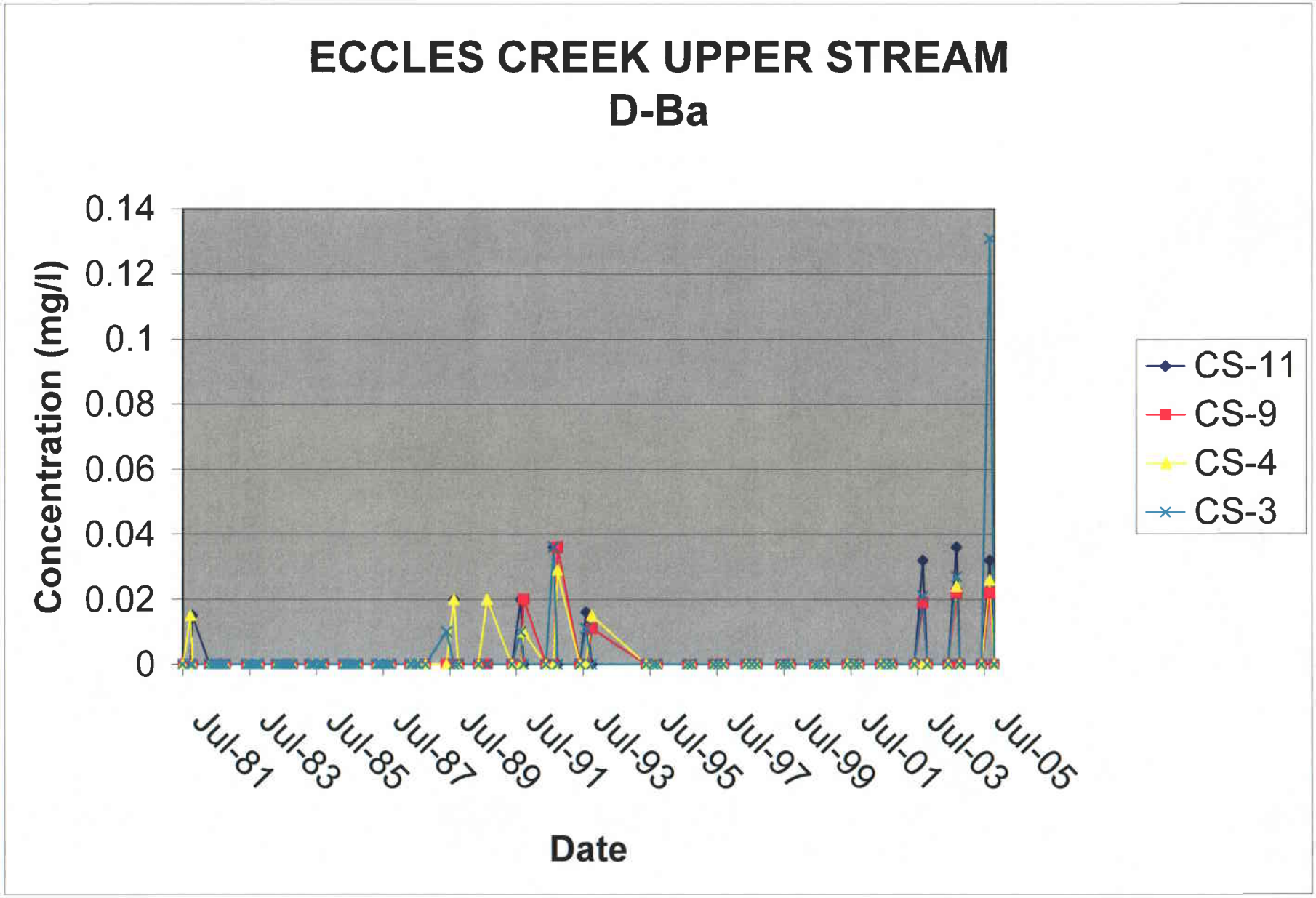
SITE		D-Ba	D-B	D-Cu	D-Pb	Acidity	F	T-Alk	F-Turb.	T-Ba	T-Cu	T-Fe	T-Pb	T-B
NAME	DATE	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	NTU	mg/l	mg/l	mg/l	mg/l	mg/l
CS-3	7/8/1987											0.08		
CS-3	6/11/1987											0.07		
CS-3	5/19/1987											0.23		
CS-3	4/22/1987											0.15		
CS-3	11/11/1986											0.03		
CS-3	10/21/1986											0.06		
CS-3	9/28/1986											0.1		
CS-3	8/20/1986						0.14	234		0.02	< .01	0.03	< .001	0.05
CS-3	7/22/1986											0.07		
CS-3	6/25/1986											0.6		
CS-3	5/28/1986											0.46		
CS-3	10/16/1985											0.08		
CS-3	9/19/1985											1.05		
CS-3	8/26/1985						0.16	223		0.02	0.02	0.48	< .001	0.11
CS-3	7/9/1985											< .05		
CS-3	6/20/1985											0.07		
CS-3	5/22/1985											0.45		
CS-3	4/24/1985											0.53		
CS-3	11/14/1984											1.23		
CS-3	10/23/1984											0.15		
CS-3	9/17/1984											0.26		
CS-3	8/28/1984						0.24	260		0.02	0.01	0.33	0	0.04
CS-3	7/26/1984											0.3		
CS-3	6/27/1984											0.33		
CS-3	5/17/1984											2.77		
CS-3	4/25/1984											1.03		
CS-3	3/22/1984											0.39		
CS-3	2/22/1984											2.01		
CS-3	11/11/1983											0.26		
CS-3	10/26/1983											0.25		
CS-3	9/28/1983											0.83		
CS-3	8/25/1983						0.14	252		0.02	0	0.3	0	0.01
CS-3	7/20/1983											0.22		
CS-3	6/29/1983											0.29		
CS-3	6/8/1983											4.3		
CS-3	11/9/1982											0.05		
CS-3	10/14/1982											0.05		
CS-3	9/15/1982											0.09		
CS-3	8/19/1982						0.17	248		0.03	0.01	0.09	0	0.02
CS-3	7/21/1982							243.3				0.08		
CS-3	6/30/1982											0.05		
CS-3	5/20/1982							128.9				0.35		
CS-3	12/9/1981							261				0.1		
CS-3	11/11/1981	0.02	0.02	< .001	.001		0.15	255.3		0.03	< .001	0.15	< .001	0.03
CS-3	10/22/1981							288.7				0.089		
CS-3	7/29/1981											0.2		
CS-4	10/18/2005								0			0.07		
CS-4	9/15/2005	0.03	0.02	< .01	< .01	< 5.	< .05	245	7.56	0.03	< .01	0.08	< .01	0.03
CS-4	6/23/2005							177	3			< .05		
CS-4	11/1/2004							240	9			0.3		

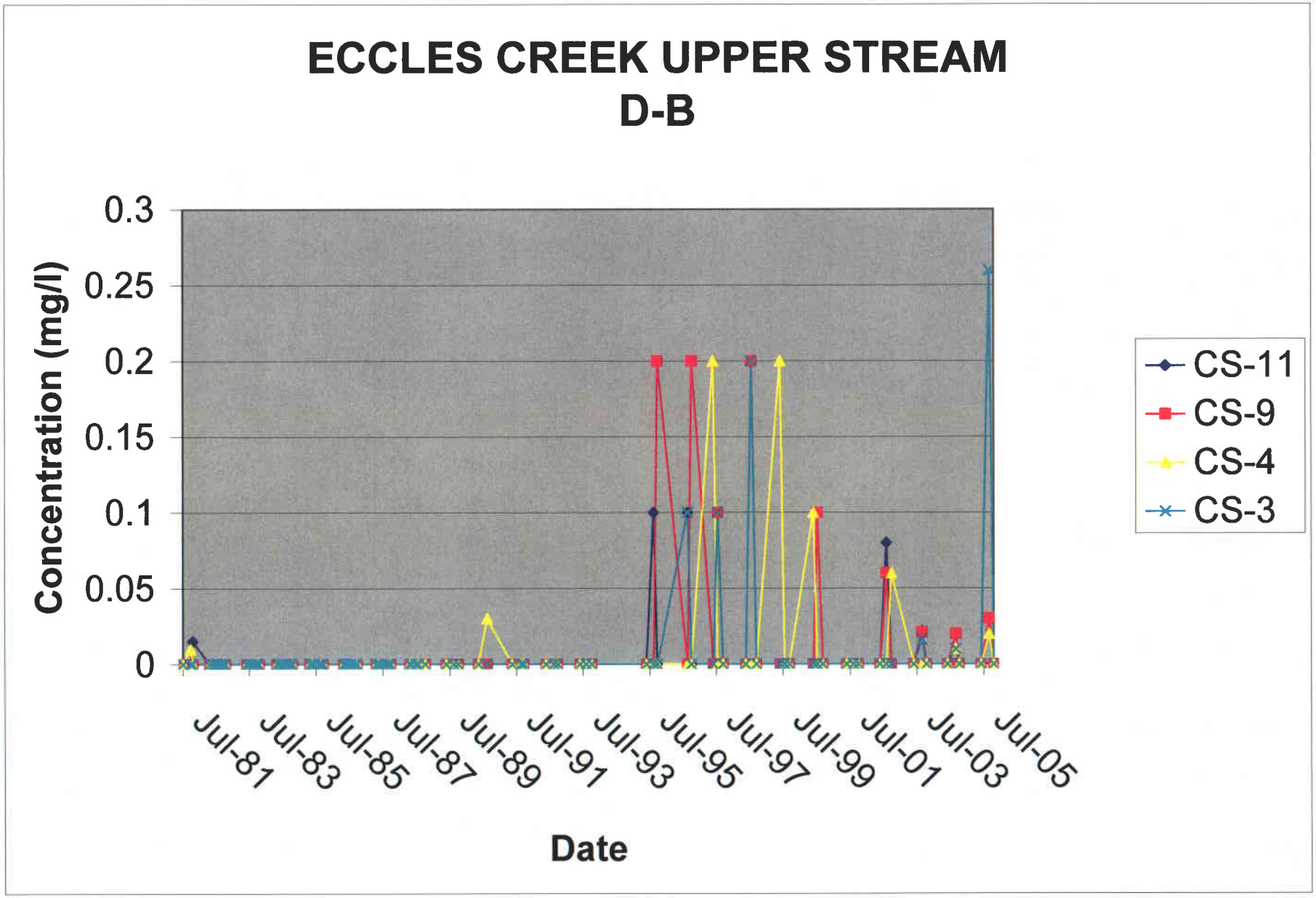
SITE		D-Ba	D-B	D-Cu	D-Pb	Acidity	F	T-Alk	F-Turb.	T-Ba	T-Cu	T-Fe	T-Pb	T-B
NAME	DATE	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	NTU	mg/l	mg/l	mg/l	mg/l	mg/l
CS-4	9/27/2004	0.02	0.01	< .01	< .01	< 5.	0.08	243	5	0.03	< .01	0.18	< .01	0.02
CS-4	6/28/2004							228	3			0.06		
CS-4	11/11/2003							249	5			0.278		
CS-4	6/25/2003								1.9			0.07		
CS-4	10/21/2002							233	10			0.1		
CS-4	8/28/2002	< .6	0.06	< .1	< .1	< 5.	0.06	247	6	< .6	< .1	< .1	< .1	0.11
CS-4	6/18/2002							202	6			< .1		
CS-4	10/25/2001								6			< .1		
CS-4	9/5/2001	< .6	< .06	< .1	< .1	< 5.	0.06	233	4	< .6	< .1	< .1	< .1	0.09
CS-4	6/20/2001								5			< .1		
CS-4	10/8/2000							250	10			0.1		
CS-4	8/8/2000	< 1.	< .1	< .1	< .1	< 10.	0.1	239	5	< 1.	< .1	0.1	< .1	< .1
CS-4	6/28/2000							233	4.26			< .1		
CS-4	8/16/1999	< 1.	0.1	< .1	< .1	< 10.	0.07	233	3	< 1.	< .1	< .1	< .1	0.1
CS-4	6/29/1999											< .1		
CS-4	10/10/1998								39.9			0.8		
CS-4	8/16/1998	< 1.	0.2	< .1	< .1	< 10.	0.05	239		< 1.	< .1	< .1	< .1	0.2
CS-4	6/16/1998								7.91			0.1		
CS-4	10/9/1997								4.79			0.1		
CS-4	8/13/1997	< 1.	< .1	< .1	< .1		0.22	209	7.11	< 1.	< .1	0.1	< .1	0.1
CS-4	6/24/1997											< .1		
CS-4	10/30/1996							226				0.2		
CS-4	9/16/1996	< 1.	0.2	< .1	< .1		0.08	238		< 1.	< .1	0.7	< .1	0.2
CS-4	6/25/1996											< .1		
CS-4	10/6/1995											0.1		
CS-4	9/6/1995	< 1.	< .1	< .1	< .1		0.1	225		< 1.	< .1	0.1	< .1	< .1
CS-4	6/19/1995							120				0.2		
CS-4	10/27/1993											0.135		
CS-4	8/26/1993	0.02	< .1	< .03	.003		0.12	212		0.01	< .007	0.07	0	.032
CS-4	6/22/1993											0.05		
CS-4	10/22/1992											0.06		
CS-4	9/8/1992	0.03	< .07	< .01	0.01		< .1	212		0.03	< .02	0.17	0.19	< .01
CS-4	6/15/1992											0.11		
CS-4	10/17/1991											0.05		
CS-4	9/16/1991	0.01	< .05	< .006	.003		< .2	239		0.02	0.01	0.13	< .003	< .05
CS-4	6/12/1991											0.48		
CS-4	10/25/1990											0.13		
CS-4	9/11/1990	0.02	0.03	0.02	.001		0.13	228		0.02	0.02	0.09	< .001	0.03
CS-4	6/6/1990											0.27		
CS-4	10/30/1989											0.2		
CS-4	9/12/1989	0.02	< .01	< .01	.001		0.12	219		0.02	< .01	0.04	< .001	< .01
CS-4	6/22/1989											0.06		
CS-4	11/2/1988											0.08		
CS-4	8/15/1988						0.15	212		0.03	0.03	0.13	< .001	.001
CS-4	7/20/1988											0.08		
CS-4	6/6/1988											0.12		
CS-4	5/17/1988											0.46		
CS-4	11/18/1987											0.06		
CS-4	10/21/1987											< .01		
CS-4	9/22/1987											0.03		

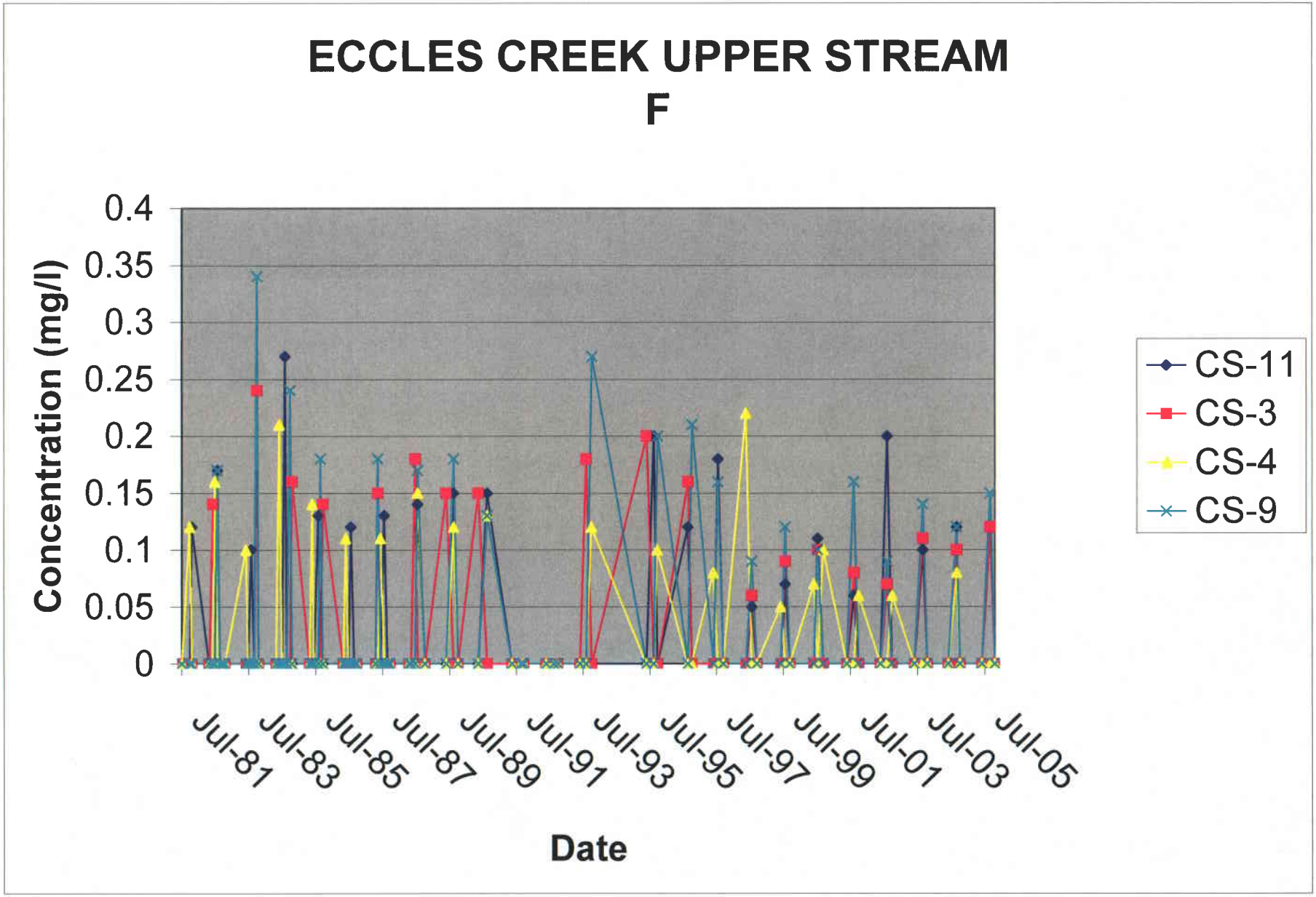
SITE		D-Ba	D-B	D-Cu	D-Pb	Acidity	F	T-Alk	F-Turb.	T-Ba	T-Cu	T-Fe	T-Pb	T-B
NAME	DATE	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	NTU	mg/l	mg/l	mg/l	mg/l	mg/l
CS-4	8/19/1987						0.11	2465		0.01	< .01	< .01	< .001	.001
CS-4	7/8/1987											0.03		
CS-4	6/11/1987											0.05		
CS-4	5/19/1987											0.16		
CS-4	4/22/1987											0.45		
CS-4	10/21/1986											0.07		
CS-4	9/25/1986											0.38		
CS-4	8/20/1986						0.11	198		0.01	< .01	0.04	< .001	0.02
CS-4	7/22/1986											0.03		
CS-4	6/25/1986											0.44		
CS-4	5/28/1986											0.49		
CS-4	10/16/1985											< .01		
CS-4	9/19/1985											0.16		
CS-4	8/26/1985						0.14	211		0.01	0.02	< .01	< .001	0.12
CS-4	7/9/1985											< .05		
CS-4	6/20/1985											0.08		
CS-4	5/22/1985											0.33		
CS-4	11/13/1984											0.21		
CS-4	10/23/1984											0.17		
CS-4	9/17/1984											0.2		
CS-4	8/27/1984						0.21	205		0.02	0.02	0.2	< .001	0.04
CS-4	7/26/1984											0.24		
CS-4	6/27/1984											0.14		
CS-4	5/24/1984											0.92		
CS-4	11/11/1983											0.42		
CS-4	10/26/1983											0.16		
CS-4	9/28/1983											0.41		
CS-4	8/24/1983						0.1	216		0.02	0.02	0.15	0	0.01
CS-4	7/20/1983											0.18		
CS-4	6/29/1983											0.14		
CS-4	10/14/1982											0.8		
CS-4	9/14/1982											5		
CS-4	8/19/1982						0.16	210.5		0.04	0.01	6.7	0	0.01
CS-4	7/21/1982							183.6				13.5		
CS-4	6/29/1982											0.1		
CS-4	12/8/1981							223.9				0.25		
CS-4	11/11/1981	0.02	0.01	< .001	.001		0.12	215.4		0.03	< .001	0.28	< .001	0.02
CS-4	10/22/1981							262.2				0.335		
CS-4	7/29/1981											0.125		
CS-9	11/16/2005							255	6.59			0.24		
CS-9	9/27/2005	0.02	0.03	< .01	< .01	<10.	0.15	240	6.5	0.02	< .01	0.16	< .01	0.03
CS-9	6/29/2005							240	6			< .05		
CS-9	11/1/2004							249	2			0.06		
CS-9	9/28/2004	0.02	0.02	< .01	< .01	< 5.	0.12	234	4.8	0.02	< .01	0.2	< .01	0.03
CS-9	6/28/2004							228	12			0.37		
CS-9	11/11/2003							256	13			0.455		
CS-9	9/25/2003	0.02	0.021	< .01	.005	< 5.	0.14	244	22	0.03	< .01	1.6	< .005	0.03
CS-9	6/25/2003							236	4.8			0.152		
CS-9	10/22/2002							250	16			0.4		
CS-9	9/9/2002	< .6	0.06	< .1	< .1	< 5.	0.09	259	7	< .6	< .1	0.4	< .1	0.06

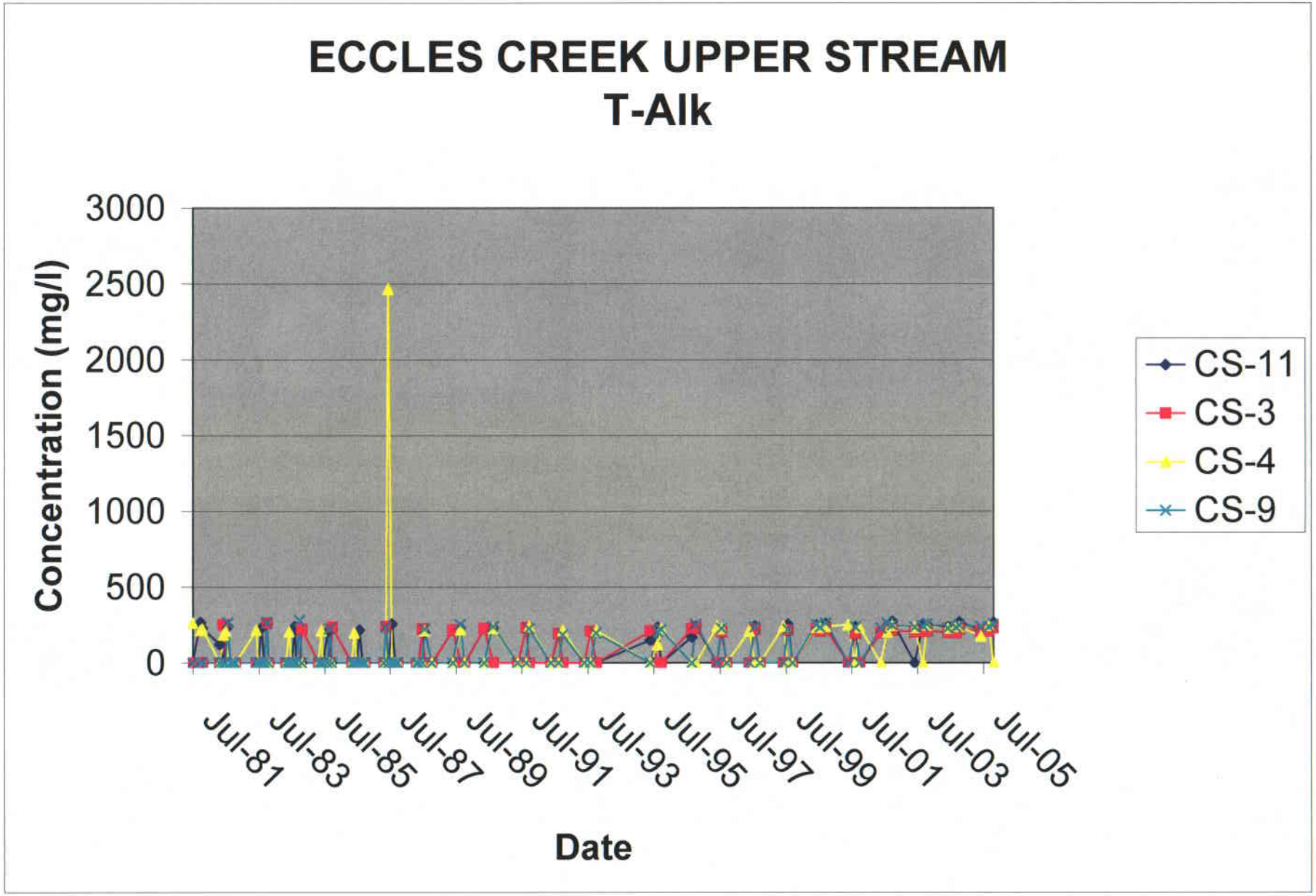
SITE NAME	DATE	D-Ba mg/l	D-B mg/l	D-Cu mg/l	D-Pb mg/l	Acidity mg/l	F mg/l	T-Alk mg/l	F-Turb. NTU	T-Ba mg/l	T-Cu mg/l	T-Fe mg/l	T-Pb mg/l	T-B mg/l
CS-9	6/19/2002							229	13			0.3		
CS-9	10/25/2001								11			0.1		
CS-9	9/6/2001	< .6	< .06	< .1	< .1	< 5.	0.16	236	6	< .6	< .1	< .1	< .1	< .06
CS-9	6/20/2001								18			0.2		
CS-9	10/8/2000							262	20			0.2		
CS-9	8/9/2000	< 1.	0.1	< .1	< .1	< 10.	0.1	235	9	< 1.	< .1	< .1	< .1	0.1
CS-9	6/28/2000							252	11			0.1		
CS-9	10/7/1999								5			< .1		
CS-9	8/16/1999	< 1.	< .1	< .1	< .1	< 10.	0.12	220	8	< 1.	< .1	< .1	< .1	0.2
CS-9	6/29/1999								8			< .1		
CS-9	10/11/1998								11.3			0.3		
CS-9	8/16/1998	< 1.	0.2	< .1	< .1	< 10.	0.09	236	4.22	< 1.	< .1	< .1	< .1	0.2
CS-9	6/16/1998								4.03			< .1		
CS-9	10/9/1997								7.92			0.3		
CS-9	8/13/1997	< 1.	0.1	< .1	< .1		0.16	227	18.9	< 1.	< .1	0.3	< .1	0.1
CS-9	6/24/1997											0.2		
CS-9	9/24/1996	< 1.	0.2	< .1	< .1		0.21	255		< 1.	< .1	1.1	< .1	0.2
CS-9	10/17/1995											< .1		
CS-9	9/6/1995	< 1.	0.2	< .1	< .1		0.2	220		< 1.	< .1	< .1	< .1	0.2
CS-9	6/20/1995							205				< .1		
CS-9	10/27/1993											0.17		
CS-9	8/26/1993	0.01	< .1	< .03	.003		0.27	197		< .01	< .03	< .04	0.01	< .13
CS-9	6/22/1993											0.06		
CS-9	10/22/1992											0.72		
CS-9	9/8/1992	0.04	< .07	< .01	.009		< .1	185		0.04	< .02	0.86	0.02	< .01
CS-9	6/15/1992											0.24		
CS-9	10/17/1991											0.06		
CS-9	9/16/1991	0.02	< .05	< .006	.003		< .2	226		0.02	0.01	0.3	< .003	< .05
CS-9	6/11/1991											0.5		
CS-9	10/25/1990											0.17		
CS-9	9/13/1990	< .01	< .005	< .01	.002		0.13	239		0.02	< .01	0.64	< .002	.005
CS-9	6/6/1990											0.35		
CS-9	10/31/1989											1.24		
CS-9	9/13/1989	< .01	< .01	< .01	.001		0.18	251		< .01	0.02	1.1	< .001	0.03
CS-9	6/22/1989											0.46		
CS-9	11/2/1988											0.66		
CS-9	8/15/1988						0.17	224		0.03	0.02	0.31	< .001	.001
CS-9	7/20/1988											0.18		
CS-9	6/6/1988											0.62		
CS-9	5/18/1988											1.96		
CS-9	11/18/1987											0.2		
CS-9	10/21/1987											0.1		
CS-9	9/23/1987											0.18		
CS-9	9/8/1987											0.24		
CS-9	8/19/1987						0.18	234		0.01	< .01	0.08	< .001	0.02
CS-9	7/8/1987											0.24		
CS-9	6/11/1987											0.31		
CS-9	5/20/1987											0.61		
CS-9	4/22/1987											0.39		
CS-9	12/10/1986											0.04		

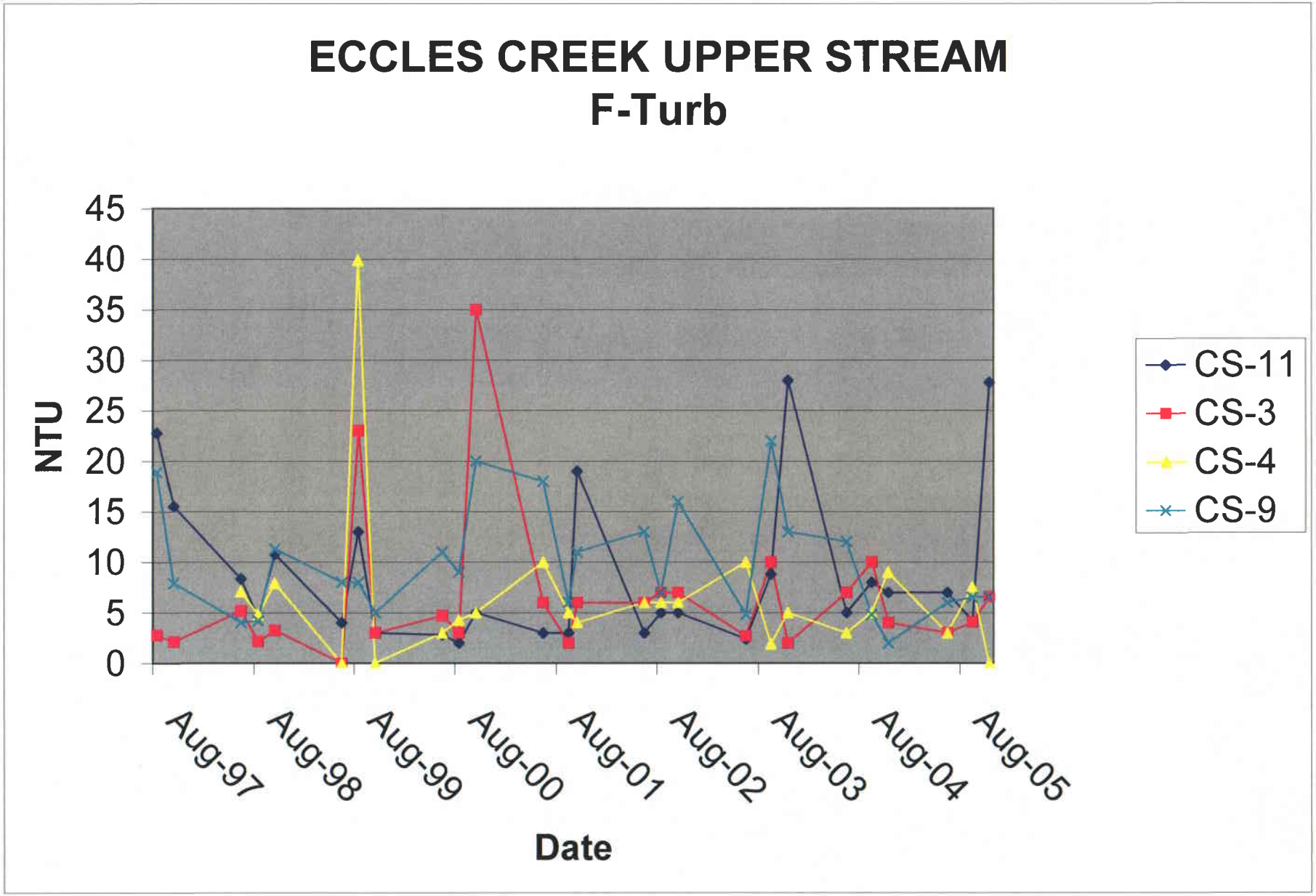
SITE		D-Ba	D-B	D-Cu	D-Pb	Acidity	F	T-Alk	F-Turb.	T-Ba	T-Cu	T-Fe	T-Pb	T-B
NAME	DATE	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	NTU	mg/l	mg/l	mg/l	mg/l	mg/l
CS-9	11/11/1986											0.11		
CS-9	10/21/1986											0.15		
CS-9	9/25/1986											0.19		
CS-9	8/20/1986						0.18	224		0.02	< .01	0.06	< .001	0.03
CS-9	7/22/1986											0.1		
CS-9	6/24/1986											1.1		
CS-9	5/28/1986											1.09		
CS-9	10/16/1985											0.12		
CS-9	9/19/1985											0.57		
CS-9	8/26/1985						0.24	281		0.02	0.05	1.23	0	0.17
CS-9	7/9/1985											0.24		
CS-9	6/20/1985											0.11		
CS-9	5/22/1985											0.77		
CS-9	4/24/1985											3.41		
CS-9	10/23/1984											0.91		
CS-9	9/17/1984											0.65		
CS-9	8/28/1984						0.34	265		0.02	0.02	0.5	< .001	0.03
CS-9	7/26/1984											0.46		
CS-9	6/27/1984											0.36		
CS-9	5/17/1984											45.1		
CS-9	4/25/1984											0.8		
CS-9	11/11/1983											0.27		
CS-9	10/26/1983											0.095		
CS-9	9/28/1983											0.24		
CS-9	8/25/1983						0.17	264		0.02	< .001	0.75	< .001	0.01
CS-9	7/20/1983											0.09		
CS-9	6/30/1983											0.45		
CS-9	6/8/1983											1.75		
CS-9	11/9/1982											0.14		
CS-9	10/14/1982											0.08		
CS-9	9/15/1982											0.3		
CS-9	8/19/1982						0.21	265.2		0.02	0.01	0.08	0	0.03
CS-9	7/21/1982							260.7				0.07		
CS-9	6/30/1982											0.17		
CS-9	5/20/1982							188.9				0.75		
CS-9	12/9/1981							269.5				0.14		
CS-9	11/12/1981	0.02	0.02	< .001	.001		0.19	260.7		0.02	< .001	0.12	< .001	0.03
CS-9	10/23/1981							314.1				0.22		
CS-9	7/29/1981											0.085		

