

REPORT OF
ANALYTICAL EVALUATION PROGRAM
STANDARD REFERENCE WATER SAMPLES NUMBERS 38 AND 39

U.S. GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
Lakewood, Colorado
December 1972

STANDARD REFERENCE WATER SAMPLES NUMBERS 38 AND 39

PURPOSE AND PLAN

As a means of providing an independent and objective evaluation of the water-quality data published by the U.S. Geological Survey and other cooperating laboratories, standard reference water samples are prepared and distributed at regular intervals. This report summarizes the analytical results submitted by 31 laboratories for Standard Reference Water Samples numbers 38 and 39 distributed on October 24, 1972.

The "Instructions for Analysis and Reporting Results" specified only that the pH and/or alkalinity determinations be performed first. No other required order of performing the determinations, nor restriction on methods and equipment was given. This program operates as a quality-control tool to enable each laboratory to detect deficiencies. Participating laboratories are identified in this report by a pre-assigned code number.

PREPARATION OF SAMPLES

Approximately 150 gallons of each sample was collected. The samples were acidified to a pH of about 1.5 with nitric acid and then the minor elements were added. Thymol was added to both samples and each sample was then filtered through a 0.45- μ m membrane filter into a large polyethylene drum. Each sample was mixed overnight with a motor-driven stirrer, pumped through an ultraviolet (2537A) sterilizer and packaged in sterile teflon bottles under ultraviolet radiation.

DETERMINATIONS

Aluminum (Al)
Iron (Fe)
Manganese (Mn)
Arsenic (As)
Beryllium (Be)*
Cadmium (Cd)

Chromium, total (Cr)
Copper (Cu)
Lead (Pb)
Mercury (Hg)
Zinc (Zn)

*Determined on Sample No. 38 only.

PARTICIPATING LABORATORIES

U.S. Geological Survey

ALABAMA, Tuscaloosa	NEW YORK, Albany
ALASKA, Anchorage	NORTH CAROLINA, Raleigh
ARKANSAS, Little Rock	OHIO, Columbus
CALIFORNIA, Menlo Park	OKLAHOMA, Oklahoma City
DISTRICT COLUMBIA, Washington	PENNSYLVANIA, Harrisburg
FLORIDA, Ocala	PUERTO RICO, San Juan
HAWAII, Honolulu	TEXAS, Austin
LOUISIANA, Baton Rouge	VIRGINIA, Charlottesville

Other

ARKANSAS, Little Rock: State dept. of Pollution Control & Ecol.
DELAWARE, Newark: State Geological Survey
GEORGIA, Athens: State University College of Agriculture
GEORGIA, Atlanta: State Water-Quality Control Board
KANSAS, Lawrence: State Geological Survey
MISSOURI, Columbia: State University
MONTANA, Butte: State Bureau of Mines and Geology
NEW ZEALAND, Petone: Department of Sci. & Indus. Research
NORTH DAKOTA, Bismarck: State Water Conservation Commission
PENNSYLVANIA, West Chester: County Health Department
SOUTH CAROLINA, Columbia: State Pollution Control Authority
SOUTH DAKOTA, Brookings: State University, WQ Laboratory
TENNESSEE, Chattanooga: Tennessee Valley Authority
WASHINGTON, Olympia: State Department of Ecology
WYOMING, Laramie: State Department of Agriculture

STATISTICAL EVALUATION

A statistical analysis of the data has established the most reliable estimate of the true value for each of the various determinations reported. Mathematical calculations are the same as those used previously.

The mean, average deviation, percent deviation from the mean, standard deviation, and total range were calculated for each determination. Confidence limits about the mean were also calculated in order to define the concentration range within which the true value may be expected to fall with a confidence level of 95 percent. Outlying values were rejected on the basis of statistical tests as outlined in ASTM Recommended Practice for Dealing with Outlying Observations (1969 Book of ASTM Standards, Part 30, p. 429-445).

REPORTED VALUES

The following section shows the reported value for each determination by each participating laboratory, and a graphical presentation of each reported value and the frequency of its occurrence. Each reported value has been rounded off, when necessary, to conform to official USGS policy on reporting analytical data. A few extreme values are not shown on the scale.

A summary shows the number of laboratories reporting values for each determination and the percentage of values rejected. The percentages of unrejected values falling within the 95-percent confidence interval, within one standard deviation ($\bar{X} \pm \text{STD}$), and within two standard deviations ($\bar{X} \pm 2 \text{ STD}$) are also given.

