REPORT ON THE U.S. GEOLOGICAL SURVEY'S EVALUATION PROGRAM FOR STANDARD REFERENCE SAMPLES DISTRIBUTED IN OCTOBER 1994: T-131 (TRACE CONSTITUENTS), T-133 (TRACE CONSTITUENTS), M-132 (MAJOR CONSTITUENTS), N-43 (NUTRIENTS), N-44 (NUTRIENTS), P-23 (LOW IONIC STRENGTH) AND Hg-19 (MERCURY)

by H. Keith Long and Jerry W. Farrar

U.S. GEOLOGICAL SURVEY

Open-File Report 95-117

Golden, Colorado

1995

DEPARTMENT OF THE INTERIOR

BRUCE BABBITT, Secretary

U.S. GEOLOGICAL SURVEY

Gordon P. Eaton, Director

For additional information
write to:
William J. Shampine
U.S. Geological Survey
Water Resources Division, CR
Box 25046, Mail Stop 401
Denver Federal Center
Denver, CO 80225

Copies of this report can be
purchased from:
U.S. Geological Survey
Books and Open-File Reports
Federal Center, Bldg. 810
Box 25425
Denver, CO 80225

CONTENTS

FIGURE

TABLES

REPORT ON THE U.S. GEOLOGICAL SURVEY'S EVALUATION PROGRAM FOR STANDARD REFERENCE SAMPLES DISTRIBUTED IN OCTOBER 1994: T-131 (TRACE CONSTITUENTS), T-133 (TRACE CONSTITUENTS), M-132 (MAJOR CONSTITUENTS), N-43 (NUTRIENTS), N-44 (NUTRIENTS), P-23 (LOW IONIC STRENGTH) AND Hg-19 (MERCURY)

By H. Keith Long and Jerry W. Farrar

ABSTRACT

This report presents the results of the U.S. Geological Survey's analytical evaluation program for 7 standard reference samples--T-131 (trace constituents), T-133 (trace constituents), M-132 (major constituents), N-43 (nutrients), N-44 (nutrients), P-23 (low ionic strength), and Hg-19 (mercury).the samples were distributed in October 1994 to 131 laboratories registered in the U.S. Geological Survey sponsored interlaboratory testing program. Analytical data that were received from 121 of the laboratories were evaluated with respect to: overall laboratory performance and relative laboratory performance for each analyte in the seven reference samples. Results of these evaluations are presented in tabular form. Also presented are tables and graphs summarizing the analytical data provided by each laboratory for each analyte in the seven standard reference samples. The most probable value for each analyte was determined using nonparametric statistics.

INTRODUCTION

The U.S. Geological Survey (USGS) conducts an interlaboratory evaluation program semiannually. This program provides a variety of reference materials to accomplish quality assurance testing of laboratories and to provide a supply of samples that contribute to quality control programs of participating laboratories. Natural-matrix reference materials are preferred for use in this interlaboratory evaluation program. A series of samples are prepared and distributed each spring and fall. Occasionally, sediment samples are provided.

The program began in 1962 with a single sample containing major constituents that was prepared from distilled water and reagent grade chemicals. Twenty-three USGS laboratories participated in the 1962 determinations of six analytes in the major standard reference sample (SRS). Since that time, objectives of the program have been to:

(1) evaluate and improve the performance of USGS and other participating laboratories;
(2) provide a library of carefully prepared, homogeneous, stable reference materials for use in the quality control programs of laboratories;
(3) identify analytical problem areas;
(4) identify quality assurance needs with respect to environmental analyses and develop new reference materials to meet these needs; and
(5) ascertain the accuracy and precision of analytical methods.

One hundred eighty-five USGS and non-USGS laboratories are registered in the program, which can currently provide eight standard reference sample types:

1. Trace constituents.
2. Major constituents.
3. Nutrients.
4. Low ionic strength.
5. Mercury.
6. Whole water (water with suspended sediment).
7. Acid mine drainage.
8. Sediment (bed material) for major and trace constituents.

When sufficient data are available, a most probable value is statistically determined for each analyte in the SRS.

Though this is not a laboratory certification program, participation in this continuing quality assurance program is mandatory for all laboratories providing water-analyses data for USGS data storage or use (publications). Federal, State, municipal, and university laboratories can participate even though they do not provide data to the USGS. Analyses of these SRS provides the means to alert participating laboratories of possible deficiencies in their analytical operations, and also provides reference materials for in-house quality control programs. Participating laboratories are identifed only by a confidential code number.

A library of SRS, from previous evaluations, are available on request. Participating laboratories can request previous SRS for further testing, continuing quality assurance, and quality control programs by contacting:

Chief Laboratory Section
U.S. Geological Survey
Branch of Technical Development and Quality Systems
Denver Federal Center
Box 25046 MS 401
Denver, CO 80225-0046

Purpose and Scope

This report summarizes the analytical results submitted by 121 (table 1) of the 131 laboratories that requested and were shipped SRS for the October 1994 evaluation. Not all SRS are requested, nor necessarily analyzed by all the laboratories; nor do all laboratories enrolled in the program participate in each evaluation. Analytical results for the following, which were mailed the week of October 17, 1994, are presented in this report:

T-131	Trace constituents
T-133	Trace constituents
M-132	Major constituents
N-43	Nutrients
N-44	Nutrients
P-23	Low ionic strength (precipitation)
Hg-19	Mercury

The USGS requested that analytical results be returned by December 2, 1994 for evaluation and preparation of this report. Each participating laboratory is requested to perform those determinations routinely made on the SRS for USGS investigations and to indicate the

analytical method used to determine the concentration of each analyte. When analytical-method information was provided, it has been included in the respective data table. The analytical data are presented in ways that allow participants to evaluate data distribution, scatter, outliers, central tendency, bias, skewness, and method relationships.

Table 1.--*Laboratory participants in the analyses of standard reference samples distributed in October 1994*

State	City	Participating Laboratory
Alaska	Soldotna	Alaska Department of Fish and Game
Alabama	Tuscaloosa	Geological Survey of Alabama
Arizona	Phoenix	Arizona Department of Health Services
	Yuma	Burns and Roe Services Corporation
Arkansas	Fayetteville	University of Arkansas
	Little Rock	Arkansas Department of Pollution Control and Ecology
California	Castiac	Castaic Chemical Laboratory, Department of Water Resources
	Davis	University of California - Davis
	La Verne	Metropolitan Water District of Southern California
	Lakeside	Helix Water District
	Oakland	East Bay Muncipal Utility District
	Riverside	University of California - Riverside
	Sacramento	Anlab
	Sacramento	US Bureau of Reclamation
	Sacramento	USGS WRD
	San Diego	USGS WRD
	Santa Fe Springs	West Coast Analytical Service, Inc.
	West Sacramento	Quanterra
Colorado	Arvada	Quanterra
	Arvada	USGS National Water Quality Laboratory
	Aurora	Core Laboratories, Inc.
	Denver	US Bureau of Reclamation
	Denver	Denver Water Department
	Denver	Metro Wastewater Reclamation
	Denver	USGS - Hydrologic Research Unit
	Denver	USGS (Branch of Geochemistry)
	Denver	USGS WRD (Upper Arkansas Project)
	Fort Collins	City of Fort Collins - Water Quality
	Golden	EG & G Rocky Flats
	Westminster	City of Westminster
Florida	Brooksville	SW Florida Water Management District
	Ft. Lauderdale	Spectrum Laboratories, Inc.
	Ocala	USGS WRD
	Orlando	Post, Bucklye, Schuh, and Jernigan, Inc.
	Ormand Beach	Environmental Laboratory
	Palatka	St. John's River Management District
	Tallahassee	City of Tallahassee
	Tallahassee	Florida Department of Environmental Regulations
	Tallahassee	Savannah Laboratories
	Tampa	Hillsborough County Environmental Protection Commission
	West Palm Beach	South Florida Water Management District
Georgia	Athens	University of Georgia
	Atlanta	Georgia Department of Natural Resources
	Atlanta	USGS WRD
	Decatur	Dekalb County Water Quality Laboratory
Hawaii	Honolulu	University of Hawaii - SOEST Analytical Services
Idaho	Boise	US Bureau of Reclamation
	Pocatello	Idaho State University

Table 1.--*Laboratory participants in the analyses of standard reference samples distributed in October 1994--Continued*

State	City	Participating Laboratory
Illinois	Champaign	Hazardous Waste Research Center
	Champaign	Illinois Environmental Protection Agency
	Chicago	Illinois Environmental Protection Agency
Indiana	Indianapolis	Indianapolis Department of Public Works
Iowa	Des Moines	University Hygienic Laboratory, Des Moines Branch
Kansas	Lawrence	Kansas Geological Survey
	Topeka	City of Topeka
	Topeka	Kansas Department of Health and Environment
	Wichita	City of Wichita
Kentucky	Frankfort	Division of Environmental Services
	Lexington	Kentucky Geological Survey
	Louisville	Metropolitan Sewer District
Maine	Orono	Sawyer Environmental Center, University of Maine
Maryland	Baltimore	Maryland Department of Health and Mental Hygiene
Massachusetts	Wellesley Hills	Massachusetts Highway Department
Michigan	Ann Arbor	University of Michigan - Department of Geological Science
	Ann Arbor	University of Michigan
Minnesota	Minneapolis	University of Minnesota, Department of Geology and Geophysics
	St. Paul	University of Minnesota
Missouri	Columbia	University of Missouri
	Jefferson City	Missouri Department of Health
Montana	Butte	Montana Bureau of Mines & Geology
Nebraska	McCook	Olson's Ag Lab
Nevada	Boulder City	US Bureau of Reclamation
	Las Vegas	University of Nevada - Las Vegas
	Reno	Desert Research Institute
	Reno	Nevada State Health Laboratory
	Reno	Reno-Sparks Wastewater Treatment
New York	Albany	NY State Health Department
	Albany	USGS WRD
	Grahamsville	New York City Department of Environmental Protection
	Hempstead	Nassau County Department of Health
	Milbrook	Institute of Ecosystem Studies
	Oakdale	Suffolk County Water Authority
	Shokan	New York City Department of Environmental Protection
	Syracuse	State University of New York - Syracuse
North Carolina	Charlotte	Mecklenburg County
	Durham	Department of Water Resources
	Durham	Duke University
	Greensboro	City of Greensboro
North Dakota	Bismarck	North Dakota State Health Department
	Bismarck	North Dakota State Water Commission
	Bismarck	US Bureau of Reclamation
Ohio	Cincinnati	US EPA
	Cuyahoga Heights	Northeastern Ohio Regional Sewer District
	Tiffin	Heidelberg College
Oklahoma	Oklahoma City	US Department of Agriculture
Oregon	Tigard	Unified Sewerage Agency
Pennsylvania	Harrisburg	Pennsylvania Department of Environmental Resources
	Somerset	Geochemical Testing
Puerto Rico	San Juan	Department of Natural Resources
South Dakota	Brookings	Northem Great Plains Laboratory
	Brookings	SDSU - Water Quality Laboratory

Table 1.--*Laboratory participants in the analyses of standard reference samples distributed in October 1994--Continued*

State	City	Participating Laboratory
Tennessee	Jackson	Jackson Branch Laboratory
	Knoxville	Cooperative Park Studies Unit
	Memphis	USGS
Texas	Tyler	Analytical Testing Laboratories
	College Station	Texas A & M
Vermont	Waterbury	Vermont Agency of Natural Resources
Virginia	Manassas	Occoquan Watershed Monitoring Laboratory
	Richmond	Consolidated Laboratory Services
Washington	Richland	Battelle - Pacific Northwest
	Seattle	Brooks-Rand, Ltd.
West Virginia	Morgantown	University of West Virginia
Wisconsin	Green Bay	Green Bay Metro Sewerage District

Preparation of Standard Reference Samples

All of the SRS used in this evaluation were prepared by personnel of the USGS in Golden, Colo. and were analyzed for analyte concentrations and physical property values prior to mailing

Trace constituent sample T-131 was prepared in cooperation with National Institute of Standards and Technology (NIST) using deionized water. The water was pumped through 2- and 0.1-µm filters, in series, into a 3500-L polypropylene drum. The water was continuously circulated and passed through a 0.1-µm filter and ultraviolet sterilizer for 24 hours. Following this circulation, the water was acidified to pH 1.1 with nitric acid. The desired trace constituent concentrations were made by adding chemical solutions provided by NIST. The sample was circulated an additional 24 hours prior to bottling. During bottling the sample was pumped through an ultraviolet sterilizer and a 0.1-µm filter. The 250-mL polyethylene bottles used were nitric acid leached and deionized-water rinsed.

Trace constituent sample T-133 was prepared in cooperation with NIST using water collected from the Clear Creek near Idaho Springs, Colorado. The water was pumped through 2- and 0.1-µm filters, in series, into a 3500-L polypropylene drum. The water was continuously circulated and passed through a 0.1-µm filter and ultraviolet sterilizer for 24 hours. Following this circulation, the water was acidified to pH 1.3 with nitric acid and chlorinated to 5 ppm free chlorine. The trace constituent concentrations were adjusted by adding reagent grade chemicals. The sample was circulated an additional 24 hours prior to bottling. During bottling the sample was pumped through an ultraviolet sterilizer and a 0.1-µm filter. The 250-mL polyethylene bottles used were nitric acid leached and deionized-water rinsed.

Major constituent sample M-132 was prepared using water collected from the Clear Creek near Idaho Springs, Colorado. The water was pumped through 2- and 0.1-µm filters, in series, into a 1300-L polypropylene drum. The water was chlorinated to 5-ppm free chlorine with sodium hypochlorite, continuously circulated, and passed through a 0.1-µm filter and ultraviolet sterilizer for 24 hours prior to bottling. During bottling the sample was pumped through an ultraviolet sterilizer and a 0.1-µm filter. The 500-mL polypropylene bottles used were nitric acid leached, deionized-water rinsed, and autoclave sterilized.

Nutrient sample N-44 was prepared using water collected from the Fall River near Idaho Springs, Colorado. This sample was prepared the week prior to the mailing for this SRS evaluation. The

water was pumped through 2- and 0.1-μm filters, in series, into a 600-L polypropylene drum and continuously circulated and passed through a 0.1-μm filter for 48 hours. The desired nutrient concentrations were obtained by adding reagent-grade chemicals. The sample was continuously circulated for an additional 24 hours prior to being bottled. New,amber 250-mL polyethylene bottles which were hydrochloric acid leached, and deionized-water rinsed were used for bottling.

Nutrient sample N-43 was prepared using deionized water. This sample was prepared the week prior to the mailing for this SRS evaluation. Desired concentrations were obtained by adding reagent grade chemicals. The sample was stirred 24 hours prior to bottling. The 12-mL vials used were hydrochloric acid leached and deionized water rinsed. These samples were concentrates which had to be diluted 10:100 prior to analysis.

Sample P-23 was prepared in a 400-L polypropylene drum using snow collected at Mt. Evans near Summit Lake in Colorado. The collected snow was allowed to melt; then it was pumped into the drum through 2- and 0.1-μm filters in series. Desired phosphate and fluoride concentrations were obtained by adding reagent-grade chemicals. The sample was continously circulated and passed through a 0.1 μm filter and an ultraviolet sterilizer for 48 hours prior to bottling and during the bottling process. The 500-mL polypropylene bottles used were nitric acid leached, deionized-water rinsed, and autoclave sterilized.

Sample Hg-19 was prepared using water collected from the Fall River near Idaho Springs, Colorado. The sample was prepared in a 190-L polypropylene drum. The river water was pumped into this drum through 2- and 0.1-μm filters in series. The water was continuously circulated and passed through a 0.1-μm filter and ultraviolet sterilizer for 72 hours. Nitric acid (5-percent, v/v) and dichromate ion (0.05-percent, w/w) were added to stabilize the sample. The desired mercury concentration was obtained by adding a mercury standard solution. Following an additional 24 hours of circulation, the sample was bottled. The 125-mL glass bottles and tetrafluoroethylene fluorocarbon resin caps used were new, acid leached, and deionized-water rinsed.

LABORATORY ANALYSES

The participating laboratories were asked to determine analytes which are summarized in table 2. The number of analytes varied from 26 in T-131 (trace constituents) to 1 in Hg-19 (mercury).

Table 2.--*Analytes determined in standard reference samples distributed in October 1994*

[mg/L, milligrams per liter; µg/L, micrograms per liter; µS/cm, microsiemens per centimeter at 25 degrees Celsius]

Analyte or property		Units	T-131, 133	M-132	N-43, 44	P-23	Hg-19
Acidity	Acidity as $CaCO_3$	mg/L				X	
Alk	Alkalinity as $CaCO_3$	mg/L		X			
Ag	Silver	µg/L	X				
Al	Aluminum	µg/L	X				
As	Arsenic	µg/L	X				
B	Boron	µg/L	X	X			
Ba	Barium	µg/L	X				
Be	Beryllium	µg/L	X				
Ca	Calcium	mg/L	X	X		X	
Cd	Cadmium	µg/L	X				
Cl	Chloride	mg/L		X		X	
Co	Cobalt	µg/L	X				
Cr	Chromium, total	µg/L	X				
Cu	Copper	µg/L	X				
DSRD	Dissolved solids	mg/L		X			
F	Fluoride	mg/L		X		X	
Fe	Iron	µg/L	X				
Hg	Mercury	µg/L					X
K	Potassium	mg/L	X	X		X	
Li	Lithium	µg/L	X				
Mg	Magnesium	mg/L	X	X		X	
Mn	Manganese	µg/L	X				
Mo	Molybdenum	µg/L	X				
Na	Sodium	mg/L	X	X		X	
NH_3 as N	Ammonia	mg/L			X		
NH_3+Org N as N	Ammonia + Organic N	mg/L			X		
Ni	Nickel	µg/L	X				
NO_3+NO_2 as N	Nitrate + Nitrite	mg/L			X		
Pb	Lead	µg/L	X				
pH		unit		X		X	
PO_4 as P	Orthophosphate	mg/L			X	X	
total P as P	Phosphorus	mg/L		X	X		
Sb	Antimony	µg/L	X				
Se	Selenium	µg/L	X				
SiO_2	Silica	mg/L	X	X			
SO_4	Sulfate	mg/L		X		X	
Sp Cond	Specific conductance	µS/cm		X		X	
Sr	Strontium	µg/L	X	X			
V	Vanadium	µg/L	X	X			
Zn	Zinc	µg/L	X				

Laboratories were requested to identify the method used for each analyte according to table 3 analytical method codes.

Table 3.--*Analytical-method codes*

Code	Method
0	Other
1	Atomic absorption: direct, air
2	Atomic absorption: direct, nitrous oxide
3	Atomic absorption: graphite furnace
4	Inductively coupled plasma
5	Direct current plasma
6	Inductively coupled plasma/Mass spectrometry
7	Ion chromatography
8	Atomic absorption: cold vapor
10	Atomic absorption: extraction [*specify chelating agents*]
11	Atomic absorption: hydride [*specify reducing agent*]
12	Flame emission
20	Titration: colorimetric [*specify color reagent*]
21	Titration: electrometric [*specify reducing or oxidizing agent/color reagent*]
22	Colorimetric: [*specify reducing or oxidizing agent/color reagent*]
40	Ion selective electrode
41	Electrometric [*pH and Specific Conductance*]
50	Gravimetric: [*specify filtration, evaporation, and so forth*]
51	Turbidimetric

Participating laboratories were also asked to use the references listed below to further define the methods.

1. American Public Health Association and others, 1992, Standard methods for the examination of water and wastewater 18th ed: Washington, D.C., American Public Health Association, 981p.

2. American Society for Testing and Materials, Annual book of ASTM standards: Philadelphia, v. 11.01, and v. 11.02.

3. Kopp, J.F., and McKee, G.F., 1979, Methods for chemical analysis of water and wastes: Cincinnati, U.S. Environmental Protection Agency, EPA 600/4-79-020, rev. 1983, 460 p.

4. Fishman, M.J., and Friedman, L.C., eds., 1989. Methods for determination of inorganic substances in water and fluvial sediments (3d ed.): U.S. Geological Survey Techniques of Water-Resources Investigations, Book 5, Chapter A1, 545 p.

5. Miscellaneous manufacturer's instrument manuals or references.

LABORATORY PERFORMANCE RATINGS

To facilitate interlaboratory performance comparisons, laboratory performance ratings, based on the analyses reported for each SRS, are included in tables 4 through 11 in this report. Averages of the analyte ratings and the number of analyte values reported for each SRS are given for each participating laboratory. Laboratory performance for each analyte is rated on a scale 4 to 0, based on the absolute Z-value, as listed below:

Rating	Absolute Z-value
4 (Excellent)	0.00 to 0.50
3 (Good)	0.51 to 1.00
2 (Satisfactory)	1.01 to 1.50
1 (Questionable)	1.51 to 2.00
0 (Poor).	Greater than 2.00

Overall laboratory performance ratings greater than 2.4 are considered satisfactory. Overall laboratory performance ratings between 2.0 and 2.39 are considered marginal; those less than 2.0 are considered poor.

STATISTICAL PRESENTATION OF DATA

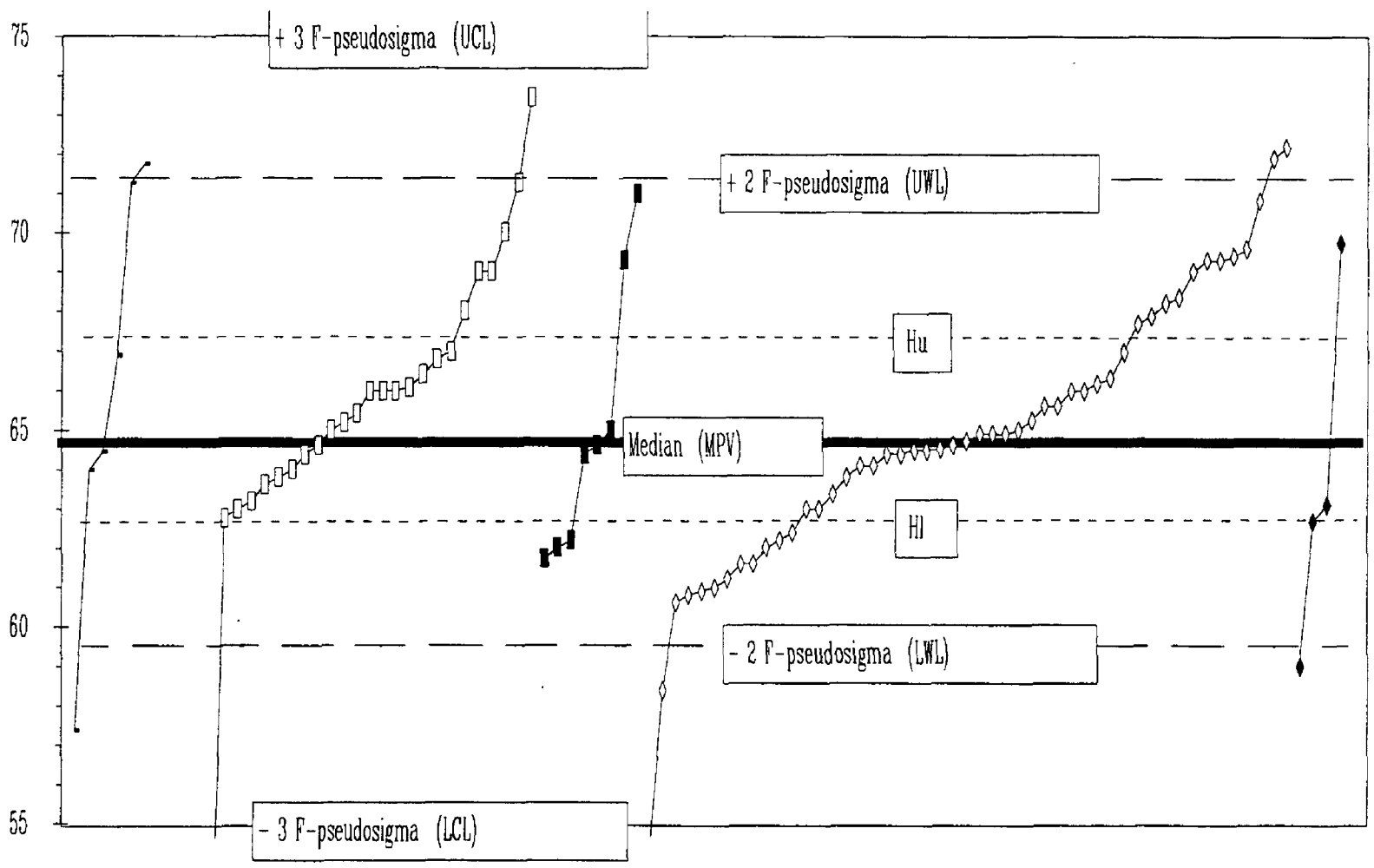
Data in this report have been evaluated using nonparametric statistics as described by Hoaglin and others (1983). This statistical approach is a resistant statistic because the median is not influenced by outliers as is the mean in traditional statistics.

Analytical data for each analyte are presented in tabular and graphical forms in tables 12 through 18. Tabulated data for each analyte include the laboratory code number, reported values, analytical method, most probable value (MPV), number of reported values - excluding less than values (N), data range, Z-value, and the F-pseudosigma. (The Z-value is equivalent to the Z-score of traditional statistics, being the number of deviations the reported value is from the MPV. The F-pseudosigma is equivalent to the standard deviation (σ) of traditional statistics when the data has a Gaussian distribution.) If an analyte has a sufficient number of determinations by a given method, usually 7, the σ for that analytical method is reported in the block of data listed for each analyte.

The median value is considered the MPV. The median (midpoint) divides the ordered data into halves and is designated the MPV. The hinges include the middle 50-percent of the data and are the mid-values of the upper and lower halves of the data. (The hinges are similar to quartiles, but are not mathematically equivalent.) The range of data between the upper hinge (Hu) and the lower hinge (Hl), the hinge spread (H-spr), is used to calculate the F-pseudosigma, the laboratory performance rating, the upper warning level (UWL) and lower warning level (LWL), the upper control level (UCL) and the lower control level (LCL). The F-pseudosigma is calculated by comparison of the H-spr value to the Gaussian distribution relation; 67.45 percent of the data "hinges" between plus and minus 1σ, resulting in a H-spr of $2 \times 0.6745 = 1.349\sigma$, This relation allows the calculation of the F-pseudosigma = (H-spr)/1.349. Laboratories reporting "less than" values are not performance rated unless their reported "less than" values are greater than two Z-values from the MPV.

The graphical plot of the reported data is shown in figure 1. The upper and lower boundaries of the graphical plots generally are +3 and -3 F-pseudosigma deviations from the median.

(Computer-program scaling constraints do not permit these boundaries to always be graphed at exactly these values.) The graphical plot is a modified box plot/control chart with reported values grouped by analytical method in ascending order of value. Lines designate the MPV, Hu, Hl, and the (UWL) and (LWL) at +2 and -2 F-pseudosigma, respectively. "Less than" values are not plotted.



NOTE: vertical scale is the concentration value of the individual analyte in appropriate units (see table 2.) Methods shown are defined in Tables 3 and 12 through 18.

Figure 1.-Statistical parameters shown on reported-data graphs

DISCUSSION

Trace constituent samples T-131 and T-133 were prepared in cooperation with NIST. Constituent concentrations for these samples will be certified by NIST in the near future.

We wish to acknowledge the cooperative effort of the USGS WRD Quality of Water Services Unit laboratory in Ocala, Florida. They performed the stability and shelf-life studies of the N-43 nutrient constituents.

REFERENCE

Hoaglin, D.C., Mosteller, F., and Tukey, J.W., eds., 1983, Understanding Robust and Exploratory Data Analysis: John Wiley and Sons, Inc., 447p.

Table 4. *-Overall laboratory performance ratings for standard reference water samples distributed in October 1994*

(Lab, laboratory number; OWR, overall weighted rating for all sample types; OLR, overall laboratory rating for reported values of a sample type; V/90, number of reported values of 90 total possible values from all sample types; V/26, V/26,V/16, V/5,V/5,V/11,V/1 are number of reported values possible for T-131, T-133, M-132, N-43, N-44, P-23, and Hg-19, respectively)

Standard reference sample =			T-131		T-133		M-132		N-43		N-44		P-23		Hg-19	
Lab	OWR	V/90	OLR	V/26	OLR	V/26	OLR	V/16	OLR	V/5	OLR	V/5	OLR	V/11	OLR	V/1
1	3.5	90	3.6	26	3.7	26	2.9	16	2.8	5	3.4	5	3.6	11	4	1
3	3.2	84	3.3	26	3.3	26	3.5	15	1.3	4	2.8	5	2.7	7	2	1
4	1.2	34	1.4	16	1.1	17	0.0	1								
5	3.3	78	3.5	25	3.5	24	3.5	13	3.0	4	2.3	4	2.6	8		
7	2.8	74	2.7	25	2.8	24	2.9	12	3.3	3	3.3	4	3.0	5	0	1
8	2.1	84	2.0	25	2.5	24	2.6	14	0.8	5	1.4	5	1.8	10	3	1
9	3.0	49	3.4	13	2.8	13	2.9	13	3.4	5	2.6	5				
10	3.5	22					3.3	12	4.0	5	3.4	5				
11	2.6	77	2.9	22	2.6	22	1.9	13	3.0	5	2.4	5	2.3	9	4	1
12	2.7	54	2.4	16	2.5	17	2.8	12	3.0	3	3.4	5			3	1
13	2.5	58	2.5	19	2.5	21	2.4	13	2.3	4					3	1
15	2.6	78	2.9	22	2.6	21	2.7	15	1.4	5	2.2	5	2.0	9	4	1
16	2.1	63	2.4	23	1.9	24	2.2	15							0	1
18	3.5	80	3.5	22	3.6	23	3.6	15	4.0	5	3.4	5	2.9	9	4	1
19	2.8	42	2.3	12	2.7	12	3.4	10	2.8	4	2.8	4				
21	2.9	7	3.0	1	2.0	1			3.0	5						
22	4.0	2							4.0	1	4.0	1				
23	2.4	67	2.7	16	2.0	22	2.1	13	3.5	4	3.4	5	2.6	7		
24	2.6	64	2.5	25	2.2	25	3.6	13							0	1
25	1.7	70	1.8	22	2.7	19	1.1	15	1.3	3	0.5	4	0.3	7		
30	2.9	47	2.9	20	3.0	20	2.8	5	4.0	2						
32	3.0	75	2.9	26	3.2	26	2.9	13	3.0	3			2.7	6	4	1
33	2.8	46	1.7	10	2.9	10	3.2	11	3.7	3	1.7	3	3.3	9		
34	3.8	5	3.5	2	4.0	2									4	1
35	3.7	3	3.7	3												
36	2.3	11							1.8	5	2.8	5			2	1
38	3.2	28					3.1	10	4.0	5	2.8	5	3.1	8		
39	2.2	38	2.6	25			1.6	7					0.8	5	4	1
40	1.3	60	0.9	22	0.7	23	2.8	15								
42	3.5	74	3.7	26	3.8	26	2.8	15	2.3	3	3.0	3			4	1
59	2.6	72	2.7	22	2.2	22	2.2	13	3.2	5	3.8	5	2.5	4	3	1
69	2.9	52	2.9	20	2.9	19	3.1	10	0.0	1	0.0	1			4	1
70	3.3	64	3.4	22	3.6	20	3.1	13	2.3	3	3.4	5			3	1
72	2.5	36	2.3	10	2.4	10	2.2	6	2.4	5	3.8	5				
73	2.4	16	2.4	8	2.4	8										
74	3.2	85	3.3	24	3.2	24	3.3	15	2.8	5	3.0	5	3.1	11	3	1
75	3.0	64	3.1	24	2.7	23	2.8	12	4.0	2	3.0	2			4	1
76	2.9	34	3.0	10	2.7	12	3.0	7	3.0	2	3.0	2			3	1
78	2.0	69	2.2	21	3.0	20	1.5	12	0.0	3	0.0	3	1.4	9	4	1
79	2.2	18	2.7	11			2.5	4			0.0	2			0	1
80	2.1	32	1.8	5	1.8	5	2.8	11	0.7	3	2.0	3	1.8	5		
81	2.3	79	2.2	22	2.1	22	3.2	13	1.2	5	3.4	5	2.2	11	3	1
83	3.0	48	3.2	16	3.1	16	3.4	8	2.8	4	2.0	4				
84	3.1	21	2.8	5	3.2	5	3.3	7	2.5	2	4.0	2				
85	2.9	68	2.8	21	2.8	22	3.3	15	3.2	5	2.8	5				
86	3.0	62	3.1	22	3.4	23	2.7	9	0.3	3	2.5	4			2	1
87	2.2	59	2.0	18	2.2	18	2.4	12	1.8	5	2.6	5			1	1
89	2.6	75	2.3	20	2.0	20	3.2	13	3.6	5	3.8	5	2.5	11	2	1
90	2.3	36	2.3	10	1.5	10	2.7	6	3.6	5	2.4	5				
91	2.6	10	3.5	2	4.0	2			2.0	3	1.7	3				
92	3.0	22	3.0	1			3.6	7	2.0	4	3.0	4	3.6	5	0	1
94	3.2	73	3.4	22	3.1	21	3.1	14	3.3	4	4.0	4	2.9	8		
96	2.6	40	1.8	11	2.5	11	2.9	7	3.0	5	3.6	5			3	1
97	2.8	71	2.7	24	2.8	24	2.9	12	2.8	5	2.4	5			3	1
101	2.5	41	2.5	13	2.3	13	3.0	8					2.6	7		
102	2.3	72	2.8	22	2.5	23	1.5	11	2.0	5	3.6	5	0.5	6		
103	2.4	29	2.5	22			2.0	7								
105	3.0	84	3.3	25	3.0	25	2.6	14	2.3	4	2.6	5	3.2	10	3	1
107	2.7	32	2.7	7	1.7	7	3.0	6	3.0	4	3.0	4	3.5	4		
109	2.7	38	2.6	12	2.8	12	2.5	13							4	1
110	3.4	9											3.4	9		
111	2.6	48	2.3	10	2.3	10	2.8	11	2.5	4	2.0	4	3.3	9		
113	2.6	73	2.4	21	2.6	20	3.1	14	3.0	3	3.8	5	1.4	9	0	1
114	2.2	33	2.1	15			2.6	12	2.0	2	1.3	3			0	1
116	2.7	35	3.0	10	2.8	10	2.6	9					2.0	6		
118	2.6	25	1.8	8			2.5	6	3.2	5	4.0	5			0	1
119	3.1	67	3.1	21	3.1	21	2.9	14	3.4	5	2.6	5			3	1
120	2.2	56	1.8	19	1.9	19	3.5	8	1.4	5	3.2	5				
121	3.0	44	2.9	18	3.0	19	3.6	7								
122	2.8	30	2.8	4	2.8	5	3.1	11	2.4	5	2.4	5				

Table 4. *-Overall laboratory performance ratings for standard reference water samples distributad in October 1994 Continued*

Standard reference sample =			T-131		T-133		M-132		N-43		N-44		P-23		Hg-19	
Lab	OWR	V/90	OLR	V/26	OLR	V/26	OLR	V/16	OLR	V/5	OLR	V/5	OLR	V/11	OLR	V/1
127	3.5	89	3.6	26	3.5	26	3.7	15	2.8	5	2.8	5	3.6	11	4	1
128	2.4	75	2.4	26	2.6	25	2.1	13	2.0	5	3.0	5			3	1
129	2.1	33	0.9	7	1.0	6	3.1	12	2.0	3	3.0	5				
131	2.0	3					2.0	3								
133	2.5	42	2.2	13	3.0	14	2.5	4	2.0	5	1.6	5			4	1
134	3.5	83	3.3	24	3.5	23	3.6	16	2.8	4	4.0	5	3.8	10	4	1
136	1.8	76	1.6	25	1.8	25	1.9	13	0.0	1	1.3	3	2.2	9		
138	3.3	67	3.5	24	3.3	24	3.2	13			2.6	5			4	1
140	3.0	46	3.1	12	3.3	12	3.0	12	1.0	5	3.6	5				
141	2.9	69	3.0	21	2.9	21	2.7	12			2.6	5	2.9	9	4	1
142	2.8	76	2.8	25	2.6	24	2.8	16	2.8	5	3.4	5			4	1
143	3.2	16					4.0	3	2.4	5	3.0	5	4.0	3		
145	3.0	83	3.3	23	2.8	23	3.1	15	2.4	5	3.4	5	3.1	11	3	1
146	2.6	64	3.0	21	2.5	19	2.0	10	1.3	3	3.3	3	2.4	7	3	1
149	2.5	40	2.2	12	2.2	15	2.9	10	3.5	2	3.0	1				
151	2.9	32	3.1	7	2.8	8	3.0	12	3.3	3	1.0	2				
153	2.9	28	2.7	9	3.6	9	2.4	10								
155	3.2	23					3.3	8	3.4	5	3.6	5	2.4	5		
158	2.5	70	2.2	23	3.0	22	2.7	10	2.3	3	3.8	4	1.1	8		
179	1.8	30	1.8	18			1.6	5	2.0	2	2.3	4			1	1
180	2.9	70	3.0	21	3.1	21	2.5	11	3.2	5	3.0	5	2.7	7		
182	1.5	49	1.4	20	1.8	19	1.1	9							0	1
185	2.6	31	3.8	4	2.8	4	2.3	9	1.0	4	3.0	4	3.2	6		
190	2.4	52	2.4	11	2.1	11	2.5	11	1.5	4	3.0	5	2.7	10		
191	3.1	52	3.1	19	2.8	19	3.3	11	4.0	1	3.5	2				
193	2.6	34	2.5	14	2.5	14	3.0	3	3.0	2	4.0	1				
194	2.3	36	2.7	18			2.2	11	2.3	3	1.7	3			0	1
196	3.2	45	3.6	23			2.9	9			4.0	2	2.3	10	3	1
197	3.3	9							3.5	2	4.0	2	3.0	5		
198	2.4	26			3.1	19	0.5	6							2	1
203	2.8	53	2.8	17	3.0	17	2.9	7	3.5	4	2.5	4	2.3	4		
204	2.5	29	2.6	16			2.4	5			2.8	4	2.7	3	0	1
205	0.5	2									0.5	2				
206	4.0	2									4.0	2				
208	2.6	5					2.7	3			2.5	2				
209	3.0	17					2.3	7	4.0	3			3.3	7		
211	1.8	71	1.3	23	1.9	23	2.6	14	1.2	5	2.8	5			0	1
212	2.6	77	2.9	26	2.7	26	2.1	15	2.5	4	1.2	5			4	1
215	2.2	78	2.8	23	2.9	23	1.6	14	0.0	4	1.4	5	1.6	8	0	1
217	2.9	40	2.9	21	2.8	19										
218	1.7	17	2.0	5	1.2	5	1.9	7								
219.1	2.4	47	2.4	19	2.4	20	2.0	7							4	1
219.2	2.1	38	2.2	18	2.1	18	2.5	2								
220	2.4	34	2.8	8	2.5	8	1.9	9	2.3	4	2.5	4			3	1
221	2.8	51	2.8	19	2.8	19	3.6	7			2.2	5			0	1
224	2.7	72	2.6	19	2.8	19	2.8	13	1.2	5	2.2	5	3.5	11		
228	2.6	8											2.6	8		
230	3.3	7					3.3	6							3	1
231	1.7	49	1.5	17	2.3	17	2.0	8	0.0	3	0.0	3			4	1
234	2.8	75	2.4	24	3.0	24	3.1	16	3.0	5	2.8	5			3	1
235	2.5	36	2.4	18	2.6	18										

Table 5. *-Laboratory performance ratings for standard reference water sample T-131 (trace constituents)*

(MPV,most probable value; ug/L, micrograms per liter; mg/L, milligrams per liter; Lab, laboratory number; OLR, overall laboratory rating for all reported values;V/26, number of reported values of 26 possible values; RV, reported value; <, less than)

Rating	Absolute Z-value	Rating	Absolute Z-value
4 (Excellent)	0.00 - 0.50	1 (Questionable)	1.51 - 2.00
3 (Good)	0.51 - 1.00	0 (Poor)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

			Analyte =	Ag (Silver)		Al (Aluminium)		As (Arsenic)		B (Boron)		Ba (Barium)		Be (Beryllium)	
			MPV =	1.26 µg/L		132 µg/L		56.6 µg/L		141 µg/L		507 µg/L		12.2 µg/L	
			F-pseudosigma =	0.24		20		5.4		12		22		0.8	
Lab	OLR	V/26		RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
1	3.6	26		1.23	4	125	4	57.4	4	143	4	495	3	12.3	4
3	3.3	26		1.20	4	153	2	60.0	3	141	4	510	4	12.8	3
4	1.4	16								440	0	444	0	12.0	4
5	3.5	25		1.10	3	133	4	71.4	0	142	4	495	3	12.2	4
7	2.7	25		1.87	0	139	4	54.9	4			518	4	12.1	4
8	2.0	25		10.00	0	83	0	61.0	3	110	0	494	3	11.0	2
9	3.4	13													
11	2.9	22		< 10	NR	122	4	52.0	3	129	3	541	1	12.0	4
12	2.4	16		0.80	1	210	0	49.0	2					< 20	NR
13	2.5	19		< 2	NR			67.0	1			515	4	11.2	2
15	2.9	22		< 10	NR	140	4	< 100	NR	170	0	533	2	12.0	4
16	2.4	23		< 7	NR	106	2	54.0	4	397	0	501	4	11.0	2
18	3.5	22		< 3	NR	< 300	NR	54.2	4	143	4	504	4	12.0	4
19	2.3	12										520	3		
21	3.0	1													
23	2.7	16		1.40	3	91	1	54.7	4			547	1		
24	2.5	25		1.70	1	160	2	58.6	4	147	4	496	4	16.2	0
25	1.8	22		< 6	NR	60	0	68.0	0	137	4	515	4	11.2	2
30	2.9	20		1.20	4	134	4	62.1	2			492	3	15.7	0
32	2.9	26		1.20	4	124	4	53.1	3	122	1	479	2	11.8	4
33	1.7	10				154	2					573	0		
34	3.5	2						57.8	4						
35	3.7	3						55.7	4						
39	2.6	25		1.40	3	138	4	80.0	0	141	4	501	4	14.1	0
40	0.9	22				35	0			15	0	532	2	6.2	0
42	3.7	26		1.16	4	119	3	52.4	3	130	3	509	4	11.1	2
59	2.7	22		1.20	4			56.0	4			490	3	13.0	3
69	2.9	20		1.38	4	152	2	58.8	4			608	0	12.9	3
70	3.4	22		< 5	NR	105	2	52.3	3	140	4	517	4	12.0	4
72	2.3	10		1.00	2			48.0	1			479	2		
73	2.4	8		< 4	NR	154	2								
74	3.3	24		1.10	3	114	3	57.0	4	152	3	519	3	11.9	4
75	3.1	24		1.21	4	114	3	55.6	4	132	3	476	2	11.3	2
76	3.0	10										518	4	13.4	2
78	2.2	21		1.85	0	111	2	54.9	4			562	0	8.1	0
79	2.7	11		1.50	3			55.1	4					8.4	0
80	1.8	5						60.0	3						
81	2.2	22		0.60	0	115	3	58.0	4			476	2	7.0	0
83	3.2	16				123	4					512	4	12.4	4
84	2.8	5													
85	2.8	21		< 5	NR	146	3	< 2	0	145	4	515	4	12.2	4
86	3.1	22				138	4	51.2	3	96	0	503	4	12.2	4
87	2.0	18		3.00	0			63.2	2			410	0		
89	2.3	20		1.42	3	108	2	47.8	1			446	0	10.5	0
90	2.3	10										658	0		
91	3.5	2													
92	3.0	1													
94	3.4	22		< 3	NR	120	3	54.0	4	137	4	502	4	12.0	4
96	1.8	11		1.46	3			49.7	2			560	0		
97	2.7	24		1.42	3	133	4	62.1	2			375	0	15.5	0
101	2.5	13										470	1		
102	2.8	22		< 10	NR	118	3	67.0	1			522	3	13.0	3
103	2.5	22				450	0	50.0	2	145	4	487	3	12.3	4
105	3.3	25		1.22	4	121	3	50.6	2			519	3	12.9	3
107	2.7	7		1.18	4							551	1		
109	2.6	12						49.0	2	147	4				
111	2.3	10				90	0								
113	2.4	21		1.94	0	118	3	58.8	4			650	0	12.0	4
114	2.1	15		3.00	0									16.0	0
116	3.0	10								143	4	505	4		
118	1.8	8		1.40	3										
119	3.1	21		1.50	3	147	3	54.0	4	149	3	500	4	13.8	1
120	1.8	19		0.80	1	96	1	53.1	3			534	2	14.1	0
121	2.9	18				130	4			120	1	490	3		
122	2.8	4													

Table 5. *-Laboratory performance ratings for standard reference water sample T-131 (trace constituents) --Continued*

			Analyte =	Ag (Silver)		Al (Aluminium)		As (Arsenic)		B (Boron)		Ba (Barium)		Be (Beryllium)	
			MPV =	1.26 µg/L		132 µg/L		56.6 µg/L		141 µg/L		507 µg/L		12.2 µg/L	
			F-pseudosigma =	0.24		20		5.4		12		22		0.8	
Lab	OLR	V/26		RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
127	3.6	26		1.24	4	133	4	58.2	4	147	4	520	3	12.9	3
128	2.4	26		1.00	2	117	3	59.0	4	118	1	480	2	10.0	0
129	0.9	7								265	0				
133	2.2	13						45.3	0			508	4	12.8	3
134	3.3	24		1.30	4	120	3			140	4	514	4	12.6	4
136	1.6	25				183	0	86.6	0	761	0	232	0	11.4	3
138	3.5	24		1.38	4	135	4	59.2	4			504	4	12.9	3
140	3.1	12													
141	3.0	21		< 10	NR	135	4	< 50	NR	129	3	515	4	12.0	4
142	2.8	25		1.82	0			57.9	4	147	4	513	4	12.3	4
145	3.3	23				107	2	58.3	4	141	4	516	4	12.6	4
146	3.0	21		< 10	NR	130	4	54.7	4			480	2	11.6	3
149	2.2	12		1.20	4	140	4					600	0		
151	3.1	7													
153	2.7	9				136	4	56.4	4						
158	2.2	23				140	4	63.0	2	141	4	518	4	12.0	4
179	1.8	18		1.80	0	152	2	59.9	3					13.0	3
180	3.0	21		< 3.8	NR	119	3	52.4	3	131	3	506	4	12.0	4
182	1.4	20				115	3	60.5	3			496	4	382.8	0
185	3.8	4													
190	2.4	11		1.01	2	184	0								
191	3.1	19				149	3	60.2	3			491	3		
193	2.5	14		< 5	NR			57.0	4			52	0		
194	2.7	18		1.30	4	< 500	NR	59.1	4	130	3	490	3	12.7	3
196	3.6	23		1.20	4	119	3	55.5	4			5	0	12.0	4
203	2.8	17		3.50	0			56.6	4			480	2		
204	2.6	16		1.10	3	147	3	55.4	4			502	4		
211	1.3	23		< 10	NR	< 100	NR	64.0	2	120	1	530	2	14.7	0
212	2.9	26		1.30	4	130	4	58.0	4	140	4	540	2	12.0	4
215	2.8	23		2.00	0	140	4	65.0	1	140	4	500	4	12.5	4
217	2.9	21		1.10	3	120	3	39.0	0	150	3	510	4	13.0	3
218	2.0	5													
219.1	2.4	19				140	4			150	3	500	4	14.0	0
219.2	2.2	18		1.00	2			50.0	2			480	0	11.0	2
220	2.8	8						50.6	2						
221	2.8	19		1.21	4	148	3	51.9	3			624	0		
224	2.6	19				166	1	49.9	2			500	4	15.1	0
231	1.5	17		2.00	0			72.5	0			612	0		
234	2.4	24		1.13	3	143	3	63.5	2	142	4	521	3	16.0	0
235	2.4	18		1.26	4			56.3	4	163	1	530	2	14.2	0

Table 5. *-Laboratory performance ratings for standard reference water sample T-131 (trace constituents) --Continued*

(MPV,most probable value; ug/L, micrograms per liter; mg/L, milligrams per liter; Lab, laboratory number; OLR, overall laboratory rating for all reported values;V/26, number of reported values of 26 possible values; RV, reported value; <, less than)

Rating	Absolute Z-value	Rating	Absolute Z-value
4 (Excellent)	*0.00 - 0.50*	*1 (Questionable)*	*1.51 - 2.00*
3 (Good)	0.51 - 1.00	O (Poor)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

Analyte =	Ca (Calcium)		Cd (Cadmium)		Co (Cobalt)		Cr (Chromium)		Cu (Copper)		Fe (Iron)		K (Potassium)	
MPV =	30.6 mg/L		6.10 µg/L		24.6 µg/L		18.6 µg/L		20.2 µg/L		90.7 µg/L		2.39 mg/L	
F-pseudosigma =	1.2		0.47		1.9		2.1		2.0		8.9		0.15	
Lab	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
1	30.9	4	6.40	3	24.6	4	17.3	3	20.2	4	88.6	4	2.25	3
3	31.8	3	6.20	4	25.0	4	17.0	3	19.0	3	110.0	0	2.33	4
4	30.0	4	< 10	NR			< 10	0	13.0	0	130.0	0		
5	30.4	4	6.40	3	23.1	3	18.6	4	20.3	4	89.0	4		
7	31.8	3	5.36	1	27.2	2	19.5	4	19.9	4	92.4	4	2.40	4
8	30.4	4	7.00	1	20.0	0	15.0	1	10.0	0	97.0	3	2.80	0
9	30.8	4	6.10	4			20.5	3	20.0	4	86.1	3	2.37	4
11	31.2	4	6.00	4	27.0	2	24.0	0	21.0	4	90.0	4	2.30	3
12	31.0	4	5.90	4			< 20	NR	18.0	2	80.0	2	2.40	4
13	30.9	4	5.56	2	30.9	0	36.8	0	18.0	2	94.3	4	2.13	1
15	30.6	4	< 10	NR	25.7	3	19.6	3	21.6	3	91.6	4	2.43	4
16	29.7	3	6.40	3	21.0	1	16.0	2	18.0	2	102.0	2	2.40	4
18	31.0	4	5.10	0	25.0	4	19.0	4	20.0	4	85.0	3	2.30	3
19	31.5	3	7.00	1			17.6	4	21.0	4	103.0	2	2.70	1
21											96.0	3		
23	30.8	4	6.15	4			22.8	1	17.9	2			2.26	3
24	30.1	4	7.00	1	24.8	4	21.1	2	21.3	3	82.7	3	2.23	2
25	30.7	4	8.00	0	29.0	0	14.0	0	9.0	0	54.0	0	2.24	3
30	30.3	4	7.40	0	26.4	3	19.8	3	21.0	4				
32	30.9	4	4.80	0	26.0	3	17.5	3	21.7	3	135.0	0	2.35	4
33	32.4	2									108.0	1	2.42	4
34														
35											90.0	4		
39	31.3	3	6.70	2	25.0	4	19.0	4	33.0	0	82.0	3	7.00	0
40	31.3	3	2.60	0	11.4	0	7.7	0	9.3	0	94.5	4	2.60	2
42	30.5	4	6.20	4	23.4	3	17.7	4	20.0	4	92.0	4	2.37	4
59	27.5	0	6.10	4	24.0	4	16.0	2	20.0	4	76.0	1	2.40	4
69	30.9	4	6.19	4			21.0	2	18.0	2	64.0	0	2.50	3
70	32.3	2	6.42	3	< 50	NR	18.0	4	20.4	4	95.1	4	2.26	3
72			5.70	3			16.8	3						
73			6.00	4			15.0	1	20.0	4	151.0	0		
74	30.4	4	6.00	4	23.0	3	17.0	3	23.0	2	92.0	4	2.40	4
75	26.2	0	5.64	3	23.0	3	16.8	3	19.4	4	83.6	3	2.35	4
76			6.10	4			17.2	3			95.6	3		
78	30.3	4	7.80	0			20.2	3	18.5	3	78.5	2	2.50	3
79			7.40	0			19.2	4	21.5	3				
80									17.0	1				
81	31.6	3	6.00	4	24.0	4	20.0	3	18.0	2	84.0	3	2.39	4
83	29.7	3	4.50	0			18.1	4	20.6	4	88.0	4	3.00	0
84	33.1	1							20.7	4				
85	31.2	4	< 5	0	21.2	1	< 20	NR	23.9	1	91.3	4	2.60	2
86	30.3	4	5.70	3	24.6	4	16.5	3	21.3	3	88.0	4	2.69	1
87	28.4	1	8.00	0			18.7	4	20.0	4	93.0	4	2.36	4
89	26.4	0	7.06	0	23.7	4	14.3	1	22.8	2	129.0	0	2.27	3
90			6.10	4			20.2	3	20.0	4	113.0	0		
91											87.8	4		
92														
94	32.0	2	5.50	2	23.0	3	18.0	4	20.0	4	84.0	3	2.20	2
96			5.36	1			18.9	4	25.2	0	65.5	0		
97	29.7	3	6.11	4	24.5	4	20.0	3	19.6	4	91.5	4	2.30	3
101	16.4	0	5.90	4			24.1	0	30.0	0	90.7	4	2.45	4
102	26.6	0	6.00	4	26.0	3	18.0	4	22.0	3	102.0	2	1.40	0
103	27.5	0	6.00	4	22.0	2	19.0	4	21.0	4	110.0	0	1.90	0
105	31.1	4	5.87	4	24.0	4	17.6	4	19.0	3	88.0	4	2.56	2
107											90.0	4		
109	32.3	2									95.8	3	2.39	4
111	33.9	0							20.0	4	90.0	4	2.48	3
113	25.6	0	6.11	4			19.1	4	21.8	3	16.6	0	2.29	3
114	29.2	2	6.00	4			26.0	0	22.0	3	85.0	3	2.55	2
116	31.1	4									93.0	4	0.90	0
118									24.6	0	72.0	0		
119	29.4	3	6.50	3			17.2	3	20.0	4	97.0	3	2.30	3
120	26.3	0	5.60	2			16.2	2	19.5	4			2.49	3
121	30.8	4	8.00	0	23.0	3	20.0	3	19.0	3	90.0	4	2.33	4
122	15.3	0											2.49	3

Table 5. *-Laboratory performance ratings for standard reference water sample T-131 (trace constituents) --Continued*

Analyte =	Ca (Calcium)		Cd (Cadmium)		Co (Cobalt)		Cr (Chromium)		Cu (Copper)		Fe (Iron)		K (Potassium)	
MPV =	30.6 mg/L		6.10 µg/L		24.6 µg/L		18.6 µg/L		20.2 µg/L		90.7 µg/L		2.39 mg/L	
F-pseudosigma =	1.2		0.47		1.9		2.1		2.0		8.9		0.15	
Lab	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
127	30.6	4	6.24	4	24.6	4	18.8	4	21.2	3	87.5	4	2.47	3
128	30.4	4	6.00	4	23.0	3	17.0	3	20.0	4	82.0	3	2.89	0
129	37.0	0									175.0	0	2.10	1
133	30.6	4	7.38	0			14.9	1	23.7	1	88.1	4		
134	29.0	2	6.20	4	24.6	4	17.4	3	21.8	3	84.0	3	2.30	3
136	30.1	4	5.90	4	28.0	1	26.0	0	35.0	0	114.1	0	2.50	3
138	32.2	2	6.44	3	24.6	4	19.0	4	21.9	3	93.9	4	2.30	3
140	31.0	4	6.40	3					20.7	4	65.0	0	2.40	4
141	31.3	3	5.00	0	23.0	3	20.0	3	21.0	4	93.0	4	2.60	2
142	31.5	3	5.45	2	25.4	4	18.5	4	19.7	4	87.5	4	2.05	0
145	31.4	3	6.33	4	27.7	1	19.1	4	20.2	4	86.2	4	2.27	3
146	29.4	3	5.90	4	23.4	3	17.8	4	22.1	3	91.6	4	1.47	0
149			6.00	4			21.0	2	29.0	0	100.0	2	3.50	0
151	31.5	3											2.34	4
153							17.2	3	15.8	0	114.0	0		
158	32.0	2	3.80	0	25.0	4	14.8	1	13.3	0	41.5	0	2.61	2
179	28.0	0	5.70	3			18.0	4	14.0	0	< 100	NR	2.30	3
180	29.4	3	4.55	0	26.2	3	18.2	4	21.0	4	73.6	1	2.73	0
182	29.5	3	8.50	0	2.3	0	25.0	0	24.0	1	99.6	3		
185	30.1	4											2.34	4
190			7.50	0			20.0	3	16.6	1	86.4	4		
191	30.0	4	6.53	3	25.4	4	19.0	4	23.0	2	106.0	1	2.31	3
193	29.6	3	6.00	4	32.0	0	18.0	4	< 50	NR	74.0	1	2.40	4
194	30.1	4	6.70	2	26.0	3	21.0	2	15.0	0	< 100	NR	2.64	1
196	31.1	4	6.15	4	25.2	4	19.1	4	20.8	4			2.46	4
203	29.6	3	5.67	3			21.5	2	20.0	4	90.0	4	2.10	1
204	30.5	4	6.40	3			17.2	3	19.5	4	100.0	2	2.22	2
211	36.5	0	7.30	0	30.0	0	14.0	0	35.0	0	90.0	4	2.50	3
212	32.7	1	6.50	3	25.0	4	18.0	4	21.0	4	78.0	2	2.40	4
215	31.0	4	5.00	0	25.0	4	20.0	3	24.4	0	91.0	4	2.70	1
217	29.6	3	7.20	0	24.0	4	16.0	2	20.0	4				
218	32.4	2											2.30	3
219.1	31.0	4	< 10	NR	27.0	2	19.0	4	< 30	NR	100.0	2	2.50	3
219.2			6.00	4	24.0	4	18.0	4	19.0	3	110.0	0		
220							16.6	3	18.7	3	76.3	1		
221	18.8	0	7.26	0	24.5	4	18.9	4	20.9	4	96.0	3	2.40	4
224	30.3	4	5.90	4	23.3	3			17.8	2	96.7	3	2.34	4
231	32.3	2	23.00	0			16.0	2	27.0	0	107.0	1	2.24	3
234	30.5	4	6.47	3			21.9	1	21.9	3	87.0	4	2.26	3
235			5.61	2	23.9	4	22.1	1	14.5	0				

Table 5. *-Laboratory performance ratings for standard reference water sample T-131 (trace constituents) --Continued*

(MPV,most probable value; ug/L, micrograms per liter; mg/L, milligrams per liter; Lab, laboratory number; OLR, overall laboratory rating for all reported values;V/26, number of reported values of 26 possible values; RV, reported value; <, less than)

Rating	Absolute Z-value	Rating	Absolute Z-value
4 (Excellent)	0.00 - 0.50	1 (Questionable)	1.51 - 2.00
3 (Good)	0.51 - 1.00	O (Poor)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

Analyte =	Li (Lithium)		Mg (Magnesium)		Mn (Manganese)		Mo (Molybdenum)		Na (Sodium)		Ni (Nickel)		Pb (Lead)	
MPV =	17.0 µg/L		8.00 mg/L		37.8 µg/L		112 µg/L		21.4 mg/L		56.3 µg/L		18.1 µg/L	
F-pseudosigma =	1.5		0.28		3.0		10		0.8		4.7		2.7	
Lab	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
1	19.2	2	7.79	3	36.3	3	114	4	21.4	4	58.4	4	19.0	4
3	18.0	3	7.89	4	37.0	4	112	4	21.4	4	54.0	4	22.0	2
4	17.0	4	8.39	2	66.0	0	82	0	22.2	2			< 40	NR
5	15.1	2	7.72	3	37.6	4	111	4	21.4	4	55.5	4	20.2	3
7	19.3	1	8.20	3	39.5	3	116	4	22.8	1	142.0	0	17.2	4
8	16.0	3	8.10	4	37.0	4	100	2	21.1	4	78.0	0	< 30	NR
9			8.01	4	39.1	4			22.1	3	51.3	2	22.0	2
11			8.35	2	34.0	2	118	3	22.3	2	62.0	2	27.0	0
12			8.10	4	40.0	3	130	1	22.0	3	60.0	3	18.0	4
13			7.99	4	37.6	4			20.5	2	58.4	4	20.0	3
15	16.3	4	8.61	0	39.8	3	110	4	20.3	2	52.0	3	< 50	NR
16	< 100	NR	7.75	3	33.0	1	102	3	20.5	2	52.0	3	15.0	2
18			8.00	4	39.0	4	108	4	21.9	3	59.0	3	18.0	4
19			8.31	2	42.1	2	131	1	22.2	2				
21														
23			8.52	1	38.4	4			21.1	4	60.5	3	15.8	3
24			7.82	3	35.7	3	107	4	20.5	2	55.6	4	22.9	1
25	16.0	3	7.85	3	37.0	4			22.3	2	49.0	1	< 71	NR
30	16.8	4	8.11	4	39.6	3	112	4			62.2	2	17.4	4
32	18.1	3	7.78	3	36.4	4	104	3	20.9	3	58.5	4	16.9	4
33			8.41	2	47.0	0			21.7	4				
34														
35														
39	19.0	2	8.24	3	38.0	4	111	4	21.3	4	57.9	4	26.0	0
40	7.7	0	8.41	2	40.0	3	53	0	23.5	0	27.7	0	5.9	0
42	16.0	3	8.00	4	38.0	4	109	4	21.6	4	57.0	4	14.3	2
59			7.90	4	36.0	3	137	0	21.0	3	50.0	2	16.0	3
69	17.0	4	8.10	4	32.0	1			20.9	3	54.0	4	18.0	4
70			8.04	4	37.1	4	112	4	21.8	3	55.1	4	16.9	4
72											49.1	1	18.0	4
73											58.0	4	13.0	1
74			7.50	1	37.0	4	105	3	21.3	4	56.0	4	19.0	4
75	15.2	2	7.85	3	35.5	3	104	3	21.2	4	54.7	4	18.7	4
76					34.0	2					47.3	1	15.9	3
78			7.90	4	37.7	4	101	2	24.6	0	52.4	3	20.5	3
79							116	4			62.2	2	17.4	4
80					35.0	3							15.0	2
81			8.33	2	33.0	1	95	1	22.5	2	26.0	0	20.0	3
83			8.00	4	37.0	4			21.5	4	52.3	3	18.8	4
84			8.28	3					22.3	2			18.4	4
85	17.4	4	7.86	4	41.5	2	117	4	21.1	4	50.0	2	< 50	NR
86			8.06	4	37.4	4	105	3	21.4	4	56.7	4	13.7	1
87			7.78	3	37.0	4	125	2	19.6	0	61.0	2	21.6	2
89			7.84	3	37.9	4			20.5	2	54.8	4	18.0	4
90					41.0	2			21.8	3	71.3	0	16.1	3
91					35.5	3								
92														
94			8.00	4	37.0	4	109	4	21.5	4	56.0	4	16.1	3
96					34.6	2							17.1	4
97			8.13	4	40.4	3	95	1	22.1	3	54.7	4	17.1	4
101			8.00	4	36.6	4			22.0	3	58.3	4	24.3	0
102			8.40	2	38.0	4			16.1	0	57.0	4	19.0	4
103	17.0	4	7.50	1	44.0	0	111	4	22.0	3	51.0	2		
105	18.0	3	7.82	3	40.0	3	120	3	21.1	4	56.0	4	17.6	4
107					40.0	3					52.0	3		
109	16.9	4	8.50	1	39.1	4	83	0	21.0	3				
111			7.96	4	69.0	0			21.5	4			12.0	0
113			7.69	2	40.7	3			21.9	3	60.0	3	20.2	3
114			8.20	3	38.0	4			20.6	2	55.0	4	23.0	1
116			8.19	3	41.0	2			22.1	3				
118					69.0	0					53.8	3	17.4	4
119			7.60	2	37.0	4			21.0	3	53.0	3	17.0	4
120			7.53	1	32.0	1	123	2	23.0	1	50.9	2	16.3	3
121			8.00	4	40.0	3			19.8	0	64.0	1		
122			8.00	4					21.2	4				

Table 5. *-Laboratory performance ratings for standard reference water sample T-131 (trace constituents) --Continued*

Analyte =	Li (Lithium)		Mg (Magnesium)		Mn (Manganese)		Mo (Molybdenum)		Na (Sodium)		Ni (Nickel)		Pb (Lead)	
MPV =	17.0 µg/L		8.00 mg/L		37.8 µg/L		112 µg/L		21.4 mg/L		56.3 µg/L		18.1 µg/L	
F-pseudosigma =	1.5		0.28		3.0		10		0.8		4.7		2.7	
Lab	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
127	17.4	4	7.78	3	39.7	3	119	3	20.6	2	58.3	4	19.1	4
128	13.0	0	7.38	0	34.0	2	93	1	21.3	4	53.0	3	14.0	1
129			8.40	2	30.0	0			22.0	3				
133			8.23	3							61.3	2	24.8	0
134	14.0	1	7.53	1	39.0	4	113	4	20.0	1	57.3	4	18.9	4
136	18.0	3	7.70	2	50.6	0	119	3	21.3	4	58.0	4	31.0	0
138			8.00	4	38.3	4	124	2	21.9	3	59.1	3	18.0	4
140			7.80	3	35.0	3			21.0	3	52.1	3	18.6	4
141			8.18	3	38.0	4	109	4	22.2	2	54.0	4	< 20	NR
142	17.7	4	8.15	3	36.5	4	158	0	21.0	3	50.9	2	20.5	3
145	15.1	2	7.99	4	38.1	4	114	4	21.2	4	63.7	1	22.0	2
146			7.73	3	30.0	0	111	4	20.0	1	57.3	4	18.2	4
149					42.0	2	160	0					18.0	4
151	16.6	4	8.00	4					21.9	3				
153					42.5	1					57.9	4	17.1	4
158			8.08	4	30.0	0	113	4	24.4	0	59.3	3	15.3	2
179			6.90	0	30.0	0	161	0	20.9	3	58.3	4	15.6	3
180			8.09	4	37.4	4	114	4	20.7	3	56.6	4	27.7	0
182	17.8	3	7.66	2	31.9	1	73	0	20.4	2	5.0	0		
185			7.90	4					21.8	3				
190					38.3	4					60.9	3	18.1	4
191			7.95	4	37.0	4			21.4	4	61.7	2	18.6	4
193			7.88	4					20.0	1	50.0	2	19.0	4
194			8.20	3	< 50	NR	132	1	21.6	4			21.1	2
196	16.9	4	8.27	3	38.0	4	113	4	22.1	3	58.7	3	17.4	4
203			7.75	3	37.3	4			22.4	2	54.0	4	18.0	4
204			8.74	0	38.0	4			19.1	0			20.9	2
211			8.40	2	35.0	3	120	3	23.3	0	42.0	0	21.0	2
212	20.0	1	8.50	1	40.0	3	110	4	22.5	2	57.0	4	16.0	3
215			8.00	4	37.5	4	112	4	21.2	4	58.7	3	14.0	1
217			8.10	4	38.0	4	110	4	21.6	4	54.0	4	16.0	3
218			7.70	2					19.0	0				
219.1	22.0	0	8.10	4	44.0	0	100	2	23.0	1	57.0	4	< 30	NR
219.2	14.0	1			35.0	3	110	4			53.0	3	16.0	3
220					34.0	2							18.2	4
221			8.23	3	40.2	3	130	1	21.7	4	56.8	4	19.7	3
224			7.41	0	38.5	4	112	4	21.4	4	52.6	3	19.6	3
231			8.20	3	30.0	0			22.0	3	51.5	2	23.0	1
234			8.29	2	37.1	4	133	0	20.1	1	63.6	1	20.5	3
235			8.32	2	40.8	2	128	1			58.6	4	18.2	4

Table 5. *-Laboratory performance ratings for standard reference water sample T-131 (trace constituents) --Continued*

(MPV,most probable value; ug/L, micrograms per liter; mg/L, milligrams per liter; Lab, laboratory number; OLR, overall laboratory rating for all reported values;V/26, number of reported values of 26 possible values; RV, reported value; <, less than)

Rating	Absolute Z-value	Rating	Absolute Z-value
4 (Excellent)	0.00 - 0.50	1 (Questionable)	1.51 - 2.00
3 (Good)	0.51 - 1.00	O (Poor)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

Analyte =	Sb (Antimony)		Se (Selenium)		SiO2 (Silica)		Sr (Strontium)		V (Vanadium)		Zn (Zinc)	
MPV =	56.2 µg/L		11.2 µg/L		5.80 mg/L		295 µg/L		34.2 µg/L		72.0 µg/L	
F-pseudosigma =	6.7		2.0		0.90		14		3.2		4.4	
Lab	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
1	57.4	4	11.8	4	5.75	4	287	3	31.7	3	74.4	3
3	58.0	4	13.0	3	6.34	3	303	3	34.0	4	73.0	4
4					6.76	2	292	4	52.0	0	85.0	0
5	51.8	3	10.9	4	6.02	4	295	4	34.7	4	71.9	4
7	57.3	4	6.3	0	6.27	3	302	3	36.6	3	78.6	1
8	49.0	2	12.0	4	6.10	4	290	4	31.0	3	47.0	0
9							292	4			68.4	3
11	55.0	4	< 10	NR	5.56	4			35.0	4	72.0	4
12	< 100	NR	8.0	1							80.0	1
13			10.4	4	2.57	0			34.7	4	75.6	3
15	56.3	4	12.6	3	6.11	4	317	1	34.2	4	79.0	1
16	49.0	2	11.0	4			266	1	30.0	2	72.0	4
18	44.0	1	10.9	4			295	4	34.0	4	75.0	3
19											69.6	3
21												
23			9.7	3							66.3	2
24	84.5	0	26.6	0	5.91	4	276	2	32.2	3	67.0	2
25	54.0	4	< 129	NR	7.05	2	300	4	22.0	0	< 4	0
30	57.8	4	12.5	3					37.7	2	81.5	0
32	45.8	1	10.0	3	5.90	4	275	2	35.0	4	69.7	3
33					7.07	2	336	0				
34			12.4	3								
35			10.1	3								
39	53.7	4			2.82	0	294	4	30.0	2	68.0	3
40	25.6	0					294	4	15.1	0	37.7	0
42	56.0	4	11.1	4	6.10	4	301	4	34.1	4	70.0	4
59	51.0	3	9.0	2			280	2	43.0	0	70.0	4
69	56.2	4	12.6	3							76.0	3
70	37.0	0	10.7	4	4.83	2	298	4	< 50	NR	71.9	4
72	42.0	0	11.0	4							67.8	3
73											75.0	3
74	50.0	3	9.0	2			281	3	34.0	4	72.0	4
75	< 50	NR	12.0	4	6.73	2			32.1	3	70.5	4
76	57.0	4	11.8	4								
78	49.3	2	15.2	1					30.1	2	71.0	4
79			14.2	2							71.8	4
80			16.0	0								
81	40.0	0	8.0	1			278	2			74.0	4
83					5.07	3					67.3	2
84												
85	< 100	NR	11.2	4			284	3	40.7	1	72.9	4
86			15.8	0			295	4	34.6	4	73.5	4
87			14.1	2	0.91	0					78.0	2
89			11.2	4	6.23	4					72.5	4
90											70.0	4
91												
92					4.99	3						
94	57.0	4	7.0	0			294	4	34.0	4	< 100	NR
96			10.2	4							81.0	0
97	58.4	4	13.1	3	4.64	2	270	1	30.3	2	63.0	0
101											69.8	4
102	57.0	4	14.0	2	5.40	4	301	4	37.0	3	74.0	4
103					5.07	3	308	3	33.0	4	73.0	4
105	57.2	4	8.8	2	6.38	3	303	3	37.0	3	69.0	3
107			10.4	4	1.80	0						
109			14.8	1	5.19	3						
111					5.84	4						
113	59.5	4	11.7	4	6.53	3	340	0			80.0	1
114	250.0	0									72.0	4
116					6.27	3	302	3				
118					2.78	0					74.0	4
119	57.0	4	12.0	4	6.10	4					65.0	1
120	58.0	4	9.9	3							59.0	0
121					5.77	4	300	4	32.0	3	72.0	4
122												

Table 5. *-Laboratory performance ratings for standard reference water sample T-131 (trace constituents) --Continued*

Analyte =	Sb (Antimony)		Se (Selenium)		SiO2 (Silica)		Sr (Strontium)		V (Vanadium)		Zn (Zinc)	
MPV =	56.2 µg/L		11.2 µg/L		5.80 mg/L		295 µg/L		34.2 µg/L		72.0 µg/L	
F-pseudosigma =	6.7		2.0		0.90		14		3.2		4.4	
Lab	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
127	62.3	3	12.6	3	5.90	4	295	4	35.4	4	73.4	4
128	46.0	1	13.0	3	6.01	4	288	4	32.0	3	72.0	4
129												
133			10.0	3							71.6	4
134			10.4	4	5.29	3	287	3	35.7	4	73.0	4
136	84.0	0	41.0	0	5.40	4	324	0	37.0	3	69.0	3
138	56.2	4	12.8	3	4.89	2	293	4	34.4	4	72.3	4
140					6.01	4					77.9	2
141	50.0	3	18.0	0	< 0.10	0			33.0	4	70.0	4
142	61.5	3	16.4	0	5.19	3	303	3	38.0	2	78.0	2
145					5.83	4	282	3	36.1	3	76.1	3
146	56.2	4	11.5	4					38.5	2	71.2	4
149											71.0	4
151					6.30	3	267	1				
153			10.2	4								
158	47.0	2	20.0	0			294	4	28.0	1	72.5	4
179	45.8	1	11.7	4							82.0	0
180	61.2	3	< 35.9	NR					33.8	4	72.0	4
182			14.0	2			230	0	13.4	0	79.5	1
185												
190			8.3	2							69.2	3
191			13.0	3	5.93	4	283	3			80.8	1
193			< 5	0							70.0	4
194	45.0	1	10.4	4					< 50	NR	70.0	4
196	55.8	4	11.1	4			293	4	36.1	3	67.7	3
203			9.6	3	4.24	1					68.0	3
204			9.9	3							79.0	1
211	52.0	3	10.0	3	2.65	0	260	0	25.0	0	68.0	3
212	57.0	4	10.0	3	6.50	3	330	0	38.0	2	78.0	2
215	59.0	4	11.0	4	2.94	0					72.6	4
217	48.0	2	6.8	0					32.0	3	69.0	3
218							306	3				
219.1					3.00	0	310	2	36.0	3	73.0	4
219.2	60.0	3					320	1	26.0	0	61.0	0
220			10.5	4							67.8	3
221			11.1	4							76.3	3
224			14.5	1					37.4	3	65.1	1
231			12.0	4	2.73	0					74.0	4
234	74.5	0	11.0	4	5.74	4	297	4	38.1	2	54.6	0
235			11.7	4			315	2	34.7	4	76.6	2

Table 6. *-Laboratory performance ratings for standard reference water sample T-133 (trace constituents)*

(MPV,most probable value; ug/L, micrograms per liter; mg/L, milligrams per liter; Lab, laboratory number; OLR, overall laboratory rating for all reported values;V/26, number of reported values of 26 possible values; RV, reported value; <, less than)

Rating	Absolute Z-value	Rating	Absolute Z-value
4 (Excellent)	0.00 - 0.50	1 (Questionable)	1.51 - 2.00
3 (Good)	0.51 - 1.00	0 (Poor)	greater than 2.00
2 (Setisfactory)	1.01 - 1.50	NR (Not Rated)	

			Analyte =	Ag (Silver)		Al (Aluminium)		As (Arsenic)		B (Boron)		Ba (Barium)		Be (Beryllium)	
			MPV =	7.44 µg/L		52.1 µg/L		27.1 µg/L		297 µg/L		148 µg/L		35.0 µg/L	
			F-pseudosigma =	0.89		8.1		3.3		16		9		2.2	
Lab	OLR	V/26		RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
1	3.7	26		7.87	4	52.2	4	27.0	4	300	4	151	4	34.9	4
3	3.3	26		6.60	3	52.0	4	28.0	4	296	4	148	4	37.0	3
4	1.1	17								607	0	142	3	32.0	2
5	3.5	24		6.60	3	55.0	4	27.5	4	299	4	142	3	34.7	4
7	2.8	24		8.70	2	52.7	4	26.7	4			149	4	34.3	4
8	2.5	24		18.00	0	< 50	NR	29.0	3	270	1	221	0	35.0	4
9	2.8	13													
11	2.6	22		10.00	0	45.0	3	< 50	NR	287	3	157	2	34.0	4
12	2.5	17		6.10	1	160.0	0	30.0	3					< 20	0
13	2.5	21		7.60	4			28.3	4			148	4	33.6	3
15	2.6	21		< 10	NR	71.2	0	< 100	NR	323	1	151	4	34.4	4
16	1.9	24		6.80	3	39.0	1	24.0	3	586	0	132	1	28.0	0
18	3.6	23		7.60	4	50.0	4	26.0	4	303	4	148	4	35.0	4
19	2.7	12										153	3		
21	2.0	1													
23	2.0	22		7.30	4	60.3	2	28.6	4			184	0	34.3	4
24	2.2	25		9.00	1	87.1	0	28.8	3	315	2	143	3	40.6	0
25	2.7	19		< 6	NR	< 19	0	53.0	0	297	4	150	4	35.0	4
30	3.0	20		7.70	4	51.2	4	30.5	2			146	4	39.4	1
32	3.2	26		7.10	4	51.9	4	24.4	3	268	1	139	2	34.1	4
33	2.9	10				54.0	4					146	4		
34	4.0	2						26.5	4						
40	0.7	23		2.30	0	12.3	0			33	0	152	4	17.7	0
42	3.8	26		7.15	4	48.0	3	25.9	4	292	4	143	3	33.0	3
59	2.2	22		7.00	4			26.0	4			139	2	35.0	4
69	2.9	19		7.47	4	65.0	1	29.8	3			157	2	35.0	4
70	3.6	20		8.37	2	< 100	NR	24.7	3	293	4	148	4	35.2	4
72	2.4	10		7.00	4			21.0	1			134	1		
73	2.4	8		6.00	1	68.0	1								
74	3.2	24		6.70	3	47.0	3	24.0	3	307	3	153	3	32.3	2
75	2.7	23		6.39	2	43.2	2	< 50	NR	276	2	134	1	32.1	2
76	2.7	12		6.81	3							156	3	31.1	1
78	3.0	20		5.00	0	54.5	4	26.9	4					9.9	0
80	1.8	5						29.0	3						
81	2.1	22		4.00	0	38.0	1	29.0	3			140	3	32.0	2
83	3.1	16				43.5	2					153	3	34.8	4
84	3.2	5													
85	2.8	22		7.50	4	83.0	0	24.2	3	310	3	148	4	34.6	4
86	3.4	23		6.50	2	59.1	3	24.3	3	268	1	142	3	35.0	4
87	2.2	18		10.00	0			28.3	4			126	0		
89	2.0	20		6.25	2	73.9	0	20.9	1			139	2	33.3	3
90	1.5	10										192	0		
91	4.0	2													
94	3.1	21		8.00	3	< 100	NR	19.0	0	304	4	150	4	35.0	4
96	2.5	11		7.27	4			25.2	3			190	0		
97	2.8	24		8.45	2	58.6	3	27.6	4			74	0	39.9	0
101	2.3	13										136	2		
102	2.5	23		8.00	3	33.0	0	40.0	0			155	3	36.0	4
105	3.0	25		7.41	4	53.2	4	24.4	3			153	3	36.3	3
107	1.7	7		7.51	4							158	2		
109	2.8	12						28.0	4	296	4				
111	2.3	10				51.8	4								
113	2.6	20		6.07	1	51.7	4	27.2	4			177	0	32.6	2
116	2.8	10								308	3	147	4		
119	3.1	21		8.00	3	58.0	3	26.0	4	305	3	142	3	33.8	3
120	1.9	19		6.80	3	39.0	1	26.9	4			175	0	37.3	2
121	3.0	19				65.0	1			265	1	150	4		
122	2.8	5								307	3				
127	3.5	26		7.50	4	58.1	3	25.7	4	291	4	146	4	35.6	4
128	2.6	25		7.00	4	52.0	4	28.0	4	264	0	150	4	28.0	0