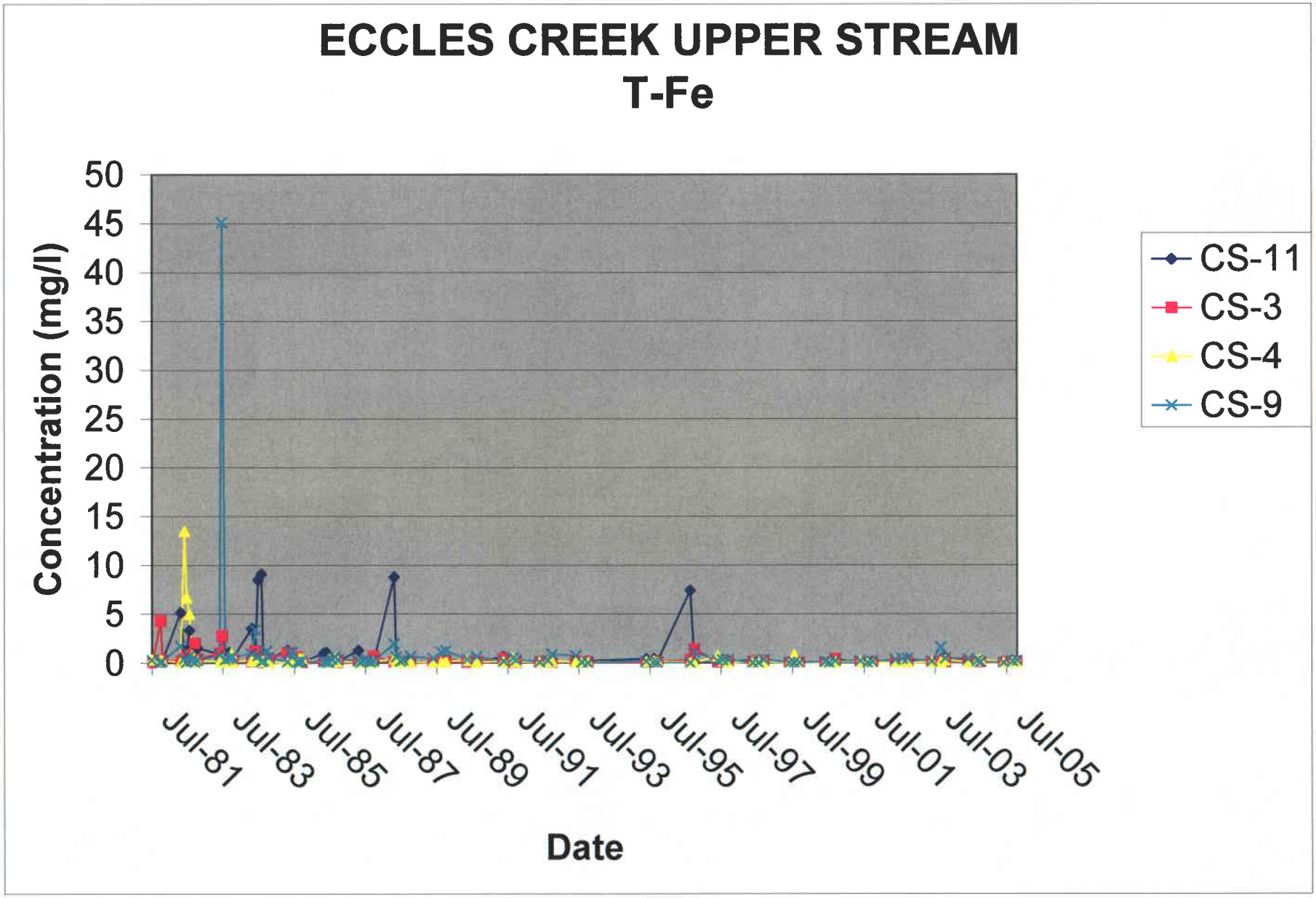

ECCLES CREEK UPPER STREAM
D-Ba
Concentration (mg/l)
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
Jul-81
Jul-83
Jul-85
Jul-87
Jul-89
Jul-91
Jul-93
Jul-95
Jul-97
Jul-99
Jul-01
Jul-03
Jul-05
Date
CS-11
CS-9
CS-4
CS-3

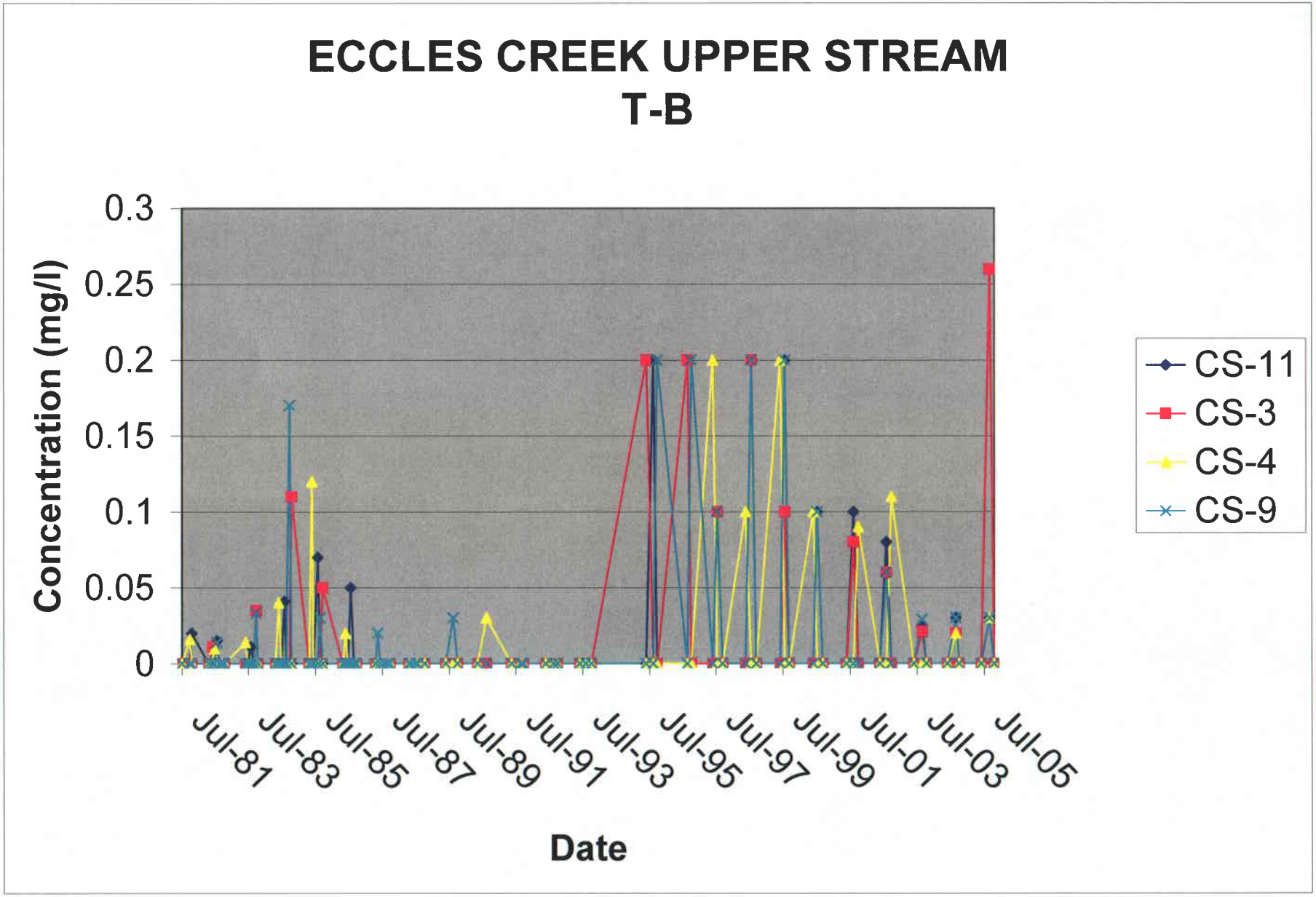

ECCLES CREEK UPPER STREAM
D-B
Concentration (mg/l)
0.3
0.25
0.2
0.15
0.1
0.05
0
Jul-81
Jul-83
Jul-85
Jul-87
Jul-89
Jul-91
Jul-93
Jul-95
Jul-97
Jul-99
Jul-01
Jul-03
Jul-05
Date
CS-11
CS-9
CS-4
CS-3


ECCLES CREEK UPPER STREAM
F
Concentration (mg/l)
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
Jul-81
Jul-83
Jul-85
Jul-87
Jul-89
Jul-91
Jul-93
Jul-95
Jul-97
Jul-99
Jul-01
Jul-03
Jul-05
Date
CS-11
CS-3
CS-4
CS-9


ECCLES CREEK UPPER STREAM
T-Alk
Concentration (mg/l)
3000
2500
2000
1500
1000
500
0
Jul-81
Jul-83
Jul-85
Jul-87
Jul-89
Jul-91
Jul-93
Jul-95
Jul-97
Jul-99
Jul-01
Jul-03
Jul-05
Date
CS-11
CS-3
CS-4
CS-9


ECCLES CREEK UPPER STREAM
F-Turb
NTU
45
40
35
30
25
20
15
10
5
0
Aug-97
Aug-98
Aug-99
Aug-00
Aug-01
Aug-02
Aug-03
Aug-04
Aug-05
Date
CS-11
CS-3
CS-4
CS-9


ECCLES CREEK UPPER STREAM
T-Fe
Concentration (mg/l)
50
45
40
35
30
25
20
15
10
5
0
Jul-81
Jul-83
Jul-85
Jul-87
Jul-89
Jul-91
Jul-93
Jul-95
Jul-97
Jul-99
Jul-01
Jul-03
Jul-05
Date
CS-11
CS-3
CS-4
CS-9


ECCLES CREEK UPPER STREAM
T-B
Concentration (mg/l)
0.3
0.25
0.2
0.15
0.1
0.05
0
Jul-81
Jul-83
Jul-85
Jul-87
Jul-89
Jul-91
Jul-93
Jul-95
Jul-97
Jul-99
Jul-01
Jul-03
Jul-05
Date
CS-11
CS-3
CS-4
CS-9

ECCLES CREEK LOWER STREAMS AND SPRING

SITE		D-Ba	D-B	D-Cu	D-Pb	Acidity	F	T-Alk	F-Turb.	T-Ba	T-Cu	T-Fe	T-Pb	T-B
NAME	DATE	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	NTU	mg/l	mg/l	mg/l	mg/l	mg/l
CS-13	11/16/2005								11.4			0.54		
CS-13	9/27/2005	0.07	0.05	< .01	< .01	< 5.	0.16	321	9.6	0.07	< .01	0.56	< .01	0.05
CS-13	6/30/2005							308	2			< .05		
CS-13	11/11/2003							353	9			0.694		
CS-13	9/25/2003	0.06	0.038	< .01	.005	< 5.	0.1	350	10	0.06	< .01	0.35	< .005	0.05
CS-13	6/26/2003								16.4			0.801		
CS-13	2/26/2003							274	2			0.953		
CS-13	10/21/2002							344	32			1		
CS-13	8/28/2002	< .6	0.08	< .1	< .1	< 5.	0.1	318	13	< .6	< .1	0.5	< .1	0.17
CS-13	6/18/2002							312	33			0.6		
CS-13	10/30/2001								6			0.3		
CS-13	9/6/2001	< .6	0.11	< .1	< .1	< 5.	0.11	318	6	< .6	< .1	0.1	< .1	0.12
CS-13	6/20/2001								38			0.8		
CS-13	3/1/2001											0.6		
CS-13	10/8/2000								27			0.5		
CS-13	8/9/2000	< 1.	0.1	< .1	< .1	< 10.	0.06	316	10	< 1.	< .1	0.2	< .1	0.2
CS-13	6/28/2000								13			0.4		
CS-13	10/7/1999								8			< .1		
CS-13	8/16/1999	< 1.	0.5	< .1	< .1	< 10.	0.22	247	31	< 1.	< .1	2.4	< .1	0.6
CS-13	7/5/1999								8.21			1.6		
CS-13	10/11/1998								63.9			1.9		
CS-13	8/17/1998	< 1.	0.2	< .1	< .1	11	0.07	333	11.9	< 1.	< .1	0.2	< .1	0.3
CS-13	6/16/1998								12			0.4		
CS-13	10/12/1997								13.8			< .1		
CS-13	8/14/1997	< 1.	0.2	< .1	< .1		0.17	329	11.3	< 1.	< .1	0.3	< .1	0.3
CS-13	6/24/1997											0.3		
CS-13	10/30/1996							359				0.2		
CS-13	9/25/1996	< 1.	0.3	< .1	< .1		0.14	329		< 1.	< .1	0.4	< .1	0.3
CS-13	6/26/1996											1.3		
CS-13	10/16/1995											0.6		
CS-13	9/6/1995	< .001	0.2	< .1	< .1		0.2	315		< 1.	< .1	< .1	< .1	0.3
CS-13	6/20/1995							350				0.3		
CS-13	10/28/1993											0.043		
CS-13	8/26/1993	0.06	< .1	< .03	.003		0.43	252		0.06	< .03	< .04	0	< .13
CS-13	6/23/1993											0.1		
CS-13	10/23/1992											0.13		
CS-13	9/9/1992	0.08	< .07	< .01	0.01			234		0.08	< .02	0.2	0.02	< .01
CS-13	6/15/1992											0.34		
CS-13	10/17/1991											0.46		
CS-13	9/17/1991	0.08	< .05	< .006	.003		< .2	300		0.09	0.01	0.16	< .003	< .05
CS-13	6/11/1991											0.24		
CS-13	2/14/1991											0.07		
CS-13	11/14/1990											0.13		
CS-13	9/13/1990	< .01	< .005	< .01	.002		0.1	278		< .01	< .01	< .03	< .002	.005
CS-13	6/6/1990											0.28		
CS-13	10/31/1989											0.15		
CS-13	9/13/1989	0.07	< .01	< .01	.001		0.16	308		0.07	< .01	0.07	< .001	< .01
CS-13	6/23/1989											0.16		

SITE		D-Ba	D-B	D-Cu	D-Pb	Acidity	F	T-Alk	F-Turb.	T-Ba	T-Cu	T-Fe	T-Pb	T-B
NAME	DATE	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	NTU	mg/l	mg/l	mg/l	mg/l	mg/l
CS-13	11/3/1988											0.74		
CS-13	8/16/1988						0.18	299		0.07	0.02	0.08	< .001	0.06
CS-13	7/20/1988											0.31		
CS-13	6/6/1988											0.07		
CS-13	5/18/1988											0.1		
CS-13	4/27/1988											0.07		
CS-13	12/15/1987											0.1		
CS-13	11/19/1987											0.02		
CS-13	10/22/1987											0.02		
CS-13	9/24/1987											0.05		
CS-13	8/20/1987						0.17	317		0.05	< .01	0.03	< .001	0.03
CS-13	7/9/1987											0.21		
CS-13	6/11/1987											0.03		
CS-13	4/22/1987											0.1		
CS-13	3/18/1987											< .01		
CS-13	2/23/1987											0.11		
CS-13	1/22/1987											0.07		
CS-13	12/11/1986											< .01		
CS-13	11/12/1986											0.03		
CS-13	10/22/1986											0.02		
CS-13	9/26/1986											< .01		
CS-13	8/21/1986						0.12	282		0.08	0.05	0.4	< .001	0.27
CS-13	7/23/1986											0.34		
CS-13	6/25/1986											0.1		
CS-13	5/28/1986											0.05		
CS-13	4/17/1986											0.09		
CS-13	10/16/1985											0.05		
CS-13	9/19/1985											0.19		
CS-13	8/22/1985						0.14	290		0.06	< .01	0.11	< .001	0.08
CS-13	7/9/1985											0.08		
CS-13	6/20/1985											0.5		
CS-13	5/22/1985											0.12		
CS-13	4/24/1985											0.12		
CS-13	11/14/1984											0.29		
CS-13	10/23/1984											1.11		
CS-13	9/18/1984											0.54		
CS-13	8/24/1984						0.17	340		0.06	0.02	0.5	0.01	0.04
CS-13	7/27/1984											0.22		
CS-13	6/29/1984											0.23		
CS-13	5/17/1984											0.25		
CS-13	4/24/1984											0.3		
CS-13	3/22/1984											0.05		
CS-13	2/22/1984											0.25		
CS-13	11/11/1983											0.2		
CS-13	11/10/1983											0.15		
CS-6	11/1/2005							245	4.56			0.45		
CS-6	9/26/2005	0.05	0.19	< .01	< .01	< 5.	0.1	234	5.46	0.05	< .01	0.37	< .01	0.17
CS-6	6/30/2005							240	5			0.08		
CS-6	2/2/2005							288	2.11			< .05		
CS-6	11/12/2004								5			0.11		

SITE		D-Ba	D-B	D-Cu	D-Pb	Acidity	F	T-Alk	F-Turb.	T-Ba	T-Cu	T-Fe	T-Pb	T-B
NAME	DATE	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	NTU	mg/l	mg/l	mg/l	mg/l	mg/l
CS-6	9/28/2004	0.07	0.21	< .01	< .01	< 5.	0.19	234	3.7	0.07	< .01	0.11	< .01	0.21
CS-6	6/29/2004							230	8			0.25		
CS-6	2/26/2004							255	4.8			0.167		
CS-6	11/11/2003							215	6			0.199		
CS-6	9/25/2003	0.16	0.134	< .01	.005	< 5.	0.22	217	13	0.16	< .01	0.29	< .005	0.15
CS-6	6/26/2003								5.8			0.214		
CS-6	2/26/2003							221	8			0.723		
CS-6	10/21/2002							226	13			0.2		
CS-6	8/28/2002	< .6	0.09	< .1	< .1	< 5.	0.15	195	13	< .6	< .1	0.2	< .1	0.15
CS-6	6/18/2002							188	18			0.3		
CS-6	1/28/2002								2			0.3		
CS-6	10/30/2001								30			0.7		
CS-6	9/6/2001	< .6	0.12	< .1	< .1	< 5.	0.07	217	39	< .6	< .1	0.7	< .1	0.12
CS-6	6/20/2001								10			0.2		
CS-6	3/1/2001											0.6		
CS-6	10/8/2000							217	48			0.7		
CS-6	8/9/2000	< 1.	0.2	< .1	< .1	< 10.	0.2	202	22	< 1.	< .1	0.6	< .1	0.2
CS-6	6/28/2000								9			0.2		
CS-6	8/16/1999		2E-04	.0001	0001	< 10.	0.17	246	17	< 1.	.0001	0.5	.0001	0
CS-6	7/5/1999								4.72			0.3		
CS-6	10/11/1998								7.96			0.3		
CS-6	8/17/1998	< 1.	0.2	< .1	< .1	< 10.	0.13	249	10.4	< 1.	< .1	0.4	< .1	0.3
CS-6	6/16/1998								14.9			0.3		
CS-6	10/12/1997								8.08			0.4		
CS-6	8/14/1997	< 1.	0.1	< .1	< .1		0.12	258	10.3	< 1.	< .1	0.4	< .1	0.2
CS-6	6/24/1997											0.2		
CS-6	10/30/1996							285				0.6		
CS-6	9/25/1996	< 1.	0.5	< .1	< .1		0.44	282		< 1.	< .1	0.5	< .1	0.5
CS-6	10/16/1995											0.8		
CS-6	9/6/1995	< 1.	0.2	< .1	< .1		0.3	290		< 1.	< .1	0.5	< .1	0.3
CS-6	6/20/1995							215				0.6		
CS-6	10/28/1993											0.593		
CS-6	8/30/1993	0.05	0.15	< .03	.003		1.04	269		0.05	< .007	0.45	< .003	0.31
CS-6	6/22/1993											0.27		
CS-6	10/23/1992											0.65		
CS-6	9/9/1992	0.07	0.17	< .01	0.01		0.92	240		0.07	< .02	0.71	0.01	0.17
CS-6	6/16/1992											1.83		
CS-6	11/5/1991											0.63		
CS-6	9/17/1991	0.06	0.25	< .006	.003		0.31	259		0.06	< .006	0.42	< .003	0.25
CS-6	6/11/1991											1.34		
CS-6	2/14/1991											0.51		
CS-6	11/14/1990											0.9		
CS-6	9/12/1990	< .08	0.069	< .01	.002		0.28	225		0.08	< .01	0.45	< .002	0.07
CS-6	6/6/1990											0.39		
CS-6	1/17/1990											0.63		
CS-6	10/31/1989											0.4		
CS-6	9/13/1989	0.06	0.075	< .01	.001		0.29	234		0.06	< .01	0.38	< .001	0.08
CS-6	6/22/1989											0.39		
CS-6	11/2/1988											0.51		
CS-6	8/16/1988						0.27	218		0.07	0.02	0.55	< .001	0.08

SITE		D-Ba	D-B	D-Cu	D-Pb	Acidity	F	T-Alk	F-Turb.	T-Ba	T-Cu	T-Fe	T-Pb	T-B
NAME	DATE	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	NTU	mg/l	mg/l	mg/l	mg/l	mg/l
CS-6	7/21/1988											0.4		
CS-6	6/6/1988											0.38		
CS-6	5/18/1988											0.98		
CS-6	4/27/1988											0.4		
CS-6	3/23/1988											0.65		
CS-6	2/17/1988											0.56		
CS-6	12/15/1987											0.36		
CS-6	11/19/1987											0.44		
CS-6	10/22/1987											0.29		
CS-6	9/24/1987											0.34		
CS-6	8/20/1987						0.29	250		0.06	< .01	0.24	< .001	0.09
CS-6	7/8/1987											0.53		
CS-6	6/11/1987											0.32		
CS-6	5/21/1987											0.48		
CS-6	4/22/1987											0.51		
CS-6	3/19/1987											0.31		
CS-6	2/23/1987											0.45		
CS-6	1/22/1987											0.45		
CS-6	12/11/1986											0.26		
CS-6	11/12/1986											0.42		
CS-6	10/22/1986											0.3		
CS-6	9/26/1986											0.54		
CS-6	8/26/1986						0.15	208		0.05	< .01	0.35	< .001	0.35
CS-6	7/23/1986											0.46		
CS-6	6/25/1986											2.5		
CS-6	5/28/1986											2.22		
CS-6	4/17/1986											2.39		
CS-6	3/20/1986											0.5		
CS-6	10/16/1985											0.34		
CS-6	9/19/1985											0.46		
CS-6	8/22/1985						0.2	218		0.07	< .01	0.42	< .001	0.07
CS-6	7/9/1985											0.33		
CS-6	6/20/1985											0.56		
CS-6	5/22/1985											2.29		
CS-6	4/17/1985											4.91		
CS-6	3/28/1985											0.52		
CS-6	2/28/1985											0.47		
CS-6	1/30/1985											0.48		
CS-6	12/11/1984											0.38		
CS-6	11/14/1984											0.55		
CS-6	10/25/1984											0.53		
CS-6	9/18/1984											0.86		
CS-6	8/28/1984						1.17	225		0.06	0.03	1.2	< .001	0.03
CS-6	7/27/1984											1.13		
CS-6	6/29/1984											0.45		
CS-6	5/17/1984											19.2		
CS-6	4/26/1984											3.53		
CS-6	3/22/1984											0.78		
CS-6	2/22/1984											0.67		
CS-6	1/18/1984											0.62		

SITE		D-Ba	D-B	D-Cu	D-Pb	Acidity	F	T-Alk	F-Turb.	T-Ba	T-Cu	T-Fe	T-Pb	T-B
NAME	DATE	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	NTU	mg/l	mg/l	mg/l	mg/l	mg/l
CS-6	11/11/1983											0.54		
CS-6	10/26/1983											0.35		
CS-6	9/29/1983											0.63		
CS-6	8/25/1983						0.14	236		0.05	0.02	0.65	0	0.02
CS-6	7/20/1983											0.34		
CS-6	6/30/1983											0.7		
CS-6	5/25/1983											24.5		
CS-6	4/21/1983											9.8		
CS-6	3/31/1983											2.4		
CS-6	2/15/1983											1.03		
CS-6	1/19/1983											1.22		
CS-6	12/14/1982											2.55		
CS-6	11/10/1982											1.05		
CS-6	10/14/1982											1.35		
CS-6	9/14/1982											2.25		
CS-6	8/19/1982						0.21	261.8		0.07	0.01	2.43	0	0.04
CS-6	7/22/1982							275.3				0.52		
CS-6	6/30/1982											1.4		
CS-6	5/20/1982							178.3				3.6		
CS-6	4/15/1982							239.4				4.6		
CS-6	3/31/1982							246.6				2		
CS-6	2/18/1982							257.9				0.99		
CS-6	1/21/1982							262.4				0.14		
CS-6	12/9/1981							275.1				0.76		
CS-6	11/11/1981	0.15	0.025	0.01	.001		0.18	278.2		0.18	0.01	1.975	< .001	0.07
CS-6	10/23/1981							316.4				1.635		
CS-6	7/29/1981											0.86		
VC-6	11/1/2005							276	9.34			0.57		
VC-6	9/26/2005	0.06	0.2	< .01	< .01	< 5.	0.29	260	9.48	0.06	< .01	0.68	< .01	0.2
VC-6	6/30/2005							271	6			0.42		
VC-6	2/2/2005							309	3.2			0.18		
VC-6	11/11/2004								4			0.08		
VC-6	9/27/2004	0.06	0.23	< .01	< .01	< 5.	0.21	272	5	0.06	< .01	0.17	< .01	0.23
VC-6	6/29/2004							246	9			0.27		
VC-6	2/26/2004							296	10			0.526		
VC-6	11/11/2003							220	8			0.208		
VC-6	9/24/2003	0.19	0.142	< .01	.005	< 5.	0.23	221	11.9	0.19	< .01	0.315	< .005	0.14
VC-6	6/26/2003								7.1			0.271		
VC-6	2/26/2003							230	2			0.289		
VC-6	10/21/2002							245	9			0.1		
VC-6	8/28/2002	< .6	0.18	< .1	< .1	< 5.	0.14	198	11	< .06	< .1	0.2	< .1	0.18
VC-6	6/18/2002							193	9			0.2		
VC-6	2/28/2002								2.5			0.5		
VC-6	10/30/2001								22			0.4		
VC-6	9/6/2001	< .6	< .06	< .1	< .1	< 5.	0.17	240	53	< .6	< .1	0.4	< .1	0.11
VC-6	6/20/2001							285	15			0.4		
VC-6	3/1/2001											0.2		
VC-6	10/8/2000							215	47			0.7		
VC-6	8/9/2000	< 1.	0.2	< .1	< .1	< 10.	0.19	185	23	< 1.	< .1	0.2	< .1	0.2
VC-6	6/28/2000							213	30			0.2		

SITE		D-Ba	D-B	D-Cu	D-Pb	Acidity	F	T-Alk	F-Turb.	T-Ba	T-Cu	T-Fe	T-Pb	T-B
NAME	DATE	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	NTU	mg/l	mg/l	mg/l	mg/l	mg/l
VC-6	10/7/1999								10			< .1		
VC-6	8/16/1999	< 1.	0.3	< .1	< .1	< 10.	0	237	13	< 1.	< .1	0.3	< .1	0.4
VC-6	7/5/1999								4.12			0.1		
VC-6	10/11/1998								25.6			0.2		
VC-6	8/17/1998	< 1.	0.4	< .1	< .1	< 10.	0.08	245	51.2	< 1.	< .1	0.4	< .1	0.5
VC-6	6/16/1998								12			0.2		
VC-6	10/9/1997								9.51			0.5		
VC-6	8/13/1997	< 1.	0.4	< .1	< .1		0.25	248	24.4	< 1.	< .1	0.4	< .1	0.4
VC-6	6/24/1997											0.1		
VC-6	10/30/1996							318				0.5		
VC-6	9/26/1996	< 1.	0.6	< .1	< .1		0.39	300		< 1.	< .1	0.4	< .1	0.6
VC-6	6/25/1996											0.4		
VC-6	10/16/1995											0.7		
VC-6	9/5/1995	< 1.	0.5	< .1	< .1		0.4	300		< 1.	< .1	1.3	< .1	0.5
VC-6	6/20/1995							225				0.6		
VC-6	10/28/1993											0.91		
VC-6	8/30/1993	0.03	0.25	< .03	.003		1.23	280		0.04	< .007	0.265	0.01	0.35
VC-6	6/22/1993											0.98		
VC-6	10/23/1992											0.62		
VC-6	9/9/1992	0.07	0.37	< .01	.002		1.39	284		0.07	< .02	0.5	0	0.38
VC-6	6/15/1992											0.51		
VC-6	2/17/1992											0.66		
VC-6	11/5/1991											0.26		
VC-6	9/17/1991	0.05	0.42	< .006	.003		0.4	274		0.06	0.02	0.46	< .003	0.38
VC-6	6/10/1991											0.82		
VC-6	2/14/1991											0.57		
VC-6	11/14/1990											0.37		
VC-6	9/12/1990	< .01	0.09	< .01	.002		< .03	194		0.07	< .01	0.14	< .002	0.15
VC-6	6/6/1990											0.27		
VC-6	1/17/1990											0.68		
VC-6	10/31/1989											0.45		
VC-6	10/5/1989	0.05	0.2	< .01	.001		0.38	197						
VC-6	9/13/1989	0.04	0.18	< .01	.001		0.46	201		0.05	0.02	0.47	< .001	0.2
VC-6	6/23/1989											0.27		
VC-6	11/2/1988											0.25		
VC-6	8/16/1988						0.46	214		0.08	< .01	0.3	< .001	0.21
VC-6	7/20/1988											0.2		
VC-6	6/6/1988											0.25		
VC-6	5/18/1988											1.3		
VC-6	4/26/1988											7.4		
VC-6	3/22/1988											0.76		
VC-6	2/17/1988											0.61		
VC-6	1/28/1988											0.35		
VC-6	12/15/1987											0.41		
VC-6	11/19/1987											0.34		
VC-6	10/21/1987											0.32		
VC-6	9/24/1987											0.2		
VC-6	8/19/1987						0.49	204		0.07	< .01	0.1	< .001	0.16
VC-6	7/8/1987											0.36		
VC-6	6/11/1987											0.47		

SITE		D-Ba	D-B	D-Cu	D-Pb	Acidity	F	T-Alk	F-Turb.	T-Ba	T-Cu	T-Fe	T-Pb	T-B
NAME	DATE	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	NTU	mg/l	mg/l	mg/l	mg/l	mg/l
VC-6	5/20/1987											0.5		
VC-6	4/22/1987											9.1		
VC-6	3/18/1987											0.56		
VC-6	2/23/1987											0.22		
VC-6	1/22/1987											0.17		
VC-6	12/11/1986											0.1		
VC-6	11/11/1986											0.15		
VC-6	10/22/1986											0.13		
VC-6	9/25/1986											2.63		
VC-6	8/26/1986						0.19	190		0.05	< .01	0.13	< .001	0.27
VC-6	7/23/1986											1.24		
VC-6	6/25/1986											0.05		
VC-6	5/28/1986											1.4		
VC-6	4/17/1986											0.17		
VC-6	3/20/1986											0.25		
VC-6	1/22/1986											0.04		
VC-6	12/11/1985											0.12		
VC-6	11/19/1985											0.21		
VC-6	10/16/1985											0.23		
VC-6	9/19/1985											0.55		
VC-6	8/22/1985						0.25	198		0.07	< .01	0.26	< .001	0.14
VC-6	7/9/1985											0.2		
VC-6	6/20/1985											0.09		
VC-6	5/22/1985											4.93		
VC-6	4/17/1985											2.12		
VC-6	3/28/1985											0.46		
VC-6	2/28/1985											0.43		
VC-6	1/30/1985											0.32		
VC-6	12/11/1984											0.21		
VC-6	11/14/1984											0.34		
VC-6	10/25/1984											0.42		
VC-6	9/18/1984											1.42		
VC-6	8/28/1984						0.26	210		0.05	0.02	0.56	< .001	0.03
VC-6	7/27/1984											0.75		
VC-6	6/28/1984											0.44		
VC-6	5/17/1984											28		
VC-6	4/26/1984											1.15		
VC-6	3/22/1984											0.68		
VC-6	2/22/1984											0.3		
VC-6	1/18/1984											0.4		
VC-6	12/14/1983											0.61		
VC-6	11/11/1983											0.41		
VC-6	10/26/1983											0.245		
VC-6	9/29/1983											0.77		
VC-6	8/25/1983						0.13	25		0.04	0.02	0.31	0	0.05
VC-6	7/20/1983											0.23		
VC-6	6/30/1983											0.5		
VC-6	5/25/1983											16.1		
VC-6	4/21/1983											4.9		
VC-6	3/31/1983											1.07		