DATE MO-YR	CODE	REPORTED VALUE	PCT.DEV. FROM MEAN	METHOD
11-72	1	450 20	12.5	OTHER
11-72	3			NOT DETERMINED
11-72	4			NOT DETERMINED
11-72	5	380 20	5.0	OTHER
12-72	6			NOT DETERMINED
11-72	7	350 20	12.5	OTHER
11-72	8	400 20	0.0	OTHER
11-72	9			NOT DETERMINED
11-72	10	400 1	0.0	FERRON-ORTHOPHENANTHROLINE: USGS TWRI BK5 CH A1
11-72	11			NOT DETERMINED
11-72	13			NOT DETERMINED
11-72	14	400 1	0.0	FERRON-ORTHOPHENANTHROLINE: USGS TWRI BK5 CH A1
11-72	15	370 1	7.5	FERRON-ORTHOPHENANTHROLINE: USGS TWRI BK5 CH A1
11-72	16			NOT DETERMINED
11-72	17	420 1	5.0	FERRON-ORTHOPHENANTHROLINE: USGS TWRI BK5 CH A1
11-72	18	400 20	0.0	OTHER
11-72	19			NOT DETERMINED
11-72	20	530 1	32.5	FERRON-ORTHOPHENANTHROLINE: USGS TWRI BK5 CH A1
11-72	21			NOT DETERMINED
11-72	22	380 20	5.0	OTHER
11-72	24	500 20	25.0	OTHER
11-72	25	600 20	50.0	REJECT OTHER
11-72	27			NOT DETERMINED
11-72	28	400 1	0.0	FERRON-ORTHOPHENANTHROLINE: USGS TWRI BK5 CH A1
11-72	30	390 20	2.5	OTHER
11-72	31	300 1	25.0	FERRON-ORTHOPHENANTHROLINE: USGS TWRI BK5 CH A1
11-72	32			NOT DETERMINED
11-72	33	390 2	2.5	ATOMIC ABS-CHELATION/EXTRACTION: USGS PROVISIONAL
11-72	34	400 1	0.0	FERRON-ORTHOPHENANTHROLINE: USGS TWRI BK5 CH A1
12-72	35	400 1	0.0	FERRON-ORTHOPHENANTHROLINE: USGS TWRI BK5 CH A1
11-72	36	340 5	15.0	8-QUINOLINOL, EXTRACTION: 1971 ASYM PT23 D857-69

TOTAL RANGE	300	-	600.				SAMPLE 38
MEAN		399.9978		AVERAGE DEVIATION	31.5793		
STANDARD DEVIATION		51.5321		95 PCT.CONF.INTVL OF MEAN	399.9978 +OR-	24.8386	AL

23

DATE MO-YR	CODE	REPORTED VALUE	PCT.DEV. FROM MEAN	METHOD
11-72	1	1000 1	0.8	ATOMIC ABS-DIRECT: 1971 ASTM PT23 D2576-70
11-72	3	960 3	4.8	PHENANTHROLINE: APHA STD METH, 13ED
11-72	4	120 1	88.1	REJECT ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	5	970 1	3.8	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
12-72	6	840 5	16.7	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	7	1100 1	9.1	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	8	1300 20	29.0	OTHER
11-72	9	1100 5	9.1	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	10	1000 1	0.8	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	11	980 2	2.8	BIPYRIDINE: USGS TWRI BK5 CH A1
11-72	13	1200 2	19.1	BIPYRIDINE: USGS TWRI BK5 CH A1
11-72	14	990 2	1.8	BIPYRIDINE: USGS TWRI BK5 CH A1
11-72	15	980 2	2.8	BIPYRIDINE: USGS TWRI BK5 CH A1
11-72	16	1000 1	0.8	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	17	1000 1	0.8	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	18	1200 20	19.1	OTHER
11-72	19	1400 1	38.9	REJECT ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	20	950 3	5.7	PHENANTHROLINE: APHA STD METH, 13ED
11-72	21	1000 3	0.8	PHENANTHROLINE: APHA STD METH, 13ED
11-72	22	1000 1	0.8	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	24	1100 20	9.1	OTHER
11-72	25	1000 1	0.8	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	27	740 20	26.6	OTHER
11-72	28	1000 1	0.8	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	30	950 1	5.7	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	31	1000 2	0.8	BIPYRIDINE: USGS TWRI BK5 CH A1
11-72	32	880 2	12.7	BIPYRIDINE: USGS TWRI BK5 CH A1
11-72	33	990 1	1.8	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	34	1000 2	0.8	BIPYRIDINE: USGS TWRI BK5 CH A1
12-72	35	1000 2	0.8	BIPYRIDINE: USGS TWRI BK5 CH A1
11-72	36	1000 2	0.8	BIPYRIDINE: USGS TWRI BK5 CH A1