Table 6. *-Laboratory performance ratings for standard reference water sample T-133 (trace constituents) --Continued*

	Analyte =	Ag (Silver)		Al (Aluminium)		As (Arsenic)		B (Boron)		Ba (Barium)		Be (Beryllium)	
	MPV =	7.44 µg/L		52.1 µg/L		27.1 µg/L		297 µg/L		148 µg/L		35.0 µg/L	
	F-pseudosigma =	0.89		8.1		3.3		16		9		2.2	
Lab	OLR	V/26	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
129	1.0	6							412	0				
133	3.0	14	5.60	0			28.5	4			146	4	37.1	3
134	3.5	23	8.00	3	52.0	4			304	4	148	4	36.0	4
136	1.8	25			106.0	0	52.0	0	787	0	133	1	32.0	2
138	3.3	24	8.11	3	57.5	3	29.0	3			144	4	38.4	1
140	3.3	12												
141	2.9	21	< 10	NR	49.0	4	< 50	NR	278	2	147	4	32.0	2
142	2.6	24	8.71	2			28.1	4	296	4	154	3	35.8	4
145	2.8	23			37.5	1	29.5	3	303	4	148	4	36.5	3
146	2.5	19	7.10	4	< 200	NR	24.4	3			130	1	31.7	2
149	2.2	15	8.10	3	40.0	2					160	2		
151	2.8	8												
153	3.6	9			58.3	3	26.5	4						
158	3.0	22			49.0	4	43.0	0	294	4	150	4	34.0	4
180	3.1	21	8.55	2	48.2	4	28.4	4	289	4	146	4	34.4	4
182	1.8	19	0.84	0	36.5	1	27.0	4			147	4	485.1	0
185	2.8	4												
190	2.1	11	7.31	4	48.9	4								
191	2.8	19			53.0	4	29.6	3			139	2		
193	2.5	14	8.00	3			25.0	3			139	2		
198	3.1	19	7.38	4	48.9	4	28.8	3			144	4	37.7	2
203	3.0	17	8.50	2			22.1	1			152	4		
211	1.9	23	15.00	0	< 100	NR	29.0	3	260	0	150	4	22.7	0
212	2.7	26	7.40	4	54.0	4	27.0	4	310	3	160	2	36.0	4
215	2.9	23	9.00	1	60.0	3	30.0	3	295	4	140	3	35.5	4
217	2.8	19	7.30	4			21.0	1	290	4	140	3	36.0	4
218	1.2	5												
219.1	2.4	20			< 100	NR			310	3	140	3	38.0	2
219.2	2.1	18	8.00	3			20.0	0			130	1	33.0	3
220	2.5	8					21.6	1						
221	2.8	19	7.56	4	61.9	2	24.4	3			177	0		
224	2.8	19			100.1	0	30.5	2			137	2	38.2	2
231	2.3	17	14.00	0			28.0	4			203	0		
234	3.0	24	6.85	3	48.9	4	30.7	2	297	4	148	4	35.1	4
235	2.6	18	8.00	3			22.8	2	326	1	152	4	38.4	1

Table 6. *-Laboratory performance ratings for standard reference water sample T-133 (trace constituents) --Continued*

(MPV,most probable value; ug/L, micrograms per liter; mg/L, milligrams per liter; Lab, laboratory number; OLR, overall laboratory rating for all reported values;V/26, number of reported values of 26 possible values; RV, reported value; <, less than)

Rating	Absolute Z-value	Rating	Absolute Z-value
4 (Excellent)	0.00 - 0.50	1 (Questionable)	1.51 - 2.00
3 (Good)	0.51 - 1.00	0 (Poor)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

Analyte =	Ca (Calcium)		Cd (Cadmium)		Co (Cobalt)		Cr (Chromium)		Cu (Copper)		Fe (Iron)		K (Potassium)	
MPV =	7.04 mg/L		23.0 µg/L		20.0 µg/L		38.0 µg/L		85.3 µg/L		31.4 µg/L		1.00 mg/L	
F-pseudosigma =	0.33		2.1		1.5		3.2		4.5		6.7		0.09	
Lab	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
1	7.04	4	22.5	4	19.9	4	36.2	3	84.4	4	31.0	4	0.87	2
3	7.39	2	23.4	4	19.0	3	36.0	3	86.0	4	40.0	3	0.90	2
4	7.74	0	44.0	0			70.0	0	79.0	2	52.0	0		
5	6.90	4	23.8	4	23.1	0	37.5	4	84.9	4	31.9	4		
7	7.21	3	22.3	4	22.1	2	40.0	3	87.6	3	35.3	4	1.19	0
8	7.10	4	23.0	4	20.0	4	36.0	3	250.0	0	44.0	2	1.30	0
9	6.92	4	20.6	2			41.4	2	84.2	4	17.0	0	1.10	2
11	7.24	3	23.0	4	22.0	2	43.0	1	91.0	2	34.0	4	0.98	4
12	7.00	4	23.0	4			40.0	3	82.0	3	< 50	NR	1.00	4
13	7.20	4	26.7	1	17.3	1	77.5	0	83.8	4	33.9	4	1.12	2
15	7.26	3	23.8	4	20.9	3	39.3	4	90.7	2	31.3	4	1.04	4
16	7.00	4	29.0	0	16.0	0	29.0	0	70.0	0	33.0	4	1.00	4
18	7.30	3	18.6	1	19.0	3	38.0	4	81.0	3	< 50	NR	1.00	4
19	7.37	3	23.5	4			37.5	4	89.7	3	32.1	4	1.04	4
21											42.0	2		
23	3.10	0	23.1	4			40.0	3	83.3	4	42.3	2	0.94	3
24	6.97	4	27.0	1	20.0	4	34.7	2	88.4	3	28.0	3	0.92	3
25	7.14	4	25.0	3	20.0	4	37.0	4	73.0	0	< 6	0	< 1.21	NR
30	6.96	4	25.1	3	22.1	2	40.9	3	91.9	2				
32	7.30	3	20.9	3	21.3	3	36.4	4	88.1	3	40.0	3	0.97	4
33	6.78	3									48.0	0	0.98	4
34														
40	7.25	3	11.6	0	9.7	0	19.1	0	39.7	0	36.2	4	1.19	0
42	7.10	4	22.5	4	19.4	4	36.6	4	86.0	4	36.0	4	1.05	3
59	5.60	0	21.0	3	21.0	3	34.0	2	85.0	4	17.0	0	0.90	2
69	6.60	2	23.8	4			38.8	4	73.0	0			1.00	4
70	7.54	1	21.6	3	< 50	NR	37.7	4	86.0	4	35.6	4	1.03	4
72			20.7	2			34.4	2						
73			24.0	4			35.0	3	88.0	3	72.0	0		
74	7.00	4	21.0	3	18.0	2	34.0	2	89.0	3	32.0	4	1.00	4
75	6.87	3	21.3	3	18.3	2	34.5	2	79.1	2	29.8	3	0.93	3
76			24.2	3			34.5	2	76.1	1	38.5	3		
78	6.85	3	22.4	4			39.3	4	85.7	4	33.5	4	0.95	3
80									74.0	0				
81	7.59	1	22.0	4	20.0	4	43.0	1	81.0	3	25.0	2	0.93	3
83	6.93	4	21.5	3			38.4	4	84.5	4	31.9	4	2.07	0
84	6.80	3							91.9	2				
85	7.60	1	26.5	1	16.8	0	35.7	3	90.5	2	31.6	4	1.10	2
86	6.99	4	21.9	3	20.0	4	35.6	3	83.5	4	31.7	4	1.06	3
87	6.18	0	24.0	4			39.9	3	85.0	4	36.0	4	1.03	4
89	6.62	2	26.7	1	20.8	3	34.0	2	90.4	2	40.2	3	1.02	4
90			28.7	0			37.2	4	86.0	4	59.0	0		
91											32.3	4		
94	7.60	1	26.0	2	19.0	3	37.0	4	86.0	4	32.0	4	< 1	NR
96			20.5	2			35.6	3	82.0	3	21.5	1		
97	7.24	3	23.7	4	20.5	4	38.0	4	81.4	3	35.8	4	0.99	4
101	5.90	0	22.7	4			44.6	0	94.2	1	37.8	3	1.00	4
102	6.20	0	24.0	4	22.0	2	38.0	4	87.0	4	45.0	1	0.58	0
105	7.04	4	21.5	3	21.0	3	36.7	4	82.0	3	48.0	0	1.14	1
107											20.0	0		
109	7.50	2									37.3	4	1.01	4
111	8.51	0							78.0	1	40.0	3	0.97	4
113	6.70	2	23.1	4			38.6	4	86.5	4	58.0	0	0.85	1
116	7.06	4									37.0	4	0.35	0
119	6.80	3	24.0	4			41.0	3	83.0	4	29.0	3	0.90	2
120	6.71	3	20.6	2			36.8	4	95.0	0			0.95	3
121	6.90	4	24.0	4	20.0	4	38.0	4	90.0	2	35.0	4	0.90	2
122	3.77	0											0.94	3
127	7.04	4	23.3	4	19.9	4	39.7	3	86.8	4	32.5	4	1.02	4
128	7.09	4	22.0	4	18.0	2	32.0	1	80.0	2	30.0	3	< 2	NR

Table 6. *-Laboratory performance ratings for standard reference water sample T-133 (trace constituents) --Continued*

Analyte =	Ca (Calcium)		Cd (Cadmium)		Co (Cobalt)		Cr (Chromium)		Cu (Copper)		Fe (Iron)		K (Potassium)	
MPV =	7.04 mg/L		23.0 µg/L		20.0 µg/L		38.0 µg/L		85.3 µg/L		31.4 µg/L		1.00 mg/L	
F-pseudosigma =	0.33		2.1		1.5		3.2		4.5		6.7		0.09	
Lab	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
129	11.00	0									110.0	0	0.90	2
133	6.88	4	25.7	2			38.4	4	88.1	3	29.6	3		
134	6.96	4	21.5	3	21.4	3	37.0	4	86.0	4	30.0	3	0.93	3
136	6.80	3	21.0	3	21.0	3	49.0	0	88.0	3	37.4	4	1.00	4
138	7.49	2	24.4	3	19.8	4	38.2	4	89.8	3	34.1	4	0.91	2
140	7.10	4	23.6	4					85.0	4	32.1	4	1.00	4
141	7.16	4	21.0	3	21.0	3	38.0	4	86.0	4	30.0	3	1.04	4
142	7.45	2	20.3	2			45.1	0	80.8	3	32.0	4	0.45	0
145	7.28	3	24.4	3	23.2	0	40.1	3	89.1	3	21.9	1	0.93	3
146	6.82	3	21.7	3	17.7	1	35.3	3	79.8	2	36.0	4	< 1	NR
149	3.70	0	21.0	3			41.0	3	98.0	0	40.0	3	2.20	0
151	7.41	2											0.94	3
153							35.8	3	81.6	3	39.0	3		
158	7.34	3	21.7	3	20.0	4	34.0	2	84.0	4	30.0	3	1.12	2
180	6.86	3	23.2	4	22.0	2	38.9	4	87.2	4	22.4	1	1.21	0
182	7.12	4	24.5	3			45.0	0	90.0	2	51.6	0		
185	6.89	4											1.17	1
190			24.6	3			47.5	0	75.0	0	39.2	3		
191	6.84	3	24.4	3	20.0	4	37.8	4	94.5	1	45.0	1	0.87	2
193	7.12	4	20.0	2	30.0	0	41.0	3	86.0	4	< 50	NR	0.99	4
198	6.98	4	18.9	1			31.4	0	84.8	4	29.8	3	1.03	4
203	6.56	2	22.0	4			41.0	3	84.0	4	35.0	4	1.00	4
211	7.54	1	22.0	4	17.0	1	52.0	0	95.0	0	30.0	3	1.70	0
212	7.70	1	25.0	3	21.0	3	38.0	4	91.0	2	38.0	3	0.97	4
215	7.16	4	20.0	2	19.0	3	37.0	4	87.9	3	33.0	4	1.73	0
217	6.50	1	20.0	2	19.0	3	35.0	3	83.0	4				
218	9.40	0											1.10	2
219.1	7.30	3	< 10	0	23.0	1	39.0	4	83.0	4	< 90	NR	0.92	3
219.2			21.0	3	19.0	3	34.0	2	76.0	1	40.0	3		
220							37.2	4	78.6	2	28.2	3		
221	5.28	0	25.0	3	22.4	1	37.4	4	85.5	4	30.9	4	0.96	4
224	7.27	3	22.1	4	20.5	4			85.6	4	48.5	0	0.95	3
231	6.93	4	34.0	0			42.7	2	81.0	3	32.0	4	0.95	3
234	6.99	4	22.3	4			43.0	1	84.2	4	34.2	4	1.07	3
235			21.0	3	18.9	3	47.2	0	83.6	4				

Table 6. *-Laboratory performance ratings for standard reference water sample T-133 (trace constituents) --Continued*

(MPV,most probable value; ug/L, micrograms per liter; mg/L, milligrams per liter; Lab, laboratory number; OLR, overall laboratory rating for all reported values;V/26, number of reported values of 26 possible values; RV, reported value; <, less than)

Rating	Absolute Z-value	Rating	Absolute Z-value
4 (Excellent)	0.00 - 0.50	1 (Questionable)	1.51 - 2.00
3 (Good)	0.51 - 1.00	O (Poor)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

Analyte =	Li (Lithium)		Mg (Magnesium)		Mn (Manganese)		Mo (Molybdenum)		Na (Sodium)		Ni (Nickel)		Pb (Lead)	
MPV =	51.0 µg/L		5.82 mg/L		121 µg/L		46.0 µg/L		29.4 mg/L		27.2 µg/L		27.8 µg/L	
F-pseudosigma =	3.5		0.21		7		4.2		1.2		3.1		2.7	
Lab	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
1	52.4	4	5.69	3	116	3	46.8	4	29.5	4	26.7	4	27.3	4
3	56.0	2	5.76	4	120	4	46.0	4	29.5	4	26.0	4	31.0	2
4	42.0	0	6.12	2	135	0	< 50	NR	29.0	4	53.0	0	< 40	NR
5	48.3	3	5.62	3	121	4	46.0	4	29.2	4	27.3	4	36.9	0
7	57.0	1	5.98	3	127	3	43.8	3	31.2	1	39.4	0	27.4	4
8	53.0	3	5.90	4	122	4	30.0	0	29.3	4	42.0	0	< 30	NR
9			5.82	4	127	3			30.7	2	25.8	4	28.2	4
11			6.10	2	121	4	45.0	4	30.7	2	30.0	3	32.0	1
12			6.00	3	12	0	40.0	2	30.0	3	30.0	3	27.0	4
13			5.86	4	123	4			28.3	3	25.1	3	30.4	3
15	47.0	2	6.29	0	129	2	< 50	NR	26.6	0	27.2	4	< 50	NR
16	< 100	NR	5.60	2	104	0	41.0	2	28.4	3	23.0	2	25.0	2
18			5.80	4	126	3	45.0	4	29.9	4	28.0	4	27.0	4
19			6.10	2	135	0	53.2	1	32.7	0				
21														
23			6.20	1	140	0	43.9	3	32.9	0	35.0	0	23.0	1
24	51.5	4	5.80	4	115	3	36.6	0	28.5	3	29.9	3	36.2	0
25	50.0	4	5.73	4	124	4			31.0	2	< 49	NR	< 71	NR
30	52.4	4	5.80	4	122	4	48.2	3			28.3	4	28.0	4
32	54.0	3	5.75	4	126	3	43.8	3	29.6	4	26.6	4	26.4	3
33			5.89	4	126	3			28.8	3				
34														
40	24.3	0	6.18	1	132	1	22.6	0	32.8	0	13.7	0	13.7	0
42	50.6	4	5.90	4	122	4	45.0	4	29.6	4	27.0	4	27.6	4
59			5.50	1	116	3	55.0	0	28.0	2	24.0	2	25.0	2
69	56.0	2	5.80	4	128	2			28.3	3	30.0	3	27.5	4
70			5.88	4	121	4	< 50	NR	29.7	4	< 50	NR	26.8	4
72											24.2	3	26.0	3
73													28.0	4
74			6.00	3	114	2	43.0	3	27.9	2	26.0	4	28.0	4
75	45.9	2	5.60	2	113	2	42.5	3	29.4	4	27.2	4	27.7	4
76					122	4					24.0	2	24.2	2
78			6.75	0	123	4	48.3	3	33.1	0	25.9	4	28.4	4
80					119	4							24.0	2
81			6.06	2	111	2	31.0	0	30.4	3	12.0	0	33.0	1
83			5.78	4	118	4			28.5	3	22.2	1	28.0	4
84			5.64	3					29.7	4			28.1	4
85	52.7	4	5.85	4	131	2	49.2	3	28.8	3	27.8	4	< 50	NR
86			5.84	4	119	4	46.5	4	28.9	4	28.2	4	24.1	2
87			5.90	4	132	1	47.8	4	26.7	0	29.0	3	32.2	1
89			5.45	1	155	0			30.2	3	27.2	4	28.8	4
90					109	1			29.1	4	32.5	1	18.7	0
91					120	4								
94			5.80	4	121	4	41.0	2	29.4	4	26.0	4	25.0	2
96					117	3							26.9	4
97			5.86	4	125	3	41.5	2	30.5	3	25.3	3	26.3	3
101			6.00	3	122	4			29.5	4	29.2	3	35.1	0
102			6.20	1	125	3			21.8	0	28.0	4	29.0	4
105	52.0	4	5.56	2	125	3	48.4	3	28.3	3	24.0	2	27.2	4
107					110	1					14.0	0		
109	50.9	4	6.20	1	122	4	49.2	3	28.6	3				
111			5.82	4	154	0			29.4	4			9.0	0
113			5.70	3	120	4			31.2	1	27.4	4	35.6	0
116			6.02	3	129	2			30.7	2				
119			5.60	2	117	3			28.4	3	27.0	4	25.0	2
120			5.46	1	108	1	50.0	3	31.8	1	23.0	2	15.7	0
121			6.00	3	120	4			29.2	4	30.0	3	39.0	0
122			5.83	4					29.1	4				
127	48.0	3	5.67	3	125	3	47.7	4	27.8	2	26.7	4	277.0	0
128	48.0	3	5.34	0	114	2	38.0	1	28.8	3	24.0	2	27.0	4

Table 6. *-Laboratory performance ratings for standard referance watar sampla T-133 (traca constituants) --Continuad*

Analyte =	Li (Lithium)		Mg (Magnesium)		Mn (Manganese)		Mo (Molybdenum)		Na (Sodium)		Ni (Nickel)		Pb (Lead)	
MPV =	51.0 µg/L		5.82 mg/L		121 µg/L		46.0 µg/L		29.4 mg/L		27.2 µg/L		27.8 µg/L	
F-pseudosigma =	3.5		0.21		7		4.2		1.2		3.1		2.7	
Lab	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
129					100	0			29.0	4				
133			5.98	3							27.2	4	37.1	0
134	48.0	3	5.74	4	128	2	46.0	4	28.0	2	27.4	4	27.4	4
136	51.0	4	5.60	2	146	0	52.0	2	28.7	3	30.0	3	35.0	0
138			5.84	4	122	4	51.0	2	30.1	3	28.0	4	27.4	4
140			5.60	2	117	3			30.0	3	25.0	3	29.3	3
141			5.93	3	119	4	43.0	3	30.8	2	25.0	3	24.0	2
142	49.0	3	6.10	2	121	4	73.0	0	29.4	4	25.0	3	31.6	2
145	49.5	4	5.83	4	124	4	47.0	4	29.1	4	32.3	1	34.9	0
146			5.53	2	101	0	45.5	4	26.8	0	28.2	4	26.7	4
149			5.50	1	129	2	48.0	4	30.3	3			29.0	4
151	51.6	4	5.66	3					30.6	2				
153					118	4					26.5	4	26.8	4
158			6.00	3	116	3	44.0	4	32.4	0	28.0	4	26.0	3
180			5.92	4	121	4	47.9	4	28.5	3	25.7	4	38.0	0
182	52.8	4	5.69	3	120	4	22.5	0	28.5	3	38.5	0		
185			5.52	2					29.4	4				
190					138	0					29.5	3	27.0	4
191			5.70	3	119	4			29.5	4	28.5	4	27.8	4
193			5.70	3					27.5	1	< 50	NR	30.0	3
198			6.03	3	123	4			29.0	4	37.4	0	27.8	4
203			5.75	4	115	3			31.0	2	35.0	0	24.7	2
211			5.70	3	120	4	63.0	0	30.0	3	25.0	3	26.0	3
212	57.0	1	6.10	2	130	2	47.0	4	31.4	1	27.0	4	19.0	0
215			5.80	4	118	4	47.0	4	29.4	4	28.0	4	20.0	0
217			5.40	1	120	4	39.0	1	28.3	3			29.0	4
218			5.92	4					21.0	0				
219.1	53.0	3	5.80	4	130	2	41.0	2	30.0	3	32.0	1	30.0	3
219.2	43.0	0			110	1	44.0	4			25.0	3	27.0	4
220					111	2							28.2	4
221			5.93	3	125	3	53.6	1	29.6	4	26.1	4	29.5	3
224			5.80	4	122	4	47.7	4	29.4	4	27.0	4	29.8	3
231			5.81	4	111	2			29.9	4	33.0	1	36.0	0
234			5.90	4	117	3	56.2	0	28.8	3	33.1	1	29.6	3
235			5.98	3	128	2	58.0	0			27.3	4	27.8	4

Table 6. *-Laboratory performance ratings for standard reference water sample T-133 (trece constituents) --Continued*

(MPV,most probable value; ug/L, micrograms per liter; mg/L, milligrams per liter; Lab, laboratory number; OLR, overall laboratory rating for all reported values;V/26, number of reported values of 26 possible values; RV, reported value; <, less than)

Rating	Absolute Z-value	Rating	Absolute Z-value
4 (Excellent)	0.00 - 0.50	1 (Questionable)	1.51 - 2.00
3 (Good)	0.51 - 1.00	0 (Poor)	greater than 2.00
2 (Setisfactory)	1.01 - 1.50	NR (Not Rated)	

Analyte =	Sb (Antimony)		Se (Selenium)		SiO2 (Silica)		Sr (Strontium)		V (Vanadium)		Zn (Zinc)	
MPV =	14.4 µg/L		21.4 µg/L		10.1 mg/L		123 µg/L		13.0 µg/L		53.0 µg/L	
F-pseudosigma =	2.4		3.7		0.7		6		1.7		4.4	
Lab	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
1	14.7	4	23.2	4	9.9	4	119	3	11.9	3	51.5	4
3	15.0	4	23.0	4	11.0	2	127	3	11.0	2	55.0	4
4					10.5	4	132	2	39.0	0	82.0	0
5			18.8	3	10.4	4	122	4	13.7	4	53.4	4
7	< 27	NR	23.1	4	10.9	2	125	4	14.9	2	59.3	2
8	13.0	3	18.0	3	10.0	4	120	4	16.0	1	54.0	4
9							117	3			48.1	2
11	< 50	NR	33.0	0	9.7	3			12.0	3	55.0	4
12	< 100	NR	17.0	2							50.0	3
13			9.1	0	4.5	0	9	0	11.1	2	55.4	3
15	< 50	NR	21.7	4	10.8	3	131	2	12.6	4	60.0	1
16	12.0	3	20.0	4			110	1	11.0	2	51.0	4
18	12.5	3	20.2	4			123	4	14.0	3	55.0	4
19											51.9	4
21												
23	16.6	3	25.6	2	10.7	3			18.1	0	58.9	2
24	24.3	0	48.0	0	10.3	4	114	2			49.9	3
25	< 51	NR	< 129	NR	10.0	4	126	4	12.0	3	< 4	0
30	15.8	3	25.7	2					15.0	2	64.5	0
32	15.7	3	25.0	3	10.7	3	114	2	13.5	4	52.9	4
33					11.9	0	120	4				
34			20.0	4								
40	3.4	0					123	4	5.8	0	28.8	0
42	13.9	4	23.0	4	10.5	4	126	4	12.5	4	55.0	4
59	13.0	3	21.0	4			108	0	7.5	0	50.0	3
69	13.1	3	22.0	4							56.0	3
70	12.0	3	21.3	4	9.8	4	124	4	< 50	NR	52.4	4
72	23.0	0	20.0	4							51.3	4
73											56.0	3
74	12.0	3	23.0	4			120	4	13.0	4	53.0	4
75	< 50	NR	21.7	4	10.6	3			13.5	4	51.0	4
76	13.4	4	20.6	4								
78	10.8	2	20.9	4					12.9	4	53.0	4
80			32.0	0								
81	12.0	3	16.0	2			114	2			55.0	4
83					9.0	1					51.1	4
84												
85	< 100	NR	19.0	3			123	4	< 20	NR	57.4	3
86			18.1	3			125	4	12.9	4	52.7	4
87			4.9	0	9.9	4					63.0	0
89			1.7	0	10.6	3					42.1	0
90											60.0	1
91												
94	15.0	4	8.0	0			124	4	13.0	4	< 100	NR
96			16.7	2							58.0	2
97	16.8	3	25.6	2	10.9	2	116	2	13.6	4	48.0	2
101											58.4	2
102	13.0	3	24.0	3	9.8	4	129	3	13.0	4	56.0	3
105	14.5	4	20.2	4	10.9	2	126	4	15.0	2	53.0	4
107			20.3	4	8.9	1						
109			28.3	1	5.3	0						
111					10.7	3						
113	16.2	3	21.2	4	10.7	3	< 200	NR			56.0	3
116					10.9	2	126	4				
119	12.5	3	23.0	4	10.2	4					48.0	2
120	10.0	1	19.5	3							49.0	3
121					10.2	4	125	4	10.0	1	52.0	4
122												
127	15.9	3	25.2	2	10.1	4	124	4	12.2	4	53.8	4
128	12.0	3	28.0	1	10.4	4	122	4	11.0	2	57.0	3

Table 6. *-Laboratory performance ratings for standard reference water sample T-133 (trace constituents) --Continued*

Analyte =	Sb (Antimony)		Se (Selenium)		SiO2 (Silica)		Sr (Strontium)		V (Vanadium)		Zn (Zinc)	
MPV =	14.4 µg/L		21.4 µg/L		10.1 mg/L		123 µg/L		13.0 µg/L		53.0 µg/L	
F-pseudosigma =	2.4		3.7		0.7		6		1.7		4.4	
Lab	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
129												
133			21.5	4							53.5	4
134					9.5	3	122	4	13.7	4	55.0	4
136	37.0	0	42.0	0	9.7	3	130	2	16.0	1	50.0	3
138	14.4	4	25.1	2	9.8	4	123	4	13.5	4	53.8	4
140					10.4	4					57.9	2
141	< 20	NR	84.4	0	1.1	0			12.0	3	52.0	4
142	15.8	3	25.4	2	9.2	2	129	3	13.5	4	57.0	3
145					10.1	4	118	3	14.5	3	58.4	2
146	< 50	NR	23.7	3					14.2	3	46.0	1
149											50.0	3
151			19.6	4	10.8	3	112	1				
153			20.8	4								
158			21.0	4			121	4	10.0	1	55.0	4
180	< 24.2	NR							11.0	2	52.4	4
182			26.6	2			106	0			63.5	0
185												
190			31.7	0							47.0	2
191			26.9	2	10.2	4	114	2			67.5	0
193			8.0	0							50.0	3
198	14.3	4	18.1	3							56.8	3
203			21.8	4	10.0	4					51.0	4
211	13.0	3	23.0	4	4.7	0	110	1	< 20	NR	50.0	3
212	15.0	4	20.0	4	11.5	1	140	0	14.0	3	59.0	2
215	17.0	2	19.0	3	5.1	0					50.7	3
217	14.0	4	16.0	2					12.0	3	49.0	3
218							173	0				
219.1					5.1	0	130	2	16.0	1	52.0	4
219.2	17.0	2					140	0	10.0	1	50.0	3
220			17.0	2							47.3	2
221			22.1	4							55.5	3
224			21.2	4					16.6	0	50.5	3
231			22.3	4	9.0	1					49.0	3
234	14.6	4	21.9	4	10.0	4	126	4	15.8	1	31.7	0
235			20.5	4			128	3	11.5	3	55.7	3

Table 7. -*Laboratory performanca ratings for standard reference water sample M-132 (major constituents)*

(MPV,most probable value; ug/L, micrograms per liter; mg/L, milligrams per liter,mS/cm, micro siemens per centimeter at 25° C; Lab, laboratory number; OLR, overall laboratoryrating for all reported values; V/16, number of reported values of 16 possible values; RV, reported value; <, less than)

Rating	Absolute Z-value	Rating	Absolute Z-value
4 (Excellent)	0.00 - 0.50	1 (Questionable)	1.51 - 2.00
3 (Good)	0.51 - 1.00	O (Poor)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

		Analyte =	Alkalinity		B (Boron)		Ca (Calcium)		Cl (Chloride)		DSRD (Dissolved solids)	
		MPV =	94.0 mg/L		30.4 µg/L		38.0 mg/L		55.7 mg/L		277 mg/L	
		F-pseudosigma =	2.4		4.4		1.7		1.3		13	
Lab	OLR	V/16	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
1	2.9	16	1.2	0	30.7	4	38.5	4	55.9	4	264	2
3	3.5	15	95.0	4	31.0	4	40.3	2	57.0	3	278	4
4	0.0	1										
5	3.5	13	93.0	4	33.5	3	37.6	4	54.6	3	294	2
7	2.9	12					39.8	2	55.6	4		
8	2.6	14	99.0	0	< 100	NR	37.5	4	56.2	4	289	3
9	2.9	13	93.0	4			37.2	4	52.0	0	284	3
10	3.3	12	95.6	3			38.5	4	54.2	2	266	3
11	1.9	13	90.9	2	< 50	NR	39.8	2	57.4	2	280	4
12	2.8	12	93.0	4			36.0	2	56.0	4	271	4
13	2.4	13	88.4	0			39.2	3	57.0	3	276	4
15	2.7	15	92.0	3	30.2	4	37.3	4	55.6	4	261	2
16	2.2	15	90.7	2	328.0	0	36.4	3	56.9	3	265	3
18	3.6	15	93.0	4	32.0	4	38.5	4	55.6	4	277	4
19	3.4	10	94.5	4			38.4	4	55.0	4	275	4
23	2.1	13	93.9	4	0.1	0	38.3	4	54.7	3	264	2
24	3.6	13	94.1	4	25.0	2	38.3	4	56.1	4		
25	1.1	15	96.1	3	23.0	1	30.0	0	54.0	2	288	3
30	2.8	5					36.3	3	52.4	0		
32	2.9	13	96.4	2			37.1	3	56.8	3	292	2
33	3.2	11	93.9	4			38.5	4	58.2	1		
38	3.1	10	96.6	2			37.5	4			277	4
39	1.6	7	120.0	0					1.0	0		
40	2.8	15	99.7	0	30.0	4	38.1	4	57.8	1	275	4
42	2.8	15	96.6	2	30.0	4	39.0	3	52.5	0		
59	2.2	13	94.7	4			31.0	0	59.6	0	279	4
69	3.1	10	90.0	1			37.2	4	55.0	4	279	4
70	3.1	13	94.0	4	< 50	NR	40.3	2	57.0	3	290	2
72	2.2	6	91.0	2					55.0	4	304	0
74	3.3	15	95.5	3	31.0	4	36.1	4	56.4	3		
75	2.8	12	96.2	3	26.1	3	37.8	4	51.6	0	282	4
76	3.0	7	92.7	3					55.3	4	286	3
78	1.5	12	95.0	4			45.5	0	56.5	3	458	0
79	2.5	4	95.0	4					52.0	0		
80	2.8	11	96.0	3			40.8	1	56.0	4	285	3
81	3.2	13	94.2	4			38.4	4	55.2	4	294	2
83	3.4	8	93.5	4			36.7	3	55.5	4		
84	3.3	7	93.4	4			39.5	3	55.2	4		
85	3.3	15	92.7	3	31.8	4	36.0	2	56.7	3	274	4
86	2.7	9					38.4	4	55.1	4		
87	2.4	12	94.0	4			35.7	2	53.0	1	264	2
89	3.2	13	94.2	4			35.6	2	55.2	4	269	3
90	2.7	6	93.0	4			38.0	4			286	3
92	3.6	7	94.2	4					55.4	4	294	2
94	3.1	14	96.0	3	28.0	3	38.7	4	53.3	1	286	3
96	2.9	7	92.0	3					55.1	4	266	3
97	2.9	12	91.4	2			37.3	4	56.9	3	246	0
101	3.0	8					38.8	4	57.8	1	288	3
102	1.5	11					35.3	1	55.5	4		
103	2.0	7			35.0	2	35.0	1				
105	2.6	14	98.0	1			37.2	4	58.0	1	279	4
107	3.0	6	96.2	3					56.3	4		
109	2.5	13	95.9	3	32.0	4	37.5	4	60.8	0	131	0
111	2.8	11	93.9	4			45.1	0	53.3	1		
113	3.1	14	92.8	3			37.3	4	55.6	4	277	4
114	2.6	12	94.0	4			35.0	1	55.3	4	290	2
116	2.6	9			26.0	3	39.2	3	54.8	3		
118	2.5	6	93.3	4							290	2
119	2.9	14	94.0	4	30.0	4	38.7	4	55.0	4	259	2
120	3.5	8	93.0	4			36.8	3	55.0	4	275	4
121	3.6	7			25.0	2	37.5	4				
122	3.1	11	97.6	1			34.4	0	55.6	4	283	4
127	3.7	15	94.4	4	30.5	4	37.5	4	55.3	4	275	4
128	2.1	13	87.6	0	< 10	0	37.6	4	54.6	3		
129	3.1	12	94.0	4			38.0	4	55.0	4	284	3

Table 7. *-Laboratory performance ratings for standard reference water sample M-132 (major constituents) --Continued*

			Analyte =	Alkalinity		B (Boron)		Ca (Calcium)		Cl (Chloride)		DSRD (Dissolved solids)	
			MPV =	94.0 mg/L		30.4 µg/L		38.0 mg/L		55.7 mg/L		277 mg/L	
			F-pseudosigma =	2.4		4.4		1.7		1.3		13	
Lab	OLR	V/16		RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
131	2.0	3								53.7	2		
133	2.5	4		91.0	2			38.8	4				
134	3.6	16		96.0	3	31.0	4	39.0	3	56.8	3	277	4
136	1.9	13		97.8	1	< 50	NR	36.3	3	56.4	3	258	1
138	3.2	13		95.9	3			40.9	1	55.8	4	314	0
140	3.0	12						36.5	3	55.6	4	269	3
141	2.7	12		95.8	3	39.0	1	38.4	4	56.0	4		
142	2.8	16		93.0	4	32.0	4	41.0	1	56.5	3	293	2
143	4.0	3											
145	3.1	15		93.5	4	31.0	4	38.1	4	56.9	3		
146	2.0	10		92.1	3			35.8	2	55.9	4	270	3
149	2.9	10		96.0	3			43.0	0			272	4
151	3.0	12		95.0	4			37.0	3	58.0	1	272	4
153	2.4	10		92.5	3			38.6	4	50.3	0		
155	3.3	8		92.0	3			38.0	4			281	4
158	2.7	10		94.0	4			40.8	1	55.7	4	275	4
179	1.6	5						30.0	0	152.0	0		
180	2.5	11		94.1	4	20.1	0	37.3	4	51.6	0		
182	1.1	9						19.0	0	85.0	0	271	4
185	2.3	9						36.2	2	56.6	3		
190	2.5	11						36.8	3	59.3	0	265	3
191	3.3	11		95.2	3			36.4	3	55.7	4		
193	3.0	3								57.3	2		
194	2.2	11		92.7	3	< 100	NR	40.1	2	55.4	4	274	4
196	2.9	9						38.9	3	55.0	4		
197	0.5	6		99.2	0					68.0	0		
203	2.9	7		82.8	0					55.7	4		
204	2.4	5		91.4	2					55.0	4		
208	2.7	3								56.2	4		
209	2.3	7						39.9	2	58.6	0		
211	2.6	14		93.2	4	< 40	NR	38.5	4	59.8	0	279	4
212	2.1	15		85.2	0	32.0	4	41.3	1	56.8	3	270	3
215	1.6	14		98.0	1	30.0	4	39.0	3	54.0	2	266	3
218	1.9	7		87.6	0			40.0	2				
219.1	2.0	7				26.0	3	35.0	1				
219.2	2.5	2											
220	1.9	9		98.0	1			36.0	2	59.6	0		
221	3.6	7						37.8	4	56.0	4	294	2
224	2.8	13		90.0	1			36.6	3	55.7	4	272	4
230	3.3	6						38.0	4	56.5	3		
231	2.0	8		103.0	0			39.8	2	55.0	4		
234	3.1	16		93.4	4	25.2	2	39.5	3	53.3	1	269	3

Table 7. *-Laboratory performance ratings for standard reference water sample M-132 (major constituents) --Continued*

(MPV,most probable value; ug/L, micrograms per liter; mg/L, milligrams per liter,mS/cm, micro siemens per centimeter at 25° C; Lab, laboratory number; OLR, overall laboratoryrating for all reported values; V/16, number of reported values of 16 possible values; RV, reported value; <, less than)

Rating	Absolute Z-value	Rating	Absolute Z-value
4 (Excellent)	0.00 - 0.50	1 (Questionable)	1.51 - 2.00
3 (Good)	0.51 - 1.00	0 (Poor)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

Analyte =	F (Fluoride)		K (Potassium)		Mg (Magnesium)		Na (Sodium)		(total Phosphorus) as P		pH	
MPV =	0.480	mg/L	2.00	mg/L	8.49	mg/L	47.9	mg/L	0.026	mg/L	8.09	
F-pseudosigma =	0.039		0.13		0.33		2.1		0.008		0.18	
Lab	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
1	0.510	3	1.73	0	8.35	4	48.1	4	0.062	0	7.88	2
3	0.482	4	1.98	4	8.60	4	49.8	3	0.024	4	8.04	4
4												
5					8.22	3	47.5	4	0.026	4	8.07	4
7	0.730	0	1.90	3	8.73	3	50.0	3	0.020	3	8.17	4
8	0.500	3	2.30	0	8.80	3	48.7	4	0.050	0	8.03	4
9	0.460	3	2.04	4	8.42	4	49.4	3	0.034	3		
10	0.440	2	1.96	4	8.60	4	46.2	3			8.14	4
11	0.400	0	2.00	4	9.10	1	51.0	2	0.040	1	8.12	4
12	0.500	3	2.00	4	8.50	4	52.0	1	0.030	4	7.70	0
13	0.500	3	1.96	4	8.89	2	47.6	4	0.040	1	8.08	4
15	0.415	1	2.10	3	8.67	3	47.3	4	0.035	2	0.79	0
16	0.480	4	2.10	3	8.10	2	46.0	3	0.055	0	8.00	4
18	0.417	1	2.10	3	8.40	4	48.4	4	0.026	4	8.17	4
19			2.10	3	8.80	3	52.1	1			8.09	4
23	0.510	3	1.82	2	9.11	1	47.0	4	0.073	0	8.13	4
24	0.500	3	1.91	3	8.63	4	47.6	4			8.05	4
25	0.380	0	1.51	0	6.64	0	41.0	0	< 121	NR	7.30	0
30					8.61	4					8.17	4
32	0.564	0	2.07	3	8.47	4	48.5	4			8.13	4
33			1.97	4	8.64	4	47.6	4			8.10	4
38			2.01	4	8.61	4	44.7	2	0.030	4	8.30	2
39	0.490	4							0.026	4	7.20	0
40	0.460	3	2.11	3	8.31	3	48.4	4	0.046	0	8.12	4
42	0.530	2	2.10	3	8.70	3	49.6	3	0.027	4	7.93	3
59			1.90	3	8.10	2	15.0	0	< 0.1	NR	7.92	3
69	0.450	3	2.20	1	8.40	4	44.8	2			8.16	4
70	0.440	2	2.04	4	8.62	4	48.9	4	< 0.1	NR	7.99	3
72	0.460	3										
74	0.463	4	2.10	3	8.20	3	46.4	3	0.034	3	8.21	3
75			1.94	4	8.30	3	47.7	4			8.14	4
76	0.436	2									7.80	1
78	0.550	1	2.05	4	8.20	3	55.0	0	0.041	1	7.90	2
79											8.16	4
80	0.440	2	2.00	4	8.50	4	46.5	3			7.85	2
81	0.460	3	1.92	3	8.34	4	48.1	4	0.025	4	8.10	4
83	0.500	3			8.37	4	46.3	3				
84					7.89	1	47.9	4			8.08	4
85	0.480	4	2.25	1	8.53	4	45.6	2	0.027	4	8.18	3
86			2.55	0	8.80	3	48.3	4			8.11	4
87			2.04	4	8.22	3	48.0	4	0.024	4	7.89	2
89	0.480	4	1.86	2	8.46	4	46.9	4	0.021	3	7.84	2
90							64.0	0			8.17	4
92									< 0.01	NR	8.05	4
94	0.470	4	1.80	1	8.30	3	47.0	4	0.026	4	8.11	4
96	0.530	2									8.14	4
97	0.458	3	1.94	4	8.43	4	48.6	4			8.20	3
101			2.00	4	8.40	4	47.5	4			7.33	0
102	0.510	3	1.40	0	9.50	0	40.2	0	0.024	4		
103			1.70	0	8.20	3	50.0	3				
105	0.490	4	2.35	0	8.01	2	46.5	3	0.040	1	7.98	3
107	0.520	2							0.038	2	8.14	4
109	0.520	2	2.18	2	8.50	4	45.8	3			8.18	3
111			1.99	4	8.44	4	47.7	4	0.024	4	8.51	0
113	0.480	4	1.95	4	8.54	4	50.4	2	0.010	1	7.45	0
114	0.497	4	2.00	4	8.50	4	44.0	1	0.020	3	7.87	2
116			1.73	0	8.80	3	50.3	2				
118									0.020	3	7.90	2
119	0.480	4	1.50	0	8.50	4	48.6	4	0.040	1	8.23	3
120	0.480	4	2.06	4	7.94	1	47.7	4	< 0.01	NR		
121			1.92	3	8.60	4	48.0	4				
122	0.460	3	2.01	4	8.49	4	47.5	4			8.15	4
127	0.500	3	2.07	3	8.05	2	48.8	4	0.023	4	8.18	3
128	0.400	0	2.81	0	8.01	2	46.7	3	< 0.05	NR	8.13	4
129	0.595	0	2.00	4	8.40	4	47.0	4	0.001	0	8.02	4

Table 7. *-Laboratory performance ratings for standard reference water sample M-132 (major constituents) --Continued*

Analyte =	F (Fluoride)		K (Potassium)		Mg (Magnesium)		Na (Sodium)		(total Phosphorus) as P		pH	
MPV =	0.480 mg/L		2.00 mg/L		8.49 mg/L		47.9 mg/L		0.026 mg/L		8.09	
F-pseudosigma =	0.039		0.13		0.33		2.1		0.008		0.18	
Lab	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
131	0.907	0							< 0.2	NR		
133					8.70	3			0.010	1		
134	0.500	3	1.90	3	8.60	4	47.0	4	0.030	4	8.14	4
136			2.00	4	7.90	1	47.2	4			7.76	1
138	0.490	4	2.00	4	8.66	3	50.7	2	0.026	4	8.08	4
140	0.498	4	1.90	3	8.20	3	47.0	4	0.010	1	7.93	3
141	0.463	4	2.17	2	8.55	4	50.7	2	< 0.05	NR	7.74	1
142	0.480	4	1.85	2	9.20	0	49.5	3	0.027	4	7.92	3
143									0.028	4	8.10	4
145	0.850	0	1.88	3	8.32	3	46.4	3	0.020	3	8.16	4
146	0.467	4	1.48	0	8.12	2	44.4	1			6.43	0
149	0.460	3	3.20	0	8.40	4	47.6	4	0.030	4	8.10	4
151	0.300	0	1.94	4	8.26	3	48.5	4	0.026	4		
153	0.410	1	1.82	2	8.65	4	50.2	2			7.81	1
155					8.73	3			0.025	4	8.01	4
158			2.07	3	8.91	2	52.4	0	< 0.03	NR	7.85	2
179			1.96	4	7.40	0	47.9	4	< 0.18	NR		
180	0.420	1	2.26	0	8.82	2	47.9	4	< 0.025	NR	8.07	4
182					4.18	0	23.7	0			7.83	2
185	0.510	3	2.03	4	8.13	2	51.2	1	0.015	2		
190	0.456	3	1.92	3	8.20	3	50.1	2	0.024	4		
191			1.89	3	6.28	3	48.2	4	0.023	4	8.19	3
193												
194	0.520	2	2.30	0	9.20	0	52.5	0	< 0.10	NR	8.09	4
196	0.350	0	2.04	4	8.60	4	48.3	4			8.31	2
197	0.728	0									8.23	3
203									0.026	4	8.15	4
204											7.96	3
208	0.400	0										
209			0.86	0	8.90	2					8.12	4
211	0.470	4	2.00	4	8.90	2	49.0	3	0.130	0	8.07	4
212	0.440	2	2.10	3	9.30	0	53.4	0	0.026	4	8.10	4
215	0.400	0	3.00	0	8.70	3	48.9	4	0.170	0	8.20	3
218			1.90	3	8.56	4	1.5	0			7.87	2
219.1			2.00	4	7.80	0	46.0	3				
219.2												
220			1.90	3	8.00	2	46.0	3	0.020	3		
221			2.00	4	8.43	4	46.8	3	0.030	4		
224	0.680	0	1.98	4	8.04	2	46.6	3	0.030	4	8.05	4
230			1.99	4	8.70	3	49.6	3				
231			1.81	1	8.51	4	49.6	3				
234	0.460	3	1.92	3	8.35	4	49.9	3	0.023	4	8.23	3

Table 7. *-Laboratory performance ratings for standard reference water sampla M-132 (major constituents) --Continued*

(MPV,most probable value; ug/L, micrograms per liter; mg/L, milligrams per liter,mS/cm, micro siemens per centimeter at 25° C; Lab, laboratory number; OLR, overall laboratoryrating for all reported values; V/16, number of reported values of 16 possible values; RV, reported value; <, less than)

Rating	Absolute Z-value	Rating	Absolute Z-value
4 (Excellent)	0.00 - 0.50	1 (Questionable)	1.51 - 2.00
3 (Good)	0.51 - 1.00	0 (Poor)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

Analyte =	SiO2 (Silica)		SO4 (Sulfate)		Sp Cond		Sr (Strontium)		V (Vanadium)	
MPV =	2.46	mg/L	60.0	mg/L	493	µS/cm	248	µg/L	2.00	µg/L
F-pseudosigma =	0.24		2.6		13		21		1.82	
Lab	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
1	2.47	4	58.8	4	498	4	243	4	1.05	3
3	2.93	1	59.6	4	495	4	251	4	< 10	NR
4			49.0	0						
5	2.57	4	58.0	3	500	3	247	4	< 4	NR
7	2.70	2	61.1	4	484	3	250	4	< 3	NR
8	2.60	3	60.3	4	459	0	250	4	< 5	NR
9	2.00	1	60.0	4	468	1	243	4		
10	2.30	3	61.2	4	499	4				
11	2.29	3	53.0	0	12	0			< 10	NR
12			60.0	4	422	0				
13	1.17	0	56.5	2	514	1				
15	2.72	2	60.3	4	529	0	258	4	< 10	NR
16			50.1	0	549	0	219	2	2.40	4
18	2.40	4	59.6	4	479	2	240	4	< 5	NR
19			58.6	3	498	4				
23			69.9	0	666	0				
24	2.64	3	60.4	4	498	4	238	4		
25	3.43	0	62.2	3	493	4	205	1	6.00	0
30			57.5	3						
32	2.59	3	58.0	3	496	4	236	3	< 2	NR
33	2.97	0	62.4	3	492	4	269	3		
38	2.36	4			518	1				
39			62.0	3	520	0				
40	2.20	2	58.2	3	493	4	230	3		
42	2.60	3	60.0	4	522	0	257	4	1.40	4
59	2.50	4	62.6	2	480	2	223	2	3.00	3
69			61.0	4						
70	2.48	4	61.0	4	524	0	252	4	< 50	NR
72			26.0	0	487	4				
74	2.60	3	56.4	2	490	4	230	3	1.20	4
75	2.66	3	48.2	0	477	2				
76			59.6	4	487	4				
78			43.8	0	464	0				
79					480	2				
80	< 3	NR	63.9	1	491	4				
81			67.0	0	507	2	228	3		
83	2.12	2	59.6	4						
84					503	3				
85	2.60	3	59.0	4	488	4	250	4	< 20	NR
86			64.5	1	520	0	256	4		
87	2.71	2	69.0	0	471	1				
89	2.46	4	61.2	4	478	2				
90					471	1				
92	2.38	4	59.2	4	486	3				
94			58.0	3	485	3	242	4	< 5	NR
96			62.0	3	513	1				
97			62.6	2	491	4	216	2		
101					490	4				
102	2.10	1	63.0	2	537	0	275	2	< 10	NR
103	2.18	2					262	3		
105	2.55	4	59.0	4	509	2	246	4	< 20	NR
107					485	3				
109	2.30	3	54.0	0	488	4				
111	2.49	4	56.7	2	496	4				
113	2.34	3	59.2	4	498	4	260	3		
114			64.1	1	474	1				
116	2.72	2	59.6	4			268	3		
118	1.19	0			487	4				
119	3.00	0	61.0	4	483	3				
120										
121	2.45	4					250	4	< 1	NR
122			62.8	2	495	4				
127	2.49	4	60.9	4	493	4	248	4	< 3	NR
128	2.19	2	60.2	4	509	2	267	3	< 10	NR
129			60.5	4	480	2				

Table 7. *-Laboratory performance ratings for standard reference water sample M-132 (major constituents) --Continued*

Analyte =	SiO2 (Silica)		SO4 (Sulfate)		Sp Cond		Sr (Strontium)		V (Vanadium)	
MPV =	2.46 mg/L		60.0 mg/L		493 µS/cm		248 µg/L		2.00 µg/L	
F-pseudosigma =	0.24		2.6		13		21		1.82	
Lab	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
131			58.8	4						
133										
134	2.28	3	60.7	4	496	4	247	4	0.94	3
136	1.98	1	57.9	3	505	3	301	0	11.00	0
138	2.50	4	59.9	4			252	4	< 2	NR
140	2.43	4	67.0	0	487	4				
141	2.36	4	56.2	2	473	1			< 10	NR
142	2.30	3	63.0	2	493	4	268	3	0.80	3
143					494	4				
145	2.41	4	62.8	2	483	3	231	3	3.63	3
146					516	1			< 10	NR
149					500	3				
151	2.83	1	60.0	4	490	4				
153			60.3	4	501	3				
155	2.84	1			500	3				
158			61.3	3	499	4				
179										
180			61.0	4	493	4			< 4	NR
182			59.0	4	398	0	106	0		
185			60.2	4	457	0				
190	1.12	0	61.6	3	494	4				
191	2.79	2	60.0	4			230	3		
193			60.2	4	501	3				
194			62.4	3	479	2			< 50	NR
196			56.3	2	500	3				
197			66.8	0	370	0				
203	2.49	4	23.5	0	490	4				
204	2.60	3	69.6	0						
208			60.0	4						
209	2.39	4	61.0	4						
211	1.72	0	63.7	2	494	4	220	2	< 20	NR
212	2.90	1	61.5	3	486	3	280	1	< 40	NR
215	1.36	0	43.1	0	450	0				
218							273	2		
219.1	1.10	0					230	3		
219.2							280	1	2.00	4
220			51.0	0	500	3				
221										
224			60.8	4	485	3			4.80	1
230			58.2	3						
231	2.13	2	47.0	0						
234	2.39	4	57.5	3	500	3	229	3	1.18	4

Table 8. *-Laboratory performance ratings for standard reference water sample N-43 (nutrient)*

(MPV, most probable value; mg/L, milligrams per liter; Lab, laboratory number; OLR, overall laboratory rating for all reported values; V/5, number of reported values of 5 possible values; RV, reported value; <, less than)

Rating	Absolute Z-value	Rating	Absolute Z-value
4 (Excellent)	0.00 - 0.50	1 (Questionable)	1.51 - 2.00
3 (Good)	0.51 - 1.00	0 (Poor)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

			Analyte =	(Ammonia as nitrogen)		(Ammonia + Organic N as nitrogen)		(Nitrate & Nitrite as nitrogen)		(total Phosphorus as phosphorus)		(Orthophosphate as phosphorus)	
			MPV =	0.108 mg/L		0.226 mg/L		0.145 mg/L		0.131 mg/L		0.096 mg/L	
			F-pseudosigma =	0.025		0.072		0.009		0.013		0.008	
Lab	OLR	V/5		RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
1	2.8	5		0.110	4	0.270	3	0.150	3	0.120	3	0.110	1
3	1.3	4		0.267	0	< 1	NR	0.130	1	0.131	4	0.079	0
5	3.0	4		0.108	4			0.127	0	0.133	4	0.096	4
7	3.3	3		0.120	4			0.140	3	0.140	3	< 0.34	NR
8	0.8	5		0.800	0	0.600	0	0.140	3	0.160	0	0.110	1
9	3.4	5		0.120	4	0.260	4	0.149	4	0.158	1	0.093	4
10	4.0	5		0.110	4	0.190	4	0.146	4	0.130	4	0.098	4
11	3.0	5		0.110	4	0.220	4	0.130	1	0.150	2	0.100	4
12	3.0	3		< 0.2	NR	< 0.3	NR	0.140	3	0.142	3	0.091	3
13	2.3	4		0.090	3			< 0.10	0	0.150	2	0.100	4
15	1.4	5		0.680	0	1.200	0	0.800	0	0.132	4	0.102	3
18	4.0	5		0.099	4	0.250	4	0.143	4	0.128	4	0.098	4
19	2.8	4		0.080	2			0.150	3	0.140	3	0.090	3
21	3.0	5		0.090	3	0.200	4	0.172	0	0.135	4	0.095	4
22	4.0	1								0.134	4		
23	3.5	4		0.120	4			0.150	3	0.130	4	0.090	3
25	1.3	3		0.156	1			0.140	3	< 0.121	NR	0.006	0
30	4.0	2						0.145	4			0.098	4
32	3.0	3		0.099	4			0.134	2			0.089	3
33	3.7	3		0.096	4			0.150	3			0.100	4
36	1.8	5		0.080	2	0.800	0	0.132	1	0.150	2	0.100	4
38	4.0	5		0.095	4	0.190	4	0.146	4	0.134	4	0.092	4
42	2.3	3						0.100	0	0.123	3	0.098	4
59	3.2	5		0.111	4	0.200	4	0.145	4	0.100	0	0.096	4
69	0.0	1						0.120	0				
70	2.3	3		< 0.1	NR	< 0.1	NR	0.140	3	0.100	0	0.100	4
72	2.4	5		0.125	3	0.260	4	1.430	0	0.130	4	0.110	1
74	2.8	5		0.124	3	0.195	4	0.141	4	0.138	3	0.119	0
75	4.0	2						0.148	4			0.100	4
76	3.0	2		0.090	3			0.139	3				
78	0.0	3						0.180	0	0.089	0	0.063	0
80	0.7	3		0.076	2			0.104	0			0.130	0
81	1.2	5		0.072	2	0.518	0	0.140	3	0.100	0	0.081	1
83	2.8	4		0.100	4			0.170	0	0.124	3	0.094	4
84	2.5	2		0.100	4			0.130	1				
85	3.2	5		0.122	3	0.250	4	0.140	3	0.118	3	0.102	3
86	0.3	3		0.280	0			0.230	0	0.110	1		
87	1.8	5		0.103	4	0.368	1	0.325	0	0.132	4	0.122	0
89	3.6	5		0.094	3	0.231	4	0.141	4	0.137	4	0.102	3
90	3.6	5		0.103	4	0.276	3	0.146	4	0.130	4	0.089	3
91	2.0	3		0.080	2	0.270	3	0.130	1				
92	2.0	4		0.092	3			0.152	3	0.100	0	0.086	2
94	3.3	4		0.107	4	0.146	2	0.140	3	0.127	4		
96	3.0	5		0.052	0	0.217	4	0.146	4	0.122	3	0.094	4
97	2.8	5		0.090	3	0.150	2	0.140	3	0.140	3	0.090	3
102	2.0	5		0.045	0	0.240	4	0.120	0	0.122	3	0.089	3
105	2.3	4		0.070	2	< 0.2	NR	0.120	0	0.140	3	0.100	4
107	3.0	4		0.096	4			0.148	4	0.132	4	0.124	0
111	2.5	4		0.130	3			0.500	0	0.139	3	0.097	4
113	3.0	3		0.062	1	< 0.5	NR			0.126	4	0.096	4
114	2.0	2		< 0.1	NR			0.166	0	0.130	4		
118	3.2	5		0.080	2	0.240	4	0.150	3	0.130	4	0.090	3
119	3.4	5		0.110	4	0.160	3	0.150	3	0.130	4	0.090	3
120	1.4	5		0.160	0	0.461	0	0.150	3	0.120	3	0.080	1
122	2.4	5		0.102	4	0.138	2	0.129	1	0.111	1	0.092	4
127	2.8	5		0.175	0	0.171	3	0.137	3	0.135	4	0.092	4
128	2.0	5		0.120	4	0.310	2	0.080	0	0.120	3	0.080	1
129	2.0	3						0.400	0	0.129	4	0.087	2
133	2.0	5		0.080	2	0.110	1	1.500	0	0.140	3	0.100	4
134	2.8	4		0.080	2	< 0.2	NR	0.140	3	0.140	3	0.090	3
136	0.0	1		0.220	0								
140	1.0	5		0.080	2	0.110	1	0.132	1	0.110	1	0.076	0
142	2.8	5		0.138	2	0.210	4	0.210	0	0.130	4	0.095	4
143	2.4	5		< 0.02	0	0.300	2	0.138	3	0.125	4	0.090	3
145	2.4	5		0.110	4	0.090	1	0.140	3	0.160	0	0.100	4

Table 8. *-Laboratory performance ratings for standard reference water sample N-43 (nutrient) --Continued*

		Analyte =	(Ammonia as nitrogen)		(Ammonia + Organic N as nitrogen)		(Nitrate & Nitrite as nitrogen)		(total Phosphorus as phosphorus)		(Orthophosphate as phosphorus)	
		MPV =	0.108 mg/L		0.226 mg/L		0.145 mg/L		0.131 mg/L		0.096 mg/L	
		F-pseudosigma =	0.025		0.072		0.009		0.013		0.008	
Lab	OLR	V/5	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
146	1.3	3	0.460	0			0.204	0			0.096	4
149	3.5	2	0.100	4					0.140	3		
151	3.3	3	0.110	4					0.151	2	0.100	4
155	3.4	5	0.098	4	0.180	3	0.157	2	0.131	4	0.092	4
158	2.3	3	0.124	3			0.147	4			0.138	0
179	2.0	2	< 0.4	NR	< 2	NR			0.220	0	0.100	4
180	3.2	5	0.084	3	0.170	3	0.150	3	0.144	3	0.097	4
185	1.0	4	0.196	0			0.124	0	0.107	1	0.088	3
190	1.5	4	0.121	3			0.140	3	0.098	0	0.138	0
191	4.0	1							0.132	4		
193	3.0	2	0.094	3			0.140	3				
194	2.3	3	0.130	3			0.150	3	0.110	1		
197	3.5	2	0.092	3			0.144	4				
203	3.5	4	0.112	4			0.137	3	0.132	4	0.102	3
209	4.0	3	0.108	4	0.260	4	0.142	4				
211	1.2	5	0.140	2	0.200	4	0.190	0	0.230	0	0.160	0
212	2.5	4	0.110	4	< 0.5	NR	0.130	1	0.130	4	0.110	1
215	0.0	4	1.060	0			0.450	0	1.600	0	1.400	0
220	2.3	4	0.110	4			0.150	3	0.110	1	0.110	1
224	1.2	5	0.090	3	0.699	0	0.200	0	0.699	0	0.090	3
231	0.0	3	0.830	0			0.740	0			0.860	0
234	3.0	5	0.086	3	0.074	0	0.146	4	0.137	4	0.092	4

Table 9. *-Laboratory performance ratings for standard reference water sample N-44 (nutrient)*

(MPV, most probable value; mg/L, milligrams per liter; Lab, laboratory number; OLR, overall laboratory rating for all reported values; V/5, number of reported values of 5 possible values; RV, reported value; <, less than)

Rating	Absolute Z-value	Rating	Absolute Z-value
4 (Excellent)	0.00 - 0.50	1 (Questionable)	1.51 - 2.00
3 (Good)	0.51 - 1.00	0 (Poor)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

			Analyte =	(Ammonia as nitrogen)		(Ammonia + Organic N as nitrogen)		(Nitrate & Nitrite as nitrogen)		(total Phosphorus as phosphorus)		(Orthophosphate as phosphorus)	
			MPV =	0.900 mg/L		1.24 mg/L		0.800 mg/L		0.920 mg/L		0.898 mg/L	
			F-pseudosigma =	0.145		0.14		0.041		0.031		0.096	
Lab	OLR	V/5		RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
1	3.4	5		0.760	3	1.21	4	0.780	4	0.900	3	0.840	3
3	2.8	5		1.000	3	1.30	4	0.830	3	0.942	3	0.744	1
5	2.3	4		1.090	2			0.728	1	0.961	2	0.905	4
7	3.3	4		1.100	2			0.840	3	0.930	4	0.860	4
8	1.4	5		3.000	0	2.00	0	0.800	4	1.060	0	0.970	3
9	2.6	5		0.721	2	1.40	2	0.793	4	0.929	4	0.745	1
10	3.4	5		0.760	3	1.30	4	0.820	4	0.910	4	0.800	2
11	2.4	5		0.710	2	1.39	2	0.840	3	0.950	3	0.760	2
12	3.4	5		0.900	4	1.00	1	0.780	4	0.916	4	0.906	4
15	2.2	5		0.683	2	1.28	4	0.792	4	1.040	0	0.708	1
18	3.4	5		0.978	3	1.20	4	0.773	3	0.897	3	0.927	4
19	2.8	4		0.880	4			0.880	1	0.920	4	0.760	2
22	4.0	1								0.933	4		
23	3.4	5		0.820	3	1.38	3	0.810	4	0.890	3	0.910	4
25	0.5	4		0.600	0			0.750	2	< 0.121	0	0.027	0
33	1.7	3		0.940	4			0.900	0			1.050	1
36	2.8	5		0.830	4	1.40	2	0.680	0	0.910	4	0.890	4
38	2.8	5		0.760	3	1.20	4	0.824	3	0.940	3	0.739	1
42	3.0	3						0.800	4	0.884	2	0.809	3
59	3.8	5		0.930	4	1.20	4	0.815	4	0.900	3	0.900	4
69	0.0	1						0.710	0				
70	3.4	5		0.890	4	1.05	2	0.780	4	0.890	3	0.860	4
72	3.8	5		0.940	4	1.27	4	0.810	4	0.940	3	0.930	4
74	3.0	5		0.924	4	1.15	3	0.796	4	1.040	0	0.922	4
75	3.0	2						0.790	4			0.790	2
76	3.0	2		0.927	4			0.752	2				
78	0.0	3						0.660	0	0.572	0	0.188	0
79	0.0	2				1.84	0			0.800	0		
80	2.0	3		0.990	3			0.623	0			0.962	3
81	3.4	5		1.090	2	1.24	4	0.811	4	0.902	3	0.904	4
83	2.0	4		0.998	3			0.940	0	0.857	1	0.930	4
84	4.0	2		0.930	4			0.780	4				
85	2.8	5		0.699	2	1.20	4	0.830	3	0.900	3	0.770	2
86	2.5	4		0.810	3			0.800	4	0.940	3	0.690	0
87	2.6	5		0.542	0	1.22	4	0.820	4	0.900	3	0.796	2
89	3.8	5		0.790	3	1.31	4	0.795	4	0.933	4	0.903	4
90	2.4	5		0.953	4	1.05	2	0.872	1	0.978	1	0.909	4
91	1.7	3		0.690	2	1.51	1	0.740	2				
92	3.0	4		0.950	4			0.835	3	0.969	1	0.905	4
94	4.0	4		0.960	4	1.22	4	0.780	4	0.934	4		
96	3.6	5		1.046	2	1.23	4	0.784	4	0.930	4	0.896	4
97	2.4	5		0.700	2	1.29	4	0.820	4	0.850	0	0.770	2
102	3.6	5		0.950	4	1.22	4	0.770	3	0.890	3	0.860	4
105	2.6	5		0.790	3	2.33	0	0.810	4	0.930	4	0.792	2
107	3.0	4		0.913	4			0.789	4	0.849	0	0.924	4
111	2.0	4		1.130	1			2.900	0	0.926	4	0.804	3
113	3.8	5		0.953	4	1.17	4	0.773	3	0.931	4	0.900	4
114	1.3	3		0.720	2			0.841	2	1.000	0		
118	4.0	5		0.970	4	1.23	4	0.790	4	0.920	4	0.920	4
119	2.6	5		0.970	4	1.26	4	0.920	0	0.920	4	0.720	1
120	3.2	5		1.029	3	1.41	2	0.800	4	0.900	3	0.900	4
122	2.4	5		0.716	2	1.24	4	0.792	4	0.812	0	0.766	2
127	2.8	5		1.060	2	1.23	4	0.734	1	0.898	3	0.879	4
128	3.0	5		0.950	4	1.19	4	0.730	1	0.920	4	1.010	2
129	3.0	5		0.904	4	2.29	0	0.798	4	0.948	3	0.919	4
133	1.6	5		0.380	0	0.78	0	1.000	0	0.930	4	0.890	4
134	4.0	5		0.900	4	1.30	4	0.800	4	0.910	4	0.910	4
136	1.3	3		0.830	4	0.83	0	0.530	0				
138	2.6	5		0.698	2	1.27	4	0.746	2	0.947	3	0.777	2
140	3.6	5		0.900	4	1.27	4	0.832	3	0.945	3	0.918	4
141	2.6	5		0.806	3	1.38	3	0.759	2	0.872	1	0.945	4
142	3.4	5		0.980	3	1.31	4	0.858	2	0.920	4	0.910	4
143	3.0	5		0.770	3	1.20	4	0.807	4	0.904	3	0.728	1
145	3.4	5		0.950	4	1.09	2	0.800	4	0.940	3	0.930	4
146	3.3	3		0.961	4			0.770	3			0.958	3

Table 9. *-Laboratory performance ratings for standard reference water sample N-44 (nutrient) --Continued*

		Analyte =	(Ammonia as nitrogen)		(Ammonia + Organic N as nitrogen)		(Nitrate & Nitrite as nitrogen)		(total Phosphorus as phosphorus)		(Orthophosphate as phosphorus)	
		MPV =	0.900 mg/L		1.24 mg/L		0.800 mg/L		0.920 mg/L		0.898 mg/L	
		F-pseudosigma =	0.145		0.14		0.041		0.031		0.096	
Lab	OLR	V/5	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
149	3.0	1	0.800	3								
151	1.0	2	0.390	0							1.020	2
155	3.6	5	0.876	4	1.17	4	0.842	2	0.905	4	0.877	4
158	3.8	4	0.887	4			0.791	4	0.943	3	0.875	4
179	2.3	4	0.780	3	2.00	0			0.900	3	0.952	3
180	3.0	5	0.890	4	1.16	3	0.792	4	0.835	0	0.909	4
185	3.0	4	0.971	4			0.679	0	0.932	4	0.851	4
190	3.0	5	0.990	3	1.21	4	0.850	2	0.950	3	0.987	3
191	3.5	2					0.778	3			0.895	4
193	4.0	1					0.810	4				
194	1.7	3	1.340	0			0.800	4	0.860	1		
196	4.0	2					0.810	4			0.904	4
197	4.0	2	0.893	4			0.793	4				
203	2.5	4	0.923	4			0.852	2	0.856	0	0.934	4
204	2.8	4	0.983	3	2.09	0	0.809	4	0.930	4		
205	0.5	2	1.140	1			0.900	0				
206	4.0	2					0.810	4			0.910	4
208	2.5	2					0.787	4			0.720	1
211	2.8	5	0.900	4	1.14	3	0.840	3	0.990	0	0.910	4
212	1.2	5	1.000	3	1.40	2	0.880	1	0.600	0	1.100	0
215	1.4	5	0.720	2	1.80	0	0.870	1	0.950	3	0.720	1
220	2.5	4			1.07	2	0.900	0	0.920	4	0.930	4
221	2.2	5	0.980	3	2.10	0	1.000	0	0.910	4	0.890	4
224	2.2	5	0.720	2	1.39	2	0.894	0	0.890	3	0.940	4
231	0.0	3	0.050	0			0.100	0			0.130	0
234	2.8	5	0.869	4	0.62	0	0.760	3	0.898	3	0.883	4

Table 10. -*Laboratory performance ratings for standard refarence water sample P-23 (low ionic strength)*

(MPV,most probable value; ug/L, micrograms per liter; mg/L, milligrams per liter,mS/cm, micro siemens per centimeter at 25°C; Lab, laboratory number; OLR, overall laboratoryrating for all reported values; V/16, number of reported values of 16 possible values; RV, reported value; <, less than)

Rating	Absolute Z-value	Rating	Absolute Z-value
4 (Excellent)	0.00 - 0.50	1 (Questionable)	1.51 - 2.00
3 (Good)	0.51 - 1.00	O (Poor)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

			Analyte =	Acidity as $CaCO_3$		Ca (Calcium)		Cl (Chloride)		F (Fluoride)		K (Potassium)	
			MPV =	2.90 mg/L		1.13 mg/L		0.310 mg/L		0.120 mg/L		0.483 mg/L	
			F-pseudosigma =	1.89		0.10		0.205		0.014		0.05	
Lab	OLR	V/11		RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
1	3.6	11		4.43	3	1.16	4	0.280	4	0.120	4	0.490	4
3	2.7	7		< 10	NR	0.90	0	< 0.5	NR	< 0.1	NR	0.470	4
5	2.6	8				1.09	4	0.380	4				
7	3.0	5						0.310	4	0.180	0		
8	1.8	10		< 5	NR	1.00	2	0.300	4	0.200	0	0.800	0
11	2.3	9		< 1	NR	1.07	3	0.600	2	0.110	3	0.538	2
15	2.0	9		< 2	NR	1.08	4	< 1	NR	0.121	4	0.587	0
18	2.9	9		< 1	NR	1.20	3	0.536	2	0.082	0	< 1	NR
23	2.6	7				< 2	NR	< 1	NR	0.140	2	0.530	3
25	0.3	7		9.62	0	0.87	0	< 2	NR	0.096	1	< 1.21	NR
32	2.7	6		2.07	4			0.268	4	0.119	4		
33	3.3	9				1.04	3	0.250	4			0.481	4
38	3.1	8		4.92	2	1.11	4					0.480	4
39	0.8	5		< 5	NR			1.000	0	0.090	0		
59	2.5	4						< 1	NR				
74	3.1	11		3.00	4	1.20	3	0.390	4	0.120	4	0.540	2
78	1.4	9		< 10	NR	1.90	0	3.500	0	0.090	0	0.400	1
80	1.8	5				< 0.6	0	< 1.2	NR			< 1.2	NR
81	2.2	11		2.10	4	1.17	4	7.100	0	0.130	3	0.462	4
89	2.5	11		2.15	4	0.84	0	0.620	1	0.119	4	0.458	4
92	3.6	5		1.65	3			0.310	4				
94	2.9	8				1.20	3	0.320	4	0.080	0	< 1	NR
101	2.6	7				1.21	3	0.990	0			0.500	4
102	0.5	6				0.86	0	< 1	NR			0.200	0
105	3.2	10		0.20	2	1.15	4	0.260	4	< 0.2	NR	0.580	1
107	3.5	4						< 3	NR	0.120	4		
110	3.4	9				1.20	3	0.205	3	0.120	4	0.450	3
111	3.3	9				1.13	4	0.570	2			0.490	4
113	1.4	9				1.60	0	0.983	0	0.122	4	0.350	0
116	2.0	6				0.93	0	0.500	3			0.390	1
127	3.6	11		4.04	3	1.07	3	0.309	4	0.119	4	0.526	3
134	3.8	10				1.16	4	0.272	4	0.130	3	0.480	4
136	2.2	9		10.50	0	1.07	3	0.330	4			0.460	4
141	2.9	9		5.02	2	0.97	1	< 1	NR	0.129	3	0.520	3
143	4.0	3											
145	3.1	11		2.50	4	1.13	4	0.280	4	0.160	0	0.480	4
146	2.4	7		< 10	NR	1.12	4	< 1	NR	0.129	3	< 1	NR
155	2.4	5				1.75	0						
158	1.1	8				2.37	0	0.190	3			0.780	0
180	2.7	7				1.10	4	< 0.25	NR	0.012	0	< 1.18	NR
185	3.2	6				1.13	4					0.482	4
190	2.7	10				1.41	0	0.283	4	0.125	4	0.501	4
196	2.3	10				1.21	3	0.291	4	0.085	0	0.504	4
197	3.0	5						0.225	4	0.112	3		
203	2.3	4		2.68	4			< 1	NR				
204	2.7	3											
209	3.3	7				1.13	4	0.265	4			0.480	4
215	1.6	8		< 5	NR	1.00	2	< 1	NR	0.110	3	2.300	0
224	3.5	11		2.90	4	1.15	4	0.310	4	0.220	0	0.484	4
228	2.6	8				1.69	0	0.281	4			0.451	3

Table 10. *-Laboratory performance ratings for standard reference weter sample P-23 (low ionic strength) --Continued*

(MPV,most probable value; ug/L, micrograms per liter; mg/L, milligrams per liter,mS/cm, micro siemens per centimeter at 25° C; Lab, laboratory number; OLR, overall laboratoryrating for all reported values; V/16, number of reported values of 16 possible values; RV, reported value; <, less than)

Rating	Absolute Z-value	Rating	Absolute Z-value
4 (Excellent)	0.00 - 0.50	1 (Questionable)	1.51 - 2.00
3 (Good)	0.51 - 1.00	0 (Poor)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

Analyte =	Mg (Magnesium)		Na (Sodium)		pH		PO_4 (Orthophosphate as P)		SO_4 (Sulfate)		Sp Cond	
MPV =	0.317	mg/L	0.500	mg/L	6.40		0.133	mg/L	1.28	mg/L	14.2	µS/cm
F-pseudosigma =	0.019		0.057		0.23		0.006		0.20		1.2	
Lab	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating	RV	Rating
1	0.310	4	0.500	4	6.58	3	0.140	2	1.27	4	14.4	4
3	0.256	0	0.460	3	6.49	4	0.133	4	< 1	NR	14.0	4
5	0.299	3	0.582	2	6.70	2	0.130	4	1.52	2	17.8	0
7					6.45	4	< 0.34	NR	1.20	4	13.5	3
8	0.290	2	0.520	4	6.25	3	0.170	0	1.40	3	10.5	0
11	0.326	4	0.518	4	8.56	3	0.150	0	< 1	NR	434.0	0
15	0.311	4	0.557	3	5.26	0	0.147	0	1.13	3	17.3	0
18	0.300	3	0.500	4	8.40	4	0.135	4	1.55	2	14.0	4
23	< 0.5	NR	0.580	2	6.61	3	0.130	4	2.50	0	14.2	4
25	0.248	0	0.376	0			0.004	0	< 10	NR	16.0	1
32							0.113	0	1.26	4	20.2	0
33	0.305	3	0.466	3	6.28	3	0.140	2	1.23	4	13.8	4
38	0.304	3	0.480	4	6.70	2	0.129	3			14.9	3
39					8.00	1	0.120	0			15.0	3
59					6.16	2	0.100	0	1.20	4	13.9	4
74	0.340	2	0.590	1	6.44	4	0.129	3	1.35	4	13.6	3
78	0.300	3	0.500	4	6.44	4	0.086	0	< 10	NR	12.1	1
80	< 0.4	NR	< 0.7	NR	6.12	2	0.130	4	9.10	0	15.3	3
81	0.329	3	0.441	2	6.50	4	0.112	0	2.17	0	22.7	0
89	0.299	3	0.464	3	6.52	3	0.138	3	1.85	0	13.5	3
92					6.36	4	0.133	4	1.48	3		
94	0.300	3	0.500	4	6.42	4			1.63	1	13.7	4
101	0.320	4	0.500	4	5.20	0					15.0	3
102	0.340	2	0.300	0			0.170	0	< 10	NR	12.0	1
105	0.320	4	0.504	4	6.22	3	0.136	4	1.27	4	15.4	2
107					6.56	3	0.138	3			14.3	4
110	0.320	4	0.420	2	6.33	4			1.27	4	14.0	4
111	0.310	4	0.500	4	7.09	0	0.136	4	1.22	4	13.9	4
113	0.390	0	0.600	1	7.63	0	0.133	4	< 2	NR	14.4	4
116	0.260	0	0.500	4					1.20	4		
127	0.316	4	0.533	3	6.36	4	0.130	4	1.24	4	13.8	4
134	0.324	4	0.540	3	6.37	4	0.130	4	1.29	4	14.4	4
136	0.220	0	0.400	1	5.82	0			1.25	4	14.0	4
141	0.313	4	0.483	4	6.20	3	0.140	2	< 10	NR	14.7	4
143					6.40	4	0.130	4			14.0	4
145	0.320	4	0.460	3	6.55	3	0.140	2	1.35	4	15.4	2
146	0.345	2	0.484	4	5.46	0	0.138	3			12.4	1
155	0.350	1			6.20	3	0.132	4			14.6	4
158	0.500	0	0.860	0	5.69	0			1.56	2	14.1	4
180	0.323	4	0.500	4	6.50	4	0.137	3	< 2.5	NR	20.0	0
185	0.306	3	0.561	2			0.127	3			13.3	3
190	0.376	0	0.529	3	5.85	0	0.133	4	1.23	4	14.3	4
196	0.336	3	0.540	3	7.31	0	0.138	3	1.40	3	139.7	0
197					6.31	4			1.28	4	11.2	0
203					6.70	2	0.139	3	< 2	NR	59.0	0
204					6.42	4	0.136	4			139.0	0
209	0.318	4	1.470	0	6.52	3			1.25	4		
215	0.330	3	0.620	0	6.40	4	0.120	0	< 1	NR	12.4	1
224	0.306	3	0.543	3	6.31	4	0.130	4	1.37	4	14.0	4
228	0.349	1	0.459	3	6.26	3			1.17	3	13.7	4