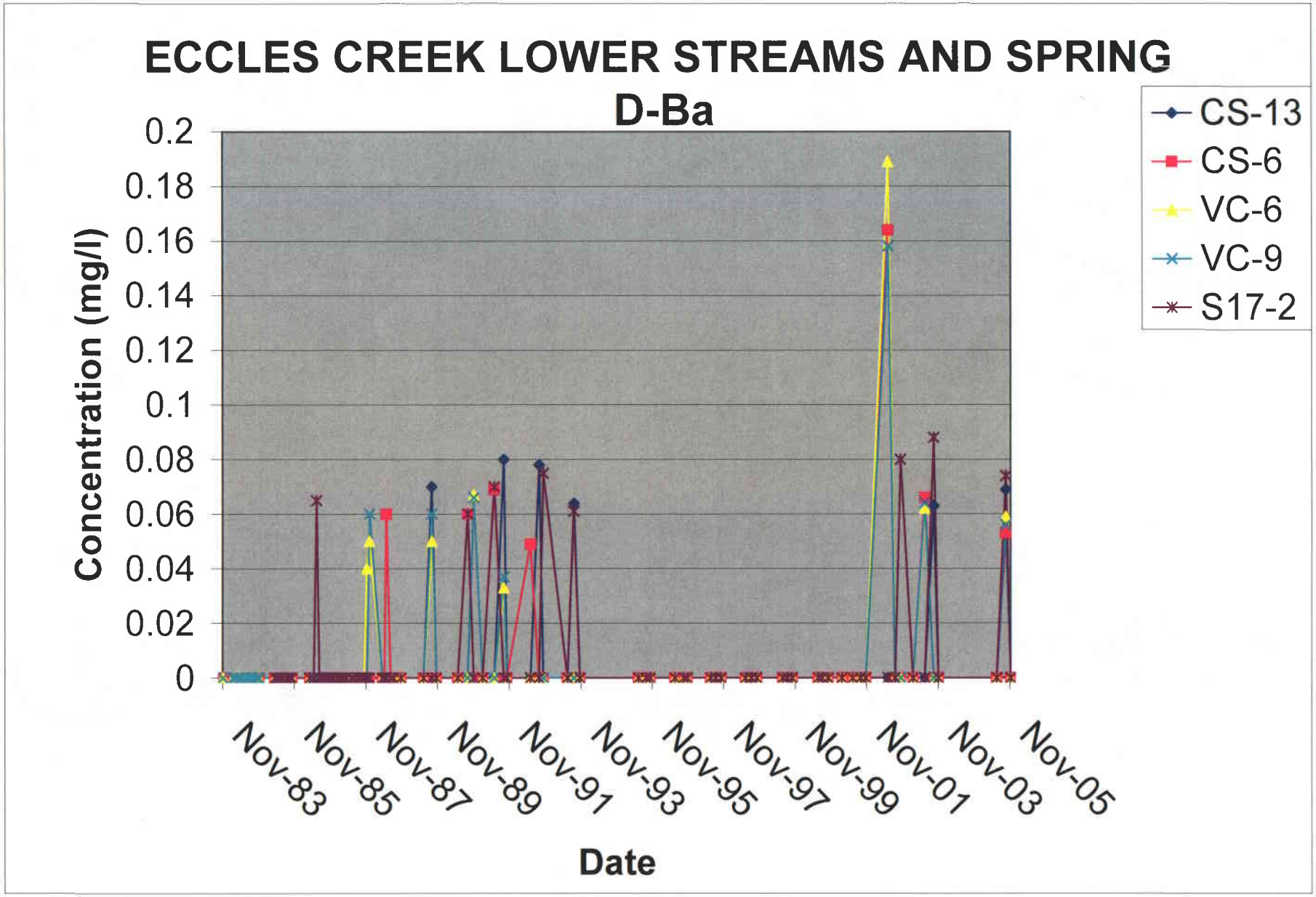
SITE NAME	DATE	D-Ba mg/l	D-B mg/l	D-Cu mg/l	D-Pb mg/l	Acidity mg/l	F mg/l	T-Alk mg/l	F-Turb. NTU	T-Ba mg/l	T-Cu mg/l	T-Fe mg/l	T-Pb mg/l	T-B mg/l
VC-6	2/15/1983											0.71		
VC-6	1/19/1983											0.38		
VC-6	12/14/1982											0.9		
VC-6	11/9/1982											1.85		
VC-6	10/14/1982											2.03		
VC-6	9/14/1982											10.5		
VC-6	8/19/1982						0.15	236.8		0.03	0.01	1.15	0	0.02
VC-6	7/21/1982							262.5				1		
VC-6	6/30/1982											1.16		
VC-6	5/20/1982							142.5				7.1		
VC-6	12/9/1981							284.3				0.27		
VC-6	11/11/1981	0.04	0.025	< .001	.001		0.18	255.2		0.05	< .001	0.38	< .001	0.03
VC-6	10/23/1981							294.4				0.144		
VC-6	7/29/1981											0.136		
VC-9	11/1/2005							243	4.48			< .05		
VC-9	9/27/2005	0.06	0.18	< .01	< .01	< 5.	0.23	239	31.3	0.06	< .01	0.52	< .01	0.18
VC-9	6/30/2005							235	8			0.19		
VC-9	2/2/2005							284	2.51			0.09		
VC-9	11/11/2004							235	4			0.08		
VC-9	9/28/2004	0.06	0.2	< .01	< .01	< 5.	0.19	228	4.9	0.06	< .01	0.12	< .01	0.21
VC-9	6/29/2004							227	6			0.22		
VC-9	2/26/2004							250	4.4			0.14		
VC-9	11/11/2003							215	7			0.155		
VC-9	9/25/2003	0.16	0.13	< .01	.005	6	0.22	211	12	0.16	< .01	0.241	< .005	0.15
VC-9	6/26/2003								14.5			0.236		
VC-9	2/26/2003							220	7.5			0.73		
VC-9	10/21/2002							221	2.3			0.2		
VC-9	8/28/2002	< .6	0.1	< .1	< .1	< 5.	0.15	197	14	< .6	< .1	0.3	< .1	0.11
VC-9	6/18/2002							189	10			0.2		
VC-9	2/28/2002								1			0.5		
VC-9	10/30/2001								31			0.6		
VC-9	9/6/2001	< .6	0.13	< .1	< .1	< 5.	0.08	212	47	< .6	< .1	0.6	< .1	0.14
VC-9	6/20/2001								20			0.4		
VC-9	3/1/2001											2.8		
VC-9	10/8/2000								38			0.6		
VC-9	8/9/2000	< 1.	0.2	< .1	< .1	< 10.	0.17	197	20	< 1.	< .1	0.5	< .1	0.2
VC-9	6/28/2000								9			0.2		
VC-9	10/7/1999								3			0.2		
VC-9	8/16/1999	< 1.	< .1	< .1	< .1	< 10.	0.16	237	16	< 1.	< .1	0.4	< .1	0.3
VC-9	7/5/1999								3.21			0.2		
VC-9	10/11/1998								6.25			0.2		
VC-9	8/17/1998	< 1.	0.2	< .1	< .1	< 10.	0.15	236	13.8	< 1.	< .1	0.4	< .1	0.3
VC-9	6/18/1998								27.4			0.7		
VC-9	10/12/1997								9.12			0.2		
VC-9	8/14/1997	< 1.	0.1	< .1	< .1		0.16	240	7.48	< 1.	< .1	0.3	< .1	0.2
VC-9	6/24/1997											0.3		
VC-9	10/30/1996							273				0.2		
VC-9	9/25/1996	< 1.	0.4	< .1	< .1		0.32	257		< 1.	< .1	0.4	< .1	0.5
VC-9	6/26/1996											0.3		
VC-9	10/16/1995											0.8		

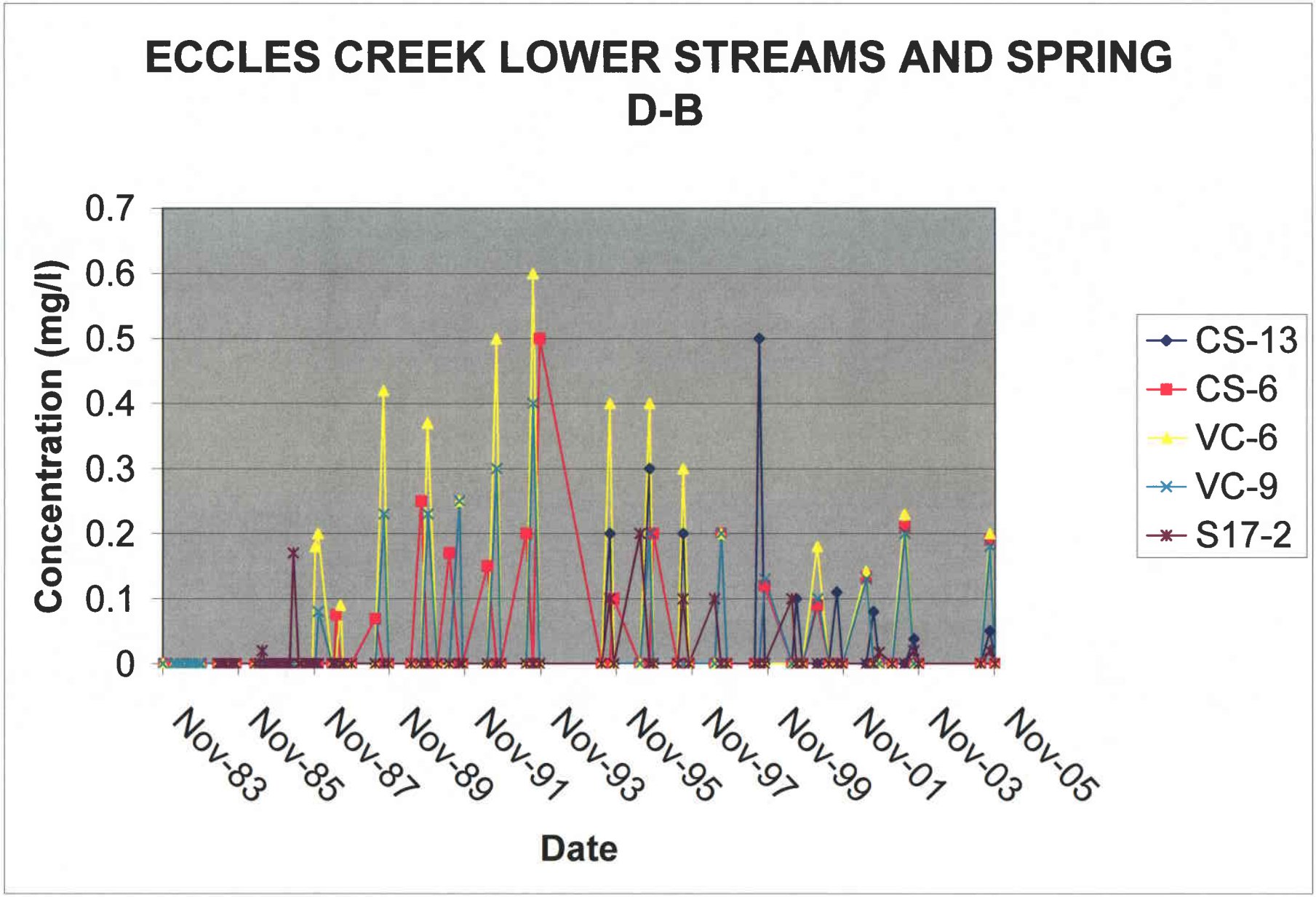
SITE		D-Ba	D-B	D-Cu	D-Pb	Acidity	F	T-Alk	F-Turb.	T-Ba	T-Cu	T-Fe	T-Pb	T-B
NAME	DATE	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	NTU	mg/l	mg/l	mg/l	mg/l	mg/l
VC-9	9/6/1995	< 1.	0.3	< .1	< .1		0.3	275		< 1.	< .1	0.3	< .1	0.3
VC-9	6/20/1995							215				0.7		
VC-9	10/28/1993											1.12		
VC-9	8/30/1993	0.04	0.25	< .03	.003		0.94	250		0.05	< .007	0.513	< .003	0.26
VC-9	6/22/1993											0.21		
VC-9	10/23/1992											0.43		
VC-9	9/9/1992	0.07	0.23	< .01	.002		0.92	234		0.08	< .02	0.64	0	0.25
VC-9	6/15/1992											0.23		
VC-9	2/17/1992											0.31		
VC-9	11/5/1991											0.7		
VC-9	9/17/1991	0.06	0.23	< .006	.003		0.29	251		0.06	0.01	0.35	< .003	0.23
VC-9	6/11/1991											2.15		
VC-9	2/14/1991											1.69		
VC-9	11/14/1990											0.57		
VC-9	9/13/1990	< .01	< .005	< .01	.002		0.31	211		0.03	< .01	< .03	< .002	.005
VC-9	6/6/1990											0.48		
VC-9	1/17/1990											0.53		
VC-9	10/31/1989											0.4		
VC-9	9/13/1989	0.06	0.08	< .01	.001		0.3	227		0.06	< .01	0.2	< .001	0.08
VC-9	6/23/1989											0.36		
VC-9	11/3/1988											0.51		
VC-9	8/16/1988						0.32	221		0.07	< .01	0.44	< .001	0.1
VC-9	7/21/1988											0.34		
VC-9	6/6/1988											0.42		
VC-9	5/18/1988											1.15		
VC-9	4/27/1988											0.34		
VC-9	2/17/1988											1.19		
VC-9	12/15/1987											0.4		
VC-9	11/19/1987											0.24		
VC-9	10/22/1987											0.21		
VC-9	9/24/1987											0.26		
VC-9	8/20/1987						0.28	243		0.06	< .01	0.18	< .001	0.1
VC-9	7/9/1987											0.47		
VC-9	6/11/1987											0.24		
VC-9	5/21/1987											0.42		
VC-9	4/23/1987											0.42		
VC-9	3/19/1987											0.23		
VC-9	2/23/1987											0.33		
VC-9	1/22/1987											0.32		
VC-9	12/11/1986											0.16		
VC-9	11/12/1986											0.21		
VC-9	10/22/1986											0.18		
VC-9	9/26/1986											0.36		
VC-9	8/26/1986						0.16	212		0.05	< .01	0.23	< .001	0.43
VC-9	7/23/1986											0.42		
VC-9	6/25/1986											0.28		
VC-9	5/28/1986											2.54		
VC-9	4/17/1986											2.85		
VC-9	3/20/1986											0.28		
VC-9	2/20/1986											0.67		

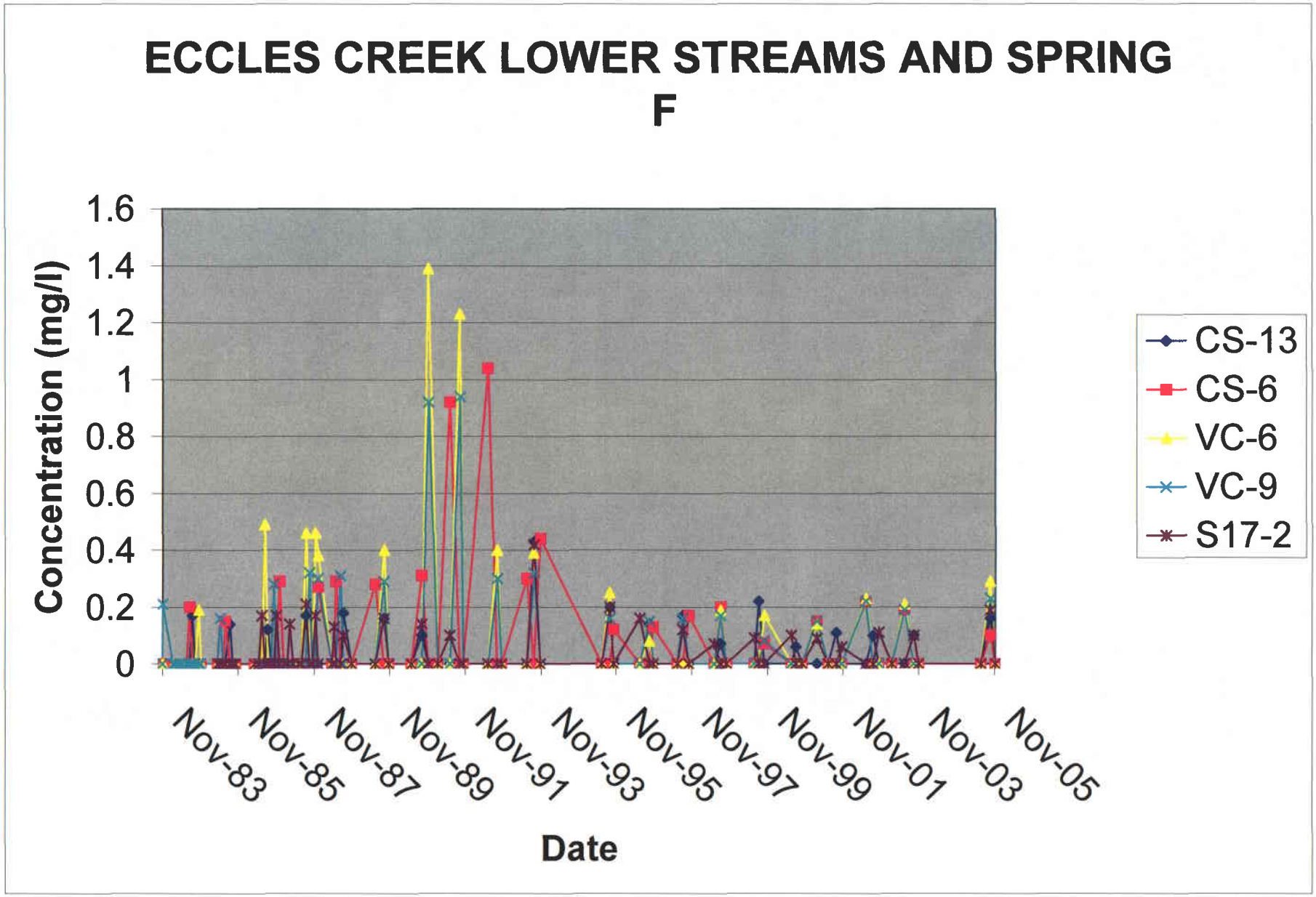
SITE		D-Ba	D-B	D-Cu	D-Pb	Acidity	F	T-Alk	F-Turb.	T-Ba	T-Cu	T-Fe	T-Pb	T-B
NAME	DATE	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	NTU	mg/l	mg/l	mg/l	mg/l	mg/l
VC-9	1/23/1986											0.23		
VC-9	12/11/1985											0.39		
VC-9	11/19/1985											0.4		
VC-9	10/16/1985											0.21		
VC-9	9/19/1985											0.52		
VC-9	8/22/1985						0.21	208		0.06	< .01	0.34	0.01	0.13
VC-9	7/9/1985											< .05		
VC-9	6/20/1985											0.19		
VC-9	5/22/1985											0.75		
VC-9	4/17/1985											2.76		
VC-9	3/28/1985											0.46		
VC-9	2/28/1985											0.46		
VC-9	1/30/1985											0.38		
VC-9	12/11/1984											0.23		
VC-9	11/14/1984											0.44		
VC-9	10/25/1984											0.4		
VC-9	9/18/1984											0.73		
VC-9	8/28/1984						0.26	275		0.06	0.02	1.5	< .001	0.03
VC-9	7/27/1984											1.43		
VC-9	6/29/1984											0.39		
VC-9	5/17/1984											20.2		
VC-9	4/26/1984											4.99		
VC-9	4/17/1984											2.85		
VC-9	3/22/1984											0.67		
VC-9	2/22/1984											0.47		
VC-9	1/18/1984											0.65		
VC-9	12/14/1983											0.5		
VC-9	11/10/1983											0.62		
VC-9	10/26/1983											0.41		
VC-9	9/29/1983											0.58		
VC-9	8/25/1983						0.16	226		0.04	0.02	0.45	0	0.04
VC-9	7/20/1983											0.4		
VC-9	6/30/1983											0.76		
VC-9	5/25/1983											36.2		
VC-9	4/21/1983											15.4		
VC-9	3/31/1983											2		
VC-9	3/23/1983											0.4		
VC-9	2/15/1983											0.97		
VC-9	1/19/1983											0.71		
VC-9	12/14/1982											1.35		
VC-9	11/10/1982											0.71		
VC-9	10/14/1982											1.17		
VC-9	9/14/1982											1.55		
VC-9	8/19/1982						0.19	231.6		0.07	0.01	2.6	0	0.01
VC-9	7/22/1982							226.4				0.8		
VC-9	6/30/1982											1.25		
VC-9	5/20/1982							177.5				4.5		
VC-9	4/15/1982							236.6				5.45		
VC-9	3/31/1982							265.9				1.65		
VC-9	2/18/1982							255.3				0.96		

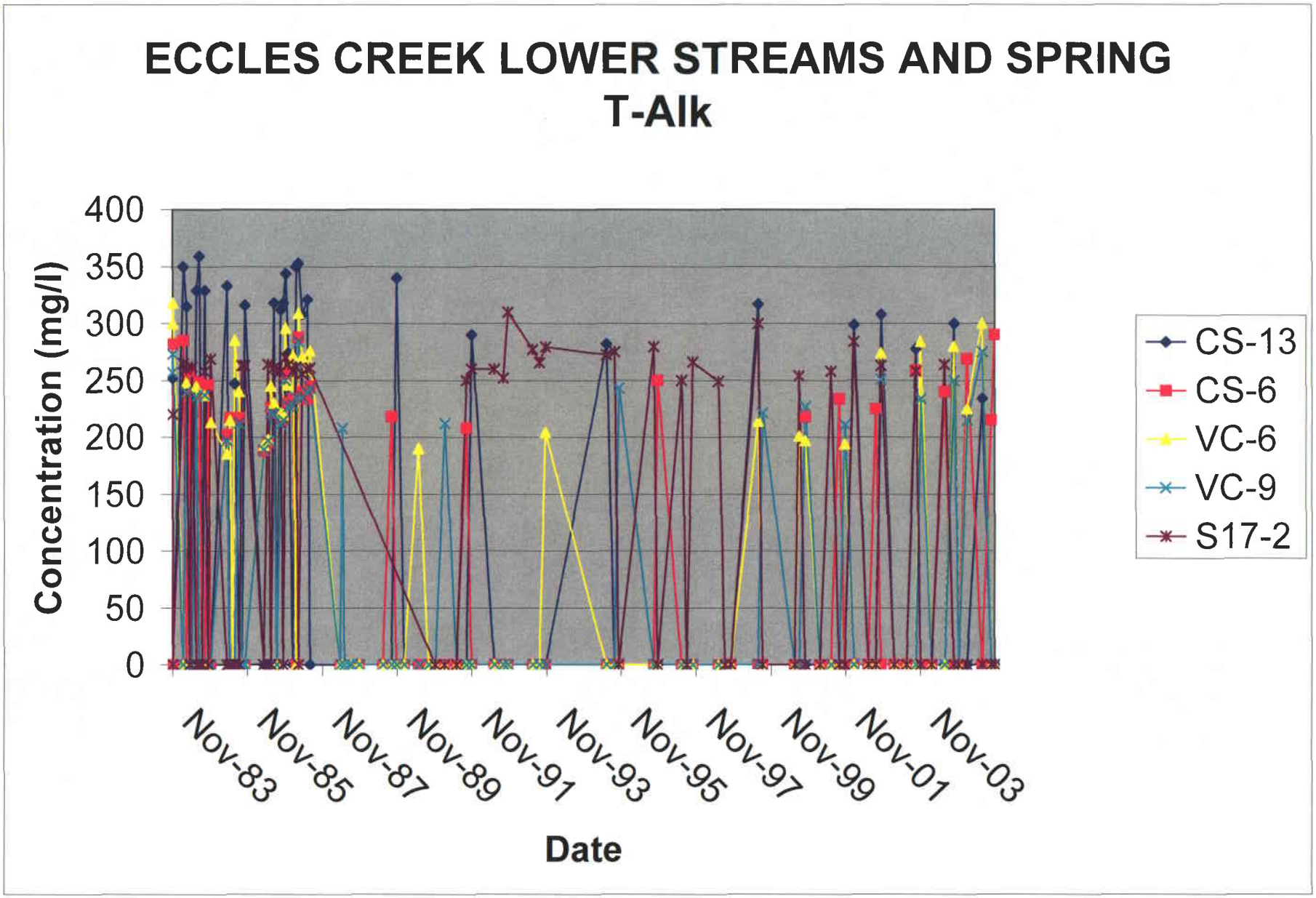
SITE		D-Ba	D-B	D-Cu	D-Pb	Acidity	F	T-Alk	F-Turb.	T-Ba	T-Cu	T-Fe	T-Pb	T-B
NAME	DATE	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	NTU	mg/l	mg/l	mg/l	mg/l	mg/l
VC-9	1/21/1982							256.7				3.34		
VC-9	12/9/1981							255.1				0.37		
VC-9	11/11/1981	0.05	0.03	0.01	.001		0.15	246		0.07	0.01	0.49	< .001	0.04
VC-9	10/23/1981							319.1				0.44		
VC-9	7/29/1981											0.38		
S17-2	11/16/2005							261	0			0.83		
S17-2	9/26/2005	0.07	0.02	< .01	< .01	< 5.	0.19	260	1.4	0.08	< .01	0.72	< .01	0.02
S17-2	6/30/2005							256	2			0.25		
S17-2	11/11/2004								6			0.79		
S17-2	9/28/2004	0.09	0.02	< .01	< .01	6	0.1	262	2.5	0.09	< .01	0.77	< .01	0.03
S17-2	6/29/2004							258	2			0.78		
S17-2	11/11/2003							264	5			0.789		
S17-2	9/25/2003	0.08	0.017	< .01	.005	8	0.11	270	3	0.08	< .01	0.788	< .005	0.02
S17-2	6/26/2003								0.8			0.229		
S17-2	10/21/2002							258	4			0.8		
S17-2	8/28/2002	< .6	< .06	< .1	< .1	10	0.06	260	4	< .6	< .1	0.8	< .1	0.1
S17-2	6/18/2002							261	3			0.8		
S17-2	10/30/2001								2			0.8		
S17-2	9/6/2001	< .6	< .06	< .1	< .1	< 5.	0.09	264	3	< .6	< .1	0.8	< .1	0.07
S17-2	6/20/2001								5			1		
S17-2	10/8/2000							263	2			0.8		
S17-2	8/9/2000	< 1.	0.1	< .1	< .1	15	0.1	263	4	< 1.	< .1	0.8	< .1	0.2
S17-2	6/28/2000								2			0.8		
S17-2	10/7/1999											0.9		
S17-2	8/16/1999	< 1.	< .1	< .1	< .1	< 10.	0.09	0	1	< 1.	< .1	0.9	< .1	< .1
S17-2	7/5/1999								3.61			1		
S17-2	10/11/1998								1.62			0.8		
S17-2	8/17/1998	< 1.	0.1	< .1	< .1	10	0.07	269	2.47	< 1.	< .1	0.8	< .1	0.2
S17-2	10/12/1997								3.64			0.8		
S17-2	8/14/1997	< 1.	0.1	< .1	< .1		0.12	258	2.46	< 1.	< .1	0.8	< .1	0.2
S17-2	6/24/1997								0.74			0.8		
S17-2	6/23/1997											0.78		
S17-2	10/30/1996											0.9		
S17-2	9/25/1996	< 1.	0.2	< .1	< .1		0.16	262		< 1.	< .1	0.8	< .1	0.2
S17-2	10/16/1995											0.7		
S17-2	9/6/1995	< 1.	0.1	< .1	< .1		0.2	260		< 1.	< .1	0.8	< .1	0.2
S17-2	6/20/1995							265				0.9		
S17-2	10/28/1993											0.975		
S17-2	8/30/1993	0.06	< .1	< .03	.003		0.42	220		0.06	< .007	0.798	< .003	.032
S17-2	10/23/1992											0.83		
S17-2	9/9/1992	0.08	< .07	< .01	.002					0.08	< .02	0.87	0	< .01
S17-2	6/15/1992											0.84		
S17-2	10/17/1991											0.86		
S17-2	6/11/1991											0.91		
S17-2	11/14/1990											0.81		
S17-2	9/12/1990	0.07	< .005	< .01	.001		0.1	264		0.07	< .01		< .002	.005
S17-2	6/6/1990											0.82		
S17-2	10/31/1989											< .03		
S17-2	9/13/1989	0.06	< .01	< .01	.001		0.14	258		0.07	< .01	0.88	< .001	< .01
S17-2	6/23/1989											0.85		

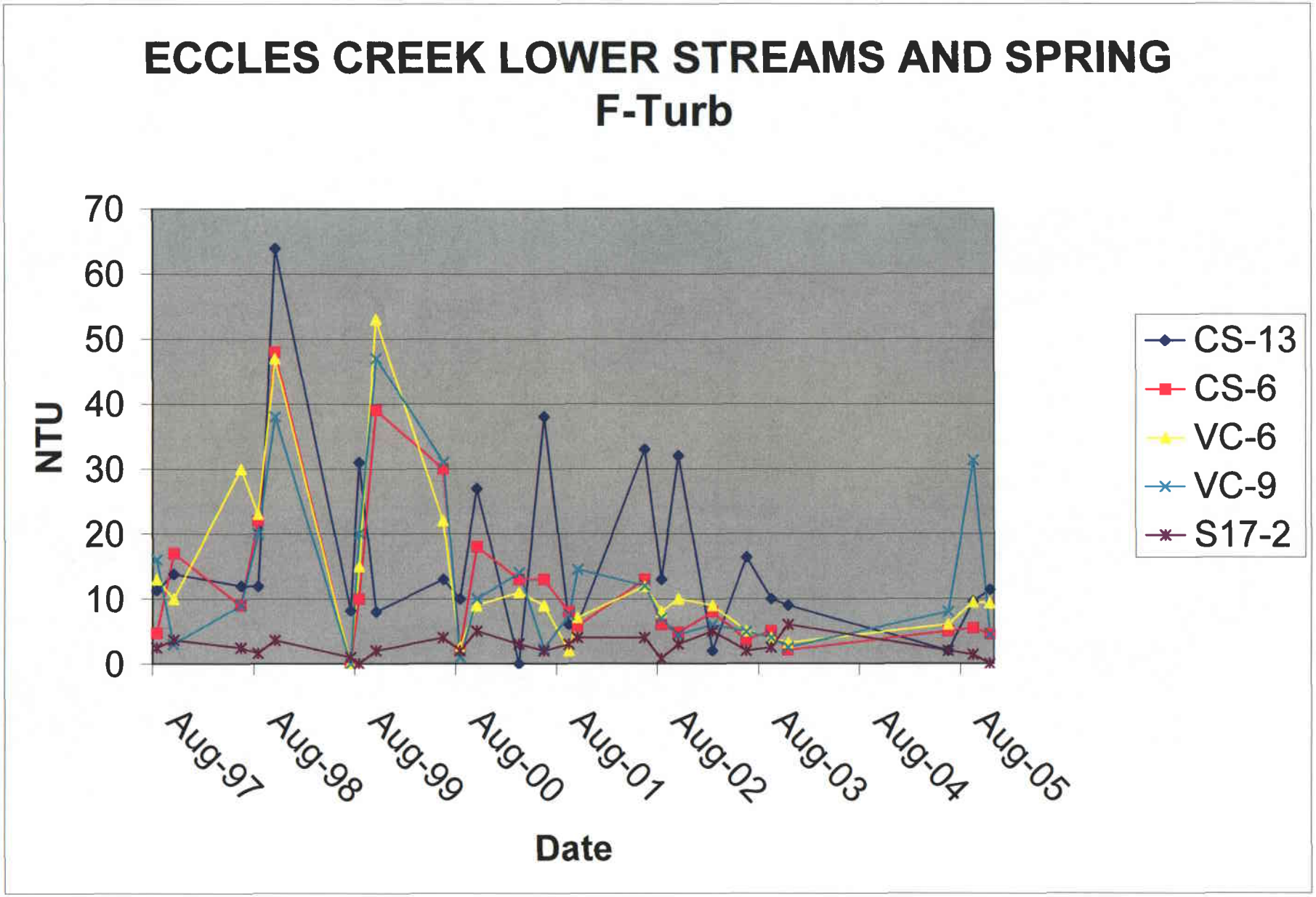
SITE		D-Ba	D-B	D-Cu	D-Pb	Acidity	F	T-Alk	F-Turb.	T-Ba	T-Cu	T-Fe	T-Pb	T-B
NAME	DATE	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	NTU	mg/l	mg/l	mg/l	mg/l	mg/l
S17-2	11/2/1988											0.8		
S17-2	8/16/1988						0.16	263		0.07	< .01	0.83	< .001	0.06
S17-2	6/6/1988											0.86		
S17-2	10/22/1987											0.79		
S17-2	8/20/1987						0.1	284		0.06	< .01	0.73	< .001	0.07
S17-2	6/11/1987											0.77		
S17-2	10/22/1986											0.75		
S17-2	8/21/1986						0.13	258		0.08	0.04	0.8	< .001	0.29
S17-2	6/25/1986											0.8		
S17-2	10/16/1985											0.78		
S17-2	8/22/1985						0.17	254		0.07	< .01	0.75	< .001	0.15
S17-2	6/20/1985											0.13		
S17-2	10/23/1984											0.9		
S17-2	8/24/1984						0.21	300		0.07	0.02	1.3	0.01	0.04
S17-2	6/29/1984											0.78		
S17-2	10/26/1983											0.85		
S17-2	10/5/1983	< .1	0.17	< .02	< .05			249				< .05		
S17-2	8/25/1983						0.14	266		0.09	< .001	0.86	< .001	0.04
S17-2	6/30/1983											0.77		
S17-2	6/29/1983							250				< .05		
S17-2	10/14/1982											0.86		
S17-2	8/18/1982						0.17	279.5		0.04	< .001	0.92	0	0.02
S17-2	6/29/1982											0.86		
S17-2	6/22/1982							275				0.02		
S17-2	1/21/1982							272.4				0.99		
S17-2	12/9/1981							279.4				1		
S17-2	11/11/1981	0.07	0.02	< .001	.001		0.17	265.7		0.08	< .001	0.51	< .001	0.03
S17-2	10/7/1981							277				0.22		
S17-2	9/24/1981							309.9				0.23		
S17-2	8/29/1981							252				0.21		
S17-2	7/8/1981							260				0.2		
S17-2	6/16/1981							260				0.45		
S17-2	12/30/1980							250				0.145		
S17-2	11/10/1980											0.06		
S17-2	10/22/1980											0.114		
S17-2	9/30/1980											0.095		