980
1200
990
980
1000
880
1000
1000

9 1003 ± 83
8 979 ± 41
7

TOTAL RANGE	120	-	1400	AVERAGE DEVIATION	65.6818	SAMPLE 38
MEAN	1007.9275			95 PCT.CONF.INTVL OF MEAN	1007.9275 +OR- 40.2909	FE
STANDARD DEVIATION	105.9439					

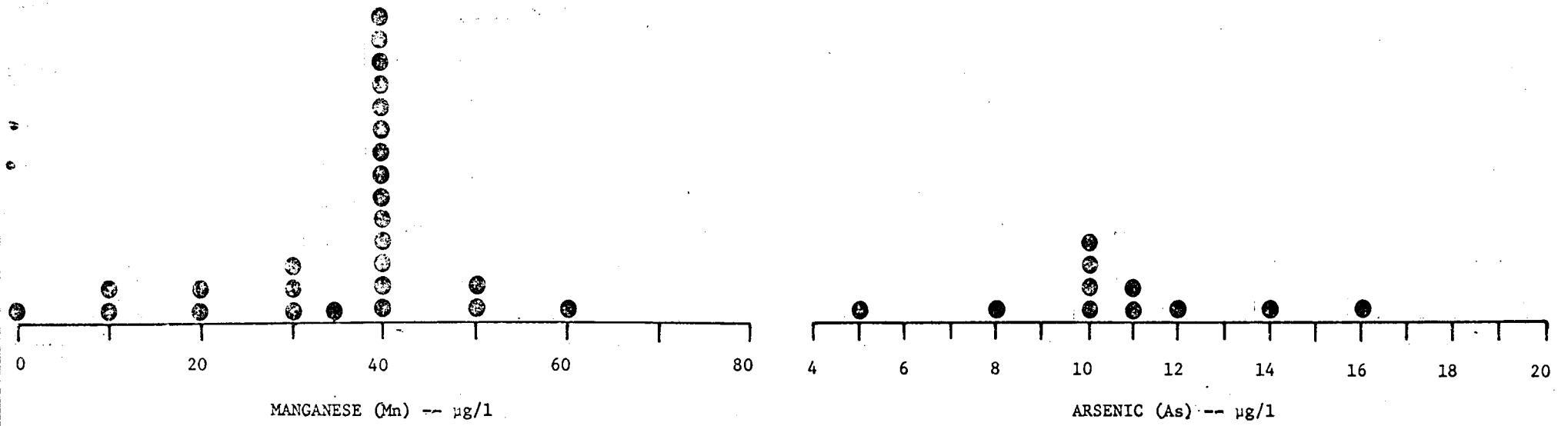
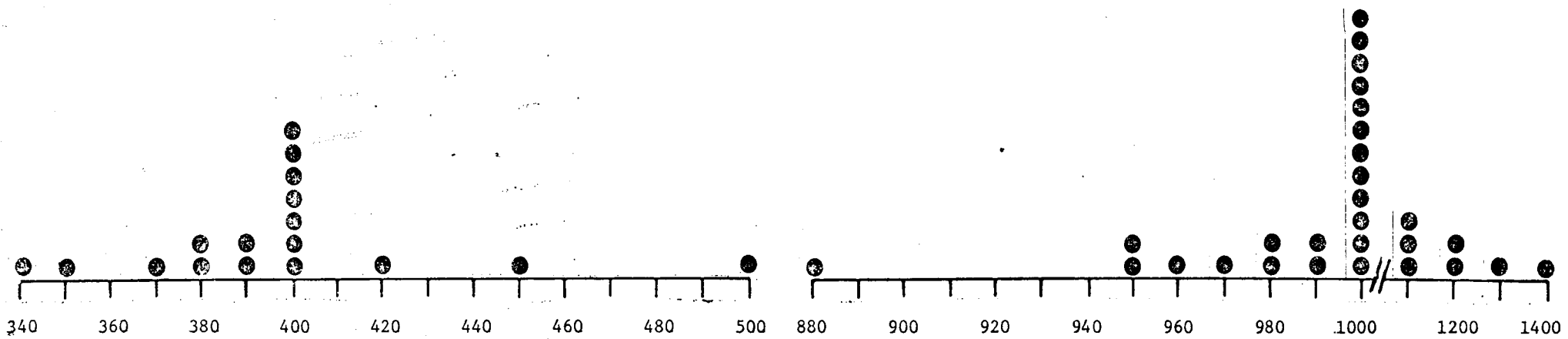
13 996 ± 63.8
14 1025 ± 124.1
15 969.7 ± 262.5