Table 11. -*Laboratory performance ratings for standard refarence water sampla Hg-19 (marcury)*

(MPV,most probable value; µg/L, micrograms per liter; mg/L, Lab, laboratory number;
V/1, number of reported values of 1 possible values; RV, reported value; <, less than)

Rating	Absolute Z-value	Rating	Absolute Z-value
4 (Excellent)	0.00 - 0.50	1 (Questionable)	1.51 - 2.00
3 (Good)	0.51 - 1.00	O (Poor)	greater than 2.00
2 (Satisfactory)	1.01 - 1.50	NR (Not Rated)	

Analyte = Hg (Mercury)
MPV = 1.01 µg/L
F-pseudosigma = 0.14

Lab	V/1	RV	Rating
1		0.95	4
3		1.16	2
7		11.20	0
8		1.10	3
11		1.07	4
12		1.10	3
13		1.10	3
15		1.05	4
16		0.70	0
18		1.00	4
24		1.30	0
32		1.01	4
34		0.97	4
36		0.82	2
39		1.00	4
42		1.00	4
59		1.14	3
69		0.97	4
70		0.94	3
74		1.13	3
75		0.97	4
76		1.09	3
78		1.05	4
79		3.80	0
81		1.10	3
86		0.81	2
87		0.80	1
89		0.84	2
92		0.15	0
96		0.90	3
97		1.08	3
105		1.14	3
109		0.95	4
113		1.30	0
114		1.95	0
118		1.70	0
119		0.90	3
127		1.01	4
128		1.10	3
133		1.04	4
134		0.98	4
138		1.00	4
141		0.95	4
142		0.96	4
145		0.88	3
146		1.09	3
179		0.80	1
182		1.56	0
194		1.60	0
196		1.10	3
198		1.18	2
204		1.33	0
211		1.50	0
212		1.00	4
215		1.40	0
219		0.99	4
220		0.94	3
221		1.43	0
230		0.94	3
231		1.00	4
234		0.92	3

Table 12. *Statistical summary of raported data for standard reference watar sampla T-131 (traca constituents)*

Definition of analytical methods, abbreviations, and symbols

Analytical methods

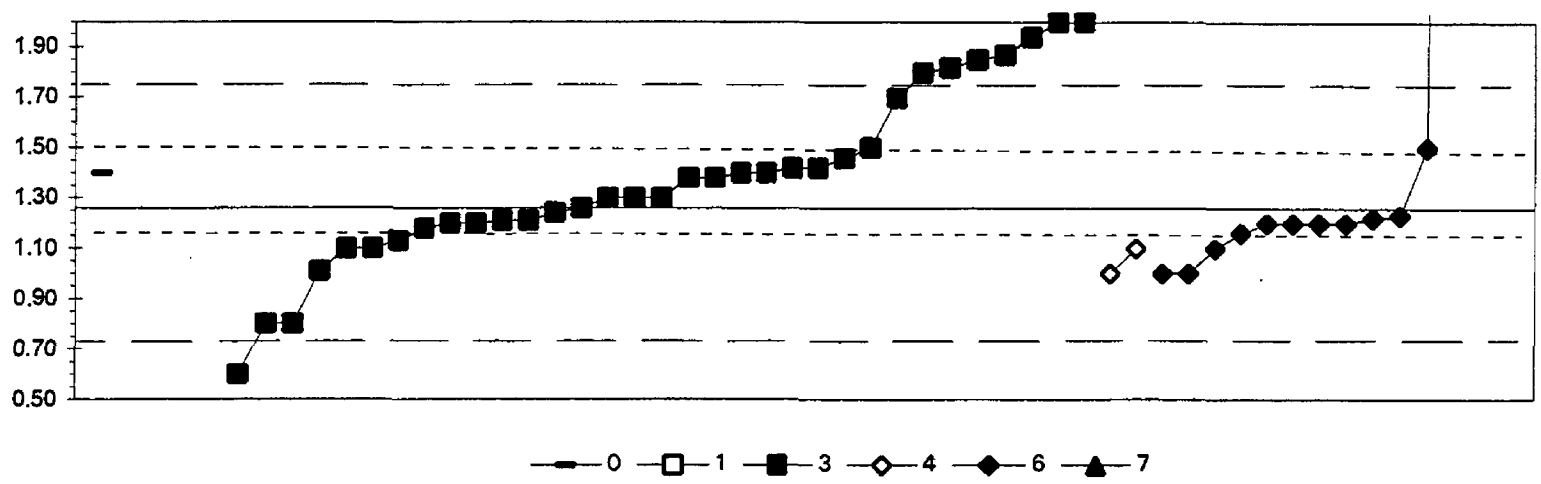
0. Other/Not reported		
1. AA: direct, air	=	atomic absorption: direct,air
2. AA: direct, N2O	=	atomic absorption: direct,nitrous oxide
3. AA: graphite furnace	=	atomic absorption: graphite furnace
4. ICP	=	inductively coupled plasma
5. DCP	=	direct current plasma
6. ICP/MS	=	inductively coupled plasma/mass spectrometry
10. AA: extraction	=	atomic absorption: extraction [chelating agent(s) specified]
11. AA: hydride	=	atomic absorption: hydride [reducing agent specified]
12. Flame emission	=	flame emission
22. Color:	=	colorimetric [color reagent specified]

Abbreviations and symbols

N =	number of samples
St dev =	traditional standard deviation
MPV =	most probable value
F-pseudosigma =	nonparametric statistic deviation
Hu =	upper hinge value
Hl =	lower hinge value
µg/L =	micrograms per liter
mg/L =	milligrams per liter
Lab =	laboratory code number
NR =	not rated, less than value reported
< =	less than

Table 12. *Statistical summary of reported data for standard reference water sample T-131 (trace constituents)--Continued*

Ag (Silver) **µg/L**



0. Other
1. AA: direct air
3. AA: graphite furnace
4. ICP
6. ICP/MS
7. Ion chromatography

	N =	Minimum =	Maximum =	Median =	F-pseudosigma =
1	1	1.40			
3	33	3.00	3.50	1.30	0.22
2	2	1.00	1.10		
12	12	1.00	10.00	1.20	0.07

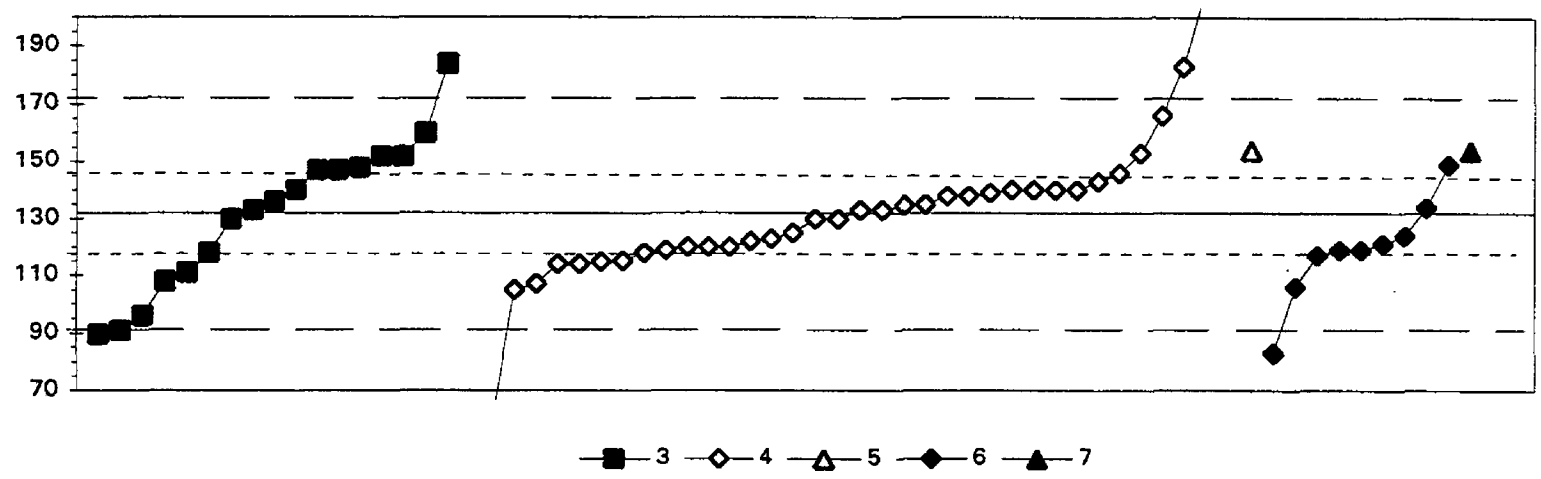
MPV = 1.26
F-pseudosigma = 0.24
N = 51
Hu = 1.50
HI = 1.17

Lab	Rating	Z-value	0	1	3	4	6	7
1	4	-0.12					1.23	
3	4	-0.25			1.20			
5	3	-0.65			1.10			
7	0	2.49			1.87			
8	0	35.73					10.00	
11	NR					< 10		
12	1	-1.88			0.80			
13	NR				< 2			
15	NR					< 10		
16	NR					< 7		
18	NR					< 3		
23	3	0.57			1.40			
24	1	1.80			1.70			
25	NR					< 6		
30	4	-0.25					1.20	
32	4	-0.25					1.20	
39	3	0.57	1.40					
42	4	-0.41					1.16	
59	4	-0.25					1.20	
69	4	0.49			1.38			
70	NR				< 5			
72	2	-1.06				1.00		
73	NR							< 4
74	3	-0.65				1.10		
75	4	-0.20			1.21			
78	0	2.41			1.85			
79	3	0.98					1.50	
81	0	-2.70			0.60			
85	NR			< 5				
87	0	7.11		3.00				
89	3	0.65			1.42			
94	NR					< 3		
96	3	0.82			1.46			
97	3	0.65			1.42			
102	NR					< 10		
105	4	-0.16					1.22	
107	4	-0.33			1.18			
113	0	2.78			1.94			
114	0	7.11		3.00				
118	3	0.57			1.40			
119	3	0.98			1.50			
120	1	-1.88			0.80			
127	4	-0.08			1.24			
128	2	-1.06					1.00	
134	4	0.16			1.30			
138	4	0.49			1.38			
141	NR					< 10		
142	0	2.29			1.82			
146	NR					< 10		
149	4	-0.25			1.20			

Lab	Rating	Z-value	0	1	3	4	6	7
179	0	2.21			1.80			
180	NR					< 3.8		
190	2	-1.02			1.01			
193	NR				< 5			
194	4	0.16			1.30			
196	4	-0.25					1.20	
203	0	9.16		3.50				
204	3	-0.65			1.10			
211	NR				< 10			
212	4	0.16			1.30			
215	0	3.03			2.00			
217	3	-0.65					1.10	
219	2	-1.06					1.00	
221	4	-0.20			1.21			
231	0	3.03			2.00			
234	3	-0.53			1.13			
235	4	0.00			1.26			

Table 12. *Statistical summary of reported data for standard reference water sample T-131 (traca constituents)--Continued*

Al (Aluminum) µg/L



3. AA: graphite furnace
4. ICP
5. DCP
6. ICP/MS
7. Ion chromatography

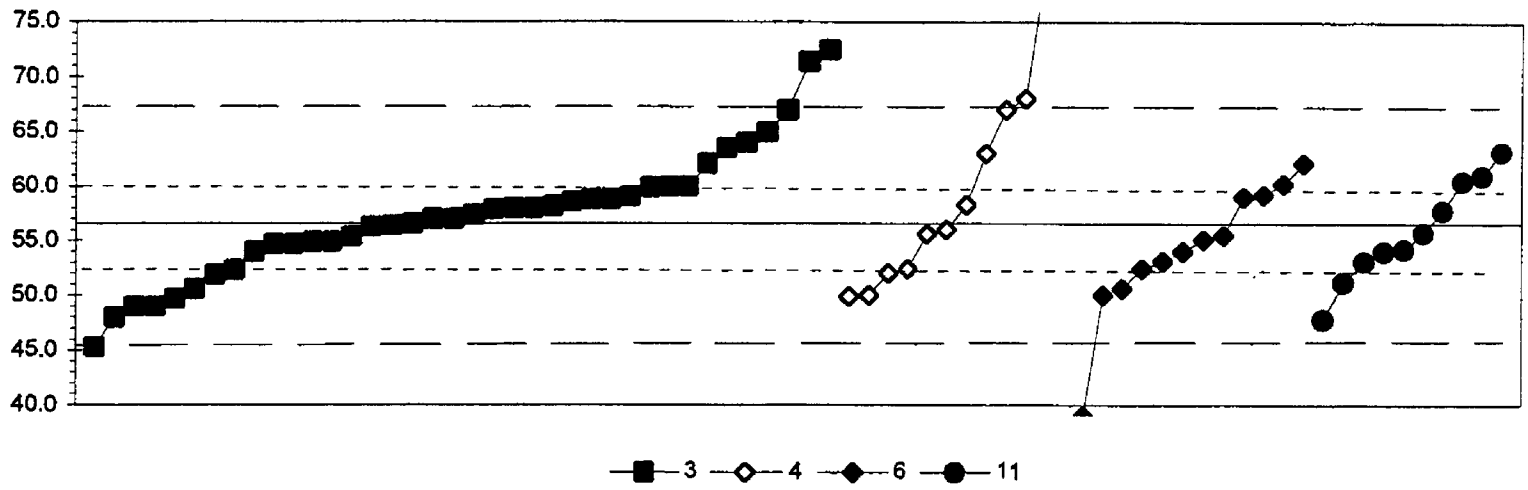
N =	17	36	1	9	1
Minimum =	90	35	154	83	154
Maximum =	184	450		149	
Median =	136	132		119	
F-pseudosigma =	27	16		5	

MPV = 132
F-pseudosigma = 20
N = 64
Hu = 145
HI = 118

Lab	Rating	Z-value	3	4	5	6	7
1	4	-0.32		125			
3	2	1.07		153			
5	4	0.07		133			
7	4	0.37		139			
8	0	-2.42				83	
11	4	-0.47		122			
12	0	3.92		210			
15	4	0.42		140			
16	2	-1.27				106	
18	NR			< 300			
23	1	-2.03	91				
24	2	1.42	160				
25	0	-3.57		60			
30	4	0.12				134	
32	4	-0.37				124	
33	2	1.12			154		
39	4	0.32		138			
40	0	-4.83		35			
42	3	-0.62				119	
69	2	1.02	152				
70	2	-1.32		105			
73	2	1.12					154
74	3	-0.87		114			
75	3	-0.87		114			
78	2	-1.02	111				
81	3	-0.82		115			
83	4	-0.42		123			
85	3	0.72		146			
86	4	0.32		138			
89	2	-1.17	108				
94	3	-0.57		120			
97	4	0.07	133				
102	3	-0.67		118			
103	0	15.91		450			
105	3	-0.52				121	
111	0	-2.10	90				
113	3	-0.67	118				
119	3	0.77	147				
120	1	-1.77	96				
121	4	-0.07	130				
127	4	0.07		133			
128	3	-0.72				117	
134	3	-0.57		120			
136	0	2.57		183			
138	4	0.16		135			
141	4	0.17		135			
145	2	-1.21		107			
146	4	-0.07		130			
149	4	0.42	140				
153	4	0.22	136				
158	4	0.42		140			
179	2	1.02	152				
180	3	-0.62		119			
182	3	-0.84		115			
190	0	2.62	184				
191	3	0.87				149	
194	NR			< 500			
196	3	-0.62				119	
204	3	0.78	147				
211	NR			< 100			
212	4	-0.07		130			
215	4	0.42		140			
217	3	-0.57		120			
219	4	0.42		140			
221	3	0.82	148				
224	1	1.73		166			
234	3	0.57		143			

Table 12. *Statistical summary of reported data for standard reference water sample T-131 (trace constituents)--Continued*

As (Arsenic) µg/L



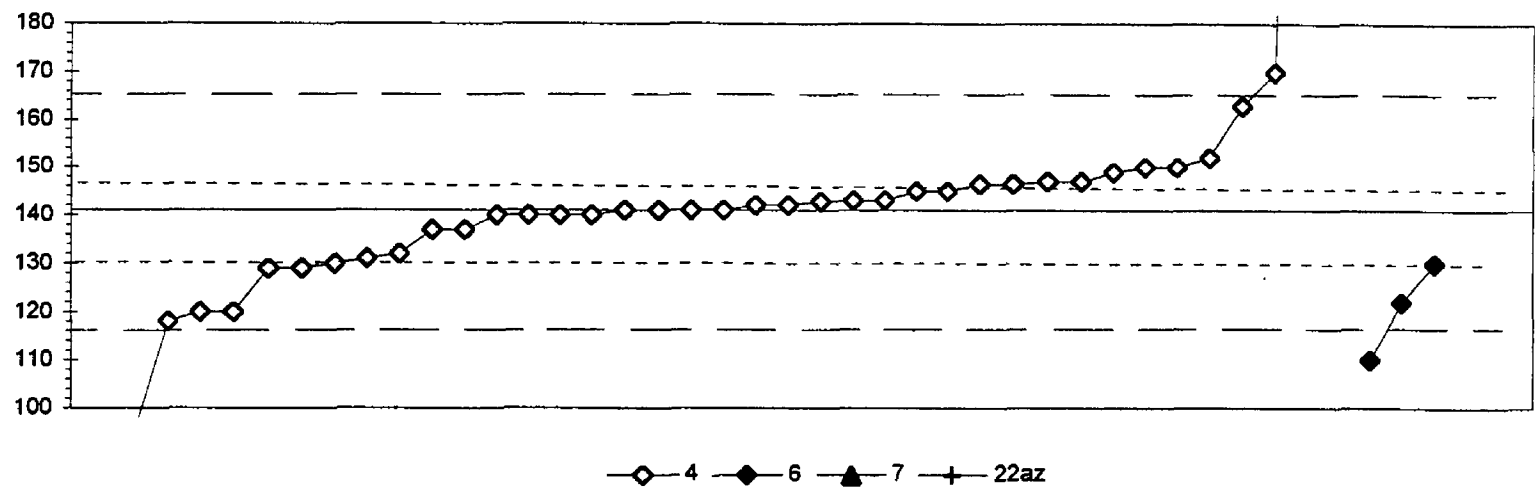
	3. AA: graphite furnace	4. ICP	6. ICP/MS	11. AA: hydride
N =	38	12	12	10
Minimum =	45.3	49.9	39.0	47.8
Maximum =	72.5	86.6	62.1	63.2
Median =	57.2	57.2	54.6	55.0
F-pseudosigma =	3.9	11.9	5.6	4.7

MPV =	56.6
F-pseudosigma =	5.4
N =	71
Hu =	60.0
Hl =	52.7

Lab	Rating	Z-value	3	4	6	11
1	4	0.15	57.4			
3	3	0.63	60.0			
5	0	2.75	71.4			
7	4	-0.32	54.9			
8	3	0.82				61.0
11	3	-0.85		52.0		
12	2	-1.41	49.0			
13	1	1.93	67.0			
15	NR			< 100		
16	4	-0.48			54.0	
18	4	-0.45				54.2
23	4	-0.35	54.7			
24	4	0.37	58.6			
25	0	2.12		68.0		
30	2	1.02			62.1	
32	3	-0.65			53.1	
34	4	0.22				57.8
35	4	-0.16				55.7
39	0	4.35		80.0		
42	3	-0.78			52.4	
59	4	-0.11		56.0		
69	4	0.41	58.8			
70	3	-0.80	52.3			
72	1	-1.60	48.0			
74	4	0.07	57.0			
75	4	-0.19		55.6		
78	4	-0.32	54.9			
79	4	-0.28			55.1	
80	3	0.63	60.0			
81	4	0.26	58.0			
85	0					< 2
86	3	-1.00				51.2
87	2	1.23				63.2
89	1	-1.63				47.8
94	4	-0.48	54.0			
96	2	-1.28	49.7			
97	2	1.02	62.1			
102	1	1.93		67.0		
103	2	-1.23		50.0		
105	2	-1.11			50.6	
109	2	-1.41	49.0			
113	4	0.41	58.8			
119	4	-0.48				54.0
120	3	-0.66				53.1
127	4	0.30	58.2			
128	4	0.45			59.0	
133	0	-2.10	45.3			
136	0	5.57		86.6		
138	4	0.48			59.2	
141	NR			< 50		
142	4	0.25	57.9			
145	4	0.32		58.3		
146	4	-0.35	54.7			
153	4	-0.04	56.4			
158	2	1.19		63.0		
179	3	0.61	59.9			
180	3	-0.78		52.4		
182	3	0.72				60.5
191	3	0.67			60.2	
193	4	0.07	57.0			
194	4	0.46	59.1			
196	4	-0.20			55.5	
203	4	0.00	56.6			
204	4	-0.22	55.4			
211	2	1.37	64.0			
212	4	0.26	58.0			
215	1	1.56	65.0			
217	0	-3.27			39.0	
219	2	-1.23			50.0	
220	2	-1.11	50.6			
221	3	-0.87	51.9			
224	2	-1.24		49.9		
231	0	2.95	72.5			
234	2	1.28	63.5			
235	4	-0.06	56.3			

Table 12. *Statistical summary of reported data for standard reference water sample T-131 (trace constituents)--Continued*

B (Boron) µg/L



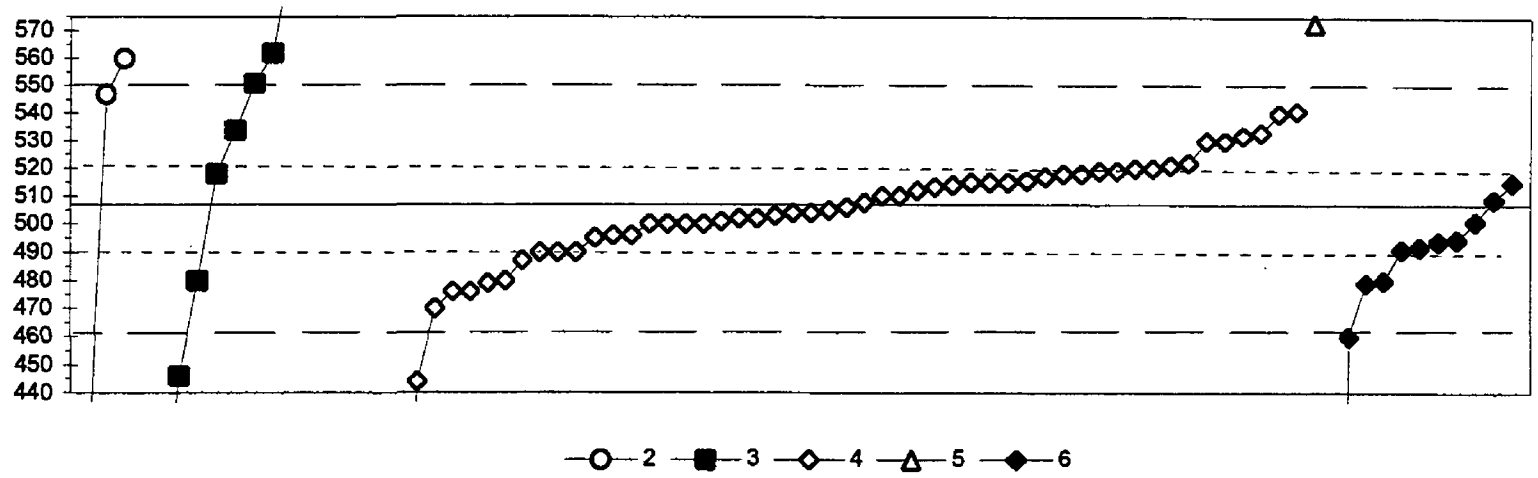
4. ICP			22az. Color: azomethine	
6. ICP/MS				
7. Ion chromatography				
N =	39	3	1	1
Minimum =	15	110	761	265
Maximum =	440	130		
Median =	141			
F-pseudosigma =	9			

MPV =	141
F-pseudosigma =	12
N =	44
Hu =	147
Hl =	131

Lab	Rating	Z-value	4	6	7	22az
1	4	0.15	143			
3	4	0.00	141			
4	0	24.45	440			
5	4	0.08	142			
8	0	-2.53		110		
11	3	-0.98	129			
15	0	2.37	170			
16	0	20.93	397			
18	4	0.16	143			
24	4	0.49	147			
25	4	-0.33	137			
32	1	-1.55		122		
39	4	0.00	141			
40	0	-10.27	15			
42	3	-0.90		130		
70	4	-0.08	140			
74	3	0.90	152			
75	3	-0.74	132			
85	4	0.33	145			
86	0	-3.69	96			
94	4	-0.33	137			
103	4	0.33	145			
109	4	0.45	147			
116	4	0.16	143			
119	3	0.65	149			
121	1	-1.72	120			
127	4	0.49	147			
128	1	-1.88	118			
129	0	10.14				265
134	4	-0.08	140			
136	0	50.69			761	
141	3	-0.98	129			
142	4	0.45	147			
145	4	0.00	141			
158	4	0.00	141			
180	3	-0.82	131			
194	3	-0.90	130			
211	1	-1.72	120			
212	4	-0.08	140			
215	4	-0.08	140			
217	3	0.74	150			
219	3	0.74	150			
234	4	0.08	142			
235	1	1.80	163			

Table 12. *Statistical summary of reported data for standard reference water sample T-131 (trace constituents)--Continued*

Ba (Barium) µg/L



2. AA: direct nitrous oxide
3. AA: graphite furnace
4. ICP
5. DCP
6. ICP/MS

	2	3	4	5	6
N =	3	14	51	1	11
Minimum =	410	52	232	573	5
Maximum =	560	658	541		515
Median =		557	506		492
F-pseudosigma =		98	16		14

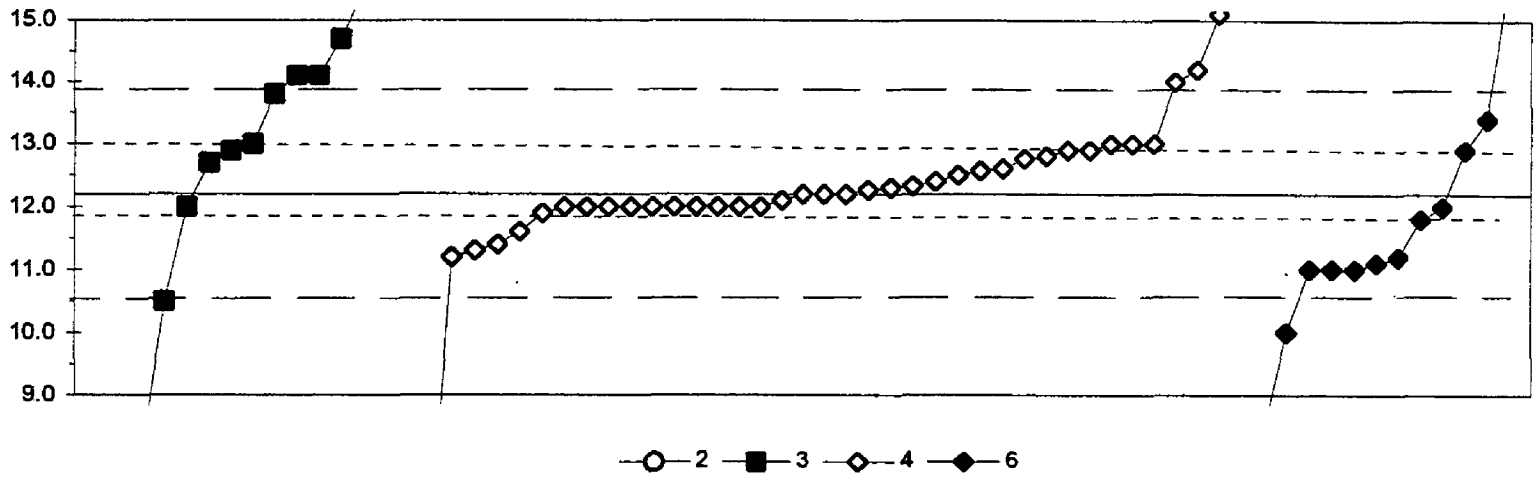
MPV = 507
F-pseudosigma = 22
N = 80
Hu = 521
Hl = 491

Lab	Rating	Z-value	2	3	4	5	6
1	3	-0.55					495
3	4	0.14			510		
4	0	-2.83			444		
5	3	-0.53			495		
7	4	0.50			518		
8	3	-0.58					494
11	1	1.54			541		
13	4	0.37					515
15	2	1.18			533		
16	4	-0.26					501
18	4	-0.13			504		
19	3	0.59			520		
23	1	1.81	547				
24	4	-0.49			496		
25	4	0.37			515		
30	3	-0.67					492
32	2	-1.25					479
33	0	2.97				573	
39	4	-0.26			501		
40	2	1.13			532		
42	4	0.10					509
59	3	-0.76			490		
69	0	4.55		608			
70	4	0.46			517		
72	2	-1.25			479		
74	3	0.55			519		
75	2	-1.39			476		
76	4	0.50		518			
78	0	2.48		562			
81	2	-1.39			476		
83	4	0.23			512		
85	4	0.37			515		
86	4	-0.17			503		
87	0	-4.36	410				
89	0	-2.74		446			
90	0	6.80		658			
94	4	-0.22			502		
96	0	2.39	560				
97	0	-5.93		375			
101	1	-1.66			470		
102	3	0.68			522		
103	3	-0.89			487		
105	3	0.55			519		
107	1	1.99		551			
113	0	6.44		650			
116	4	-0.08			505		
119	4	-0.31			500		
120	2	1.22		534			
121	3	-0.76			490		
127	3	0.59			520		

Lab	Rating	Z-value	2	3	4	5	6
128	2	-1.21					480
133	4	0.04			508		
134	4	0.32			514		
136	0	-12.36			232		
138	4	-0.13			504		
141	4	0.37			515		
142	4	0.29			513		
145	4	0.39			516		
146	2	-1.21			480		
149	0	4.19		600			
158	4	0.50			518		
180	4	-0.04			506		
182	4	-0.49			496		
191	3	-0.71					491
193	0	-20.45		52			
194	3	-0.76			490		
196	0	-22.56					5
203	2	-1.21		480			
204	4	-0.22			502		
211	2	1.04			530		
212	2	1.49			540		
215	4	-0.31			500		
217	4	0.14			510		
219.1	4	-0.31			500		
219.2	0	-2.11					460
221	0	5.27		624			
224	4	-0.31			500		
231	0	4.73		612			
234	3	0.64			521		
235	2	1.04			530		

Table 12. *Statistical summary of reported data for standard referenca watar sample T-131 (trace constituents)--Continued*

Be (Beryllium) µg/L



2. AA: direct nitrous oxide
3. AA: graphite furnace
4. ICP
6. ICP/MS

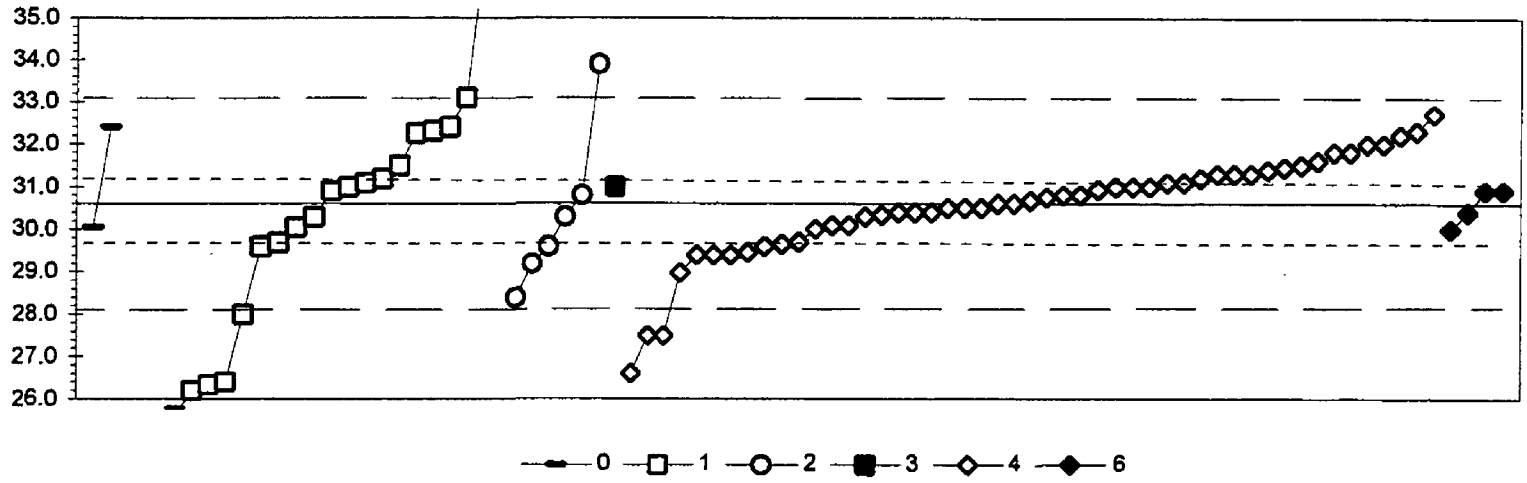
	2	3	4	6
N =	1	14	38	12
Minimum =	16.0	7.0	6.2	8.4
Maximum =		16.2	382.8	15.7
Median =		13.4	12.2	11.2
F-pseudosigma =		2.0	0.6	1.1

MPV = 12.2
F-pseudosigma = 0.8
N = 65
Hu = 13.0
Hl = 11.9

Lab	Rating	Z-value	2	3	4	6
1	4	0.16			12.3	
3	3	0.74			12.8	
4	4	-0.25			12.0	
5	4	0.00			12.2	
7	4	-0.12			12.1	
8	2	-1.47				11.0
11	4	-0.25			12.0	
12	NR				< 20	
13	2	-1.23				11.2
15	4	-0.25			12.0	
16	2	-1.47				11.0
18	4	-0.25			12.0	
24	0	4.91		16.2		
25	2	-1.23			11.2	
30	0	4.29				15.7
32	4	-0.49				11.8
39	0	2.33		14.1		
40	0	-7.36			6.2	
42	2	-1.35				11.1
59	3	0.98			13.0	
69	3	0.85		12.9		
70	4	-0.25			12.0	
74	4	-0.37			11.9	
75	2	-1.10			11.3	
76	2	1.47				13.4
78	0	-5.03		8.1		
79	0	-4.66				8.4
81	0	-6.38		7.0		
83	4	0.25			12.4	
85	4	0.00			12.2	
86	4	0.00			12.2	
89	0	-2.08		10.5		
94	4	-0.25			12.0	
97	0	4.05		15.5		
102	3	0.98			13.0	
103	4	0.12			12.3	
105	3	0.86			12.9	
113	4	-0.25		12.0		
114	0	4.66	16.0			
119	1	1.96		13.8		
120	0	2.33		14.1		
127	3	0.86			12.9	
128	0	-2.70				10.0
133	3	0.69			12.8	
134	4	0.49			12.6	
136	3	-0.98			11.4	
138	3	0.86				12.9
141	4	-0.25			12.0	
142	4	0.09			12.3	
145	4	0.45			12.6	
146	3	-0.74			11.6	
158	4	-0.25			12.0	
179	3	0.98		13.0		
180	4	-0.25			12.0	
182	0	454.49			382.8	
194	3	0.61		12.7		
196	4	-0.25				12.0
211	0	3.07		14.7		
212	4	-0.25			12.0	
215	4	0.37			12.5	
217	3	0.98			13.0	
219.1	0	2.21			14.0	
219.2	2	-1.47				11.0
224	0	3.56			15.1	
234	0	4.66		16.0		
235	0	2.45			14.2	

Table 12. *Statistical summary of reported data for standard reference water sample T-131 (trace constituents)--Continued*

Ca (Calcium) mg/L



0. Other			3. AA: graphite furnace			
1. AA: direct air			4. ICP			
2. AA: direct nitrous oxide			6. ICP/MS			
N =	2	23	6	1	49	4
Minimum =	30.1	15.3	28.4	31.0	26.6	30.0
Maximum =	32.4	37.0	33.9		32.7	30.9
Median =		30.3			30.7	
F-pseudosigma =		4.1			1.3	

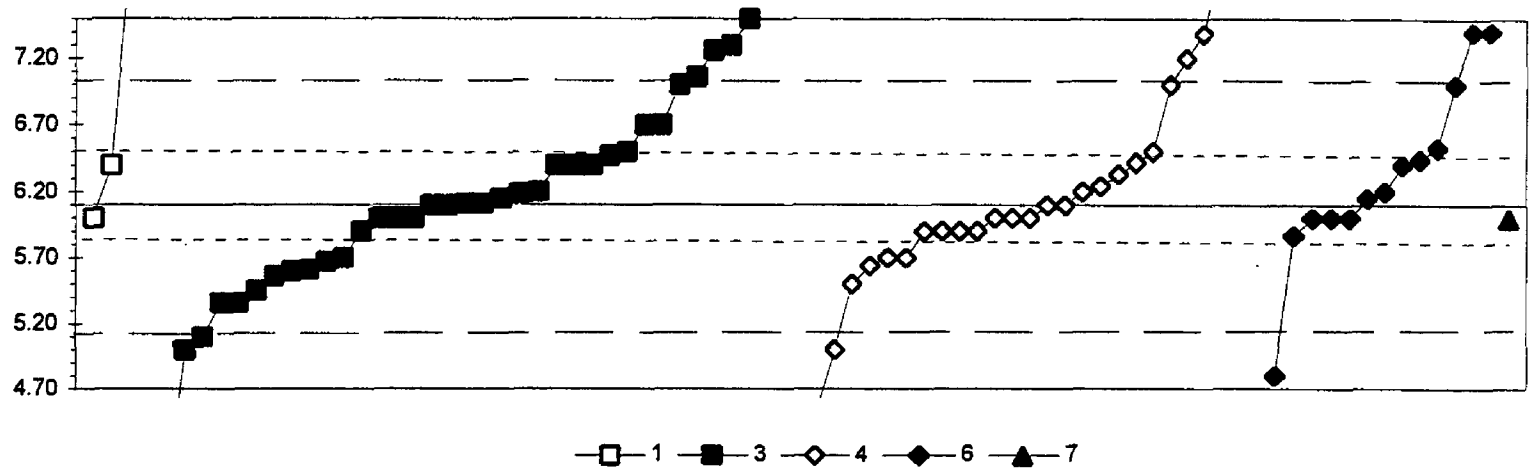
MPV =	30.6
F-pseudosigma =	1.2
N =	85
Hu =	31.3
Hl =	29.7

Lab	Rating	Z-value	0	1	2	3	4	6
1	4	0.27					30.9	
3	3	0.98					31.8	
4	4	-0.49					30.0	
5	4	-0.16					30.4	
7	3	0.98					31.8	
8	4	-0.16						30.4
9	4	0.16					30.8	
11	4	0.49					31.2	
12	4	0.33					31.0	
13	4	0.25						30.9
15	4	0.00					30.6	
16	3	-0.74					29.7	
18	4	0.33					31.0	
19	3	0.74					31.5	
23	4	0.16				30.8		
24	4	-0.41					30.1	
25	4	0.06					30.7	
30	4	-0.25				30.3		
32	4	0.25						30.9
33	2	1.47	32.4					
39	3	0.57					31.3	
40	3	0.57					31.3	
42	4	-0.08					30.5	
59	0	-2.53					27.5	
69	4	0.25		30.9				
70	2	1.39					32.3	
74	4	-0.16					30.4	
75	0	-3.60		26.2				
78	4	-0.25		30.3				
81	3	0.82					31.6	
83	3	-0.78					29.7	
84	1	2.04		33.1				
85	4	0.49		31.2				
86	4	-0.25					30.3	
87	1	-1.80				28.4		
89	0	-3.43		26.4				
94	2	1.14					32.0	
97	3	-0.74		29.7				
101	0	-11.61		16.4				
102	0	-3.27					26.6	
103	0	-2.53					27.5	
105	4	0.41					31.1	
109	2	1.35		32.3				
111	0	2.70				33.9		
113	0	-4.09		25.6				
114	2	-1.14				29.2		
116	4	0.41					31.1	
119	3	-0.98					29.4	
120	0	-3.49		26.3				
121	4	0.16					30.8	

Lab	Rating	Z-value	0	1	2	3	4	6
122	0	-12.51		15.3				
127	4	0.00					30.6	
128	4	-0.16					30.4	
129	0	5.23		37.0				
133	4	0.12					30.8	
134	2	-1.31					29.0	
136	4	-0.44	30.1					
138	2	1.31					32.2	
140	4	0.33		31.0				
141	3	0.57					31.3	
142	3	0.69					31.5	
145	3	0.65					31.4	
146	3	-0.98					29.4	
151	3	0.74		31.5				
158	2	1.14					32.0	
179	0	-2.13		28.0				
180	3	-0.98					29.4	
182	3	-0.93					29.5	
185	4	-0.44		30.1				
191	4	-0.49						30.0
193	3	-0.82			29.6			
194	4	-0.41					30.1	
196	4	0.41		31.1				
203	3	-0.82		29.6				
204	4	-0.08					30.5	
211	0	4.82		36.5				
212	1	1.72					32.7	
215	4	0.33				31.0		
217	3	-0.82					29.6	
218	2	1.47		32.4				
219	4	0.33					31.0	
221	0	-9.65		18.8				
224	4	-0.21					30.3	
231	2	1.39		32.3				
234	4	-0.08					30.5	

Table 12. *Statistical summary of reported data for standard reference water sample T-131 (trace constituents)--Continuad*

Cd (Cadmium) µg/L



1. AA: direct air
3. AA: graphite furnace
4. ICP
6. ICP/MS
7. Ion chromatography

	1	3	4	6	7
N =	4	35	28	13	1
Minimum =	6.00	3.80	2.60	4.80	6.00
Maximum =	23.00	7.80	8.50	7.40	
Median =		6.11	6.00	6.20	
F-pseudosigma =		0.63	0.56	0.39	

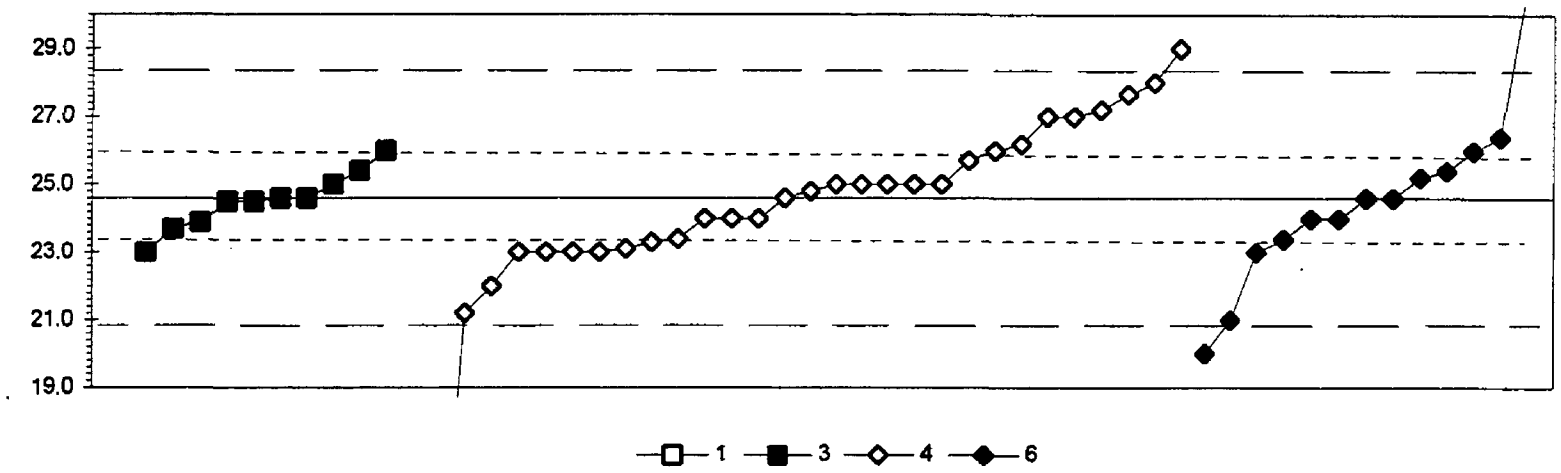
MPV = 6.10
F-pseudosigma = 0.47
N = 81
Hu = 6.50
Hl = 5.87

Lab	Rating	Z-value	1	3	4	6	7
1	3	0.64		6.40			
3	4	0.21			6.20		
4	NR				< 10		
5	3	0.64		6.40			
7	1	-1.58		5.36			
8	1	1.93				7.00	
9	4	0.00			6.10		
11	4	-0.21			6.00		
12	4	-0.43		5.90			
13	2	-1.16		5.56			
15	NR				< 10		
16	3	0.64				6.40	
18	0	-2.14		5.10			
19	1	1.93			7.00		
23	4	0.11		6.15			
24	1	1.93		7.00			
25	0	4.07			8.00		
30	0	2.78				7.40	
32	0	-2.78				4.80	
39	2	1.28		6.70			
40	0	-7.49			2.60		
42	4	0.21				6.20	
59	4	0.00			6.10		
69	4	0.19		6.19			
70	3	0.69			6.42		
72	3	-0.86			5.70		
73	4	-0.21					6.00
74	4	-0.21				6.00	
75	3	-0.98			5.64		
76	4	0.00		6.10			
78	0	3.64		7.80			
79	0	2.78				7.40	
81	4	-0.21		6.00			
83	0	-3.43			4.50		
85	0		< 5				
86	3	-0.86			5.70		
87	0	4.07	8.00				
89	0	2.06		7.06			
90	4	0.00		6.10			
94	2	-1.28			5.50		
96	1	-1.58		5.36			
97	4	0.02		6.11			
101	4	-0.43			5.90		
102	4	-0.21			6.00		
103	4	-0.21			6.00		
105	4	-0.49				5.87	
113	4	0.02		6.11			
114	4	-0.21	6.00				
119	3	0.86		6.50			
120	2	-1.07		5.60			

Lab	Rating	Z-value	1	3	4	6	7
121	0	4.07			8.00		
127	4	0.30			6.24		
128	4	-0.21				6.00	
133	0	2.75			7.38		
134	4	0.21		6.20			
136	4	-0.43			5.90		
138	3	0.73				6.44	
140	3	0.64	6.40				
141	0	-2.36			5.00		
142	2	-1.39		5.45			
145	4	0.49			6.33		
146	4	-0.43			5.90		
149	4	-0.21		6.00			
158	0	-4.92		3.80			
179	3	-0.86		5.70			
180	0	-3.32			4.55		
182	0	5.14			8.50		
190	0	3.00		7.50			
191	3	0.92				6.53	
193	4	-0.21		6.00			
194	2	1.28		6.70			
196	4	0.11				6.15	
203	3	-0.92		5.67			
204	3	0.64		6.40			
211	0	2.57		7.30			
212	3	0.86			6.50		
215	0	-2.36		5.00			
217	0	2.36			7.20		
219.1	NR				< 10		
219.2	4	-0.21				6.00	
221	0	2.48		7.26			
224	4	-0.43			5.90		
231	0	36.19	23.00				
234	3	0.79		6.47			
235	2	-1.05		5.61			

Table 12. *Statistical summary of reported data for standard reference water sample T-131 (trace constituents)--Continued*

Co (Cobalt) µg/L



1. AA: direct air
3. AA: graphite furnace
4. ICP
6. ICP/MS

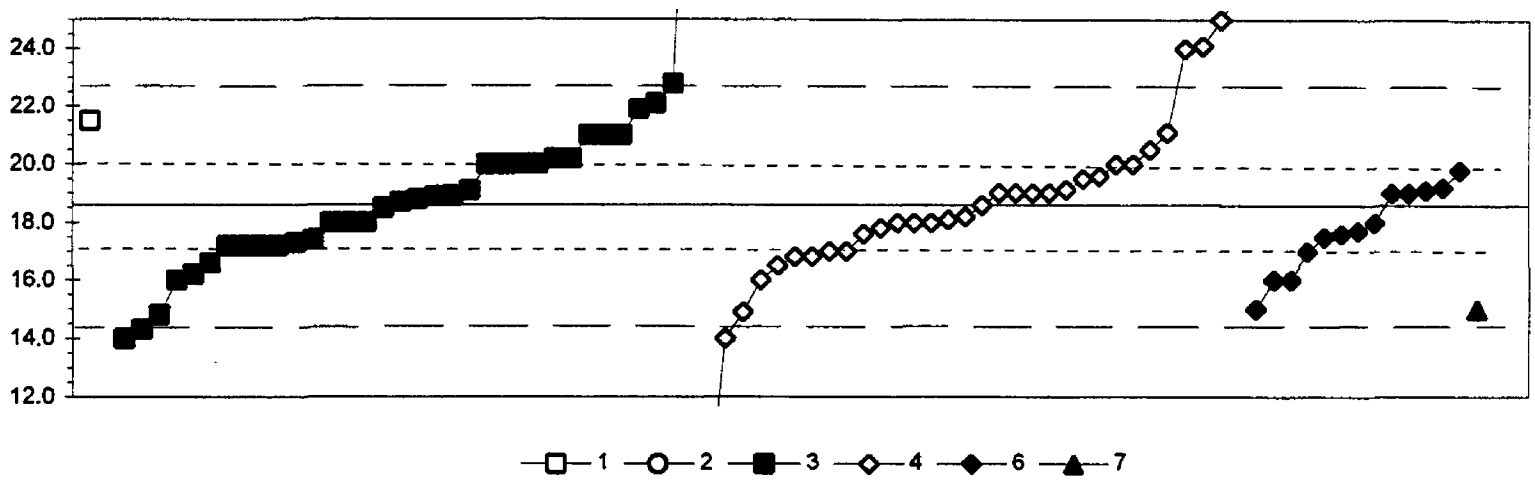
	1	3	4	6
N =	1	10	31	13
Minimum =	32.0	23.0	2.3	20.0
Maximum =		26.0	30.0	30.9
Median =		24.6	24.8	24.6
F-pseudosigma =		0.8	2.3	1.5

MPV = 24.6
F-pseudosigma = 1.9
N = 55
Hu = 25.9
Hl = 23.4

Lab	Rating	Z-value	1	3	4	6
1	4	0.00				24.6
3	4	0.22			25.0	
5	3	-0.81			23.1	
7	2	1.40			27.2	
8	0	-2.48				20.0
11	2	1.30			27.0	
13	0	3.40				30.9
15	3	0.59			25.7	
16	1	-1.94				21.0
18	4	0.22			25.0	
24	4	0.11			24.8	
25	0	2.37			29.0	
30	3	0.97				26.4
32	3	0.76				26.0
39	4	0.22			25.0	
40	0	-7.12			11.4	
42	3	-0.65				23.4
59	4	-0.32				24.0
70	NR				< 50	
74	3	-0.86			23.0	
75	3	-0.86			23.0	
81	4	-0.32			24.0	
85	1	-1.83			21.2	
86	4	0.00			24.6	
89	4	-0.49		23.7		
94	3	-0.86			23.0	
97	4	-0.05		24.5		
102	3	0.76			26.0	
103	2	-1.40			22.0	
105	4	-0.32			24.0	
121	3	-0.86		23.0		
127	4	0.00		24.6		
128	3	-0.86				23.0
134	4	0.00		24.6		
136	1	1.83			28.0	
138	4	0.00				24.6
141	3	-0.86			23.0	
142	4	0.43		25.4		
145	1	1.66			27.7	
146	3	-0.65			23.4	
158	4	0.22			25.0	
180	3	0.86			26.2	
182	0	-12.05			2.3	
191	4	0.43				25.4
193	0	3.99	32.0			
194	3	0.76		26.0		
196	4	0.32				25.2
211	0	2.91			30.0	
212	4	0.22			25.0	
215	4	0.22		25.0		
217	4	-0.32			24.0	
219.1	2	1.30			27.0	
219.2	4	-0.32				24.0
221	4	-0.05		24.5		
224	3	-0.70			23.3	
235	4	-0.38		23.9		

Table 12. *Statistical summary of reported data for standard reference water sample T-131 (trace constituents)--Continued*

Cr (Chromium) µg/L



1. AA: direct air
2. AA: direct nitrous oxide
3. AA: graphite furnace
4. ICP
6. ICP/MS
7. Ion chromatography

	1	2	3	4	6	7
N =	1	1	34	32	13	1
Minimum =	21.5	26.0	14.0	7.7	15.0	15.0
Maximum =			36.8	26.0	19.8	
Median =			18.8	18.4	17.7	
F-pseudosigma =			2.2	1.9	1.5	

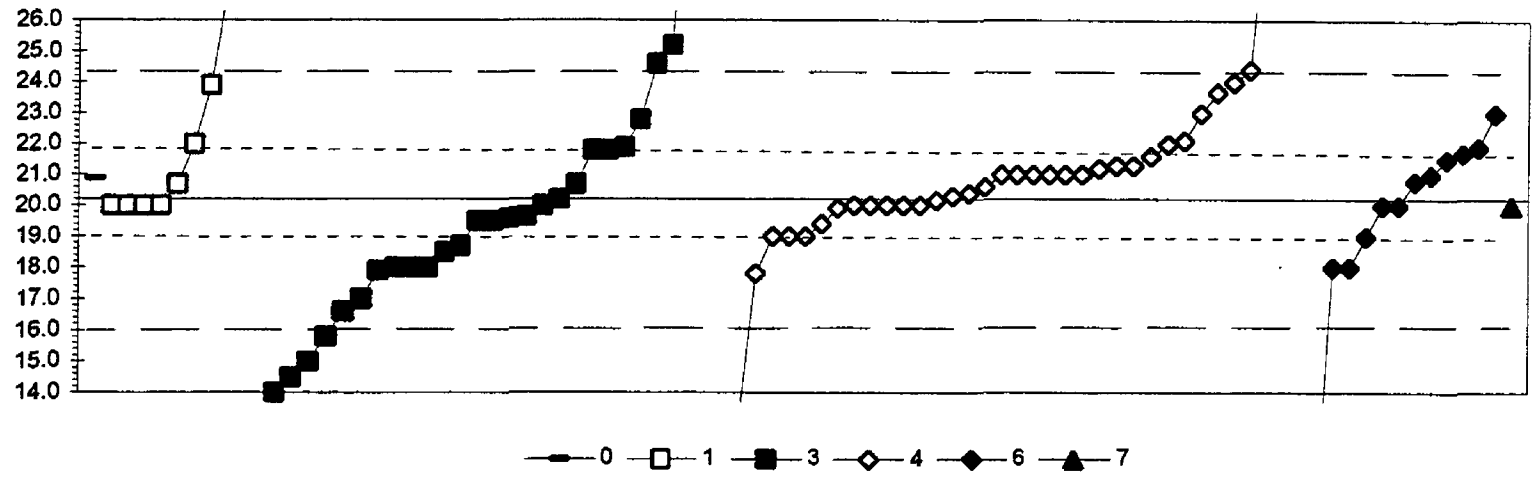
MPV = 18.6
F-pseudosigma = 2.1
N = 82
Hu = 20.0
Hl = 17.2

Lab	Rating	Z-value	1	2	3	4	6	7
1	3	-0.60			17.3			
3	3	-0.75				17.0		
4	0					< 10		
5	4	0.02				18.6		
7	4	0.46				19.5		
8	1	-1.71					15.0	
9	3	0.94				20.5		
11	0	2.63				24.0		
12	NR					< 20		
13	0	8.79			36.8			
15	3	0.51				19.6		
16	2	-1.23					16.0	
18	4	0.22				19.0		
19	4	-0.46				17.6		
23	1	2.05			22.8			
24	2	1.23				21.1		
25	0	-2.19				14.0		
30	3	0.60					19.8	
32	3	-0.51					17.5	
39	4	0.22				19.0		
40	0	-5.23				7.7		
42	4	-0.41					17.7	
59	2	-1.23				16.0		
69	2	1.18			21.0			
70	4	-0.26				18.0		
72	3	-0.84				16.8		
73	1	-1.71						15.0
74	3	-0.75				17.0		
75	3	-0.84				16.8		
76	3	-0.65			17.2			
78	3	0.79			20.2			
79	4	0.31					19.2	
81	3	0.70			20.0			
83	4	-0.22				18.1		
85	NR					< 20		
86	3	-0.99				16.5		
87	4	0.07			18.7			
89	1	-2.05			14.3			
90	3	0.79			20.2			
94	4	-0.26				18.0		
96	4	0.17			18.9			
97	3	0.70			20.0			
101	0	2.67				24.1		
102	4	-0.26				18.0		
103	4	0.22				19.0		
105	4	-0.46					17.6	
113	4	0.26			19.1			
114	0	3.59		26.0				
119	3	-0.65			17.2			
120	2	-1.13			16.2			

Lab	Rating	Z-value	1	2	3	4	6	7
121	3	0.70				20.0		
127	4	0.12			18.8			
128	3	-0.75					17.0	
133	1	-1.76				14.9		
134	3	-0.55			17.4			
136	0	3.59				26.0		
138	4	0.22					19.0	
141	3	0.70				20.0		
142	4	-0.02			18.5			
145	4	0.28				19.1		
146	4	-0.36				17.8		
149	2	1.18			21.0			
153	3	-0.65			17.2			
158	1	-1.81			14.8			
179	4	-0.26			18.0			
180	4	-0.17				18.2		
182	0	3.11				25.0		
190	3	0.70			20.0			
191	4	0.22					19.0	
193	4	-0.26			18.0			
194	2	1.18			21.0			
196	4	0.26					19.1	
203	2	1.42	21.5					
204	3	-0.65			17.2			
211	0	-2.19			14.0			
212	4	-0.26			18.0			
215	3	0.70			20.0			
217	2	-1.23					16.0	
219.1	4	0.22				19.0		
219.2	4	-0.26					18.0	
220	3	-0.94			16.6			
221	4	0.17			18.9			
231	2	-1.23			16.0			
234	1	1.61			21.9			
235	1	1.71			22.1			

Table 12. *Statistical summary of raported data for standard reference water sample T-131 (trace constituents)--Continued*

Cu (Copper) µg/L



0. Other			4. ICP				
1. AA: direct air			6. ICP/MS				
3. AA: graphite furnace			7. Ion chromatography				
N =	1	9	27	37	12	1	
Minimum =	20.9	20.0	13.3	9.0	10.0	20.0	
Maximum =		29.0	33.0	35.0	23.0		
Median =		20.7	19.5	21.0	20.4		
F-pseudosigma =		2.9	2.8	1.2	2.3		

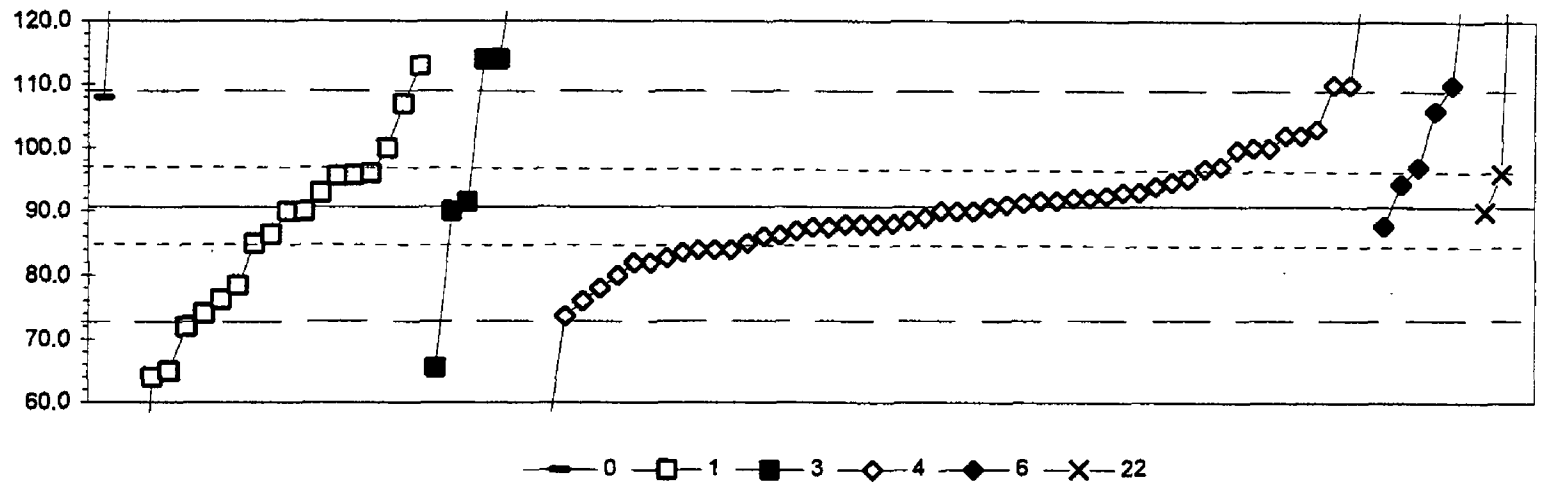
MPV =	20.2
F-pseudosigma =	2.0
N =	87
Hu =	21.8
Hl =	19.0

Lab	Rating	Z-value	0	1	3	4	6	7
1	4	0.01			20.2			
3	3	-0.57				19.0		
4	0	-3.52				13.0		
5	4	0.06				20.3		
7	4	-0.13				19.9		
8	0	-4.99					10.0	
9	4	-0.08				20.0		
11	4	0.41				21.0		
12	2	-1.06			18.0			
13	2	-1.06					18.0	
15	3	0.70				21.6		
16	2	-1.06					18.0	
18	4	-0.08		20.0				
19	4	0.41				21.0		
23	2	-1.11			17.9			
24	3	0.55				21.3		
25	0	-5.48				9.0		
30	4	0.41					21.0	
32	3	0.75					21.7	
39	0	6.29			33.0			
40	0	-5.33				9.3		
42	4	-0.08					20.0	
59	4	-0.08				20.0		
69	2	-1.06			18.0			
70	4	0.11				20.4		
73	4	-0.08						20.0
74	2	1.39				23.0		
75	4	-0.38				19.4		
78	3	-0.82			18.5			
79	3	0.65					21.5	
80	1	-1.56			17.0			
81	2	-1.06			18.0			
83	4	0.21				20.6		
84	4	0.26			20.7			
85	1	1.83		23.9				
86	3	0.55				21.3		
87	4	-0.08		20.0				
89	2	1.29			22.8			
90	4	-0.08		20.0				
94	4	-0.08				20.0		
96	0	2.47			25.2			
97	4	-0.28			19.6			
101	0	4.82				30.0		
102	3	0.90				22.0		
103	4	0.41				21.0		
105	3	-0.57				19.0		
111	4	-0.08			20.0			
113	3	0.80			21.8			
114	3	0.90		22.0				
118	0	2.17			24.6			

Lab	Rating	Z-value	0	1	3	4	6	7
119	4	-0.08				20.0		
120	4	-0.33			19.5			
121	3	-0.57				19.0		
127	3	0.51				21.2		
128	4	-0.08					20.0	
133	1	1.72				23.7		
134	3	0.80			21.8			
136	0	7.27				35.0		
138	3	0.85					21.9	
140	4	0.26		20.7				
141	4	0.41				21.0		
142	4	-0.25			19.7			
145	4	0.00				20.2		
146	3	0.95				22.1		
149	0	4.33		29.0				
153	0	-2.14			15.8			
158	0	-3.37			13.3			
179	0	-3.03			14.0			
180	4	0.41				21.0		
182	1	1.88				24.0		
190	1	-1.75			16.6			
191	2	1.39					23.0	
193	NR			< 50				
194	0	-2.54			15.0			
196	4	0.31					20.8	
203	4	-0.08		20.0				
204	4	-0.33			19.5			
211	0	7.27				35.0		
212	4	0.41				21.0		
215	0	2.08				24.4		
217	4	-0.08				20.0		
219.1	NR					< 30		
219.2	3	-0.57					19.0	
220	3	-0.72			18.7			
221	4	0.36	20.9					
224	2	-1.16				17.8		
231	0	3.35		27.0				
234	3	0.85			21.9			
235	0	-2.78			14.5			

Table 12. *Statistical summary of reportad deta for standard reference water sample T-131 (trece constituents)--Continued*

Fe (Iron) µg/L



0. Other		4. ICP				
1. AA: direct air		6. ICP/MS				
3. AA: graphite furnace		22. Colorimetric				
N =	2	18	6	52	6	3
Minimum =	108.0	16.6	65.5	41.5	87.8	90.0
Maximum =	151.0	113.0	129.0	130.0	135.0	175.0
Median =		88.2		90.0		
F-pseudosigma =		16.1		7.2		

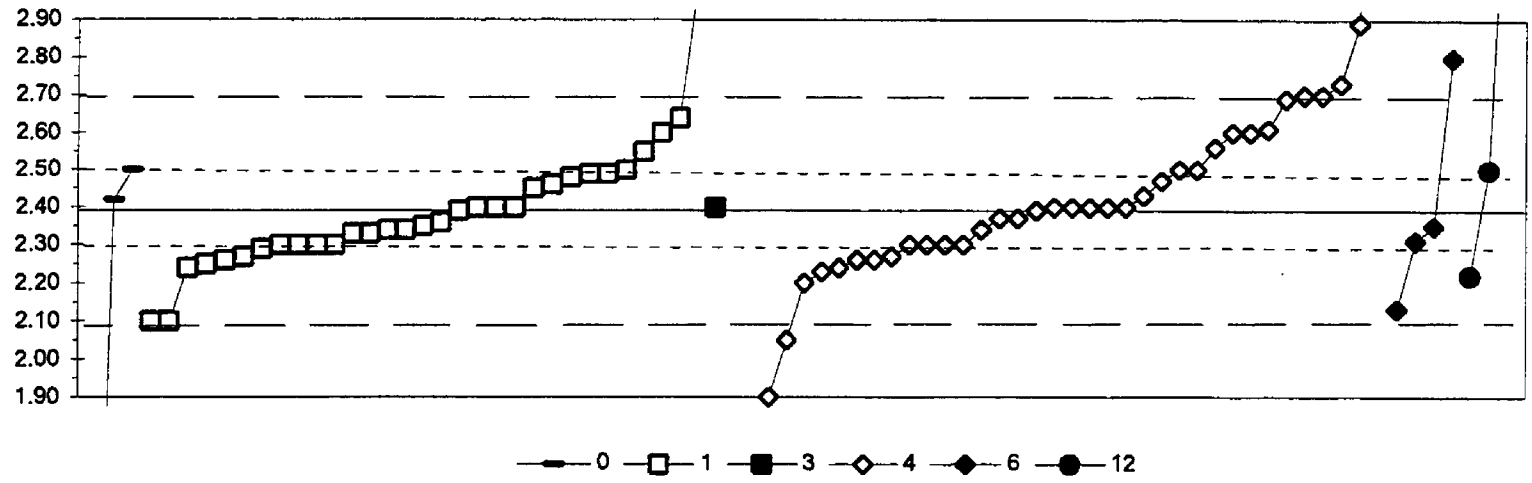
MPV = 90.7
F-pseudosigma = 8.9
N = 87
Hu = 97.0
Hl = 85.0

Lab	Rating	Z-value	0	1	3	4	6	22
1	4	-0.24				88.6		
3	0	2.17				110.0		
4	0	4.42				130.0		
5	4	-0.19				89.0		
7	4	0.19				92.4		
8	3	0.71					97.0	
9	3	-0.52				86.1		
11	4	-0.08				90.0		
12	2	-1.20				80.0		
13	4	0.40					94.3	
15	4	0.10				91.6		
16	2	1.27				102.0		
18	3	-0.64				85.0		
19	2	1.38				103.0		
21	3	0.60						96.0
24	3	-0.90				82.7		
25	0	-4.13				54.0		
32	0	4.98					135.0	
33	1	1.94	108.0					
35	4	-0.08						90.0
39	3	-0.98				82.0		
40	4	0.43				94.5		
42	4	0.15				92.0		
59	1	-1.65				76.0		
69	0	-3.00		64.0				
70	4	0.49				95.1		
73	0	6.78	151.0					
74	4	0.15				92.0		
75	3	-0.80				83.6		
76	3	0.55		95.6				
78	2	-1.37		78.5				
81	3	-0.75				84.0		
83	4	-0.30				88.0		
85	4	0.07				91.3		
86	4	-0.30				88.0		
87	4	0.26		93.0				
89	0	4.31			129.0			
90	0	2.51		113.0				
91	4	-0.33					87.8	
94	3	-0.75				84.0		
96	0	-2.83			65.5			
97	4	0.09			91.5			
101	4	0.00				90.7		
.102	2	1.27				102.0		
103	0	2.17				110.0		
105	4	-0.30				88.0		
107	4	-0.08		90.0				
109	3	0.57		95.8				
111	4	-0.08			90.0			
113	0	-8.33		16.6				

Lab	Rating	Z-value	0	1	3	4	6	22
114	3	-0.64		85.0				
116	4	0.26				93.0		
118	0	-2.10		72.0				
119	3	0.71				97.0		
121	4	-0.08				90.0		
127	4	-0.36				87.5		
128	3	-0.98				82.0		
129	0	9.48						175.0
133	4	-0.30				88.1		
134	3	-0.75				84.0		
136	0	2.63			114.1			
138	4	0.36				93.9		
140	0	-2.89		65.0				
141	4	0.26				93.0		
142	4	-0.36				87.5		
145	4	-0.50				86.2		
146	4	0.10				91.6		
149	2	1.05		100.0				
153	0	2.62			114.0			
158	0	-5.53				41.5		
179	NR			< 100				
180	1	-1.92				73.6		
182	3	1.00				99.6		
190	4	-0.48		86.4				
191	1	1.72					106.0	
193	1	-1.88		74.0				
194	NR					< 100		
203	4	-0.08		90.0				
204	2	1.05				100.0		
211	4	-0.08				90.0		
212	2	-1.43				78.0		
215	4	0.03				91.0		
219.1	2	1.05				100.0		
219.2	0	2.17					110.0	
220	1	-1.62		76.3				
221	3	0.60		96.0				
224	3	0.67				96.7		
231	1	1.83		107.0				
234	4	-0.42				87.0		

Table 12. *Statistical summary of raportad data for standard raferenca watar sample T-131 (trace constituents)--Continuad*

K (Potassium) mg/L



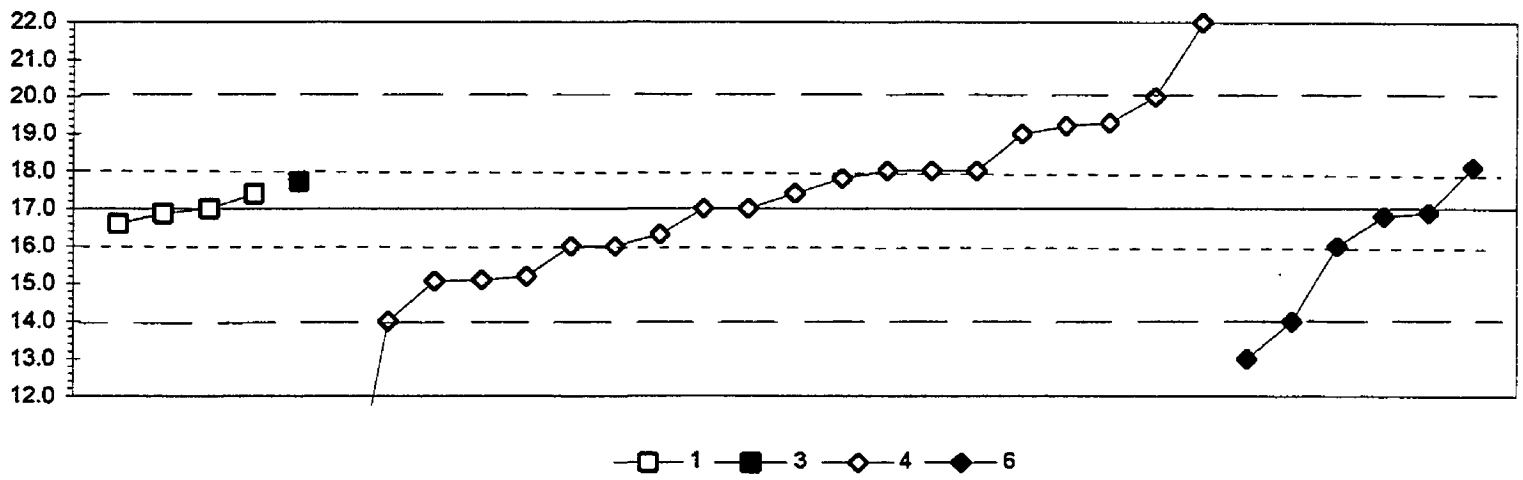
0. Other		4. ICP				
1. AA: direct air		6. ICP/MS				
3. AA: graphite furnace		12. Flame emission				
N =	3	31	1	37	4	3
Minimum =	0.90	2.10	2.40	1.40	2.13	2.22
Maximum =	2.50	3.00		7.00	2.80	3.50
Median =		2.35		2.40		
F-pseudosigma =		0.13		0.21		

MPV = 2.39
F-pseudosigma = 0.15
N = 79
Hu = 2.50
Hl = 2.30

Lab	Rating	Z-value	0	1	3	4	6	12
1	3	-0.92		2.25				
3	4	-0.39		2.33				
7	4	0.07				2.40		
8	0	2.70					2.80	
9	4	-0.13				2.37		
11	3	-0.59				2.30		
12	4	0.07				2.40		
13	1	-1.71					2.13	
15	4	0.26				2.43		
16	4	0.07			2.40			
18	3	-0.59				2.30		
19	1	2.04				2.70		
23	3	-0.86		2.26				
24	2	-1.05				2.23		
25	3	-0.99				2.24		
32	4	-0.26					2.35	
33	4	0.20	2.42					
39	0	30.34				7.00		
40	2	1.38				2.60		
42	4	-0.13				2.37		
59	4	0.07				2.40		
69	3	0.72						2.50
70	3	-0.86				2.26		
74	4	0.07				2.40		
75	4	-0.26		2.35				
78	3	0.72		2.50				
81	4	0.00				2.39		
83	0	4.01		3.00				
85	2	1.38		2.60				
86	1	1.97				2.69		
87	4	-0.20		2.36				
89	3	-0.79		2.27				
94	2	-1.25				2.20		
97	3	-0.59		2.30				
101	4	0.39		2.45				
102	0	-6.51				1.40		
103	0	-3.22				1.90		
105	2	1.12				2.56		
109	4	0.00		2.39				
111	3	0.59		2.48				
113	3	-0.66		2.29				
114	2	1.05		2.55				
116	0	-9.80	0.90					
119	3	-0.59				2.30		
120	3	0.66		2.49				
121	4	-0.39		2.33				
122	3	0.66		2.49				
127	3	0.53				2.47		
128	0	3.29				2.89		
129	1	-1.91		2.10				
134	3	-0.59		2.30				
136	3	0.72	2.50					
138	3	-0.59					2.30	
140	4	0.07		2.40				
141	2	1.38					2.60	
142	0	-2.24					2.05	
145	3	-0.79					2.27	
146	0	-6.05					1.47	
149	0	7.30						3.50
151	4	-0.33		2.34				
158	2	1.45					2.61	
179	3	-0.59		2.30				
180	0	2.24					2.73	
185	4	-0.33		2.34				
191	3	-0.53						2.31
193	4	0.07		2.40				
194	1	1.65		2.64				
196	4	0.46		2.46				
203	1	-1.91		2.10				
204	2	-1.12						2.22
211	3	0.72					2.50	
212	4	0.07					2.40	
215	1	2.04					2.70	
218	3	-0.59		2.30				
219	3	0.72					2.50	
221	4	0.07		2.40				
224	4	-0.33					2.34	
231	3	-0.99		2.24				
234	3	-0.86					2.26	

Table 12. *Statistical summary of reported data for standard reference watar sample T-131 (traca constituents)--Continuad*

Li (Lithium) µg/L



1. AA: direct air
3. AA: graphite furnace
4. ICP
6. ICP/MS

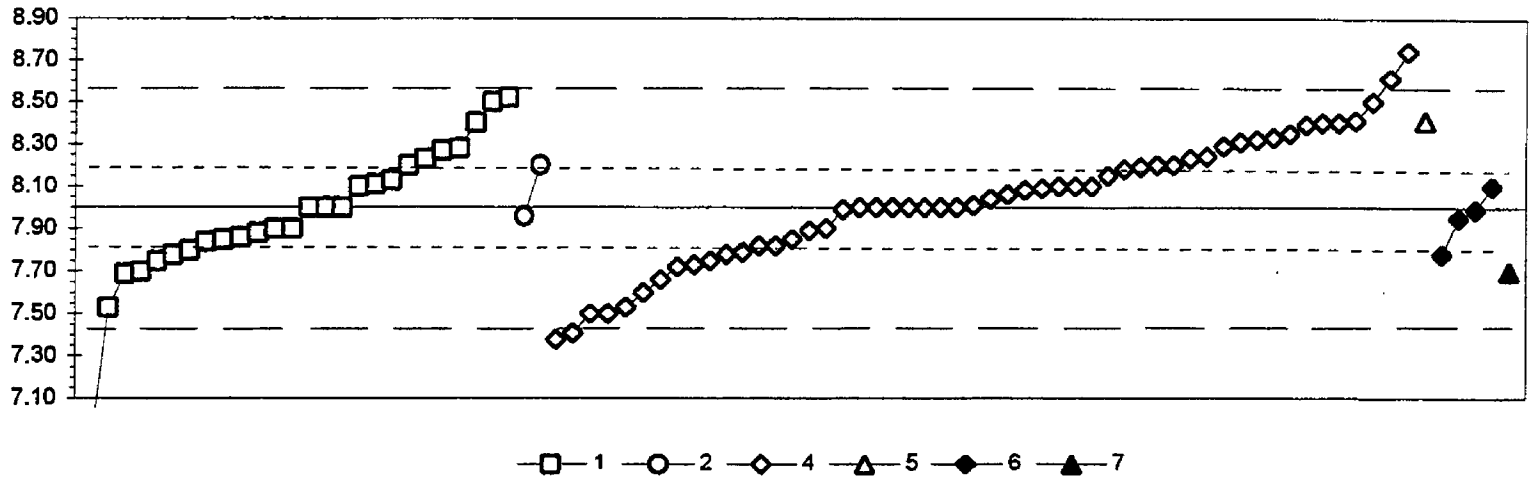
	4	1	20	6
N =	4	1	20	6
Minimum =	16.6	17.7	7.7	13.0
Maximum =	17.4		22.0	18.1
Median =			17.2	
F-pseudosigma =			2.2	