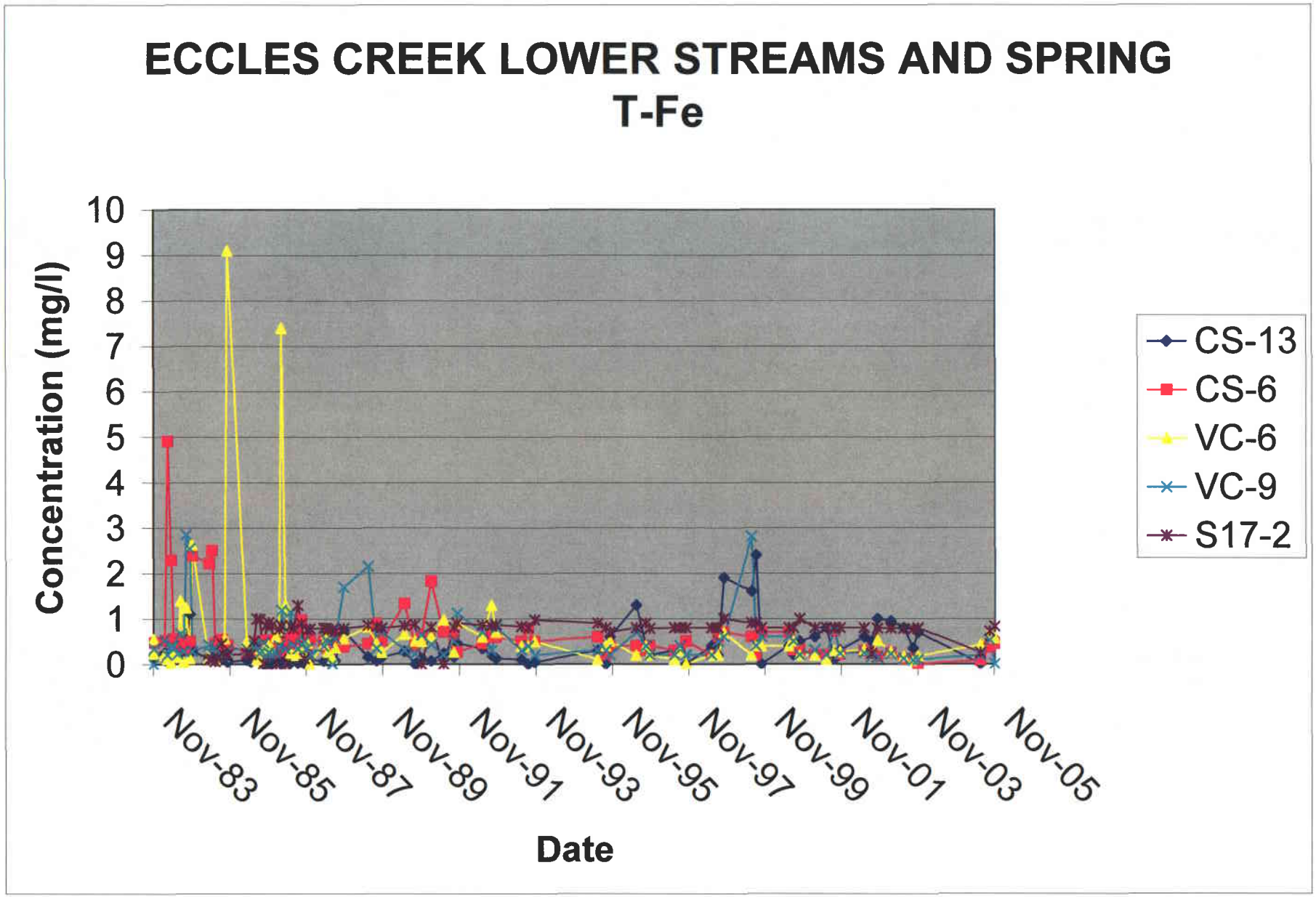

ECCLES CREEK LOWER STREAMS AND SPRING
D-Ba
Concentration (mg/l)
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
Nov-83
Nov-85
Nov-87
Nov-89
Nov-91
Nov-93
Nov-95
Nov-97
Nov-99
Nov-01
Nov-03
Nov-05
Date
CS-13
CS-6
VC-6
VC-9
S17-2

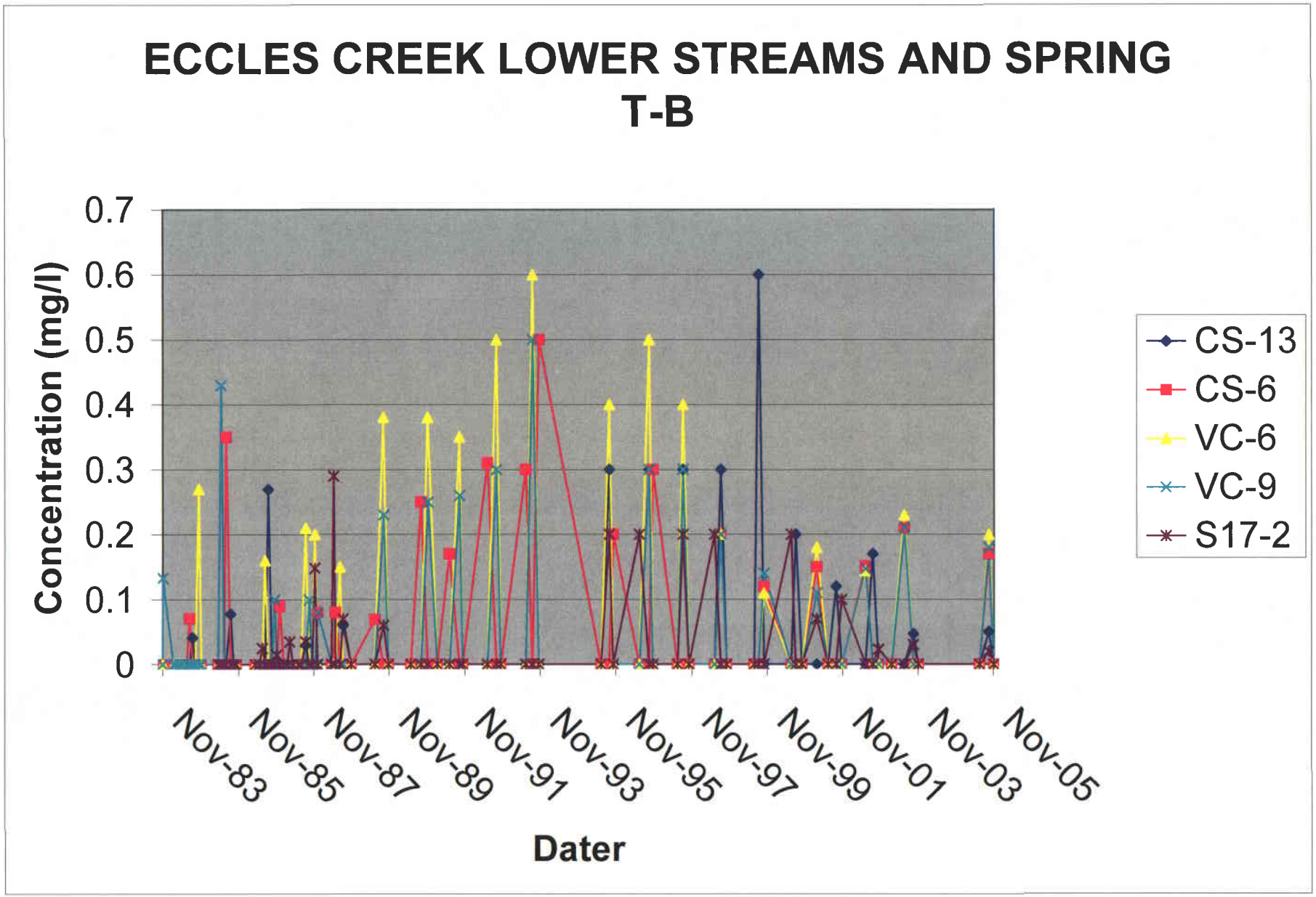

ECCLES CREEK LOWER STREAMS AND SPRING
D-B
Concentration (mg/l)
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Nov-83
Nov-85
Nov-87
Nov-89
Nov-91
Nov-93
Nov-95
Nov-97
Nov-99
Nov-01
Nov-03
Nov-05
Date
CS-13
CS-6
VC-6
VC-9
S17-2


ECCLES CREEK LOWER STREAMS AND SPRING F
Concentration (mg/l)
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Nov-83
Nov-85
Nov-87
Nov-89
Nov-91
Nov-93
Nov-95
Nov-97
Nov-99
Nov-01
Nov-03
Nov-05
Date
CS-13
CS-6
VC-6
VC-9
S17-2


ECCLES CREEK LOWER STREAMS AND SPRING
T-Alk
Concentration (mg/l)
400
350
300
250
200
150
100
50
0
Nov-83
Nov-85
Nov-87
Nov-89
Nov-91
Nov-93
Nov-95
Nov-97
Nov-99
Nov-01
Nov-03
Date
CS-13
CS-6
VC-6
VC-9
S17-2


ECCLES CREEK LOWER STREAMS AND SPRING
F-Turb
NTU
70
60
50
40
30
20
10
0
Aug-97
Aug-98
Aug-99
Aug-00
Aug-01
Aug-02
Aug-03
Aug-04
Aug-05
Date
CS-13
CS-6
VC-6
VC-9
S17-2


ECCLES CREEK LOWER STREAMS AND SPRING
T-Fe
Concentration (mg/l)
10
9
8
7
6
5
4
3
2
1
0
Nov-83
Nov-85
Nov-87
Nov-89
Nov-91
Nov-93
Nov-95
Nov-97
Nov-99
Nov-01
Nov-03
Nov-05
Date
CS-13
CS-6
VC-6
VC-9
S17-2


ECCLES CREEK LOWER STREAMS AND SPRING
T-B
Concentration (mg/l)
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Nov-83
Nov-85
Nov-87
Nov-89
Nov-91
Nov-93
Nov-95
Nov-97
Nov-99
Nov-01
Nov-03
Nov-05
Dater
CS-13
CS-6
VC-6
VC-9
S17-2

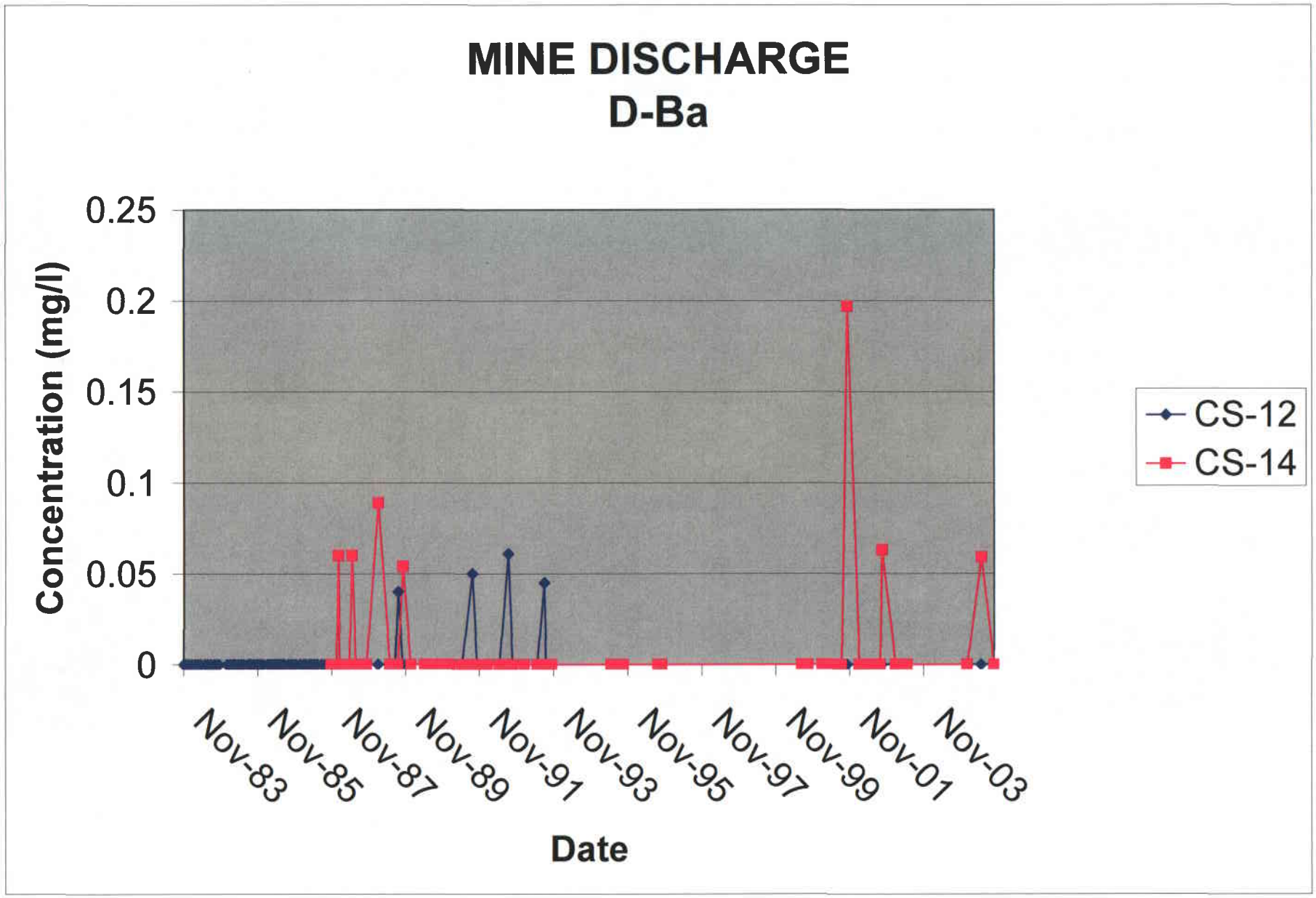
MINE DISCHARGE

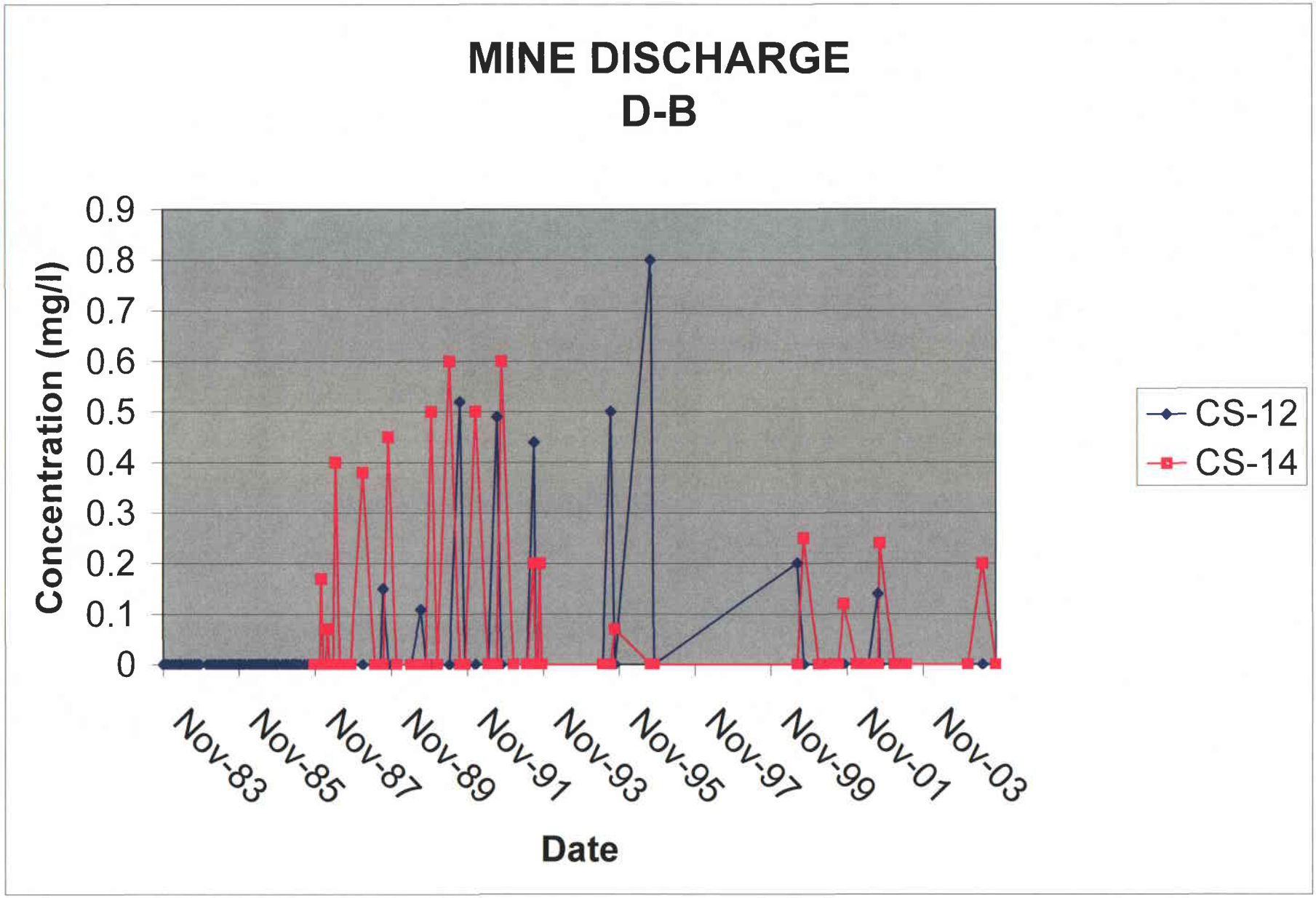
SITE		D-Ba	D-B	D-Cu	D-Pb	Acidity	F	T-Alk	F-Turb.	T-Ba	T-Cu	T-Fe	T-Pb	T-B
NAME	DATE	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	NTU	mg/l	mg/l	mg/l	mg/l	mg/l
CS-12	10/26/2005							574	8.74			1.52		
CS-12	6/23/2005							488	9			0.72		
CS-12	2/2/2005							548	17.9			2.99		
CS-12	6/18/2003							471	26.1			2.75		
CS-12	2/26/2003							354	9			3.48		
CS-12	10/10/2002													
CS-12	9/24/2002	< .6	0.14	< .1	< .1	9	0.06	215	2	< .6	< .1	< .1	< .1	0.14
CS-12	6/19/2002							298	33			1.5		
CS-12	2/28/2002								1.5			0.8		
CS-12	10/30/2001											0.5		
CS-12	9/6/2001	< .6	< .06	< .1	< .1	< 5.	0.15	310	21	< .6	< .1	0.6	< .1	0.09
CS-12	6/20/2001								21			0.9		
CS-12	2/27/2001											0.9		
CS-12	10/8/2000							198	40			0.3		
CS-12	8/9/2000	< 1.	0.2	< .1	< .1	< 10.	0.19	181	59	< 1.	< .1	0.4	< .1	0.2
CS-12	10/30/1996							417				0.1		
CS-12	9/25/1996	< 1.	0.8	< .1	< .1		0.61	454		< 1.	< .1	0.6	< .1	0.8
CS-12	10/16/1995											0.6		
CS-12	9/5/1995	< 1.	0.5	< .1	< .1		0.7	490		< 1.	< .1	1.5	< .1	0.6
CS-12	6/20/1995							460				1		
CS-12	11/10/1993							410						
CS-12	10/27/1993							264				0.653		
CS-12	10/7/1993							315						
CS-12	9/16/1993							392						
CS-12	8/30/1993	0.05	0.44	< .03	.003		2.07	428		0.06	< .007	1.35	0	0.57
CS-12	6/23/1993											0.82		
CS-12	2/15/1993							410						
CS-12	10/22/1992											3.72		
CS-12	9/8/1992	0.06	0.49	< .01	0.01		1.88	348		0.08	< .02	4.21	0.01	0.57
CS-12	6/15/1992											5.1		
CS-12	2/17/1992											2.22		
CS-12	11/5/1991											2.29		
CS-12	9/17/1991	0.05	0.52	0.01	.003		0.57	369		0.06	0.01	1.32	< .003	0.63
CS-12	6/11/1991											0.75		
CS-12	2/14/1991											1.05		
CS-12	12/18/1990											0.23		
CS-12	10/25/1990											0.06		
CS-12	9/11/1990	< .01	0.109	< .01	.002		0.53	158		0.07	< .01	0.34	< .002	0.11
CS-12	6/6/1990											0.14		
CS-12	1/17/1990											0.04		
CS-12	10/30/1989											0.12		
CS-12	9/12/1989	0.04	0.15	< .01	.001		0.49	203		0.05	0.03	0.35	< .001	0.18
CS-12	8/14/1989											0.13		
CS-12	6/22/1989											0.27		
CS-12	2/27/1989											0.13		
CS-12	11/3/1988											0.15		
CS-12	8/15/1988						0.58	189		0.09	< .01	0.26	< .001	0.24
CS-12	7/21/1988											0.13		

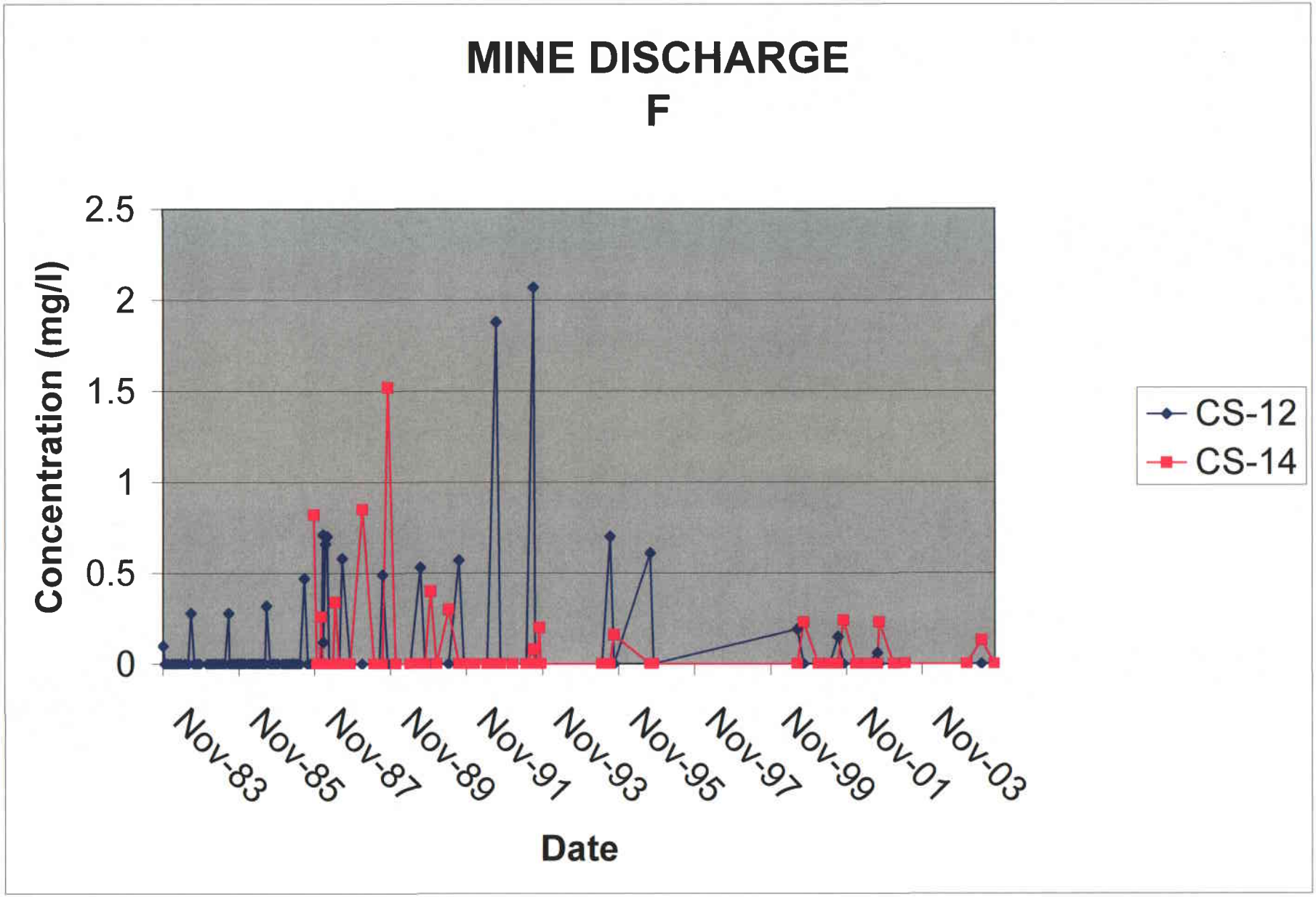
SITE		D-Ba	D-B	D-Cu	D-Pb	Acidity	F	T-Alk	F-Turb.	T-Ba	T-Cu	T-Fe	T-Pb	T-B
NAME	DATE	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	NTU	mg/l	mg/l	mg/l	mg/l	mg/l
CS-12	6/9/1988											0.23		
CS-12	5/18/1988											0.48		
CS-12	5/4/1988											0.21		
CS-12	4/27/1988											0.58		
CS-12	4/12/1988											0.23		
CS-12	3/23/1988						0.7					0.46		
CS-12	3/8/1988						0.66							
CS-12	2/18/1988						0.12							
CS-12	2/12/1988						0.71					0.31		
CS-12	1/28/1988											0.75		
CS-12	1/13/1988											0.63		
CS-12	12/16/1987											0.83		
CS-12	11/18/1987											11.1		
CS-12	10/19/1987											0.18		
CS-12	9/23/1987											1.07		
CS-12	8/20/1987						0.47	209		0.08	0.02	0.59	< .001	0.21
CS-12	7/9/1987											0.93		
CS-12	6/11/1987											0.64		
CS-12	5/21/1987											0.48		
CS-12	5/5/1987											1.16		
CS-12	4/22/1987											0.28		
CS-12	3/18/1987											0.13		
CS-12	2/23/1987											0.32		
CS-12	1/22/1987											0.31		
CS-12	12/10/1986											0.28		
CS-12	11/11/1986											0.09		
CS-12	10/21/1986											0.17		
CS-12	9/25/1986											0.18		
CS-12	8/20/1986						0.32	162		0.06	0.08	0.23	< .001	0.55
CS-12	8/6/1986											0.26		
CS-12	7/22/1986											0.29		
CS-12	7/8/1986											0.28		
CS-12	6/24/1986											0.2		
CS-12	6/10/1986											0.22		
CS-12	5/28/1986											0.58		
CS-12	5/8/1986											0.15		
CS-12	4/12/1986											0.18		
CS-12	3/26/1986											0.2		
CS-12	3/6/1986											0.18		
CS-12	1/22/1986											0.51		
CS-12	12/26/1985											0.19		
CS-12	12/11/1985											0.17		
CS-12	11/27/1985											0.19		
CS-12	11/15/1985											0.15		
CS-12	10/16/1985											0.15		
CS-12	9/25/1985											0.31		
CS-12	9/19/1985											0.35		
CS-12	9/6/1985											0.17		
CS-12	8/30/1985											0.2		
CS-12	8/22/1985						0.28	176		0.08	< .01	0.17	0.01	0.14

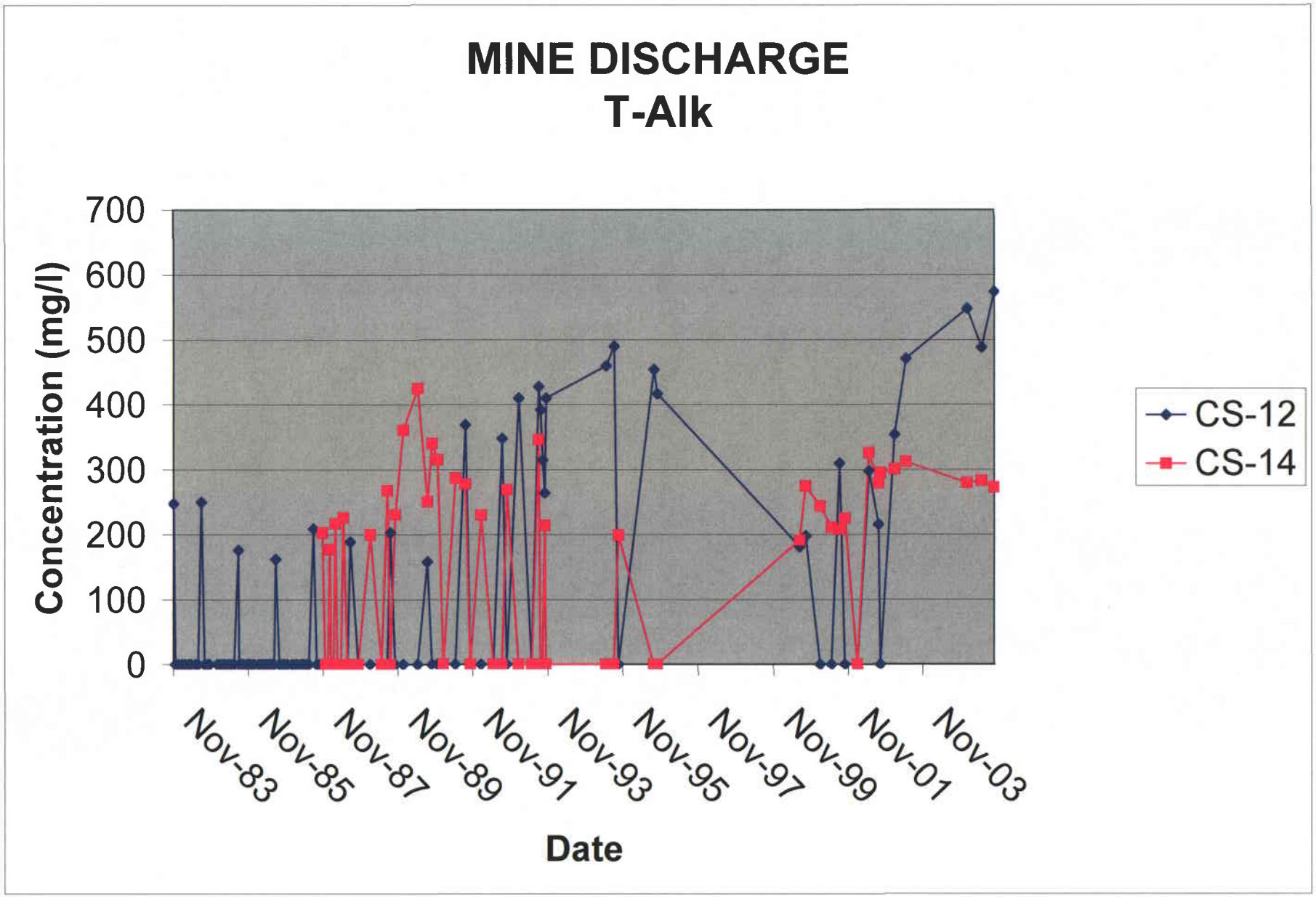
SITE NAME	DATE	D-Ba mg/l	D-B mg/l	D-Cu mg/l	D-Pb mg/l	Acidity mg/l	F mg/l	T-Alk mg/l	F-Turb. NTU	T-Ba mg/l	T-Cu mg/l	T-Fe mg/l	T-Pb mg/l	T-B mg/l
CS-12	7/13/1985											0.17		
CS-12	6/20/1985											0.21		
CS-12	5/22/1985											0.26		
CS-12	4/18/1985											1.69		
CS-12	3/28/1985											1.67		
CS-12	2/28/1985											19.6		
CS-12	1/30/1985											2.58		
CS-12	11/14/1984											0.54		
CS-12	10/23/1984											0.23		
CS-12	9/27/1984											0.43		
CS-12	8/24/1984						0.28	250		0.11	0.02	2.4	0.01	0.14
CS-12	7/27/1984											0.71		
CS-12	6/28/1984											32.4		
CS-12	5/17/1984											2.31		
CS-12	4/25/1984											1.23		
CS-12	3/22/1984											3.04		
CS-12	2/21/1984											0.83		
CS-12	1/18/1984											0.18		
CS-12	12/20/1983											0.02		
CS-12	11/30/1983						0.1	248		0.09	0.01	0.16	< .001	0.2
CS-14	10/26/2005							273	9.06			0.45		
CS-14	8/18/2005	0.06	0.2	< .01	< .01	10	0.13	283	5.6	0.06	< .01	< .5	< .01	0.02
CS-14	6/23/2005							280	9			0.38		
CS-14	2/2/2005							312	19			0.17		
CS-14	11/1/2004							301	6			0.11		
CS-14	9/27/2004	0.06	0.24	< .01	< .01	15	0.23	295	8	0.06	< .01	0.16	< .01	0.24
CS-14	6/29/2004							279	12			0.48		
CS-14	2/26/2004							326	12			0.725		
CS-14	11/11/2003								7			0.198		
CS-14	9/30/2003	0.2	0.12	< .01	.005	< 5.	0.24	225	13	0.02	< .01	0.565	< .005	0.12
CS-14	6/18/2003							208	7.2			0.172	0.17	
CS-14	2/26/2003							211	4			0.145		
CS-14	10/22/2002							244	13			< .1		
CS-14	9/9/2002	< .6	0.25	< .1	< .1	< 5.	0.23	275	27	< .6	< .1	1.2	< .1	0.26
CS-14	6/19/2002							191	9			< .1		
CS-14	2/28/2002								1			< .1		
CS-14	10/29/2001								2.5			0.2		
CS-14	9/6/2001	< .6	0.07	< .1	< .1	< 5.	0.16	199	38	< .6	< .1	0.3	< .1	0.35
CS-14	6/20/2001								3			< .1		
CS-14	2/27/2001											0.1		
CS-14	10/8/2000								10			0.7		
CS-14	8/9/2000	< 1.	0.2	< .1	< .1	< 10.	0.2	214	47	< 1.	< .1	0.4	< .1	0.2
CS-14	6/20/2000								8			2.8		
CS-14	10/7/1999								9			< .1		
CS-14	8/16/1999	< 1.	0.2	< .1	< .1	< 10.	0.08	346	10	< 1.	< .1	2.2	< .1	0.3
CS-14	6/29/1999								10.2			0.4		
CS-14	10/11/1998								5.33			< .1		
CS-14	8/16/1998	< 1.	0.6	< .1	< .1	< 10.	< .05	269	16.3	< 1.	< .1	< .1	< .1	0.6
CS-14	6/16/1998								2.97			< .1		
CS-14	10/9/1997								835			5.7		