DATE MO-YR	CODE	REPORTED VALUE	PCT.DEV. FROM MEAN	METHOD
11-72	1	40 7	14.9	ATOMIC ABS-DIRECT: 1971 ASTM PT23 D2576-70
11-72	3	0 3	100.0	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	4	40 1	14.9	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	5	40 1	14.9	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
12-72	6	30 3	13.8	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	7	40 1	14.9	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	8	20 20	42.5	OTHER
11-72	9	10 3	71.3	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	10	50 1	43.6	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	11	30 1	13.8	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	13	50 1	43.6	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	14	20 1	42.5	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	15	35 2	0.6	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	16	40 1	14.9	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	17	40 1	14.9	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	18	60 1	72.4	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	19			NOT DETERMINED
11-72	20			NOT DETERMINED
11-72	21	40 1	14.9	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	22	40 1	14.9	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	24	30 20	13.8	OTHER
11-72	25	40 1	14.9	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	27			NOT DETERMINED
11-72	28	40 1	14.9	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	30	40 1	14.9	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	31			NOT DETERMINED
11-72	32	130 1	273.5	REJECT ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	33	40 1	14.9	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	34	10 1	71.3	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
12-72	35	40 1	14.9	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	36	40 1	14.9	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1

TOTAL RANGE 0 - 130
 MEAN 34.8075 AVERAGE DEVIATION 9.8817 SAMPLE 38
 STANDARD DEVIATION 13.3027 95 PCT.CONF.INTVL OF MEAN 34.8075 +OR- 5.3743 MN

DATE MO-YR	CODE	REPORTED VALUE	PCT.DEV. FROM MEAN	METHOD
11-72	1	5 4	48.7	SILVER DIETHYLDITHIOCARBAMATE: APHA STD METH, 13ED
11-72	3			NOT DETERMINED
11-72	4	12 1	23.1	SILVER DIETHYLDITHIOCARBAMATE: USGS TWRI BK5 CH A1
11-72	5			NOT DETERMINED
12-72	6	10 4	2.6	SILVER DIETHYLDITHIOCARBAMATE: APHA STD METH, 13ED
11-72	7			NOT DETERMINED
11-72	8			NOT DETERMINED
11-72	9			NOT DETERMINED
11-72	10			NOT DETERMINED
11-72	11	8 1	17.9	SILVER DIETHYLDITHIOCARBAMATE: USGS TWRI BK5 CH A1
11-72	13			NOT DETERMINED
11-72	14	14 2	43.6	SILVER DIETHYLDITHIOCARBAMATE-REVISION: USGS PROVISIONAL
11-72	15	11 1	12.8	SILVER DIETHYLDITHIOCARBAMATE: USGS TWRI BK5 CH A1
11-72	16			NOT DETERMINED
11-72	17			NOT DETERMINED
11-72	18	10 2	2.6	SILVER DIETHYLDITHIOCARBAMATE-REVISION: USGS PROVISIONAL
11-72	19			NOT DETERMINED
11-72	20			NOT DETERMINED
11-72	21			NOT DETERMINED
11-72	22			NOT DETERMINED
11-72	24	54 20	453.8	REJECT OTHER
11-72	25			NOT DETERMINED
11-72	27			NOT DETERMINED
11-72	28	0 1	100.0	SILVER DIETHYLDITHIOCARBAMATE: USGS TWRI BK5 CH A1
11-72	30	10 2	2.6	SILVER DIETHYLDITHIOCARBAMATE-REVISION: USGS PROVISIONAL
11-72	31			NOT DETERMINED
11-72	32	11 1	12.8	SILVER DIETHYLDITHIOCARBAMATE: USGS TWRI BK5 CH A1
11-72	33	16 1	64.1	SILVER DIETHYLDITHIOCARBAMATE: USGS TWRI BK5 CH A1
11-72	34	10 1	2.6	SILVER DIETHYLDITHIOCARBAMATE: USGS TWRI BK5 CH A1
12-72	35			NOT DETERMINED
11-72	36			NOT DETERMINED

TOTAL RANGE	0	-	54				
MEAN		9.7500		AVERAGE DEVIATION	2.7083		SAMPLE 38
STANDARD DEVIATION		4.1148		95 PCT.CONF.INTVL OF MEAN	9.7500 +OR-	2.6145	AS