MPV = 17.0
F-pseudosigma = 1.5
N = 31
Hu = 18.0
Hl = 16.0

Lab	Rating	Z-value	1	3	4	6
1	2	1.49			19.2	
3	3	0.67			18.0	
4	4	0.00			17.0	
5	2	-1.28			15.1	
7	1	1.55			19.3	
8	3	-0.67				16.0
15	4	-0.47			16.3	
16	NR				< 100	
25	3	-0.67			16.0	
30	4	-0.13				16.8
32	3	0.74				18.1
39	2	1.35			19.0	
40	0	-6.27			7.7	
42	3	-0.67			16.0	
69	4	0.00	17.0			
75	2	-1.21			15.2	
85	4	0.27	17.4			
103	4	0.00			17.0	
105	3	0.67			18.0	
109	4	-0.09	16.9			
127	4	0.27			17.4	
128	0	-2.70				13.0
134	1	-2.02			14.0	
136	3	0.67			18.0	
142	4	0.49		17.7		
145	2	-1.30			15.1	
151	4	-0.27	16.6			
182	3	0.54			17.8	
196	4	-0.07				16.9
212	1	2.02			20.0	
219	0	3.37			22.0	
219	1	-2.02				14.0

Table 12. *Statistical summary of raportad data for standard reference watar sampla T-131 (trace constituents)--Continued*

Mg (Magnesium) mg/L



1. AA: direct eir			5. DCP			
2. AA: direct nitrous oxide			6. ICP/MS			
4. ICP			7. Ion chromatography			
N =	26	2	52	1	4	1
Minimum =	6.90	7.96	7.38	8.41	7.78	7.70
Maximum =	8.52	8.20	8.74		8.10	
Median =	7.95		8.03			
F-pseudosigma =	0.30		0.31			

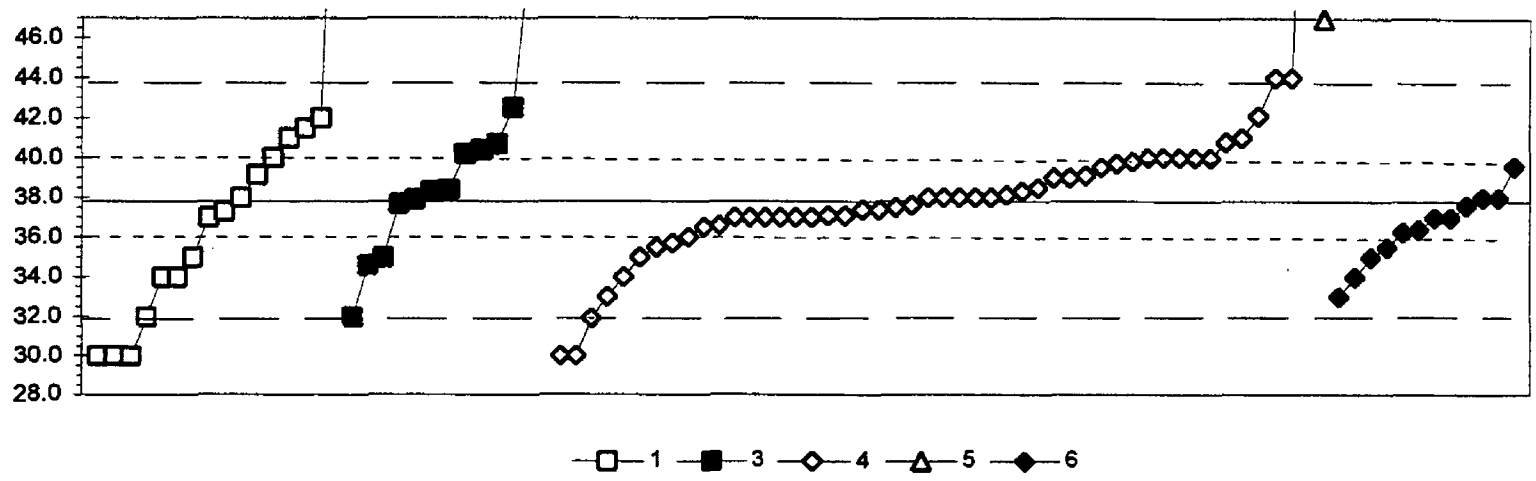
MPV =	8.00
F-pseudosigma =	0.28
N =	86
Hu =	8.20
Hl =	7.82

Lab	Rating	Z-value	1	2	4	5	6	7
1	3	-0.75			7.79			
3	4	-0.39			7.89			
4	2	1.38			8.39			
5	3	-0.99			7.72			
7	3	0.71			8.20			
8	4	0.36					8.10	
9	4	0.04			8.01			
11	2	1.24			8.35			
12	4	0.36			8.10			
13	4	-0.04					7.99	
15	0	2.17			8.61			
16	3	-0.89			7.75			
18	4	0.00			8.00			
19	2	1.10			8.31			
23	1	1.85	8.52					
24	3	-0.64			7.82			
25	3	-0.53			7.85			
30	4	0.39	8.11					
32	3	-0.78					7.78	
33	2	1.46				8.41		
39	3	0.85			8.24			
40	2	1.46			8.41			
42	4	0.00			8.00			
59	4	-0.36			7.90			
69	4	0.36	8.10					
70	4	0.14			8.04			
74	1	-1.78			7.50			
75	3	-0.53	7.85					
78	4	-0.36	7.90					
81	2	1.17			8.33			
83	4	0.00			8.00			
84	3	0.99	8.28					
85	4	-0.50	7.86					
86	4	0.21			8.06			
87	3	-0.78	7.78					
89	3	-0.57	7.84					
94	4	0.00			8.00			
97	4	0.46	8.13					
101	4	0.00	8.00					
102	2	1.42			8.40			
103	1	-1.78			7.50			
105	3	-0.64			7.82			
109	1	1.78	8.50					
111	4	-0.14		7.96				
113	2	-1.10	7.69					
114	3	0.71		8.20				
116	3	0.67			8.19			
119	2	-1.42			7.60			
120	1	-1.67	7.53					
121	4	0.00			8.00			

Lab	Rating	Z-value	1	2	4	5	6	7
122	4	0.00	8.00					
127	3	-0.78			7.78			
128	0	-2.20			7.38			
129	2	1.42	8.40					
133	3	0.82			8.23			
134	1	-1.67			7.53			
136	2	-1.07						7.70
138	4	0.00			8.00			
140	3	-0.71	7.80					
141	3	0.64			8.18			
142	3	0.53			8.15			
145	4	-0.04			7.99			
146	3	-0.96			7.73			
151	4	0.00	8.00					
158	4	0.28			8.08			
179	0	-3.91	6.90					
180	4	0.32			8.09			
182	2	-1.21			7.66			
185	4	-0.36	7.90					
191	4	-0.18						7.95
193	4	-0.43	7.88					
194	3	0.71			8.20			
196	3	0.96	8.27					
203	3	-0.89	7.75					
204	0	2.63			8.74			
211	2	1.42			8.40			
212	1	1.78			8.50			
215	4	0.00			8.00			
217	4	0.36			8.10			
218	2	-1.07	7.70					
219	4	0.36			8.10			
221	3	0.82	8.23					
224	0	-2.09			7.41			
231	3	0.71	8.20					
234	2	1.03			8.29			
235	2	1.14			8.32			

Table 12. *Statistical summary of reported data for standard reference water sample T-131 (trace constituents)--Continued*

Mn (Manganese) µg/L



1. AA: direct air
3. AA: graphite furnace
4. ICP
5. DCP
6. ICP/MS

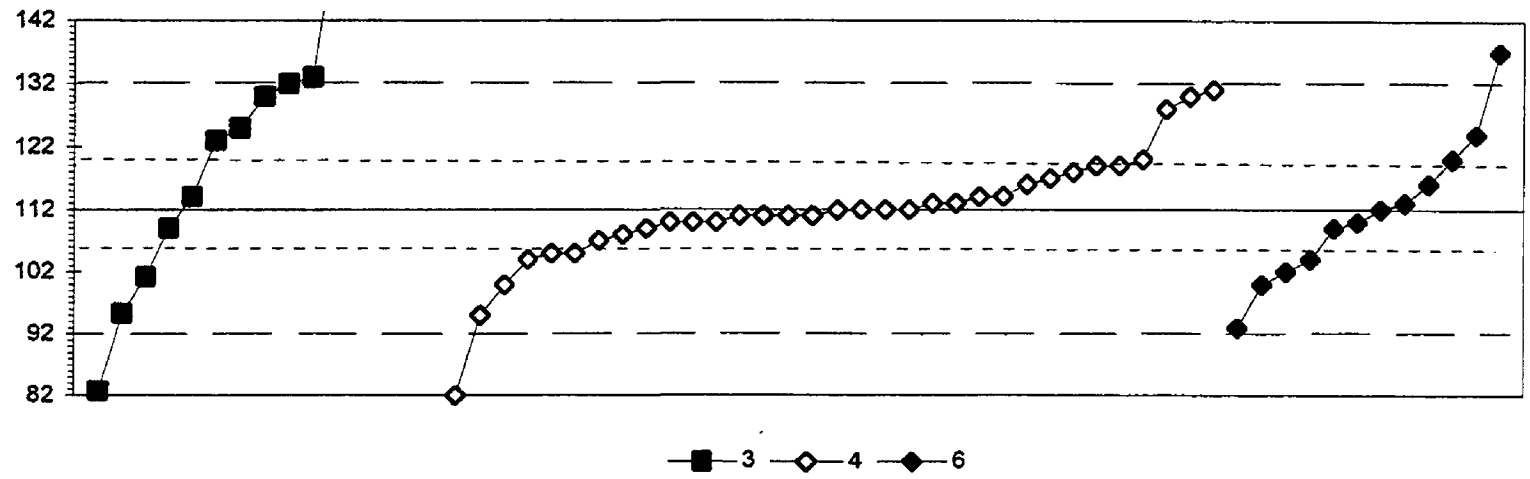
	1	3	4	5	6
N =	16	13	48	1	12
Minimum =	30.0	32.0	30.0	47.0	33.0
Maximum =	69.0	69.0	66.0		39.6
Median =	37.2	38.4	38.0		36.7
F-pseudosigma =	5.6	2.2	2.0		1.9

MPV = 37.8
F-pseudosigma = 3.0
N = 90
Hu = 40.0
Hl = 36.0

Lab	Rating	Z-value	1	3	4	5	6
1	3	-0.52					36.3
3	4	-0.27			37.0		
4	0	9.51			66.0		
5	4	-0.07			37.6		
7	3	0.57			39.5		
8	4	-0.27					37.0
9	4	0.44			39.1		
11	2	-1.28			34.0		
12	3	0.74			40.0		
13	4	-0.07					37.6
15	3	0.67			39.8		
16	1	-1.62					33.0
18	4	0.40			39.0		
19	2	1.45			42.1		
23	4	0.20		38.4			
24	3	-0.71			35.7		
25	4	-0.27			37.0		
30	3	0.61					39.6
32	4	-0.47					36.4
33	0	3.10				47.0	
39	4	0.07			38.0		
40	3	0.74			40.0		
42	4	0.07					38.0
59	3	-0.61			36.0		
69	1	-1.96	32.0				
70	4	-0.24			37.1		
74	4	-0.27			37.0		
75	3	-0.78			35.5		
76	2	-1.28	34.0				
78	4	-0.03		37.7			
80	3	-0.94		35.0			
81	1	-1.62			33.0		
83	4	-0.27			37.0		
85	2	1.25	41.5				
86	4	-0.13			37.4		
87	4	-0.27	37.0				
89	4	0.03		37.9			
90	2	1.08	41.0				
91	3	-0.78					35.5
94	4	-0.27			37.0		
96	2	-1.08		34.6			
97	3	0.88		40.4			
101	4	-0.40			36.6		
102	4	0.07			38.0		
103	0	2.09			44.0		
105	3	0.74			40.0		
107	3	0.74	40.0				
109	4	0.45	39.1				
111	0	10.52		69.0			
113	3	0.98		40.7			
114	4	0.07	38.0				
116	2	1.08			41.0		
118	0	10.52	69.0				
119	4	-0.27			37.0		
120	1	-1.96		32.0			
121	3	0.74			40.0		
127	3	0.64			39.7		
128	2	-1.28					34.0
129	0	-2.63	30.0				
134	4	0.40			39.0		
136	0	4.32		50.6			
138	4	0.17			38.3		
140	3	-0.94	35.0				
141	4	0.07			38.0		
142	4	-0.44			36.5		
145	4	0.11			38.1		
146	0	-2.63			30.0		
149	2	1.42	42.0				
153	1	1.59		42.5			
158	0	-2.63			30.0		
179	0	-2.63	30.0				
180	4	-0.13			37.4		
182	1	-1.99			31.9		
190	4	0.17		38.3			
191	4	-0.27					37.0
194	NR				< 50		
196	4	0.07					38.0
203	4	-0.17	37.3				
204	4	0.07			38.0		
211	3	-0.94			35.0		
212	3	0.74			40.0		
215	4	-0.10			37.5		
217	4	0.07			38.0		
219.1	0	2.09			44.0		
219.2	3	-0.94					35.0
220	2	-1.28	34.0				
221	3	0.81		40.2			
224	4	0.24			38.5		
231	0	-2.63	30.0				
234	4	-0.24			37.1		
235	2	1.01			40.8		

Table 12. *Statistical summary of reported data for standard reference water sample T-131 (trece constituents)--Continued*

Mo (Molybdenum) µg/L



3. AA: graphite furnace
4. ICP
6. ICP/MS

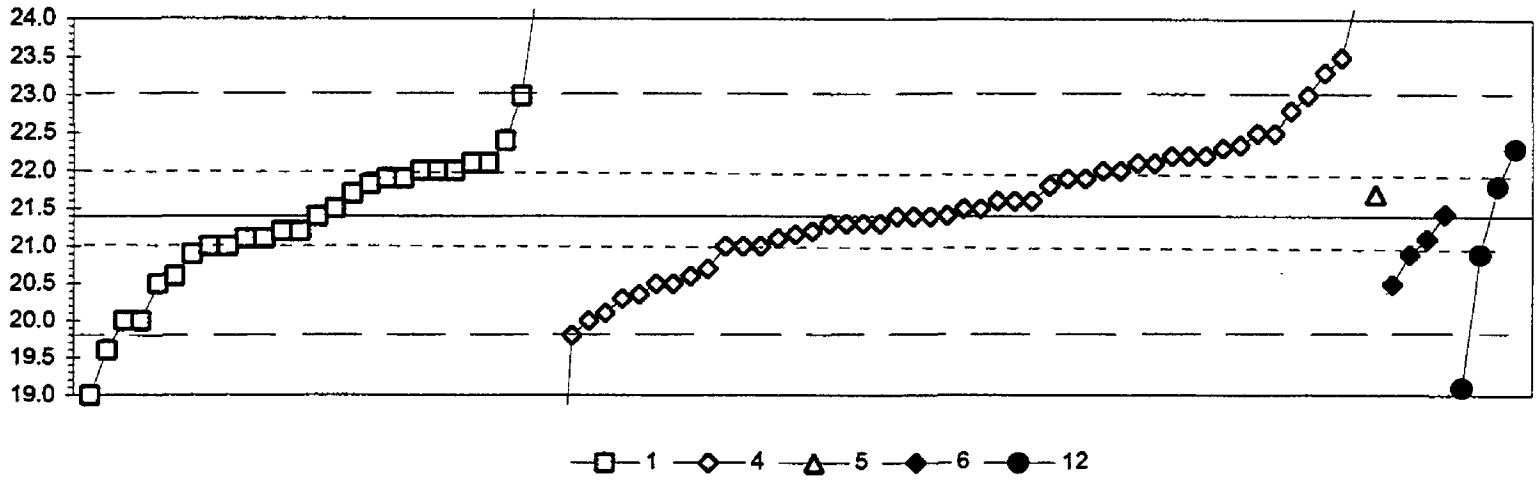
	3	4	6
N =	13	35	12
Minimum =	83	53	93
Maximum =	161	131	137
Median =	125	111	111
F-pseudosigma =	18	6	11

MPV =	112
F-pseudosigma =	10
N =	60
Hu =	120
HI =	106

Lab	Rating	Z-value	3	4	6
1	4	0.20	114		
3	4	0.00		112	
4	0	-3.00		82	
5	4	-0.10		111	
7	4	0.40		116	
8	2	-1.20			100
11	3	0.60		118	
12	1	1.80		130	
15	4	-0.20		110	
16	3	-1.00			102
18	4	-0.40		108	
19	1	1.90		131	
24	4	-0.50		107	
30	4	0.00			112
32	3	-0.80			104
39	4	-0.10		111	
40	0	-5.94		53	
42	4	-0.30			109
59	0	2.50			137
70	4	0.00		112	
74	3	-0.70		105	
75	3	-0.80		104	
78	2	-1.07	101		
79	4	0.40			116
81	1	-1.70		95	
85	4	0.50		117	
86	3	-0.70		105	
87	2	1.30	125		
94	4	-0.30	109		
97	1	-1.66	95		
103	4	-0.10		111	
105	3	0.80			120
109	0	-2.92	83		
120	2	1.10	123		
127	3	0.70		119	
128	1	-1.90			93
134	4	0.10		113	
136	3	0.70		119	
138	2	1.20			124
141	4	-0.30		109	
142	0	4.60	158		
145	4	0.21		114	
146	4	-0.10		111	
149	0	4.80	160		
158	4	0.10		113	
179	0	4.90	161		
180	4	0.20		114	
182	0	-3.91		73	
194	1	2.00	132		
196	4	0.10			113
211	3	0.80		120	
212	4	-0.20		110	
215	4	0.00		112	
217	4	-0.20		110	
219.1	2	-1.20		100	
219.2	4	-0.20			110
221	1	1.80	130		
224	4	-0.01		112	
234	0	2.10	133		
235	1	1.60		128	

Table 12. *Statistical summary of reported data for standard reference watar sample T-131 (trace constituents)--Continued*

Na (Sodium) mg/L



1. AA: direct air		6. ICP/MS			
4. ICP		12. Flame emission			
5. DCP					
N =	27	48	1	4	4
Minimum =	19.0	16.1	21.7	20.5	19.1
Maximum =	24.6	24.4		21.4	22.3
Median =	21.4	21.5			
F-pseudosigma =	0.8	0.9			

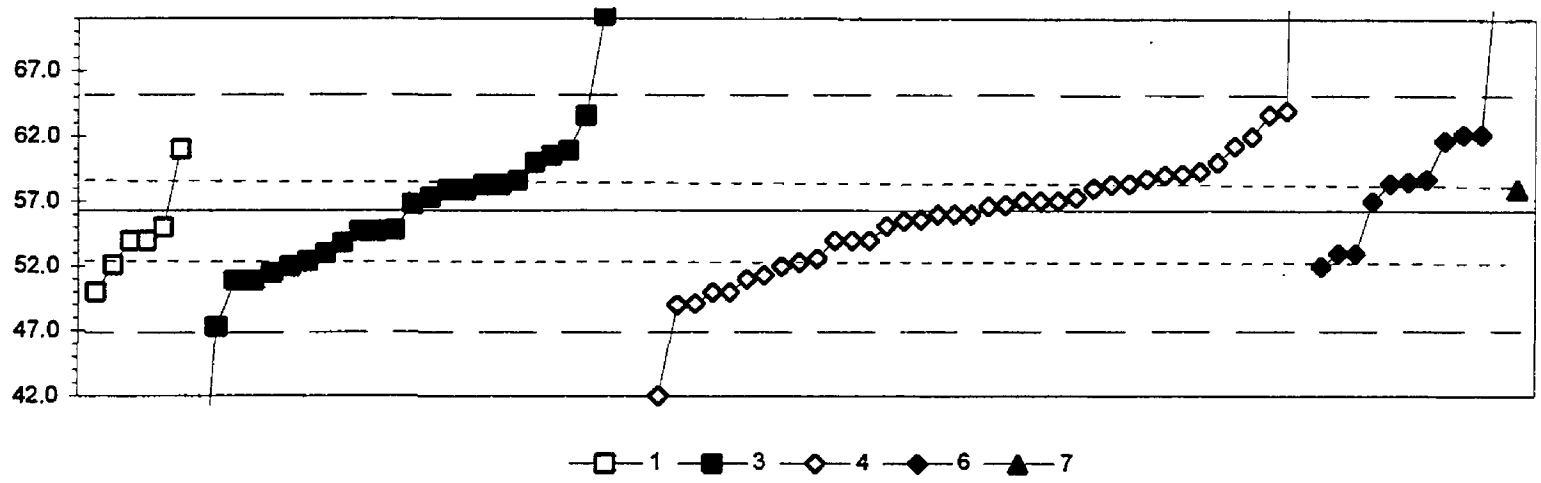
MPV =	21.4
F-pseudosigma =	0.8
N =	84
Hu =	22.0
HI =	21.0

Lab	Rating	Z-value	1	4	5	6	12
1	4	-0.01	21.4				
3	4	-0.01		21.4			
4	2	1.02		22.2			
5	4	-0.01		21.4			
7	1	1.79		22.8			
8	4	-0.39				21.1	
9	3	0.89		22.1			
11	2	1.15		22.3			
12	3	0.76		22.0			
13	2	-1.16				20.5	
15	2	-1.42		20.3			
16	2	-1.16		20.5			
18	3	0.64		21.9			
19	2	1.02		22.2			
23	4	-0.39	21.1				
24	2	-1.16		20.5			
25	2	1.20		22.3			
32	3	-0.65				20.9	
33	4	0.38			21.7		
39	4	-0.13		21.3			
40	0	2.69		23.5			
42	4	0.25		21.6			
59	3	-0.52		21.0			
69	3	-0.65					20.9
70	3	0.51		21.8			
74	4	-0.13		21.3			
75	4	-0.26	21.2				
78	0	4.10	24.6				
81	2	1.41		22.5			
83	4	0.12		21.5			
84	2	1.15					22.3
85	4	-0.39	21.1				
86	4	-0.01		21.4			
87	0	-2.32	19.6				
89	2	-1.16	20.5				
90	3	0.51					21.8
94	4	0.12		21.5			
97	3	0.89	22.1				
101	3	0.76	22.0				
102	0	-6.82		16.1			
103	3	0.76		22.0			
105	4	-0.39		21.1			
109	3	-0.52	21.0				
111	4	0.12	21.5				
113	3	0.64	21.9				
114	2	-1.03	20.6				
116	3	0.89		22.1			
119	3	-0.52		21.0			
120	1	2.04	23.0				
121	0	-2.06		19.8			

Lab	Rating	Z-value	1	4	5	6	12
122	4	-0.26	21.2				
127	2	-1.03		20.6			
128	4	-0.13		21.3			
129	3	0.76	22.0				
134	1	-1.81	20.0				
136	4	-0.13		21.3			
138	3	0.64		21.9			
140	3	-0.52	21.0				
141	2	1.02		22.2			
142	3	-0.52		21.0			
145	4	-0.31		21.2			
146	1	-1.81		20.0			
151	3	0.64	21.9				
158	0	3.85		24.4			
179	3	-0.65	20.9				
180	3	-0.91		20.7			
182	2	-1.34		20.4			
185	3	0.53	21.8				
191	4	0.03				21.4	
193	1	-1.81	20.0				
194	4	0.25		21.6			
196	3	0.89	22.1				
203	2	1.28	22.4				
204	0	-2.96					19.1
211	0	2.43		23.3			
212	2	1.41		22.5			
215	4	-0.26		21.2			
217	4	0.25		21.6			
218	0	-3.09	19.0				
219	1	2.05		23.0			
221	4	0.38	21.7				
224	4	0.01		21.4			
231	3	0.76	22.0				
234	1	-1.68		20.1			

Table 12. *Statistical summary of reported data for standard reference water sample T-131 (trace constituents)--Continued*

Ni (Nickel) µg/L



1. AA: direct air		6. ICP/MS			
3. AA: graphite furnace		7. Ion chromatography			
4. ICP					
N =	6	24	40	11	1
Minimum =	50.0	26.0	5.0	52.0	58.0
Maximum =	61.0	71.3	142.0	78.0	
Median =		55.8	56.0	58.5	
F-pseudosigma =		4.6	4.7	5.2	

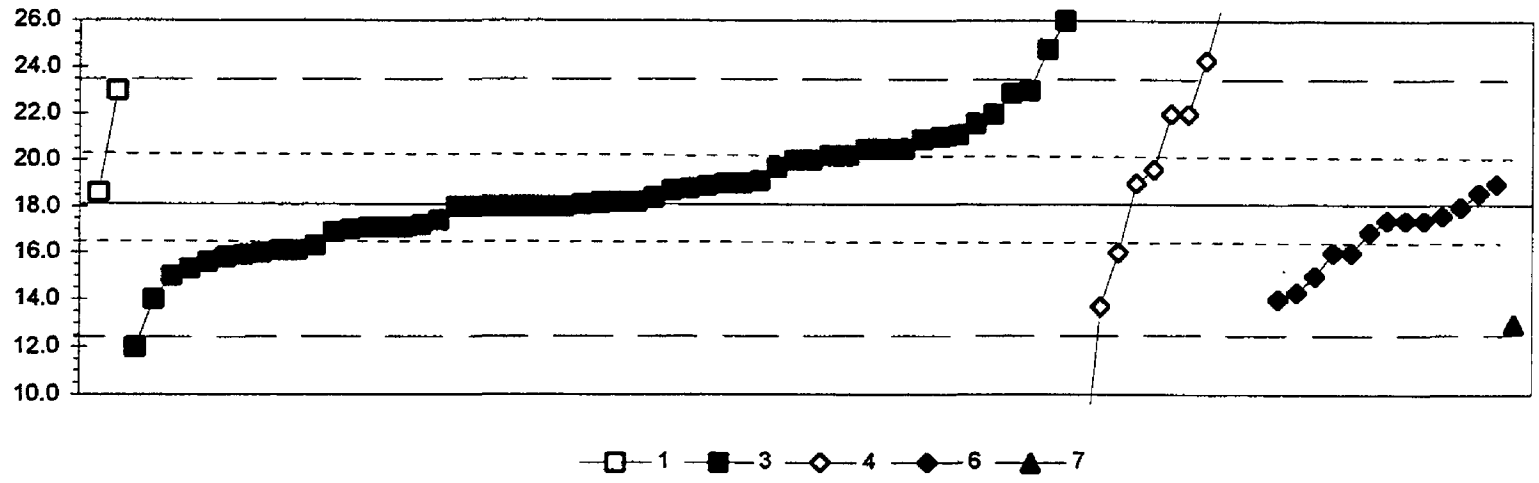
MPV =	56.3
F-pseudosigma =	4.7
N =	82
Hu =	58.7
Hl =	52.4

Lab	Rating	Z-value	1	3	4	6	7
1	4	0.44			58.4		
3	4	-0.49			54.0		
5	4	-0.17			55.5		
7	0	18.35			142.0		
8	0	4.65				78.0	
9	2	-1.07			51.3		
11	2	1.22			62.0		
12	3	0.79			60.0		
13	4	0.45				58.4	
15	3	-0.92			52.0		
16	3	-0.92				52.0	
18	3	0.58			59.0		
23	3	0.90		60.5			
24	4	-0.15			55.6		
25	1	-1.56			49.0		
30	2	1.26				62.2	
32	4	0.47				58.5	
39	4	0.34		57.9			
40	0	-6.12			27.7		
42	4	0.15				57.0	
59	2	-1.35			50.0		
69	4	-0.49	54.0				
70	4	-0.26			55.1		
72	1	-1.54			49.1		
73	4	0.36					58.0
74	4	-0.06			56.0		
75	4	-0.34		54.7			
76	1	-1.93		47.3			
78	3	-0.84		52.4			
79	2	1.26				62.2	
81	0	-6.49		26.0			
83	3	-0.86			52.3		
85	2	-1.35			50.0		
86	4	0.09			56.7		
87	2	1.01	61.0				
89	4	-0.32		54.8			
90	0	3.21		71.3			
94	4	-0.06			56.0		
97	4	-0.34		54.7			
101	4	0.43			58.3		
102	4	0.15			57.0		
103	2	-1.13			51.0		
105	4	-0.06			56.0		
107	3	-0.92		52.0			
113	3	0.79		60.0			
114	4	-0.28	55.0				
118	3	-0.54		53.8			
119	3	-0.71		53.0			
120	2	-1.16		50.9			
121	1	1.65			64.0		

Lab	Rating	Z-value	1	3	4	6	7
127	4	0.43		58.3			
128	3	-0.71				53.0	
133	2	1.06			61.3		
134	4	0.21		57.3			
136	4	0.36			58.0		
138	3	0.60			59.1		
140	3	-0.90	52.1				
141	4	-0.49			54.0		
142	2	-1.16		50.9			
145	1	1.58			63.7		
146	4	0.21			57.3		
153	4	0.34		57.9			
158	3	0.64			59.3		
179	4	0.43		58.3			
180	4	0.06			56.6		
182	0	-10.98			5.0		
190	3	0.98		60.9			
191	2	1.16				61.7	
193	2	-1.35	50.0				
196	3	0.51				58.7	
203	4	-0.49	54.0				
211	0	-3.06			42.0		
212	4	0.15			57.0		
215	3	0.51			58.7		
217	4	-0.49			54.0		
219.1	4	0.15			57.0		
219.2	3	-0.71				53.0	
221	4	0.11		56.8			
224	3	-0.79			52.6		
231	2	-1.03		51.5			
234	1	1.56		63.6			
235	4	0.49		58.6			

Table 12. *Statistical summary of reported data for standard reference water semple T-131 (trace constituents)--Continued*

Pb (Lead) µg/L



1. AA: direct air		6. ICP/MS			
3. AA: graphite furnace		7. Ion chromatography			
4. ICP					
N =	2	53	11	13	1
Minimum =	18.6	12.0	5.9	14.0	13.0
Maximum =	23.0	26.0	31.0	19.0	
Median =		18.2	22.0	17.4	
F-pseudosigma =		2.3	6.0	1.2	

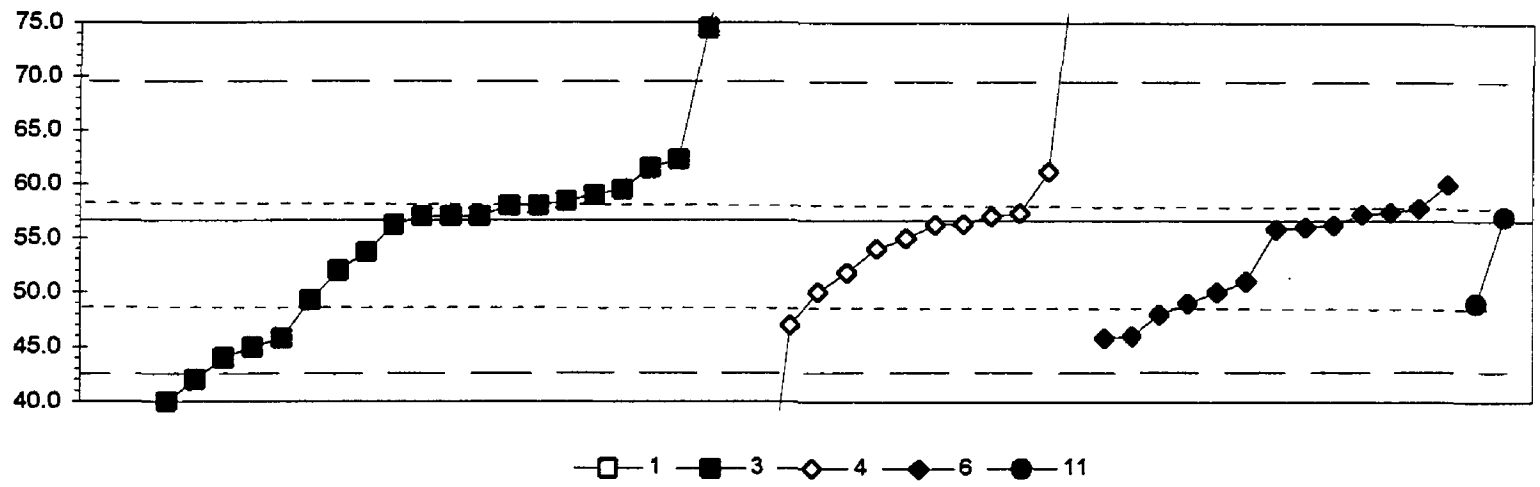
MPV =	18.1
F-pseudosigma =	2.7
N =	80
Hu =	20.2
Hl =	16.6

Lab	Rating	Z-value	1	3	4	6	7
1	4	0.36		19.0			
3	2	1.48		22.0			
4	NR				< 40		
5	3	0.81		20.2			
7	4	-0.32		17.2			
8	NR					< 30	
9	2	1.48			22.0		
11	0	3.35			27.0		
12	4	-0.02		18.0			
13	3	0.73		20.0			
15	NR				< 50		
16	2	-1.14				15.0	
18	4	-0.02		18.0			
23	3	-0.84		15.8			
24	1	1.82		22.9			
25	NR				< 71		
30	4	-0.24				17.4	
32	4	-0.43				16.9	
39	0	2.98		26.0			
40	0	-4.55			5.9		
42	2	-1.41				14.3	
59	3	-0.77			16.0		
69	4	-0.02		18.0			
70	4	-0.43		16.9			
72	4	-0.02		18.0			
73	1	-1.89					13.0
74	4	0.36				19.0	
75	4	0.24		18.7			
76	3	-0.81		15.9			
78	3	0.92		20.5			
79	4	-0.24				17.4	
80	2	-1.14		15.0			
81	3	0.73		20.0			
83	4	0.28		18.8			
84	4	0.13		18.4			
85	NR		< 50				
86	1	-1.63			13.7		
87	2	1.33		21.6			
89	4	-0.02		18.0			
90	3	-0.73		16.1			
94	3	-0.73		16.1			
96	4	-0.36		17.1			
97	4	-0.36		17.1			
101	0	2.34			24.3		
102	4	0.36			19.0		
105	4	-0.17				17.6	
111	0	-2.27		12.0			
113	3	0.81		20.2			
114	1	1.85	23.0				
118	4	-0.24		17.4			

Lab	Rating	Z-value	1	3	4	6	7
119	4	-0.39		17.0			
120	3	-0.66		16.3			
127	4	0.39		19.1			
128	1	-1.52				14.0	
133	0	2.52		24.8			
134	4	0.32		18.9			
136	0	4.85			31.0		
138	4	-0.02				18.0	
140	4	0.21	18.6				
141	NR				< 20		
142	3	0.92		20.5			
145	2	1.48			22.0		
146	4	0.06		18.2			
149	4	-0.02		18.0			
153	4	-0.36		17.1			
158	2	-1.03		15.3			
179	3	-0.92		15.6			
180	0	3.62			27.7		
190	4	0.02		18.1			
191	4	0.21				18.6	
193	4	0.36		19.0			
194	2	1.14		21.1			
196	4	-0.24				17.4	
203	4	-0.02		18.0			
204	2	1.07		20.9			
211	2	1.11		21.0			
212	3	-0.77		16.0			
215	1	-1.52		14.0			
217	3	-0.77				16.0	
219.1	NR				< 30		
219.2	3	-0.77				16.0	
220	4	0.05		18.2			
221	3	0.62		19.7			
224	3	0.58			19.6		
231	1	1.85		23.0			
234	3	0.92		20.5			
235	4	0.06		18.2			

Table 12. *Statistical summary of reported data for standard reference watar sample T-131 (traca constituants)--Continued*

Sb (Antimony) µg/L



1. AA: direct air
3. AA: graphite furnace
4. ICP
6. ICP/MS
11. AA: hydride

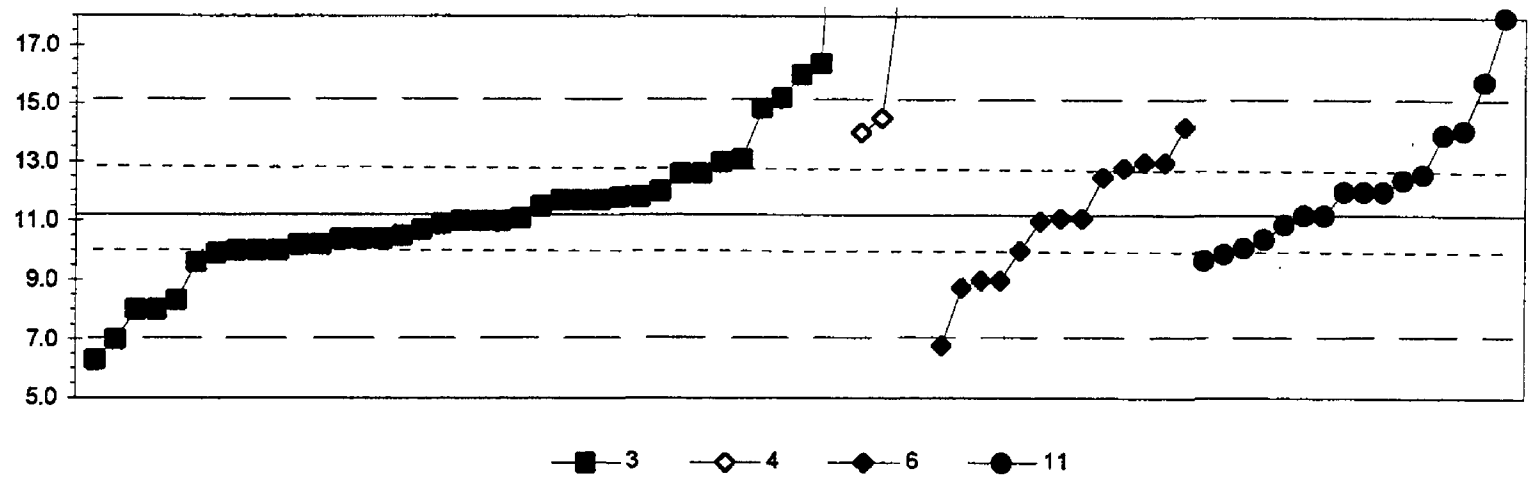
	1	3	4	6	11
N =	1	22	12	13	2
Minimum =	250.0	37.0	25.6	45.8	49.0
Maximum =		84.5	84.0	60.0	57.0
Median =		57.0	55.6	55.8	
F-pseudosigma =		9.8	4.6	6.1	

MPV = 56.2
F-pseudosigma = 6.7
N = 50
Hu = 58.0
Hl = 49.0

Lab	Rating	Z-value	1	3	4	6	11
1	4	0.18				57.4	
3	4	0.27		58.0			
5	3	-0.66			51.8		
7	4	0.16			57.3		
8	2	-1.08					49.0
11	4	-0.18			55.0		
12	NR				< 100		
15	4	0.01			56.3		
16	2	-1.08				49.0	
18	1	-1.83		44.0			
24	0	4.24		84.5			
25	4	-0.33			54.0		
30	4	0.24				57.8	
32	1	-1.56				45.8	
39	4	-0.37		53.7			
40	0	-4.59			25.6		
42	4	-0.03				56.0	
59	3	-0.78				51.0	
69	4	0.00		56.2			
70	0	-2.88		37.0			
72	0	-2.13		42.0			
74	3	-0.93				50.0	
75	NR				< 50		
76	4	0.12		57.0			
78	2	-1.03		49.3			
81	0	-2.43		40.0			
85	NR				< 100		
94	4	0.12		57.0			
97	4	0.33		58.4			
102	4	0.12			57.0		
105	4	0.15				57.2	
113	4	0.49		59.5			
114	0	29.05	250.0				
119	4	0.12					57.0
120	4	0.27		58.0			
127	3	0.91		62.3			
128	1	-1.53				46.0	
136	0	4.17			84.0		
138	4	0.00				56.2	
141	3	-0.93			50.0		
142	3	0.80		61.5			
146	4	0.00			56.2		
158	2	-1.38			47.0		
179	1	-1.56		45.8			
180	3	0.75			61.2		
194	1	-1.68		45.0			
196	4	-0.06				55.8	
211	3	-0.63		52.0			
212	4	0.12		57.0			
215	4	0.42		59.0			
217	2	-1.23				48.0	
219	3	0.57				60.0	
234	0	2.74		74.5			

Table 12. *Statistical summary of reported data for standard refaranca watar sample T-131 (traca constituents)--Continued*

Se (Selenium) µg/L



3. AA: graphite furnace
4. ICP
6. ICP/MS
11. AA: hydride

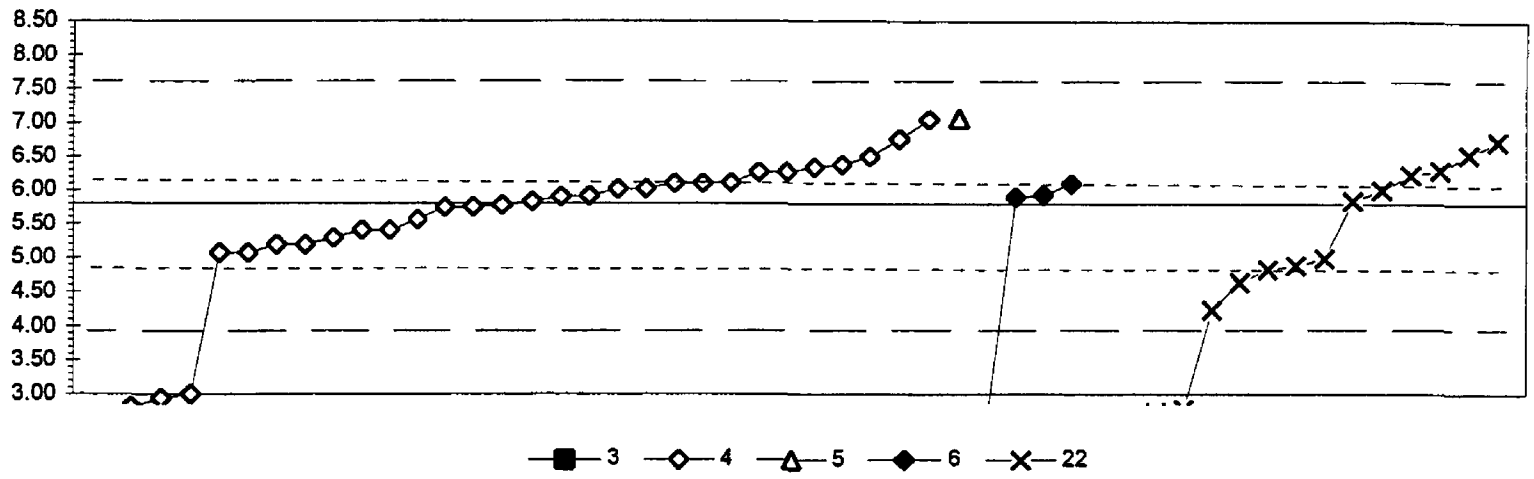
		3	4	6	11
N =		38	4	13	16
Minimum =		6.3	14.0	6.8	9.7
Maximum =		26.6	41.0	14.2	18.0
Median =		11.0		11.1	12.0
F-pseudosigma =		1.5		2.7	1.2

MPV = 11.2
F-pseudosigma = 2.0
N = 71
Hu = 12.9
Hl = 10.2

Lab	Rating	Z-value	3	4	6	11
1	4	0.29	11.8			
3	3	0.88	13.0			
5	4	-0.15	10.9			
7	0	-2.40	6.3			
8	4	0.39				12.0
11	NR			< 10		
12	1	-1.57	8.0			
13	4	-0.39	10.4			
15	3	0.69				12.6
16	4	-0.10			11.0	
18	4	-0.15				10.9
23	3	-0.75				9.7
24	0	7.55	26.6			
25	NR			< 129		
30	3	0.64			12.5	
32	3	-0.59			10.0	
34	3	0.59				12.4
35	3	-0.54				10.1
42	4	-0.05			11.1	
59	2	-1.08			9.0	
69	3	0.69	12.6			
70	4	-0.25	10.7			
72	4	-0.10	11.0			
74	2	-1.08			9.0	
75	4	0.39				12.0
76	4	0.29	11.8			
78	1	1.96	15.2			
79	2	1.47			14.2	
80	0	2.35	16.0			
81	1	-1.57	8.0			
85	4	0.00				11.2
86	0	2.26				15.8
87	2	1.42				14.1
89	4	0.00				11.2
94	0	-2.06	7.0			
96	4	-0.49	10.2			
97	3	0.93	13.1			
102	2	1.37		14.0		
105	2	-1.20			8.8	
107	4	-0.39	10.4			
109	1	1.78	14.8			
113	4	0.25	11.7			
119	4	0.39				12.0
120	3	-0.64				9.9
127	3	0.69	12.6			
128	3	0.88			13.0	
133	3	-0.59	10.0			
134	4	-0.39				10.4
136	0	14.62		41.0		
138	3	0.78			12.8	
141	0	3.34				18.0
142	0	2.55	16.4			
146	4	0.15	11.5			
153	4	-0.49	10.2			
158	0	4.32		20.0		
179	4	0.25	11.7			
180	NR			< 35.9		
182	2	1.35				14.0
190	2	-1.41	8.3			
191	3	0.88			13.0	
193	0		< 5			
194	4	-0.39	10.4			
196	4	-0.05			11.1	
203	3	-0.78	9.6			
204	3	-0.64	9.9			
211	3	-0.59	10.0			
212	3	-0.59	10.0			
215	4	-0.10	11.0			
217	0	-2.16			6.8	
220	4	-0.34	10.5			
221	4	-0.05	11.1			
224	1	1.62		14.5		
231	4	0.39	12.0			
234	4	-0.10	11.0			
235	4	0.25	11.7			

Table 12. *Statistical summary of reported data for standard referance water sample T-131 (trace constituents)--Continued*

SiO2 (Silica) mg/L



3. AA: graphite furnace
4. ICP
5. DCP
6. ICP/MS
22m. Color: molydate blue

	3	4	5	6	22m
N =	1	29	1	4	15
Minimum =	2.65	2.82	7.07	2.57	0.91
Maximum =		7.05		6.10	6.73
Median =		5.83			4.89
F-pseudosigma =		0.60			1.93

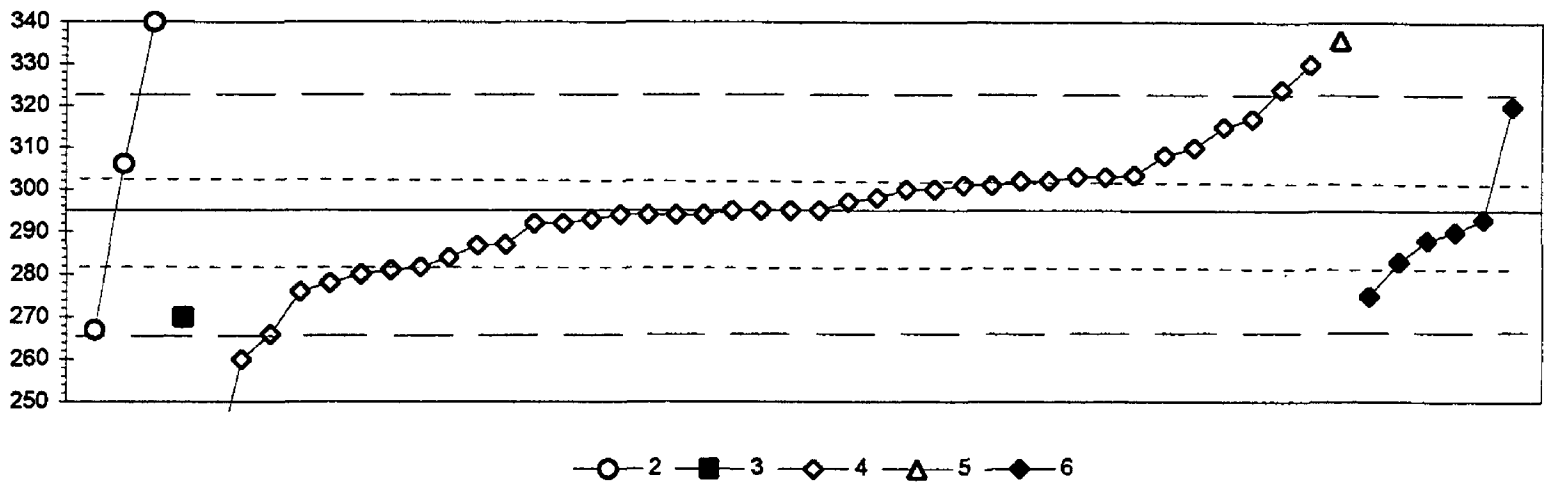
MPV = 5.80
F-pseudosigma = 0.90
N = 50
Hu = 6.11
Hl = 4.89

Lab	Rating	Z-value	3	4	5	6	22m
1	4	-0.06		5.75			
3	3	0.60		6.34			
4	2	1.06		6.76			
5	4	0.24		6.02			
7	3	0.52		6.27			
8	4	0.33				6.10	
11	4	-0.27		5.56			
13	0	-3.57				2.57	
15	4	0.34		6.11			
24	4	0.12		5.91			
25	2	1.38		7.05			
32	4	0.11				5.90	
33	2	1.40			7.07		
39	0	-3.30		2.82			
42	4	0.33		6.10			
70	2	-1.07					4.83
75	2	1.03					6.73
83	3	-0.81		5.07			
87	0	-5.41					0.91
89	4	0.48					6.23
92	3	-0.90					4.99
97	2	-1.28					4.64
102	4	-0.44		5.40			
103	3	-0.81		5.07			
105	3	0.64		6.38			
107	0	-4.42					1.80
109	3	-0.67		5.19			
111	4	0.04					5.84
113	3	0.81					6.53
116	3	0.52		6.27			
118	0	-3.34					2.78
119	4	0.33		6.10			
121	4	-0.03		5.77			
127	4	0.11		5.90			
128	4	0.23		6.01			
134	3	-0.56		5.29			
136	4	-0.44		5.40			
138	2	-1.01					4.89
140	4	0.23					6.01
141	0						< 0.10
142	3	-0.68		5.19			
145	4	0.03		5.83			
151	3	0.55					6.30
191	4	0.14				5.93	
203	1	-1.72					4.24
211	0	-3.48	2.65				
212	3	0.77		6.50			
215	0	-3.16		2.94			
219	0	-3.10		3.00			
231	0	-3.39					2.73

Lab	Rating	Z-value	3	4	5	6	22m
234	4	-0.07		5.74			

Table 12. *Statistical summary of reported data for standard reference water sample T-131 (trace constituents)--Continued*

Sr (Strontium) µg/L



2. AA: direct nitrous oxide
3. AA: graphite furnace
4. ICP
5. DCP
6. ICP/MS

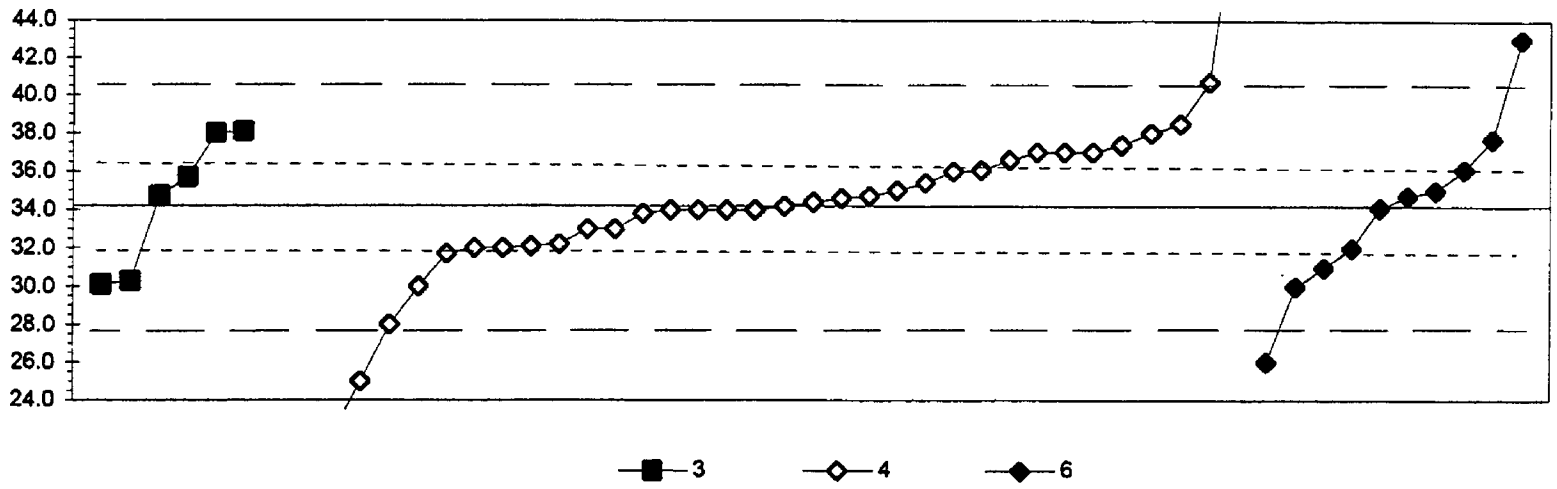
	2	3	4	5	6
N =	3	1	39	1	6
Minimum =	267	270	230	336	275
Maximum =	340		330		320
Median =			295		
F-pseudosigma =			11		

MPV = 295
F-pseudosigma = 14
N = 50
Hu = 303
Hl = 284

Lab	Rating	Z-value	2	3	4	5	6
1	3	-0.55			287		
3	3	0.60			303		
4	4	-0.18			292		
5	4	0.04			295		
7	3	0.53			302		
8	4	-0.32					290
9	4	-0.18			292		
15	1	1.60			317		
16	1	-2.02			266		
18	4	0.04			295		
24	2	-1.31			276		
25	4	0.39			300		
32	2	-1.38					275
33	0	2.95				336	
39	4	-0.04			294		
40	4	-0.04			294		
42	4	0.46			301		
59	2	-1.03			280		
70	4	0.25			298		
74	3	-0.96			281		
81	2	-1.17			278		
85	3	-0.75			284		
86	4	0.04			295		
94	4	-0.04			294		
97	1	-1.74		270			
102	4	0.46			301		
103	3	0.96			308		
105	3	0.60			303		
113	0	3.23	340				
116	3	0.53			302		
121	4	0.39			300		
127	4	0.04			295		
128	4	-0.46					288
134	3	-0.53			287		
136	0	2.09			324		
138	4	-0.11			293		
142	3	0.62			303		
145	3	-0.91			282		
151	1	-1.95	267				
158	4	-0.04			294		
182	0	-4.55			230		
191	3	-0.82					283
196	4	-0.11					293
211	0	-2.45			260		
212	0	2.52			330		
218	3	0.82	306				
219.1	2	1.10			310		
219.2	1	1.81					320
234	4	0.18			297		
235	2	1.46			315		

Table 12. *Statistical summary of reported data for standard reference water sample T-131 (trace constituents)--Continued*

V (Vanadium) µg/L



3. AA: graphite furnace
4. ICP
6. ICP/MS

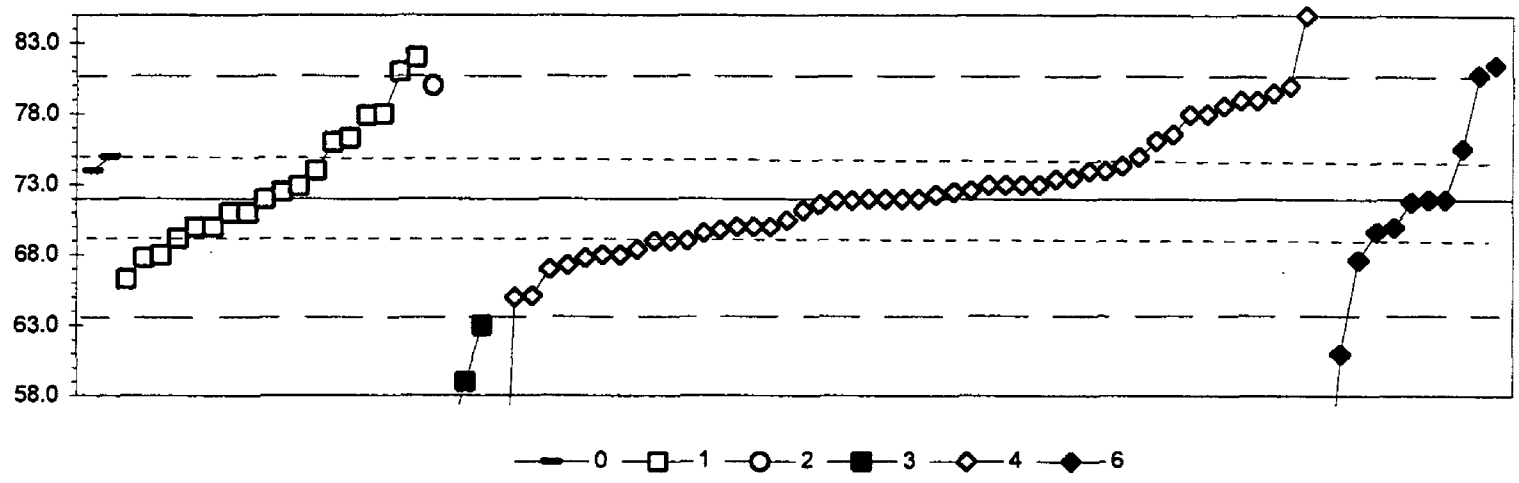
	3	4	6
N =	6	35	10
Minimum =	30.1	13.4	26.0
Maximum =	38.1	52.0	43.0
Median =		34.0	34.4
F-pseudosigma =		3.2	3.8

MPV = 34.2
F-pseudosigma = 3.2
N = 51
Hu = 36.4
Hl = 32.0

Lab	Rating	Z-value	3	4	6
1	3	-0.77		31.7	
3	4	-0.06		34.0	
4	0	5.52		52.0	
5	4	0.16		34.7	
7	3	0.74		36.6	
8	3	-0.99			31.0
11	4	0.25		35.0	
13	4	0.16			34.7
15	4	0.00		34.2	
16	2	-1.30			30.0
18	4	-0.06		34.0	
24	3	-0.62		32.2	
25	0	-3.78		22.0	
30	2	1.09			37.7
32	4	0.25			35.0
39	2	-1.30		30.0	
40	0	-5.92		15.1	
42	4	-0.03			34.1
59	0	2.73			43.0
70	NR			< 50	
74	4	-0.06		34.0	
75	3	-0.65		32.1	
78	2	-1.27	30.1		
85	1	2.02		40.7	
86	4	0.12		34.6	
94	4	-0.06		34.0	
97	2	-1.21	30.3		
102	3	0.87		37.0	
103	4	-0.37		33.0	
105	3	0.87		37.0	
121	3	-0.68		32.0	
127	4	0.37		35.4	
128	3	-0.68			32.0
134	4	0.47	35.7		
136	3	0.87		37.0	
138	4	0.06		34.4	
141	4	-0.37		33.0	
142	2	1.18	38.0		
145	3	0.58		36.1	
146	2	1.33		38.5	
158	1	-1.92		28.0	
180	4	-0.12		33.8	
182	0	-6.45		13.4	
194	NR			< 50	
196	3	0.59			36.1
211	0	-2.85		25.0	
212	2	1.18		38.0	
217	3	-0.68		32.0	
219.1	3	0.56		36.0	
219.2	0	-2.54			26.0
224	3	0.99		37.4	
234	2	1.21	38.1		
235	4	0.16	34.7		

Table 12. *Statistical summary of reported data for standard reference water sample T-131 (trace constituents)--Continued*

Zn (Zinc) µg/L



0. Other
1. AA: direct air
2. AA: direct nitrous oxide
3. AA: grephite furnace
4. ICP
6. ICP/MS

	0	1	2	3	4	6
N =	2	18	1	3	49	11
Minimum =	74.0	66.3	80.0	54.6	37.7	47.0
Maximum =	75.0	82.0		63.0	85.0	81.5
Median =		72.3			72.0	71.8
F-pseudosigma =		4.7			3.3	3.8

MPV = 72.0
F-pseudosigma = 4.4
N = 84
Hu = 75.0
Hl = 69.1

Lab	Rating	Z-value	0	1	2	3	4	6
1	3	0.54					74.4	
3	4	0.23					73.0	
4	0	2.97					85.0	
5	4	-0.02					71.9	
7	1	1.51					78.6	
8	0	-5.72						47.0
9	3	-0.82					68.4	
11	4	0.00					72.0	
12	1	1.83					80.0	
13	3	0.82						75.6
15	1	1.60					79.0	
16	4	0.00						72.0
18	3	0.69					75.0	
19	3	-0.55					69.6	
23	2	-1.30		66.3				
24	2	-1.14					67.0	
25	0						< 4	
30	0	2.17						81.5
32	3	-0.53						69.7
39	3	-0.91					68.0	
40	0	-7.84					37.7	
42	4	-0.46						70.0
59	4	-0.46					70.0	
69	3	0.91		76.0				
70	4	-0.02					71.9	
72	3	-0.96					67.8	
73	3	0.69	75.0					
74	4	0.00					72.0	
75	4	-0.34					70.5	
78	4	-0.23		71.0				
79	4	-0.05						71.8
81	4	0.46					74.0	
83	2	-1.07					67.3	
85	4	0.21		72.9				
86	4	0.34					73.5	
87	2	1.37		78.0				
89	4	0.11		72.5				
90	4	-0.46		70.0				
94	NR						< 100	
96	0	2.06		81.0				
97	0	-2.06				63.0		
101	4	-0.50					69.8	
102	4	0.46					74.0	
103	4	0.23					73.0	
105	3	-0.69					69.0	
113	1	1.83			80.0			
114	4	0.00		72.0				
118	4	0.46	74.0					
119	1	-1.60					65.0	
120	0	-2.97				59.0		
121	4	0.00					72.0	
127	4	0.32					73.4	
128	4	0.00						72.0
133	4	-0.09					71.6	
134	4	0.23					73.0	
136	3	-0.69					69.0	
138	4	0.07					72.3	
140	2	1.35		77.9				
141	4	-0.46					70.0	
142	2	1.38					78.0	
145	3	0.94					76.1	
146	4	-0.18					71.2	
149	4	-0.23		71.0				
158	4	0.11					72.5	
179	0	2.29		82.0				
180	4	0.00					72.0	
182	1	1.71					79.5	
190	3	-0.64		69.2				
191	1	2.01						80.8
193	4	-0.46		70.0				
194	4	-0.46					70.0	
196	3	-0.98						67.7
203	3	-0.91		68.0				
204	1	1.60					79.0	
211	3	-0.91					68.0	
212	2	1.37					78.0	
215	4	0.14					72.6	
217	3	-0.69					69.0	
219.1	4	0.23					73.0	
219.2	0	-2.52						61.0
220	3	-0.95		67.8				
221	3	0.98		76.3				
224	1	-1.58					65.1	
231	4	0.46		74.0				
234	0	-3.98				54.6		
235	2	1.05					76.6	

Table 13. *Statistical summary of reported data for standard reference water sample T-133 (trace constituents)*

Definition of analytical methods, abbreviations, and symbols

Analytical methods

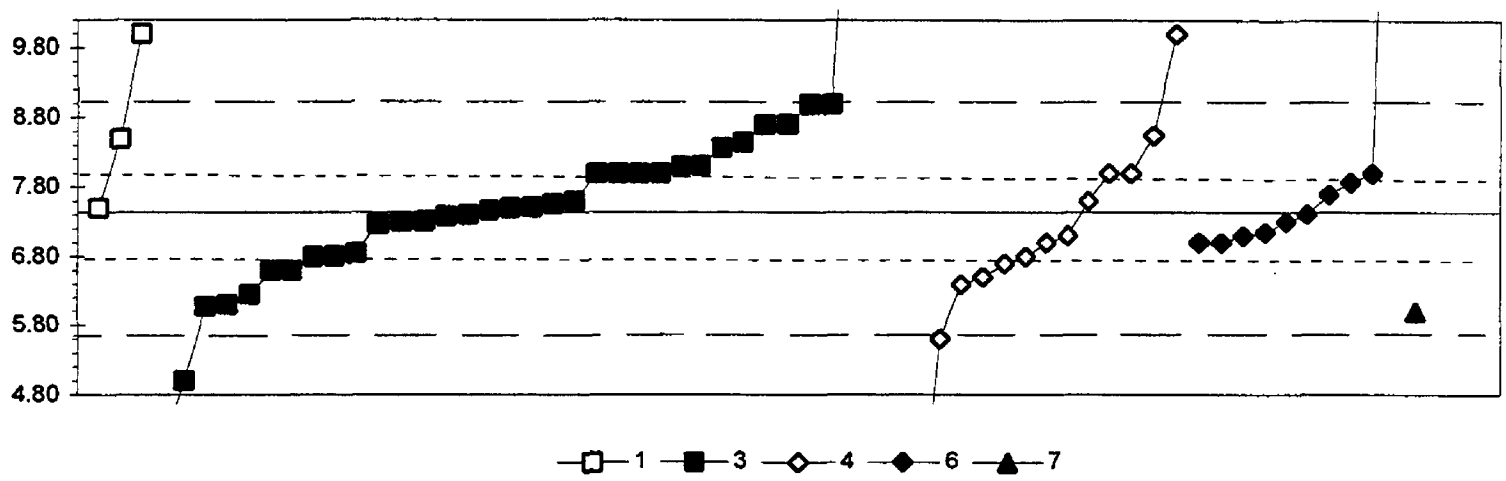
0. Other/Not reported
1. AA: direct, air = atomic absorption: direct,air
2. AA: direct, N2O = atomic absorption: direct,nitrous oxide
3. AA: graphite furnace = atomic absorption: graphite furnace
4. ICP = inductively coupled plasma
5. DCP = direct current plasma
6. ICP/MS = inductively coupled plasma/mass spectrometry
10. AA: extraction = atomic absorption: extraction [chelating agent(s) specified]
11. AA: hydride = atomic absorption: hydride [reducing agent specified]
12. Flame emission = flame emission
22. Color: = colorimetric [color reagent specified]

Abbreviations and symbols

N =	number of samples
St dev =	traditional standard deviation
MPV =	most probable value
F-pseudosigma =	nonparametric statistic deviation
Hu =	upper hinge value
Hl =	lower hinge value
µg/L =	micrograms per liter
mg/L =	milligrams per liter
Lab =	laboratory code number
NR =	not rated, less than value reported
< =	less than

Table 13. *Statistical summary of reported data for standard reference water sampla T-133 (trace constituants)--Continued*

Ag (Silver) µg/L



1. AA: direct air		6. ICP/MS			
3. AA: graphite furnace		7. Ion chromatography			
4. ICP					
N =	3	34	14	10	1
Minimum =	7.50	4.00	0.84	7.00	6.00
Maximum =	10.00	15.00	10.00	18.00	
Median =		7.51	6.90	7.36	
F-pseudosigma =		0.96	1.19	0.57	

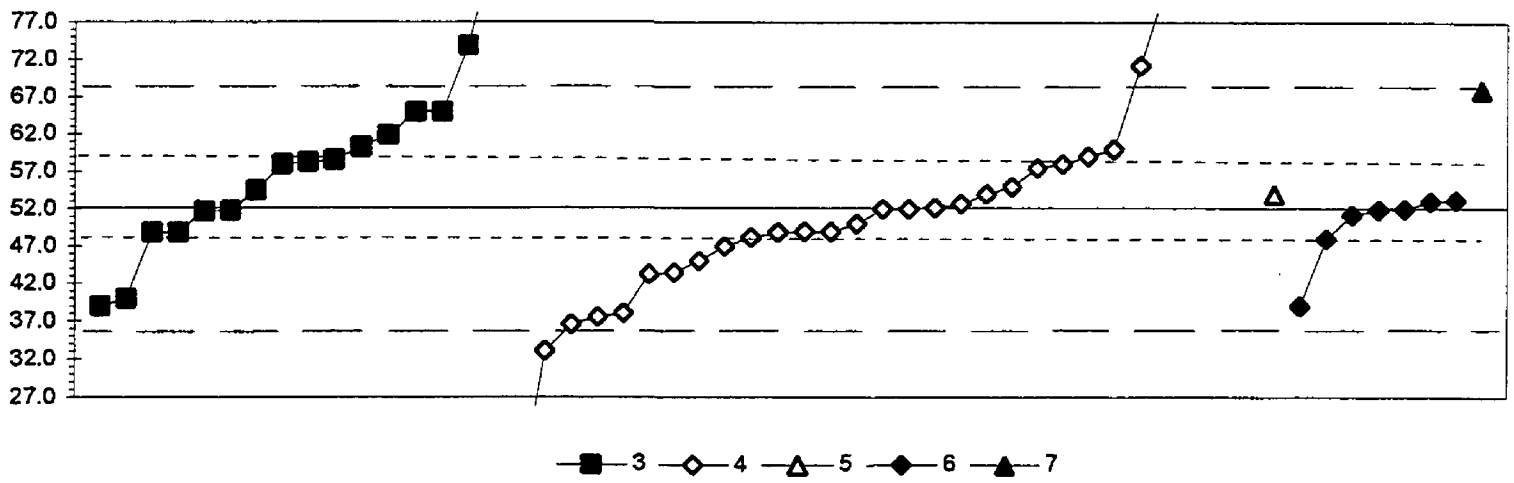
MPV =	7.44
F-pseudosigma =	0.89
N =	62
Hu =	8.00
Hl =	6.80

Lab	Rating	Z-value	1	3	4	6	7
1	4	0.48				7.87	
3	3	-0.94		6.60			
5	3	-0.94		6.60			
7	2	1.42		8.70			
8	0	11.87				18.00	
11	0	2.88			10.00		
12	1	-1.51		6.10			
13	4	0.18		7.60			
15	NR				< 10		
16	3	-0.72			6.80		
18	4	0.18			7.60		
23	4	-0.16		7.30			
24	1	1.75		9.00			
25	NR				< 6		
30	4	0.29				7.70	
32	4	-0.38				7.10	
40	0	-5.78			2.30		
42	4	-0.33				7.15	
59	4	-0.49				7.00	
69	4	0.03		7.47			
70	2	1.05		8.37			
72	4	-0.49			7.00		
73	1	-1.62					6.00
74	3	-0.83			6.70		
75	2	-1.18			6.39		
76	3	-0.71		6.81			
78	0	-2.74		5.00			
81	0	-3.87		4.00			
85	4	0.07	7.50				
86	2	-1.06			6.50		
87	0	2.88	10.00				
89	2	-1.34		6.25			
94	3	0.63			8.00		
96	4	-0.19		7.27			
97	2	1.14		8.45			
102	3	0.63			8.00		
105	4	-0.03				7.41	
107	4	0.08		7.51			
113	1	-1.54		6.07			
119	3	0.63		8.00			
120	3	-0.72		6.80			
127	4	0.07		7.50			
128	4	-0.49				7.00	
133	0	-2.07			5.60		
134	3	0.63		8.00			
138	3	0.75		8.11			
141	NR				< 10		
142	2	1.43		8.71			
146	4	-0.38			7.10		
149	3	0.74		8.10			

Lab	Rating	Z-value	1	3	4	6	7
180	2	1.25			8.55		
182	0	-7.42			0.84		
190	4	-0.15		7.31			
193	3	0.63		8.00			
198	4	-0.07		7.38			
203	2	1.19	8.50				
211	0	8.50		15.00			
212	4	-0.04		7.40			
215	1	1.75		9.00			
217	4	-0.16				7.30	
219	3	0.63				8.00	
221	4	0.13		7.56			
231	0	7.37		14.00			
234	3	-0.66		6.85			
235	3	0.63		8.00			

Table 13. *Statistical summary of reported data for standard reference watar sample T-133 (trace constituents)--Continued*

Al (Aluminum) µg/L



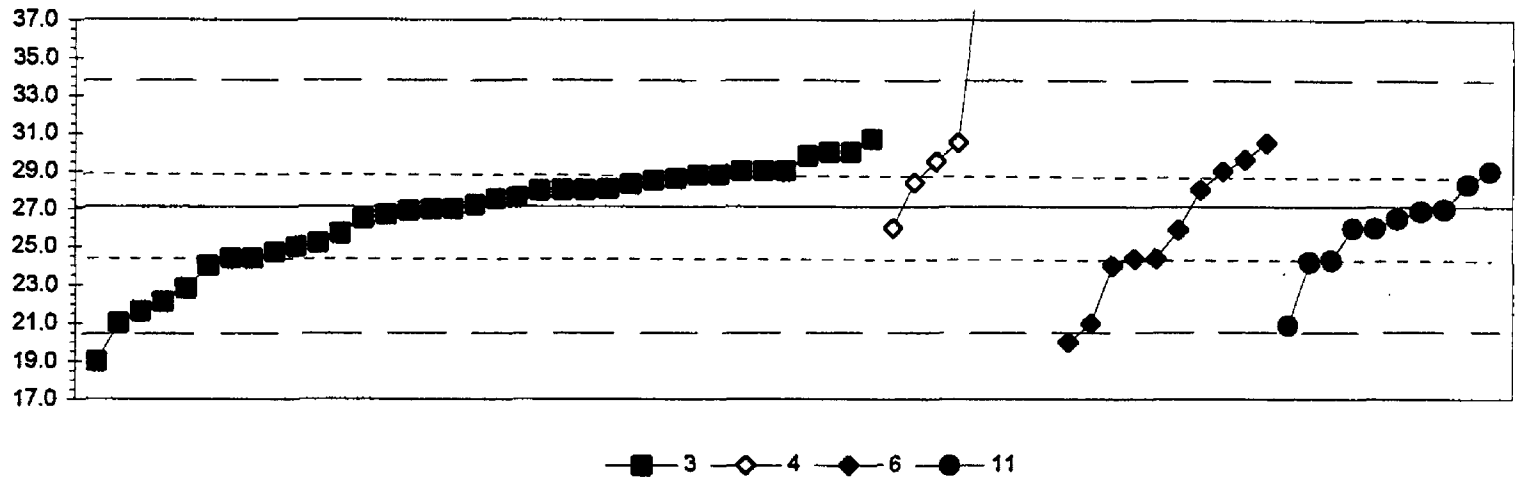
3. AA: graphite furnace			6. ICP/MS			
4. ICP			7. Ion chromatography			
5. DCP						
N =	16	29	1	7	1	
Minimum =	39.0	12.3	54.0	39.0	68.0	
Maximum =	87.1	160.0		53.2		
Median =	58.2	52.0		51.9		
F-pseudosigma =	9.8	9.7		2.2		

MPV =	52.1
F-pseudosigma =	8.1
N =	54
Hu =	59.1
HI =	48.2

Lab	Rating	Z-value	3	4	5	6	7
1	4	0.01		52.2			
3	4	-0.01		52.0			
5	4	0.36		55.0			
7	4	0.08		52.7			
8	NR					< 50	
11	3	-0.88		45.0			
12	0	13.36		160.0			
15	0	2.37		71.2			
16	1	-1.62				39.0	
18	4	-0.26		50.0			
23	2	1.02	60.3				
24	0	4.33	87.1				
25	0			< 19			
30	4	-0.11				51.2	
32	4	-0.02				51.9	
33	4	0.24			54.0		
40	0	-4.92		12.3			
42	3	-0.51				48.0	
69	1	1.60	65.0				
70	NR			< 100			
73	1	1.97					68.0
74	3	-0.63		47.0			
75	2	-1.10		43.2			
78	4	0.30	54.5				
81	1	-1.74		38.0			
83	2	-1.06		43.5			
85	0	3.83		83.0			
86	3	0.87		59.1			
89	0	2.70	73.9				
94	NR			< 100			
97	3	0.81	58.6				
102	0	-2.36		33.0			
105	4	0.14				53.2	
111	4	-0.04	51.8				
113	4	-0.05	51.7				
119	3	0.73	58.0				
120	1	-1.62	39.0				
121	1	1.60	65.0				
127	3	0.74		58.1			
128	4	-0.01				52.0	
134	4	-0.01		52.0			
136	0	6.67		106.0			
138	3	0.67		57.5			
141	4	-0.38		49.0			
145	1	-1.81		37.5			
146	NR			< 200			
149	2	-1.50	40.0				
153	3	0.77	58.3				
158	4	-0.38		49.0			
180	4	-0.48		48.2			
182	1	-1.93		36.5			
190	4	-0.39	48.9				
191	4	0.11				53.0	
198	4	-0.39	48.9				
211	NR			< 100			
212	4	0.24		54.0			
215	3	0.98		60.0			
219	NR			< 100			
221	2	1.21	61.9				
224	0	5.94		100.1			
234	4	-0.39		48.9			

Table 13. *Statistical summary of reported data for standard reference water sampla T-133 (trace constituents)--Continued*

As (Arsenic) µg/L



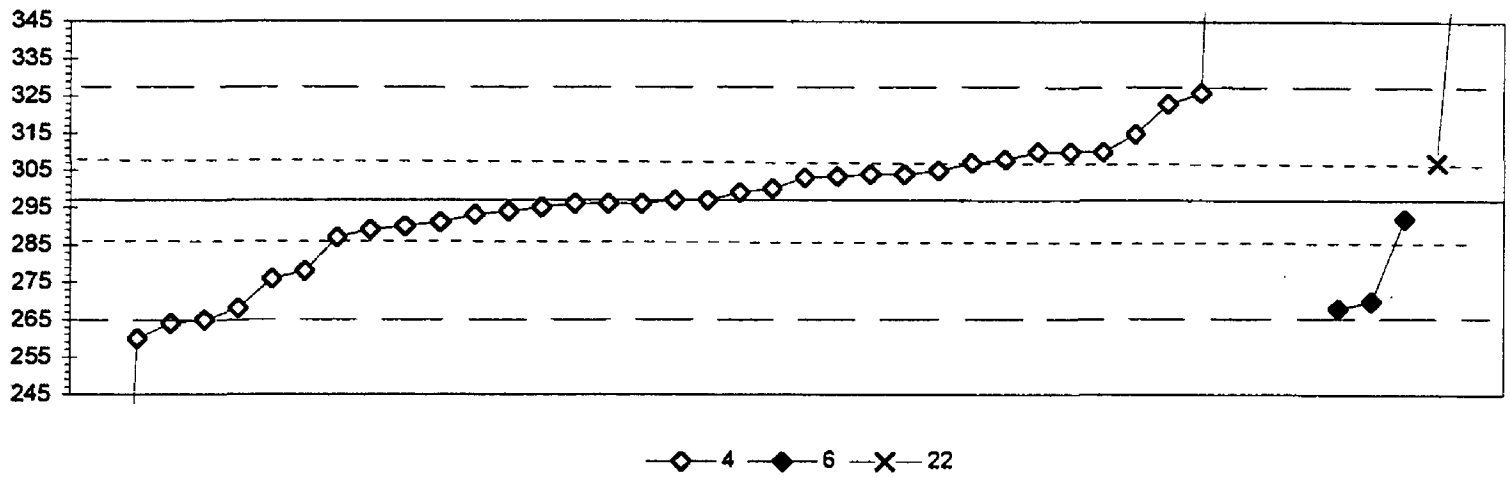
	3. AA: graphite furnace	4. ICP	6. ICP/MS	11. AA: hydride
N =	36	8	10	10
Minimum =	19.0	26.0	20.0	20.9
Maximum =	30.7	53.0	30.5	29.0
Median =	27.4	35.3	25.2	26.3
F-pseudosigma =	2.9	13.7	3.7	2.0