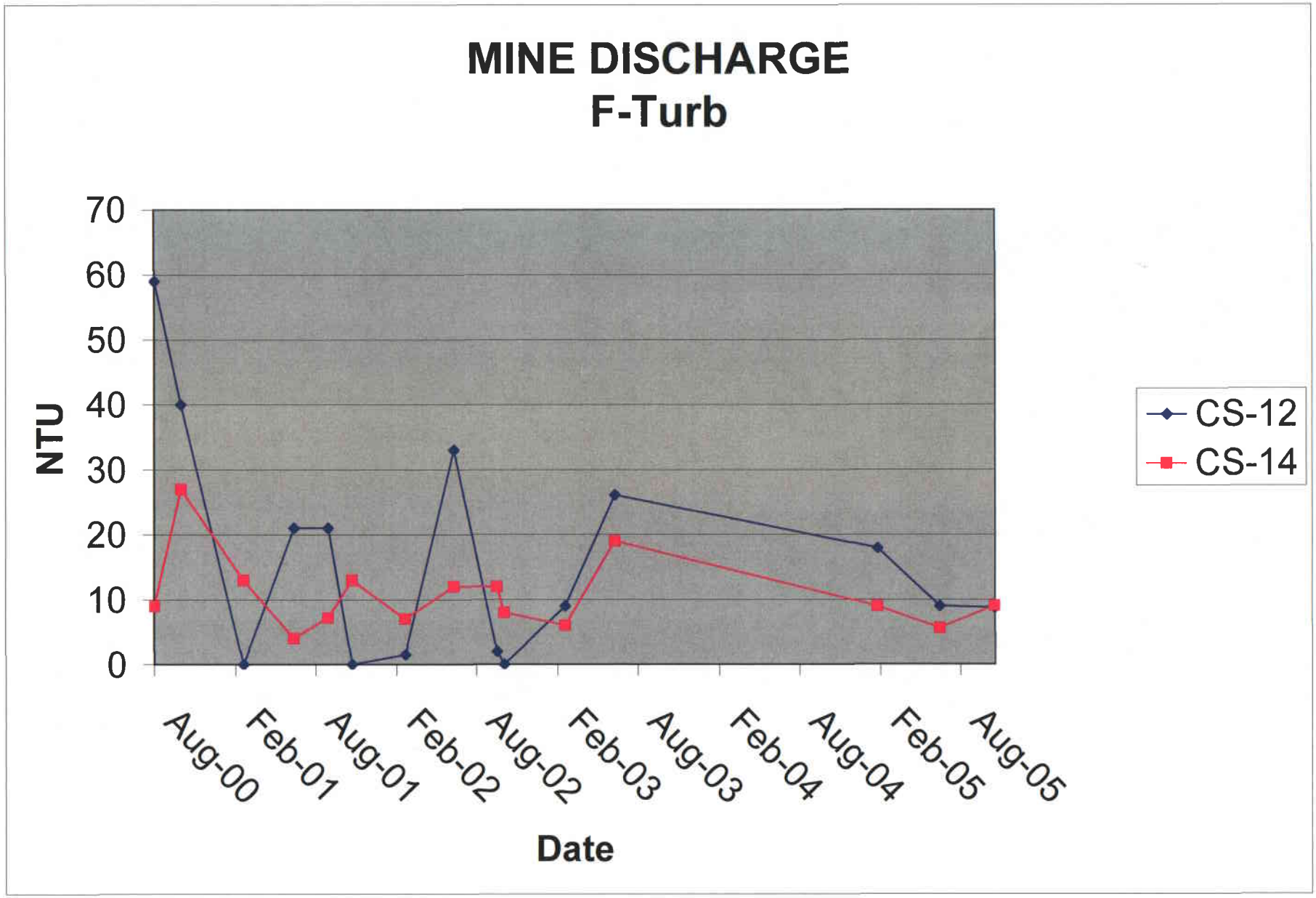
SITE		D-Ba	D-B	D-Cu	D-Pb	Acidity	F	T-Alk	F-Turb.	T-Ba	T-Cu	T-Fe	T-Pb	T-B
NAME	DATE	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	NTU	mg/l	mg/l	mg/l	mg/l	mg/l
CS-14	8/13/1997	< 1.	0.5	< .1	< .1		< .1	230	660	< 1.	< .1	2.9	< .1	0.6
CS-14	6/24/1997								28			0.2		
CS-14	10/30/1996							278				< .1		
CS-14	9/25/1996	< 1.	0.6	< .1	< .1		0.3	287		< 1.	< .1	0.7	< .1	0.7
CS-14	10/16/1995											0.2		
CS-14	9/5/1995	< 1.	0.5	< .1	< .1		0.4	315		< 1.	< .1	0.9	< .1	0.6
CS-14	6/20/1995							340				0.9		
CS-14	11/10/1993							251						
CS-14	10/20/1993							425						
CS-14	9/16/1993							361						
CS-14	8/26/1993	0.05	0.45	< .03	0		1.52	231		0.06	< .007	1	0	0.35
CS-14	6/23/1993											3.04		
CS-14	2/15/1993							268						
CS-14	10/22/1992											1.99		
CS-14	9/8/1992	0.09	0.38	< .01	0.01		0.85	200		0.36	< .02	19.8	0.02	0.38
CS-14	6/15/1992											2.75		
CS-14	2/17/1992											2.27		
CS-14	11/5/1991											0.54		
CS-14	9/17/1991	0.06	0.4	0.01	.003		0.34	226		0.08	0.01	1.3	< .003	0.4
CS-14	6/11/1991											0.13		
CS-14	2/14/1991											0.79		
CS-14	12/18/1990											0.13		
CS-14	10/25/1990											0.05		
CS-14	9/12/1990	< .01	0.07	< .01	.002		< .03	217		0.09	0.03	1.4	< .002	0.16
CS-14	6/6/1990											1.17		
CS-14	1/17/1990											0.39		
CS-14	10/30/1989											1.23		
CS-14	9/18/1989	0.06	0.17	< .02	.001		0.26	177		0.1	< .02	7.34	< .001	0.21
CS-14	6/23/1989											0.6		
CS-14	2/27/1989											0.06		
CS-14	1/25/1989						0.82	203		0.08	0.02	1.77	< .001	0.24

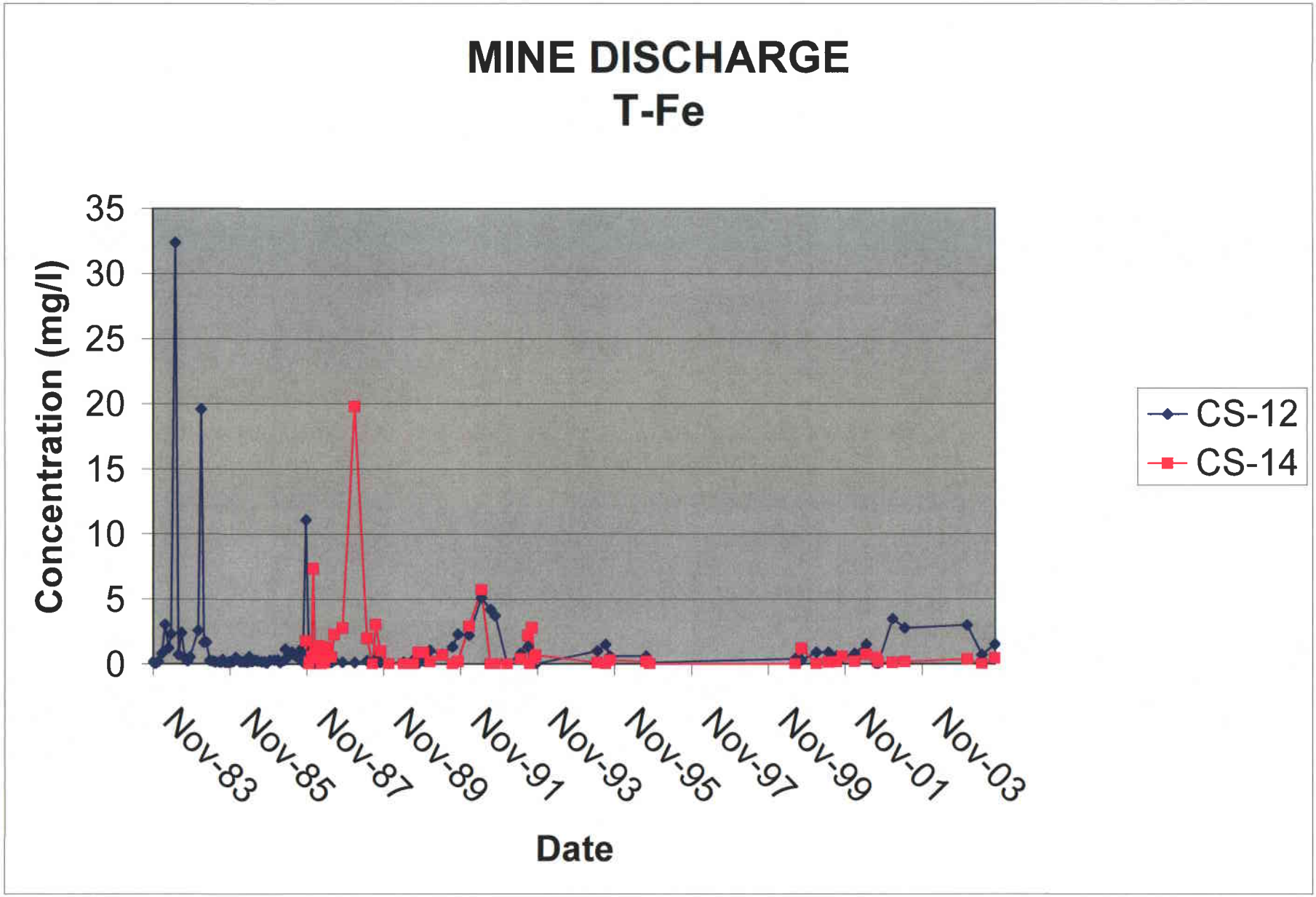

MINE DISCHARGE
D-Ba
Concentration (mg/l)
0.25
0.2
0.15
0.1
0.05
0
Nov-83
Nov-85
Nov-87
Nov-89
Nov-91
Nov-93
Nov-95
Nov-97
Nov-99
Nov-01
Nov-03
Date
CS-12
CS-14

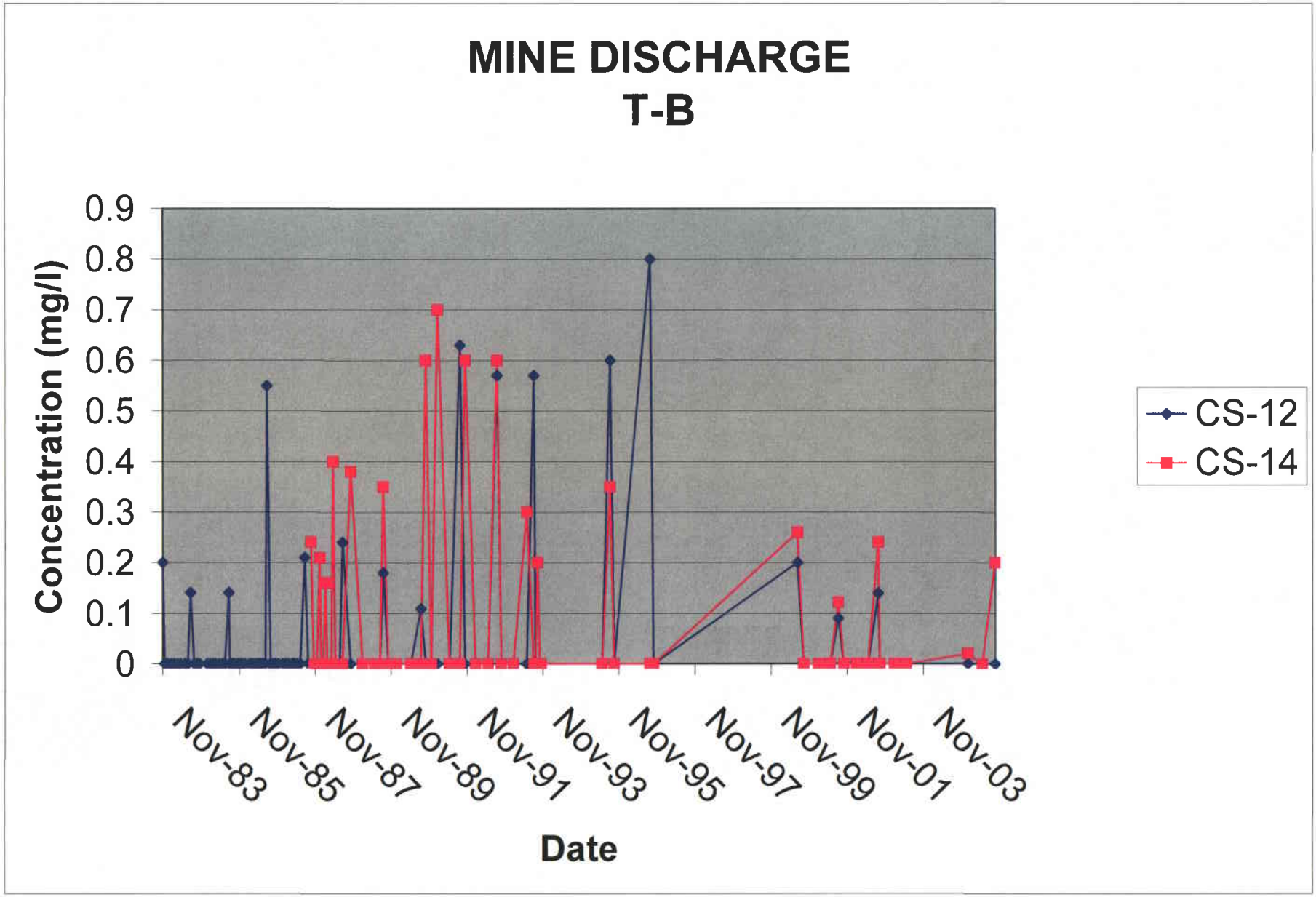

MINE DISCHARGE
D-B
Concentration (mg/l)
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Nov-83
Nov-85
Nov-87
Nov-89
Nov-91
Nov-93
Nov-95
Nov-97
Nov-99
Nov-01
Nov-03
Date
CS-12
CS-14


MINE DISCHARGE
F
Concentration (mg/l)
2.5
2
1.5
1
0.5
0
Nov-83
Nov-85
Nov-87
Nov-89
Nov-91
Nov-93
Nov-95
Nov-97
Nov-99
Nov-01
Nov-03
Date
CS-12
CS-14


MINE DISCHARGE
T-Alk
Concentration (mg/l)
700
600
500
400
300
200
100
0
Nov-83
Nov-85
Nov-87
Nov-89
Nov-91
Nov-93
Nov-95
Nov-97
Nov-99
Nov-01
Nov-03
Date
CS-12
CS-14

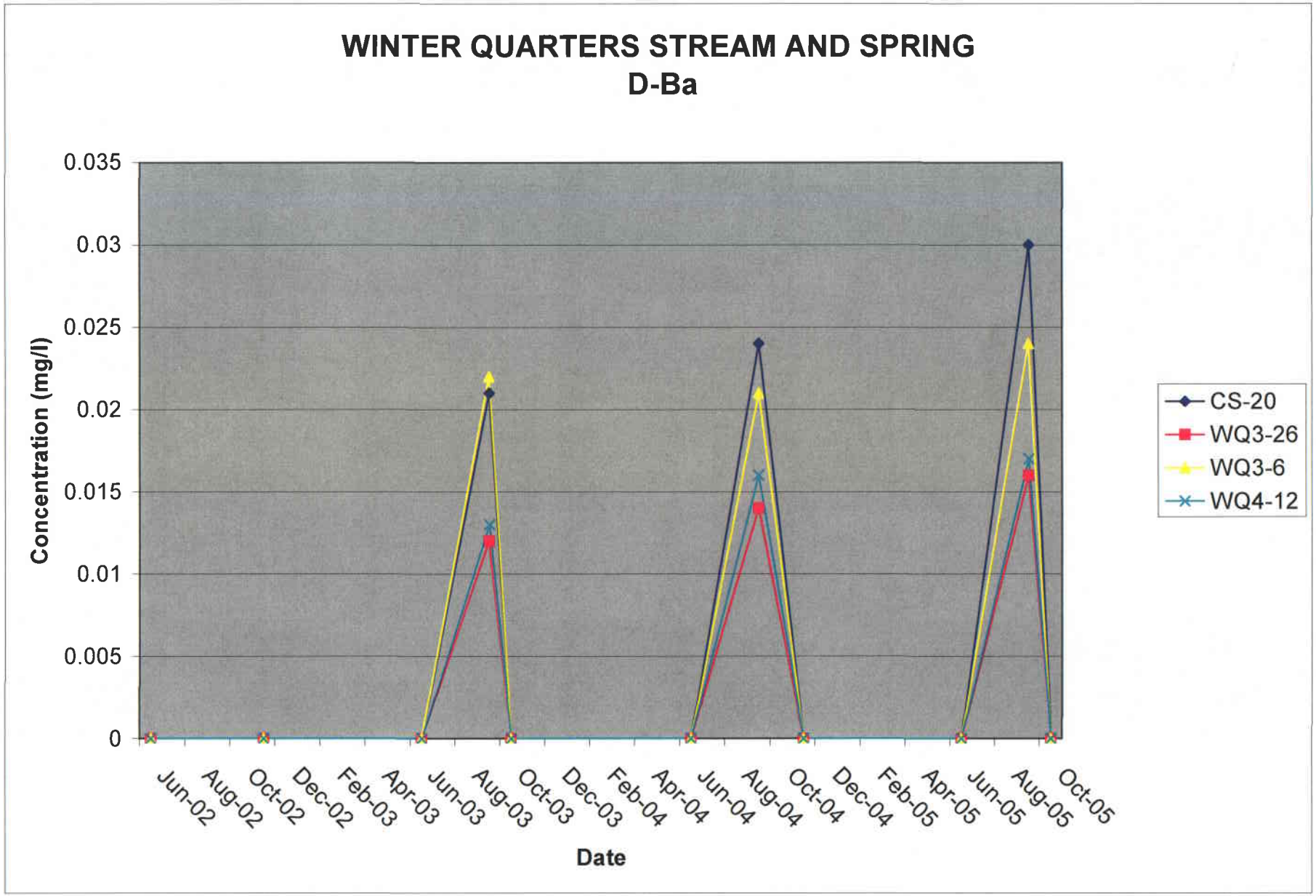

MINE DISCHARGE
F-Turb
NTU
70
60
50
40
30
20
10
0
Aug-00
Feb-01
Aug-01
Feb-02
Aug-02
Feb-03
Aug-03
Feb-04
Aug-04
Feb-05
Aug-05
Date
CS-12
CS-14

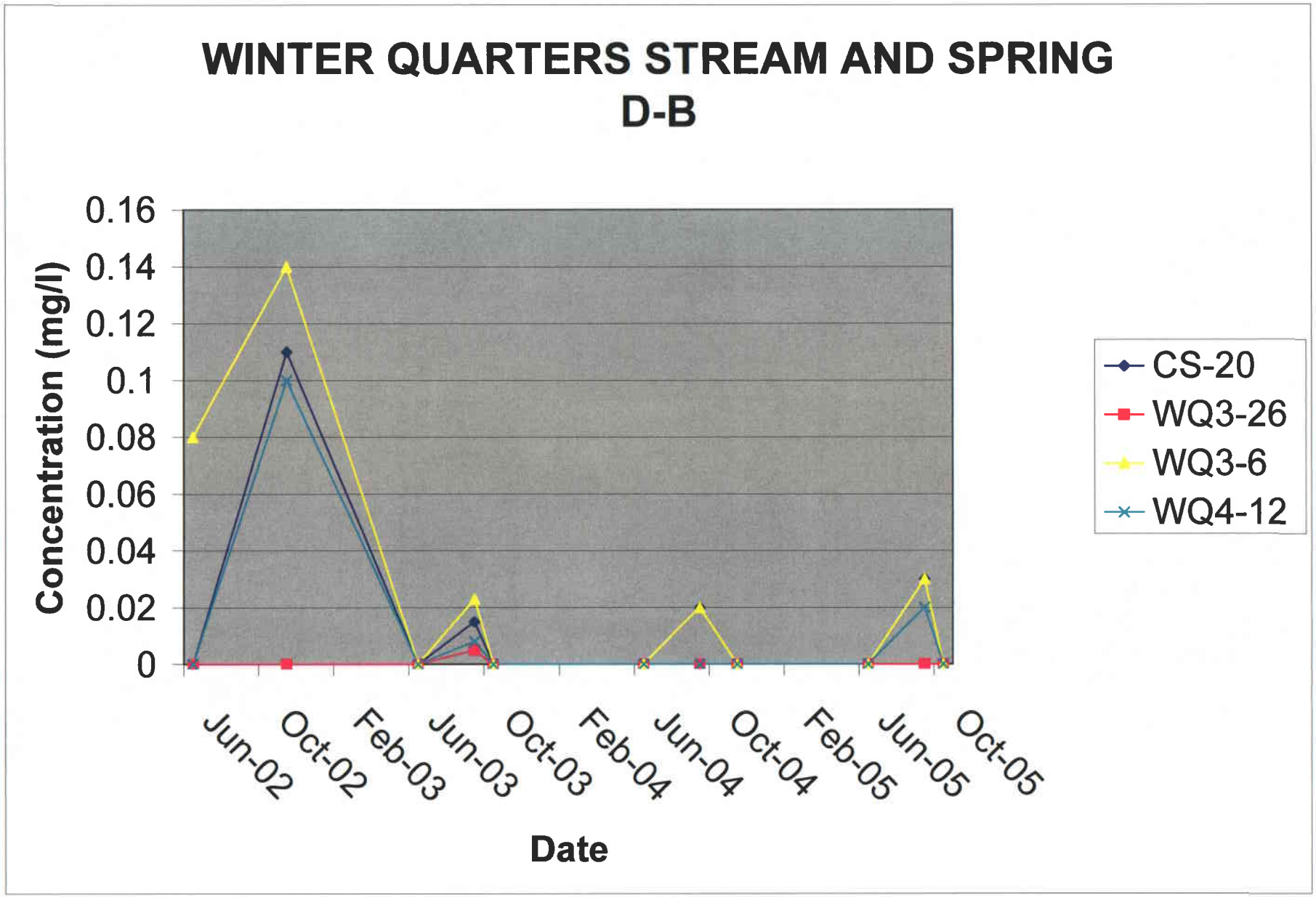

MINE DISCHARGE
T-Fe
Concentration (mg/l)
35
30
25
20
15
10
5
0
Nov-83
Nov-85
Nov-87
Nov-89
Nov-91
Nov-93
Nov-95
Nov-97
Nov-99
Nov-01
Nov-03
Date
CS-12
CS-14

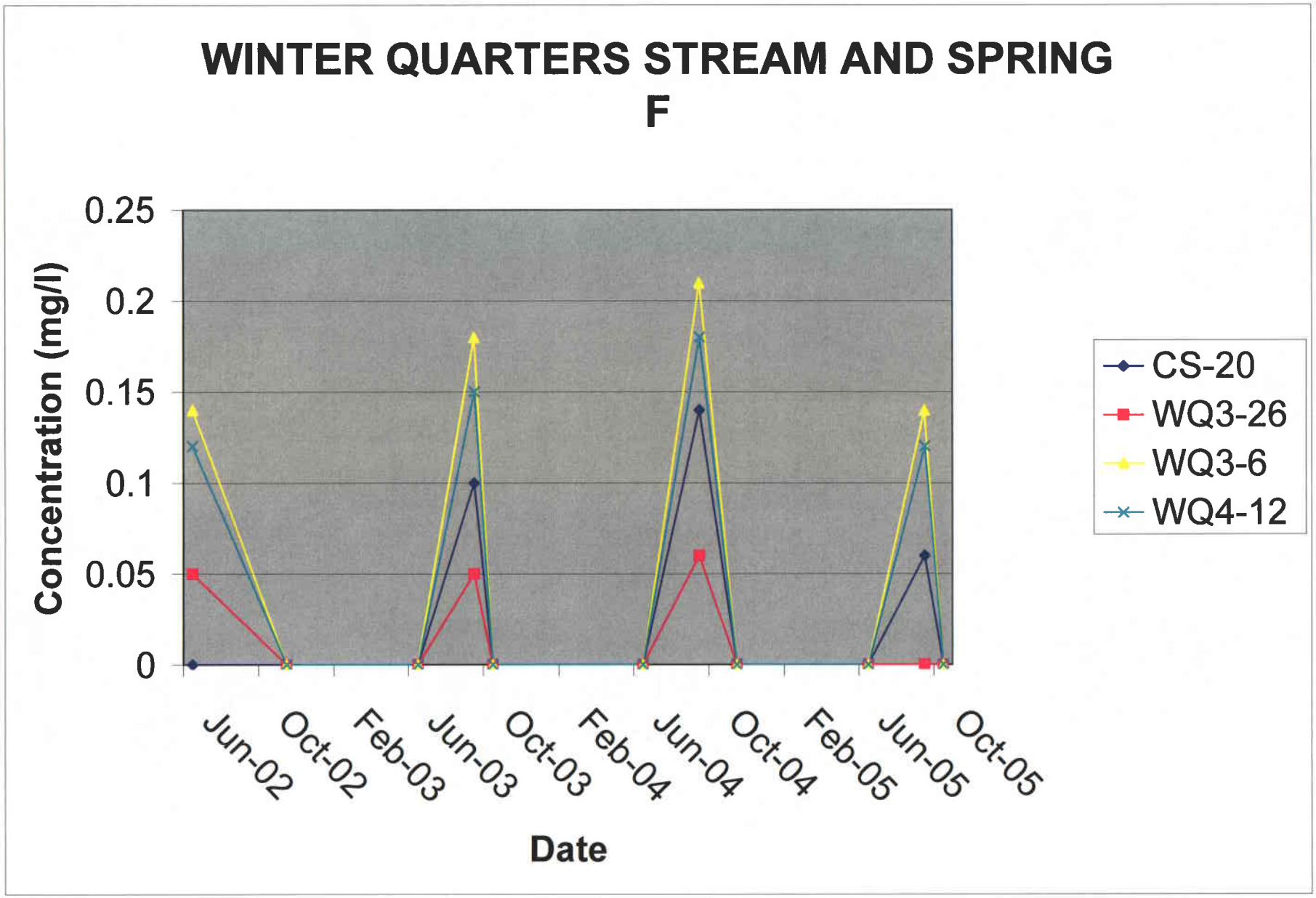

MINE DISCHARGE
T-B
Concentration (mg/l)
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Nov-83
Nov-85
Nov-87
Nov-89
Nov-91
Nov-93
Nov-95
Nov-97
Nov-99
Nov-01
Nov-03
Date
CS-12
CS-14

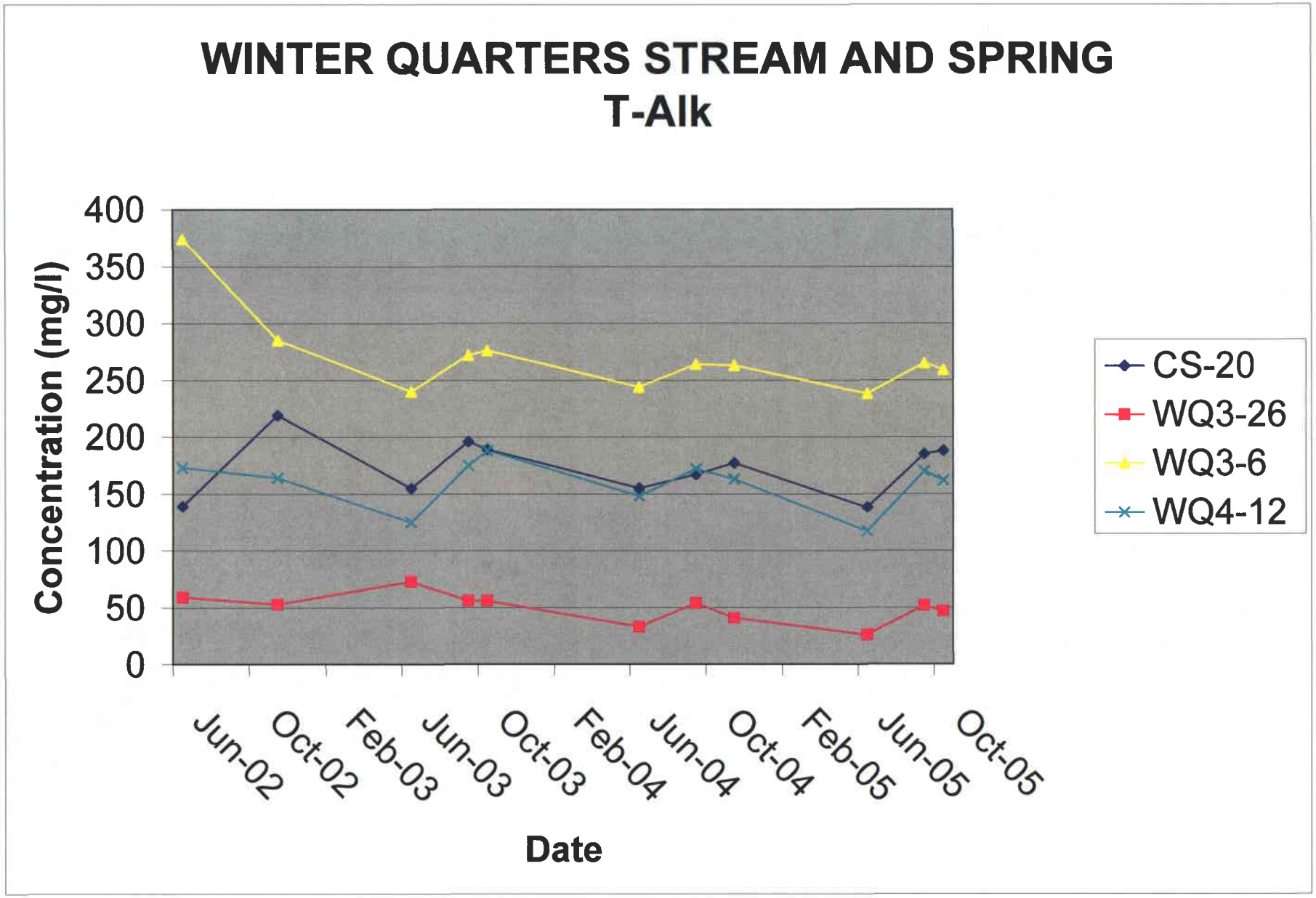
WINTER QUARTERS STREAM AND SPRING

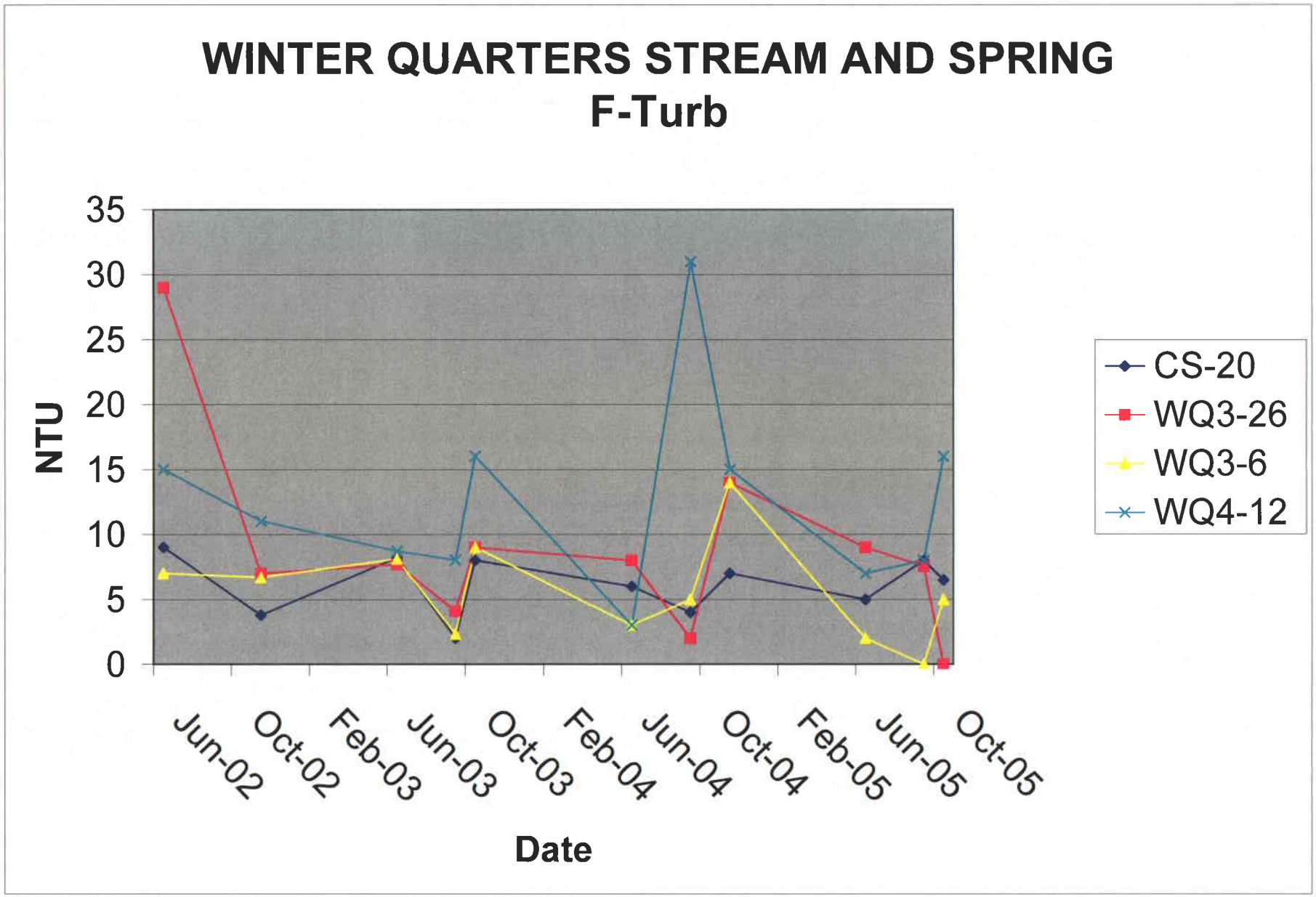
SITE		D-Ba	D-B	D-Cu	D-Pb	Acidity	F	T-Alk	F-Turb.	T-Ba	T-Cu	T-Fe	T-Pb	T-B
NAME	DATE	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	NTU	mg/l	mg/l	mg/l	mg/l	mg/l
CS-20	10/18/2005							188	6.5			0.07		
CS-20	9/15/2005	0.03	0.03	< .01	< .01	< 5.	0.06	185	8	0.03	< .01	0.07	< .01	0.03
CS-20	6/23/2005							138	5			0.11		
CS-20	11/10/2004							177	7			0.07		
CS-20	9/6/2004	0.02	0.02	< .01	< .01	< 5.	0.14	167	4	0.03	< .01	0.37	0.01	0.03
CS-20	6/23/2004							155	6			0.24		
CS-20	10/30/2003							189	8			0.119		
CS-20	9/18/2003	0.02	0.015	< .01	.005	< 5.	0.1	196	2	0.02	< .01	0.062	< .005	0.02
CS-20	6/17/2003							155	8.2			0.168		
CS-20	11/4/2002		0.11	< .1	< .1	< 5.		219	3.8			< .1		
CS-20	6/17/2002							139	9			0.1		
WQ3-26	10/18/2005							47	0			< .05		
WQ3-26	9/15/2005	0.02	< .01	< .01	< .01	< 5.	< .05	52	7.56	0.02	< .01	< .05	< .01	0.02
WQ3-26	6/23/2005							26	9			0.24		
WQ3-26	11/10/2004							41	14			0.25		
WQ3-26	9/6/2004	0.01	< .01	< .01	< .01	< 5.	0.06	54	2	0.02	< .01	< .05	< .01	0.01
WQ3-26	6/23/2004							33	8			0.16		
WQ3-26	10/30/2003							56	9			0.165		
WQ3-26	9/18/2003	0.01	0.005	< .01	.005	< 5.	0.05	56	4.1	0.01	< .01	0.072	< .005	0.01
WQ3-26	6/17/2003							73	7.7			0.194		
WQ3-26	11/4/2002		< .06	< .1	< .1	< 5.		53	7			< .1		
WQ3-26	9/5/2002	< .6	< .06	< .1	< .1	< 5.	0.05	59	29	< .6	< .1	0.4	< .1	< .06
WQ3-26	6/17/2002							30	11			0.4		
WQ3-6	10/18/2005							259	5			< .05		
WQ3-6	9/15/2005	0.02	0.03	< .01	< .01	< 5.	0.14	265		0.02	< .01	0.38	< .01	0.04
WQ3-6	6/23/2005							238	2			0.06		
WQ3-6	11/10/2004							263	14			0.21		
WQ3-6	9/6/2004	0.02	0.02	< .01	< .01	12	0.21	264	5	0.02	< .01	0.07	< .01	0.03
WQ3-6	6/23/2004							244	3			0.08		
WQ3-6	10/30/2003							276	9			0.168		
WQ3-6	9/18/2003	0.02	0.023	< .01	.005	22	0.18	272	2.3	0.02	< .01	0.08	< .005	0.03
WQ3-6	6/17/2003							240	8.1			0.258		
WQ3-6	11/4/2002		0.14	< .1	< .1	13		285	6.7			< .1		
WQ3-6	9/5/2002	< .6	0.08	< .1	< .1	< 5.	0.14	374	7	< .6	< .1	< .1	< .1	0.09
WQ3-6	6/17/2002							243	3			< .1		
WQ4-12	10/18/2005							162	16			< .05		
WQ4-12	9/15/2005	0.02	0.02	< .01	< .01	< 5.	0.12	170	8	0.02	< .01	0.11	< .01	0.02
WQ4-12	6/23/2005							117	7			0.22		
WQ4-12	11/10/2004							163	15			0.95		
WQ4-12	9/6/2004	0.02	< .01	< .01	< .01	< 5.	0.18	172	31	0.02	< .01	0.5	< .01	0.01
WQ4-12	6/23/2004							148	3			< .05		
WQ4-12	10/30/2003							188	16			0.545		
WQ4-12	9/18/2003	0.01	0.008	< .01	.005	10	0.15	175	8	0.01	< .01	0.133	< .005	0.01
WQ4-12	6/17/2003							125	8.7			0.193		
WQ4-12	11/4/2002		0.1	< .1	< .1	< 5.		164	11			0.2		
WQ4-12	9/5/2002	< .6	< .06	< .1	< .1	< 5.	0.12	173	15	< .6	< .1	0.3	< .1	0.07
WQ4-12	6/17/2002							151	6			< .1		