SAMPLE NO. 38

DATE MO-YR	CODE	REPORTED VALUE	PCT.DEV. FROM MEAN	METHOD
11-72	1	30	12.5	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	3			NOT DETERMINED
11-72	4	20	25.0	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	5			NOT DETERMINED
12-72	6			NOT DETERMINED
11-72	7			NOT DETERMINED
11-72	8			NOT DETERMINED
11-72	9			NOT DETERMINED
11-72	10			NOT DETERMINED
11-72	11			NOT DETERMINED
11-72	13			NOT DETERMINED
11-72	14	20	25.0	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	15			NOT DETERMINED
11-72	16			NOT DETERMINED
11-72	17			NOT DETERMINED
11-72	18	30	12.5	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	19			NOT DETERMINED
11-72	20			NOT DETERMINED
11-72	21			NOT DETERMINED
11-72	22			NOT DETERMINED
11-72	24	30	12.5	OTHER
11-72	25			NOT DETERMINED
11-72	27			NOT DETERMINED
11-72	28			NOT DETERMINED
11-72	30			NOT DETERMINED
11-72	31			NOT DETERMINED
11-72	32			NOT DETERMINED
11-72	33			NOT DETERMINED
11-72	34			NOT DETERMINED
12-72	35	30	12.5	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	36			NOT DETERMINED

TOTAL RANGE	20	-	30				SAMPLE 38
MEAN		26.6666		AVERAGE DEVIATION	4.4444		
STANDARD DEVIATION		5.1640		95 PCT.CONF.INTVL OF MEAN	26.6666 +OR-	5.4201	BE

DATE MO-YR	CODE	REPORTED VALUE	PCT.DEV. FROM MEAN	METHOD
11-72	1	5	39.7	OTHER
11-72	3			NOT DETERMINED
11-72	4	35	877.9	REJECT ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	5	4	11.8	OTHER
12-72	6	3	16.2	OTHER
11-72	7			NOT DETERMINED
11-72	8	20	458.8	REJECT OTHER
11-72	9	2	44.1	ATOMIC ABS-CHELATION/EXTRACTION: APHA STD METH, 13ED
11-72	10			NOT DETERMINED
11-72	11	5	39.7	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	13	4	11.8	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	14	2	44.1	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	15	4	11.8	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	16			NOT DETERMINED
11-72	17	3	16.2	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	18	3	16.2	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	19			NOT DETERMINED
11-72	20			NOT DETERMINED
11-72	21			NOT DETERMINED
11-72	22	2	44.1	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	24	4	11.8	OTHER
11-72	25			NOT DETERMINED
11-72	27	5	39.7	ATOMIC ABS-CHELATION/EXTRACTION: APHA STD METH, 13ED
11-72	28	3	16.2	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	30	3	16.2	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	31	6	67.6	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	32			NOT DETERMINED
11-72	33	3	16.2	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	34	3	16.2	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
12-72	35	4	11.8	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	36			NOT DETERMINED

TOTAL RANGE	2	-	35						SAMPLE 38
MEAN		3.5789		AVERAGE DEVIATION		0.9252			
STANDARD DEVIATION		1.1213		95 PCT.CONF.INTVL OF MEAN		3.5789 +QR-	0.5405		CD

DATE MO-YR	CODE	REPORTED VALUE	PCT.DEV. FROM MEAN	METHOD
11-72	1	60	33.3	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	3			NOT DETERMINED
11-72	4	40	11.1	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	5			NOT DETERMINED
12-72	6	70	55.6	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	7	0	100.0	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	8			NOT DETERMINED
11-72	9	90	100.0	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	10			NOT DETERMINED
11-72	11	10	77.8	PERMANGANATE-AZIDE: USGS TWRI BK5 CH A1
11-72	13	20	55.6	PERMANGANATE-AZIDE: USGS TWRI BK5 CH A1
11-72	14	70	55.6	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	15	20	55.6	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	16			NOT DETERMINED
11-72	17	60	33.3	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	18	30	33.3	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	19			NOT DETERMINED
11-72	20			NOT DETERMINED
11-72	21			NOT DETERMINED
11-72	22	50	11.1	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	24	60	33.3	OTHER
11-72	25	70	55.6	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	27			NOT DETERMINED
11-72	28	40	11.1	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	30	40	11.1	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	31			NOT DETERMINED
11-72	32			NOT DETERMINED
11-72	33	50	11.1	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	34	50	11.1	PERMANGANATE-AZIDE: USGS TWRI BK5 CH A1
12-72	35	10	77.8	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	36	60	33.3	ATOMIC ABS-DIRECT: APHA STD METH, 13ED

TOTAL RANGE	0	-	90				SAMPLE 38
MEAN		44.9998		AVERAGE DEVIATION	19.4999		
STANDARD DEVIATION		23.9517		95 PCT.CONF.INTVL OF MEAN	44.9998 +OR-	11.2096	CR TOT