MPV =	27.1
F-pseudosigma =	3.3
N =	64
Hu =	29.0
Hl =	24.6

Lab	Rating	Z-value	3	4	6	11
1	4	-0.04	27.0			
3	4	0.27	28.0			
5	4	0.12	27.5			
7	4	-0.12	26.7			
8	3	0.58				29.0
11	NR			< 50		
12	3	0.88	30.0			
13	4	0.36	28.3			
15	NR			< 100		
16	3	-0.94			24.0	
18	4	-0.33				26.0
23	4	0.45	28.6			
24	3	0.52	28.8			
25	0	7.85		53.0		
30	2	1.03			30.5	
32	3	-0.82			24.4	
34	4	-0.18				26.5
42	4	-0.36			25.9	
59	4	-0.33		26.0		
69	3	0.82	29.8			
70	3	-0.73	24.7			
72	1	-1.85	21.0			
74	3	-0.94	24.0			
75	NR			< 50		
78	4	-0.06	26.9			
80	3	0.58	29.0			
81	3	0.58	29.0			
85	3	-0.88				24.2
86	3	-0.85				24.3
87	4	0.36				28.3
89	1	-1.88				20.9
94	0	-2.46	19.0			
96	3	-0.58	25.2			
97	4	0.15	27.6			
102	0	3.91		40.0		
105	3	-0.82			24.4	
109	4	0.26	28.0			
113	4	0.03	27.2			
119	4	-0.33				26.0
120	4	-0.07				26.9
127	4	-0.42	25.7			
128	4	0.27			28.0	
133	4	0.42	28.5			
136	0	7.55		52.0		
138	3	0.58			29.0	
141	NR			< 50		
142	4	0.29	28.1			
145	3	0.74		29.5		
146	3	-0.82	24.4			
153	4	-0.18	26.5			
158	0	4.82		43.0		
180	4	0.39		28.4		
182	4	-0.03				27.0
191	3	0.76			29.6	
193	3	-0.64	25.0			
198	3	0.52	28.8			
203	1	-1.52	22.1			
211	3	0.58	29.0			
212	4	-0.03	27.0			
215	3	0.88	30.0			
217	1	-1.85			21.0	
219	0	-2.15			20.0	
220	1	-1.67	21.6			
221	3	-0.82	24.4			
224	2	1.03		30.5		
231	4	0.27	28.0			
234	2	1.09	30.7			
235	2	-1.30	22.8			

Table 13. *Statistical summary of reported data for standard reference water sample T-133 (trace constituents)--Continued*

B (Boron) µg/L



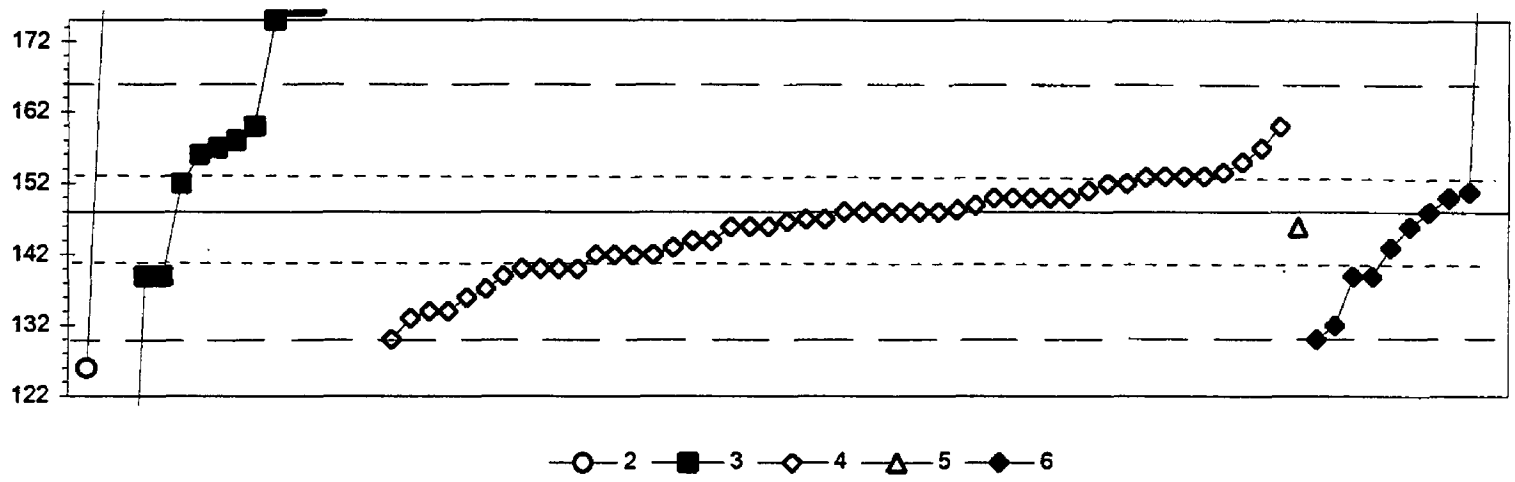
4. ICP			
6. ICP/MS			
22. Colorimetric			
N =	37	3	2
Minimum =	33	268	307
Maximum =	787	292	412
Median =	297		
F-pseudosigma =	13		

MPV =	297
F-pseudosigma =	16
N =	42
Hu =	308
HI =	287

Lab	Rating	Z-value	4	6	22
1	4	0.23	300		
3	4	-0.03	296		
4	0	19.95	607		
5	4	0.16	299		
8	1	-1.70		270	
11	3	-0.61	287		
15	1	1.70	323		
16	0	18.60	586		
18	4	0.42	303		
24	2	1.19	315		
25	4	-0.03	297		
32	1	-1.83		268	
40	0	-16.92	33		
42	4	-0.29		292	
70	4	-0.22	293		
74	3	0.67	307		
75	2	-1.32	276		
85	3	0.87	310		
86	1	-1.83	268		
94	4	0.48	304		
109	4	-0.03	296		
116	3	0.74	308		
119	3	0.55	305		
121	1	-2.02	265		
122	3	0.67			307
127	4	-0.35	291		
128	0	-2.09	264		
129	0	7.42			412
134	4	0.48	304		
136	0	31.51	787		
141	2	-1.19	278		
142	4	-0.03	296		
145	4	0.44	303		
158	4	-0.16	294		
180	4	-0.48	289		
211	0	-2.34	260		
212	3	0.87	310		
215	4	-0.10	295		
217	4	-0.42	290		
219	3	0.87	310		
234	4	0.03	297		
235	1	1.90	326		

Table 13. *Statistical summary of reported data for standard referance water sample T-133 (traca constituents)--Continued*

Ba (Barium) µg/L



2. AA: direct nitrous oxide
3. AA: graphite furnace
4. ICP
5. DCP
6. ICP/MS

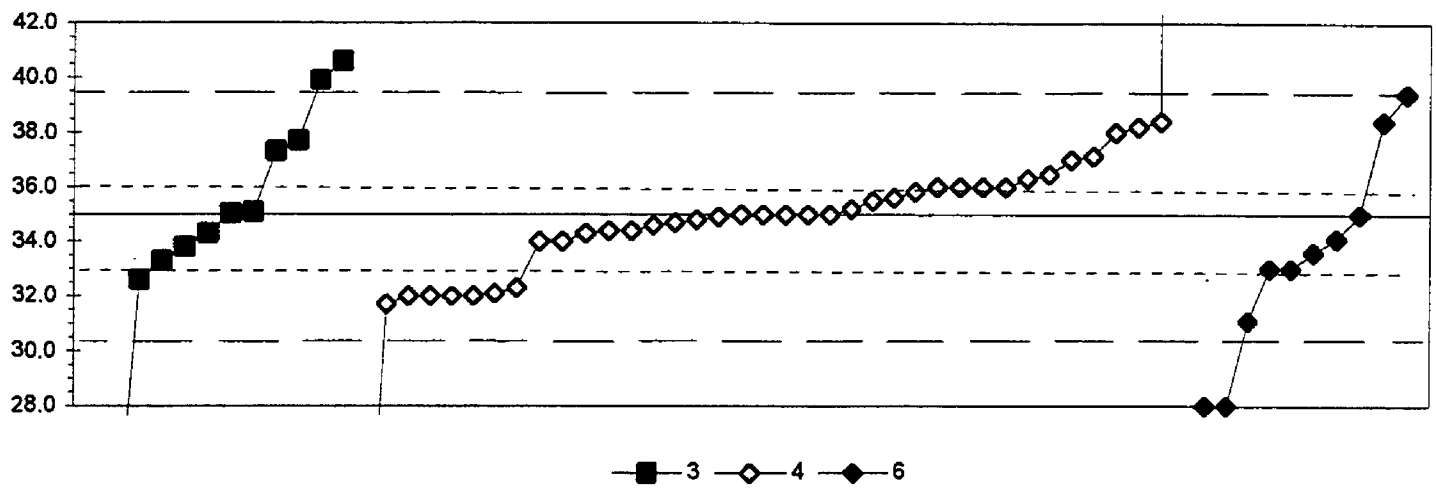
	2	3	4	5	6
N =	2	14	48	1	10
Minimum =	126	74	130	146	130
Maximum =	190	203	160		221
Median =		159	148		145
F-pseudosigma =		17	6		8

MPV = 148
F-pseudosigma = 9
N = 75
Hu = 153
Hl = 141

Lab	Rating	Z-value	2	3	4	5	6
1	4	0.32					151
3	4	0.00			148		
4	3	-0.68			142		
5	3	-0.68			142		
7	4	0.11			149		
8	0	8.24					221
11	2	1.02			157		
13	4	0.00					148
15	4	0.34			151		
16	1	-1.81					132
18	4	0.00			148		
19	3	0.56			153		
23	0	4.06		184			
24	3	-0.56			143		
25	4	0.23			150		
30	4	-0.23					146
32	2	-1.02					139
33	4	-0.23				146	
40	4	0.45			152		
42	3	-0.56					143
59	2	-1.02			139		
69	2	1.02		157			
70	4	0.00			148		
72	1	-1.58			134		
74	3	0.56			153		
75	1	-1.58			134		
76	3	0.90		156			
81	3	-0.90			140		
83	3	0.55			153		
85	4	0.00			148		
86	3	-0.68			142		
87	0	-2.48	126				
89	2	-1.02		139			
90	0	4.97		192			
94	4	0.23			150		
96	0	4.74	190				
97	0	-8.34		74			
101	2	-1.35			136		
102	3	0.79			155		
105	3	0.56			153		
107	2	1.13		158			
113	0	3.27		177			
116	4	-0.11			147		
119	3	-0.68			142		
120	0	3.05		175			
121	4	0.23			150		
127	4	-0.23			146		
128	4	0.23					150
133	4	-0.24			146		
134	4	0.00			148		
136	1	-1.69			133		
138	4	-0.45			144		
141	4	-0.11			147		
142	3	0.63			154		
145	4	0.04			148		
146	1	-2.03			130		
149	2	1.35		160			
158	4	0.23			150		
180	4	-0.23			146		
182	4	-0.15			147		
191	2	-1.02					139
193	2	-1.02		139			
198	4	-0.45			144		
203	4	0.45		152			
211	4	0.23			150		
212	2	1.35			160		
215	3	-0.90			140		
217	3	-0.90			140		
219.1	3	-0.90			140		
219.2	1	-2.03					130
221	0	3.27		177			
224	2	-1.22			137		
231	0	6.21		203			
234	4	0.00			148		
235	4	0.45			152		

Table 13. *Statistical summary of reportad data for standard raference watar sampla T-133 (trace constituents)--Continued*

Be (Beryllium) µg/L



3. AA: graphite furnace
4. ICP
6. ICP/MS

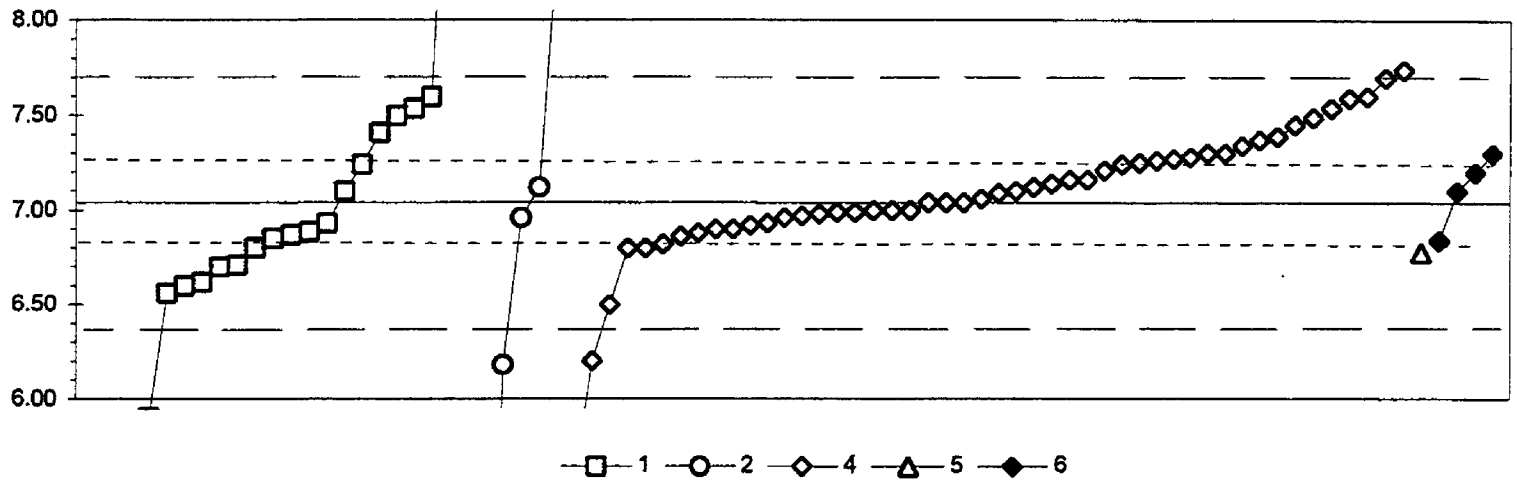
	3	4	6
N =	12	38	10
Minimum =	9.9	17.7	28.0
Maximum =	40.6	485.1	39.4
Median =	34.7	35.0	33.3
F-pseudosigma =	3.4	1.5	2.9

MPV = 35.0
F-pseudosigma = 2.2
N = 60
Hu = 36.0
Hl = 33.0

Lab	Rating	Z-value	3	4	6
1	4	-0.02		34.9	
3	3	0.92		37.0	
4	2	-1.33		32.0	
5	4	-0.12		34.7	
7	4	-0.30		34.3	
8	4	0.02			35.0
11	4	-0.43		34.0	
12	0			< 20	
13	3	-0.61			33.6
15	4	-0.25		34.4	
16	0	-3.13			28.0
18	4	0.02		35.0	
23	4	-0.30	34.3		
24	0	2.54	40.6		
25	4	0.02		35.0	
30	1	2.00			39.4
32	4	-0.39			34.1
40	0	-7.76		17.7	
42	3	-0.88			33.0
59	4	0.02		35.0	
69	4	0.04	35.0		
70	4	0.11		35.2	
74	2	-1.20		32.3	
75	2	-1.29		32.1	
76	1	-1.74			31.1
78	0	-11.27	9.9		
81	2	-1.33		32.0	
83	4	-0.07		34.8	
85	4	-0.16		34.6	
86	4	0.02		35.0	
89	3	-0.75	33.3		
94	4	0.02		35.0	
97	0	2.22	39.9		
102	4	0.47		36.0	
105	3	0.60		36.3	
113	2	-1.06	32.6		
119	3	-0.52	33.8		
120	2	1.05	37.3		
127	4	0.29		35.6	
128	0	-3.13			28.0
133	3	0.97		37.1	
134	4	0.47		36.0	
136	2	-1.33		32.0	
138	1	1.55			38.4
141	2	-1.33		32.0	
142	4	0.39		35.8	
145	3	0.68		36.5	
146	2	-1.47		31.7	
158	4	-0.43		34.0	
180	4	-0.25		34.4	
182	0	202.41		485.1	
198	2	1.23	37.7		
211	0	-5.51	22.7		
212	4	0.47		36.0	
215	4	0.24		35.5	
217	4	0.47		36.0	
219.1	2	1.37		38.0	
219.2	3	-0.88			33.0
224	2	1.46		38.2	
234	4	0.06	35.1		
235	1	1.55		38.4	

Table 13. *Statistical summary of reported data for standard reference water sample T-133 (trace constituents)--Continued*

Ca (Calcium) mg/L



1. AA: direct air
2. AA: direct nitrous oxide
4. ICP
5. DCP
6. ICP/MS

	1	2	4	5	6
N =	22	5	48	1	4
Minimum =	3.70	3.10	5.60	6.78	6.84
Maximum =	11.00	8.51	7.74		7.30
Median =	6.86		7.08		
F-pseudosigma =	0.60		0.26		

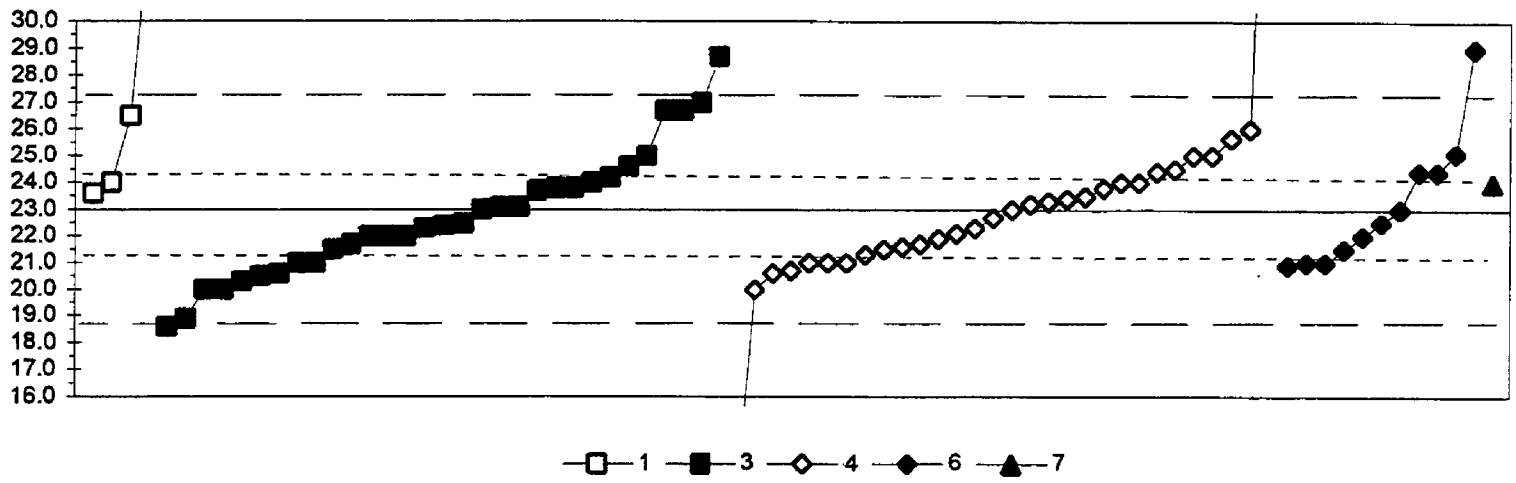
MPV = 7.04
F-pseudosigma = 0.33
N = 80
Hu = 7.29
Hl = 6.85

Lab	Rating	Z-value	1	2	4	5	6
1	4	0.00			7.04		
3	2	1.06			7.39		
4	0	2.12			7.74		
5	4	-0.42			6.90		
7	3	0.52			7.21		
8	4	0.18					7.10
9	4	-0.36			6.92		
11	3	0.61			7.24		
12	4	-0.12			7.00		
13	4	0.49					7.20
15	3	0.67			7.26		
16	4	-0.12			7.00		
18	3	0.79			7.30		
19	3	1.00			7.37		
23	0	-11.94		3.10			
24	4	-0.21			6.97		
25	4	0.30			7.14		
30	4	-0.24		6.96			
32	3	0.79					7.30
33	3	-0.79				6.78	
40	3	0.64			7.25		
42	4	0.18			7.10		
59	0	-4.37			5.60		
69	2	-1.33	6.60				
70	1	1.52			7.54		
74	4	-0.12			7.00		
75	3	-0.52	6.87				
78	3	-0.58	6.85				
81	1	1.67			7.59		
83	4	-0.33			6.93		
84	3	-0.73	6.80				
85	1	1.70	7.60				
86	4	-0.15			6.99		
87	0	-2.61		6.18			
89	2	-1.27	6.62				
94	1	1.70			7.60		
97	3	0.61	7.24				
101	0	-3.46	5.90				
102	0	-2.55			6.20		
105	4	0.00			7.04		
109	2	1.39	7.50				
111	0	4.46		8.51			
113	2	-1.03	6.70				
116	4	0.06			7.06		
119	3	-0.73			6.80		
120	3	-1.00	6.71				
121	4	-0.42			6.90		
122	0	-9.91	3.77				
127	4	0.00			7.04		
128	4	0.15			7.09		

Lab	Rating	Z-value	1	2	4	5	6
129	0	12.00	11.00				
133	4	-0.49			6.88		
134	4	-0.24			6.96		
136	3	-0.73			6.80		
138	2	1.36			7.49		
140	4	0.18	7.10				
141	4	0.36			7.16		
142	2	1.24			7.45		
145	3	0.73			7.28		
146	3	-0.67			6.82		
149	0	-10.13	3.70				
151	2	1.12	7.41				
158	3	0.91			7.34		
180	3	-0.55			6.86		
182	4	0.24			7.12		
185	4	-0.47	6.89				
191	3	-0.61					6.84
193	4	0.24		7.12			
198	4	-0.18			6.98		
203	2	-1.46	6.56				
211	1	1.52	7.54				
212	1	2.00			7.70		
215	4	0.36			7.16		
217	1	-1.64			6.50		
218	0	7.15	9.40				
219	3	0.79			7.30		
221	0	-5.40	5.26				
224	3	0.70			7.27		
231	4	-0.33	6.93				
234	4	-0.15			6.99		

Table 13. *Statistical summary of reported data for standard reference water sample T-133 (trace constituents)--Continued*

Cd (Cadmium) µg/L



1. AA: direct air			6. ICP/MS		
3. AA: graphite furnace			7. Ion chromatography		
4. ICP					
N =	4	31	30	11	1
Minimum =	23.6	18.6	11.6	20.9	24.0
Maximum =	34.0	28.7	44.0	29.0	
Median =		22.4	22.9	22.5	
F-pseudosigma =		2.2	2.0	2.3	

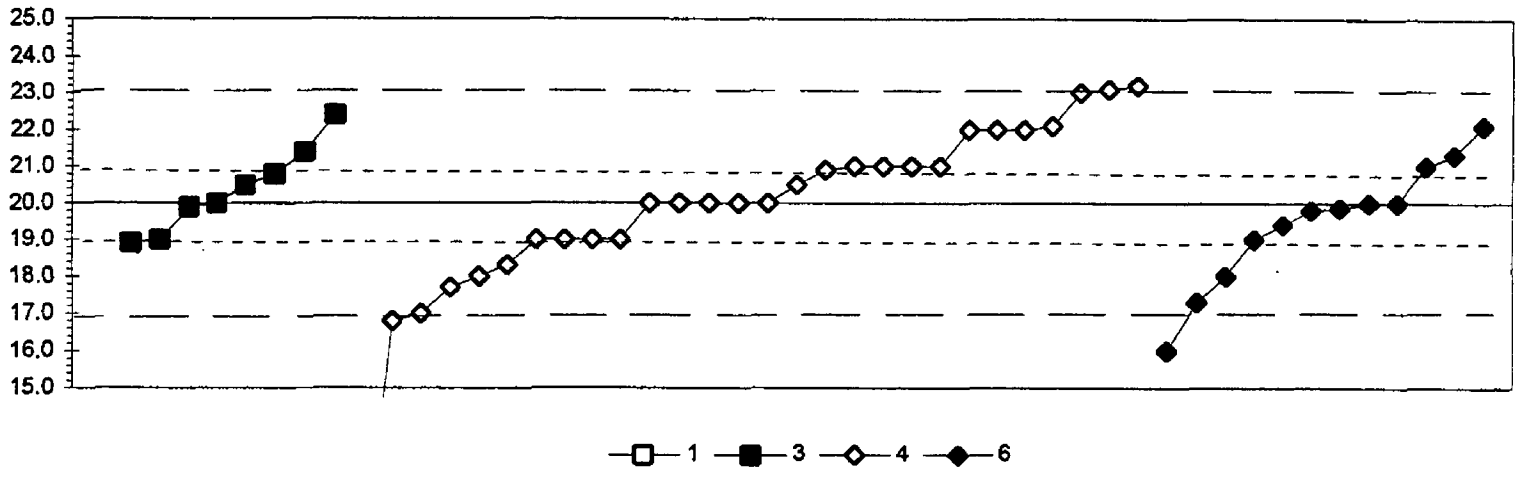
MPV =	23.0
F-pseudosigma =	2.1
N =	77
Hu =	24.2
HI =	21.3

Lab	Rating	Z-value	1	3	4	6	7
1	4	-0.25		22.5			
3	4	0.19			23.4		
4	0	9.77			44.0		
5	4	0.37		23.8			
7	4	-0.33			22.3		
8	4	0.00				23.0	
9	2	-1.12			20.6		
11	4	0.00			23.0		
12	4	0.00		23.0			
13	1	1.72		26.7			
15	4	0.37			23.8		
16	0	2.79				29.0	
18	1	-2.05		18.6			
19	4	0.23			23.5		
23	4	0.05		23.1			
24	1	1.86		27.0			
25	3	0.93			25.0		
30	3	0.98				25.1	
32	3	-0.98				20.9	
40	0	-5.30			11.6		
42	4	-0.23				22.5	
59	3	-0.93			21.0		
69	4	0.37		23.8			
70	3	-0.65			21.6		
72	2	-1.07			20.7		
73	4	0.47					24.0
74	3	-0.93				21.0	
75	3	-0.79			21.3		
76	3	0.56		24.2			
78	4	-0.28		22.4			
81	4	-0.47		22.0			
83	3	-0.70			21.5		
85	1	1.63	26.5				
86	3	-0.51			21.9		
87	4	0.47	24.0				
89	1	1.72		26.7			
90	0	2.65		28.7			
94	2	1.40			26.0		
96	2	-1.16		20.5			
97	4	0.33		23.7			
101	4	-0.14			22.7		
102	4	0.47			24.0		
105	3	-0.70				21.5	
113	4	0.05		23.1			
119	4	0.47		24.0			
120	2	-1.12		20.6			
121	4	0.47			24.0		
127	4	0.14			23.3		
128	4	-0.47				22.0	
133	2	1.23			25.7		

Lab	Rating	Z-value	1	3	4	6	7
134	3	-0.70		21.5			
136	3	-0.93			21.0		
138	3	0.65				24.4	
140	4	0.28	23.6				
141	3	-0.93			21.0		
142	2	-1.26		20.3			
145	3	0.65			24.4		
146	3	-0.60			21.7		
149	3	-0.93		21.0			
158	3	-0.60		21.7			
180	4	0.09			23.2		
182	3	0.70			24.5		
190	3	0.74		24.6			
191	3	0.65				24.4	
193	2	-1.40		20.0			
198	1	-1.91		18.9			
203	4	-0.47		22.0			
211	4	-0.47		22.0			
212	3	0.93			25.0		
215	2	-1.40		20.0			
217	2	-1.40			20.0		
219.1	0				< 10		
219.2	3	-0.93				21.0	
221	3	0.93		25.0			
224	4	-0.42			22.1		
231	0	5.12	34.0				
234	4	-0.33		22.3			
235	3	-0.93		21.0			

Table 13. *Statistical summary of reported data for standard raference water sample T-133 (trace constituents)--Continued*

Co (Cobalt) µg/L



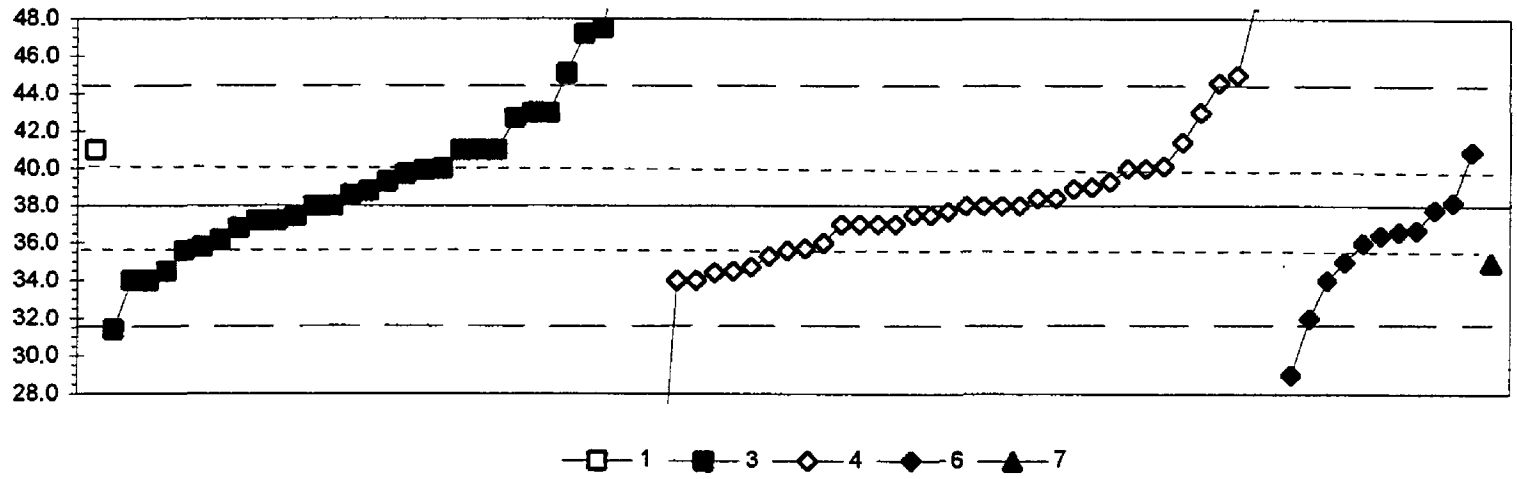
	1. AA: direct air	3. AA: graphite furnace	4. ICP	6. ICP/MS
N =	1	8	28	12
Minimum =	30.0	18.9	9.7	16.0
Maximum =		22.4	23.2	22.1
Median =		20.3	20.0	19.8
F-pseudosigma =		1.2	1.9	1.5

MPV = 20.0
F-pseudosigma = 1.5
N = 49
Hu = 21.0
Hl = 19.0

Lab	Rating	Z-value	1	3	4	6
1	4	-0.09				19.9
3	3	-0.67			19.0	
5	0	2.09			23.1	
7	2	1.42			22.1	
8	4	0.00				20.0
11	2	1.35			22.0	
13	1	-1.82				17.3
15	3	0.61			20.9	
16	0	-2.70				16.0
18	3	-0.67			19.0	
24	4	0.00			20.0	
25	4	0.00			20.0	
30	2	1.42				22.1
32	3	0.88				21.3
40	0	-6.95			9.7	
42	4	-0.40				19.4
59	3	0.67				21.0
70	NR				< 50	
74	2	-1.35			18.0	
75	2	-1.15			18.3	
81	4	0.00			20.0	
85	0	-2.16			16.8	
86	4	0.00			20.0	
89	3	0.54		20.8		
94	3	-0.67			19.0	
97	4	0.34		20.5		
102	2	1.35			22.0	
105	3	0.67			21.0	
121	4	0.00		20.0		
127	4	-0.07		19.9		
128	2	-1.35				18.0
134	3	0.94		21.4		
136	3	0.67			21.0	
138	4	-0.13				19.8
141	3	0.67			21.0	
145	0	2.16			23.2	
146	1	-1.55			17.7	
158	4	0.00			20.0	
180	2	1.35			22.0	
191	4	0.00				20.0
193	0	6.75	30.0			
211	1	-2.02			17.0	
212	3	0.67			21.0	
215	3	-0.67		19.0		
217	3	-0.67			19.0	
219.1	1	2.02			23.0	
219.2	3	-0.67				19.0
221	1	1.62		22.4		
224	4	0.34			20.5	
235	3	-0.74		18.9		

Table 13. *Statistical summary of reported data for standard reference water sample T-133 (trece constituents)--Continued*

Cr (Chromium) µg/L



1. AA: direct air
3. AA: graphite furnace
4. ICP
6. ICP/MS
7. Ion chromatography

	1	3	4	6	7
N =	1	30	35	11	1
Minimum =	41.0	31.4	19.1	29.0	35.0
Maximum =		77.5	70.0	40.9	
Median =		39.1	38.0	36.4	
F-pseudosigma =		4.4	2.8	2.0	

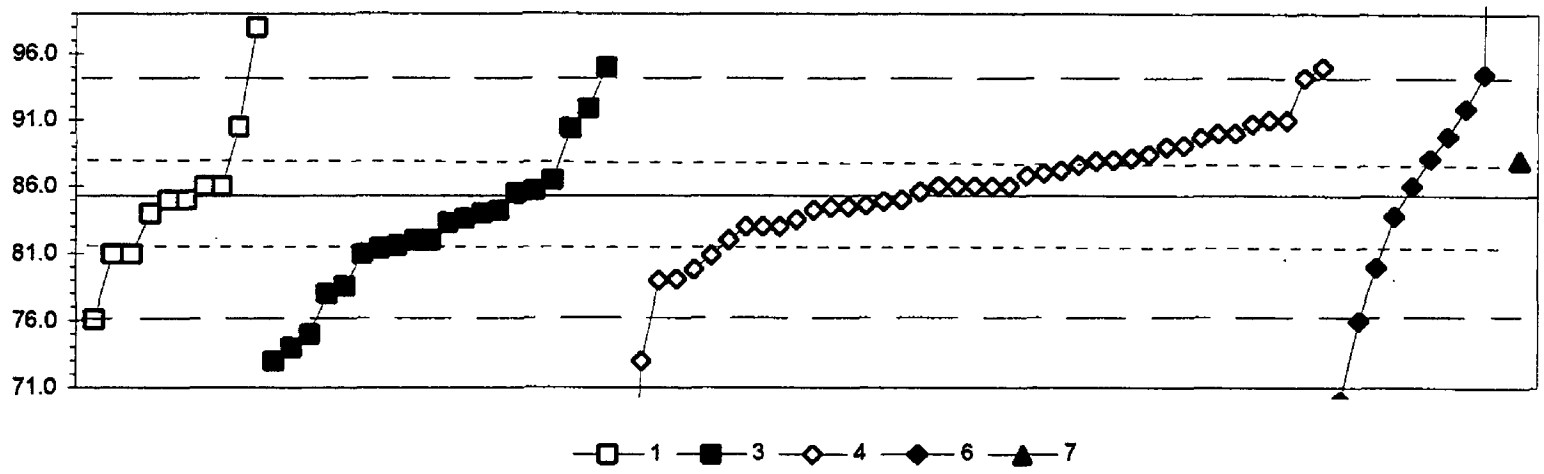
MPV = 38.0
F-pseudosigma = 3.2
N = 78
Hu = 40.1
Hl = 35.8

Lab	Rating	Z-value	1	3	4	6	7
1	3	-0.57		36.2			
3	3	-0.62			36.0		
4	0	9.97			70.0		
5	4	-0.16			37.5		
7	3	0.62			40.0		
8	3	-0.62				36.0	
9	2	1.06			41.4		
11	1	1.56			43.0		
12	3	0.62			40.0		
13	0	12.31		77.5			
15	4	0.41			39.3		
16	0	-2.80				29.0	
18	4	0.00			38.0		
19	4	-0.16			37.5		
23	3	0.62	40.0				
24	2	-1.03			34.7		
25	4	-0.31			37.0		
30	3	0.90				40.9	
32	4	-0.50				36.4	
40	0	-5.89			19.1		
42	4	-0.44				36.6	
59	2	-1.25			34.0		
69	4	0.25	38.8				
70	4	-0.09			37.7		
72	2	-1.12			34.4		
73	3	-0.93					35.0
74	2	-1.25			34.0		
75	2	-1.09			34.5		
76	2	-1.09		34.5			
78	4	0.41		39.3			
81	1	1.56		43.0			
83	4	0.12			38.4		
85	3	-0.72			35.7		
86	3	-0.75			35.6		
87	3	0.59		39.9			
89	2	-1.25		34.0			
90	4	-0.25		37.2			
94	4	-0.31			37.0		
96	3	-0.75		35.6			
97	4	0.00		38.0			
101	0	2.06			44.6		
102	4	0.00			38.0		
105	4	-0.41				36.7	
113	4	0.19		38.6			
119	3	0.93		41.0			
120	4	-0.37		36.8			
121	4	0.00			38.0		
127	3	0.53		39.7			
128	1	-1.87				32.0	
133	4	0.13			38.4		

Lab	Rating	Z-value	1	3	4	6	7
134	4	-0.31			37.0		
136	0	3.43			49.0		
138	4	0.06				38.2	
141	4	0.00			38.0		
142	0	2.21		45.1			
145	3	0.66			40.1		
146	3	-0.84			35.3		
149	3	0.93		41.0			
153	3	-0.69		35.8			
158	2	-1.25		34.0			
180	4	0.28			38.9		
182	0	2.18			45.0		
190	0	2.96		47.5			
191	4	-0.06				37.8	
193	3	0.93		41.0			
198	0	-2.06		31.4			
203	3	0.93	41.0				
211	0	4.36		52.0			
212	4	0.00		38.0			
215	4	-0.31			37.0		
217	3	-0.93				35.0	
219.1	4	0.31			39.0		
219.2	2	-1.25				34.0	
220	4	-0.25		37.2			
221	4	-0.19		37.4			
231	2	1.46		42.7			
234	1	1.56		43.0			
235	0	2.87		47.2			

Table 13. *Statistical summary of reported data for standard reference water sample T-133 (trace constituents)--Continued*

Cu (Copper) µg/L



1. AA: direct air
3. AA: graphite furnace
4. ICP
6. ICP/MS
7. Ion chromatography

	1	3	4	6	7
N =	10	20	41	10	1
Minimum =	76.1	73.0	39.7	70.0	88.0
Maximum =	98.0	95.0	95.0	250.0	
Median =	85.0	82.7	86.0	87.1	
F-pseudosigma =	3.7	4.3	3.6	8.8	

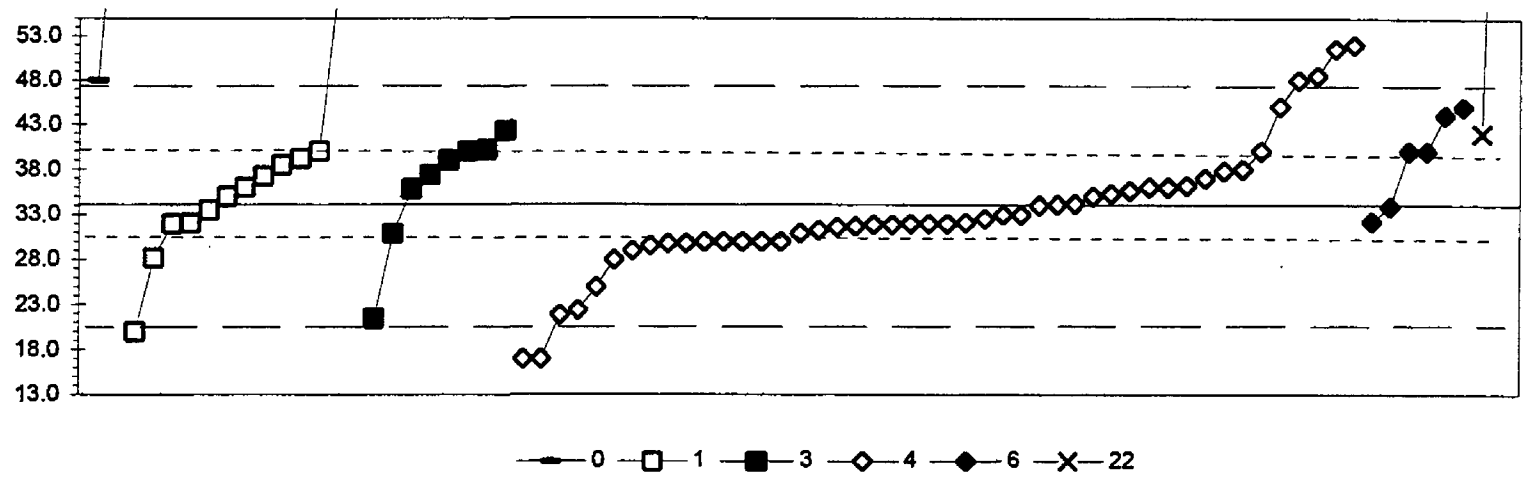
MPV = 85.3
F-pseudosigma = 4.5
N = 82
Hu = 88.1
Hl = 82.0

Lab	Rating	Z-value	1	3	4	6	7
1	4	-0.18			84.4		
3	4	0.17			86.0		
4	2	-1.38			79.0		
5	4	-0.08			84.9		
7	3	0.52			87.6		
8	0	36.26				250.0	
9	4	-0.23			84.2		
11	2	1.27			91.0		
12	3	-0.72		82.0			
13	4	-0.32				83.8	
15	2	1.20			90.7		
16	0	-3.36				70.0	
18	3	-0.94	81.0				
19	3	0.98			89.7		
23	4	-0.43		83.3			
24	3	0.69			88.4		
25	0	-2.70			73.0		
30	2	1.46				91.9	
32	3	0.63				88.1	
40	0	-10.02			39.7		
42	4	0.17				86.0	
59	4	-0.06			85.0		
69	0	-2.70		73.0			
70	4	0.17			86.0		
73	3	0.61					88.0
74	3	0.83			89.0		
75	2	-1.35			79.1		
76	1	-2.01	76.1				
78	4	0.10		85.7			
80	0	-2.48		74.0			
81	3	-0.94		81.0			
83	4	-0.17			84.5		
84	2	1.46		91.9			
85	2	1.16	90.5				
86	4	-0.39			83.5		
87	4	-0.06	85.0				
89	2	1.13		90.4			
90	4	0.17	86.0				
94	4	0.17			86.0		
96	3	-0.72		82.0			
97	3	-0.85		81.4			
101	1	1.97			94.2		
102	4	0.39			87.0		
105	3	-0.72			82.0		
111	1	-1.60		78.0			
113	4	0.28		86.5			
119	4	-0.50			83.0		
120	0	2.15		95.0			
121	2	1.05			90.0		
127	4	0.34			86.8		

Lab	Rating	Z-value	1	3	4	6	7
128	2	-1.16				80.0	
133	3	0.63			88.1		
134	4	0.17			86.0		
136	3	0.61			88.0		
138	3	1.00				89.8	
140	4	-0.06	85.0				
141	4	0.17			86.0		
142	3	-0.97			80.8		
145	3	0.84			89.1		
146	2	-1.20			79.8		
149	0	2.81	98.0				
153	3	-0.80		81.6			
158	4	-0.28		84.0			
180	4	0.43			87.2		
182	2	1.05			90.0		
190	0	-2.26		75.0			
191	1	2.04				94.5	
193	4	0.17	86.0				
198	4	-0.14			84.6		
203	4	-0.28	84.0				
211	0	2.15			95.0		
212	2	1.27			91.0		
215	3	0.58			87.9		
217	4	-0.50			83.0		
219.1	4	-0.50			83.0		
219.2	1	-2.04				76.0	
220	2	-1.46		78.6			
221	4	0.06		85.5			
224	4	0.08			85.6		
231	3	-0.94	81.0				
234	4	-0.23		84.2			
235	4	-0.36		83.6			

Table 13. *Statistical summary of reported data for standard refarence water sample T-133 (trace constituents)--Continued*

Fe (Iron) µg/L



0. Other		4. ICP				
1. AA: direct air		6. ICP/MS				
3. AA: graphite furnace		22. Colorimetric				
N =	2	13	8	46	6	2
Minimum =	48.0	5.0	21.5	17.0	32.3	42.0
Maximum =	72.0	59.0	42.3	52.0	45.0	110.0
Median =		36.0	38.2	32.0		
F-pseudosigma =		5.3	5.0	4.5		

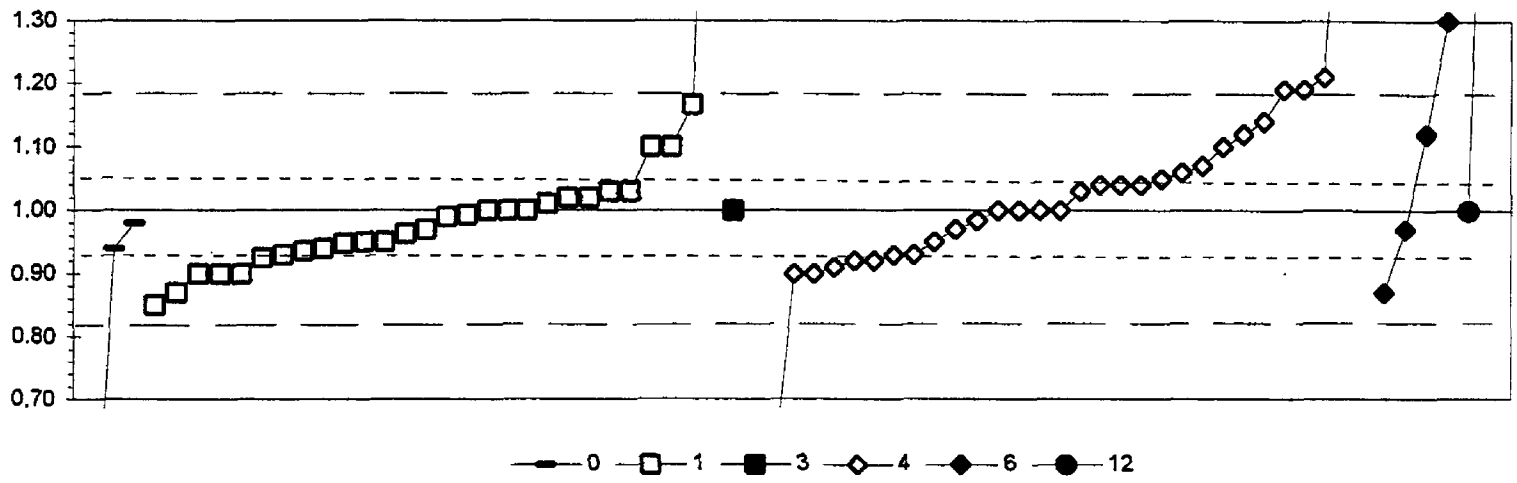
MPV =	34.1
F-pseudosigma =	6.7
N =	77
Hu =	40.0
HI =	30.9

Lab	Rating	Z-value	0	1	3	4	6	22
1	4	-0.46				31.0		
3	3	0.88				40.0		
4	0	2.67				52.0		
5	4	-0.32				31.9		
7	4	0.19				35.3		
8	2	1.48					44.0	
9	0	-2.54				17.0		
11	4	-0.01				34.0		
12	NR					< 50		
13	4	-0.02					33.9	
15	4	-0.41				31.3		
16	4	-0.16				33.0		
18	NR					< 50		
19	4	-0.29				32.1		
21	2	1.18						42.0
23	2	1.23			42.3			
24	3	-0.90				28.0		
25	0					< 6		
32	3	0.88					40.0	
33	0	2.07	48.0					
40	4	0.32				36.2		
42	4	0.29				36.0		
59	0	-2.54				17.0		
70	4	0.23				35.6		
73	0	5.64	72.0					
74	4	-0.30				32.0		
75	3	-0.63				29.8		
76	3	0.66		38.5				
78	4	-0.08		33.5				
81	2	-1.35				25.0		
83	4	-0.32				31.9		
85	4	-0.36				31.6		
86	4	-0.35				31.7		
87	4	0.29		36.0				
89	3	0.91			40.2			
90	0	3.71		59.0				
91	4	-0.26					32.3	
94	4	-0.30				32.0		
96	1	-1.87			21.5			
97	4	0.26			35.8			
101	3	0.56				37.8		
102	1	1.63				45.0		
105	0	2.07				48.0		
107	0	-2.09		20.0				
109	4	0.48		37.3				
111	3	0.88			40.0			
113	0	3.56		58.0				
116	4	0.44				37.0		
119	3	-0.75				29.0		
121	4	0.14				35.0		

Lab	Rating	Z-value	0	1	3	4	6	22
127	4	-0.23				32.5		
128	3	-0.60				30.0		
129	0	11.30						110.0
133	3	-0.67				29.6		
134	3	-0.60				30.0		
136	4	0.50			37.4			
138	4	0.01				34.1		
140	4	-0.29		32.1				
141	3	-0.60				30.0		
142	4	-0.30				32.0		
145	1	-1.81				21.9		
146	4	0.29				36.0		
149	3	0.88		40.0				
153	3	0.74			39.0			
158	3	-0.60				30.0		
180	1	-1.73				22.4		
182	0	2.60				51.6		
190	3	0.77		39.2				
191	1	1.63						45.0
193	NR			< 50				
198	3	-0.63				29.8		
203	4	0.14		35.0				
211	3	-0.60				30.0		
212	3	0.59				38.0		
215	4	-0.16				33.0		
219.1	NR					< 90		
219.2	3	0.88						40.0
220	3	-0.87		28.2				
221	4	-0.47			30.9			
224	0	2.15				48.5		
231	4	-0.30		32.0				
234	4	0.02				34.2		

Table 13. *Statistical summary of reported data for standard referenca water sample T-133 (trace constituants)--Continued*

K (Potassium) mg/L



0. Other		4. ICP				
1. AA: direct air		6. ICP/MS				
3. AA: graphite furnace		12. Flame emission				
N =	3	28	1	31	4	2
Minimum =	0.35	0.85	1.00	0.45	0.87	1.00
Maximum =	0.98	2.07		1.73	1.30	2.20
Median =		0.98		1.00		
F-pseudosigma =		0.06		0.11		

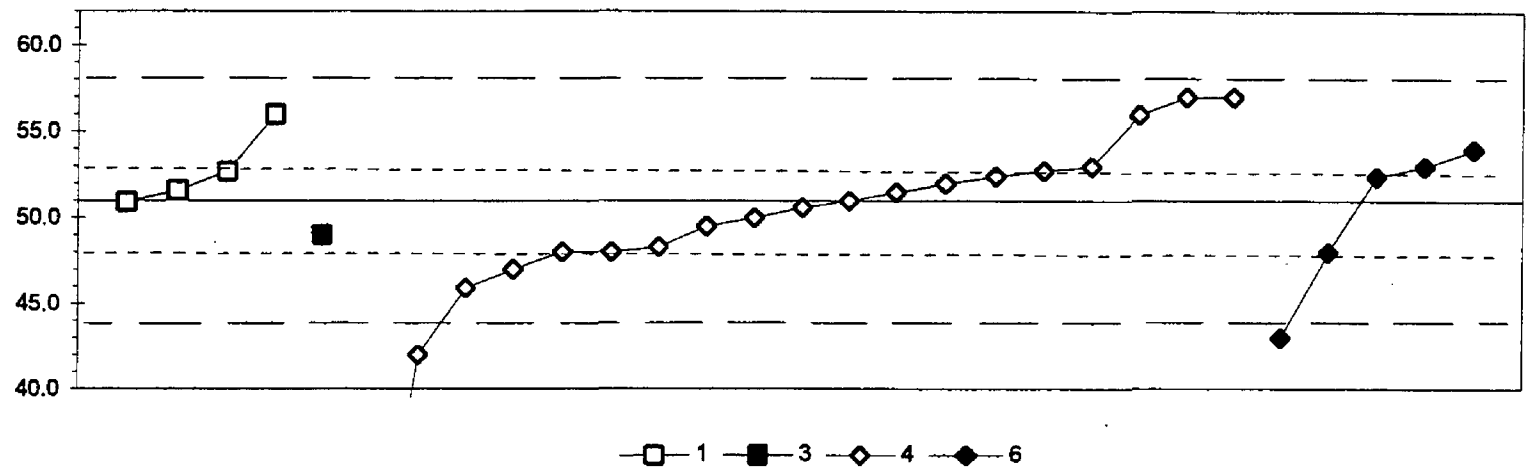
MPV = 1.00
F-pseudosigma = 0.09
N = 69
Hu = 1.05
Hl = 0.93

Lab	Rating	Z-value	0	1	3	4	6	12
1	2	-1.46		0.87				
3	2	-1.12		0.90				
7	0	2.14				1.19		
8	0	3.37					1.30	
9	2	1.12				1.10		
11	4	-0.18				0.98		
12	4	0.00				1.00		
13	2	1.35					1.12	
15	4	0.45				1.04		
16	4	0.00			1.00			
18	4	0.00				1.00		
19	4	0.45				1.04		
23	3	-0.67	0.94					
24	3	-0.90				0.92		
25	NR					< 1.21		
32	4	-0.34					0.97	
33	4	-0.22	0.98					
40	0	2.14				1.19		
42	3	0.56				1.05		
59	2	-1.12				0.90		
69	4	0.00						1.00
70	4	0.34				1.03		
74	4	0.00				1.00		
75	3	-0.84		0.93				
78	3	-0.56		0.95				
81	3	-0.79				0.93		
83	0	12.03		2.07				
85	2	1.12		1.10				
86	3	0.67				1.06		
87	4	0.34		1.03				
89	4	0.22		1.02				
94	NR					< 1		
97	4	-0.11		0.99				
101	4	0.00		1.00				
102	0	-4.72				0.58		
105	1	1.57				1.14		
109	4	0.11		1.01				
111	4	-0.34		0.97				
113	1	-1.69		0.85				
116	0	-7.31	0.35					
119	2	-1.12				0.90		
120	3	-0.56		0.95				
121	2	-1.12		0.90				
122	3	-0.67		0.94				
127	4	0.22		1.02				
128	NR					< 2		
129	2	-1.12		0.90				
134	3	-0.79		0.93				
136	4	0.00				1.00		
138	2	-1.01				0.91		

Lab	Rating	Z-value	0	1	3	4	6	12
140	4	0.00		1.00				
141	4	0.45				1.04		
142	0	-6.18				0.45		
145	3	-0.79				0.93		
146	NR					< 1		
149	0	13.49						2.20
151	3	-0.72		0.94				
158	2	1.35				1.12		
180	0	2.36				1.21		
185	1	1.87		1.17				
191	2	-1.46					0.87	
193	4	-0.08		0.99				
198	4	0.34		1.03				
203	4	0.00		1.00				
211	0	7.87				1.70		
212	4	-0.34				0.97		
215	0	8.21				1.73		
218	2	1.12		1.10				
219	3	-0.90				0.92		
221	4	-0.42		0.96				
224	3	-0.56				0.95		
231	3	-0.58		0.95				
234	3	0.79				1.07		

Table 13. *Statistical summary of reported data for standard reference water sample T-133 (trace constituents)--Continued*

Li (Lithium) µg/L



1. AA: direct air
3. AA: graphite furnace
4. ICP
6. ICP/MS

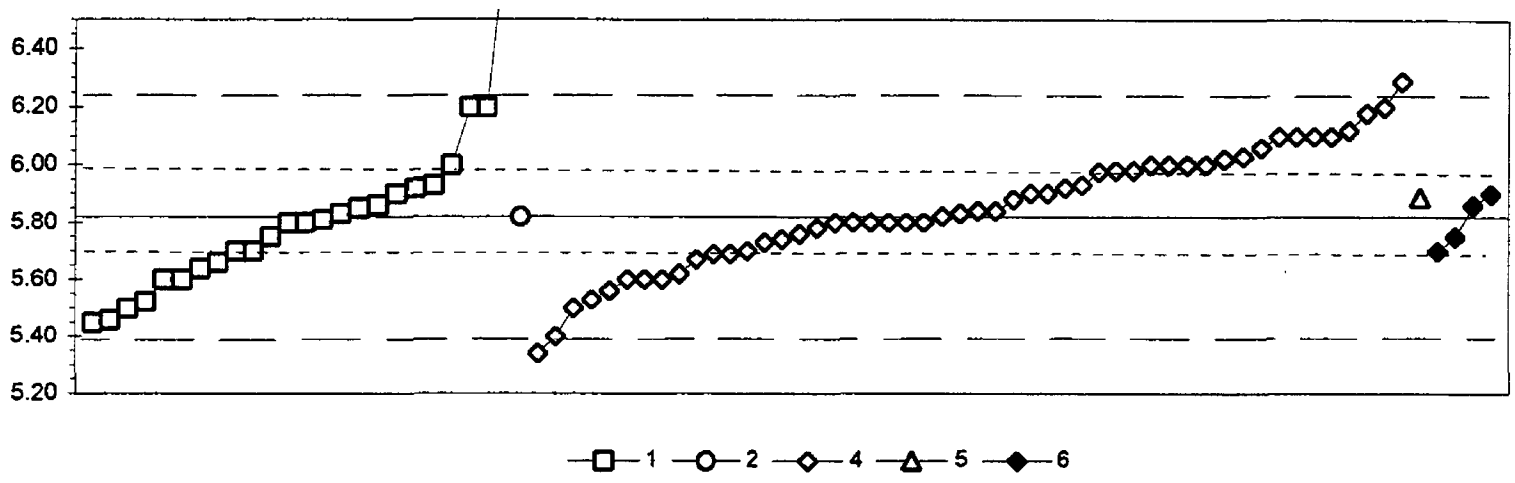
	4	1	19	5
N =	4	1	19	5
Minimum =	50.9	49.0	24.3	43.0
Maximum =	56.0		57.0	54.0
Median =			50.6	
F-pseudosigma =			3.4	

MPV = 51.0
F-pseudosigma = 3.5
N = 29
Hu = 52.8
Hl = 48.0

Lab	Rating	Z-value	1	3	4	6
1	4	0.41			52.4	
3	2	1.42			56.0	
4	0	-2.55			42.0	
5	3	-0.77			48.3	
7	1	1.70			57.0	
8	3	0.57				53.0
15	2	-1.13			47.0	
16	NR				< 100	
24	4	0.14			51.5	
25	4	-0.28			50.0	
30	4	0.40				52.4
32	3	0.85				54.0
40	0	-7.57			24.3	
42	4	-0.11			50.6	
69	2	1.42	56.0			
75	2	-1.45			45.9	
85	4	0.48	52.7			
105	4	0.28			52.0	
109	4	-0.02	50.9			
127	3	-0.85			48.0	
128	3	-0.85				48.0
134	3	-0.85			48.0	
136	4	0.00			51.0	
142	3	-0.57		49.0		
145	4	-0.43			49.5	
151	4	0.17	51.6			
182	4	0.50			52.8	
212	1	1.70			57.0	
219.1	3	0.57			53.0	
219.2	0	-2.27				43.0

Table 13. *Statistical summary of reported data for standard refarence watar sampla T-133 (trace constituents)--Continued*

Mg (Magnesium) mg/L



1. AA: direct air
2. AA: direct nitrous oxide
4. ICP
5. DCP
6. ICP/MS

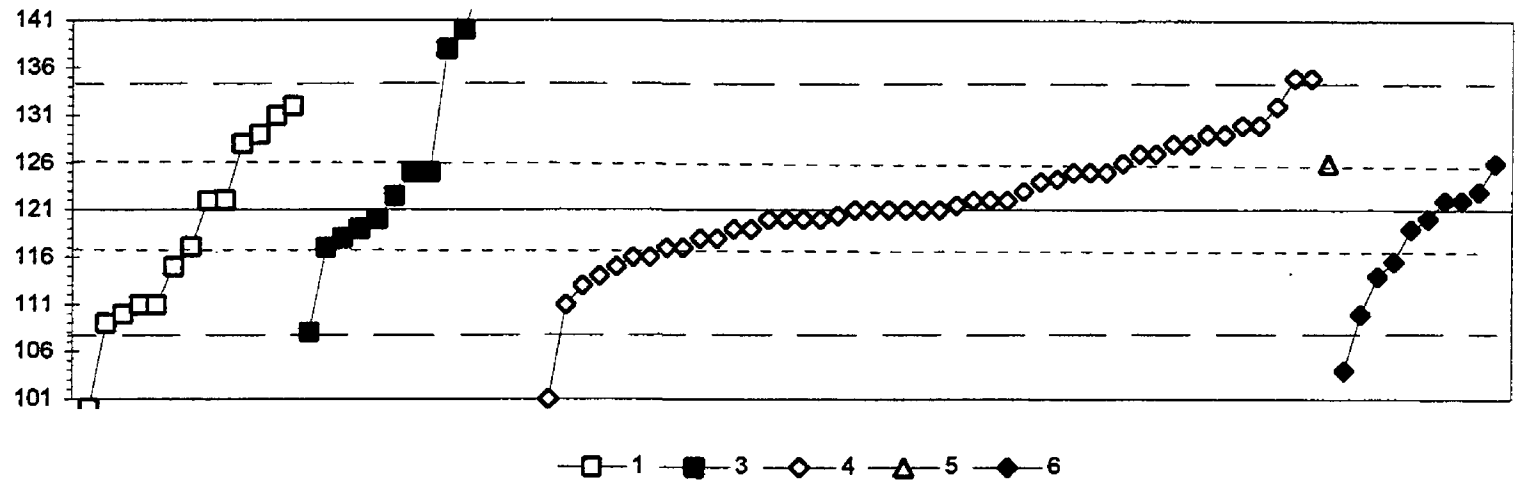
	1	2	4	5	6
N =	24	1	50	1	4
Minimum =	5.45	5.82	5.34	5.89	5.70
Maximum =	6.75		6.29		5.90
Median =	5.80		5.84		
F-pseudosigma =	0.21		0.28		

MPV = 5.82
F-pseudosigma = 0.21
N = 80
Hu = 5.98
Hl = 5.70

Lab	Rating	Z-value	1	2	4	5	6
1	3	-0.62			5.69		
3	4	-0.28			5.76		
4	2	1.42			6.12		
5	3	-0.95			5.62		
7	3	0.76			5.98		
8	4	0.38					5.90
9	4	0.00			5.82		
11	2	1.33			6.10		
12	3	0.85			6.00		
13	4	0.19					5.86
15	0	2.22			6.29		
16	2	-1.04			5.60		
18	4	-0.09			5.80		
19	2	1.33			6.10		
23	1	1.80	6.20				
24	4	-0.09			5.80		
25	4	-0.43			5.73		
30	4	-0.09	5.80				
32	4	-0.33					5.75
33	4	0.33				5.89	
40	1	1.70			6.18		
42	4	0.38			5.90		
59	1	-1.51			5.50		
69	4	-0.09	5.80				
70	4	0.28			5.88		
74	3	0.85			6.00		
75	2	-1.04	5.60				
78	0	4.40	6.75				
81	2	1.14			6.06		
83	4	-0.19			5.78		
84	3	-0.85	5.64				
85	4	0.14	5.85				
86	4	0.09			5.84		
87	4	0.38	5.90				
89	1	-1.75	5.45				
94	4	-0.09			5.80		
97	4	0.19	5.86				
101	3	0.85	6.00				
102	1	1.80			6.20		
105	2	-1.23			5.56		
109	1	1.80	6.20				
111	4	0.00		5.82			
113	3	-0.57	5.70				
116	3	0.95			6.02		
119	2	-1.04			5.60		
120	1	-1.70	5.46				
121	3	0.85			6.00		
122	4	0.05	5.83				
127	3	-0.71			5.67		
128	0	-2.27			5.34		
133	3	0.74			5.98		
134	4	-0.38			5.74		
136	2	-1.04			5.60		
138	4	0.09			5.84		
140	2	-1.04	5.60				
141	3	0.52			5.93		
142	2	1.33			6.10		
145	4	0.05			5.83		
146	2	-1.37			5.53		
149	1	-1.51	5.50				
151	3	-0.76	5.66				
158	3	0.85			6.00		
180	4	0.47			5.92		
182	3	-0.62			5.69		
185	2	-1.40	5.52				
191	3	-0.57					5.70
193	3	-0.57	5.70				
198	3	0.99			6.03		
203	4	-0.33	5.75				
211	3	-0.57			5.70		
212	2	1.33			6.10		
215	4	-0.09			5.80		
217	1	-1.99			5.40		
218	4	0.47	5.92				
219	4	-0.09			5.80		
221	3	0.52	5.93				
224	4	-0.09			5.80		
231	4	-0.05	5.81				
234	4	0.38			5.90		
235	3	0.76			5.98		

Table 13. *Statistical summary of reported data for standard reference water sample T-133 (trace constituents)--Continued*

Mn (Manganese) µg/L



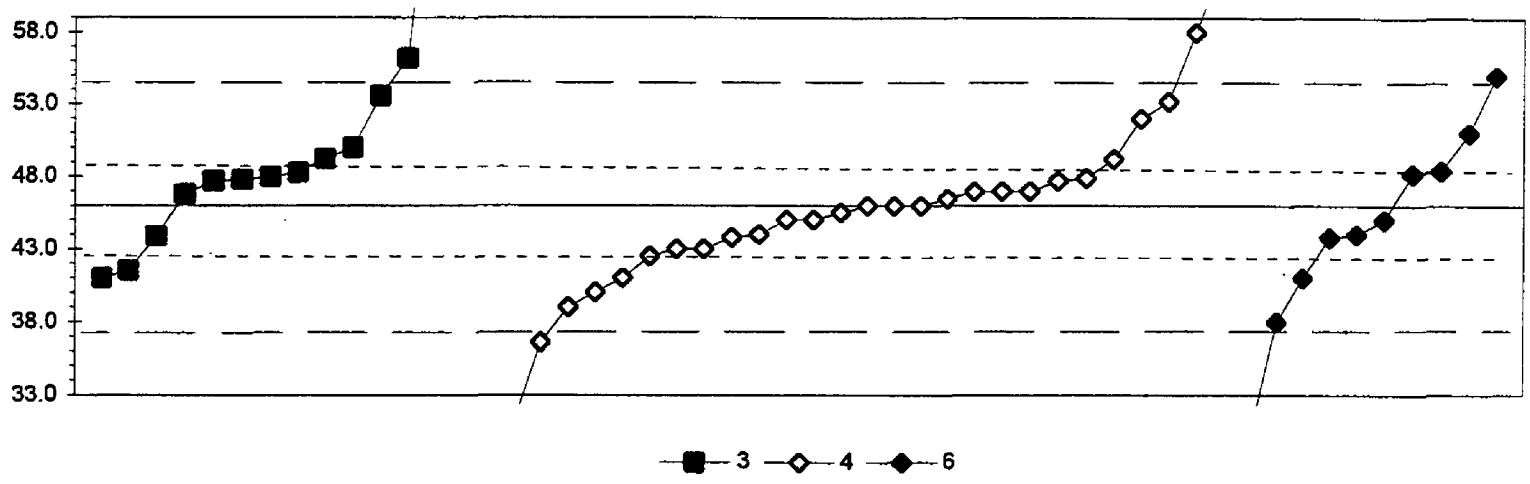
1. AA: direct air		5. DCP			
3. AA: graphite furnace		6. ICP/MS			
4. ICP					
N =	13	13	47	1	10
Minimum =	100	108	12	126	104
Maximum =	132	155	135		126
Median =	117	125	121		120
F-pseudosigma =	13	16	5		6

MPV = 121
F-pseudosigma = 7
N = 84
Hu = 126
Hl = 117

Lab	Rating	Z-value	1	3	4	5	6
1	3	-0.82					116
3	4	-0.15			120		
4	0	2.10			135		
5	4	0.00			121		
7	3	0.90			127		
8	4	0.15					122
9	3	0.90			127		
11	4	0.00			121		
12	0	-16.34			12		
13	4	0.30					123
15	2	1.20			129		
16	0	-2.55					104
18	3	0.75			126		
19	0	2.10			135		
23	0	2.85		140			
24	3	-0.90			115		
25	4	0.45			124		
30	4	0.15					122
32	3	0.75					126
33	3	0.75				126	
40	1	1.65			132		
42	4	0.15			122		
59	3	-0.75			116		
69	2	1.05	128				
70	4	0.00			121		
74	2	-1.05			114		
75	2	-1.20			113		
76	4	0.15	122				
78	4	0.22		123			
80	4	-0.30		119			
81	2	-1.50			111		
83	4	-0.45			118		
85	2	1.50	131				
86	4	-0.30			119		
87	1	1.65	132				
89	0	5.10		155			
90	1	-1.80	109				
91	4	-0.13					120
94	4	0.00			121		
96	3	-0.60		117			
97	3	0.60		125			
101	4	0.15			122		
102	3	0.60			125		
105	3	0.60			125		
107	1	-1.65	110				
109	4	0.14	122				
111	0	4.95		154			
113	4	-0.15		120			
116	2	1.20			129		
119	3	-0.60			117		
120	1	-1.95		108			
121	4	-0.15			120		
127	3	0.60			125		
128	2	-1.05					114
129	0	-3.15	100				
134	2	1.05			128		
136	0	3.69		146			
138	4	0.15			122		
140	3	-0.58	117				
141	4	-0.30			119		
142	4	0.00			121		
145	4	0.49			124		
146	0	-3.00			101		
149	2	1.20	129				
153	4	-0.45		118			
158	3	-0.75			116		
180	4	0.00			121		
182	4	-0.09			120		
190	0	2.55		138			
191	4	-0.30					119
198	4	0.30			123		
203	3	-0.90	115				
211	4	-0.15			120		
212	2	1.35			130		
215	4	-0.45			118		
217	4	-0.15			120		
219.1	2	1.35			130		
219.2	1	-1.65					110
220	2	-1.50	111				
221	3	0.60		125			
224	4	0.07			122		
231	2	-1.50	111				
234	3	-0.60			117		
235	2	1.05			128		

Table 13. *Statistical summary of reported data for standard referanca watar sample T-133 (trace constituents)--Continued*

Mo (Molybdenum) µg/L



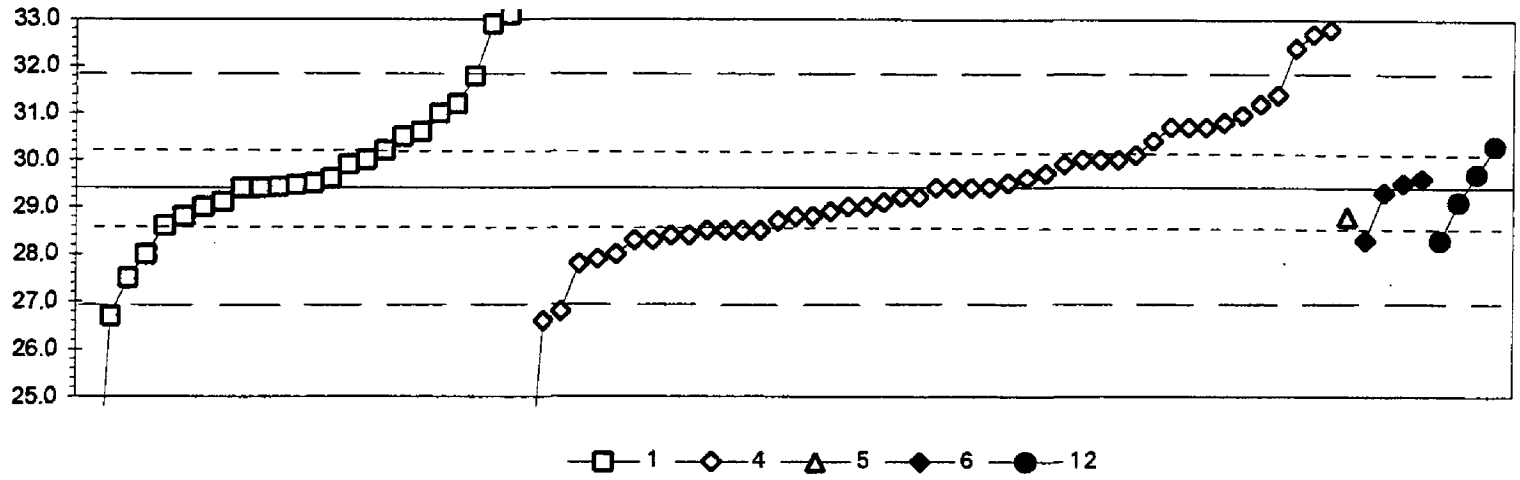
3. AA: graphite furnace			
4. ICP			
6. ICP/MS			
N =	13	29	10
Minimum =	41.0	22.5	30.0
Maximum =	73.0	63.0	55.0
Median =	48.0	45.5	44.5
F-pseudosigma =	2.4	3.3	5.5

MPV =	46.0
F-pseudosigma =	4.2
N =	52
Hu =	48.4
Hl =	42.8

Lab	Rating	Z-value	3	4	6
1	4	0.19	46.8		
3	4	0.00		46.0	
4	NR			< 50	
5	4	0.00		46.0	
7	3	-0.53		43.8	
8	0	-3.85			30.0
11	4	-0.24		45.0	
12	2	-1.45		40.0	
15	NR			< 50	
16	2	-1.20			41.0
18	4	-0.24		45.0	
19	1	1.73		53.2	
23	3	-0.51	43.9		
24	0	-2.26		36.6	
30	3	0.53			48.2
32	3	-0.53			43.8
40	0	-5.64		22.6	
42	4	-0.24			45.0
59	0	2.17			55.0
70	NR			< 50	
74	3	-0.72		43.0	
75	3	-0.84		42.5	
78	3	0.55	48.3		
81	0	-3.61		31.0	
85	3	0.77		49.2	
86	4	0.12		46.5	
87	4	0.43	47.8		
94	2	-1.20	41.0		
97	2	-1.08	41.5		
105	3	0.58			48.4
109	3	0.78	49.2		
120	3	0.96	50.0		
127	4	0.41	47.7		
128	1	-1.93			38.0
134	4	0.00		46.0	
136	2	1.45		52.0	
138	2	1.20			51.0
141	3	-0.72		43.0	
142	0	6.50	73.0		
145	4	0.23		47.0	
146	4	-0.12		45.5	
149	4	0.48	48.0		
158	4	-0.48		44.0	
180	4	0.46		47.9	
182	0	-5.66		22.5	
211	0	4.10		63.0	
212	4	0.24		47.0	
215	4	0.24		47.0	
217	1	-1.69		39.0	
219.1	2	-1.20		41.0	
219.2	4	-0.48			44.0
221	1	1.83	53.6		
224	4	0.41		47.7	
234	0	2.46	56.2		
235	0	2.89		58.0	

Table 13. *Statistical summary of reported data for standard reference water semple T-133 (trace constituents)--Continued*

Na (Sodium) mg/L



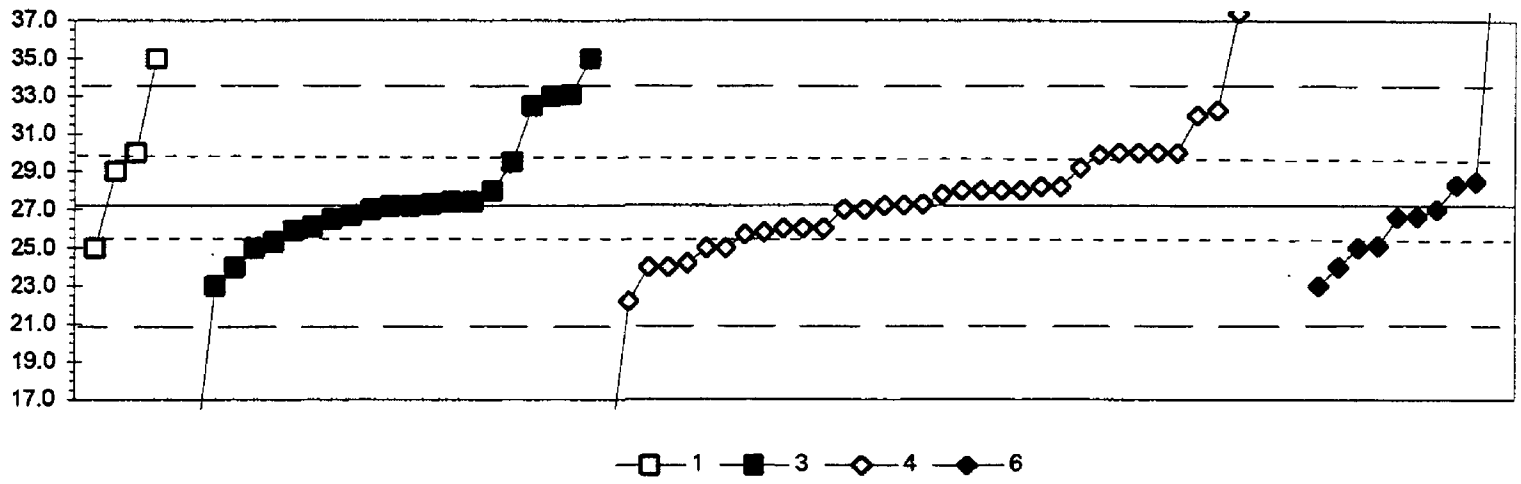
1. AA: direct air			6. ICP/MS		
4. ICP			12. Flame emission		
5. DCP					
N =	24	46	1	4	4
Minimum =	21.0	21.8	28.8	28.3	28.3
Maximum =	33.1	32.8		29.6	30.3
Median =	29.5	29.3			
F-pseudosigma =	1.2	1.2			