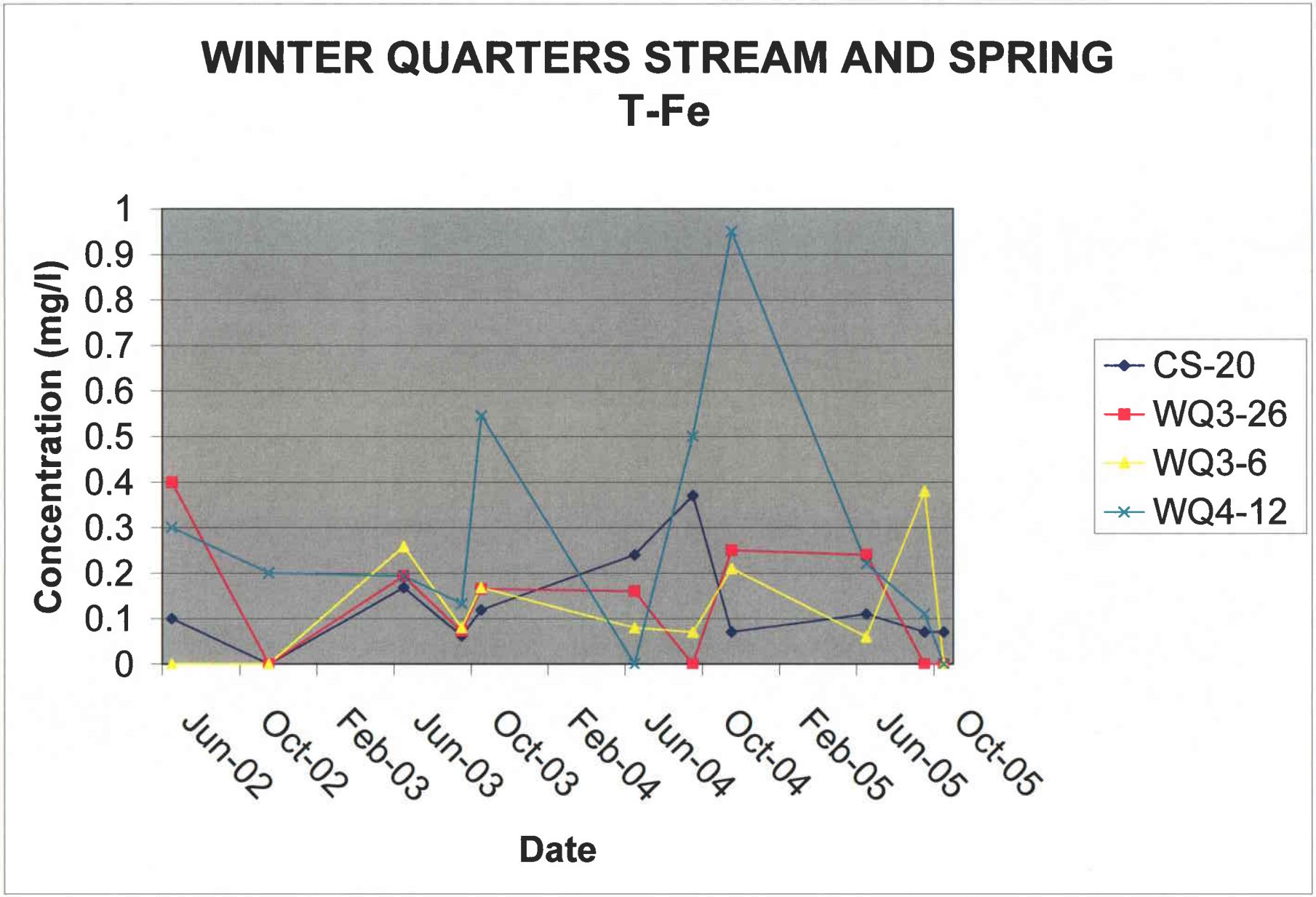

WINTER QUARTERS STREAM AND SPRING
D-Ba
Concentration (mg/l)
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
Jun-02
Aug-02
Oct-02
Dec-02
Feb-03
Apr-03
Jun-03
Aug-03
Oct-03
Dec-03
Feb-04
Apr-04
Jun-04
Aug-04
Oct-04
Dec-04
Feb-05
Apr-05
Jun-05
Aug-05
Oct-05
Date
CS-20
WQ3-26
WQ3-6
WQ4-12

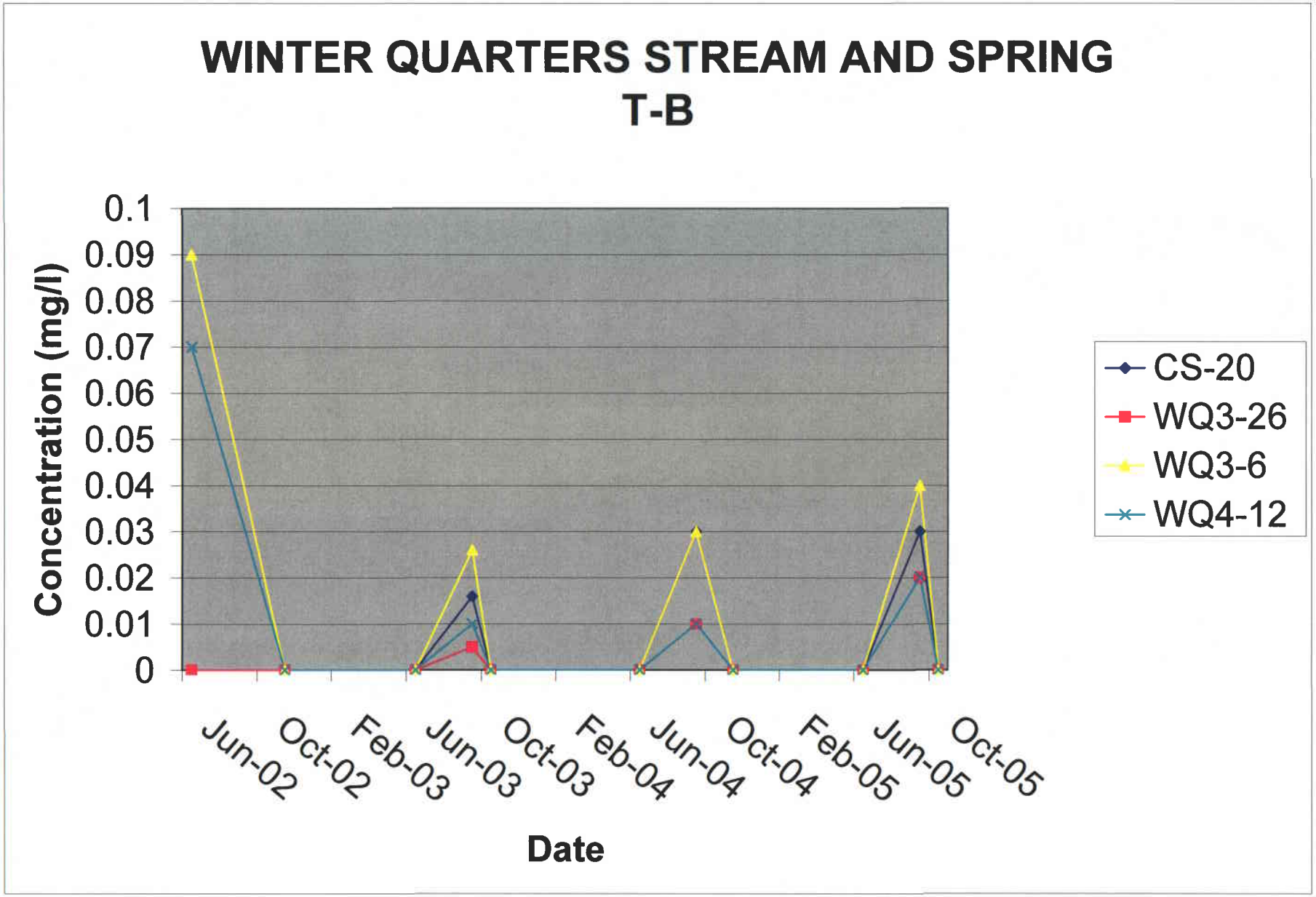

WINTER QUARTERS STREAM AND SPRING
D-B
Concentration (mg/l)
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
Jun-02
Oct-02
Feb-03
Jun-03
Oct-03
Feb-04
Jun-04
Oct-04
Feb-05
Jun-05
Oct-05
Date
CS-20
WQ3-26
WQ3-6
WQ4-12


WINTER QUARTERS STREAM AND SPRING
F
Concentration (mg/l)
0.25
0.2
0.15
0.1
0.05
0
Jun-02
Oct-02
Feb-03
Jun-03
Oct-03
Feb-04
Jun-04
Oct-04
Feb-05
Jun-05
Oct-05
Date
CS-20
WQ3-26
WQ3-6
WQ4-12


WINTER QUARTERS STREAM AND SPRING
T-Alk
Concentration (mg/l)
400
350
300
250
200
150
100
50
0
Jun-02
Oct-02
Feb-03
Jun-03
Oct-03
Feb-04
Jun-04
Oct-04
Feb-05
Jun-05
Oct-05
Date
CS-20
WQ3-26
WQ3-6
WQ4-12


WINTER QUARTERS STREAM AND SPRING
F-Turb
NTU
35
30
25
20
15
10
5
0
Jun-02
Oct-02
Feb-03
Jun-03
Oct-03
Feb-04
Jun-04
Oct-04
Feb-05
Jun-05
Oct-05
Date
CS-20
WQ3-26
WQ3-6
WQ4-12

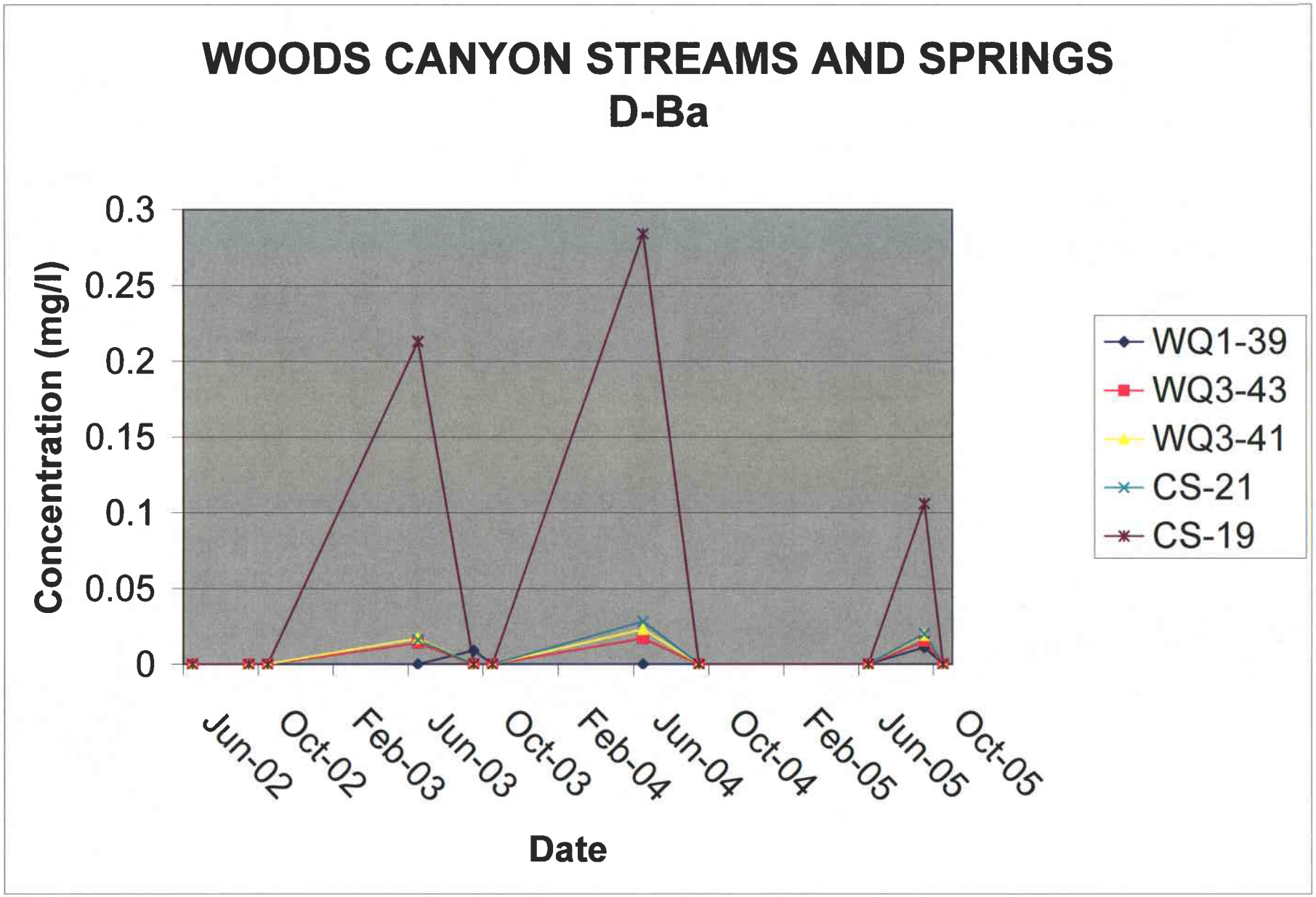

WINTER QUARTERS STREAM AND SPRING
T-Fe
Concentration (mg/l)
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Jun-02
Oct-02
Feb-03
Jun-03
Oct-03
Feb-04
Jun-04
Oct-04
Feb-05
Jun-05
Oct-05
Date
CS-20
WQ3-26
WQ3-6
WQ4-12

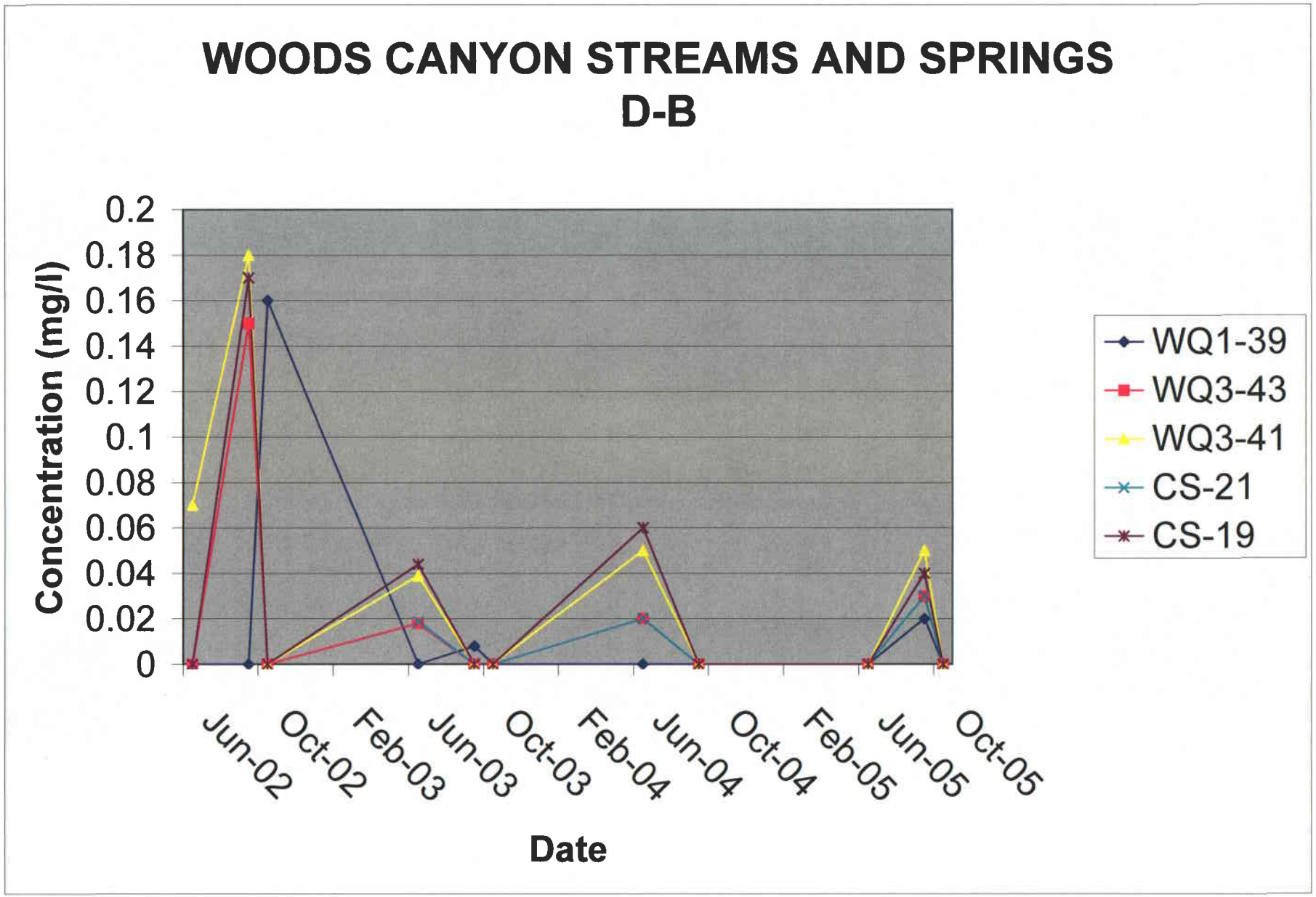

WINTER QUARTERS STREAM AND SPRING
T-B
Concentration (mg/l)
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
Jun-02
Oct-02
Feb-03
Jun-03
Oct-03
Feb-04
Jun-04
Oct-04
Feb-05
Jun-05
Oct-05
Date
CS-20
WQ3-26
WQ3-6
WQ4-12

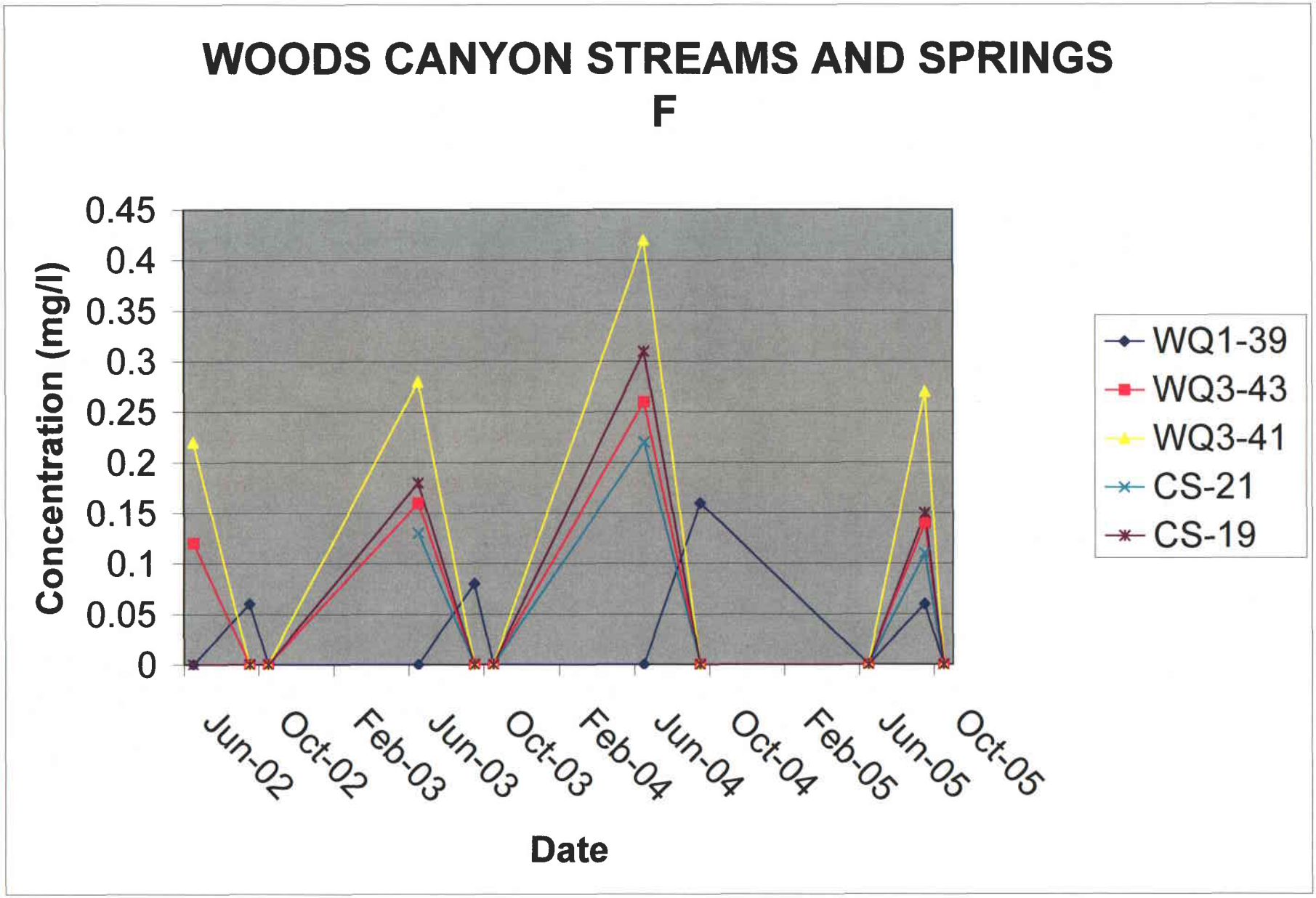
WOODS CANYON STREAMS AND SPRINGS

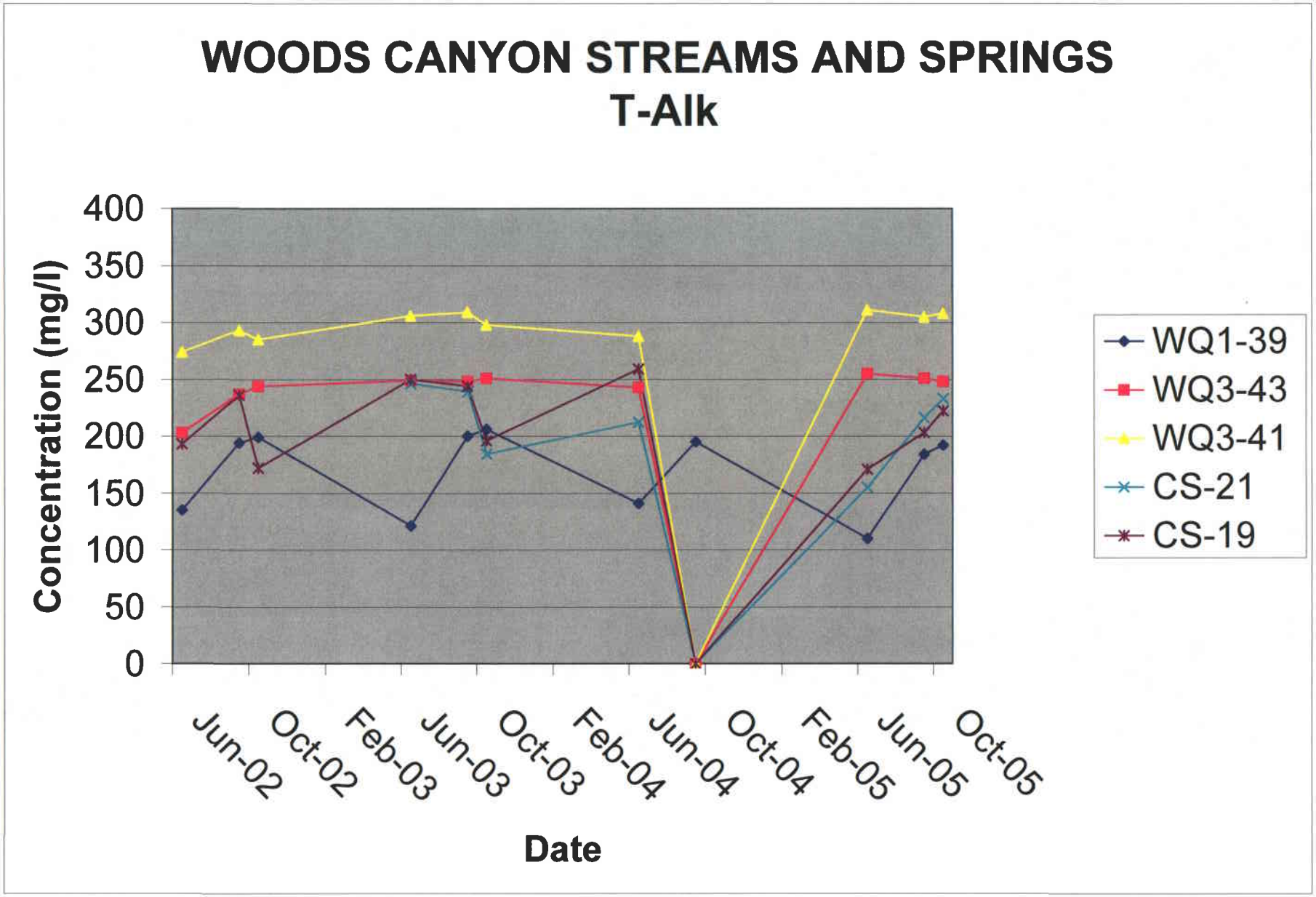
SITE		D-Ba	D-B	D-Cu	D-Pb	Acidity	F	T-Alk	F-Turb.	T-Ba	T-Cu	T-Fe	T-Pb	T-B
NAME	DATE	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	NTU	mg/l	mg/l	mg/l	mg/l	mg/l
WQ1-39	10/13/2005							192				0.07		
WQ1-39	9/6/2005	0.01	0.02	< .01	< .01	< 5.	0.06	184		0.01	< .01	< .05	< .01	0.02
WQ1-39	6/22/2005							110	6			0.16		
WQ1-39	9/2/2004	< .01	< .01	< .01	< .01	6	0.16	195	4	0.01	< .01	0.08	< .01	0.01
WQ1-39	6/22/2004							141	3			< .05		
WQ1-39	10/28/2003							206	14			0.17		
WQ1-39	9/17/2003	0.01	0.008	< .01	.005	10	0.08	200	5	0.01	< .01	0.144	< .005	0.01
WQ1-39	6/16/2003							121	4.5			0.062		
WQ1-39	10/16/2002		0.16	< .1	< .1	< 5.		199	6			< .1		
WQ1-39	9/11/2002	< .6	< .06	< .1	< .1	< 5.	0.06	194	19	< .6	< .1	0.3	< .1	< .06
WQ1-39	6/18/2002							135	4			< .1		
WQ3-43	10/13/2005							248	5			0.09		
WQ3-43	9/6/2005	0.02	0.03	< .01	< .01	< 5.	0.14	251		0.02	< .01	0.09	< .01	0.03
WQ3-43	6/22/2005							255	5			0.18		
WQ3-43	11/12/2004								3			0.24		
WQ3-43	9/2/2004	0.02	0.02	< .01	< .01	10	0.26	243	6	0.02	< .01	0.5	< .01	0.03
WQ3-43	6/22/2004							251	6			0.27		
WQ3-43	10/28/2003							248	15			0.415		
WQ3-43	9/17/2003	0.01	0.018	< .01	.005	12	0.16	249	15	0.01	< .01	0.233	< .005	0.02
WQ3-43	6/16/2003							244	4.2			0.075		
WQ3-43	10/16/2002		0.15	< .1	< .1	< 5.		237	22			0.3		
WQ3-43	9/11/2002	< .6	< .06	< .1	< .1	< 5.	0.12	203	72	< .6	< .1	1.9	< .1	< .06
WQ3-43	6/18/2002							339	4			0.1		
WQ3-41	10/13/2005							308				0.51		
WQ3-41	9/6/2005	0.02	0.05	< .01	< .01	< 5.	0.27	305		0.02	< .01	< .05	< .01	0.05
WQ3-41	6/22/2005							311	11			0.38		
WQ3-41	11/11/2004								24			1.78		
WQ3-41	9/2/2004	0.02	0.05	< .01	< .01	9	0.42	288	50	0.03	< .01	1.75	< .01	0.06
WQ3-41	6/22/2004							298	31			0.45		
WQ3-41	10/28/2003							309	31			0.931		
WQ3-41	9/17/2003	0.02	0.039	< .01	.005	14	0.28	306	35	0.02	< .01	0.436	< .005	0.04
WQ3-41	6/16/2003							285	14.7			0.353		
WQ3-41	10/16/2002		0.18	< .1	< .1	< 5.		293	23			0.6		
WQ3-41	9/11/2002	< .6	0.07	< .1	< .1	< 5.	0.22	274	274	< .6	< .1	4.2	< .1	0.13
WQ3-41	6/18/2002							260	5			< .1		
CS-21	10/13/2005							233	3			0.07		
CS-21	9/6/2005	0.02	0.03	< .01	< .01	< 5.	0.11	216	3.7	0.02	< .01	0.09	< .01	0.03
CS-21	6/22/2005							155	11			0.42		
CS-21	11/11/2004								3			0.08		
CS-21	9/2/2004	0.03	0.02	< .01	< .01	25	0.22	212	1	0.03	< .01	0.09	< .01	0.03
CS-21	6/22/2004							184	6			0.21		
CS-21	10/28/2003							239	31			0.11		
CS-21	9/17/2003	0.02	0.019	< .01	.005	< 5.	0.13	246			< .01	0.065	< .005	0.02
CS-19	10/13/2005							222	8.5			0.24		
CS-19	9/6/2005	0.11	0.04	< .01	< .01	< 5.	0.15	203	3.9	0.11	< .01	0.12	< .01	0.04
CS-19	6/22/2005							171	24			0.77		
CS-19	11/11/2004								11			0.29		
CS-19	9/2/2004	0.28	0.06	< .01	< .01	13	0.31	259	7	0.29	0.01	0.32	< .01	0.06