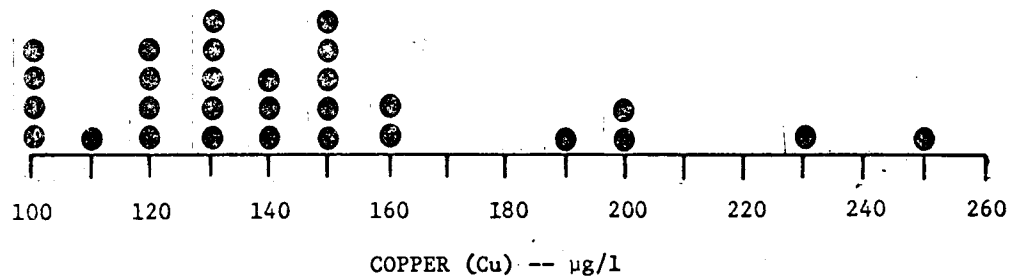
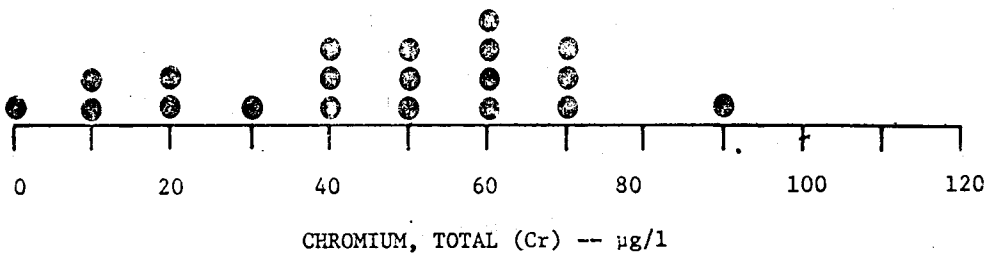
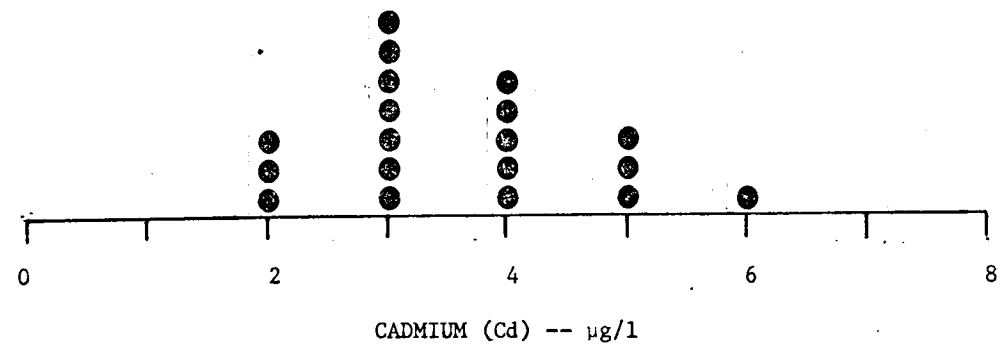
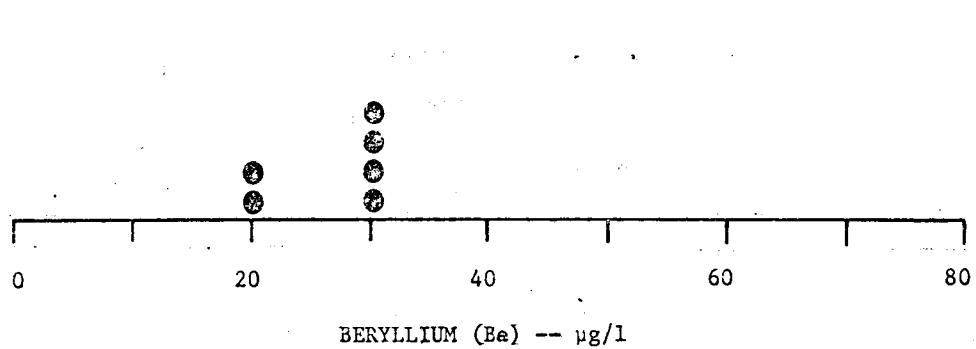
DATE MO-YR	CODE	REPORTED VALUE	PCT.DEV. FROM MEAN	METHOD
11-72	1	130	10.2	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	3	200	38.1	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	4	130	10.2	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	5	230	58.8	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
12-72	6	150	3.6	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	7	150	3.6	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	8	130	10.2	OTHER
11-72	9	100	31.0	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	10	120	17.1	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	11	110	24.0	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	13	120	17.1	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	14	140	3.3	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	15	130	10.2	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	16			NOT DETERMINED
11-72	17	140	3.3	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	18	160	10.5	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	19	200	38.1	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	20	160	10.5	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	21			NOT DETERMINED
11-72	22	120	17.1	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	24	150	3.6	OTHER
11-72	25	140	3.3	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	27	190	31.2	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	28	100	31.0	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	30	130	10.2	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	31	100	31.0	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	32	250	72.6	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	33	120	17.1	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	34	100	31.0	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
12-72	35	150	3.6	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	36	150	3.6	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1