MPV = 29.4
F-pseudosigma = 1.2
N = 79
Hu = 30.2
Hl = 28.6

Lab	Rating	Z-value	1	4	5	6	12
1	4	0.06	29.5				
3	4	0.08		29.5			
4	4	-0.34		29.0			
5	4	-0.17		29.2			
7	1	1.52		31.2			
8	4	-0.08				29.3	
9	2	1.10		30.7			
11	2	1.10		30.7			
12	3	0.51		30.0			
13	3	-0.93				28.3	
15	0	-2.36		26.6			
16	3	-0.84		28.4			
18	4	0.42		29.9			
19	0	2.78		32.7			
23	0	2.95	32.9				
24	3	-0.76		28.5			
25	2	1.32		31.0			
32	4	0.17				29.6	
33	3	-0.51			28.8		
40	0	2.87		32.8			
42	4	0.17		29.6			
59	2	-1.18		28.0			
69	3	-0.93					28.3
70	4	0.25		29.7			
74	2	-1.26		27.9			
75	4	0.00	29.4				
78	0	3.12	33.1				
81	3	0.84		30.4			
83	3	-0.76		28.5			
84	4	0.25					29.7
85	3	-0.51	28.8				
86	4	-0.42		28.9			
87	0	-2.28	26.7				
89	3	0.67	30.2				
90	4	-0.25					29.1
94	4	0.00		29.4			
97	3	0.93	30.5				
101	4	0.08	29.5				
102	0	-6.41		21.8			
105	3	-0.93		28.3			
109	3	-0.67	28.6				
111	4	0.00	29.4				
113	1	1.52	31.2				
116	2	1.10		30.7			
119	3	-0.84		28.4			
120	1	2.02	31.8				
121	4	-0.17		29.2			
122	4	-0.25	29.1				
127	2	-1.35		27.8			
128	3	-0.51		28.8			
129	4	-0.34	29.0				
134	2	-1.18	28.0				
136	3	-0.59		28.7			
138	3	0.59		30.1			
140	3	0.51	30.0				
141	2	1.18		30.8			
142	4	0.00		29.4			
145	4	-0.26		29.1			
146	0	-2.19		26.8			
149	3	0.76					30.3
151	2	1.01	30.6				
158	0	2.53		32.4			
180	3	-0.76		28.5			
182	3	-0.76		28.5			
185	4	0.02	29.4				
191	4	0.08				29.5	
193	1	-1.60	27.5				
198	4	-0.34		29.0			
203	2	1.35	31.0				
211	3	0.51		30.0			
212	1	1.69		31.4			
215	4	0.00		29.4			
217	3	-0.93		28.3			
218	0	-7.08	21.0				
219	3	0.51		30.0			
221	4	0.17	29.6				
224	4	0.01		29.4			
231	4	0.42	29.9				
234	3	-0.51		28.8			

Table 13. *Statistical summary of reported data for standard reference water sample T-133 (trace constituents)--Continued*

Ni (Nickel) µg/L



1. AA: direct air		6. ICP/MS		
3. AA: graphite furnace				
4. ICP				
N =	4	22	36	10
Minimum =	25.0	12.0	13.7	23.0
Maximum =	35.0	35.0	53.0	42.0
Median =		27.1	27.9	26.6
F-pseudosigma =		2.0	3.0	2.5

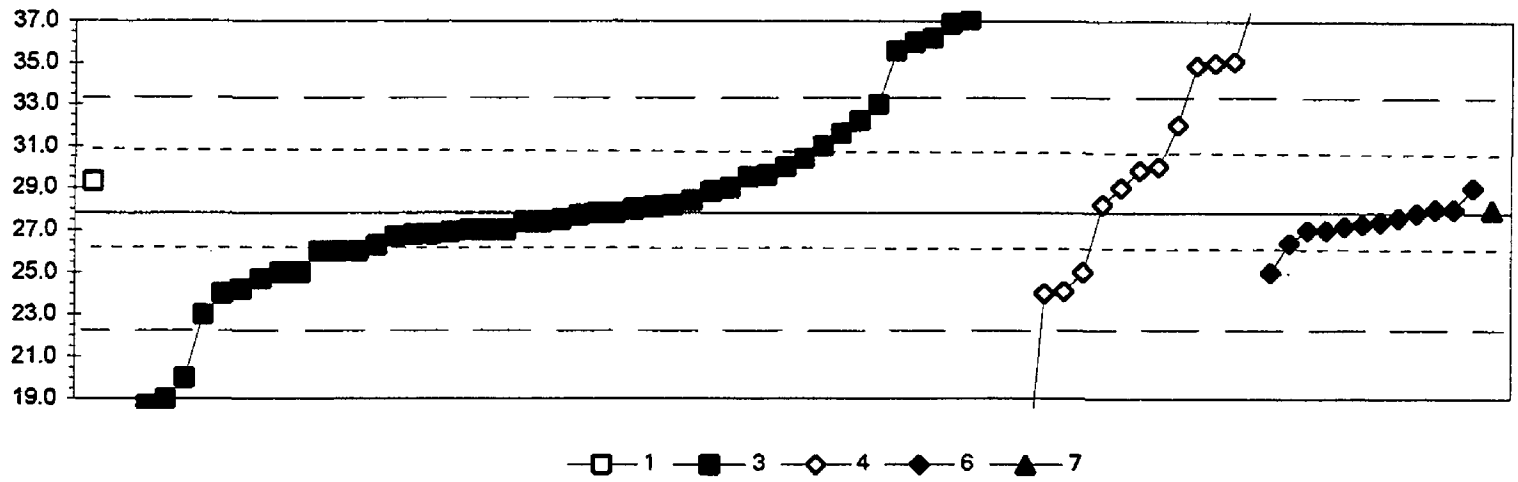
MPV =	27.2
F-pseudosigma =	3.1
N =	72
Hu =	29.7
Hl =	25.5

Lab	Rating	Z-value	1	3	4	6
1	4	-0.18				26.7
3	4	-0.39			26.0	
4	0	8.28			53.0	
5	4	0.03			27.3	
7	0	3.91			39.4	
8	0	4.75				42.0
9	4	-0.45			25.8	
11	3	0.89			30.0	
12	3	0.89			30.0	
13	3	-0.68				25.1
15	4	0.00			27.2	
16	2	-1.35				23.0
18	4	0.25			28.0	
23	0	2.50		35.0		
24	3	0.86			29.9	
25	NR				< 49	
30	4	0.35				28.3
32	4	-0.20				26.6
40	0	-4.34			13.7	
42	4	-0.07				27.0
59	2	-1.03			24.0	
69	3	0.89	30.0			
70	NR				< 50	
72	3	-0.97			24.2	
74	4	-0.39			26.0	
75	4	0.00		27.2		
76	2	-1.03		24.0		
78	4	-0.42		25.9		
81	0	-4.89		12.0		
83	1	-1.61			22.2	
85	4	0.19			27.8	
86	4	0.32			28.2	
87	3	0.57	29.0			
89	4	0.00		27.2		
90	1	1.70		32.5		
94	4	-0.39			26.0	
97	3	-0.62		25.3		
101	3	0.64			29.2	
102	4	0.25			28.0	
105	2	-1.03			24.0	
107	0	-4.24		14.0		
113	4	0.06		27.4		
119	4	-0.07		27.0		
120	2	-1.35		23.0		
121	3	0.89			30.0	
127	4	-0.17		26.7		
128	2	-1.03				24.0
133	4	0.00			27.2	
134	4	0.06		27.4		
136	3	0.89			30.0	

Lab	Rating	Z-value	1	3	4	6
138	4	0.25			28.0	
140	3	-0.71	25.0			
141	3	-0.71			25.0	
142	3	-0.71		25.0		
145	1	1.62			32.3	
146	4	0.32			28.2	
153	4	-0.23		26.5		
158	4	0.25			28.0	
180	4	-0.49			25.7	
182	0	3.62			38.5	
190	3	0.73		29.5		
191	4	0.41				28.5
193	NR		< 50			
198	0	3.27			37.4	
203	0	2.50	35.0			
211	3	-0.71			25.0	
212	4	-0.07			27.0	
215	4	0.25		28.0		
219.1	1	1.54			32.0	
219.2	3	-0.71				25.0
221	4	-0.36		26.1		
224	4	-0.07			27.0	
231	1	1.86		33.0		
234	1	1.89		33.1		
235	4	0.03		27.3		

Table 13. *Statistical summary of reported data for standard refaranca water sampla T-133 (trace constituants)--Continued*

Pb (Lead) **µg/L**



1. AA: direct air	6. ICP/MS				
3. AA: graphite furnace	7. Ion chromatography				
4. ICP					
N =	1	49	13	12	1
Minimum =	29.3	9.0	13.7	25.0	28.0
Maximum =		277.0	38.0	29.0	
Median =		27.5	29.8	27.4	
F-pseudosigma =		3.0	5.8	0.7	

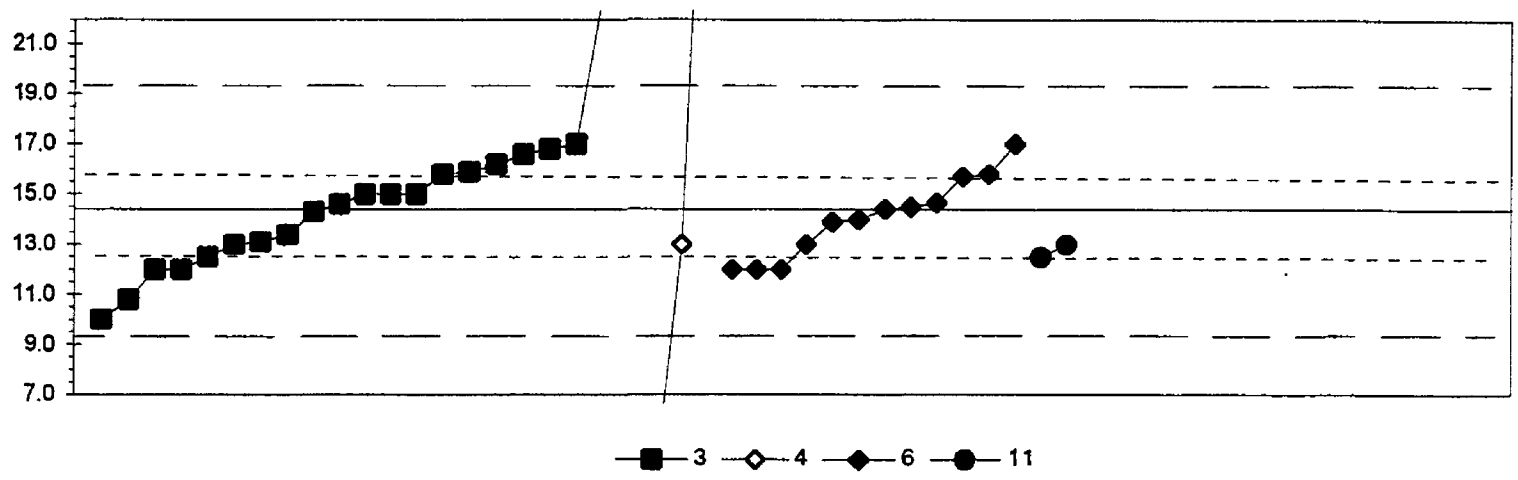
MPV =	27.8
F-pseudosigma =	2.7
N =	76
Hu =	29.9
HI =	26.3

Lab	Rating	Z-value	1	3	4	6	7
1	4	-0.17				27.3	
3	2	1.22		31.0			
4	NR				< 40		
5	0	3.43		36.9			
7	4	-0.13		27.4			
8	NR					< 30	
9	4	0.17			28.2		
11	1	1.59			32.0		
12	4	-0.28		27.0			
13	3	0.99		30.4			
15	NR				< 50		
16	2	-1.03				25.0	
18	4	-0.28		27.0			
23	1	-1.78		23.0			
24	0	3.17		36.2			
25	NR				< 71		
30	4	0.09				28.0	
32	3	-0.51				26.4	
40	0	-5.26			13.7		
42	4	-0.06				27.6	
59	2	-1.03			25.0		
69	4	-0.09		27.5			
70	4	-0.36		26.8			
72	3	-0.66		26.0			
73	4	0.09					28.0
74	4	0.09				28.0	
75	4	-0.02		27.7			
76	2	-1.33		24.2			
78	4	0.24		28.4			
80	2	-1.41		24.0			
81	1	1.97		33.0			
83	4	0.09		28.0			
84	4	0.13		28.1			
85	NR		< 50				
86	2	-1.37			24.1		
87	1	1.67		32.2			
89	4	0.39		28.8			
90	0	-3.39		18.7			
94	2	-1.03		25.0			
96	4	-0.32		26.9			
97	3	-0.54		26.3			
101	0	2.75			35.1		
102	4	0.47			29.0		
105	4	-0.21				27.2	
111	0	-7.03		9.0			
113	0	2.94		35.6			
119	2	-1.03		25.0			
120	0	-4.52		15.7			
121	0	4.22		39.0			
127	0	93.40		277.0			

Lab	Rating	Z-value	1	3	4	6	7
128	4	-0.28				27.0	
133	0	3.50		37.1			
134	4	-0.13		27.4			
136	0	2.72			35.0		
138	4	-0.13				27.4	
140	3	0.58	29.3				
141	2	-1.41			24.0		
142	2	1.44		31.6			
145	0	2.67			34.9		
146	4	-0.39		26.7			
149	4	0.47		29.0			
153	4	-0.36		26.8			
158	3	-0.66		26.0			
180	0	3.84			38.0		
190	4	-0.28		27.0			
191	4	0.02				27.8	
193	3	0.84		30.0			
198	4	0.02		27.8			
203	2	-1.14		24.7			
211	3	-0.66		26.0			
212	0	-3.28		19.0			
215	0	-2.90		20.0			
217	4	0.47				29.0	
219.1	3	0.84			30.0		
219.2	4	-0.28				27.0	
220	4	0.16		28.2			
221	3	0.66		29.5			
224	3	0.77			29.8		
231	0	3.09		36.0			
234	3	0.69		29.6			
235	4	0.02		27.8			

Table 13. *Statistical summary of reported data for standard reference watar sample T-133 (traca constituents)--Continued*

Sb (Antimony) µg/L



3. AA: graphite furnace
4. ICP
6. ICP/MS
11. AA: hydride

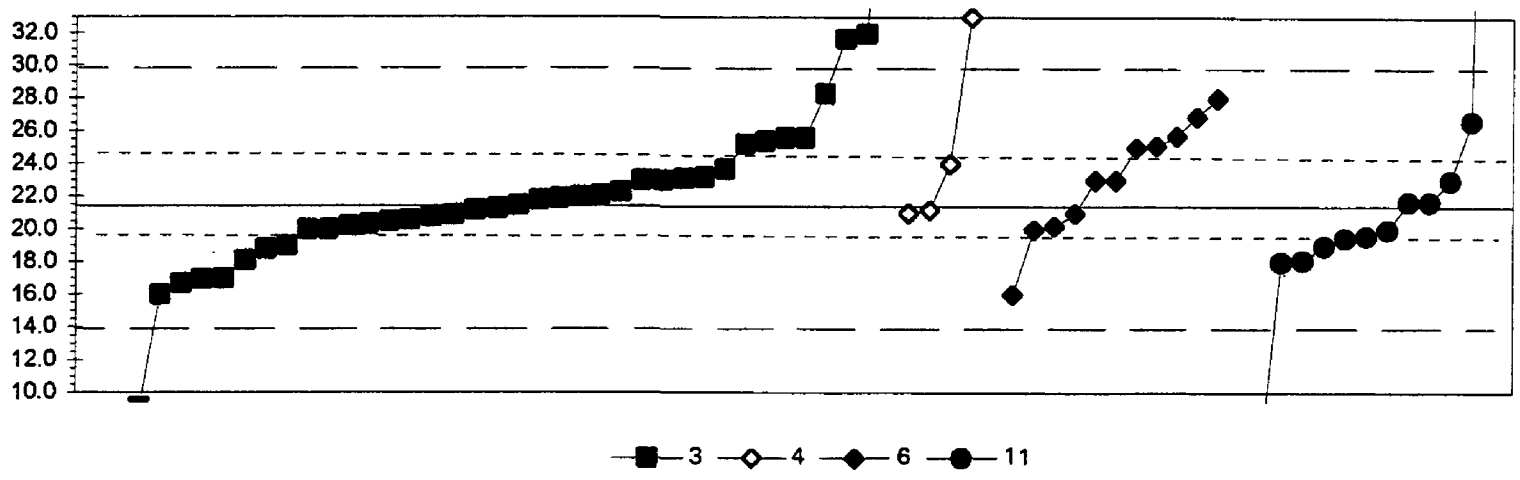
	3	4	6	11
N =	21	3	12	2
Minimum =	10.0	3.4	12.0	12.5
Maximum =	24.3	37.0	17.0	13.0
Median =	15.0		14.2	
F-pseudosigma =	2.4		2.0	

MPV = 14.4
F-pseudosigma = 2.4
N = 38
Hu = 15.8
Hl = 12.5

Lab	Rating	Z-value	3	4	6	11
1	4	0.13			14.7	
3	4	0.27	15.0			
7	NR			< 27		
8	3	-0.55				13.0
11	NR			< 50		
12	NR			< 100		
15	NR			< 50		
16	3	-0.96			12.0	
18	3	-0.76	12.5			
23	3	0.92	16.6			
24	0	4.07	24.3			
25	NR			< 51		
30	3	0.59			15.8	
32	3	0.55			15.7	
40	0	-4.48		3.4		
42	4	-0.18			13.9	
59	3	-0.55			13.0	
69	3	-0.51	13.1			
70	3	-0.96	12.0			
72	0	3.54	23.0			
74	3	-0.96			12.0	
75	NR			< 50		
76	4	-0.39	13.4			
78	2	-1.45	10.8			
81	3	-0.96	12.0			
85	NR			< 100		
94	4	0.27	15.0			
97	3	1.00	16.8			
102	3	-0.55		13.0		
105	4	0.06			14.5	
113	3	0.76	16.2			
119	3	-0.76				12.5
120	1	-1.78	10.0			
127	3	0.63	15.9			
128	3	-0.96			12.0	
136	0	9.26		37.0		
138	4	0.02			14.4	
141	NR			< 20		
142	3	0.59	15.8			
146	NR			< 50		
180	NR			< 24.2		
198	4	-0.02	14.3			
211	3	-0.55	13.0			
212	4	0.27	15.0			
215	2	1.08	17.0			
217	4	-0.14			14.0	
219	2	1.08			17.0	
234	4	0.10	14.6			

Table 13. *Statistical summary of reportad data for standard reference watar sample T-133 (trece constituents)--Continued*

Se (Selenium) µg/L



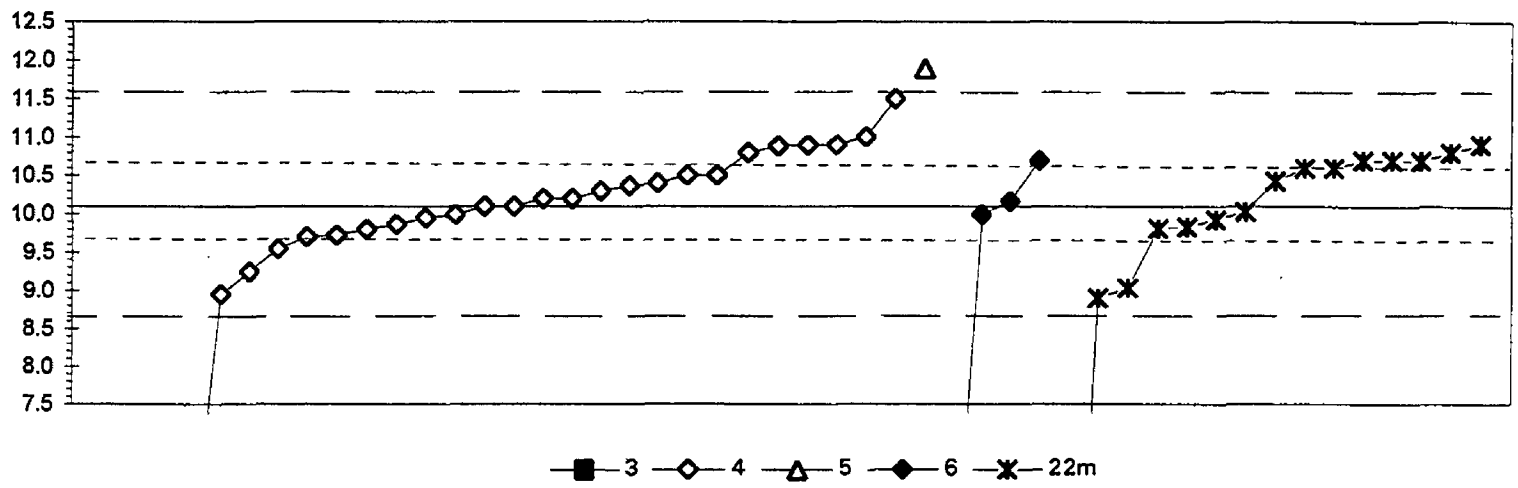
3. AA: graphite furnace			11. AA: hydride	
4. ICP				
6. ICP/MS				
N =	39	5	11	13
Minimum =	8.0	21.0	16.0	1.7
Maximum =	48.0	42.0	28.0	84.4
Median =	21.3		23.0	19.6
F-pseudosigma =	2.7		3.6	2.7

MPV = 21.4
F-pseudosigma = 3.7
N = 68
Hu = 24.5
HI = 19.5

Lab	Rating	Z-value	3	4	6	11
1	4	0.49	23.2			
3	4	0.43	23.0			
5	3	-0.71	18.8			
7	4	0.46	23.1			
8	3	-0.92				18.0
11	0	3.15		33.0		
12	2	-1.20	17.0			
13	0	-3.34	9.1			
15	4	0.08				21.7
16	4	-0.38			20.0	
18	4	-0.33	20.2			
23	2	1.14	25.6			
24	0	7.23	48.0			
25	NR			< 129		
30	2	1.17			25.7	
32	3	0.98			25.0	
34	4	-0.38				20.0
42	4	0.43			23.0	
59	4	-0.11			21.0	
69	4	0.16	22.0			
70	4	-0.03	21.3			
72	4	-0.38	20.0			
74	4	0.43			23.0	
75	4	0.08				21.7
76	4	-0.22	20.6			
78	4	-0.14	20.9			
80	0	2.88	32.0			
81	2	-1.47	16.0			
85	3	-0.65				19.0
86	3	-0.90				18.1
87	0	-4.48				4.9
89	0	-5.36				1.7
94	0	-3.64	8.0			
96	2	-1.28	16.7			
97	2	1.14	25.6			
102	3	0.71		24.0		
105	4	-0.33			20.2	
107	4	-0.30	20.3			
109	1	1.87	28.3			
113	4	-0.05	21.2			
119	4	0.43				23.0
120	3	-0.52				19.5
127	2	1.03	25.2			
128	1	1.79			28.0	
133	4	0.03	21.5			
136	0	5.60		42.0		
138	2	1.01			25.1	
141	0	17.12				84.4
142	2	1.09	25.4			
146	3	0.62	23.7			
151	4	-0.49				19.6
153	4	-0.16	20.8			
158	4	-0.11		21.0		
182	2	1.42				26.6
190	0	2.80	31.7			
191	2	1.49			26.9	
193	0	-3.64	8.0			
198	3	-0.90	18.1			
203	4	0.11	21.8			
211	4	0.43	23.0			
212	4	-0.38	20.0			
215	3	-0.65	19.0			
217	2	-1.47			16.0	
220	2	-1.21	17.0			
221	4	0.19	22.1			
224	4	-0.05		21.2		
231	4	0.24	22.3			
234	4	0.14	21.9			
235	4	-0.24	20.5			

Table 13. *Statistical summary of reported data for standard reference water sample T-133 (trace constituants)--Continued*

SiO2 (Silica) mg/L



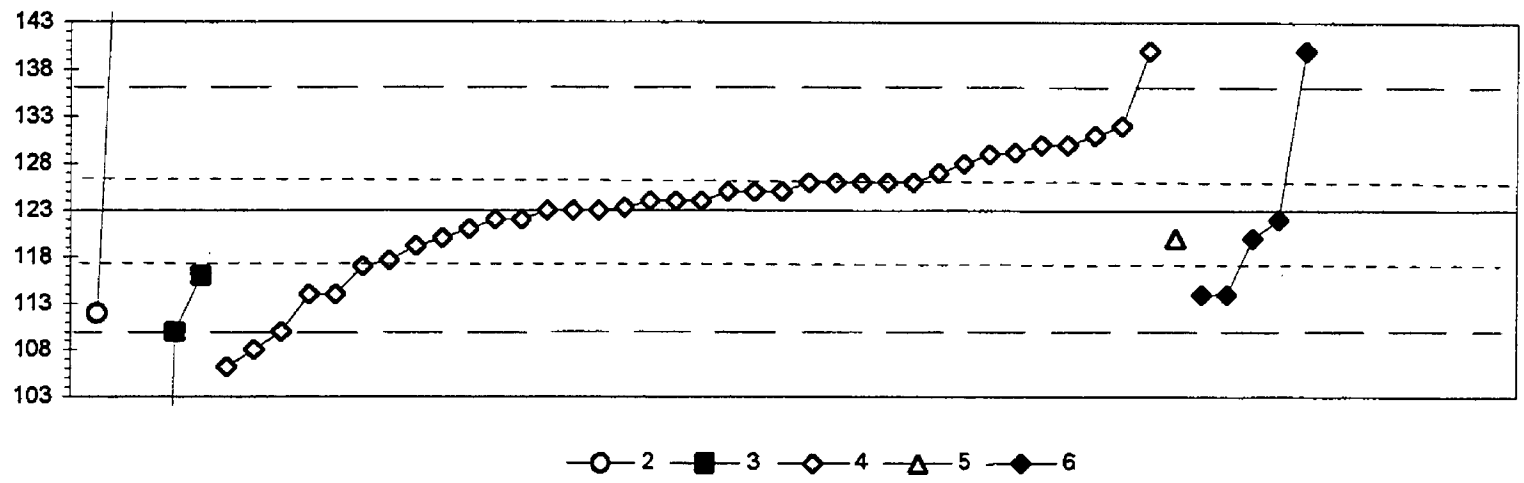
3. AA: graphite furnace			6. ICP/MS		
4. ICP			22m. Color: molybdate blue		
5. DCP					
N =	1	27	1	4	15
Minimum =	4.7	5.1	11.9	4.5	1.1
Maximum =		11.5		10.7	10.9
Median =		10.1			10.4
F-pseudosigma =		0.6			0.7

MPV =	10.1
F-pseudosigma =	0.7
N =	48
Hu =	10.7
HI =	9.7

Lab	Rating	Z-value	3	4	5	6	22m
1	4	-0.36		9.9			
3	2	1.18		11.0			
4	4	0.50		10.5			
5	4	0.36		10.4			
7	2	1.04		10.9			
8	4	-0.18				10.0	
11	3	-0.57		9.7			
13	0	-7.73				4.5	
15	3	0.91		10.8			
23	3	0.77					10.7
24	4	0.22		10.3			
25	4	-0.20		10.0			
32	3	0.77				10.7	
33	0	2.41			11.9		
42	4	0.50		10.5			
70	4	-0.40					9.8
75	3	0.63					10.6
83	1	-1.61		9.0			
87	4	-0.28					9.9
89	3	0.63					10.6
97	2	1.04					10.9
102	4	-0.46		9.8			
105	2	1.03		10.9			
107	1	-1.68					8.9
109	0	-6.66		5.3			
111	3	0.77					10.7
113	3	0.77					10.7
116	2	1.04		10.9			
119	4	0.09		10.2			
121	4	0.09		10.2			
127	4	-0.05		10.1			
128	4	0.32		10.4			
134	3	-0.81		9.5			
136	3	-0.59		9.7			
138	4	-0.44					9.8
140	4	0.40					10.4
141	0	-12.34					1.1
142	2	-1.21		9.2			
145	4	-0.05		10.1			
151	3	0.91					10.8
191	4	0.05				10.2	
203	4	-0.14					10.0
211	0	-7.47	4.7				
212	1	1.86		11.5			
215	0	-6.86		5.1			
219	0	-6.86		5.1			
231	1	-1.51					9.0
234	4	-0.25		10.0			

Table 13. *Statistical summary of reported data for standard reference water sample T-133 (trace constituents)--Continued*

Sr (Strontium) µg/L



2. AA: direct nitrous oxide
3. AA: graphite furnace
4. ICP
5. DCP
6. ICP/MS

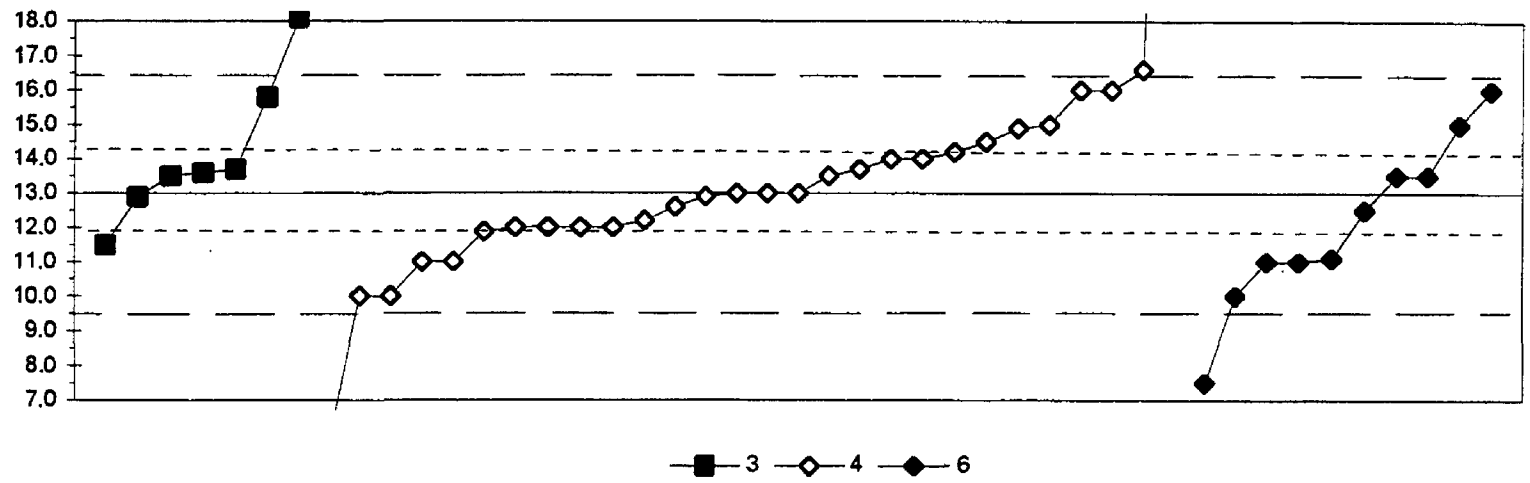
	2	3	4	5	6
N =	2	3	36	1	5
Minimum =	112	9	106	120	114
Maximum =	173	116	140		140
Median =			124		
F-pseudosigma =			4		

MPV =	123
F-pseudosigma =	6
N =	47
Hu =	126
Hl =	117

Lab	Rating	Z-value	2	3	4	5	6
1	3	-0.59			119		
3	3	0.62			127		
4	2	1.40			132		
5	4	-0.16			122		
7	4	0.31			125		
8	4	-0.47					120
9	3	-0.93			117		
13	0	-17.69		9			
15	2	1.24			131		
16	1	-2.02			110		
18	4	0.00			123		
24	2	-1.40			114		
25	4	0.47			126		
32	2	-1.40					114
33	4	-0.47				120	
40	4	0.00			123		
42	4	0.47			126		
59	0	-2.33			108		
70	4	0.16			124		
74	4	-0.47			120		
81	2	-1.40			114		
85	4	0.00			123		
86	4	0.31			125		
94	4	0.16			124		
97	2	-1.09		116			
102	3	0.93			129		
105	4	0.47			126		
113	NR		< 200				
116	4	0.47			126		
121	4	0.31			125		
127	4	0.16			124		
128	4	-0.16					122
134	4	-0.16			122		
136	2	1.09			130		
138	4	0.05			123		
142	3	0.96			129		
145	3	-0.83			118		
151	1	-1.71	112				
158	4	-0.31			121		
182	0	-2.61			106		
191	2	-1.40					114
211	1	-2.02		110			
212	0	2.64			140		
218	0	7.77	173				
219.1	2	1.09			130		
219.2	0	2.64					140
234	4	0.47			126		
235	3	0.78			128		

Table 13. *Statistical summary of reportad data for standard refarence water sample T-133 (trace constituents)--Continued*

V (Vanadium) µg/L



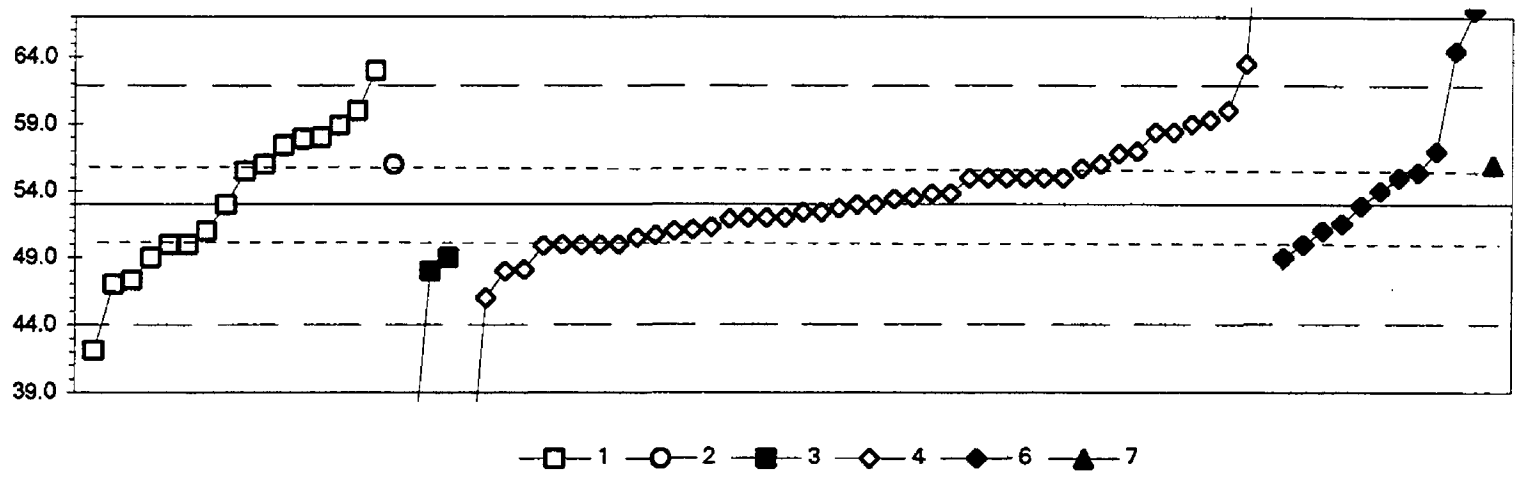
3. AA: graphite furnace			
4. ICP			
6. ICP/MS			
N =	7	28	10
Minimum =	11.5	5.8	7.5
Maximum =	18.1	39.0	16.0
Median =	13.6	13.0	11.8
F-pseudosigma =	1.2	1.7	1.9

MPV =	13.0
F-pseudosigma =	1.7
N =	45
Hu =	14.2
Hl =	11.9

Lab	Rating	Z-value	3	4	6
1	3	-0.65		11.9	
3	2	-1.16		11.0	
4	0	15.12		39.0	
5	4	0.41		13.7	
7	2	1.10		14.9	
8	1	1.74			16.0
11	3	-0.58		12.0	
13	2	-1.10			11.1
15	4	-0.23		12.6	
16	2	-1.16			11.0
18	3	0.58		14.0	
23	0	2.97	18.1		
25	3	-0.58		12.0	
30	2	1.16			15.0
32	4	0.29			13.5
40	0	-4.19		5.8	
42	4	-0.29			12.5
59	0	-3.20			7.5
70	NR			< 50	
74	4	0.00		13.0	
75	4	0.29		13.5	
78	4	-0.06	12.9		
85	NR			< 20	
86	4	-0.06		12.9	
94	4	0.00		13.0	
97	4	0.35	13.6		
102	4	0.00		13.0	
105	2	1.16		15.0	
121	1	-1.74		10.0	
127	4	-0.47		12.2	
128	2	-1.16			11.0
134	4	0.41	13.7		
136	1	1.74		16.0	
138	4	0.29			13.5
141	3	-0.58		12.0	
142	4	0.29	13.5		
145	3	0.87		14.5	
146	3	0.70		14.2	
158	1	-1.74		10.0	
180	2	-1.16		11.0	
211	NR			< 20	
212	3	0.58		14.0	
217	3	-0.58		12.0	
219.1	1	1.74		16.0	
219.2	1	-1.74			10.0
224	0	2.09		16.6	
234	1	1.63	15.8		
235	3	-0.87	11.5		

Table 13. *Statistical summary of reported data for standard reference water sample T-133 (trace constituents)--Continued*

Zn (Zinc) µg/L



1. AA: direct air		4. ICP					
2. AA: direct nitrous oxide		6. ICP/MS					
3. AA: graphite furnace		7. Ion chromatography					
N =	16	1	3	44	11	1	
Minimum =	42.1	56.0	31.7	28.8	49.0	56.0	
Maximum =	63.0		49.0	82.0	67.5		
Median =	54.3			53.0	54.0		
F-pseudosigma =	5.9			3.3	3.7		

MPV =	53.0
F-pseudosigma =	4.4
N =	76
Hu =	56.0
Hl =	50.0

Lab	Rating	Z-value	1	2	3	4	6	7
1	4	-0.33					51.5	
3	4	0.45				55.0		
4	0	6.52				82.0		
5	4	0.09				53.4		
7	2	1.42				59.3		
8	4	0.22					54.0	
9	2	-1.10				48.1		
11	4	0.45				55.0		
12	3	-0.67				50.0		
13	3	0.54					55.4	
15	1	1.57				60.0		
16	4	-0.45					51.0	
18	4	0.45				55.0		
19	4	-0.25				51.9		
23	2	1.33	58.9					
24	3	-0.70				49.9		
25	0					< 4		
30	0	2.59					64.5	
32	4	-0.02					52.9	
40	0	-5.44				28.8		
42	4	0.45					55.0	
59	3	-0.67				50.0		
69	3	0.67	56.0					
70	4	-0.13				52.4		
72	4	-0.38				51.3		
73	3	0.67						56.0
74	4	0.00				53.0		
75	4	-0.45				51.0		
78	4	0.00	53.0					
81	4	0.45				55.0		
83	4	-0.43				51.1		
85	3	0.99	57.4					
86	4	-0.07				52.7		
87	0	2.25	63.0					
89	0	-2.45	42.1					
90	1	1.57	60.0					
94	NR					< 100		
96	2	1.12	58.0					
97	2	-1.12			48.0			
101	2	1.21				58.4		
102	3	0.67				56.0		
105	4	0.00				53.0		
113	3	0.67		56.0				
119	2	-1.12				48.0		
120	3	-0.90			49.0			
121	4	-0.22				52.0		
127	4	0.18				53.8		
128	3	0.90					57.0	
133	4	0.11				53.5		
134	4	0.45				55.0		

Lab	Rating	Z-value	1	2	3	4	6	7
136	3	-0.67				50.0		
138	4	0.18				53.8		
140	2	1.10	57.9					
141	4	-0.22				52.0		
142	3	0.89				57.0		
145	2	1.21				58.4		
146	1	-1.57				46.0		
149	3	-0.67	50.0					
158	4	0.45				55.0		
180	4	-0.13				52.4		
182	0	2.36				63.5		
190	2	-1.35	47.0					
191	0	3.26					67.5	
193	3	-0.67	50.0					
198	3	0.85				56.8		
203	4	-0.45	51.0					
211	3	-0.67				50.0		
212	2	1.35				59.0		
215	3	-0.52				50.7		
217	3	-0.90					49.0	
219.1	4	-0.22				52.0		
219.2	3	-0.67					50.0	
220	2	-1.27	47.3					
221	3	0.56	55.5					
224	3	-0.56				50.5		
231	3	-0.90	49.0					
234	0	-4.79			31.7			
235	3	0.61				55.7		

Table 14. *Statistical summary of reported data for standard reference water sample M-132 (major constituents)*

Definition of analytical methods, abbreviations, and symbols

Analytical methods

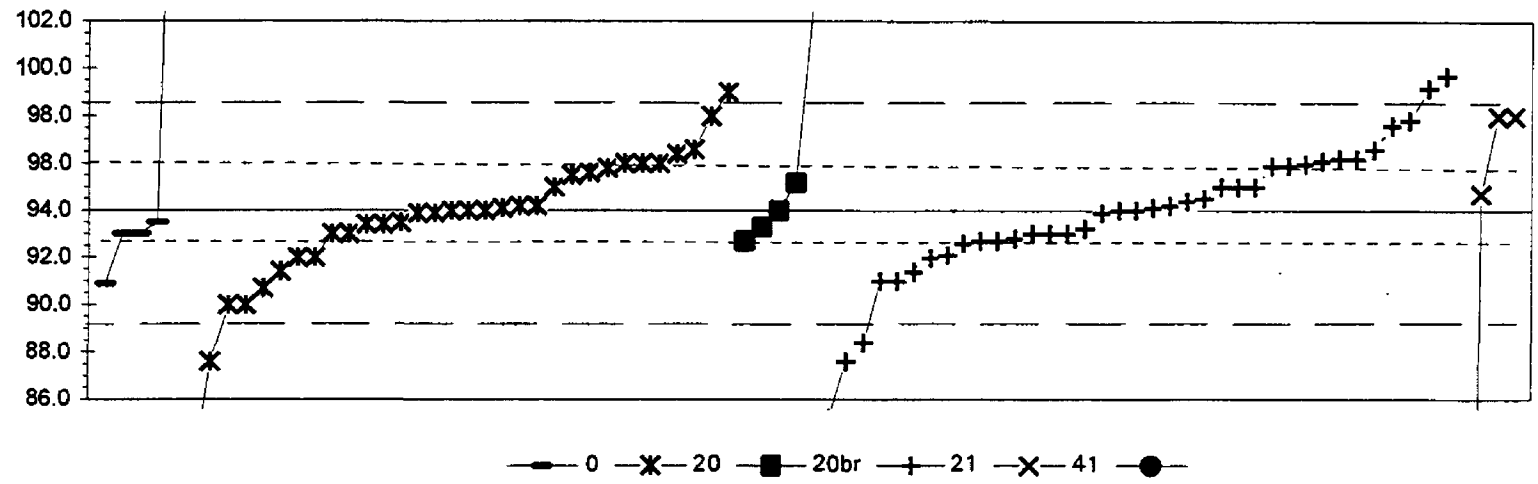
0	Other/Not reported		
1	AA: direct, air	=	atomic absorption: direct,air
2	AA: direct, N2O	=	atomic absorption: direct,nitrous oxide
3	AA: graphite furnace	=	atomic absorption: graphite furnace
4	ICP	=	inductively coupled plasma
5	DCP	=	direct current plasma
6	ICP/MS	=	mass spectrometry/inductively coupled plasma
7	IC	=	ion chromatography
12	Flame emission	=	flame emission
20	Titrate: color	=	titration: colorimetric [color reagent specified]
21	Titrate: electro	=	titration: electrometric
22	Color:	=	colorimetric [color reagent specified]
40	Ion electrode	=	ion selective electrode
41	Electro	=	electrometric: [type meter specified]
50	Gravimetric	=	gravimetric: [precipitate specified]
51	Turbidimetric	=	turbidimetric: [precipitate specified]

Abbreviations and symbols

N	=	number of samples
St dev	=	traditional standard deviation
MPV	=	most probable value
F-pseudosigma	=	nonparametric statistic deviation
Hu	=	upper hinge value
Hl	=	lower hinge value
µg/L	=	micrograms per liter
mg/L	=	milligrams per liter
µS/cm	=	microsiemens per centimeter at 25 C
Lab	=	laboratory code number
NR	=	not rated, less than value reported
<	=	less than

Table 14. *Statistical summary of reported data for standard referance water sampla M-132 (major constituents)--Continued*

Alk (Alkalinity as calcium carbonate) mg/L



0. Other			21. Titrate: electrometric		
20. Titrate: colorimetric			41. Direct reading		
20br: Titrate: bromcresol green					
N =	5	32	5	37	4
Minimum =	90.9	82.8	92.7	85.2	1.2
Maximum =	120.0	99.0	103.0	99.7	98.0
Median =		94.0		94.0	
F-pseudosigma =		1.5		0.9	

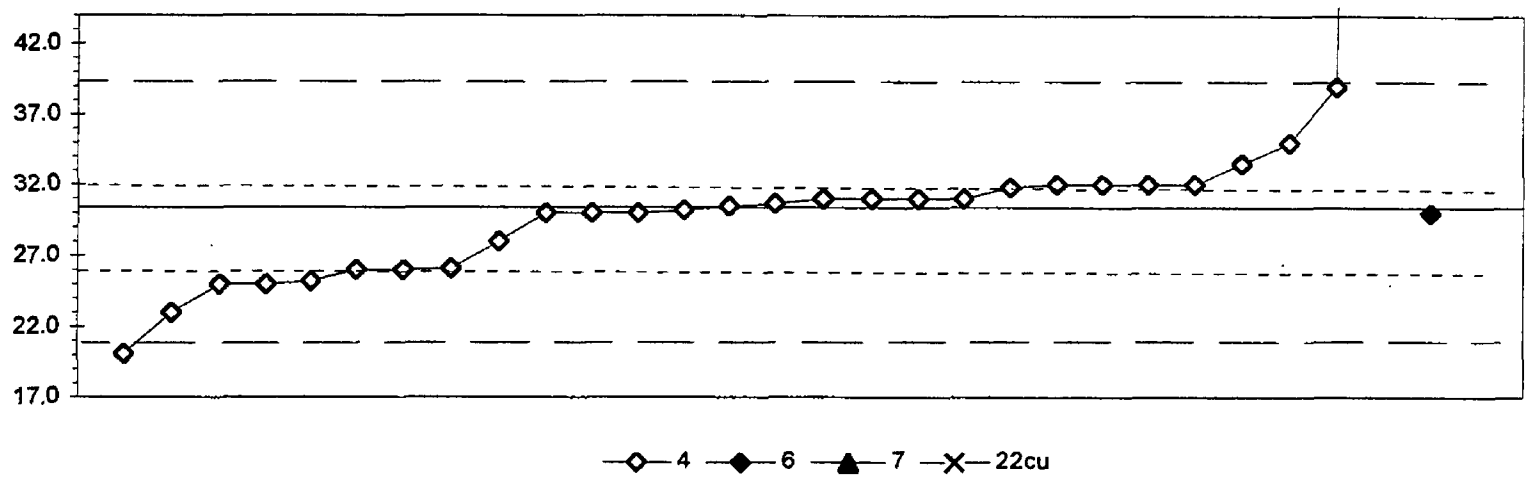
MPV = 94.0
F-pseudosigma = 2.4
N = 83
Hu = 95.9
HI = 92.7

Lab	Rating	Z-value	0	20	20br	21	41
1	0	-39.12					1.2
3	4	0.42		95.0			
5	4	-0.42				93.0	
8	0	2.11		99.0			
9	4	-0.42	93.0				
10	3	0.67		95.6			
11	2	-1.31	90.9				
12	4	-0.42				93.0	
13	0	-2.36				88.4	
15	3	-0.84		92.0			
16	2	-1.39		90.7			
18	4	-0.42		93.0			
19	4	0.21				94.5	
23	4	-0.04		93.9			
24	4	0.04		94.1			
25	3	0.89				96.1	
32	2	1.01		96.4			
33	4	-0.04				93.9	
38	2	1.09				96.6	
39	0	10.96	120.0				
40	0	2.40				99.7	
42	2	1.10		96.6			
59	4	0.30					94.7
69	1	-1.69		90.0			
70	4	0.00		94.0			
72	2	-1.26				91.0	
74	3	0.63		95.5			
75	3	0.93				96.2	
76	3	-0.55			92.7		
78	4	0.42				95.0	
79	4	0.42				95.0	
80	3	0.84		96.0			
81	4	0.08		94.2			
83	4	-0.21	93.5				
84	4	-0.25		93.4			
85	3	-0.55				92.7	
87	4	0.00				94.0	
89	4	0.08		94.2			
90	4	-0.42		93.0			
92	4	0.08				94.2	
94	3	0.84		96.0			
96	3	-0.84				92.0	
97	2	-1.10				91.4	
105	1	1.69					98.0
107	3	0.93				96.2	
109	3	0.80				95.9	
111	4	-0.04		93.9			
113	3	-0.51				92.8	
114	4	0.00				94.0	
118	4	-0.30			93.3		

Lab	Rating	Z-value	0	20	20br	21	41
119	4	0.00		94.0			
120	4	-0.42				93.0	
122	1	1.52				97.6	
127	4	0.17				94.4	
128	0	-2.70		87.6			
129	4	0.00			94.0		
133	2	-1.26				91.0	
134	3	0.83				96.0	
136	1	1.60				97.8	
138	3	0.80				95.9	
141	3	0.76		95.8			
142	4	-0.42	93.0				
145	4	-0.21		93.5			
146	3	-0.80				92.1	
149	3	0.84		96.0			
151	4	0.42				95.0	
153	3	-0.59				92.6	
155	3	-0.84		92.0			
158	4	0.00		94.0			
180	4	0.04				94.1	
191	3	0.51			95.2		
194	3	-0.55				92.7	
197	0	2.19				99.2	
203	0	-4.74		82.8			
204	2	-1.10		91.4			
211	4	-0.34				93.2	
212	0	-3.71				85.2	
215	1	1.69		98.0			
218	0	-2.70				87.6	
220	1	1.69					98.0
224	1	-1.69		90.0			
231	0	3.79			103.0		
234	4	-0.25		93.4			

Table 14. *Statistical summary of reported data for standard reference water sample M-132 (major constituents)--Continued*

B (Boron) µg/L



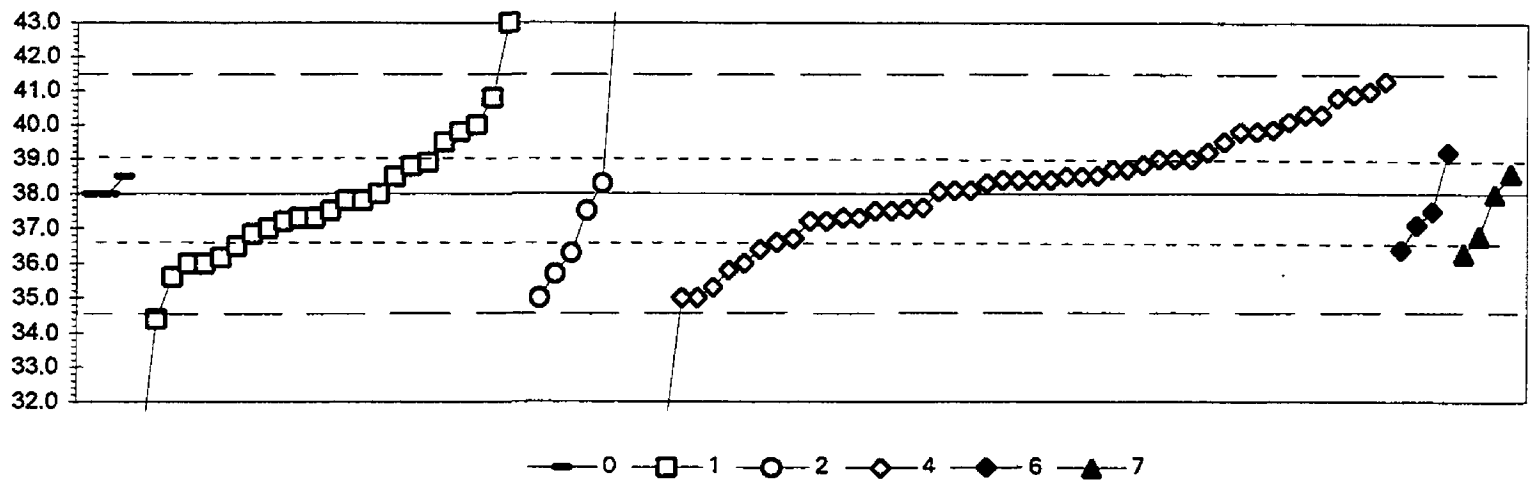
4. ICP			22cu. Color: curcumin		
6. ICP/MS					
7. Ion chromatography					
N =	28	1	0	1	
Minimum =	20.1	30.0		0.1	
Maximum =	328.0				
Median =	30.6				
F-pseudosigma =	4.4				

MPV =	30.4
F-pseudosigma =	4.4
N =	30
Hu =	32.0
Hl =	26.0

Lab	Rating	Z-value	4	6	7	22cu
1	4	0.07	30.7			
3	4	0.15	31.0			
5	3	0.71	33.5			
8	NR			< 100		
11	NR		< 50			
15	4	-0.03	30.2			
16	0	66.92	328.0			
18	4	0.37	32.0			
23	0	-6.81				0.1
24	2	-1.20	25.0			
25	1	-1.65	23.0			
40	4	-0.08	30.0			
42	4	-0.08		30.0		
70	NR		< 50			
74	4	0.15	31.0			
75	3	-0.96	26.1			
85	4	0.33	31.8			
94	3	-0.53	28.0			
103	2	1.05	35.0			
109	4	0.37	32.0			
116	3	-0.98	26.0			
119	4	-0.08	30.0			
121	2	-1.20	25.0			
127	4	0.03	30.5			
128	0		< 10			
134	4	0.15	31.0			
136	NR					< 50
141	1	1.94	39.0			
142	4	0.37	32.0			
145	4	0.15	31.0			
180	0	-2.30	20.1			
194	NR		< 100			
211	NR		< 40			
212	4	0.37	32.0			
215	4	-0.08	30.0			
219	3	-0.98	26.0			
234	2	-1.16	25.2			

Table 14. *Statistical summary of raported data for standard reference watar sample M-132 (major constituents)--Continued*

Ca (Calcium) mg/L



0. Other		4. ICP				
1. AA: direct air		6. ICP/MS				
2. AA: direct nitrous oxide		7. Ion chromatography				
N =	3	25	6	48	4	4
Minimum =	38.0	30.0	35.0	19.0	36.4	36.3
Maximum =	38.5	45.5	45.1	41.3	39.2	38.6
Median =		37.5		38.4		
F-pseudosigma =		1.7		1.4		

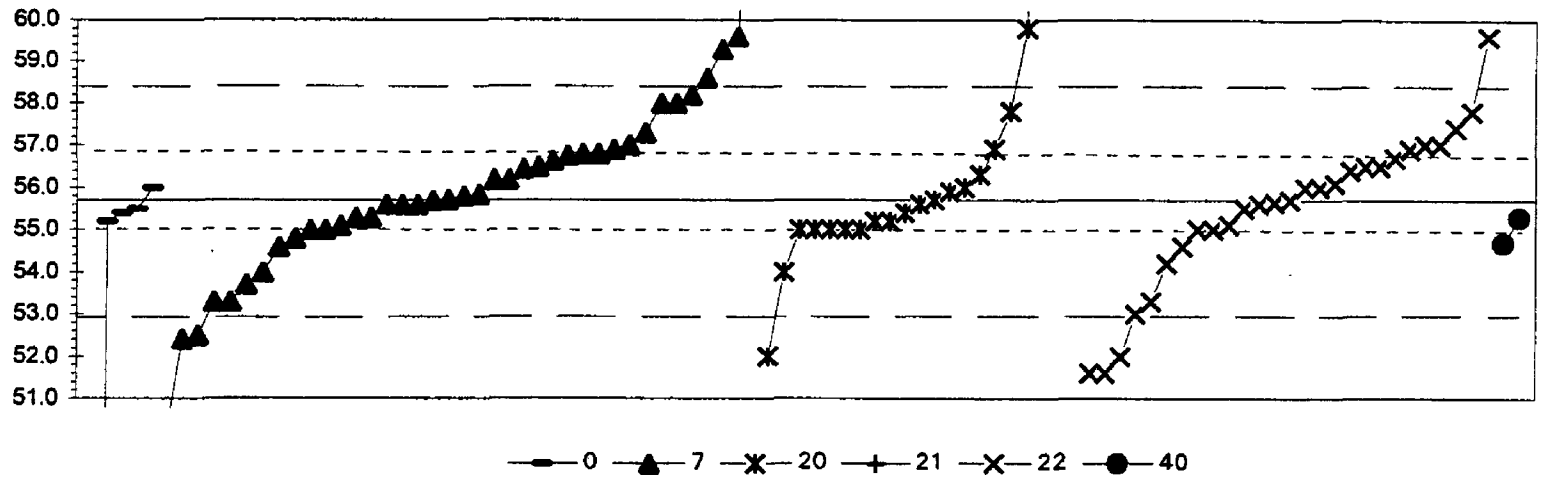
MPV =	38.0
F-pseudosigma =	1.7
N =	90
Hu =	39.0
HI =	36.7

Lab	Rating	Z-value	0	1	2	4	6	7
1	4	0.30				38.5		
3	2	1.35				40.3		
5	4	-0.23				37.6		
7	2	1.06				39.8		
8	4	-0.29					37.5	
9	4	-0.47				37.2		
10	4	0.29		38.5				
11	2	1.06				39.8		
12	2	-1.17				36.0		
13	3	0.70					39.2	
15	4	-0.41				37.3		
16	3	-0.94				36.4		
18	4	0.29				38.5		
19	4	0.23				38.4		
23	4	0.18			38.3			
24	4	0.18				38.3		
25	0	-4.67				30.0		
30	3	-1.00			36.3			
32	3	-0.53					37.1	
33	4	0.29	38.5					
38	4	-0.29			37.5			
40	4	0.06				38.1		
42	3	0.59				39.0		
59	0	-4.11				31.0		
69	4	-0.47		37.2				
70	2	1.35				40.3		
74	4	0.06				38.1		
75	4	-0.12		37.8				
78	0	4.40		45.5				
80	1	1.64		40.8				
81	4	0.23				38.4		
83	3	-0.76				36.7		
84	3	0.88		39.5				
85	2	-1.17		36.0				
86	4	0.23				38.4		
87	2	-1.35			35.7			
89	2	-1.41		35.6				
90	4	0.00	38.0					
94	4	0.41				38.7		
97	4	-0.41		37.3				
101	4	0.47		38.8				
102	1	-1.58				35.3		
103	1	-1.76				35.0		
105	4	-0.47				37.2		
109	4	-0.29		37.5				
111	0	4.16			45.1			
113	4	-0.41		37.3				
114	1	-1.76			35.0			
116	3	0.70				39.2		
119	4	0.41				38.7		

Lab	Rating	Z-value	0	1	2	4	6	7
120	3	-0.68		36.8				
121	4	-0.29				37.5		
122	0	-2.11		34.4				
127	4	-0.29				37.5		
128	4	-0.26				37.6		
129	4	0.00		38.0				
133	4	0.49				38.8		
134	3	0.59				39.0		
136	3	-1.00						36.3
138	1	1.70				40.9		
140	3	-0.88		36.5				
141	4	0.23				38.4		
142	1	1.76				41.0		
145	4	0.04				38.1		
146	2	-1.29				35.8		
149	0	2.93		43.0				
151	3	-0.59		37.0				
153	4	0.35						38.6
155	4	0.00	38.0					
158	1	1.64				40.8		
179	0	-4.69		30.0				
180	4	-0.41				37.3		
182	0	-11.13				19.0		
185	2	-1.07		36.2				
190	3	-0.70						36.8
191	3	-0.94					36.4	
194	2	1.23				40.1		
196	3	0.53		38.9				
209	2	1.09				39.9		
211	4	0.29				38.5		
212	1	1.94				41.3		
215	3	0.59				39.0		
218	2	1.17		40.0				
219	1	-1.76				35.0		
220	2	-1.17		36.0				
221	4	-0.12		37.8				
224	3	-0.83				36.6		
230	4	0.00						38.0
231	2	1.06		39.8				
234	3	0.88				39.5		

Table 14. *Statistical summary of reported data for standard reference water sample M-132 (major constituents)--Continued*

Cl (Chloride) mg/L



0. Other		21. Titrate: electrometric				
7. Ion chromatography		22. Colorimetric				
20. Titrate: colorimetric		40. Ion selective electrode				
N =	5	39	20	1	27	2
Minimum =	1.0	50.3	52.0	60.8	51.6	54.7
Maximum =	56.0	68.0	152.0		59.6	55.3
Median =		55.8	55.5		55.7	
F-pseudosigma =		1.4	1.2		1.3	

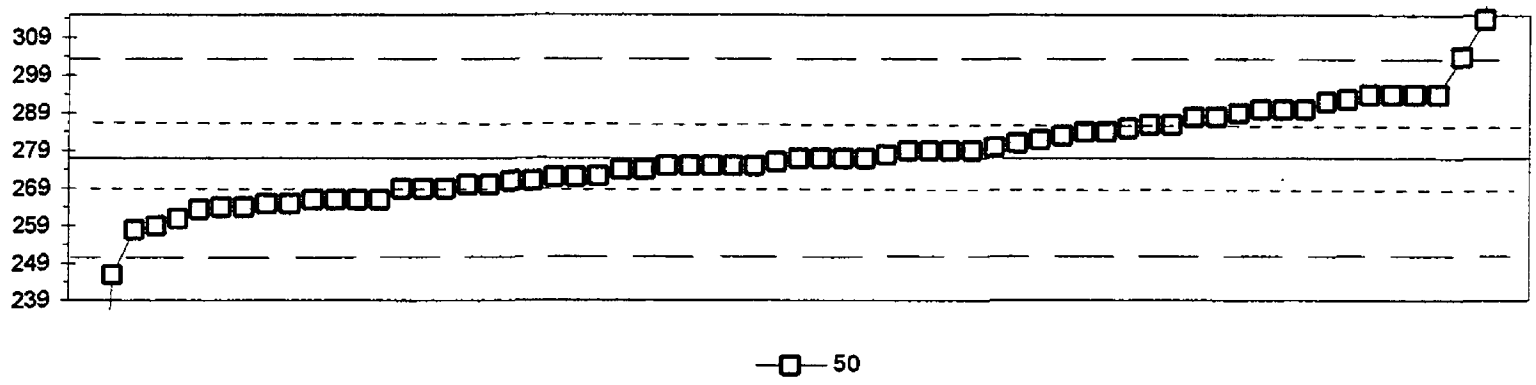
MPV = 55.7
F-pseudosigma = 1.3
N = 94
Hu = 56.8
Hl = 55.0

Lab	Rating	Z-value	0	7	20	21	22	40
1	4	0.13		55.9				
3	3	1.00					57.0	
5	3	-0.80		54.6				
7	4	-0.05		55.6				
8	4	0.40		56.2				
9	0	-2.75					52.0	
10	2	-1.10					54.2	
11	2	1.30					57.4	
12	4	0.25					56.0	
13	3	1.00					57.0	
15	4	-0.05		55.6				
16	3	0.92			56.9			
18	4	-0.05					55.6	
19	4	-0.50			55.0			
23	3	-0.73						54.7
24	4	0.32					56.1	
25	2	-1.25		54.0				
30	0	-2.44		52.4				
32	3	0.85		56.8				
33	1	1.90		58.2				
39	0	-40.97	1.0					
40	1	1.60					57.8	
42	0	-2.38		52.5				
59	0	2.95		59.6				
69	4	-0.50					55.0	
70	3	1.00		57.0				
72	4	-0.50			55.0			
74	3	0.55					56.4	
75	0	-3.05					51.6	
76	4	-0.28		55.3				
78	3	0.62					56.5	
79	0	-2.75			52.0			
80	4	0.25			56.0			
81	4	-0.35			55.2			
83	4	-0.13	55.5					
84	4	-0.35	55.2					
85	3	0.77					56.7	
86	4	-0.43		55.1				
87	1	-2.00					53.0	
89	4	-0.35			55.2			
92	4	-0.20			55.4			
94	1	-1.78					53.3	
96	4	-0.43					55.1	
97	3	0.92					56.9	
101	1	1.60			57.8			
102	4	-0.13					55.5	
105	1	1.75		58.0				
107	4	0.47			56.3			
109	0	3.84				60.8		
111	1	-1.78		53.3				

Lab	Rating	Z-value	0	7	20	21	22	40
113	4	-0.05		55.6				
114	4	-0.28						55.3
116	3	-0.65		54.8				
119	4	-0.50			55.0			
120	4	-0.50			55.0			
122	4	-0.05			55.6			
127	4	-0.28		55.3				
128	3	-0.80					54.6	
129	4	-0.50		55.0				
131	2	-1.48		53.7				
134	3	0.82		56.8				
136	3	0.58		56.4				
138	4	0.10		55.8				
140	4	-0.02					55.6	
141	4	0.25					56.0	
142	3	0.62					56.5	
145	3	0.92		56.9				
146	4	0.17			55.9			
151	1	1.75		58.0				
153	0	-4.02		50.3				
158	4	0.02					55.7	
179	0	72.19			152.0			
180	0	-3.05					51.6	
182	0	21.98			85.0			
185	3	0.73		56.6				
190	0	2.72		59.3				
191	4	0.02		55.7				
193	2	1.22		57.3				
194	4	-0.20	55.4					
196	4	-0.50		55.0				
197	0	9.26		68.0				
203	4	0.02			55.7			
204	4	-0.50					55.0	
208	4	0.40		56.2				
209	0	2.20		58.6				
211	0	3.10			59.8			
212	3	0.85		56.8				
215	2	-1.25			54.0			
220	0	2.95					59.6	
221	4	0.25	56.0					
224	4	0.04		55.7				
230	3	0.62		56.5				
231	4	-0.50			55.0			
234	1	-1.78		53.3				

Table 14. *Statistical summary of reported data for standard reference water sample M-132 (major constituents)--Continued*

DSRD (Dissolved solids) mg/L



50. Gravimetric

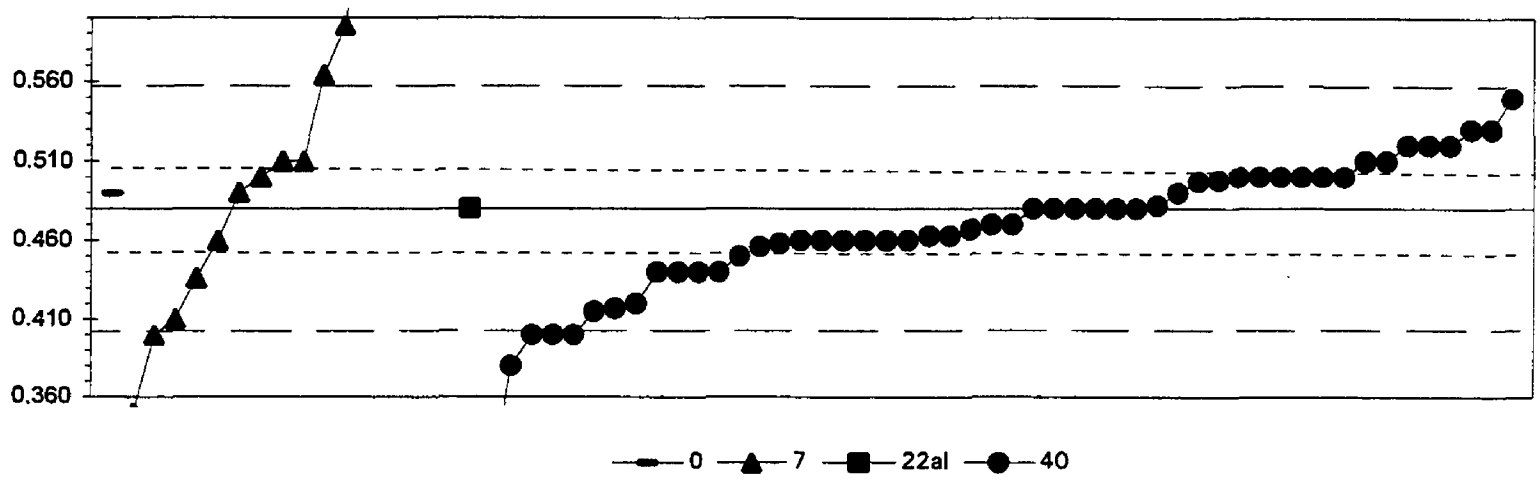
N =	65
Minimum =	131
Maximum =	458
Median =	277
F-pseudosigma =	12.6

MPV =	277
F-pseudosigma =	13
N =	65
Hu =	286
Hl =	269

Lab	Rating	Z-value	50
1	2	-1.07	264
3	4	0.08	278
5	2	1.35	294
8	3	0.95	289
9	3	0.56	284
10	3	-0.87	266
11	4	0.24	280
12	4	-0.48	271
13	4	-0.08	276
15	2	-1.27	261
16	3	-0.95	265
18	4	0.00	277
19	4	-0.16	275
23	2	-1.03	264
25	3	0.87	288
32	2	1.19	292
38	4	0.00	277
40	4	-0.16	275
59	4	0.16	279
69	4	0.16	279
70	2	1.03	290
72	0	2.14	304
75	4	0.40	282
76	3	0.71	286
78	0	14.36	458
80	3	0.63	285
81	2	1.35	294
85	4	-0.24	274
87	2	-1.03	264
89	3	-0.63	269
90	3	0.71	286
92	2	1.35	294
94	3	-0.87	266
96	3	-0.87	266
97	0	-2.46	246
101	3	0.87	288
105	4	0.16	279
109	0	-11.59	131
113	4	0.00	277
114	2	1.03	290
118	2	1.03	290
119	2	-1.43	259
120	4	-0.16	275
122	4	0.48	283
127	4	-0.16	275
129	3	0.56	284
134	4	0.00	277
136	1	-1.51	258
138	0	2.94	314
140	3	-0.63	269
142	2	1.25	293
146	3	-0.56	270
149	4	-0.40	272
151	4	-0.40	272
155	4	0.33	281
158	4	-0.16	275
182	4	-0.48	271
190	3	-0.95	265
194	4	-0.24	274
211	4	0.16	279
212	3	-0.56	270
215	3	-0.87	266
221	2	1.35	294
224	4	-0.38	272
234	3	-0.63	269

Table 14. *Statistical summary of reported data for standard reference weter sample M-132 (mejor constituents)--Continued*

F (Fluoride) mg/L



0. Other
7. Ion chromatography
22al: Color: alizarin fluorine blue
40. Ion selective electrode

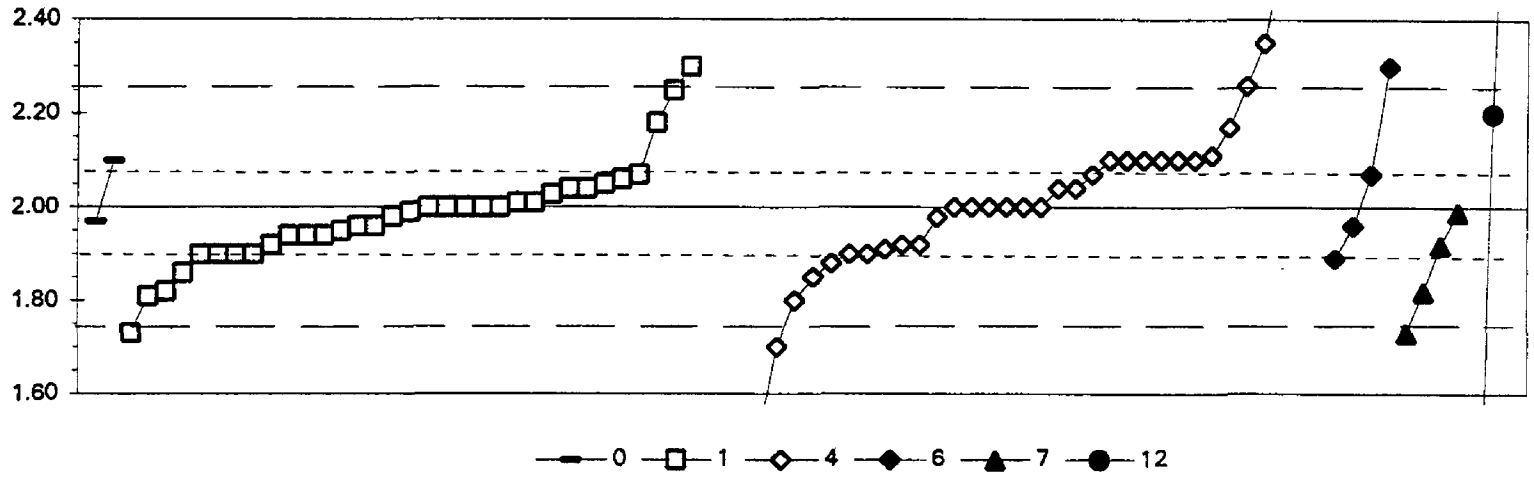
N =	1	16	1	50
Minimum =	0.490	0.350	0.480	0.300
Maximum =		0.907		0.550
Median =		0.510		0.470
F-pseudosigma =		0.190		0.040

MPV = 0.480
F-pseudosigma = 0.039
N = 68
Hu = 0.505
Hl = 0.453

Lab	Rating	Z-value	0	7	22al	40
1	3	0.78				0.510
3	4	0.05				0.482
7	0	6.49		0.730		
8	3	0.52				0.500
9	3	-0.52				0.460
10	2	-1.04				0.440
11	0	-2.08				0.400
12	3	0.52				0.500
13	3	0.52				0.500
15	1	-1.69				0.415
16	4	0.00				0.480
18	1	-1.63				0.417
23	3	0.78				0.510
24	3	0.52				0.500
25	0	-2.59				0.380
32	0	2.18		0.564		
39	4	0.26	0.490			
40	3	-0.52				0.460
42	2	1.30				0.530
69	3	-0.78				0.450
70	2	-1.04				0.440
72	3	-0.52				0.460
74	4	-0.44				0.463
76	2	-1.14		0.436		
78	1	1.82				0.550
80	2	-1.04				0.440
81	3	-0.52				0.460
83	3	0.52				0.500
85	4	0.00				0.480
89	4	0.00				0.480
94	4	-0.26				0.470
96	2	1.30				0.530
97	3	-0.57				0.458
102	3	0.78		0.510		
105	4	0.26		0.490		
107	2	1.04				0.520
109	2	1.04				0.520
113	4	0.00				0.480
114	4	0.44				0.497
119	4	0.00				0.480
120	4	0.00			0.480	
122	3	-0.52				0.460
127	3	0.52		0.500		
128	0	-2.08				0.400
129	0	2.98		0.595		
131	0	11.08		0.907		
134	3	0.52				0.500
138	4	0.26				0.490
140	4	0.47				0.498
141	4	-0.44				0.463
142	4	0.00				0.480
145	0	9.60		0.850		
146	4	-0.34				0.467
149	3	-0.52				0.460
151	0	-4.67				0.300
153	1	-1.82		0.410		
180	1	-1.56				0.420
185	3	0.78		0.510		
190	3	-0.62				0.456
194	2	1.04				0.520
196	0	-3.37		0.350		
197	0	6.43		0.728		
208	0	-2.08		0.400		
211	4	-0.26				0.470
212	2	-1.04				0.440
215	0	-2.08				0.400
224	0	5.19		0.680		
234	3	-0.52		0.460		

Table 14. *Statistical summary of reportad data for standard referance water sample M-132 (major constituents)--Continued*

K (Potassium) mg/L



0. Other		6. ICP/MS				
1. AA: direct air		7. Ion chromatography				
4. ICP		12. Flame emission				
N =	2	33	36	4	4	3
Minimum =	1.97	1.73	1.40	1.89	1.73	0.86
Maximum =	2.10	2.30	3.00	2.30	1.99	3.20
Median =		1.99	2.00			
F-pseudosigma =		0.08	0.15			

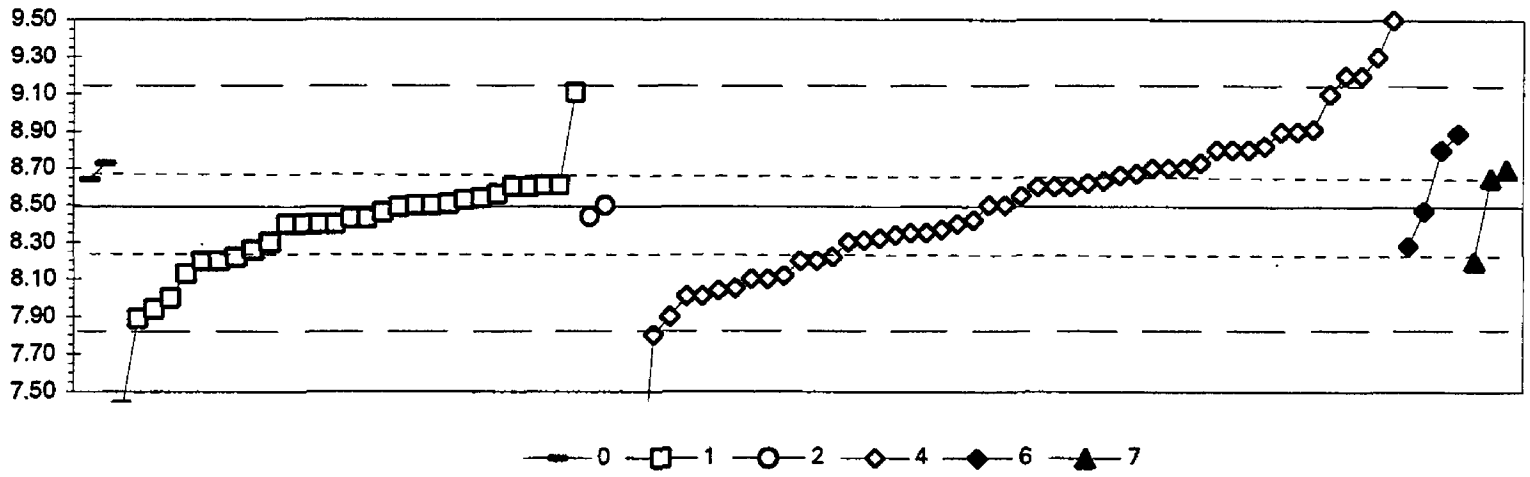
MPV = 2.00
F-pseudosigma = 0.13
N = 82
Hu = 2.07
HI = 1.90

Lab	Rating	Z-value	0	1	4	6	7	12
1	0	-2.14		1.73				
3	4	-0.16		1.98				
7	3	-0.79			1.90			
8	0	2.38				2.30		
9	4	0.32			2.04			
10	4	-0.32		1.96				
11	4	0.00			2.00			
12	4	0.00			2.00			
13	4	-0.32				1.96		
15	3	0.79			2.10			
16	3	0.79	2.10					
18	3	0.79			2.10			
19	3	0.79			2.10			
23	2	-1.43		1.82				
24	3	-0.71			1.91			
25	0	-3.89			1.51			
32	3	0.56				2.07		
33	4	-0.24	1.97					
38	4	0.08		2.01				
40	3	0.87			2.11			
42	3	0.79			2.10			
59	3	-0.79			1.90			
69	1	1.59						2.20
70	4	0.32			2.04			
74	3	0.79			2.10			
75	4	-0.48		1.94				
78	4	0.40		2.05				
80	4	0.00		2.00				
81	3	-0.63			1.92			
85	1	1.98		2.25				
86	0	4.36			2.55			
87	4	0.32		2.04				
89	2	-1.11		1.86				
94	1	-1.59			1.80			
97	4	-0.48		1.94				
101	4	0.00		2.00				
102	0	-4.76			1.40			
103	0	-2.38			1.70			
105	0	2.78			2.35			
109	2	1.43		2.18				
111	4	-0.08		1.99				
113	4	-0.40		1.95				
114	4	0.00		2.00				
116	0	-2.14					1.73	
119	0	-3.97			1.50			
120	4	0.48		2.06				
121	3	-0.63		1.92				
122	4	0.08		2.01				
127	3	0.56		2.07				
128	0	6.43			2.81			