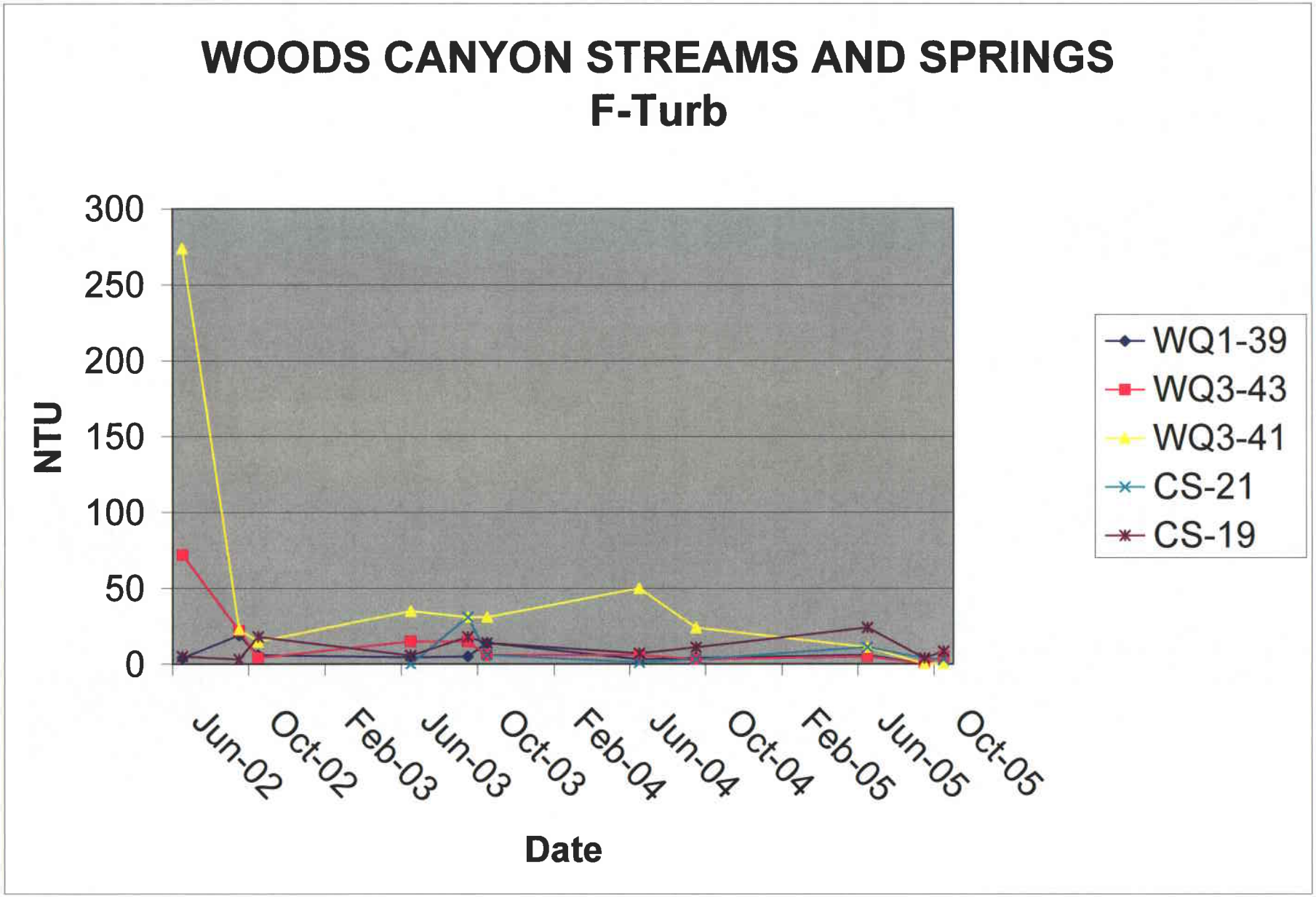
SITE		D-Ba	D-B	D-Cu	D-Pb	Acidity	F	T-Alk	F-Turb.	T-Ba	T-Cu	T-Fe	T-Pb	T-B
NAME	DATE	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	NTU	mg/l	mg/l	mg/l	mg/l	mg/l
CS-19	6/22/2004							196	14			0.46		
CS-19	10/28/2003							244	18			0.562		
CS-19	9/17/2003	0.21	0.044	< .01	.005	< 5.	0.18	250	5.6	0.21	< .01	0.202	< .005	0.04
CS-19	6/16/2003							172	18			0.488		
CS-19	10/16/2002		0.17	< .1	< .1	< 5.		236	3			0.1		
CS-19	6/18/2002							193	5			0.1		

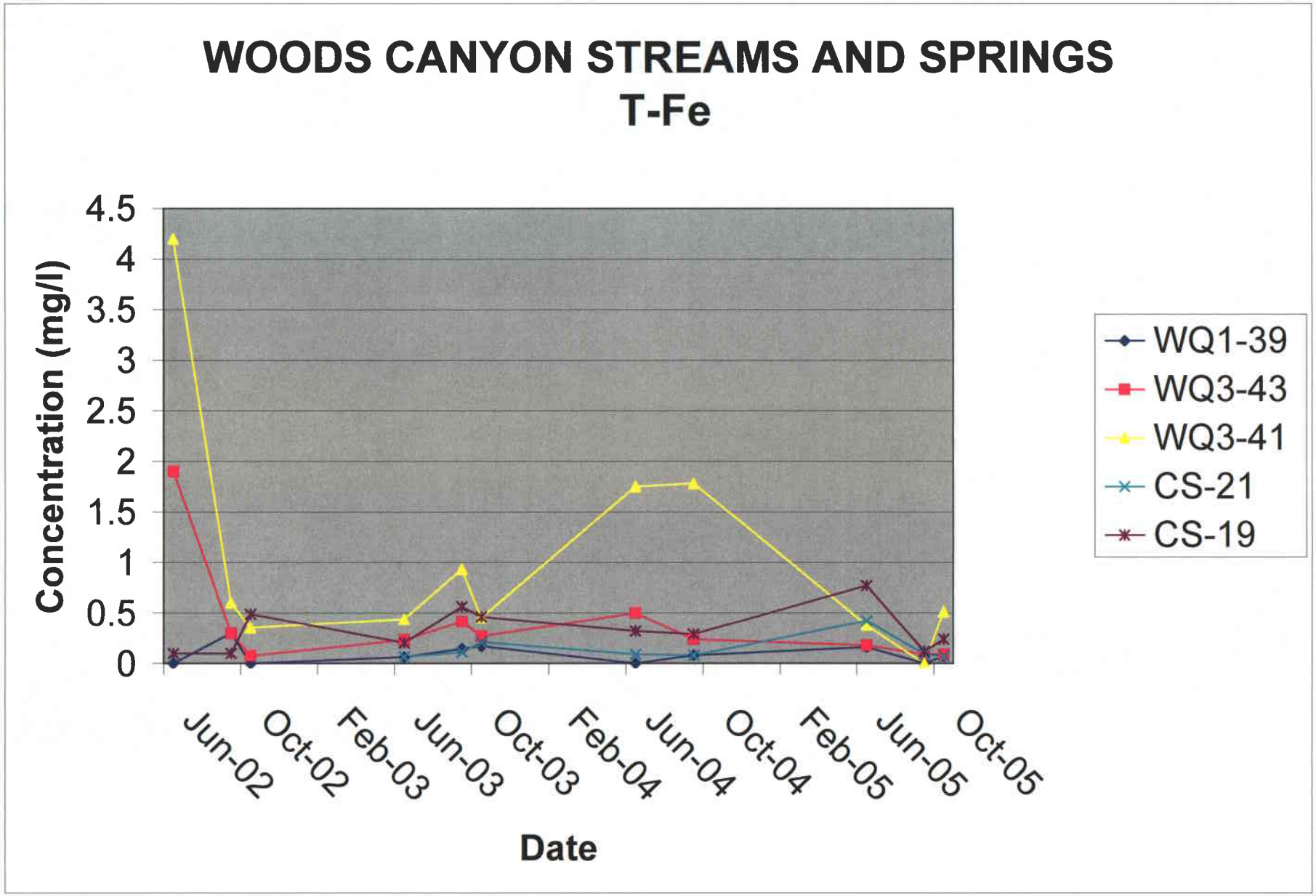

WOODS CANYON STREAMS AND SPRINGS
D-Ba
Concentration (mg/l)
0.3
0.25
0.2
0.15
0.1
0.05
0
Jun-02
Oct-02
Feb-03
Jun-03
Oct-03
Feb-04
Jun-04
Oct-04
Feb-05
Jun-05
Oct-05
Date
WQ1-39
WQ3-43
WQ3-41
CS-21
CS-19

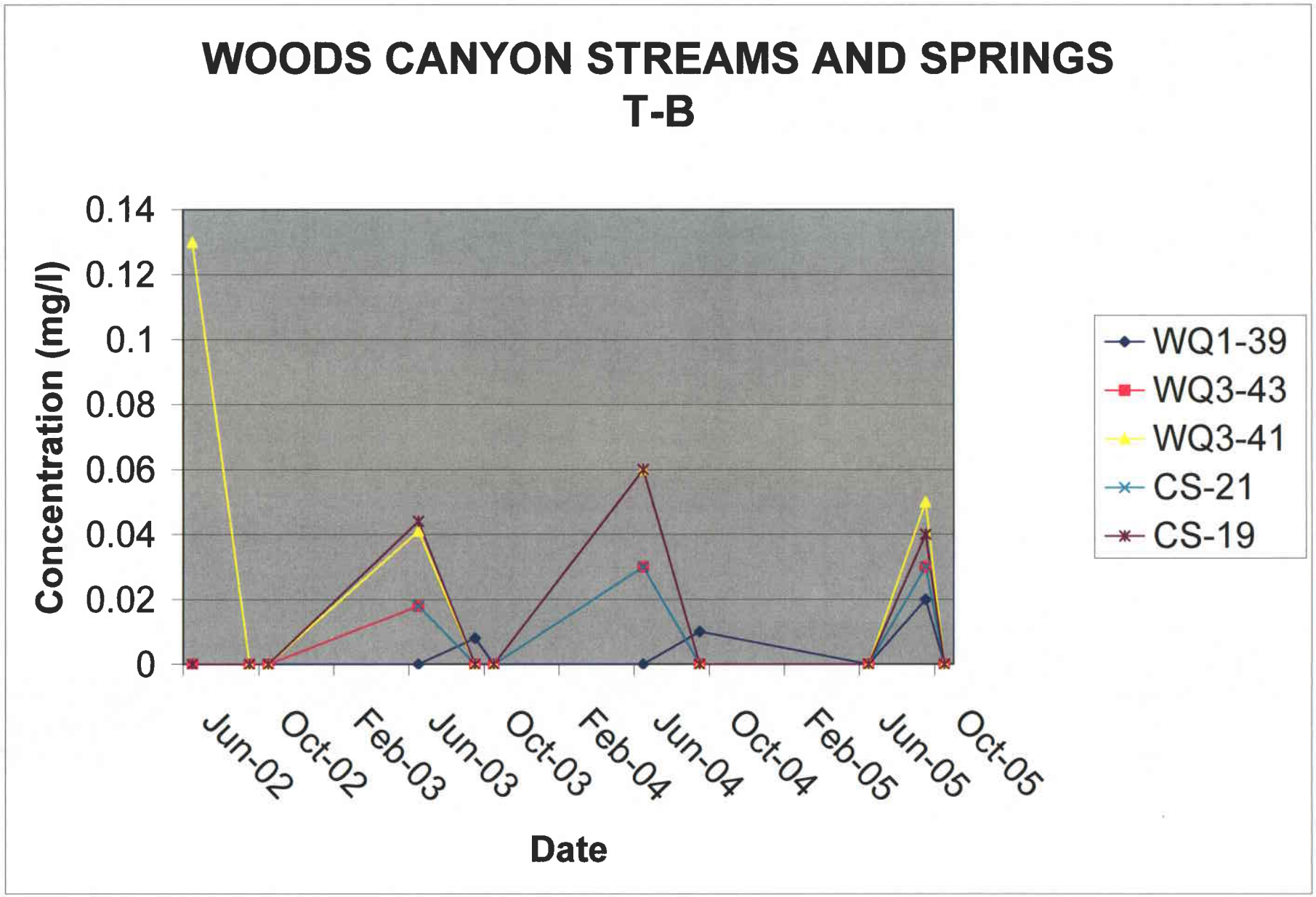

WOODS CANYON STREAMS AND SPRINGS
D-B
Concentration (mg/l)
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
Jun-02
Oct-02
Feb-03
Jun-03
Oct-03
Feb-04
Jun-04
Oct-04
Feb-05
Jun-05
Oct-05
Date
WQ1-39
WQ3-43
WQ3-41
CS-21
CS-19


WOODS CANYON STREAMS AND SPRINGS
F
Concentration (mg/l)
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
Jun-02
Oct-02
Feb-03
Jun-03
Oct-03
Feb-04
Jun-04
Oct-04
Feb-05
Jun-05
Oct-05
Date
WQ1-39
WQ3-43
WQ3-41
CS-21
CS-19


WOODS CANYON STREAMS AND SPRINGS
T-Alk
Concentration (mg/l)
400
350
300
250
200
150
100
50
0
Jun-02
Oct-02
Feb-03
Jun-03
Oct-03
Feb-04
Jun-04
Oct-04
Feb-05
Jun-05
Oct-05
Date
WQ1-39
WQ3-43
WQ3-41
CS-21
CS-19


WOODS CANYON STREAMS AND SPRINGS
F-Turb
NTU
300
250
200
150
100
50
0
Jun-02
Oct-02
Feb-03
Jun-03
Oct-03
Feb-04
Jun-04
Oct-04
Feb-05
Jun-05
Oct-05
Date
WQ1-39
WQ3-43
WQ3-41
CS-21
CS-19


WOODS CANYON STREAMS AND SPRINGS
T-Fe
Concentration (mg/l)
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Jun-02
Oct-02
Feb-03
Jun-03
Oct-03
Feb-04
Jun-04
Oct-04
Feb-05
Jun-05
Oct-05
Date
WQ1-39
WQ3-43
WQ3-41
CS-21
CS-19

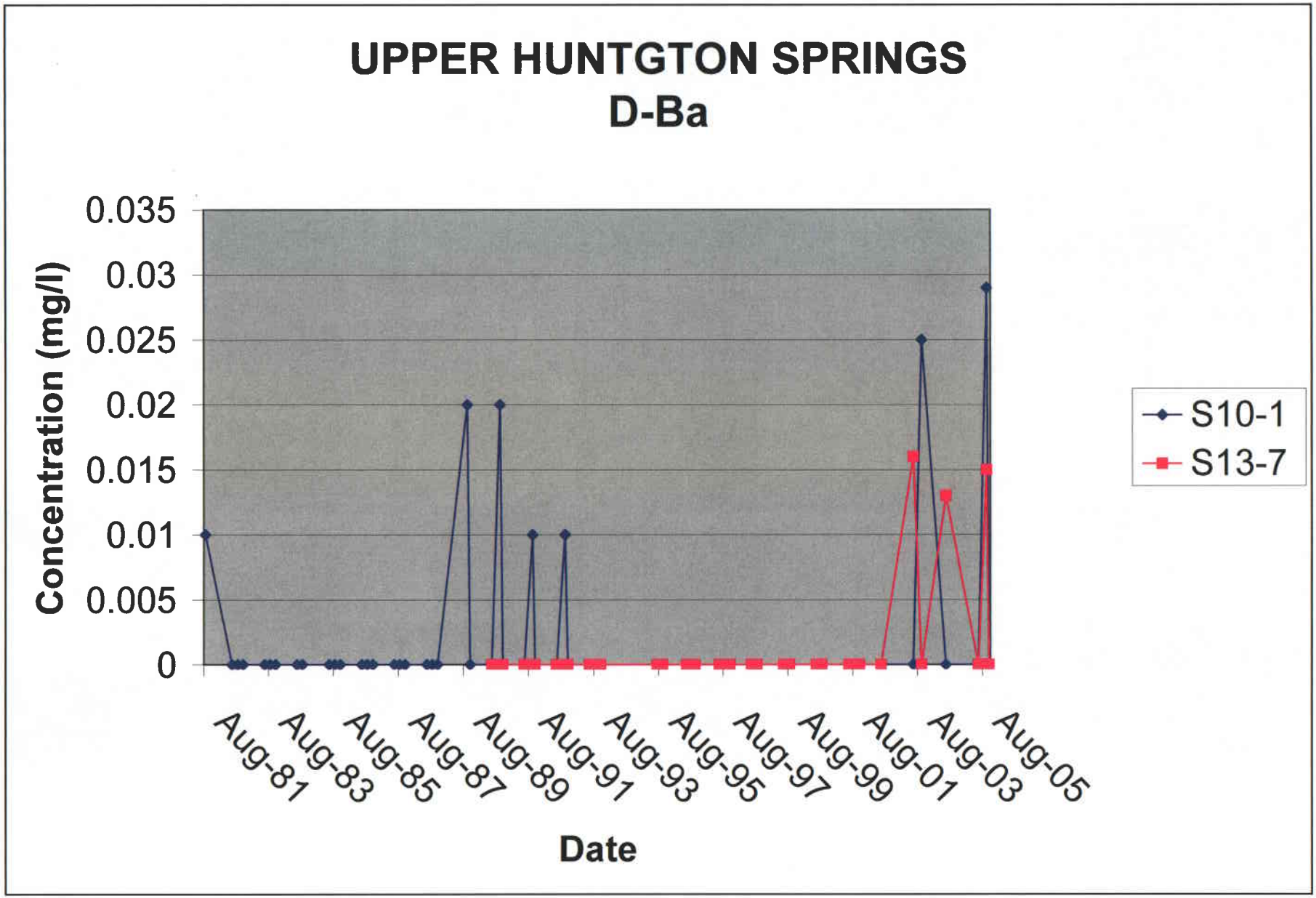

WOODS CANYON STREAMS AND SPRINGS
T-B
Concentration (mg/l)
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
Jun-02
Oct-02
Feb-03
Jun-03
Oct-03
Feb-04
Jun-04
Oct-04
Feb-05
Jun-05
Oct-05
Date
WQ1-39
WQ3-43
WQ3-41
CS-21
CS-19

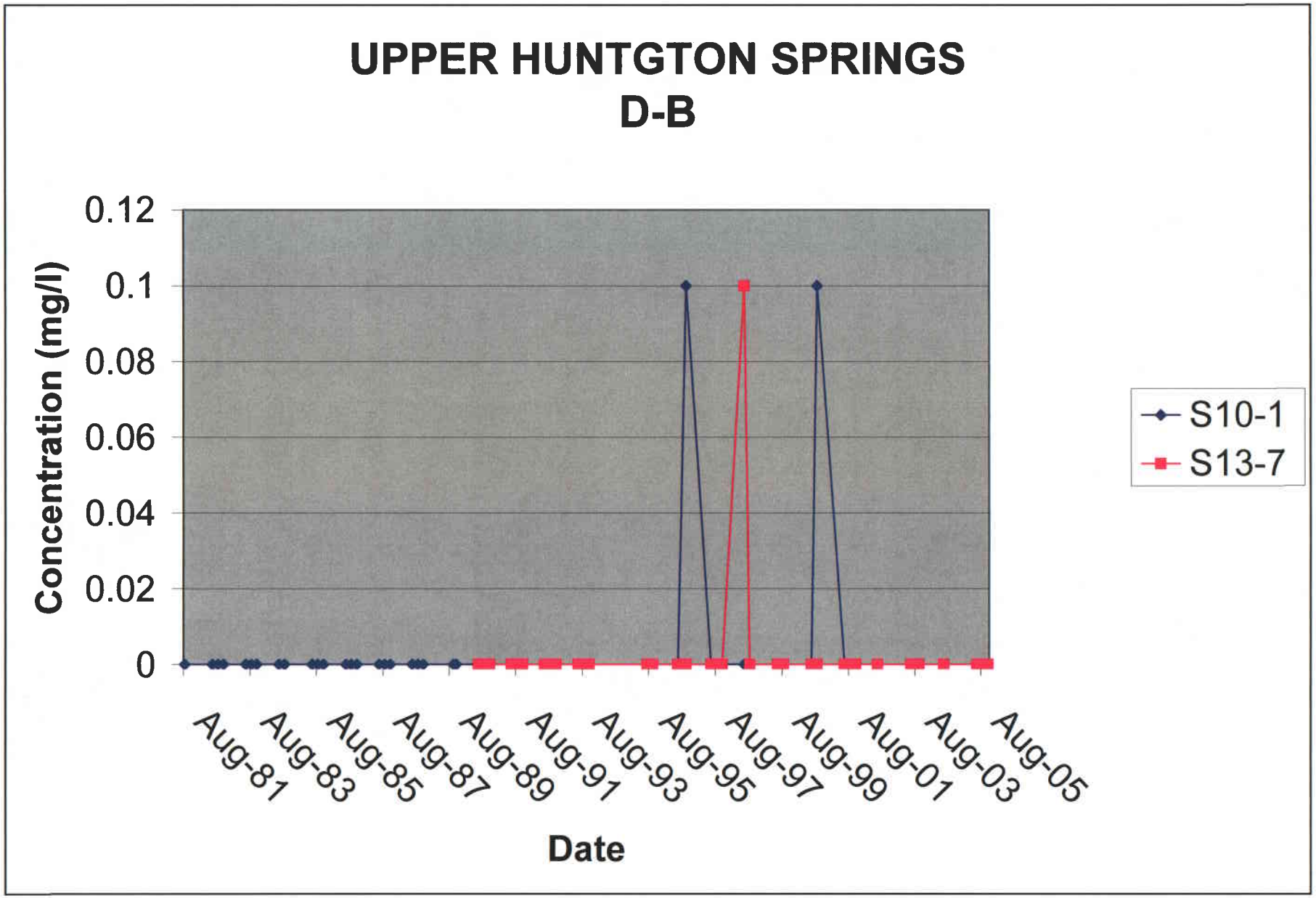
UPPER HUNTGTON SPRINGS

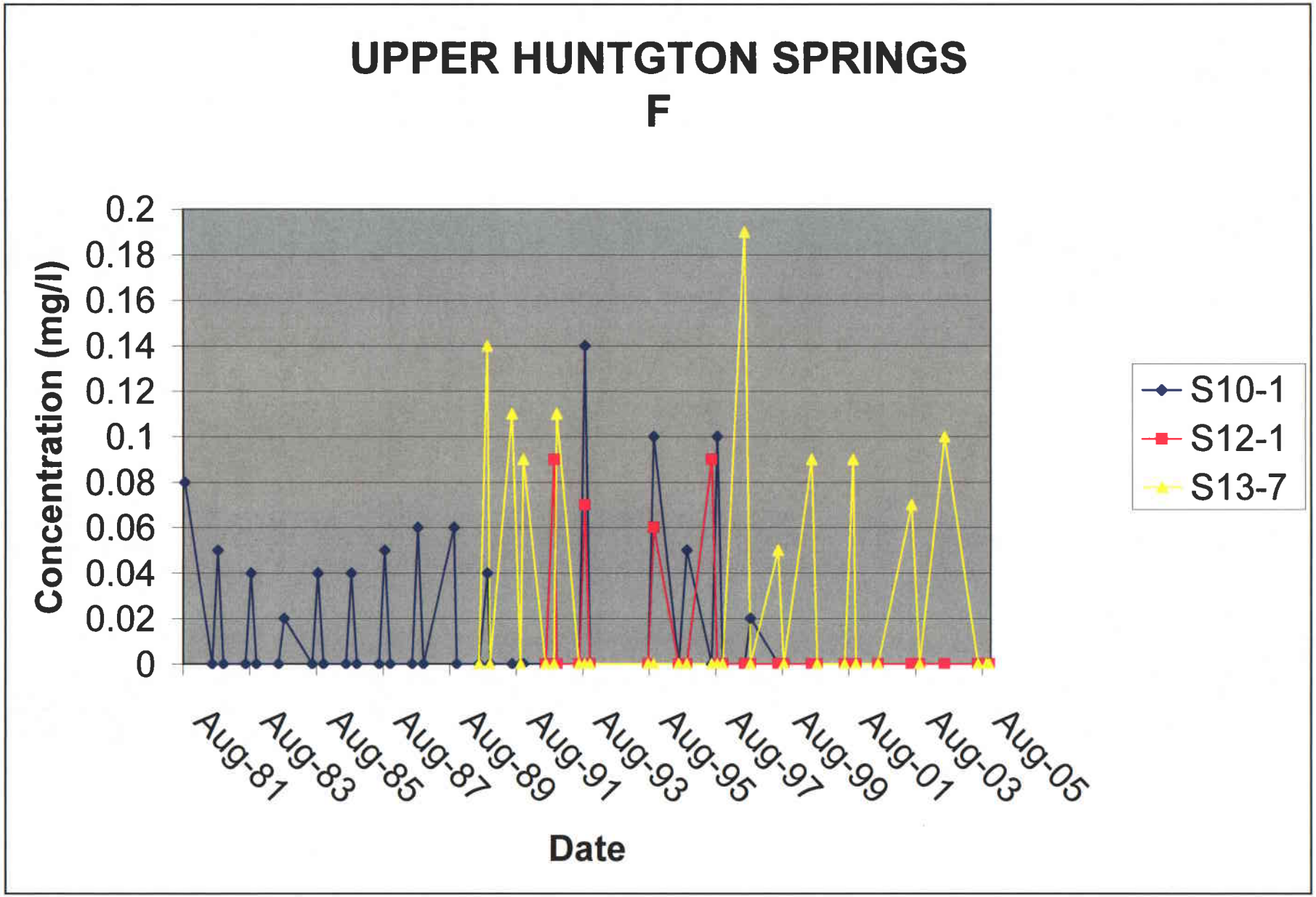
SITE		D-Ba	D-B	D-Cu	D-Pb	Acidity	F	T-Alk	F-Turb.	T-Ba	T-Cu	T-Fe	T-Pb	T-B
NAME	DATE	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	NTU	mg/l	mg/l	mg/l	mg/l	mg/l
S10-1	10/13/2005							121				< .05		
S10-1	9/7/2005	0.03	< .01	< .01	< .01	< 5.	< .03	112		0.04	< .01	< .05	< .01	< .01
S10-1	6/22/2005							44	13			0.28		
S10-1	6/22/2004							69	10			0.15		
S10-1	9/17/2003	0.03	< .005	< .01	.005	< 5.	< .03	121	3.6	0.03	< .01	0.142	< .005	.005
S10-1	6/16/2003							440	5.4			0.12		
S10-1	6/17/2002							66	16			0.3		
S10-1	10/23/2001								3			< .1		
S10-1	9/3/2001	< .6	< .06	< .1	< .1	< 5.	< .03	112		< .6	< .1	0.2	< .1	0.16
S10-1	6/18/2001								12			0.2		
S10-1	8/7/2000	< 1.	0.1	< .1	< .1	< 10.	< .05	114	3	< 1.	< .1	< .1	< .1	0.1
S10-1	6/28/2000							79	9.9			0.2		
S10-1	8/17/1999	< 1.	< .1	< .1	< .1	< 10.	< .05	113	15	< 1.	< .1	0.8	< .1	< .1
S10-1	6/29/1999								24			3		
S10-1	8/19/1998	< 1.	< .1	< .1	< .1	< 10.	0.02	109	4.43	< 1.	< .1	< .1	< .1	0.2
S10-1	6/22/1998								19.7			0.3		
S10-1	10/9/1997								23.6			0.4		
S10-1	8/13/1997	< 1.	< .1	< .1	< .1		0.1	103	36.1	< 1.	< .1	0.8	< .1	< .1
S10-1	6/23/1997											0.2		
S10-1	9/11/1996	< 1.	0.1	< .1	< .1		0.05	125		< 1.	< .1	0.3	< .1	0.2
S10-1	6/24/1996											0.5		
S10-1	9/4/1995	< 1.	< .1	< .1	< .1		0.1	105		< 1.	< .1	< .1	< .1	0.1
S10-1	7/17/1995											0.5		
S10-1	10/18/1993											0.065		
S10-1	8/25/1993	< .01	< .1	< .03	.003		0.14	65.7		0.01	< .03	< .04	< .003	.032
S10-1	6/23/1993											0.35		
S10-1	10/20/1992											0.04		
S10-1	9/1/1992	0.01	< .07	< .01	.002		< .1	95		0.02	< .02	< .03	0	< .01
S10-1	6/10/1992											0.12		
S10-1	10/15/1991											0.1		
S10-1	9/3/1991	0.01	< .05	< .006	.003		< .2	63		0.02	0.01	0.12	< .003	< .05
S10-1	6/18/1991											0.52		
S10-1	10/24/1990											0.06		
S10-1	9/10/1990	0.02	< .02	< .01	.001		0.04	90		0.02	< .01	0.06	< .001	< .02
S10-1	6/4/1990											0.31		
S10-1	10/16/1989											0.06		
S10-1	9/5/1989	0.02	< .001	< .01	.001		0.06	80		0.03	< .01	0.06	< .001	.001
S10-1	10/11/1988											0.08		
S10-1	8/17/1988						0.06	81		0.02	< .01	0.09	< .001	0.02
S10-1	6/27/1988											0.25		
S10-1	10/20/1987											< .01		
S10-1	8/17/1987						0.05	96		0.02	< .01	0.03	< .001	.001
S10-1	6/9/1987											0.17		
S10-1	10/15/1986											0.09		
S10-1	8/19/1986						0.04	76		0.01	< .01	0.05	< .001	0.05
S10-1	6/18/1986											0.21		
S10-1	10/15/1985											0.1		
S10-1	8/27/1985						0.04	71		0.02	< .01	0.26	< .001	0.06

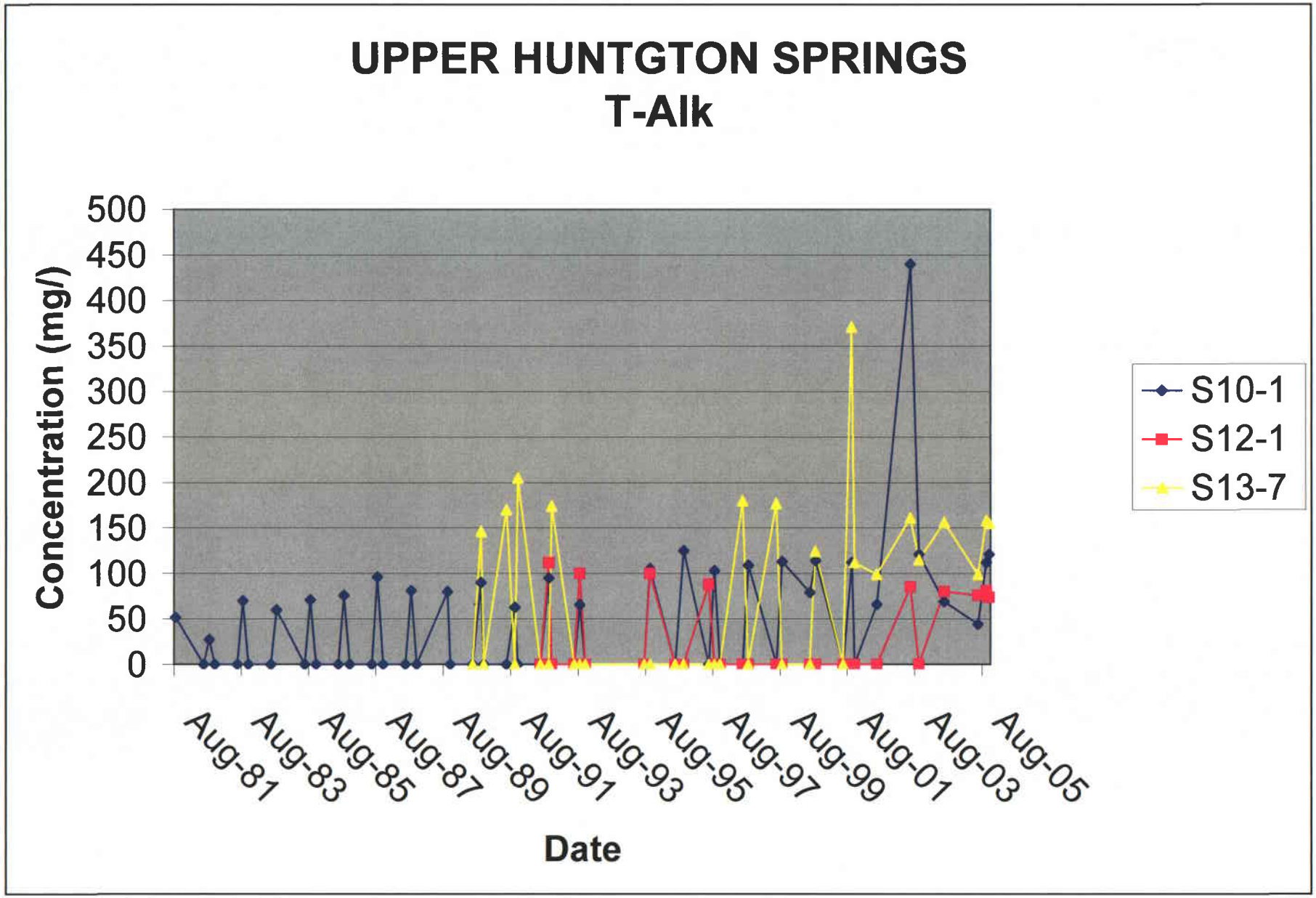
SITE		D-Ba	D-B	D-Cu	D-Pb	Acidity	F	T-Alk	F-Turb.	T-Ba	T-Cu	T-Fe	T-Pb	T-B
NAME	DATE	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	NTU	mg/l	mg/l	mg/l	mg/l	mg/l
S10-1	6/18/1985											0.22		
S10-1	8/22/1984						0.02	60		0.02	0.01	0.36	0.01	0.04
S10-1	6/26/1984											0.46		
S10-1	10/19/1983											0.19		
S10-1	8/22/1983						0.04	70		0.02	0.02	0.32	0.01	0.06
S10-1	6/29/1983											0.37		
S10-1	10/12/1982											0.27		
S10-1	8/18/1982						0.05	27.3		0.01	< .001	0.26	0	0.01
S10-1	6/29/1982											0.42		
S10-1	8/18/1981	0.01	< .001	< .001	.001		0.08	52		0.02	0.01	0.14	< .001	.001
S12-1	6/29/2005							74	30			0.5		
S12-1	6/23/2004							81	46			0.76		
S12-1	6/16/2003							76	36.7			0.46		
S12-1	6/17/2002							80	38			1		
S12-1	6/18/2001								51			0.9		
S12-1	6/20/2000							85	4			1		
S12-1	6/29/1999								10.4			0.4		
S12-1	7/6/1998								5.1			1.1		
S12-1	6/23/1997											0.3		
S12-1	6/24/1996											0.2		
S12-1	7/24/1995											1.1		
S12-1	6/23/1993											0.39		
S12-1	6/18/1991											0.27		
S12-1	6/4/1990											0.22		
S12-1	6/21/1989											0.19		
S12-1	6/27/1988											0.21		
S12-1	6/9/1987											0.11		
S12-1	10/15/1986											0.73		
S12-1	8/19/1986						0.09	88		0.02	< .01	0.3	< .001	0.07
S12-1	6/18/1986											0.18		
S12-1	6/18/1985											0.18		
S12-1	8/22/1984						0.06	100		0.02	0.02	0.33	0	0.04
S12-1	6/26/1984											0.31		
S12-1	10/19/1983											0.62		
S12-1	8/22/1983						0.07	100		0.08	0.02	0.32	< .001	0.03
S12-1	6/29/1983											0.05		
S12-1	10/16/1982											0.22		
S12-1	8/18/1982						0.09	111.7		0.04	< .001	0.65	0	0.02
S12-1	6/29/1982											0.21		
S13-7	10/18/2005							155	34			0.79		
S13-7	9/7/2005	0.02	< .01	< .01	< .01	< 5.	< .05	158		0.02	< .01	0.3	< .01	< .01
S13-7	6/29/2005							99	18			0.21		
S13-7	9/6/2004	0.01	< .01	< .01	< .01	7	0.1	156	12	0.02	< .01	0.24	< .01	< .01
S13-7	6/23/2004							115	21			0.63		
S13-7	9/18/2003	0.02	< .005	< .01	.005	< 5.	0.07	161	6.2	0.02	< .01	0.235	< .005	.005
S13-7	6/16/2003							99	31.4			0.915		
S13-7	6/17/2002							112	75			2		
S13-7	9/3/2001	< .6	< .06	< .1	< .1	< 5.	0.09	371		< .6	< .1	1.4	< .1	0.07
S13-7	6/18/2001								54			0.7		
S13-7	6/20/2000							124	8			0.7		