TOTAL RANGE 100 - 250

MEAN 144.8273 AVERAGE DEVIATION 27.7287
STANDARD DEVIATION 37.7606 95 PCT.CONF.INTVL OF MEAN

144.8273 +OR- 14.3605 CU

SAMPLE 38



SAMPLE NO. 38

DATE MO-YR	CODE	REPORTED VALUE	PCT.DEV. FROM MEAN	METHOD
11-72	1	38	127.8	OTHER
11-72	3			NOT DETERMINED
11-72	4	150	799.1	REJECT ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	5	35	109.8	OTHER
12-72	6	9	46.1	ATOMIC ABS-CHELATION/EXTRACTION: APHA STD METH, 13ED
11-72	7			NOT DETERMINED
11-72	8	2	88.0	OTHER
11-72	9	160	859.0	REJECT ATOMIC ABS-CHELATION/EXTRACTION: APHA STD METH, 13ED
11-72	10			NOT DETERMINED
11-72	11	22	31.9	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	13	7	58.0	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	14	16	4.1	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	15	15	10.1	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	16			NOT DETERMINED
11-72	17	14	16.1	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	18	16	4.1	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	19			NOT DETERMINED
11-72	20			NOT DETERMINED
11-72	21			NOT DETERMINED
11-72	22	12	28.1	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	24	26	55.8	OTHER
11-72	25	22	31.9	OTHER
11-72	27			NOT DETERMINED
11-72	28	18	7.9	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	30	18	7.9	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	31	10	40.1	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	32			NOT DETERMINED
11-72	33	12	28.1	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	34	9	46.1	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
12-72	35	16	4.1	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	36			NOT DETERMINED

TOTAL RANGE 2 - 160
MEAN 16.6841
STANDARD DEVIATION 9.0188

AVERAGE DEVIATION 6.5485
95 PCT.CONF.INTVL OF MEAN 16.6841 +OR- 4.3471

SAMPLE 38

P8

DATE MO-YR	CODE	REPORTED VALUE	PCT.DEV. FROM MEAN	METHOD
11-72	1	3.0	9.7	ATOMIC ABS-FLAMELESS: USGS PROVISIONAL
11-72	3			NOT DETERMINED
11-72	4	2.8 20	15.7	OTHER
11-72	5			NOT DETERMINED
12-72	6			NOT DETERMINED
11-72	7	1.7	48.8	ATOMIC ABS-FLAMELESS: USGS PROVISIONAL
11-72	8			NOT DETERMINED
11-72	9			NOT DETERMINED
11-72	10			NOT DETERMINED
11-72	11			NOT DETERMINED
11-72	13			NOT DETERMINED
11-72	14	3.2 20	3.7	OTHER
11-72	15			NOT DETERMINED
11-72	16			NOT DETERMINED
11-72	17	3.2	3.7	ATOMIC ABS-FLAMELESS: USGS PROVISIONAL
11-72	18			NOT DETERMINED
11-72	19			NOT DETERMINED
11-72	20			NOT DETERMINED
11-72	21			NOT DETERMINED
11-72	22	3.8 20	14.4	OTHER
11-72	24	3.6 20	8.4	OTHER
11-72	25	2.8 20	15.7	OTHER
11-72	27	4.1 20	23.4	OTHER
11-72	28	3.8	14.4	ATOMIC ABS-FLAMELESS: USGS PROVISIONAL
11-72	30	3.9	17.4	ATOMIC ABS-FLAMELESS: USGS PROVISIONAL
11-72	31	5.1	53.5	ATOMIC ABS-FLAMELESS: USGS PROVISIONAL
11-72	32	2.0 20	39.8	OTHER
11-72	33			NOT DETERMINED
11-72	34			NOT DETERMINED
12-72	35	3.5	5.4	ATOMIC ABS-FLAMELESS: USGS PROVISIONAL
11-72	36			NOT DETERMINED