Lab	Rating	Z-value	0	1	4	6	7	12
129	4	0.00		2.00				
134	3	-0.79		1.90				
136	4	0.00			2.00			
138	4	0.00			2.00			
140	3	-0.79		1.90				
141	2	1.35			2.17			
142	2	-1.19			1.85			
145	3	-0.95			1.88			
146	0	-4.13			1.48			
149	0	9.52						3.20
151	4	-0.48		1.94				
153	2	-1.43					1.82	
158	3	0.56			2.07			
179	4	-0.32		1.96				
180	0	2.06			2.26			
185	4	0.21		2.03				
190	3	-0.63					1.92	
191	3	-0.87				1.89		
194	0	2.38		2.30				
196	4	0.32		2.04				
209	0	-9.05						0.86
211	4	0.00			2.00			
212	3	0.79			2.10			
215	0	7.94			3.00			
218	3	-0.79		1.90				
219	4	0.00			2.00			
220	3	-0.79		1.90				
221	4	0.00		2.00				
224	4	-0.17			1.98			
230	4	-0.08					1.99	
231	1	-1.51		1.81				
234	3	-0.63			1.92			

Table 14. *Statistical summary of reported data for standard reference water sample M-132 (major constituants)--Continued*

Mg (Magnesium) mg/L



0. Other		4. ICP				
1. AA: direct air		6. ICP/MS				
2. AA: direct nitrous oxide		7. Ion chromatography				
N =	2	29	2	49	4	3
Minimum =	8.64	7.40	8.44	4.18	8.28	8.20
Maximum =	8.73	9.11	8.50	9.50	8.89	8.70
Median =		8.43		8.50		
F-pseudosigma =		0.23		0.39		

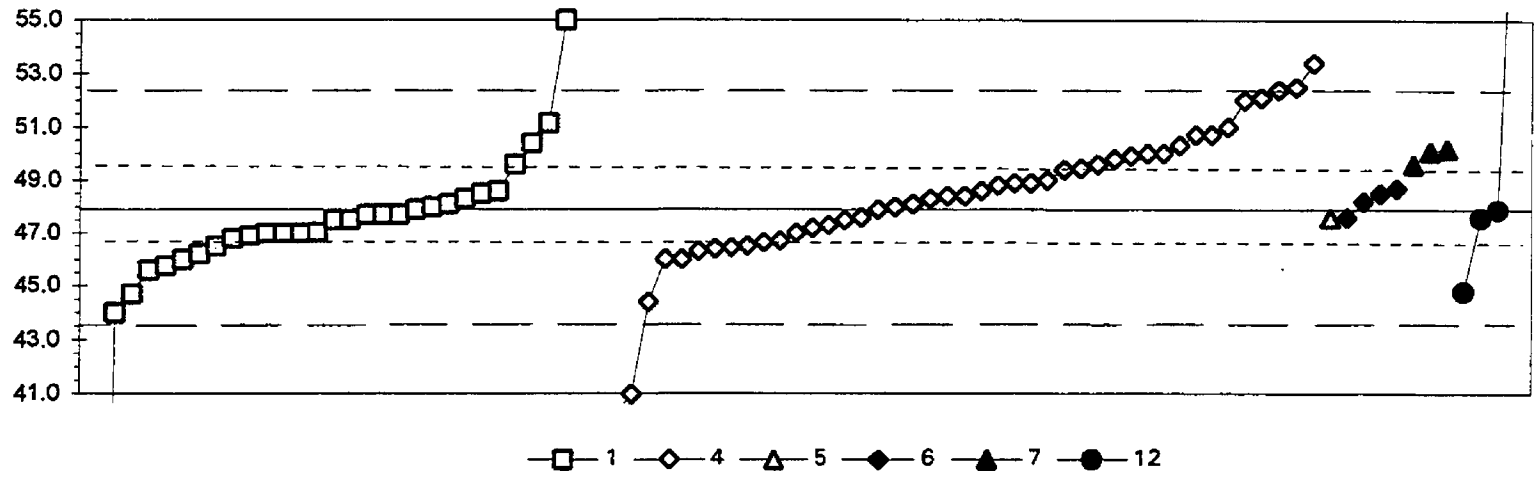
MPV =	8.49
F-pseudosigma =	0.33
N =	89
Hu =	8.66
HI =	8.22

Lab	Rating	Z-value	0	1	2	4	6	7
1	4	-0.43				8.35		
3	4	0.34				8.60		
5	3	-0.83				8.22		
7	3	0.74				8.73		
8	3	0.95					8.80	
9	4	-0.21				8.42		
10	4	0.34		8.60				
11	1	1.87				9.10		
12	4	0.03				8.50		
13	2	1.23					8.89	
15	3	0.55				8.67		
16	2	-1.20				8.10		
18	4	-0.28				8.40		
19	3	0.95				8.80		
23	1	1.90		9.11				
24	4	0.43				8.63		
25	0	-5.67				6.64		
30	4	0.37		8.61				
32	4	-0.06					8.47	
33	4	0.46	8.64					
38	4	0.37		8.61				
40	3	-0.55				8.31		
42	3	0.64				8.70		
59	2	-1.20				8.10		
69	4	-0.28		8.40				
70	4	0.40				8.62		
74	3	-0.89				8.20		
75	3	-0.58		8.30				
78	3	-0.89		8.20				
80	4	0.03		8.50				
81	4	-0.46				8.34		
83	4	-0.37				8.37		
84	1	-1.84		7.89				
85	4	0.12		8.53				
86	3	0.95				8.80		
87	3	-0.83		8.22				
89	4	-0.09		8.46				
94	3	-0.58				8.30		
97	4	-0.18		8.43				
101	4	-0.28		8.40				
102	0	3.10				9.50		
103	3	-0.89				8.20		
105	2	-1.47				8.01		
109	4	0.03		8.50				
111	4	-0.15			8.44			
113	4	0.15		8.54				
114	4	0.03			8.50			
116	3	0.95				8.80		
119	4	0.03				8.50		
120	1	-1.69		7.94				

Lab	Rating	Z-value	0	1	2	4	6	7
121	4	0.34				8.60		
122	4	0.00		8.49				
127	2	-1.35				8.05		
128	2	-1.47				8.01		
129	4	-0.28		8.40				
133	3	0.65				8.70		
134	4	0.34				8.60		
136	1	-1.81				7.90		
138	3	0.52				8.66		
140	3	-0.89		8.20				
141	4	0.18				8.55		
142	0	2.18				9.20		
145	3	-0.52				8.32		
146	2	-1.13				8.12		
149	4	-0.28		8.40				
151	3	-0.71		8.26				
153	4	0.49						8.65
155	3	0.73	8.73					
158	2	1.29				8.91		
179	0	-3.34		7.40				
180	2	1.01				8.82		
182	0	-13.21				4.18		
185	2	-1.10		8.13				
190	3	-0.89						8.20
191	3	-0.64					8.28	
194	0	2.18				9.20		
196	4	0.34		8.60				
209	2	1.24				8.90		
211	2	1.26				8.90		
212	0	2.48				9.30		
215	3	0.64				8.70		
218	4	0.21		8.56				
219	0	-2.12				7.80		
220	2	-1.50		8.00				
221	4	-0.18		8.43				
224	2	-1.38				8.04		
230	3	0.64						8.70
231	4	0.06		8.51				
234	4	-0.43				8.35		

Table 14. *Statistical summary of reported data for standard reference water sample M-132 (major constituents)--Continued*

Na (Sodium) mg/L



1. AA: direct air			6. ICP/MS			
4. ICP			7. Ion chromatography			
5. DCP			12. Flame emission			
N =	29	45	1	4	3	4
Minimum =	1.5	15.0	47.6	47.6	49.6	44.8
Maximum =	55.0	53.4		48.7	50.2	64.0
Median =	47.5	48.4				
F-pseudosigma =	1.2	2.4				

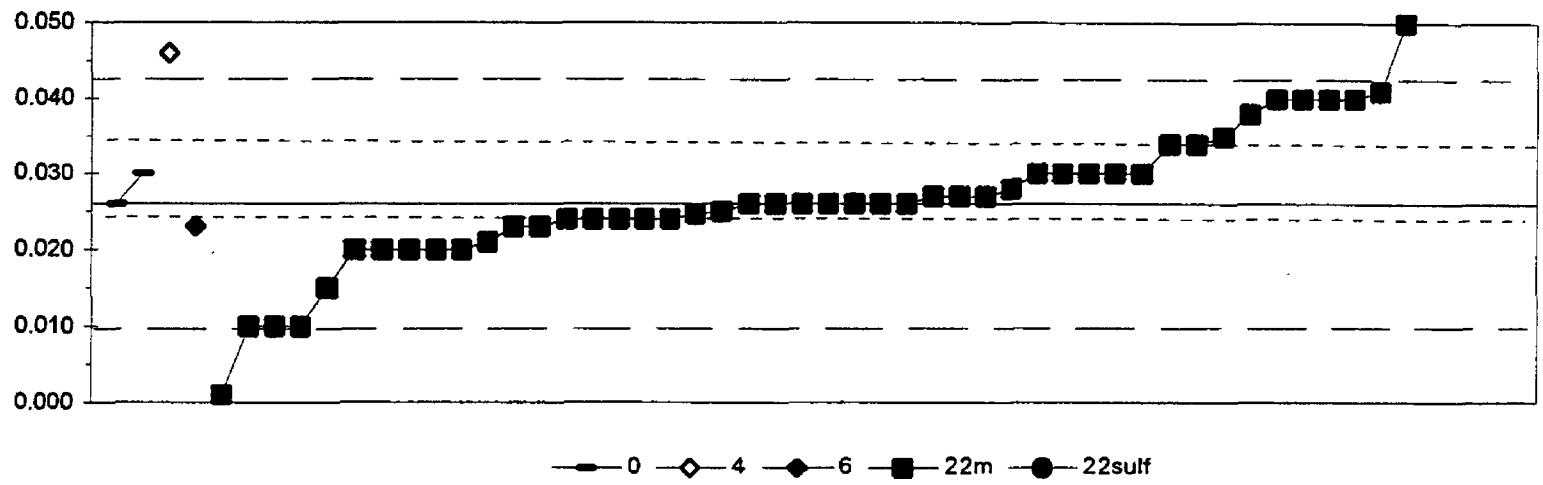
MPV =	47.9
F-pseudosigma =	2.1
N =	86
Hu =	49.6
Hl =	46.7

Lab	Rating	Z-value	1	4	5	6	7	12
1	4	0.09	48.1					
3	3	0.88		49.8				
5	4	-0.19		47.5				
7	3	0.98		50.0				
8	4	0.37				48.7		
9	3	0.70		49.4				
10	3	-0.79	46.2					
11	2	1.44		51.0				
12	1	1.91		52.0				
13	4	-0.14				47.6		
15	4	-0.28		47.3				
16	3	-0.88		46.0				
18	4	0.23		48.4				
19	1	1.95		52.1				
23	4	-0.40	47.0					
24	4	-0.14		47.6				
25	0	-3.21		41.0				
32	4	0.28				48.5		
33	4	-0.14			47.6			
38	2	-1.49	44.7					
40	4	0.23		48.4				
42	3	0.79		49.6				
59	0	-15.30		15.0				
69	2	-1.44						44.8
70	4	0.47		48.9				
74	3	-0.70		46.4				
75	4	-0.09	47.7					
78	0	3.30	55.0					
80	3	-0.65	46.5					
81	4	0.09		48.1				
83	3	-0.74		46.3				
84	4	0.00						47.9
85	2	-1.07	45.6					
86	4	0.19		48.3				
87	4	0.05	48.0					
89	4	-0.47	46.9					
90	0	7.49						64.0
94	4	-0.42		47.0				
97	4	0.33	48.6					
101	4	-0.19	47.5					
102	0	-3.58		40.2				
103	3	0.98		50.0				
105	3	-0.65		46.5				
109	3	-1.00	45.8					
111	4	-0.09	47.7					
113	2	1.16	50.4					
114	1	-1.81	44.0					
116	2	1.12		50.3				
119	4	0.33		48.6				
120	4	-0.09	47.7					

Lab	Rating	Z-value	1	4	5	6	7	12
121	4	0.05		48.0				
122	4	-0.19	47.5					
127	4	0.42		48.8				
128	3	-0.56		46.7				
129	4	-0.42	47.0					
134	4	-0.42	47.0					
136	4	-0.33		47.2				
138	2	1.30		50.7				
140	4	-0.42	47.0					
141	2	1.30		50.7				
142	3	0.72		49.5				
145	3	-0.68		46.4				
146	1	-1.63		44.4				
149	4	-0.14						47.6
151	4	0.28	48.5					
153	2	1.07					50.2	
158	0	2.09		52.4				
179	4	0.00	47.9					
180	4	0.00		47.9				
182	0	-11.26		23.7				
185	1	1.52	51.2					
190	2	1.02					50.1	
191	4	0.14				48.2		
194	0	2.14		52.5				
196	4	0.19	48.3					
211	3	0.51		49.0				
212	0	2.56		53.4				
215	4	0.47		48.9				
218	0	-21.58	1.5					
219	3	-0.88		46.0				
220	3	-0.88	46.0					
221	3	-0.51	46.8					
224	3	-0.59		46.6				
230	3	0.79					49.6	
231	3	0.79	49.6					
234	3	0.93		49.9				

Table 14. *Statistical summary of reported data for standard reference water sample M-132 (major constituents)--Continued*

total P (total Phosphorus) mg/L



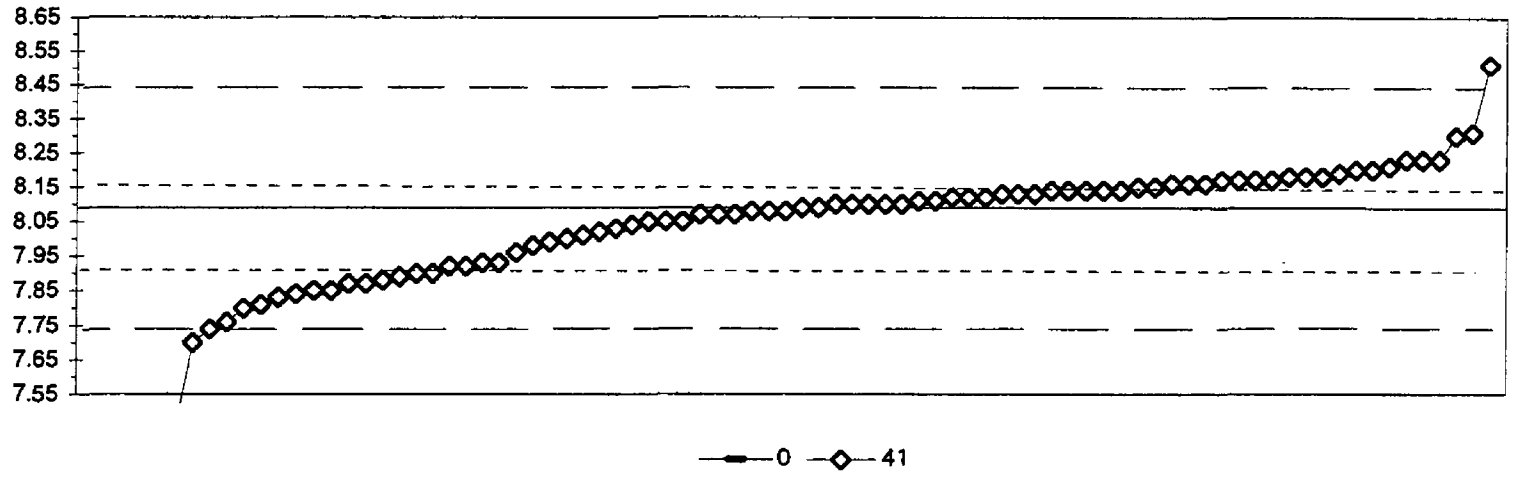
0. Other				22m. Color: phosphomolybdate		
4. ICP				22sulf. Color:sulfuric acid		
6. ICP/MS						
N =	2	1	1	50	1	
Minimum =	0.026	0.046	0.023	0.001	0.062	
Maximum =	0.030			0.130	0.170	
Median =				0.025		
F-pseudosigma =				0.008		

MPV = 0.026
F-pseudosigma = 0.008
N = 55
Hu = 0.035
HI = 0.024

Lab	Rating	Z-value	0	4	6	22m	22sulf
1	0	4.41					0.062
3	4	-0.25				0.024	
5	4	0.00				0.026	
7	3	-0.74				0.020	
8	0	2.94				0.050	
9	3	0.98				0.034	
11	1	1.72				0.040	
12	4	0.49				0.030	
13	1	1.72				0.040	
15	2	1.10				0.035	
16	0	3.56				0.055	
18	4	0.00				0.026	
23	0	5.76				0.073	
25	NR			< 121			
38	4	0.49				0.030	
39	4	0.00	0.026				
40	0	2.45		0.046			
42	4	0.12				0.027	
59	NR					< 0.1	
70	NR					< 0.1	
74	3	0.98				0.034	
78	1	1.84				0.041	
81	4	-0.12				0.025	
85	4	0.12				0.027	
87	4	-0.25				0.024	
89	3	-0.61				0.021	
92	NR					< 0.01	
94	4	0.00				0.026	
102	4	-0.25				0.024	
105	1	1.72				0.040	
107	2	1.47				0.038	
111	4	-0.25				0.024	
113	1	-1.96				0.010	
114	3	-0.74				0.020	
118	3	-0.74				0.020	
119	1	1.72				0.040	
120	NR					< 0.01	
127	4	-0.37				0.023	
128	NR					< 0.05	
129	0	-3.07				0.001	
131	NR		< 0.2				
133	1	-1.96				0.010	
134	4	0.49				0.030	
138	4	0.00				0.026	
140	1	-1.96				0.010	
141	NR					< 0.05	
142	4	0.12				0.027	
143	4	0.25				0.028	
145	3	-0.74				0.020	
149	4	0.49				0.030	
151	4	0.00				0.026	
155	4	-0.16				0.025	
158	NR					< 0.03	
179	NR					< 0.18	
180	NR					< 0.025	
185	2	-1.35				0.015	
190	4	-0.25				0.024	
191	4	-0.37			0.023		
194	NR		< 0.10				
203	4	0.00				0.026	
211	0	12.75				0.130	
212	4	0.00				0.026	
215	0	17.66				0.170	
220	3	-0.74				0.020	
221	4	0.49	0.030				
224	4	0.49				0.030	
234	4	-0.37				0.023	

Table 14. *Statistical summary of raported data for standard reference water sample M-132 (major constituents)--Continuad*

pH



0. Other
41. Direct reading

N =	1	83
Minimum =	7.20	0.79
Maximum =		8.51
Median =		8.09
F-pseudosigma =		0.17

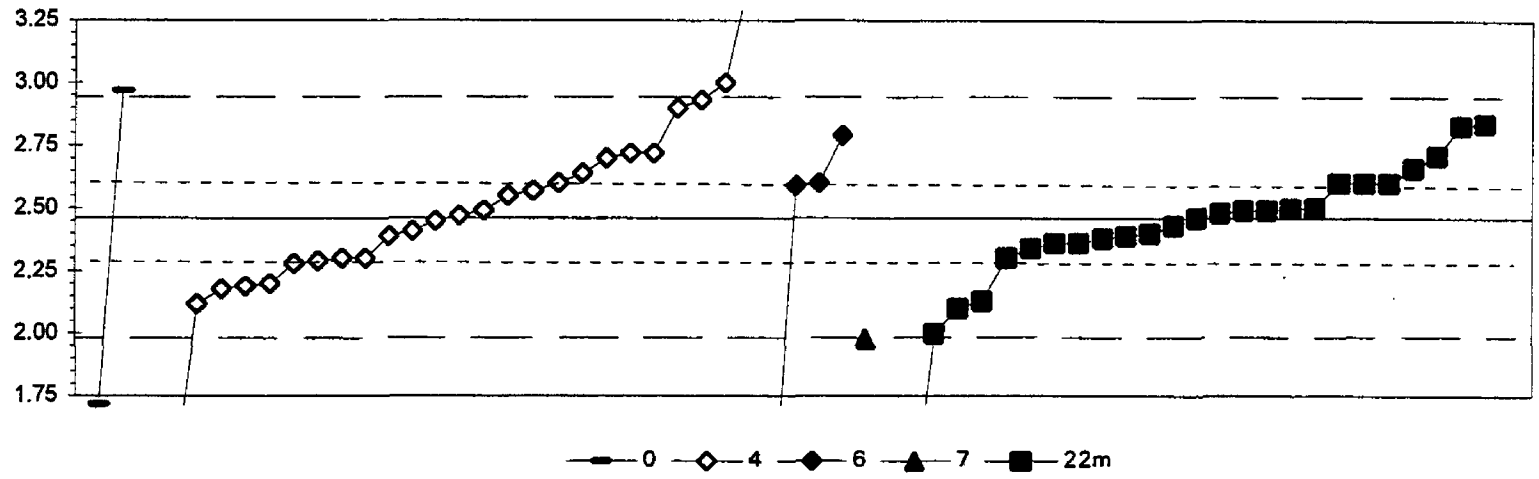
MPV =	8.09
F-pseudosigma =	0.18
N =	84
Hu =	8.15
HI =	7.91

Lab	Rating	Z-value	0	41
1	2	-1.15		7.88
3	4	-0.25		8.04
5	4	-0.08		8.07
7	4	0.48		8.17
8	4	-0.31		8.03
10	4	0.31		8.14
11	4	0.20		8.12
12	0	-2.16		7.70
13	4	-0.03		8.08
15	0	-41.03		0.79
16	4	-0.48		8.00
18	4	0.48		8.17
19	4	0.03		8.09
23	4	0.25		8.13
24	4	-0.20		8.05
25	0	-4.41		7.30
30	4	0.48		8.17
32	4	0.25		8.13
33	4	0.08		8.10
38	2	1.21		8.30
39	0	-4.97	7.20	
40	4	0.20		8.12
42	3	-0.87		7.93
59	3	-0.93		7.92
69	4	0.42		8.16
70	3	-0.53		7.99
74	3	0.70		8.21
75	4	0.31		8.14
76	1	-1.60		7.80
78	2	-1.04		7.90
79	4	0.42		8.16
80	2	-1.32		7.85
81	4	0.08		8.10
84	4	-0.03		8.08
85	3	0.53		8.18
86	4	0.14		8.11
87	2	-1.10		7.89
89	2	-1.38		7.84
90	4	0.48		8.17
92	4	-0.20		8.05
94	4	0.14		8.11
96	4	0.31		8.14
97	3	0.65		8.20
101	0	-4.24		7.33
105	3	-0.59		7.98
107	4	0.31		8.14
109	3	0.53		8.18
111	0	2.39		8.51
113	0	-3.57		7.45
114	2	-1.21		7.87

Lab	Rating	Z-value	0	41
118	2	-1.04		7.90
119	3	0.82		8.23
122	4	0.37		8.15
127	3	0.53		8.18
128	4	0.25		8.13
129	4	-0.37		8.02
134	4	0.31		8.14
136	1	-1.83		7.76
138	4	-0.03		8.08
140	3	-0.87		7.93
141	1	-1.94		7.74
142	3	-0.93		7.92
143	4	0.08		8.10
145	4	0.42		8.16
146	0	-9.30		6.43
149	4	0.08		8.10
153	1	-1.55		7.81
155	4	-0.42		8.01
158	2	-1.32		7.85
180	4	-0.08		8.07
182	2	-1.43		7.83
191	3	0.59		8.19
194	4	0.03		8.09
196	2	1.26		8.31
197	3	0.82		8.23
203	4	0.37		8.15
204	3	-0.70		7.96
209	4	0.20		8.12
211	4	-0.08		8.07
212	4	0.08		8.10
215	3	0.65		8.20
218	2	-1.21		7.87
224	4	-0.20		8.05
234	3	0.82		8.23

Table 14. *Statistical summary of raported data for standard reference water sample M-132 (major constituents)--Continued*

SiO2 (Silica) mg/L



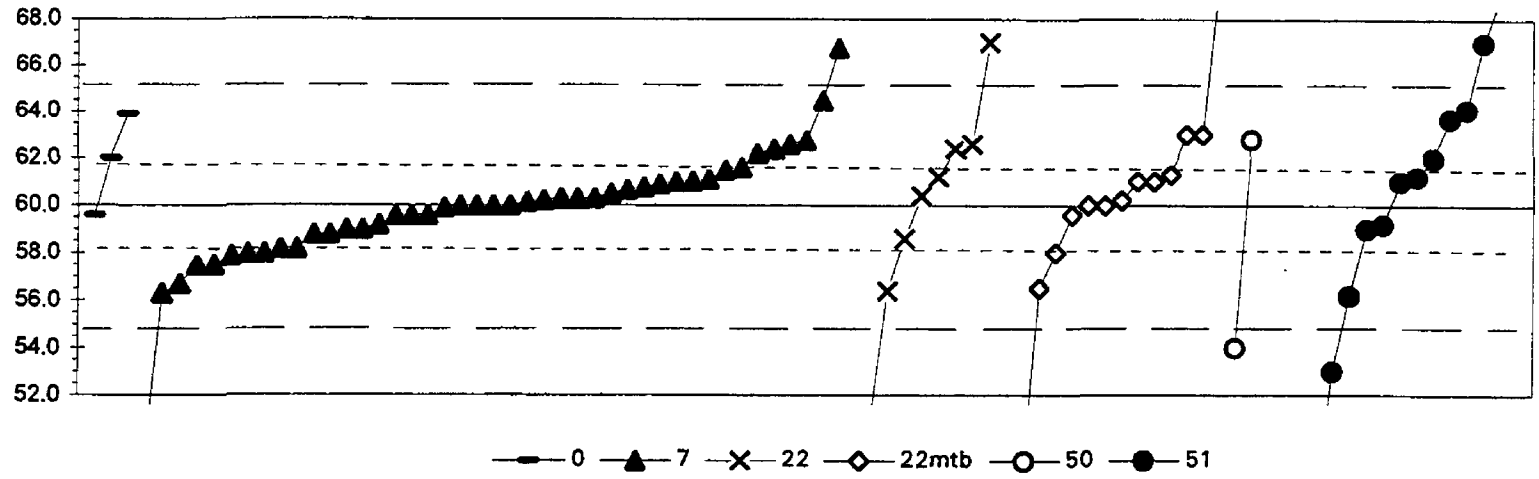
0. Other			7. Ion chromatography		
4. ICP			22m. Color:phosphomolybdate		
6. ICP/MS					
N =	2	26	4	1	26
Minimum =	1.72	1.10	1.17	1.98	1.12
Maximum =	2.97	3.43	2.79		2.84
Median =		2.46			2.45
F-pseudosigma =		0.31			0.19

MPV =	2.46
F-pseudosigma =	0.24
N =	59
Hu =	2.60
Hl =	2.28

Lab	Rating	Z-value	0	4	6	7	22	22m
1	4	0.04		2.47				
3	1	1.98		2.93				
5	4	0.46		2.57				
7	2	1.01		2.70				
8	3	0.59			2.60			
9	1	-1.94						2.00
10	3	-0.67						2.30
11	3	-0.72		2.29				
13	0	-5.44			1.17			
15	2	1.10		2.72				
18	4	-0.25						2.40
24	3	0.76		2.64				
25	0	4.09		3.43				
32	3	0.55			2.59			
33	0	2.15	2.97					
38	4	-0.42						2.36
40	2	-1.10		2.20				
42	3	0.59		2.60				
59	4	0.17						2.50
70	4	0.08						2.48
74	3	0.59					2.60	
75	3	0.84						2.66
80	NR		< 3					
83	2	-1.43		2.12				
85	3	0.59						2.60
87	2	1.05						2.71
89	4	0.00						2.46
92	4	-0.34						2.38
102	1	-1.52						2.10
103	2	-1.18		2.18				
105	4	0.38		2.55				
109	3	-0.67		2.30				
111	4	0.13						2.49
113	3	-0.51					2.34	
116	2	1.10		2.72				
118	0	-5.35						1.19
119	0	2.28		3.00				
121	4	-0.04		2.45				
127	4	0.13		2.49				
128	2	-1.14		2.19				
134	3	-0.76		2.28				
136	1	-2.02				1.98		
138	4	0.17						2.50
140	4	-0.13					2.43	
141	4	-0.42						2.36
142	3	-0.67		2.30				
145	4	-0.21		2.41				
151	1	1.56						2.83
155	1	1.59						2.84
190	0	-5.65					1.12	
191	2	1.39			2.79			
203	4	0.13						2.49
204	3	0.59						2.60
209	4	-0.30					2.39	
211	0	-3.12	1.72					
212	1	1.85		2.90				
215	0	-4.64		1.36				
219	0	-5.73		1.10				
231	2	-1.39						2.13
234	4	-0.30		2.39				

Table 14. *Statistical summary of raported data for standard rafarenca watar sampla M-132 (major constituents)--Continuad*

SO4 (Sulfate) mg/L



0. Other			22mtb. Color: methyl thymol blue			
7. Ion chromatography			50. Gravimetric			
22. Colorimetric			51. Turbidimetric			
N =	3	43	9	14	2	16
Minimum =	59.6	49.0	50.1	23.5	54.0	26.0
Maximum =	63.9	66.8	67.0	69.6	62.8	69.9
Median =		60.0	60.4	60.1		60.1
F-pseudosigma =		1.6	4.5	2.2		10.3

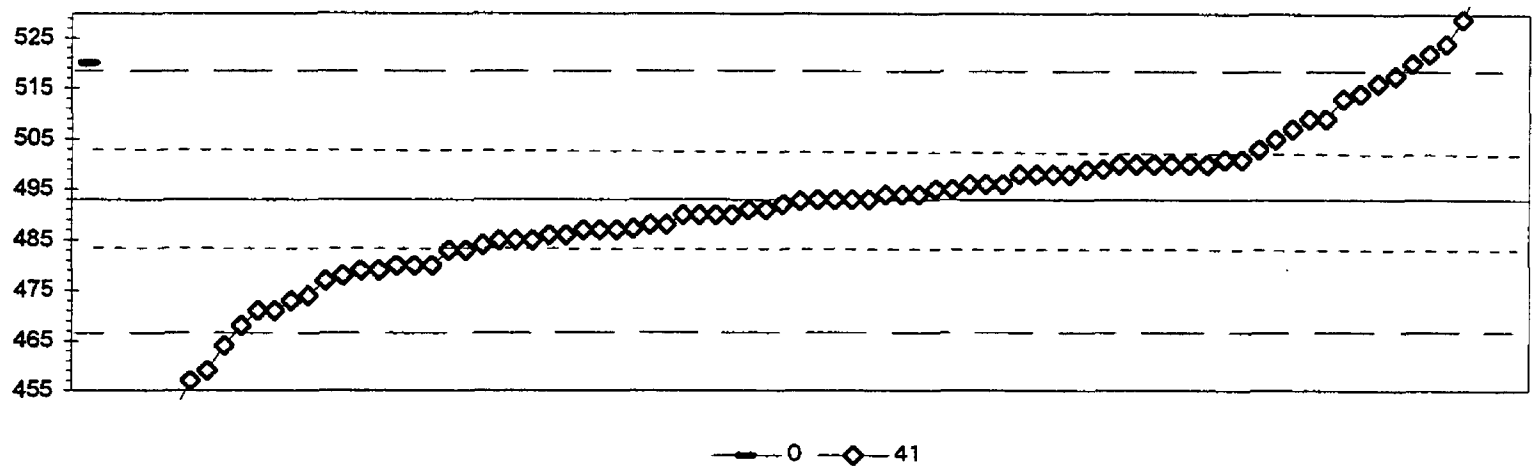
MPV =	60.0
F-pseudosigma =	2.6
N =	87
Hu =	61.55
Hl =	58.10

Lab	Rating	Z-value	0	7	22	22mtb	50	51
1	4	-0.47		58.8				
3	4	-0.16		59.6				
4	0	-4.30		49.0				
5	3	-0.78		58.0				
7	4	0.43		61.1				
8	4	0.12		60.3				
9	4	0.00				60.0		
10	4	0.47						61.2
11	0	-2.74						53.0
12	4	0.00				60.0		
13	2	-1.37				56.5		
15	4	0.12		60.3				
16	0	-3.89			50.1			
18	4	-0.16				59.6		
19	3	-0.55			58.6			
23	0	3.87						69.9
24	4	0.16			60.4			
25	3	0.86		62.2				
30	3	-0.99		57.5				
32	3	-0.78		58.0				
33	3	0.94		62.4				
39	3	0.78	62.0					
40	3	-0.70		58.2				
42	4	0.00		60.0				
59	2	1.02		62.6				
69	4	0.39				61.0		
70	4	0.39		61.0				
72	0	-13.29						26.0
74	2	-1.41			56.4			
75	0	-4.61				48.2		
76	4	-0.16		59.6				
78	0	-6.35						43.8
80	1	1.52	63.9					
81	0	2.74			67.0			
83	4	-0.16	59.6					
85	4	-0.39		59.0				
86	1	1.76		64.5				
87	0	3.52						69.0
89	4	0.47			61.2			
92	4	-0.31						59.2
94	3	-0.78				58.0		
96	3	0.78						62.0
97	2	1.02			62.6			
102	2	1.17				63.0		
105	4	-0.39		59.0				
109	0	-2.35					54.0	
111	2	-1.29		56.7				
113	4	-0.31		59.2				
114	1	1.60						64.1
116	4	-0.16		59.6				

Lab	Rating	Z-value	0	7	22	22mtb	50	51
119	4	0.39						61.0
122	2	1.09					62.8	
127	4	0.35		60.9				
128	4	0.08				60.2		
129	4	0.20		60.5				
131	4	-0.47		58.8				
134	4	0.26		60.7				
136	3	-0.83		57.9				
138	4	-0.04		59.9				
140	0	2.74						67.0
141	2	-1.49						56.2
142	2	1.17				63.0		
145	2	1.08		62.8				
151	4	0.00		60.0				
153	4	0.12		60.3				
158	3	0.51				61.3		
180	4	0.39				61.0		
182	4	-0.39						59.0
185	4	0.06		60.2				
190	3	0.63		61.6				
191	4	0.00		60.0				
193	4	0.08		60.2				
194	3	0.94			62.4			
196	2	-1.45		56.3				
197	0	2.65		66.8				
203	0	-14.29				23.5		
204	0	3.75				69.6		
208	4	0.00		60.0				
209	4	0.40		61.0				
211	2	1.45						63.7
212	3	0.59		61.5				
215	0	-6.61						43.1
220	0	-3.52			51.0			
224	4	0.30		60.8				
230	3	-0.70		58.2				
231	0	-5.08						47.0
234	3	-0.98		57.5				

Table 14. *Statistical summary of reported data for standard reference water sample M-132 (major constituents)--Continued*

Sp Cond (Specific Conductance) µS/cm



0. Other
41. Direct reading

N =	1	84
Minimum =	520	12
Maximum =		666
Median =		493
F-pseudosigma =		13

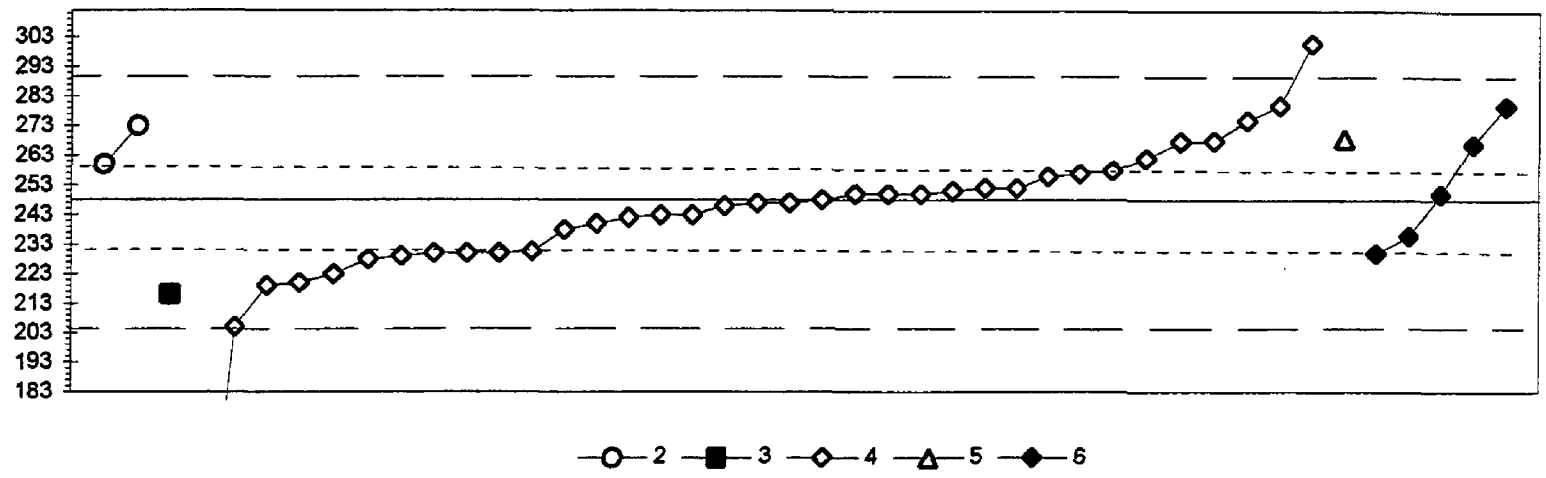
MPV = 493
F-pseudosigma = 13
N = 85
Hu = 500
Hl = 483

Lab	Rating	Z-value	0	41
1	4	0.40		498
3	4	0.16		495
5	3	0.56		500
7	3	-0.71		484
8	0	-2.70		459
9	1	-1.98		468
10	4	0.48		499
11	0	-38.14		12
12	0	-5.63		422
13	1	1.67		514
15	0	2.86		529
16	0	4.46		549
18	2	-1.11		479
19	4	0.40		498
23	0	13.73		666
24	4	0.40		498
25	4	-0.02		493
32	4	0.24		496
33	4	-0.08		492
38	1	1.95		518
39	0	2.14	520	
40	4	0.00		493
42	0	2.30		522
59	2	-1.03		480
70	0	2.46		524
72	4	-0.48		487
74	4	-0.24		490
75	2	-1.27		477
76	4	-0.48		487
78	0	-2.30		464
79	2	-1.03		480
80	4	-0.16		491
81	2	1.11		507
84	3	0.79		503
85	4	-0.40		488
86	0	2.14		520
87	1	-1.75		471
89	2	-1.19		478
90	1	-1.75		471
92	3	-0.56		486
94	3	-0.63		485
96	1	1.59		513
97	4	-0.16		491
101	4	-0.24		490
102	0	3.49		537
105	2	1.27		509
107	3	-0.63		485
109	4	-0.40		488
111	4	0.24		496
113	4	0.40		498

Lab	Rating	Z-value	0	41
114	1	-1.51		474
118	4	-0.46		487
119	3	-0.79		483
122	4	0.16		495
127	4	0.00		493
128	2	1.27		509
129	2	-1.03		480
134	4	0.24		496
136	3	0.95		505
140	4	-0.48		487
141	1	-1.59		473
142	4	0.00		493
143	4	0.08		494
145	3	-0.79		483
146	1	1.83		516
149	3	0.56		500
151	4	-0.24		490
153	3	0.63		501
155	3	0.56		500
158	4	0.48		499
180	4	0.00		493
182	0	-7.58		398
185	0	-2.86		457
190	4	0.08		494
193	3	0.63		501
194	2	-1.11		479
196	3	0.56		500
197	0	-9.76		370
203	4	-0.24		490
211	4	0.08		494
212	3	-0.56		486
215	0	-3.41		450
220	3	0.56		500
224	3	-0.63		485
234	3	0.56		500

Table 14. *Statistical summary of reportad data for standard rafarenca watar sample M-132 (major constituents)--Continuad*

Sr (Strontium) µg/L



2. AA: direct nitrous oxide
3. AA: graphite furnace
4. ICP
5. DCP
6. ICP/MS

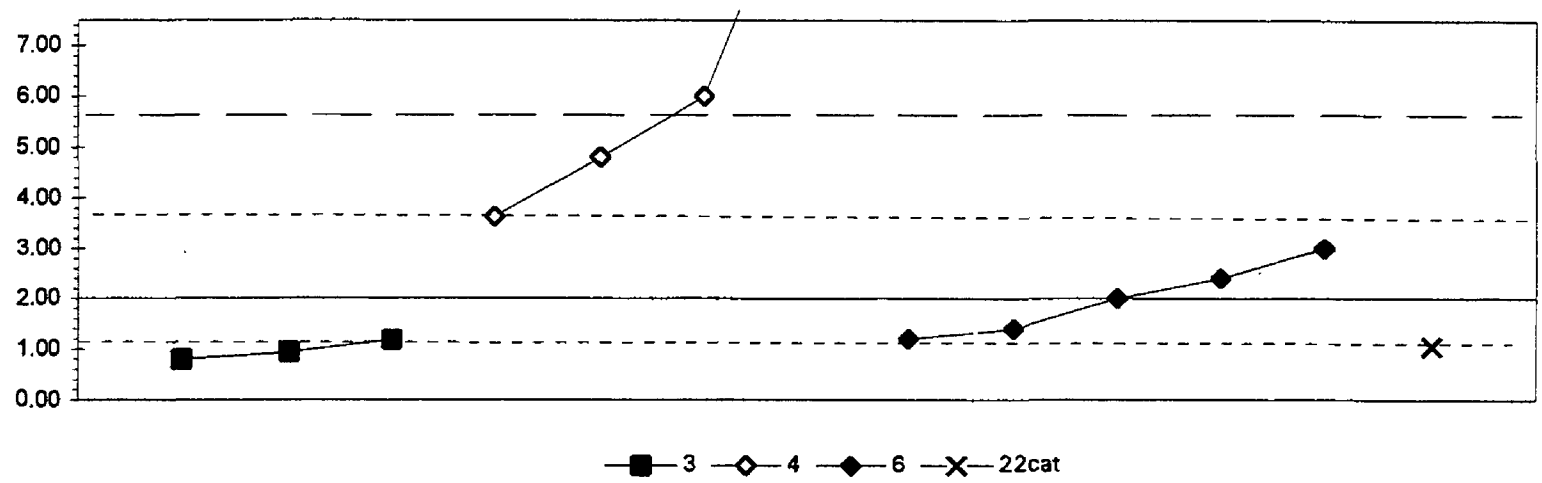
	2	3	4	5	6
N =	2	1	35	1	5
Minimum =	260	216	106	269	230
Maximum =	273		301		280
Median =			247		
F-pseudosigma =			18		

MPV = 248
F-pseudosigma = 21
N = 44
Hu = 259
Hl = 230

Lab	Rating	Z-value	2	3	4	5	6
1	4	-0.21			243		
3	4	0.16			251		
5	4	-0.02			247		
7	4	0.12			250		
8	4	0.12					250
9	4	-0.21			243		
15	4	0.49			258		
16	2	-1.33			219		
18	4	-0.35			240		
24	4	-0.44			238		
25	1	-1.98			205		
32	3	-0.53					236
33	3	1.00				269	
40	3	-0.81			230		
42	4	0.44			257		
59	2	-1.14			223		
70	4	0.21			252		
74	3	-0.81			230		
81	3	-0.91			228		
85	4	0.12			250		
86	4	0.40			256		
94	4	-0.26			242		
97	2	-1.47		216			
102	2	1.28			275		
103	3	0.67			262		
105	4	-0.07			246		
113	3	0.58	260				
116	3	0.95			268		
121	4	0.12			250		
127	4	0.02			248		
128	3	0.91					267
134	4	-0.02			247		
136	0	2.49			301		
138	4	0.21			252		
142	3	0.95			268		
145	3	-0.79			231		
182	0	-6.56			106		
191	3	-0.81					230
211	2	-1.28			220		
212	1	1.51			280		
218	2	1.19	273				
219.1	3	-0.81			230		
219.2	1	1.51					280
234	3	-0.86			229		

Table 14. *Statistical summary of reported data for standard referance watar sample M-132 (major constituents)--Continuad*

V (Vanadium) µg/L



3. AA: graphite furnace 22cat. Color: catalytic
4. ICP
6. ICP/MS

N =	3	4	5	1
Minimum =	0.80	3.63	1.20	1.05
Maximum =	1.18	11.00	3.00	
Median =				
F-pseudosigma =				

MPV =	2.00
F-pseudosigma =	1.82
N =	13
Hu =	3.63
HI =	1.18

Lab	Rating	Z-value	3	4	6	22cat
1	3	-0.52				1.05
3	NR			< 10		
5	NR			< 4		
7	NR			< 3		
8	NR				< 5	
11	NR			< 10		
15	NR			< 10		
16	4	0.22			2.40	
18	NR			< 5		
25	0	2.20		6.00		
32	NR				< 2	
42	4	-0.33			1.40	
59	3	0.55			3.00	
70	NR			< 50		
74	4	-0.44			1.20	
85	NR			< 20		
94	NR			< 5		
102	NR			< 10		
105	NR			< 20		
121	NR			< 1		
127	NR			< 3		
128	NR			< 10		
134	3	-0.58	0.94			
136	0	4.96		11.00		
138	NR				< 2	
141	NR			< 10		
142	3	-0.66	0.80			
145	3	0.90		3.63		
146	NR			< 10		
180	NR			< 4		
194	NR			< 50		
211	NR			< 20		
212	NR			< 40		
219	4	0.00			2.00	
224	1	2		5		
234	4	-0.45	1.18			

Table 15. *Statistical summary of reported data for standard raference water sampla N-43 (nutrients)*

Definition of analytical methods, abbreviations, and symbols

Analytical methods

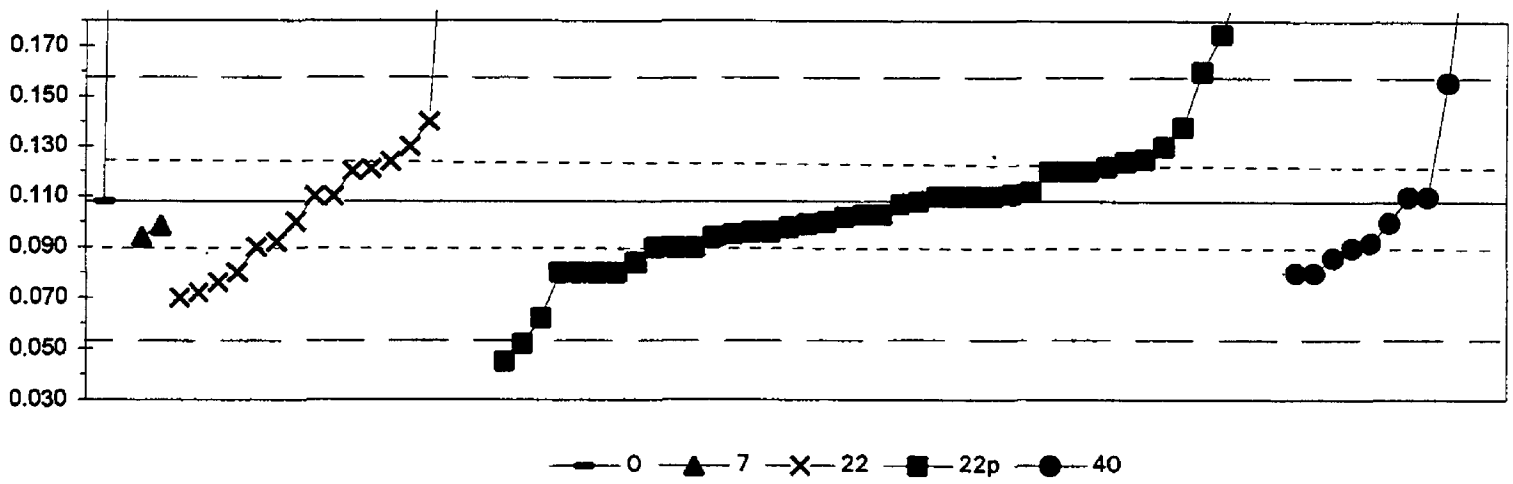
0. Other/Not reported	=	
4. ICP	=	inductively coupled plasma
5. DCP	=	direct coupled plasma
7. IC	=	ion chromatography
20. Titrate: color	=	titration: colorimetric (color reagent specified)
22. Color:	=	colorimetric [color reagent specified]
40. Ion electrode	=	ion selective electrode

Abbreviations and symbols

N	=	number of samples
St dev	=	traditional standard deviation
MPV	=	most probable value
F-pseudosigma	=	nonparametric statistic deviation
Hu	=	upper hinge value
Hl	=	lower hinge value
mg/L	=	milligrams per liter
Lab	=	laboratory code number
NR	=	not rated, less than value reported
<	=	less than

Table 15. *Statistical summary of raportad data for standard referance water sample N-43 (nutrients)--Continued*

NH3 as N (Ammonia) mg/L



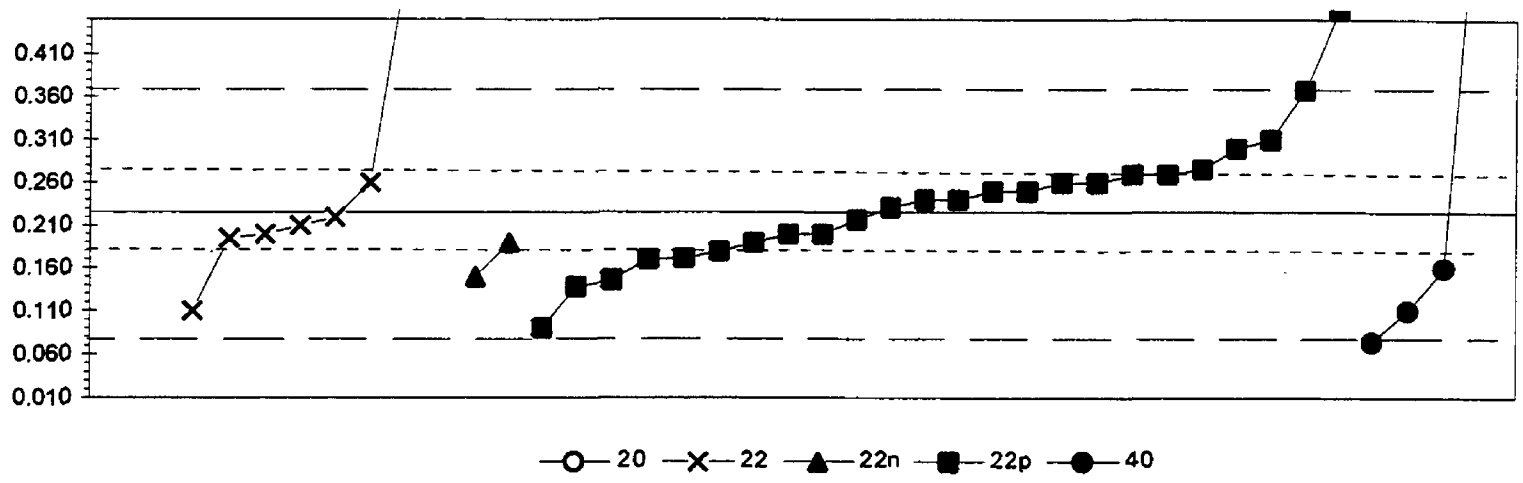
0. Other			22p. Color: phenate		
7. Ion chromatography			40. Ion selective electrode		
22. Colorimetric					
N =	2	2	17	42	11
Minimum =	0.108	0.094	0.070	0.045	0.080
Maximum =	0.800	0.099	0.830	1.060	0.460
Median =			0.110	0.105	0.100
F-pseudosigma =			0.030	0.023	0.033

MPV = 0.108
F-pseudosigma = 0.025
N = 74
Hu = 0.124
Hl = 0.090

Lab	Rating	Z-value	0	7	22	22p	40
1	4	0.10				0.110	
3	0	6.33			0.267		
5	4	0.02				0.108	
7	4	0.50			0.120		
8	0	27.48	0.800				
9	4	0.50				0.120	
10	4	0.10					0.110
11	4	0.10			0.110		
12	NR					< 0.2	
13	3	-0.69				0.090	
15	0	22.71			0.680		
18	4	-0.34				0.099	
19	2	-1.09				0.080	
21	3	-0.69				0.090	
23	4	0.50				0.120	
25	1	1.92					0.156
32	4	-0.35		0.099			
33	4	-0.46				0.096	
36	2	-1.09					0.080
38	4	-0.50				0.095	
59	4	0.14				0.111	
70	NR					< 0.1	
72	3	0.69				0.125	
74	3	0.65			0.124		
76	3	-0.69				0.090	
80	2	-1.25			0.076		
81	2	-1.41			0.072		
83	4	-0.30			0.100		
84	4	-0.30				0.100	
85	3	0.58				0.122	
86	0	6.84				0.280	
87	4	-0.18				0.103	
89	3	-0.54				0.094	
90	4	-0.18				0.103	
91	2	-1.09				0.080	
92	3	-0.61					0.092
94	4	-0.02				0.107	
96	0	-2.20				0.052	
97	3	-0.69			0.090		
102	0	-2.48				0.045	
105	2	-1.49			0.070		
107	4	-0.46				0.096	
111	3	0.89				0.130	
113	1	-1.81				0.062	
114	NR						< 0.1
118	2	-1.09				0.080	
119	4	0.10					0.110
120	0	2.08				0.160	
122	4	-0.22				0.102	
127	0	2.68				0.175	
128	4	0.50				0.120	
133	2	-1.09					0.080
134	2	-1.09				0.080	
136	0	4.46					0.220
140	2	-1.09			0.080		
142	2	1.21				0.138	
143	0					< 0.02	
145	4	0.10				0.110	
146	0	13.99					0.460
149	4	-0.30					0.100
151	4	0.10				0.110	
155	4	-0.39				0.098	
158	3	0.65				0.124	
179	NR					< 0.4	
180	3	-0.93				0.084	
185	0	3.51				0.196	
190	3	0.54				0.121	
193	3	-0.54		0.094			
194	3	0.89				0.130	
197	3	-0.61				0.092	
203	4	0.18				0.112	
209	4	0.02	0.108				
211	2	1.29				0.140	
212	4	0.10				0.110	
215	0	37.79				1.060	
220	4	0.10				0.110	
224	3	-0.69					0.090
231	0	28.67				0.830	
234	3	-0.85					0.086

Table 15. *Statistical summary of reported data for standard reference water sample N-43 (nutrients)--Continued*

NH3 + Org N as N (Ammonia + Organic N) mg/L



20. Titrate: colorimetric
22. Colorimetric
22n. Color: Nesslerization
22p. Color: phenate
40. Ion selective electrode

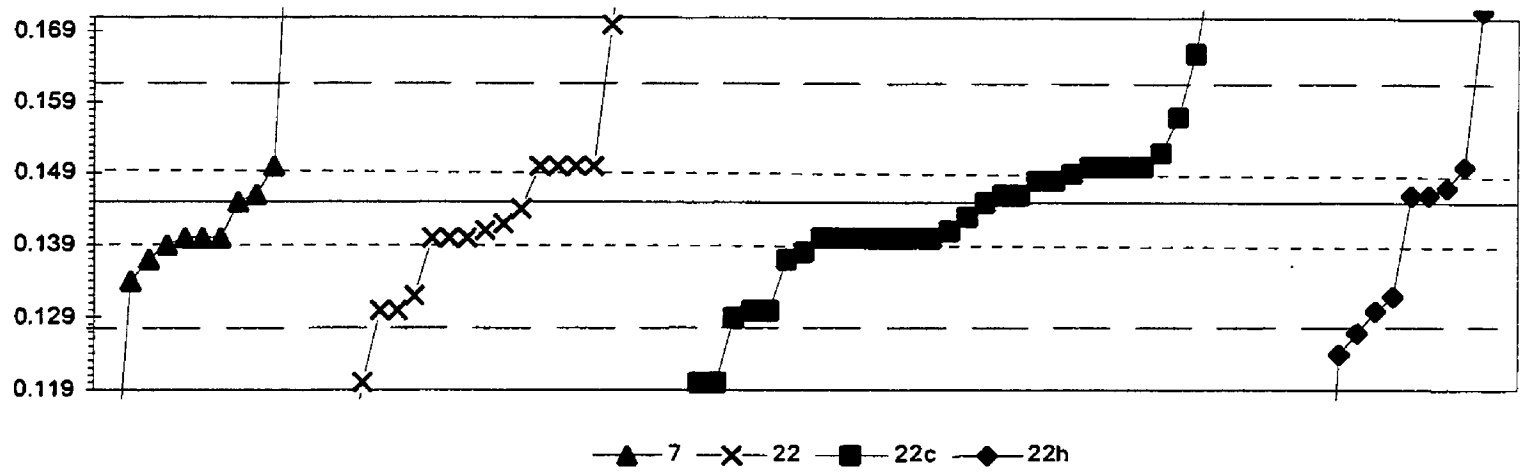
N =	2	8	2	24	4
Minimum =	0.600	0.110	0.150	0.090	0.074
Maximum =	0.800	1.200	0.190	0.461	0.699
Median =		0.215		0.240	
F-pseudosigma =		0.142		0.059	

MPV = 0.226
F-pseudosigma = 0.072
N = 40
Hu = 0.273
Hl = 0.175

Lab	Rating	Z-value	20	22	22n	22p	40
1	3	0.61				0.270	
3	0		< 1				
8	0	5.17	0.600				
9	4	0.48				0.260	
10	4	-0.49				0.190	
11	4	-0.08		0.220			
12	NR					< 0.3	
15	0	13.46		1.200			
18	4	0.34				0.250	
21	4	-0.35				0.200	
36	0	7.93	0.800				
38	4	-0.49			0.190		
59	4	-0.35				0.200	
70	NR					< 0.1	
72	4	0.48				0.260	
74	4	-0.42		0.195			
81	0	4.04		0.518			
85	4	0.34				0.250	
87	1	1.97				0.368	
89	4	0.08				0.231	
90	3	0.70				0.276	
91	3	0.61				0.270	
94	2	-1.10				0.146	
96	4	-0.12				0.217	
97	2	-1.04			0.150		
102	4	0.20				0.240	
105	NR			< 0.2			
113	NR					< 0.5	
118	4	0.20				0.240	
119	3	-0.90					0.160
120	0	3.25				0.461	
122	2	-1.21				0.138	
127	3	-0.75				0.171	
128	2	1.17				0.310	
133	1	-1.59					0.110
134	NR					< 0.2	
140	1	-1.59		0.110			
142	4	-0.21		0.210			
143	2	1.03				0.300	
145	1	-1.87				0.090	
155	3	-0.63				0.180	
179	NR			< 2			
180	3	-0.77				0.170	
209	4	0.48		0.260			
211	4	-0.35		0.200			
212	NR					< 0.5	
224	0	6.54					0.699
234	0	-2.09					0.074

Table 15. *Statistical summary of reported data for standard reference water sample N-43 (nutrients)--Continued*

NO3 + NO2 as N (Nitrate + Nitrite) mg/L



7. Ion chromatography
22. Colorimetric
22c. Color: cd diazo
22h. Color: hydrazine diazo

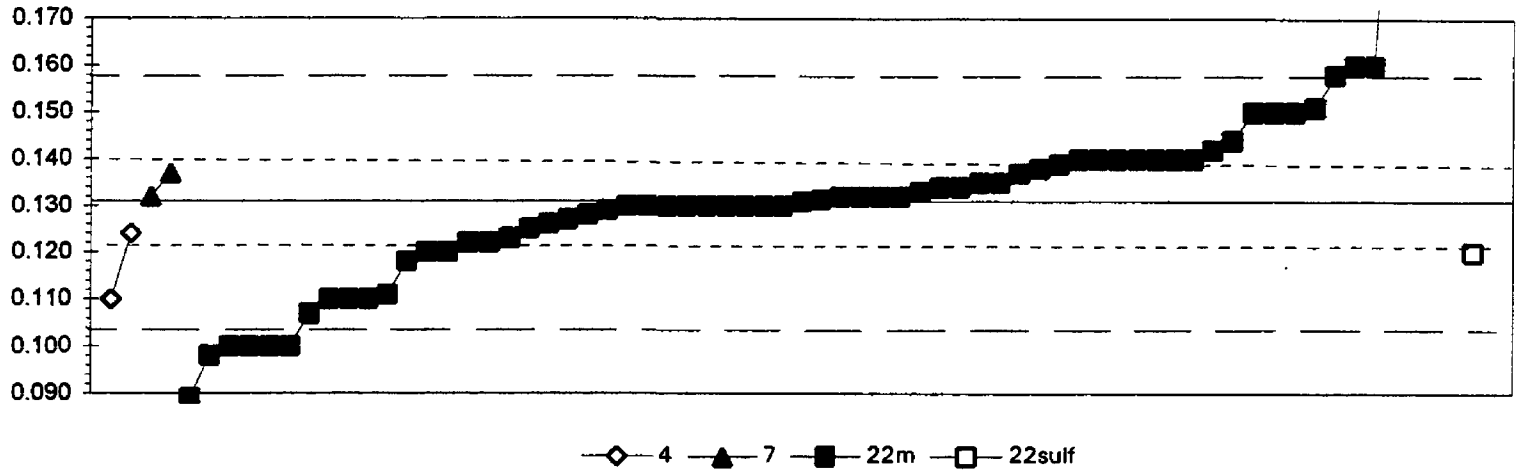
	7	22	22c	22h
N =	13	20	35	11
Minimum =	0.100	0.104	0.120	0.080
Maximum =	0.500	0.800	1.500	1.430
Median =	0.140	0.143	0.146	0.146
F-pseudosigma =	0.006	0.018	0.008	0.015

MPV = 0.145
F-pseudosigma = 0.009
N = 79
Hu = 0.150
Hl = 0.139

Lab	Rating	Z-value	7	22	22c	22h
1	3	0.59			0.150	
3	1	-1.76		0.130		
5	0	-2.11				0.127
7	3	-0.59		0.140		
8	3	-0.59	0.140			
9	4	0.47			0.149	
10	4	0.12			0.146	
11	1	-1.76		0.130		
12	3	-0.59			0.140	
13	0				< 0.10	
15	0	76.83		0.800		
18	4	-0.23			0.143	
19	3	0.59		0.150		
21	0	3.17				0.172
23	3	0.59			0.150	
25	3	-0.59	0.140			
30	4	0.00	0.145			
32	2	-1.29	0.134			
33	3	0.59	0.150			
36	1	-1.52				0.132
38	4	0.12			0.146	
42	0	-5.28	0.100			
59	4	0.00			0.145	
69	0	-2.93			0.120	
70	3	-0.59			0.140	
72	0	150.74				1.430
74	4	-0.47		0.141		
75	4	0.35			0.148	
76	3	-0.70	0.139			
78	0	4.11			0.180	
80	0	-4.81		0.104		
81	3	-0.59		0.140		
83	0	2.93		0.170		
84	1	-1.76			0.130	
85	3	-0.59			0.140	
86	0	9.97			0.230	
87	0	21.11			0.325	
89	4	-0.47			0.141	
90	4	0.12				0.146
91	1	-1.76				0.130
92	3	0.82			0.152	
94	3	-0.59			0.140	
96	4	0.12				0.146
97	3	-0.59			0.140	
102	0	-2.93			0.120	
105	0	-2.93		0.120		
107	4	0.35			0.148	
111	0	41.64	0.500			
114	0	2.46			0.166	
118	3	0.59				0.150
119	3	0.59			0.150	
120	3	0.59		0.150		
122	1	-1.88			0.129	
127	3	-0.94	0.137			
128	0	-7.62				0.080
129	0	29.95	0.400			
133	0	158.95			1.500	
134	3	-0.59			0.140	
140	1	-1.52		0.132		
142	0	7.62			0.210	
143	3	-0.82			0.138	
145	3	-0.59			0.140	
146	0	6.92		0.204		
155	2	1.41			0.157	
158	4	0.23				0.147
180	3	0.59			0.150	
185	0	-2.46				0.124
190	3	-0.59		0.140		
193	3	-0.59	0.140			
194	3	0.59		0.150		
197	4	-0.12		0.144		
203	3	-0.94			0.137	
209	4	-0.35		0.142		
211	0	5.28		0.190		
212	1	-1.76			0.130	
215	0	35.78			0.450	
220	3	0.59		0.150		
224	0	6.45	0.200			
231	0	69.80		0.740		
234	4	0.12	0.146			

Table 15. *Statistical summary of reported data for standard reference water sample N-43 (nutrients)--Continued*

Total P as P (total Phosphorus) mg/L



4. ICP 22sulf. Color: sulfuric acid
7. Ion chromatography
22m. Color: phosphomolybdate

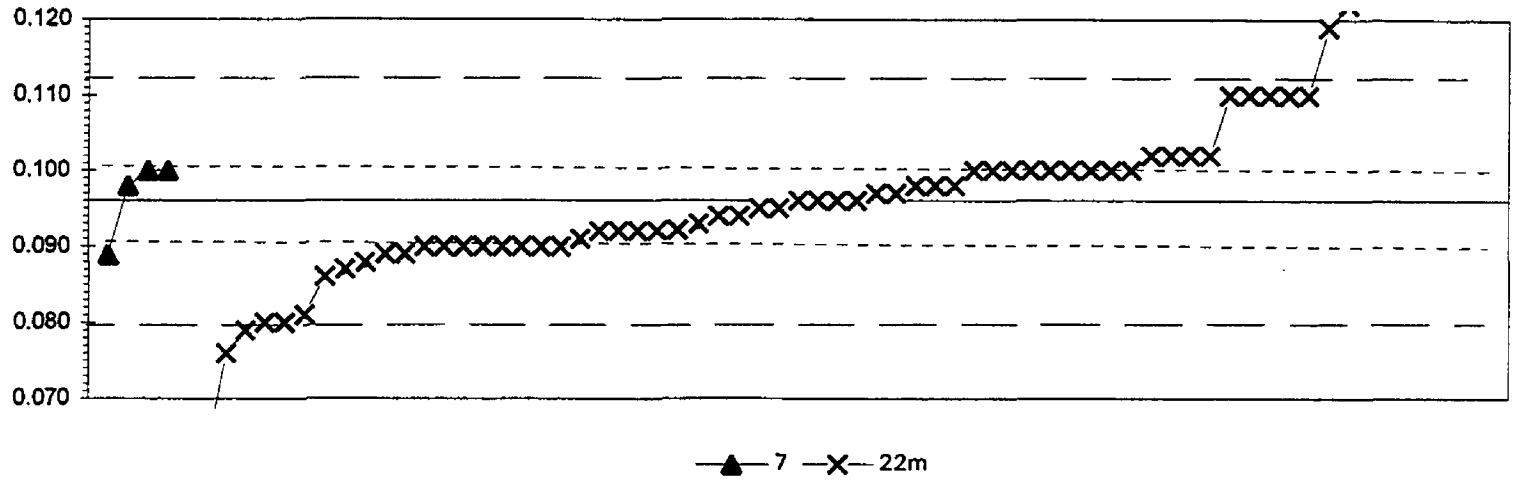
	4	7	22m	22sulf
N =	2	2	65	1
Minimum =	0.110	0.132	0.089	0.120
Maximum =	0.124	0.137	1.600	
Median =			0.131	
F-pseudosigma =			0.013	

MPV = 0.131
F-pseudosigma = 0.013
N = 70
Hu = 0.140
HI = 0.122

Lab	Rating	Z-value	4	7	22m	22sulf
1	3	-0.84				0.120
3	4	-0.01			0.131	
5	4	0.14			0.133	
7	3	0.66			0.140	
8	0	2.16			0.160	
9	1	2.01			0.158	
10	4	-0.09			0.130	
11	2	1.41			0.150	
12	3	0.81			0.142	
13	2	1.41			0.150	
15	4	0.06			0.132	
18	4	-0.24			0.128	
19	3	0.66			0.140	
21	4	0.29			0.135	
22	4	0.21			0.134	
23	4	-0.09			0.130	
25	NR		< 0.121			
36	2	1.41			0.150	
38	4	0.21			0.134	
42	3	-0.61			0.123	
59	0	-2.33			0.100	
70	0	-2.33			0.100	
72	4	-0.09			0.130	
74	3	0.51			0.138	
78	0	-3.16			0.089	
81	0	-2.33			0.100	
83	3	-0.54	0.124			
85	3	-0.99			0.118	
86	1	-1.59	0.110			
87	4	0.06			0.132	
89	4	0.44			0.137	
90	4	-0.09			0.130	
92	0	-2.33			0.100	
94	4	-0.31			0.127	
96	3	-0.69			0.122	
97	3	0.66			0.140	
102	3	-0.69			0.122	
105	3	0.66			0.140	
107	4	0.06			0.132	
111	3	0.59			0.139	
113	4	-0.39			0.126	
114	4	-0.09			0.130	
118	4	-0.09			0.130	
119	4	-0.09			0.130	
120	3	-0.84			0.120	
122	1	-1.51			0.111	
127	4	0.29			0.135	
128	3	-0.84			0.120	
129	4	-0.16			0.129	
133	3	0.66			0.140	
134	3	0.66			0.140	
140	1	-1.59			0.110	
142	4	-0.09			0.130	
143	4	-0.46			0.125	
145	0	2.16			0.160	
149	3	0.66			0.140	
151	2	1.49			0.151	
155	4	0.01			0.131	
179	0	6.66			0.220	
180	3	0.96			0.144	
185	1	-1.81			0.107	
190	0	-2.48			0.098	
191	4	0.06	0.132			
194	1	-1.59			0.110	
203	4	0.06			0.132	
211	0	7.41			0.230	
212	4	-0.09			0.130	
215	0	110.08			1.600	
220	1	-1.59			0.110	
224	0	42.56			0.699	
234	4	0.44	0.137			

Table 15. *Statistical summary of raported data for standard reference water sample N-43 (nutrients)--Continued*

PO4 as P (Orthophosphate) mg/L



7. Ion chromatography
22m. Color:phosphomolybdate

	4	67
N =		
Minimum =	0.089	0.006
Maximum =	0.100	1.400
Median =	0.099	0.096
F-pseudosigma =	0.005	0.009

MPV = 0.096
F-pseudosigma = 0.008
N = 71
Hu = 0.101
HI = 0.090

Lab	Rating	Z-value	7	22m
1	1	1.72		0.110
3	0	-2.08		0.079
5	4	0.00		0.096
7	NR		< 0.34	
8	1	1.72		0.110
9	4	-0.37		0.093
10	4	0.25		0.098
11	4	0.49		0.100
12	3	-0.61		0.091
13	4	0.49		0.100
15	3	0.74		0.102
18	4	0.25		0.098
19	3	-0.74		0.090
21	4	-0.12		0.095
23	3	-0.74		0.090
25	0	-10.99		0.006
30	4	0.25	0.098	
32	3	-0.87	0.089	
33	4	0.49	0.100	
36	4	0.49		0.100
38	4	-0.49		0.092
42	4	0.25		0.098
59	4	0.00		0.096
70	4	0.49		0.100
72	1	1.72		0.110
74	0	2.82		0.119
75	4	0.49		0.100
78	0	-4.05		0.063
80	0	4.17		0.130
81	1	-1.84		0.081
83	4	-0.25		0.094
85	3	0.74		0.102
87	0	3.19		0.122
89	3	0.74		0.102
90	3	-0.86		0.089
92	2	-1.23		0.086
96	4	-0.25		0.094
97	3	-0.74		0.090
102	3	-0.86		0.089
105	4	0.49		0.100
107	0	3.43		0.124
111	4	0.12		0.097
113	4	0.00		0.096
118	3	-0.74		0.090
119	3	-0.74		0.090
120	1	-1.96		0.080
122	4	-0.49		0.092
127	4	-0.49		0.092
128	1	-1.96		0.080
129	2	-1.10		0.087
133	4	0.49		0.100
134	3	-0.74		0.090
140	0	-2.45		0.076
142	4	-0.12		0.095
143	3	-0.74		0.090
145	4	0.49		0.100
146	4	0.00		0.096
151	4	0.49	0.100	
155	4	-0.47		0.092
158	0	5.15		0.138
179	4	0.49		0.100
180	4	0.12		0.097
185	3	-0.98		0.088
190	0	5.15		0.138
203	3	0.74		0.102
211	0	7.85		0.160
212	1	1.72		0.110
215	0	159.92		1.400
220	1	1.72		0.110
224	3	-0.74		0.090
231	0	93.69		0.860
234	4	-0.49		0.092

Table 16. *Statistical summary of reported data for standard reference weter semple N-44 (nutrients)*

Definition of analytical methods, abbreviations, and symbols

Analytical methods

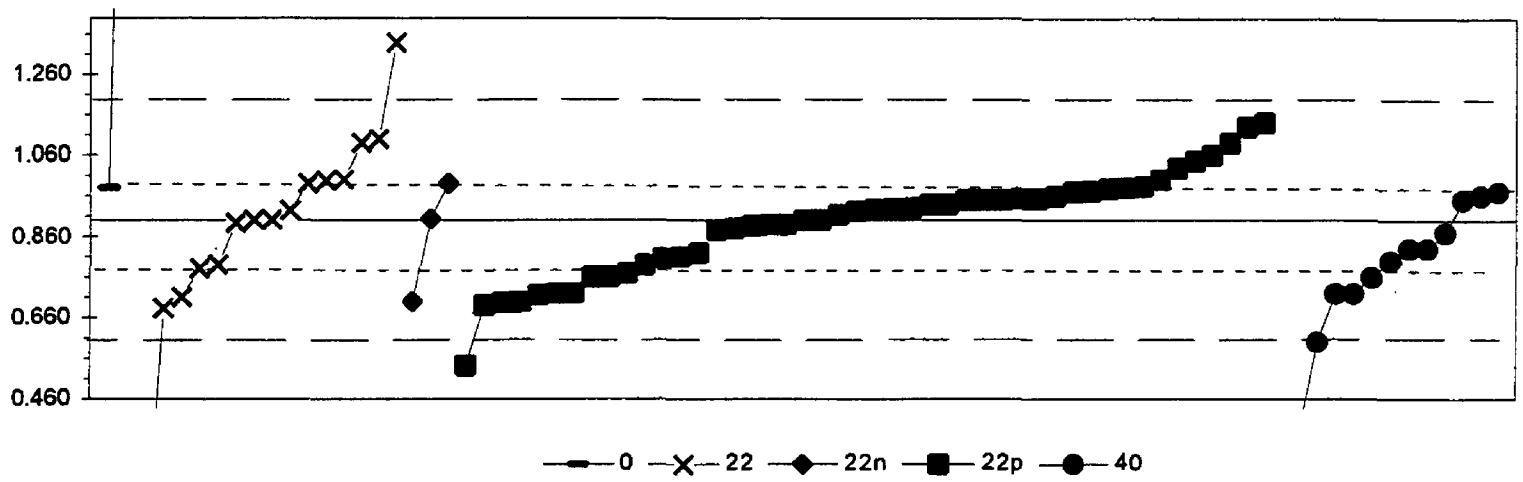
0. Other/Not reported	=	
4. ICP	=	inductively coupled plasma
5. DCP	=	direct coupled plasma
7. IC	=	ion chromatography
20. Titrate: color	=	titration: colorimetric (color reagent specified)
22. Color:	=	colorimetric [color reagent specified]
40. Ion electrode	=	ion selective electrode

Abbreviations and symbols

N	=	number of samples
St dev	=	traditional standard deviation
MPV	=	most probable value
F-pseudosigma	=	nonparametric statistic deviation
Hu	=	upper hinge value
Hl	=	lower hinge value
mg/L	=	milligrems per liter
Lab	=	laboratory code number
NR	=	not rated, less than value reported
<	=	less than

Table 16. *Statistical summary of reported data for standard reference water semple N-44 (nutrients)--Continued*

NH3 as N (Ammonia) mg/L



0. Other
22. Colorimetric
22n. Color: Nesslerization
22p. Color: phenate
40. Ion selective electrode

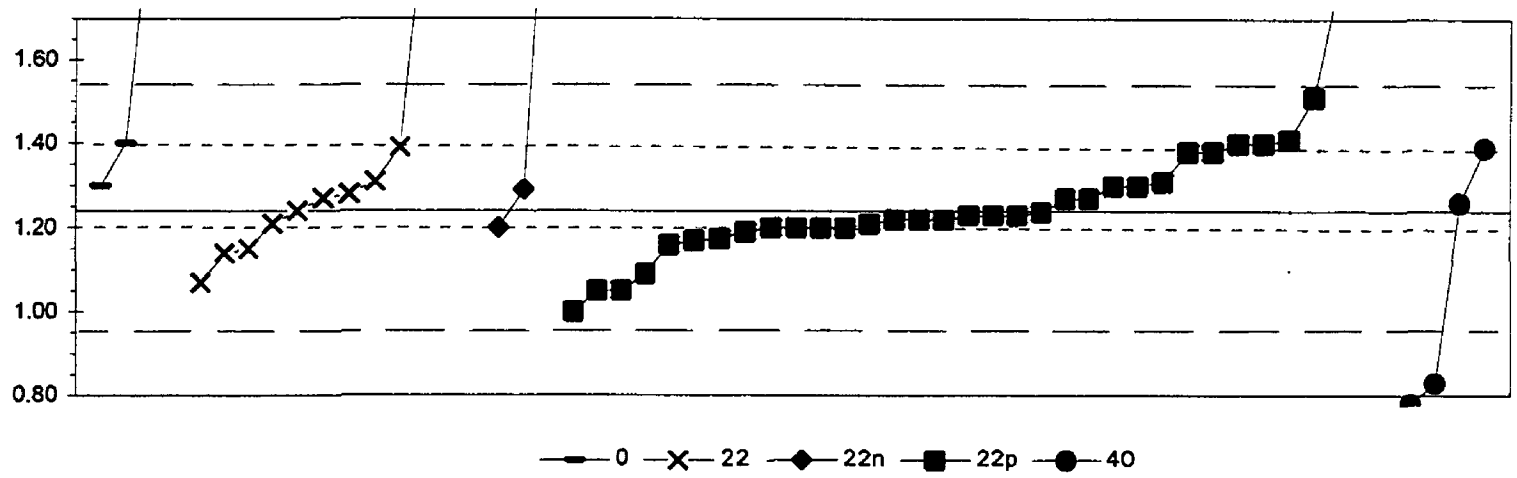
N =	2	15	3	46	13
Minimum =	0.980	0.050	0.700	0.542	0.380
Maximum =	3.000	1.340	0.990	1.140	0.970
Median =		0.900		0.925	0.800
F-pseudosigma =		0.159		0.122	0.110