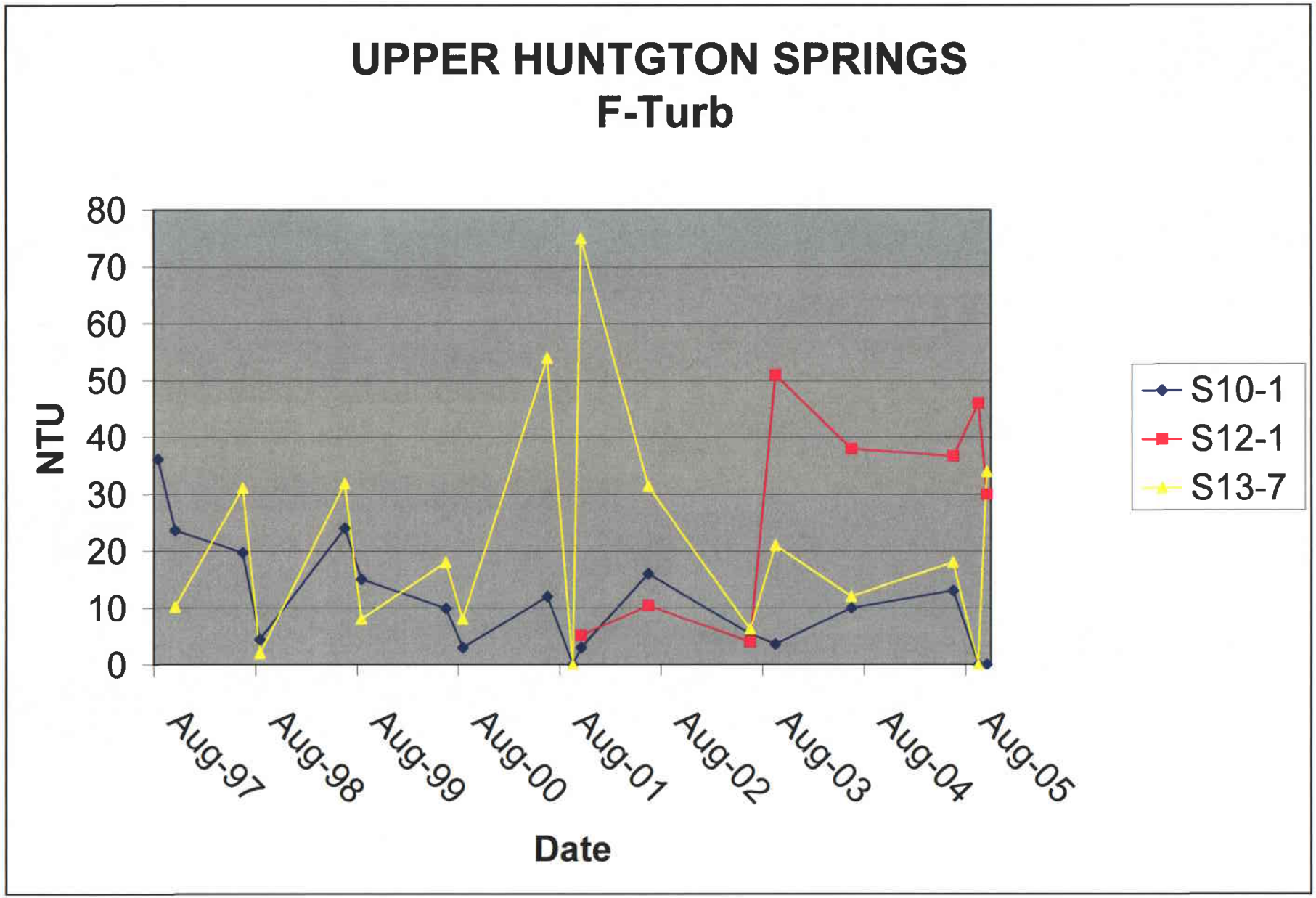
SITE		D-Ba	D-B	D-Cu	D-Pb	Acidity	F	T-Alk	F-Turb.	T-Ba	T-Cu	T-Fe	T-Pb	T-B
NAME	DATE	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	NTU	mg/l	mg/l	mg/l	mg/l	mg/l
S13-7	8/17/1999	< 1.	< .1	< .1	< .1	< 10.	0.09	0	18	< 1.	0	0	< .1	< .1
S13-7	6/29/1999								8.01			0.2		
S13-7	8/19/1998	< 1.	< .1	< .1	< .1	13	0.05	177	31.9	< 1.	< .1	1	< .1	0.2
S13-7	7/6/1998								1.95			0.3		
S13-7	8/13/1997	< 1.	0.1	< .1	< .1		0.19	180	31.1	< 1.	< .1	0.3	< .1	0.1
S13-7	7/3/1997								10.2			0.2		
S13-7	6/27/1996											1.2		
S13-7	7/17/1995											0.4		
S13-7	6/23/1993											0.23		
S13-7	6/9/1992											0.12		
S13-7	6/18/1991											0.29		
S13-7	6/4/1990											0.06		
S13-7	6/21/1989											0.38		
S13-7	6/27/1988											0.13		
S13-7	6/9/1987											0.06		
S13-7	8/19/1986						0.11	174		0.02	< .01	0.02	< .001	0.05
S13-7	6/18/1986											0.14		
S13-7	6/18/1985											0.18		
S13-7	8/22/1984						0.09	205		0.02	0.02	0.13	< .001	0.05
S13-7	6/26/1984											0.32		
S13-7	8/22/1983						0.11	170		0.02	0.01	0.13	0	0.01
S13-7	6/29/1983											0.19		
S13-7	8/18/1982						0.14	146		0.05	< .001	0.06	0	0.01
S13-7	6/29/1982											1.2		

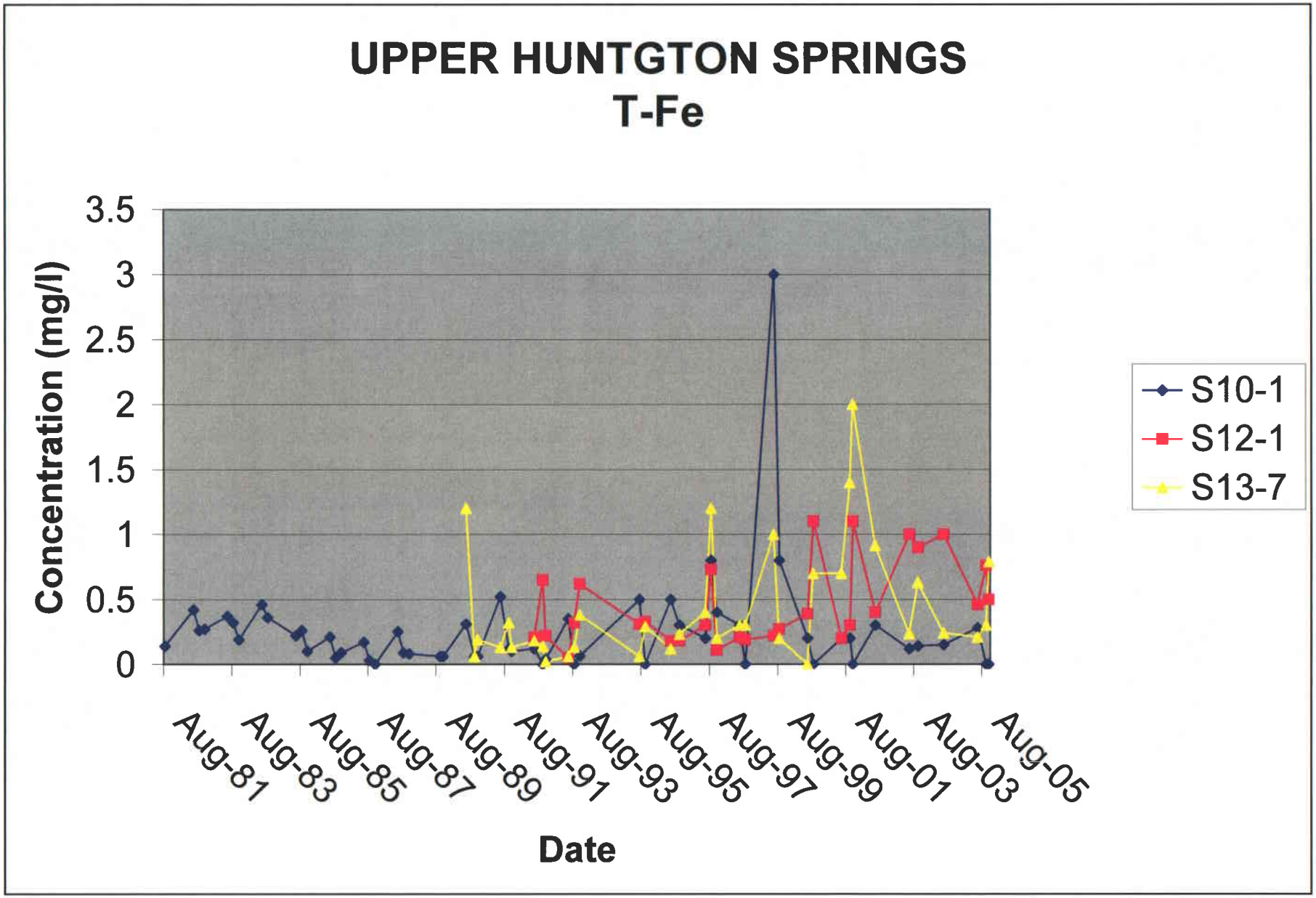

UPPER HUNTGTON SPRINGS
D-Ba
Concentration (mg/l)
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
Aug-81
Aug-83
Aug-85
Aug-87
Aug-89
Aug-91
Aug-93
Aug-95
Aug-97
Aug-99
Aug-01
Aug-03
Aug-05
Date
S10-1
S13-7


UPPER HUNTGTON SPRINGS
D-B
Concentration (mg/l)
0.12
0.1
0.08
0.06
0.04
0.02
0
Aug-81
Aug-83
Aug-85
Aug-87
Aug-89
Aug-91
Aug-93
Aug-95
Aug-97
Aug-99
Aug-01
Aug-03
Aug-05
Date
S10-1
S13-7


UPPER HUNTGTON SPRINGS
F
Concentration (mg/l)
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
Aug-81
Aug-83
Aug-85
Aug-87
Aug-89
Aug-91
Aug-93
Aug-95
Aug-97
Aug-99
Aug-01
Aug-03
Aug-05
Date
S10-1
S12-1
S13-7


UPPER HUNTGTON SPRINGS
T-Alk
Concentration (mg/l)
500
450
400
350
300
250
200
150
100
50
0
Aug-81
Aug-83
Aug-85
Aug-87
Aug-89
Aug-91
Aug-93
Aug-95
Aug-97
Aug-99
Aug-01
Aug-03
Aug-05
Date
S10-1
S12-1
S13-7


UPPER HUNTGTON SPRINGS
F-Turb
NTU
80
70
60
50
40
30
20
10
0
Aug-97
Aug-98
Aug-99
Aug-00
Aug-01
Aug-02
Aug-03
Aug-04
Aug-05
Date
S10-1
S12-1
S13-7


UPPER HUNTGTON SPRINGS
T-Fe
Concentration (mg/l)
3.5
3
2.5
2
1.5
1
0.5
0
Aug-81
Aug-83
Aug-85
Aug-87
Aug-89
Aug-91
Aug-93
Aug-95
Aug-97
Aug-99
Aug-01
Aug-03
Aug-05
Date
S10-1
S12-1
S13-7

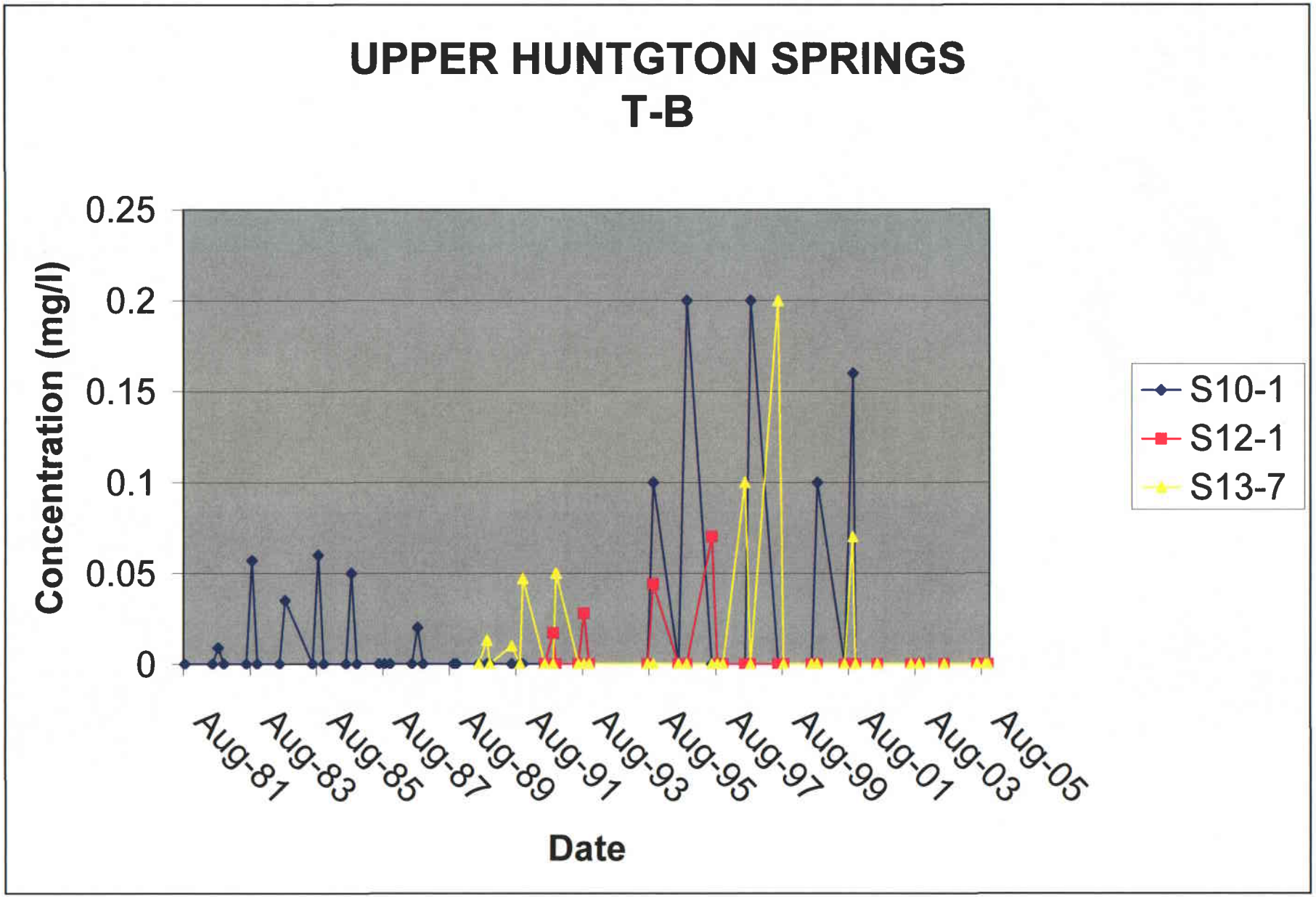

UPPER HUNTGTON SPRINGS
T-B
Concentration (mg/l)
0.25
0.2
0.15
0.1
0.05
0
Aug-81
Aug-83
Aug-85
Aug-87
Aug-89
Aug-91
Aug-93
Aug-95
Aug-97
Aug-99
Aug-01
Aug-03
Aug-05
Date
S10-1
S12-1
S13-7

Table 2.3.7-2A
Water Quality Analytical Schedule
Streams and Springs
-Low Summer Flow-
(August - September)

Field Measurements
Flow
Dissolved Oxygen
pH
Specific Conductance
Temperature, Air
Temperature, Water
Turbidity

Laboratory Measurements
Acidity
Alkalinity
Bicarbonate
Ammonia
Barium, Total and dissolved
Boron Total and dissolved
Calcium, dissolved
Chloride
Copper, total and dissolved
Fluoride
Iron, total and dissolved
Lead, total and dissolved
Magnesium, dissolved
Manganese, total and dissolved
Nitrate
Phosphate (Orthophosphate)
Potassium, dissolved
Sodium, dissolved
Sulfate
Suspended Solids
Total Dissolved Solids

Historically collected

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JAN 0 6 2005
DIV OF OIL GAS & MINING

Special Improvement District

✓ on current Analysis list

TABLE 2.3.7-5 + add to list * 5 year

COMPREHENSIVE WATER QUALITY ANALYTICAL SCHEDULE
WASTE ROCK DISPOSAL SITE - WELL NUMBER 92-91-03

Monitoring Frequency - Three Times per Year
- Spring (May - June)
- Summer (August - September)
- Fall (October - November)

FIELD MEASUREMENTS	LABORATORY MEASUREMENTS	
Water Level	✓*Total Dissolved Solids	Lead (pb)
pH	✓*Total Hardness (as $CaCO_3$)	✓*Magnesium (mg)
Specific Conductance	* Alkalinity	
	Aluminum (Al)	✓*Manganese (total)
	Anion/Cation Balance	
Temperature, Air	Arsenic (As)	Molybdenum (Mo)
~~Temperature, Water~~	Boron (B)	Ammonia (NH_3)
	*Carbonate (CO_3)	Nitrite (NO_2)
	✓*Bicarbonate (HCO_3)	+Nitrate + Nitrite (NO_3)
		Oil & Grease
	Cadmium (Cd)	✓*Potassium (K)
	✓*Calcium (Ca)	* Phosphate (PO_4) + Total P
	✓*Chloride (Cl)	Selenium (Se)
	*Specific Conductance	✓*Sodium (Na)
	Copper (Cu)	✓ ✓*Sulfate (SO_4)
	✓*Iron (Fe) Diss. & total	Zinc (Zn)
	↑ Non D	

*Notes - All constituents identified as Laboratory Measurements will be analyzed through 1994 season, after which, only the asterisked items will be monitored.

- All trace metals will be analyzed in dissolved form only except iron and manganese which will also be analyzed for total concentrations.

~~to~~ on

APR 24 2001 OOB
Oil Division Oil, Gas

Table 2.3.7-2
Water Quality Analytical Schedule
Streams and Springs
High Spring (April - June),
Late Fall (October - November), and
Winter (December - February) Flows

ok to have

Field Measurements
Flow
pH
Specific Conductance ✓
Temperature, Air ?
Temperature, Water
Turbidity (streams below mine discharge only)

Laboratory Measurements
Ammonia ~~✓~~ only nobody else does
Bicarbonate ✓
Calcium, dissolved ✓
Chloride ✓
Iron, Total and dissolved ✓
Magnesium, dissolved ✓
Manganese, total and dissolved ✓
Nitrate + Nitrite O
~~Phosphate (Orthophosphate)~~ T-P
Potassium, dissolved ✓
Sodium, dissolved ✓
Sulfate ✓
Suspended Solids O
Total Dissolved Solids ✓

Hardness ✓
Alk
carbonate

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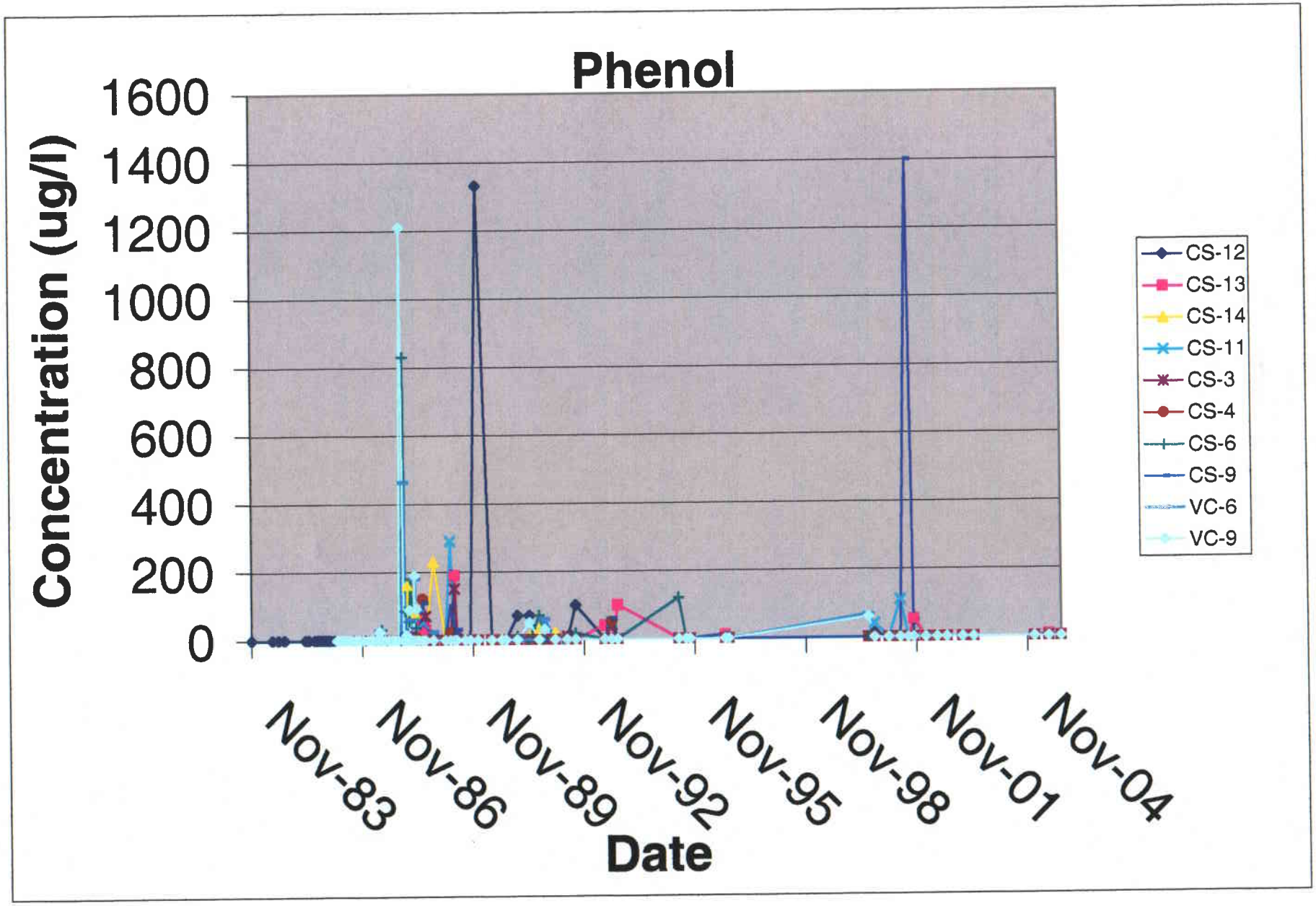
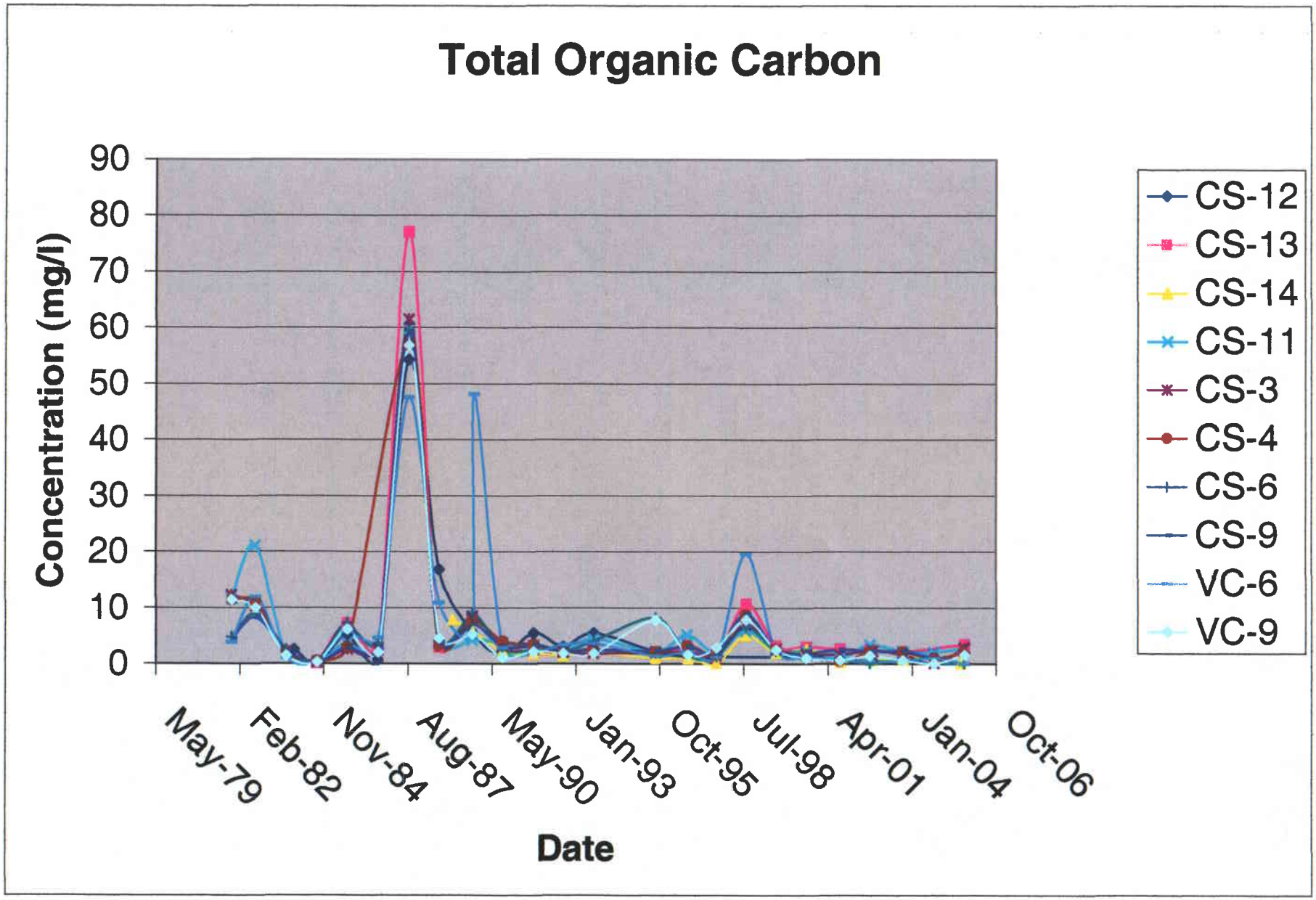
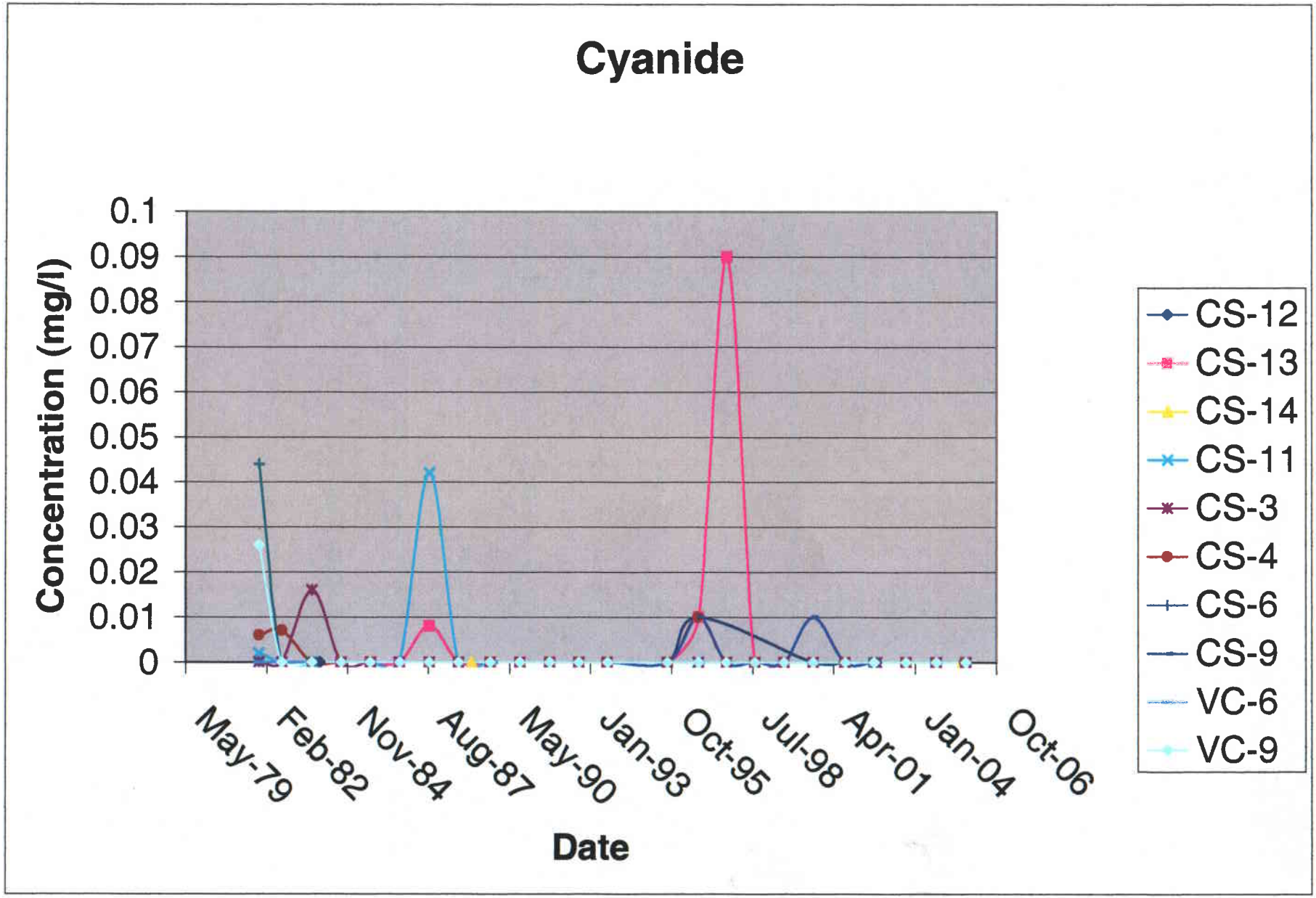

Phenol
Concentration (ug/l)
1600
1400
1200
1000
800
600
400
200
0
Nov-83
Nov-86
Nov-89
Nov-92
Nov-95
Nov-98
Nov-01
Nov-04
Date
CS-12
CS-13
CS-14
CS-11
CS-3
CS-4
CS-6
CS-9
VC-6
VC-9


Total Organic Carbon
Concentration (mg/l)
90
80
70
60
50
40
30
20
10
0
May-79
Feb-82
Nov-84
Aug-87
May-90
Jan-93
Oct-95
Jul-98
Apr-01
Jan-04
Oct-06
Date
CS-12
CS-13
CS-14
CS-11
CS-3
CS-4
CS-6
CS-9
VC-6
VC-9


Cyanide
Concentration (mg/l)
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
May-79
Feb-82
Nov-84
Aug-87
May-90
Jan-93
Oct-95
Jul-98
Apr-01
Jan-04
Oct-06
Date
CS-12
CS-13
CS-14
CS-11
CS-3
CS-4
CS-6
CS-9
VC-6
VC-9