MPV = 0.900
F-pseudosigma = 0.145
N = 79
Hu = 0.971
HI = 0.775

Lab	Rating	Z-value	0	22	22n	22p	40
1	3	-0.97				0.760	
3	3	0.69		1.000			
5	2	1.31				1.090	
7	2	1.38		1.100			
8	0	14.49	3.000				
9	2	-1.24				0.721	
10	3	-0.97					0.760
11	2	-1.31		0.710			
12	4	0.00				0.900	
15	2	-1.50		0.683			
18	3	0.54				0.978	
19	4	-0.14				0.880	
23	3	-0.55				0.820	
25	0	-2.07					0.600
33	4	0.28				0.940	
36	4	-0.48					0.830
38	3	-0.97				0.760	
59	4	0.21				0.930	
70	4	-0.07				0.890	
72	4	0.28				0.940	
74	4	0.17		0.924			
76	4	0.19				0.927	
80	3	0.62			0.990		
81	2	1.31		1.090			
83	3	0.68		0.998			
84	4	0.21				0.930	
85	2	-1.39				0.699	
86	3	-0.62				0.810	
87	0	-2.47				0.542	
89	3	-0.76				0.790	
90	4	0.37				0.953	
91	2	-1.45				0.690	
92	4	0.35					0.950
94	4	0.41				0.960	
96	2	1.01				1.046	
97	2	-1.38			0.700		
102	4	0.35				0.950	
105	3	-0.76		0.790			
107	4	0.09				0.913	
111	1	1.59				1.130	
113	4	0.37				0.953	
114	2	-1.24					0.720
118	4	0.48				0.970	
119	4	0.48					0.970
120	3	0.89				1.029	
122	2	-1.27				0.716	
127	2	1.10				1.060	
128	4	0.35				0.950	
129	4	0.03			0.904		
133	0	-3.59					0.380
134	4	0.00				0.900	
136	4	-0.48					0.830
138	2	-1.39				0.698	
140	4	0.00		0.900			
141	3	-0.65				0.806	
142	3	0.55				0.980	
143	3	-0.90				0.770	
145	4	0.35				0.950	
146	4	0.42					0.961
149	3	-0.69					0.800
151	0	-3.52					0.390
155	4	-0.17				0.876	
158	4	-0.09				0.887	
179	3	-0.83		0.780			
180	4	-0.07				0.890	
185	4	0.49				0.971	
190	3	0.62		0.990			
194	0	3.04		1.340			
197	4	-0.05		0.893			
203	4	0.16				0.923	
204	3	0.57				0.983	
205	1	1.66				1.140	
211	4	0.00		0.900			
212	3	0.69				1.000	
215	2	-1.24				0.720	
221	3	0.55	0.980				
224	2	-1.24					0.720
231	0	-5.87		0.050			
234	4	-0.21					0.869

Table 16. *Statistical summary of reported data for standard raferance water sample N-44 (nutriants)--Continued*

NH3 + Org N as N (Ammonia + Organic N) mg/L



0. Other
22. Colorimetric
22n. Color: Nesslerization
22p. Color: phenate
40. Ion selective electrode

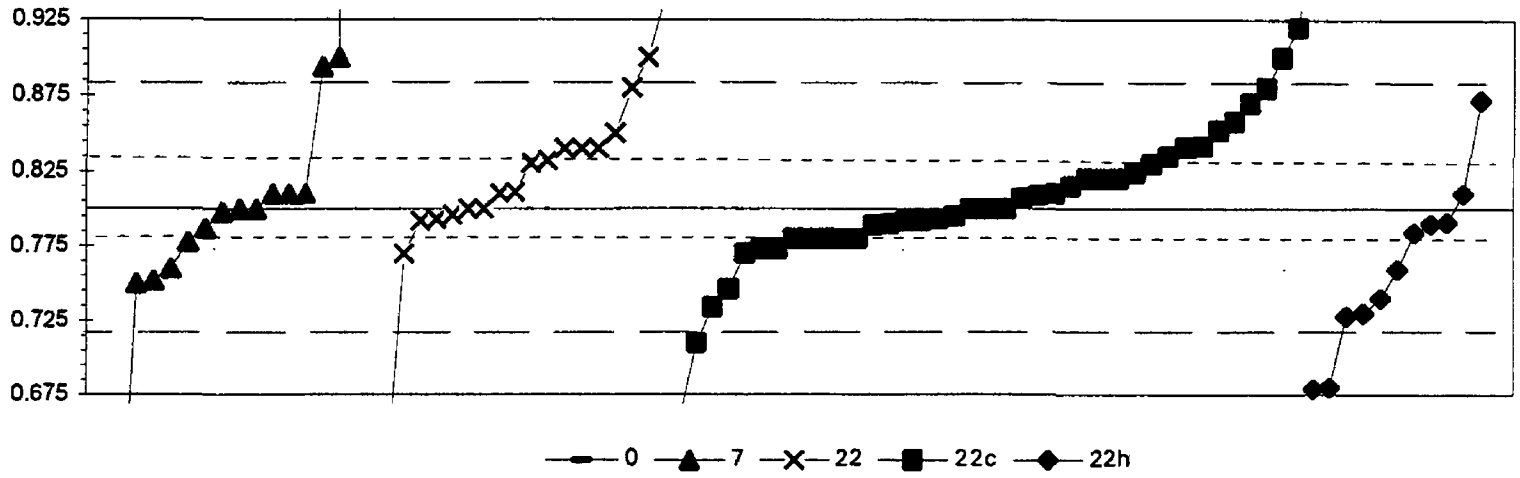
	0	22	22n	22p	40
N =	4	12	3	33	5
Minimum =	1.30	1.07	1.20	1.00	0.62
Maximum =	2.10	2.33	2.29	1.84	1.39
Median =		1.28		1.23	
F-pseudosigma =		0.38		0.10	

MPV = 1.24
F-pseudosigma = 0.14
N = 57
Hu = 1.39
Hl = 1.20

Lab	Rating	Z-value	0	22	22n	22p	40
1	4	-0.21				1.21	
3	4	0.42	1.30				
8	0	5.26	2.00				
9	2	1.11				1.40	
10	4	0.42				1.30	
11	2	1.04		1.39			
12	1	-1.66				1.00	
15	4	0.28		1.28			
18	4	-0.28				1.20	
23	3	0.97				1.38	
36	2	1.11	1.40				
38	4	-0.28			1.20		
59	4	-0.28				1.20	
70	2	-1.31				1.05	
72	4	0.21				1.27	
74	3	-0.62		1.15			
79	0	4.15				1.84	
81	4	0.00		1.24			
85	4	-0.28				1.20	
87	4	-0.14				1.22	
89	4	0.48				1.31	
90	2	-1.31				1.05	
91	1	1.87				1.51	
94	4	-0.14				1.22	
96	4	-0.07				1.23	
97	4	0.35			1.29		
102	4	-0.14				1.22	
105	0	7.54		2.33			
113	4	-0.48				1.17	
118	4	-0.07				1.23	
119	4	0.14					1.26
120	2	1.18				1.41	
122	4	-0.01				1.24	
127	4	-0.07				1.23	
128	4	-0.35				1.19	
129	0	7.26			2.29		
133	0	-3.18					0.78
134	4	0.42				1.30	
136	0	-2.84					0.83
138	4	0.21				1.27	
140	4	0.21		1.27			
141	3	0.97				1.38	
142	4	0.48		1.31			
143	4	-0.28				1.20	
145	2	-1.04				1.09	
155	4	-0.45				1.17	
179	0	5.26		2.00			
180	3	-0.55				1.16	
190	4	-0.21		1.21			
204	0	5.88		2.09			
211	3	-0.69			1.14		
212	2	1.11				1.40	
215	0	3.87				1.80	
220	2	-1.18			1.07		
221	0	5.95	2.10				
224	2	1.04					1.39
234	0	-4.29					0.62

Table 16. *Statistical summary of reported data for standard reference water sampla N-44 (nutrients)--Continued*

NO3 + NO2 as N (Nitrate + Nitrite) mg/L



0. Other
7. Ion chromatography
22. Colorimetric
22c. Color: cd diazo
22h. Color: hydrazine diazo

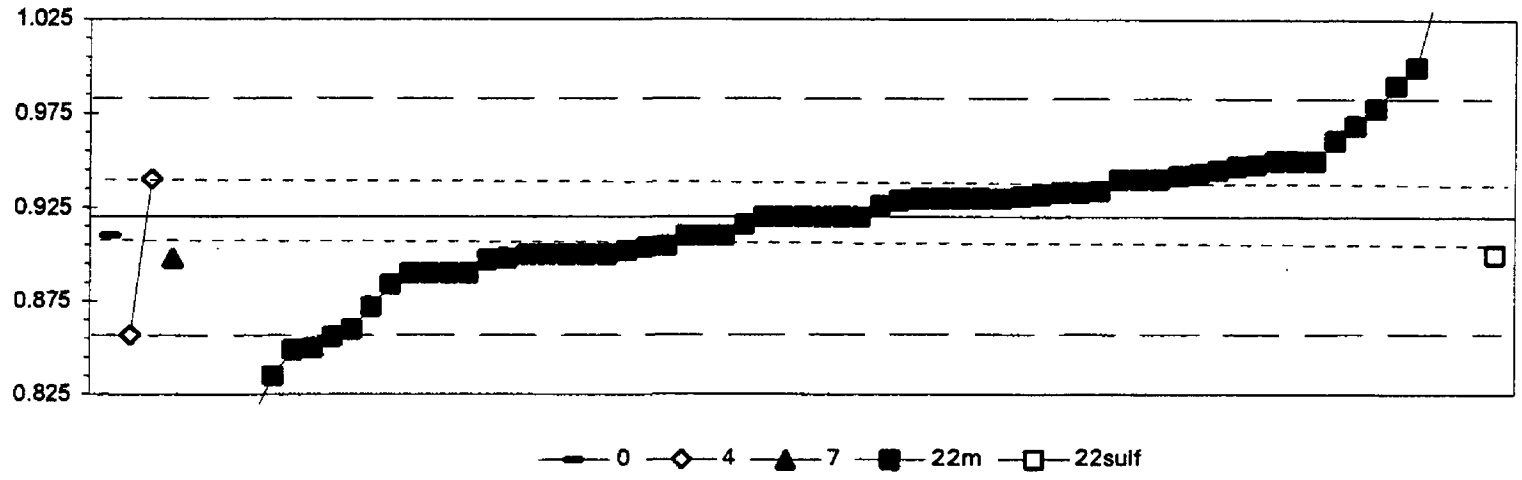
	1	15	19	40	11
N =					
Minimum =	1.000	0.530	0.100	0.660	0.679
Maximum =		2.900	0.940	1.000	0.872
Median =		0.800	0.811	0.800	0.759
F-pseudosigma =		0.030	0.031	0.039	0.046

MPV = 0.800
F-pseudosigma = 0.041
N = 86
Hu = 0.835
HI = 0.780

Lab	Rating	Z-value	0	7	22	22c	22h
1	4	-0.49				0.780	
3	3	0.74			0.830		
5	1	-1.77					0.728
7	3	0.98			0.840		
8	4	0.00		0.800			
9	4	-0.17				0.793	
10	4	0.49				0.820	
11	3	0.98			0.840		
12	4	-0.49				0.780	
15	4	-0.20			0.792		
18	3	-0.66				0.773	
19	1	1.96			0.880		
23	4	0.25				0.810	
25	2	-1.23		0.750			
33	0	2.45		0.900			
36	0	-2.94					0.680
38	3	0.59				0.824	
42	4	0.00		0.800			
59	4	0.37				0.815	
69	0	-2.21				0.710	
70	4	-0.49				0.780	
72	4	0.25					0.810
74	4	-0.10			0.796		
75	4	-0.25				0.790	
76	2	-1.18		0.752			
78	0	-3.43				0.660	
80	0	-4.34			0.623		
81	4	0.27			0.811		
83	0	3.43			0.940		
84	4	-0.49				0.780	
85	3	0.74				0.830	
86	4	0.00				0.800	
87	4	0.49				0.820	
89	4	-0.12				0.795	
90	1	1.77					0.872
91	2	-1.47					0.740
92	3	0.86				0.835	
94	4	-0.49				0.780	
96	4	-0.39					0.784
97	4	0.49				0.820	
102	3	-0.74				0.770	
105	4	0.25			0.810		
107	4	-0.27				0.789	
111	0	51.51		2.900			
113	3	-0.66				0.773	
114	2	1.01				0.841	
118	4	-0.25					0.790
119	0	2.94				0.920	
120	4	0.00			0.800		
122	4	-0.20				0.792	
127	1	-1.62				0.734	
128	1	-1.72					0.730
129	4	-0.05		0.798			
133	0	4.91				1.000	
134	4	0.00				0.800	
136	0	-6.62		0.530			
138	2	-1.32				0.746	
140	3	0.78			0.832		
141	2	-1.01					0.759
142	2	1.42				0.858	
143	4	0.17				0.807	
145	4	0.00				0.800	
146	3	-0.74			0.770		
155	2	1.02				0.842	
158	4	-0.22					0.791
180	4	-0.20				0.792	
185	0	-2.97					0.679
190	2	1.23			0.850		
191	3	-0.54		0.778			
193	4	0.25		0.810			
194	4	0.00			0.800		
196	4	0.25		0.810			
197	4	-0.17			0.793		
203	2	1.28				0.852	
204	4	0.22				0.809	
205	0	2.45				0.900	
206	4	0.25		0.810			
208	4	-0.32		0.787			
211	3	0.98			0.840		
212	1	1.96				0.880	
215	1	1.72				0.870	
220	0	2.45			0.900		
221	0	4.91	1.000				
224	0	2.31		0.894			
231	0	-17.17			0.100		
234	3	-0.98		0.760			

Table 16. *Statistical summary of reported data for standard reference water sample N-44 (nutrients)--Continued*

total P as P (total Phosphorus) mg/L



0. Other — 22m. Color: phosphomolybdate
4. ICP — 22sulf. Color:sulfuric acid
7. Ion chromatography

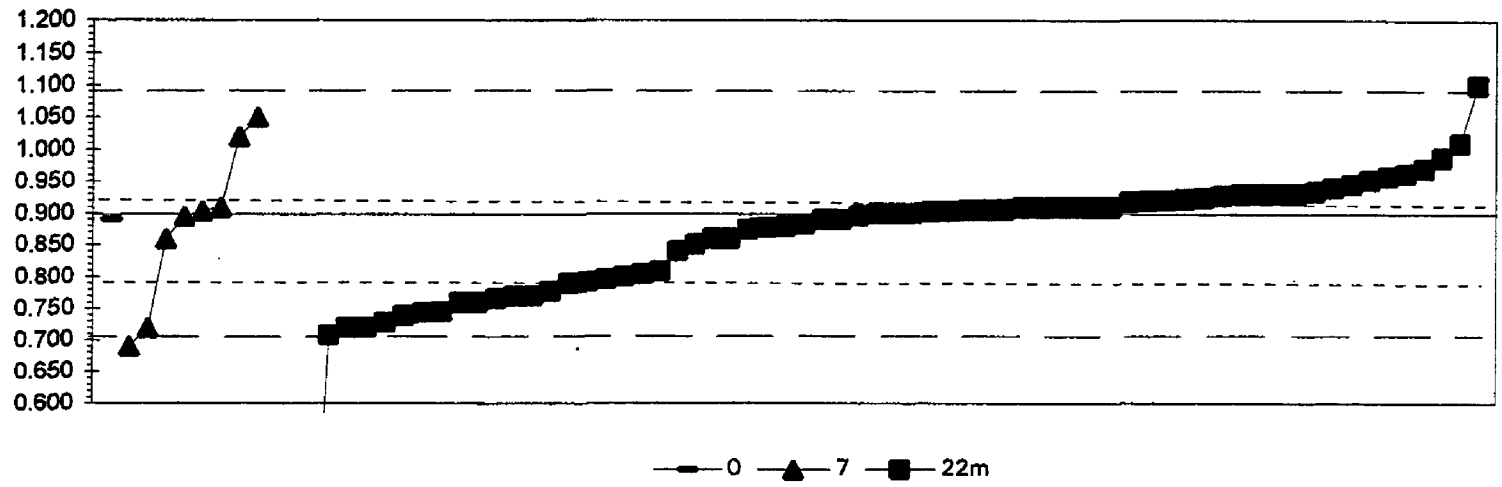
N =	1	2	1	66	1	1
Minimum =	0.910	0.857	0.898	0.572	0.900	0.900
Maximum =		0.940		1.060		
Median =				0.920		
F-pseudosigma =				0.031		

MPV = 0.920
F-pseudosigma = 0.031
N = 71
Hu = 0.940
Hl = 0.898

Lab	Rating	Z-value	0	4	7	22m	22sulf
1	3	-0.64					0.900
3	3	0.71				0.942	
5	2	1.32				0.961	
7	4	0.32				0.930	
8	0	4.50				1.060	
9	4	0.29				0.929	
10	4	-0.32				0.910	
11	3	0.96				0.950	
12	4	-0.13				0.916	
15	0	3.85				1.040	
18	3	-0.74				0.897	
19	4	0.00				0.920	
22	4	0.42				0.933	
23	3	-0.96				0.890	
25	0		< 0.121				
36	4	-0.32				0.910	
38	3	0.64				0.940	
42	2	-1.16				0.884	
59	3	-0.64				0.900	
70	3	-0.96				0.890	
72	3	0.64				0.940	
74	0	3.85				1.040	
78	0	-11.18				0.572	
79	0	-3.85				0.800	
81	3	-0.58				0.902	
83	1	-2.02	0.857				
85	3	-0.64				0.900	
86	3	0.64	0.940				
87	3	-0.64				0.900	
89	4	0.42				0.933	
90	1	1.86				0.978	
92	1	1.57				0.969	
94	4	0.45				0.934	
96	4	0.32				0.930	
97	0	-2.25				0.850	
102	3	-0.96				0.890	
105	4	0.32				0.930	
107	0	-2.28				0.849	
111	4	0.19				0.926	
113	4	0.35				0.931	
114	0	2.57				1.000	
118	4	0.00				0.920	
119	4	0.00				0.920	
120	3	-0.64				0.900	
122	0	-3.47				0.812	
127	3	-0.71				0.898	
128	4	0.00				0.920	
129	3	0.90				0.948	
133	4	0.32				0.930	
134	4	-0.32				0.910	
138	3	0.87				0.947	
140	3	0.80				0.945	
141	1	-1.54				0.872	
142	4	0.00				0.920	
143	3	-0.51				0.904	
145	3	0.64				0.940	
155	4	-0.49				0.905	
158	3	0.74				0.943	
179	3	-0.64				0.900	
180	0	-2.73				0.835	
185	4	0.39				0.932	
190	3	0.96				0.950	
194	1	-1.93				0.860	
203	0	-2.06				0.856	
204	4	0.32				0.930	
211	0	2.25				0.990	
212	0	-10.28				0.600	
215	3	0.96				0.950	
220	4	0.00				0.920	
221	4	-0.32	0.910				
224	3	-0.96				0.890	
234	3	-0.71			0.898		

Table 16. *Statistical summary of reported data for standard reference water sample N-44 (nutrients)--Continued*

PO4 as P (Orthophosphate) mg/L



0. Other
7. Ion chromatography
22m. Color: phosphomolybdate

	1	8	67
N =			
Minimum =	0.890	0.690	0.027
Maximum =		1.050	1.100
Median =		0.900	0.914
F-pseudosigma =		0.130	0.096

MPV = 0.898
F-pseudosigma = 0.096
N = 76
Hu = 0.921
Hl = 0.791

Lab	Rating	-value	0	7	22m
1	3	-0.60			0.840
3	1	-1.60			0.744
5	4	0.07			0.905
7	4	-0.39		0.860	
8	3	0.75			0.970
9	1	-1.59			0.745
10	2	-1.02			0.800
11	2	-1.43			0.760
12	4	0.08			0.906
15	1	-1.97			0.708
18	4	0.30			0.927
19	2	-1.43			0.760
23	4	0.12			0.910
25	0	-9.04			0.027
33	1	1.58		1.050	
36	4	-0.08			0.890
38	1	-1.65			0.739
42	3	-0.92			0.809
59	4	0.02			0.900
70	4	-0.39			0.860
72	4	0.33			0.930
74	4	0.25			0.922
75	2	-1.12			0.790
78	0	-7.37			0.188
80	3	0.66			0.962
81	4	0.06			0.904
83	4	0.33			0.930
85	2	-1.33			0.770
86	0	-2.16		0.690	
87	2	-1.06			0.796
89	4	0.05			0.903
90	4	0.11			0.909
92	4	0.07			0.905
96	4	-0.02			0.896
97	2	-1.33			0.770
102	4	-0.39			0.860
105	2	-1.10			0.792
107	4	0.27			0.924
111	3	-0.98			0.804
113	4	0.02			0.900
118	4	0.23			0.920
119	1	-1.85			0.720
120	4	0.02			0.900
122	2	-1.37			0.766
127	4	-0.20			0.879
128	2	1.16			1.010
129	4	0.22			0.919
133	4	-0.08			0.890
134	4	0.12			0.910
138	2	-1.26			0.777
140	4	0.21			0.918
141	4	0.49			0.945
142	4	0.12			0.910
143	1	-1.76			0.728
145	4	0.33			0.930
146	3	0.62			0.958
151	2	1.27		1.020	
155	4	-0.21			0.877
158	4	-0.24			0.875
179	3	0.56			0.952
180	4	0.11			0.909
185	4	-0.49			0.851
190	3	0.92			0.987
191	4	-0.03		0.895	
196	4	0.06		0.904	
203	4	0.37			0.934
206	4	0.12		0.910	
208	1	-1.85		0.720	
211	4	0.12			0.910
212	0	2.10			1.100
215	1	-1.85			0.720
220	4	0.33			0.930
221	4	-0.08	0.890		
224	4	0.44			0.940
231	0	-7.97			0.130
234	4	-0.16			0.883

Table 17. *Statistical summary of reported data for standard reference water sample P-23 (low ionic strength)*

Definition of analytical methods, abbreviations, and symbols

Analytical methods

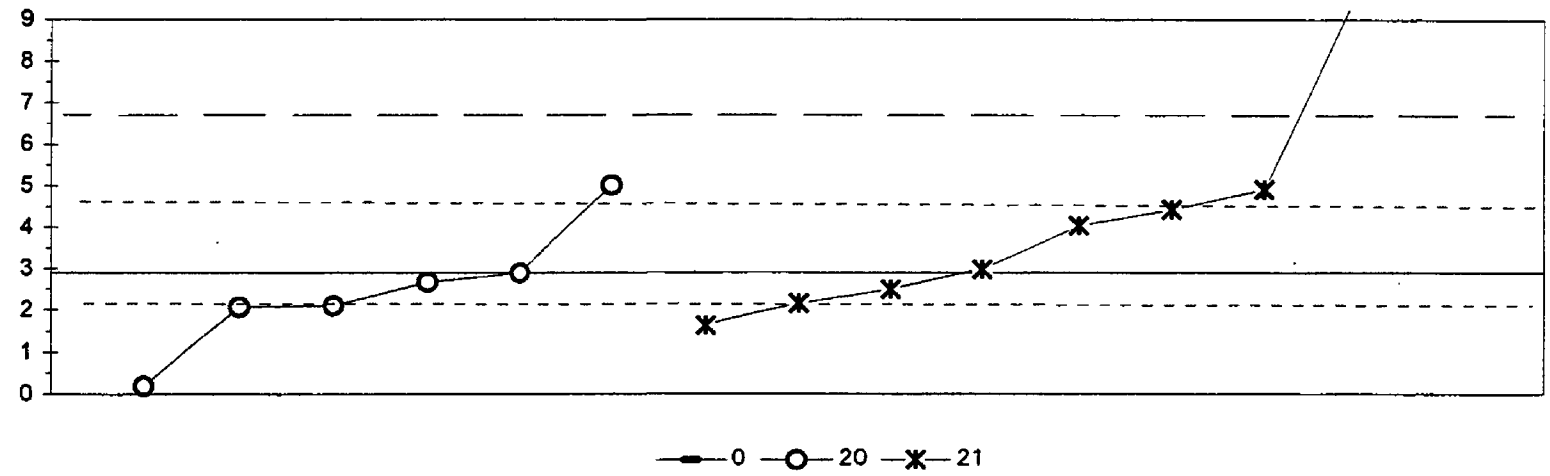
0	Other/Not reported	
1	AA: direct, air	= atomic absorption: direct,air
2	AA: direct, N2O	= atomic absorption: direct,nitrous oxide
3	AA: graphite furnace	= atomic absorption: graphite furnace
4	ICP	= inductively coupled plasma
5	DCP	= direct current plasma
6	ICP/MS	= mass spectrometry/inductively coupled plasma
7	IC	= ion chromatography
12	Flame emission	= flame emission
20	Titrate: color	= titration: colorimetric [color reagent specified]
21	Titrate: electro	= titration: electrometric
22	Color:	= colorimetric [color raagent specified]
40	Ion electrode	= ion selective electrode
41	Electro	= electrometric: [type meter specified]
50	Gravimetric	= gravimetric: [precipitate specified]
51	Turbidimetric	= turbidimetric: [precipitate specified]

Abbreviations and symbols

N =	number of samples
St dev =	traditional standard deviation
MPV =	most probable value
F-pseudosigma =	nonparametric statistic deviation
Hu =	upper hinge value
Hl =	lower hinge value
mg/L =	milligrams per liter
µS/cm =	microsiemens per centimeter at 25 C
Lab =	laboratory code number
NR =	not rated, less than value reported
< =	less than

Table 17. *Statistical summary of reportad data for standard reference water sampla P-23 (low ionic strength)--Continued*

Acidity as CaCO3 **mg/L**



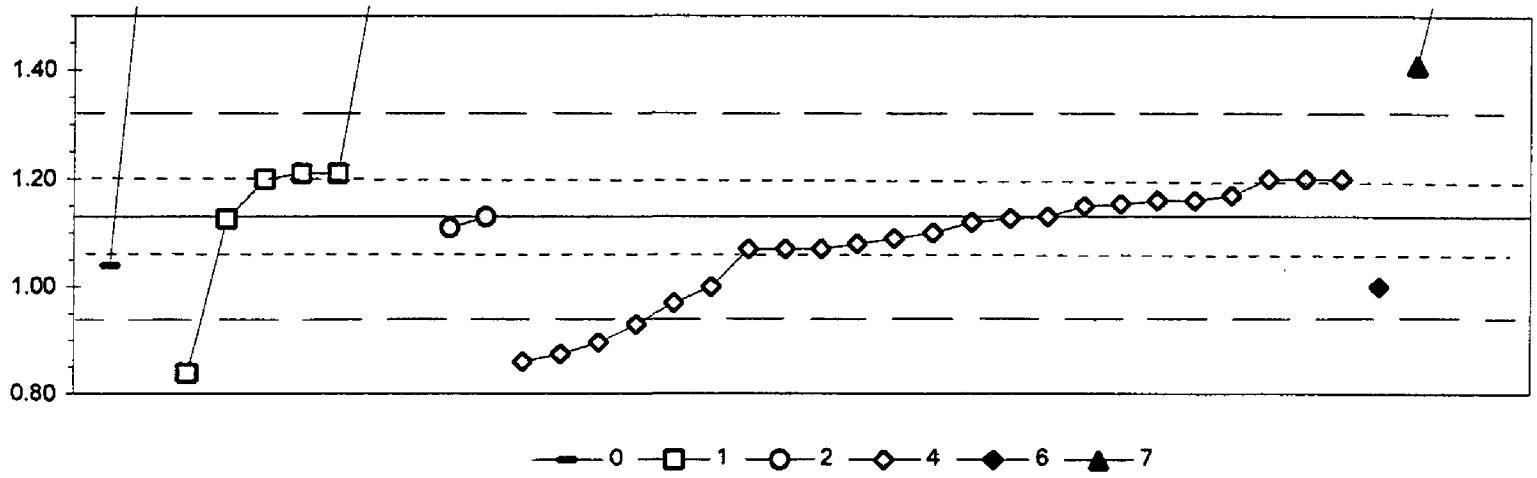
0. Other			
20. Titrate: colorimetric			
21. Titrate: electrometric			
N =	0	6	9
Minimum =		0.20	1.65
Maximum =		5.02	10.50
Median =			4.04
F-pseudosigma =			1.79

MPV =	2.90
F-pseudosigma =	1.89
N =	15
Hu =	4.68
Hl =	2.13

Lab	Rating	Z-value	0	20	21
1	3	0.81			4.43
3	NR			< 10	
8	NR			< 5	
11	NR		< 1		
15	NR				< 2
18	NR			< 1	
25	0	3.56			9.62
32	4	-0.44		2.07	
38	2	1.07			4.92
39	NR				< 5
74	4	0.05			3.00
78	NR				< 10
81	4	-0.42		2.10	
89	4	-0.40			2.15
92	3	-0.66			1.65
105	2	-1.43		0.20	
127	3	0.60			4.04
136	0	4.02			10.50
141	2	1.12		5.02	
145	4	-0.21			2.50
146	NR				< 10
203	4	-0.12		2.68	
215	NR			< 5	
224	4	0.00		2.90	

Table 17. *Statistical summary of reported data for standard reference watar sample P-23 (low ionic strength)--Continuad*

Ca (Calcium) mg/L



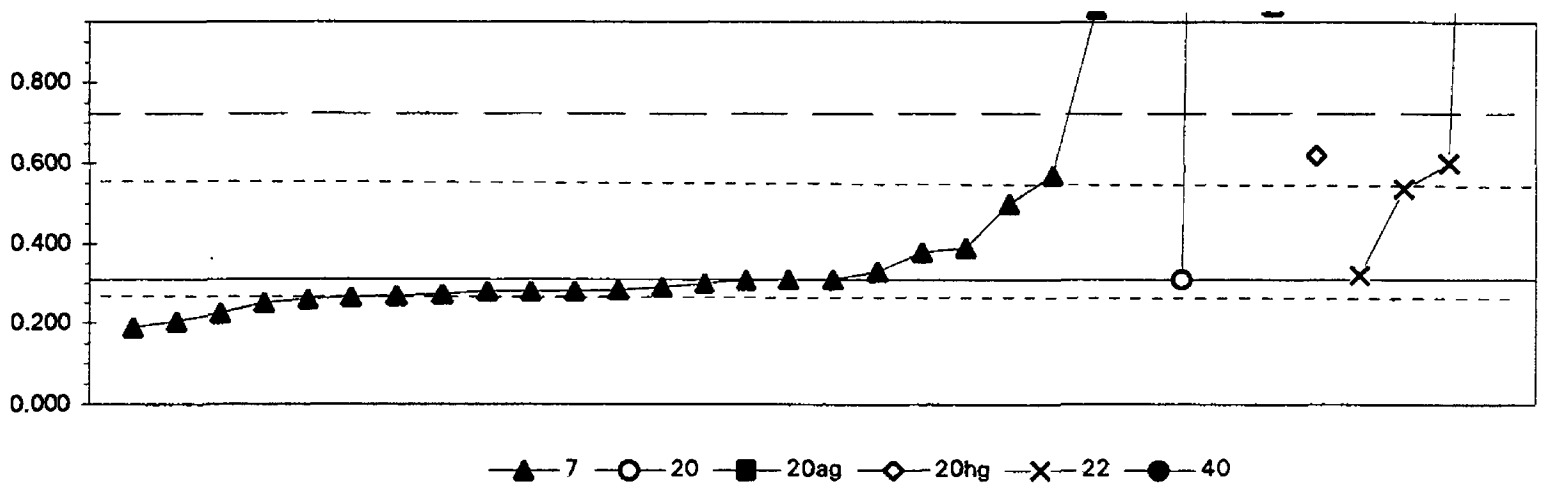
0. Other			4. ICP				
1. AA: direct air			6. ICP/MS				
2. AA: direct nitrous oxide			7. Ion chromatography				
N =	2	7	2	23	1	3	
Minimum =	1.04	0.84	1.11	0.86	1.00	1.41	
Maximum =	1.75	1.90	1.13	1.20		2.37	
Median =		1.21		1.10			
F-pseudosigma =		0.18		0.09			

MPV = 1.13
F-pseudosigma = 0.10
N = 38
Hu = 1.20
HI = 1.07

Lab	Rating	Z-value	0	1	2	4	6	7
1	4	0.33				1.16		
3	0	-2.41				0.90		
5	4	-0.40				1.09		
8	2	-1.33					1.00	
11	3	-0.61				1.07		
15	4	-0.50				1.08		
18	3	0.74				1.20		
23	NR				< 2			
25	0	-2.64				0.87		
33	3	-0.92	1.04					
38	4	-0.19			1.11			
74	3	0.74				1.20		
78	0	8.01		1.90				
80	0			< 0.6				
81	4	0.43				1.17		
89	0	-3.00		0.84				
94	3	0.74				1.20		
101	3	0.85		1.21				
102	0	-2.79				0.86		
105	4	0.22				1.15		
110	3	0.74		1.20				
111	4	0.02			1.13			
113	0	4.89		1.60				
116	0	-2.06				0.93		
127	3	-0.61				1.07		
134	4	0.33				1.16		
136	3	-0.61				1.07		
141	1	-1.64				0.97		
145	4	0.02				1.13		
146	4	-0.09				1.12		
155	0	6.45	1.75					
158	0	12.88						2.37
180	4	-0.30				1.10		
185	4	-0.03		1.13				
190	0	2.92						1.41
196	3	0.85		1.21				
209	4	-0.02				1.13		
215	2	-1.33				1.00		
224	4	0.26				1.15		
228	0	5.83						1.69

Table 17. *Statistical summary of reported data for standard reference water sample P-23 (low ionic strength)--Continuad*

Cl (Chloride) mg/L



7. Ion chromatography
20. Titrate: colorimetric
20ag: Titrate: silver
20hg: Titrate: mercury
22. Colorimetric
40. Ion selective electrode

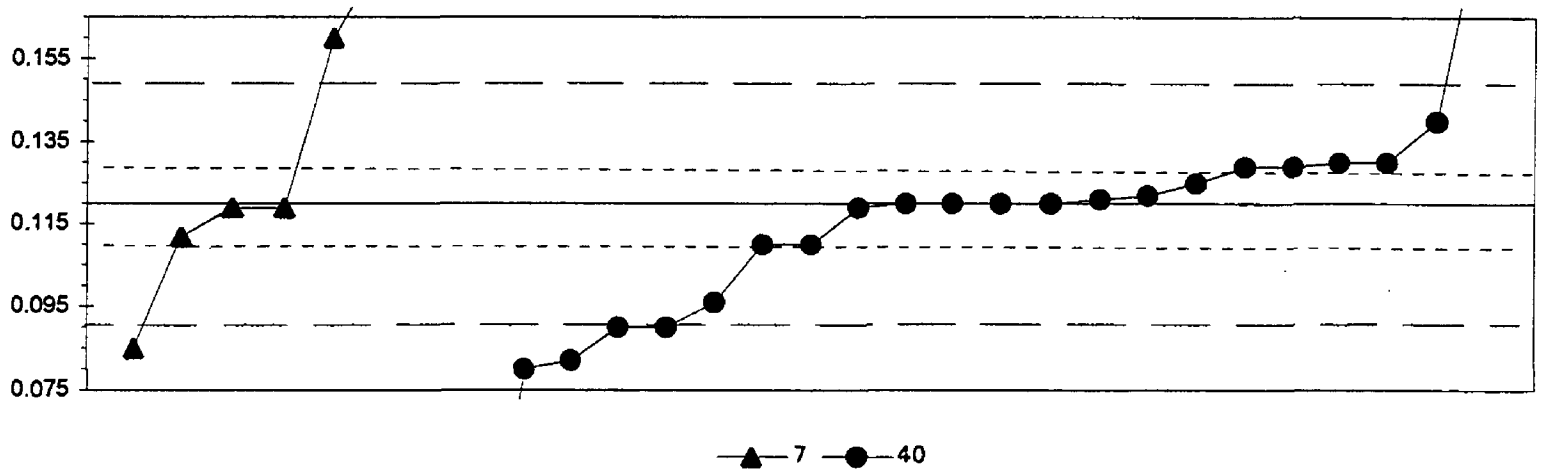
	7	20	20ag	20hg	22	40
N =	24	2	1	1	4	
Minimum =	0.190	0.310	0.990	0.620	0.320	
Maximum =	1.000	7.100			3.500	
Median =	0.287					
F-pseudosigma =	0.066					

MPV = 0.310
F-pseudosigma = 0.205
N = 32
Hu = 0.553
HI = 0.276

Lab	Rating	Z-value	7	20	20ag	20hg	22	40
1	4	-0.15	0.280					
3	NR						< 0.5	
5	4	0.34	0.380					
7	4	0.00	0.310					
8	4	-0.05	0.300					
11	2	1.41					0.600	
15	NR		< 1					
18	2	1.10					0.536	
23	NR							< 1
25	NR		< 2					
32	4	-0.20	0.268					
33	4	-0.29	0.250					
39	0	3.36	1.000					
59	NR		< 1					
74	4	0.39	0.390					
78	0	15.54					3.500	
80	NR				< 1.2			
81	0	33.07		7.100				
89	1	1.51				0.620		
92	4	0.00		0.310				
94	4	0.05					0.320	
101	0	3.31			0.990			
102	NR						< 1	
105	4	-0.24	0.260					
107	NR				< 3			
110	3	-0.51	0.205					
111	2	1.27	0.570					
113	0	3.28	0.983					
116	3	0.93	0.500					
127	4	0.00	0.309					
134	4	-0.19	0.272					
136	4	0.10	0.330					
141	NR						< 1	
145	4	-0.15	0.280					
146	NR			< 1				
158	3	-0.58	0.190					
180	NR						< 0.25	
190	4	-0.13	0.283					
196	4	-0.09	0.291					
197	4	-0.41	0.225					
203	NR				< 1			
209	4	-0.22	0.265					
215	NR			< 1				
224	4	0.00	0.310					
228	4	-0.14	0.281					

Table 17. *Statistical summary of reported data for standard reference water sample P-23 (low ionic strength)--Continued*

F (Fluoride) mg/L



7. Ion chromatography
40. Ion selective electrode

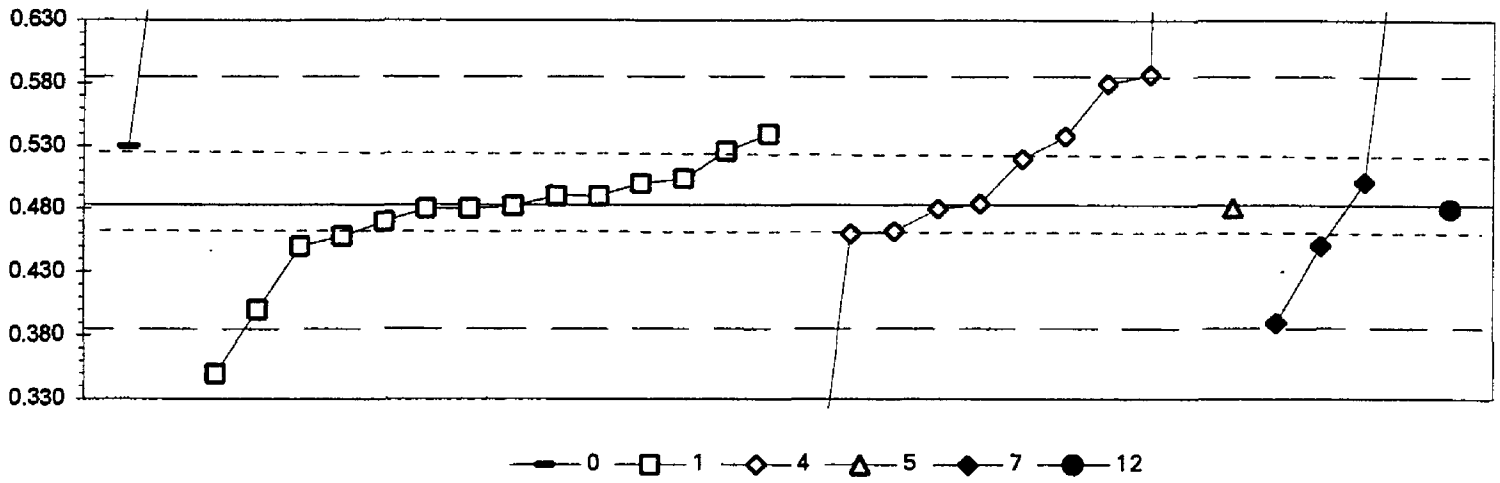
	7	40
N =	7	22
Minimum =	0.085	0.012
Maximum =	0.220	0.200
Median =	0.119	0.120
F-pseudosigma =	0.040	0.024

MPV = 0.120
F-pseudosigma = 0.014
N = 29
Hu = 0.129
HI = 0.110

Lab	Rating	Z-value	7	40
1	4	0.00		0.120
3	NR			< 0.1
7	0	4.26	0.180	
8	0	5.68		0.200
11	3	-0.71		0.110
15	4	0.07		0.121
18	0	-2.70		0.082
23	2	1.42		0.140
25	1	-1.70		0.096
32	4	-0.07	0.119	
39	0	-2.13		0.090
74	4	0.00		0.120
78	0	-2.13		0.090
81	3	0.71		0.130
89	4	-0.07		0.119
94	0	-2.84		0.080
105	NR		< 0.2	
107	4	0.00		0.120
110	4	0.00		0.120
113	4	0.14		0.122
127	4	-0.07	0.119	
134	3	0.71		0.130
141	3	0.64		0.129
145	0	2.84	0.160	
146	3	0.64		0.129
180	0	-7.67		0.012
190	4	0.36		0.125
196	0	-2.49	0.085	
197	3	-0.57	0.112	
215	3	-0.71		0.110
224	0	7.10	0.220	

Table 17. *Statistical summary of reported data for standard raference water sampla P-23 (low ionic strength)--Continued*

K (Potassium) mg/L



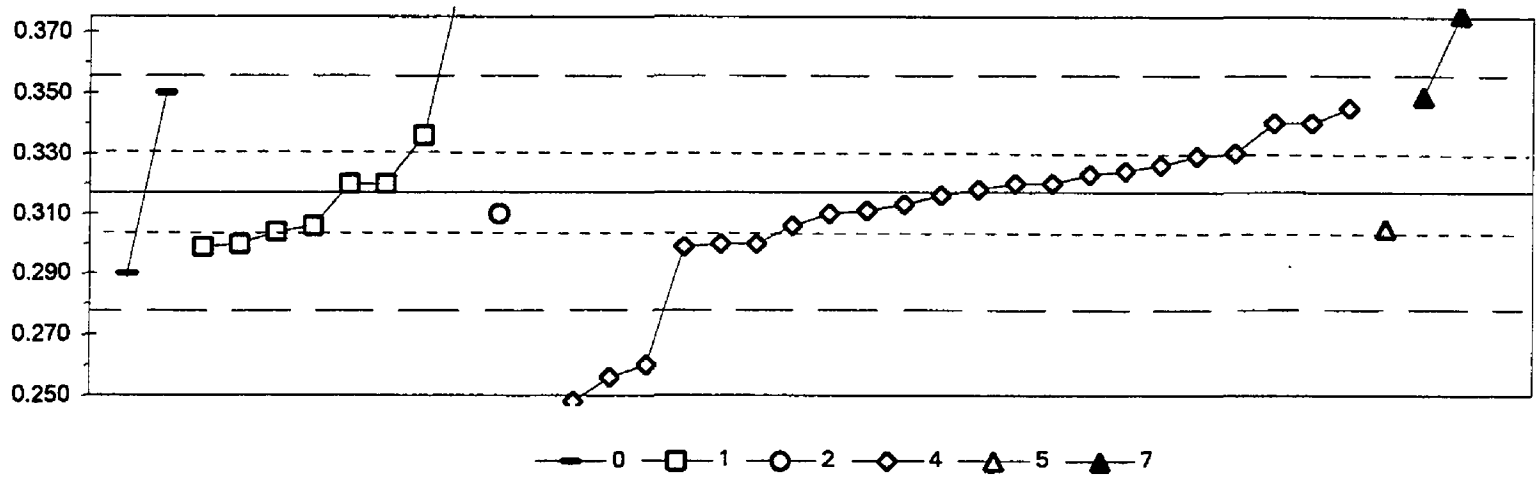
0. Other			5. DCP				
1. AA: direct air			7. Ion chromatography				
4. ICP			12. Flame emission				
N =	2	14	10	1	4	1	
Minimum =	0.530	0.350	0.200	0.481	0.390	0.480	
Maximum =	0.800	0.540	2.300		0.780		
Median =		0.481	0.502				
F-pseudosigma =		0.031	0.087				

MPV = 0.483
F-pseudosigma = 0.050
N = 32
Hu = 0.528
Hl = 0.461

Lab	Rating	-value	0	1	4	5	7	12
1	4	0.14		0.490				
3	4	-0.26		0.470				
8	0	6.38	0.800					
11	2	1.11			0.538			
15	0	2.09			0.587			
18	NR				< 1			
23	3	0.95	0.530					
25	NR				< 1.21			
33	4	-0.04				0.481		
38	4	-0.06		0.480				
74	2	1.15		0.540				
78	1	-1.67		0.400				
80	NR			< 1.2				
81	4	-0.42			0.462			
89	4	-0.50		0.458				
94	NR				< 1			
101	4	0.34		0.500				
102	0	-5.70			0.200			
105	1	1.95			0.580			
110	3	-0.66		0.450				
111	4	0.14		0.490				
113	0	-2.68		0.350				
116	1	-1.87					0.390	
127	3	0.87		0.526				
134	4	-0.06		0.480				
136	4	-0.46			0.460			
141	3	0.74			0.520			
145	4	-0.06			0.480			
146	NR				< 1			
158	0	5.98					0.780	
180	NR				< 1.18			
185	4	-0.02		0.482				
190	4	0.36					0.501	
196	4	0.42		0.504				
209	4	-0.06						0.480
215	0	36.58			2.300			
224	4	0.02			0.484			
228	3	-0.64					0.451	

Table 17. *Statistical summary of reported data for standard referanca water sample P-23 (low ionic strangth)--Continued*

Mg (Magnesium) mg/L



0. Other
1. AA: direct air
2. AA: direct nitrous oxide
4. ICP
5. DCP
7. Ion chromatography

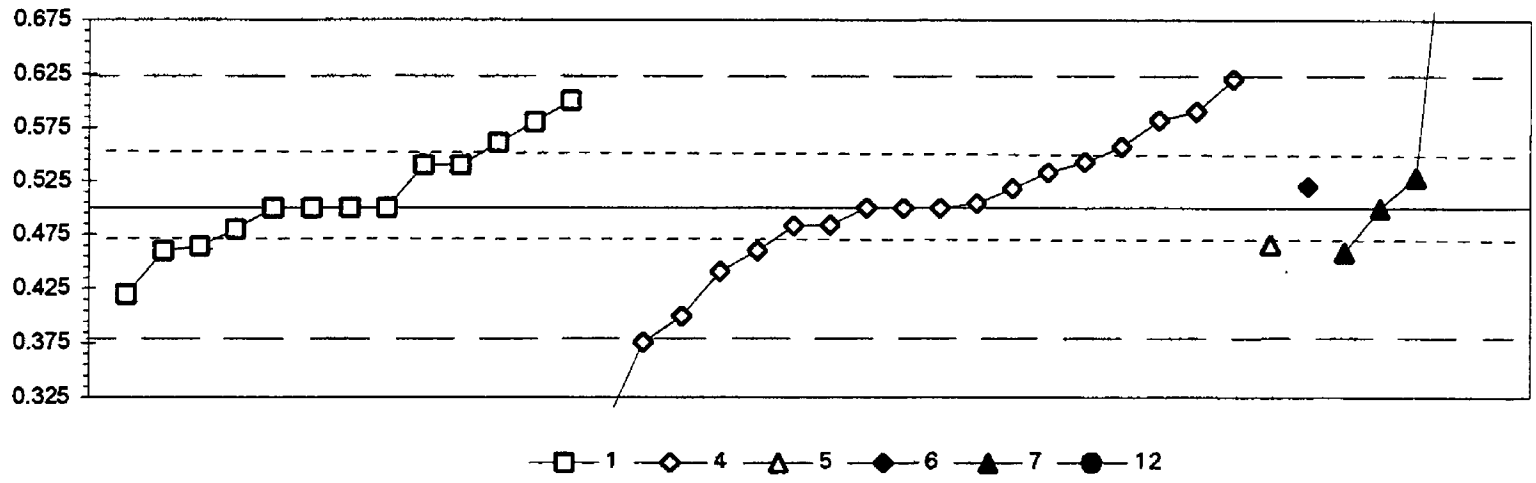
MPV = 0.317
F-pseudosigma = 0.019
N = 38
Hu = 0.330
Hl = 0.304

	N =	2	8	1	23	1	3
	Minimum =	0.290	0.299	0.310	0.220	0.305	0.349
	Maximum =	0.350	0.390		0.345		0.500
	Median =		0.313		0.316		
	F-pseudosigma =		0.019		0.019		

Lab	Rating	Z-value	0	1	2	4	5	7
1	4	-0.36				0.310		
3	0	-3.16				0.256		
5	3	-0.93				0.299		
8	2	-1.40	0.290					
11	4	0.47				0.326		
15	4	-0.31				0.311		
18	3	-0.88				0.300		
23	NR			< 0.5				
25	0	-3.58				0.248		
33	3	-0.62					0.305	
38	3	-0.67		0.304				
74	2	1.19				0.340		
78	3	-0.88		0.300				
80	NR			< 0.4				
81	3	0.62				0.329		
89	3	-0.93		0.299				
94	3	-0.88				0.300		
101	4	0.16		0.320				
102	2	1.19				0.340		
105	4	0.16				0.320		
110	4	0.16		0.320				
111	4	-0.36			0.310			
113	0	3.79		0.390				
116	0	-2.96				0.260		
127	4	-0.05				0.316		
134	4	0.36				0.324		
136	0	-5.03				0.220		
141	4	-0.21				0.313		
145	4	0.16				0.320		
146	2	1.45				0.345		
155	1	1.72	0.350					
158	0	9.49						0.500
180	4	0.31				0.323		
185	3	-0.57		0.306				
190	0	3.06						0.376
196	3	0.99		0.336				
209	4	0.05				0.318		
215	3	0.67				0.330		
224	3	-0.57				0.306		
228	1	1.66						0.349

Table 17. *Statistical summary of raportad data for standard referanca watar sample P-23 (low ionic strangth)--Continued*

Na (Sodium) mg/L

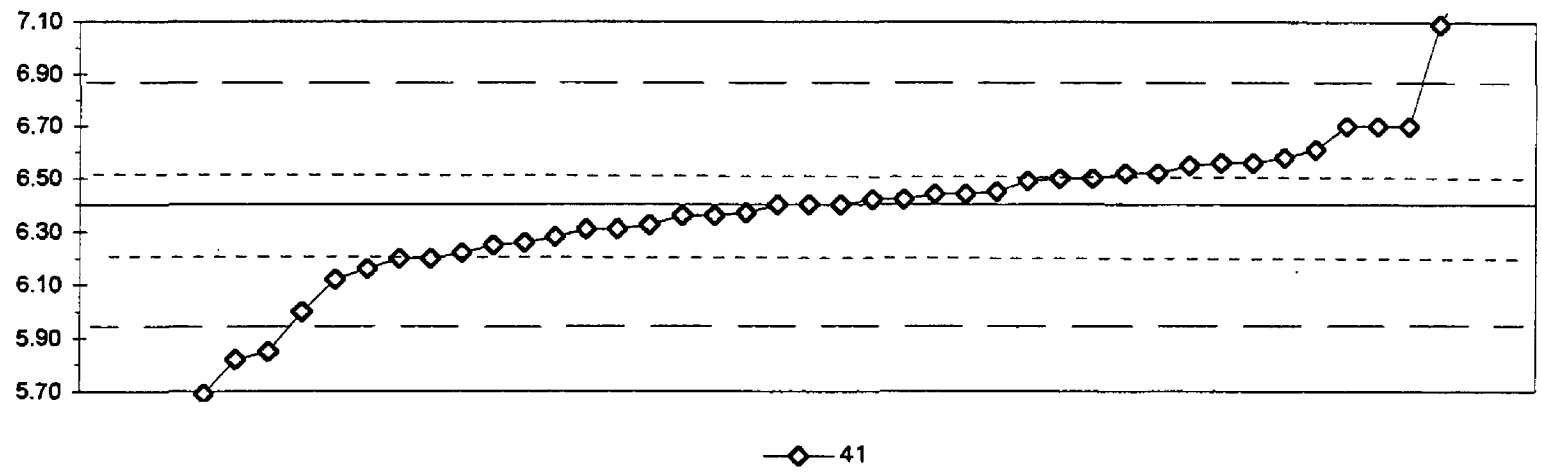


1. AA: direct air
4. ICP
5. DCP
6. ICP/MS
7. Ion chromatography
12. Flame emission

MPV = 0.500
F-pseudosigma = 0.057
N = 38
Hu = 0.543
HI = 0.466

			1	4	5	6	7	12
		N =	13	18	1	1	4	1
		Minimum =	0.420	0.300	0.466	0.520	0.459	1.470
		Maximum =	0.600	0.620			0.860	
		Median =	0.500	0.500				
		F-pseudosigma =	0.044	0.062				
Lab	Rating	Z-value	1	4	5	6	7	12
1	4	0.00	0.500					
3	3	-0.70	0.460					
5	2	1.44		0.582				
8	4	0.35				0.520		
11	4	0.32		0.518				
15	3	1.00		0.557				
18	4	0.00		0.500				
23	2	1.40	0.580					
25	0	-2.17		0.376				
33	3	-0.60			0.466			
38	4	-0.35	0.480					
74	1	1.58		0.590				
78	4	0.00	0.500					
80	NR		< 0.7					
81	2	-1.03		0.441				
89	3	-0.63	0.464					
94	4	0.00		0.500				
101	4	0.00	0.500					
102	0	-3.50		0.300				
105	4	0.07		0.504				
110	2	-1.40	0.420					
111	4	0.00	0.500					
113	1	1.75	0.600					
116	4	0.00					0.500	
127	3	0.58		0.533				
134	3	0.70	0.540					
136	1	-1.75		0.400				
141	4	-0.30		0.483				
145	3	-0.70		0.460				
146	4	-0.28		0.484				
158	0	6.31					0.860	
180	4	0.00		0.500				
185	2	1.07	0.561					
190	3	0.51					0.529	
196	3	0.70	0.540					
209	0	16.99						1.470
215	0	2.10		0.620				
224	3	0.75		0.543				
228	3	-0.72					0.459	

Table 17. *Statistical summary of reported data for standard reference water sampla P-23 (low ionic strength)--Continuad*



41. Direct reading

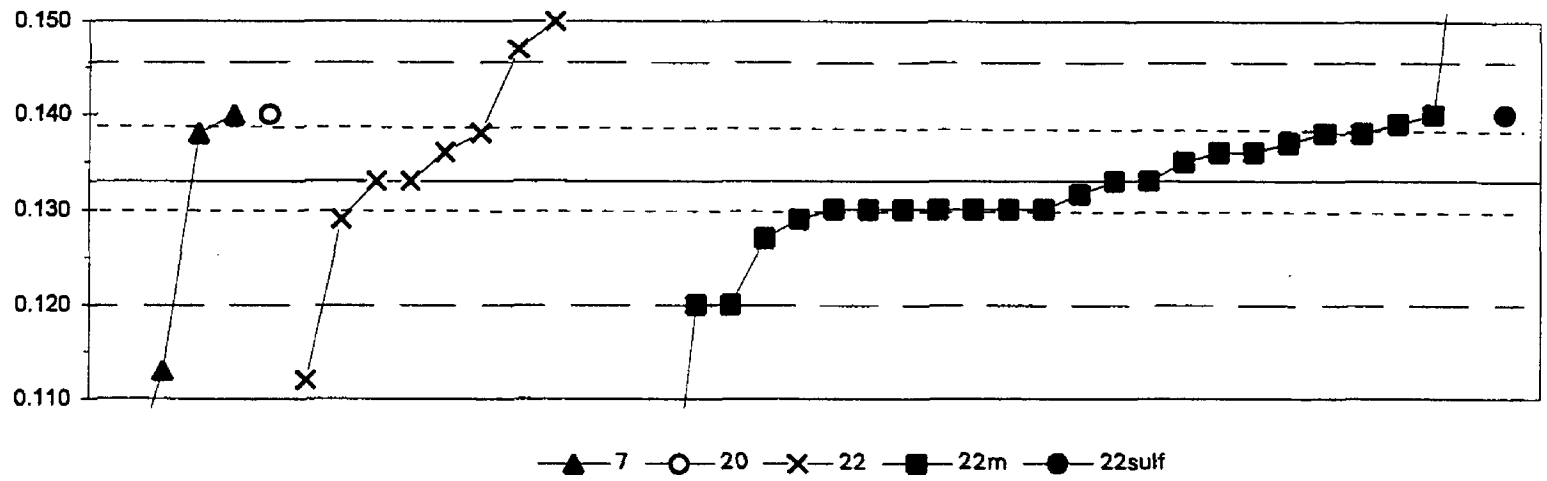
N =	45
Minimum =	5.20
Maximum =	7.63
Median =	6.40
F-pseudosigma =	0.23

MPV =	6.40
F-pseudosigma =	0.23
N =	45
Hu =	6.52
Hl =	6.21

Lab	Rating	Z-value	41
1	3	0.78	6.58
3	4	0.39	6.49
5	2	1.31	6.70
7	4	0.22	6.45
8	3	-0.65	6.25
11	3	0.70	6.56
15	0	-4.96	5.26
18	4	0.00	6.40
23	3	0.91	6.61
33	3	-0.52	6.28
38	2	1.31	6.70
39	1	-1.74	6.00
59	2	-1.04	6.16
74	4	0.17	6.44
78	4	0.17	6.44
80	2	-1.22	6.12
81	4	0.44	6.50
89	3	0.52	6.52
92	4	-0.17	6.36
94	4	0.09	6.42
101	0	-5.22	5.20
105	3	-0.78	6.22
107	3	0.70	6.56
110	4	-0.32	6.33
111	0	3.00	7.09
113	0	5.35	7.63
127	4	-0.17	6.36
134	4	-0.13	6.37
136	0	-2.52	5.82
141	3	-0.87	6.20
143	4	0.00	6.40
145	3	0.65	6.55
146	0	-4.09	5.46
155	3	-0.87	6.20
158	0	-3.09	5.69
180	4	0.44	6.50
190	0	-2.39	5.85
196	0	3.96	7.31
197	4	-0.39	6.31
203	2	1.31	6.70
204	4	0.09	6.42
209	3	0.52	6.52
215	4	0.00	6.40
224	4	-0.39	6.31
228	3	-0.61	6.26

Table 17. *Statistical summary of reported data for standard reference water sample P-23 (low ionic strength)--Continued*

PO4 as P (Orthophosphate) mg/L



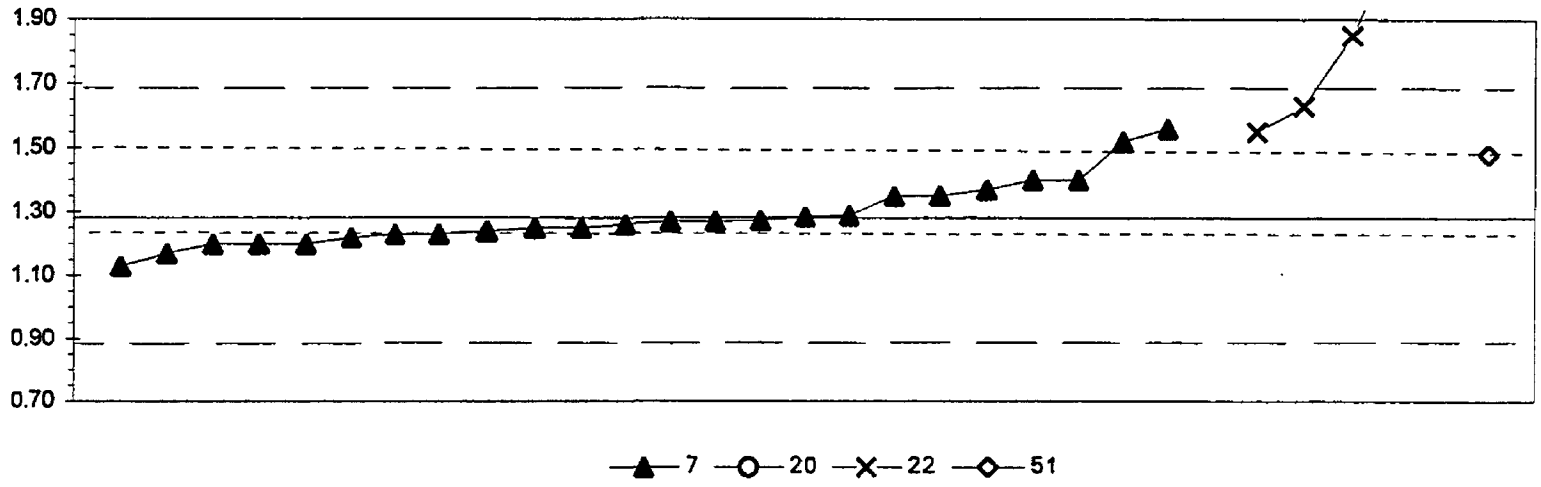
7. Ion chromatography				22m. Color: phosphomolybdate		
20. Titrate: colorimetric				22sulf. Color: sulfuric acid		
22. Colorimetric						
N =	4	1	9	25	1	
Minimum =	0.100	0.140	0.112	0.004	0.140	
Maximum =	0.140		0.170	0.170		
Median =			0.136	0.130		
F-pseudosigma =			0.010	0.004		

MPV = 0.133
F-pseudosigma = 0.006
N = 40
Hu = 0.138
HI = 0.130

Lab	Rating	Z-value	7	20	22	22m	22sulf
1	2	1.11					0.140
3	4	0.00			0.133		
5	4	-0.48				0.130	
7	NR		< 0.34				
8	0	5.87				0.170	
11	0	2.70			0.150		
15	0	2.22			0.147		
18	4	0.32				0.135	
23	4	-0.48				0.130	
25	0	-20.47				0.004	
32	0	-3.17	0.113				
33	2	1.11	0.140				
38	3	-0.63				0.129	
39	0	-2.06				0.120	
59	0	-5.24	0.100				
74	3	-0.63			0.129		
78	0	-7.46				0.086	
80	4	-0.48				0.130	
81	0	-3.33			0.112		
89	3	0.79				0.138	
92	4	0.00				0.133	
102	0	5.87			0.170		
105	4	0.48			0.136		
107	3	0.79				0.138	
111	4	0.48				0.136	
113	4	0.00				0.133	
127	4	-0.48				0.130	
134	4	-0.48				0.130	
141	2	1.11		0.140			
143	4	-0.48				0.130	
145	2	1.11				0.140	
146	3	0.79			0.138		
155	4	-0.22				0.132	
180	3	0.63				0.137	
185	3	-0.95				0.127	
190	4	0.00			0.133		
196	3	0.79	0.138				
203	3	0.95				0.139	
204	4	0.48				0.136	
215	0	-2.06				0.120	
224	4	-0.48				0.130	

Table 17. *Statistical summary of reported data for standard reference water sample P-23 (low ionic strength)--Continued*

SO4 (Sulfate) mg/L



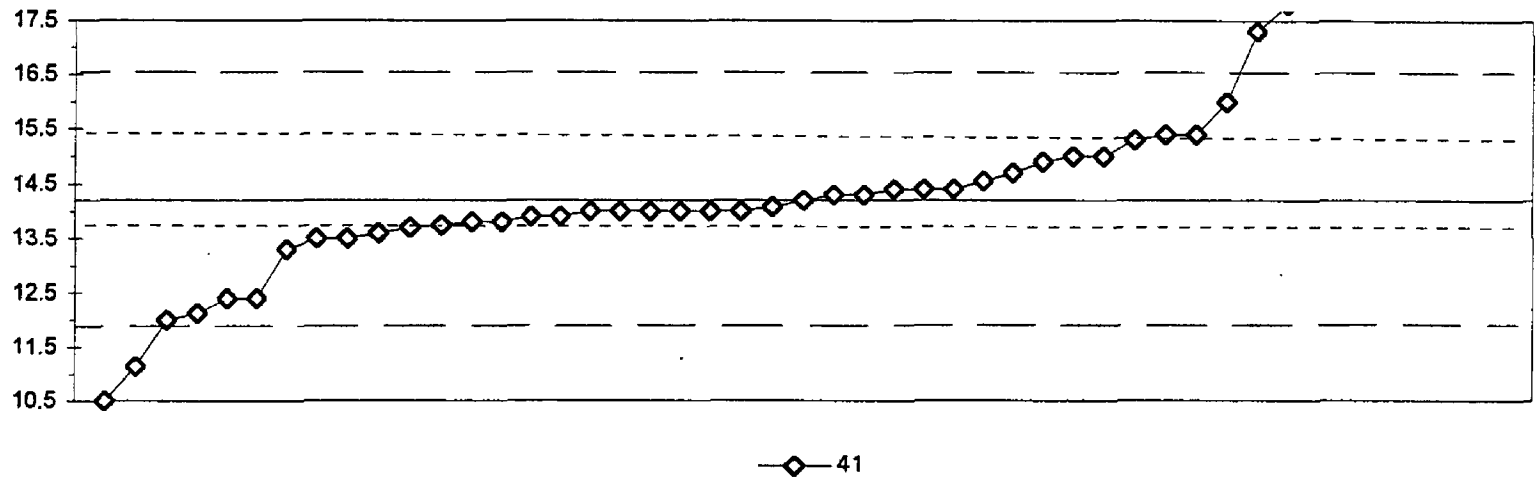
7. Ion chromatography		51. Turbidimetric	
20. Titrate: colorimetric			
22. Colorimetric			
N =	24	1	5	1
Minimum =	1.13	9.10	1.55	1.48
Maximum =	1.56		2.50	
Median =	1.27			
F-pseudosigma =	0.09			

MPV =	1.28
F-pseudosigma =	0.20
N =	31
Hu =	1.50
HI =	1.24

Lab	Rating	Z-value	7	20	22	51
1	4	-0.07	1.27			
3	NR		< 1			
5	2	1.20	1.52			
7	4	-0.43	1.20			
8	3	0.59	1.40			
11	NR					< 1
15	3	-0.78	1.13			
18	2	1.35			1.55	
23	0	6.19			2.50	
25	NR		< 10			
32	4	-0.12	1.26			
33	4	-0.27	1.23			
59	4	-0.43	1.20			
74	4	0.34	1.35			
78	NR					< 10
80	0	39.79		9.10		
81	0	4.51			2.17	
89	0	2.88			1.85	
92	3	1.00				1.48
94	1	1.76			1.63	
102	NR				< 10	
105	4	-0.07	1.27			
110	4	-0.06	1.27			
111	4	-0.33	1.22			
113	NR		< 2			
116	4	-0.43	1.20			
127	4	-0.22	1.24			
134	4	0.02	1.29			
136	4	-0.17	1.25			
141	NR					< 10
145	4	0.34	1.35			
158	2	1.40	1.56			
180	NR				< 2.5	
190	4	-0.27	1.23			
196	3	0.59	1.40			
197	4	0.00	1.28			
203	NR				< 2	
209	4	-0.17	1.25			
215	NR					< 1
224	4	0.44	1.37			
228	3	-0.58	1.17			

Table 17. *Statistical summary of reported data for standard reference water sample P-23 (low ionic strength)--Continued*

Specific Conductance **µS/cm**



41. Direct reading

N =	47
Minimum =	10.5
Maximum =	434.0
Median =	14.2
F-pseudosigma =	1.2

MPV =	14.2
F-pseudosigma =	1.2
N =	47
Hu =	15.4
Hl =	13.8

Lab	Rating	Z-value	41
1	4	0.17	14.4
3	4	-0.17	14.0
5	0	3.07	17.8
7	3	-0.60	13.5
8	0	-3.16	10.5
11	0	358.42	434.0
15	0	2.65	17.3
18	4	-0.17	14.0
23	4	0.00	14.2
25	1	1.54	16.0
32	0	5.12	20.2
33	4	-0.34	13.8
38	3	0.60	14.9
39	3	0.68	15.0
59	4	-0.26	13.9
74	3	-0.51	13.6
78	1	-1.77	12.1
80	3	0.94	15.3
81	0	7.26	22.7
89	3	-0.60	13.5
94	4	-0.39	13.7
101	3	0.68	15.0
102	1	-1.88	12.0
105	2	1.02	15.4
107	4	0.09	14.3
110	4	-0.17	14.0
111	4	-0.26	13.9
113	4	0.17	14.4
127	4	-0.34	13.8
134	4	0.17	14.4
136	4	-0.17	14.0
141	4	0.43	14.7
143	4	-0.17	14.0
145	2	1.02	15.4
146	1	-1.54	12.4
155	4	0.30	14.6
158	4	-0.10	14.1
180	0	4.95	20.0
185	3	-0.77	13.3
190	4	0.09	14.3
196	0	107.15	139.7
197	0	-2.60	11.2
203	0	38.25	59.0
204	0	106.55	139.0
215	1	-1.54	12.4
224	4	-0.17	14.0
228	4	-0.43	13.7

Table 18. *Statistical summary of reported data for standard reference water sample Hg-19 (mercury)*

Definition of analytical methods, abbreviations, and symbols

Analytical methods

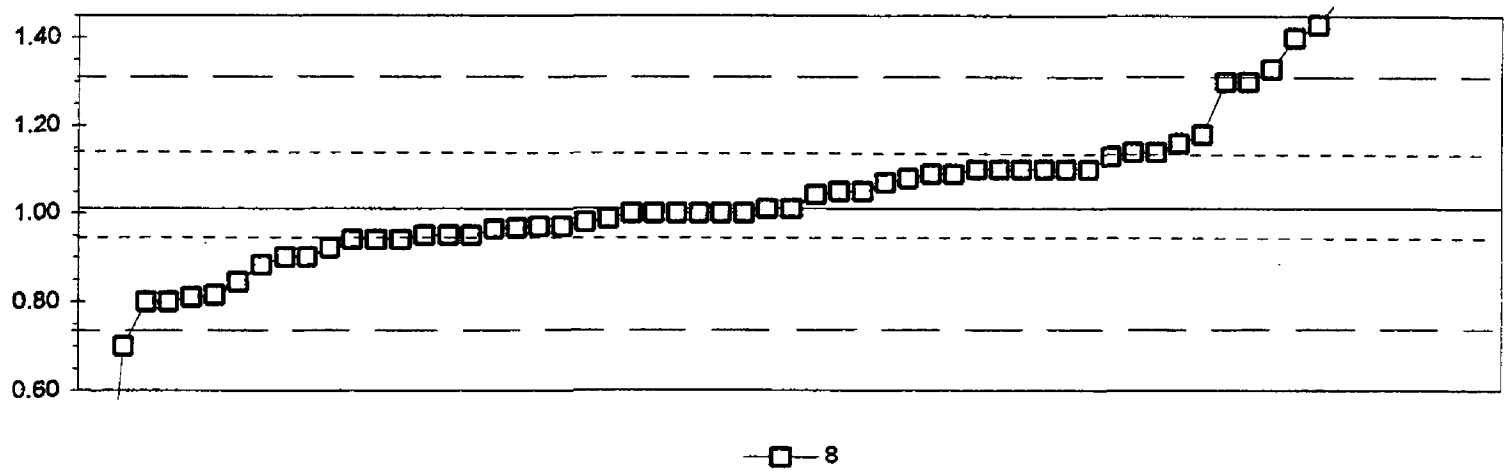
0. Other/Not reported
8. AA: cold = atomic absorption: cold vapor

Abbreviations and symbols

N =	number of samples
St dev =	traditional standard deviation
MPV =	most probable value
F-pseudosigma =	nonparametric statistic deviation
Hu =	upper hinge value
Hl =	lower hinge value
µg/L =	micrograms per liter
Lab =	laboratory code number
NR =	not rated, less than value reported
< =	less than

Table 18. *Statistical summary of reported data for standard referanca weter sample Hg-19 (mercury)--Continued*

Hg (Mercury) µg/L



8. AA: cold vapor

N =	61
Minimum =	0.15
Maximum =	11.20
Median =	1.01
F-pseudosigma =	0.14

MPV =	1.01
F-pseudosigma =	0.14
N =	61
Hu =	1.14
Hl =	0.95

Lab	Rating	Z-value	8
1	4	-0.44	0.95
3	2	1.09	1.16
7	0	74.30	11.20
8	3	0.66	1.10
11	4	0.44	1.07
12	3	0.66	1.10
13	3	0.66	1.10
15	4	0.29	1.05
16	0	-2.26	0.70
18	4	-0.07	1.00
24	0	2.11	1.30
32	4	0.00	1.01
34	4	-0.32	0.97
36	2	-1.42	0.82
39	4	-0.07	1.00
42	4	-0.07	1.00
59	3	0.95	1.14
69	4	-0.29	0.97
70	3	-0.51	0.94
74	3	0.88	1.13
75	4	-0.29	0.97
76	3	0.58	1.09
78	4	0.29	1.05
79	0	20.34	3.80
81	3	0.66	1.10
86	2	-1.46	0.81
87	1	-1.53	0.80
89	2	-1.21	0.84
92	0	-6.27	0.15
96	3	-0.80	0.90
97	3	0.51	1.08
105	3	0.95	1.14
109	4	-0.44	0.95
113	0	2.11	1.30
114	0	6.85	1.95
118	0	5.03	1.70
119	3	-0.80	0.90
127	4	0.00	1.01
128	3	0.66	1.10
133	4	0.23	1.04
134	4	-0.22	0.98
138	4	-0.07	1.00
141	4	-0.44	0.95
142	4	-0.34	0.96
145	3	-0.93	0.88
146	3	0.58	1.09
179	1	-1.53	0.80
182	0	4.01	1.56
194	0	4.30	1.60
196	3	0.66	1.10

Lab	Rating	Z-value	8
198	2	1.24	1.18
204	0	2.33	1.33
211	0	3.57	1.50
212	4	-0.07	1.00
215	0	2.84	1.40
219	4	-0.16	0.99
220	3	-0.51	0.94
221	0	3.06	1.43
230	3	-0.51	0.94
231	4	-0.07	1.00
234	3	-0.65	0.92

Table 19. *--Most probable velues for constituents and properties in standard reference samples distributed in October 1994*

[MPV, most probable value; ug/L, microgram per liter; mg/L, milligram per liter; uS/cm, microsiemen per centimeter at 25 degrees Celsius]

T-131 (trace constituents)

Analyte	MPV	F-pseudosigma	Analyte	MPV	F-pseudosigma
Ag	1.26 µg/L	0.24	Li	17.0 µg/L	1.5
Al	132 µg/L	20	Mg	8.00 mg/L	0.28
As	56.6 µg/L	5.4	Mn	37.8 µg/L	3.0
B	141 µg/L	12	Mo	112 µg/L	10
Ba	507 µg/L	22	Na	21.4 mg/L	0.8
Be	12.2 µg/L	0.8	Ni	56.3 µg/L	4.7
Ca	30.6 mg/L	1.2	Pb	18.1 µg/L	2.7
Cd	6.10 µg/L	0.47	Sb	56.2 µg/L	6.7
Co	24.6 µg/L	1.9	Se	11.2 µg/L	2.0
Cr	18.6 µg/L	2.1	SiO2	5.80 mg/L	0.90
Cu	20.2 µg/L	2.0	Sr	295 µg/L	14
Fe	90.7 µg/L	8.9	V	34.2 µg/L	3.2
K	2.39 mg/L	0.15	Zn	72.0 µg/L	4.4

T-133 (trace constituents)

Analyte	MPV	F-pseudosigma	Analyte	MPV	F-pseudosigma
Ag	7.44 µg/L	0.89	Li	51.0 µg/L	3.5
Al	52.1 µg/L	8.1	Mg	5.82 mg/L	0.21
As	27.1 µg/L	3.3	Mn	121 µg/L	7
B	297 µg/L	16	Mo	46.0 µg/L	4.2
Ba	148 µg/L	9	Na	29.4 mg/L	1.2
Be	35.0 µg/L	2.2	Ni	27.2 µg/L	3.1
Ca	7.04 mg/L	0.33	Pb	27.8 µg/L	2.7
Cd	23.0 µg/L	2.1	Sb	14.4 µg/L	2.4
Co	20.0 µg/L	1.5	Se	21.4 µg/L	3.7
Cr	38.0 µg/L	3.2	SiO2	10.1 mg/L	0.7
Cu	85.3 µg/L	4.5	Sr	123 µg/L	6
Fe	31.4 µg/L	6.7	V	13.0 µg/L	1.7
K	1.00 mg/L	0.09	Zn	53.0 µg/L	4.4

M-132 (major constituents)

Analyte	MPV	F-pseudosigma	Analyte	MPV	F-pseudosigma
Alkalinity	94.0 mg/L	2.4	Na	47.9 mg/L	2.1
B	30.4 mg/L	4.4	total P	0.026 mg/L	0.008
Ca	38.0 mg/L	1.7	pH	8.09	0.18
Cl	55.7 mg/L	1.3	SiO2	2.46 mg/L	0.24
DSRD	277 mg/L	13	SO4	60.0 mg/L	2.6
F	0.480 mg/L	0.039	Sp Cond	493 µS/cm	13
K	2.00 mg/L	0.13	Sr	248 µg/L	21
Mg	8.49 mg/L	0.33	V	2.00 µg/L	1.82

N-43 (nutrients)

Analyte	MPV	F-pseudosigma
NH3 as N	0.108 mg/L	0.025
NH3+OrgN as N	0.226 mg/L	0.072
NO3+NO2 as N	0.145 mg/L	0.009
total P as P	0.131 mg/L	0.013
PO4 as P	0.096 mg/L	0.008

N-44 (nutrients)

Analyte	MPV	F-pseudosigma
NH3 as N	0.900 mg/L	0.145
NH3+OrgN as N	1.24 mg/L	0.14
NO3+NO2 as N	0.800 mg/L	0.041
Total P as P	0.920 mg/L	0.031
PO4 as P	0.898 mg/L	0.096

P-23 (low ionic strength constituents)

Analyte	MPV	F-pseudosigma	Analyte	MPV	F-pseudosigma
Acidity	2.90 mg/L	1.89	Na	0.500 mg/L	0.057
Ca	1.13 mg/L	0.10	pH	6.40	0.23
Cl	0.310 mg/L	0.205	PO4 as P	0.133 mg/L	0.006
F	0.120 mg/L	0.014	SO4	1.28 mg/L	0.20
K	0.483 mg/L	0.05	Sp Cond	14.2 µS/cm	1.2
Mg	0.317 mg/L	0.019			

Hg-19 (mercury)

Analyte	MPV	F-pseudosigma
Hg	1.01 µg/L	0.14