7 3.46 2.03

TOTAL RANGE	1.7	-	5.1				
MEAN		3.3214		AVERAGE DEVIATION	0.6500		SAMPLE 38
STANDARD DEVIATION		0.8649		95 PCT.CONF.INTVL OF MEAN	3.3214 +OR-	0.4993	HG

DATE MO-YR	CODE	REPORTED VALUE	PCT.DEV. FROM MEAN	METHOD
11-72	1	180	6.2	ATOMIC ABS-DIRECT: 1971 ASTM PT23 D2576-70
11-72	3	120	37.5	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	4	190	1.0	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	5	170	11.4	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
12-72	6	160	16.6	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	7	350	82.4	REJECT ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	8	180	6.2	OTHER
11-72	9	0	100.0	REJECT ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	10	200	4.2	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	11	180	6.2	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	13	250	30.3	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	14	180	6.2	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	15	200	4.2	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	16			NOT DETERMINED
11-72	17	240	25.1	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	18	190	1.0	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	19	220	14.6	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	20	160	16.6	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	21			NOT DETERMINED
11-72	22	190	1.0	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	24	200	4.2	OTHER
11-72	25	210	9.4	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	27	60	68.7	REJECT OTHER
11-72	28	200	4.2	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	30	230	19.8	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	31	160	16.6	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	32	240	25.1	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	33	170	11.4	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	34	190	1.0	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
12-72	35	200	4.2	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	36	180	6.2	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1

TOTAL RANGE 0 - 350

MEAN 191.9222

STANDARD DEVIATION 28.3470

AVERAGE DEVIATION

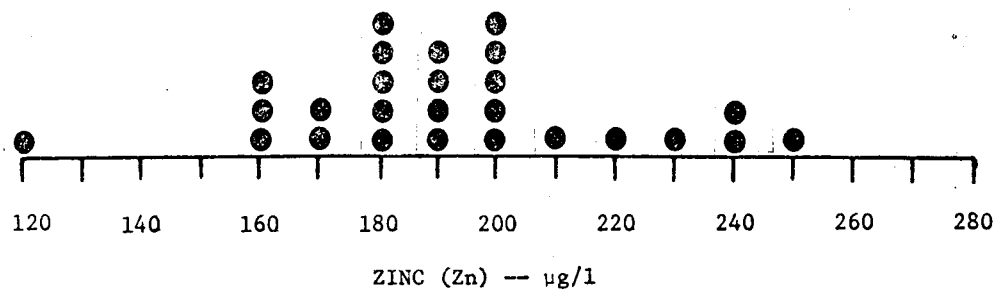
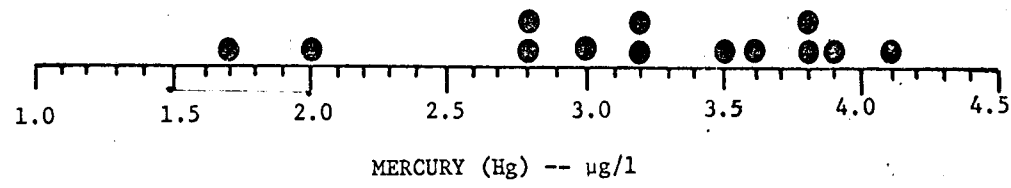
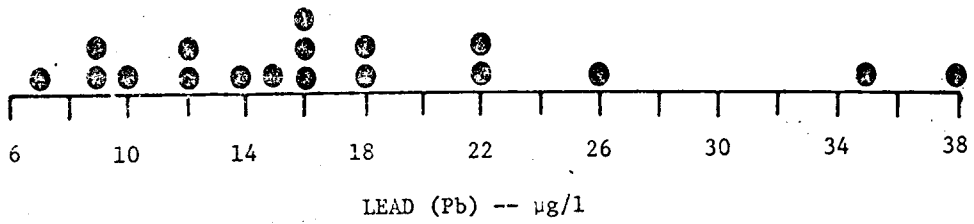
95 PCT.CONF.INTVL OF MEAN

21.4495

191.9222 +OR- 11.6542

SAMPLE 38

2N



SAMPLE NO. 38

DETERMINATION	NO. LABS REPORTING	PCT. OF VALUES REJECTED	PCT. OF UNREJECTED VALUES WITHIN		
			95 PCT. CI	X +OR- STD	X +OR- 2STD
AL	20	5	63	79	95
FE	31	6	59	79	93
MN	27	4	69	69	96
AS	13	8	67	67	92
BE	6	0	67	67	100
CD	21	10	26	63	95
CR TOT	20	0	30	55	100
CU	29	0	28	69	93
PB	21	10	37	74	89
HG	14	0	50	79	93
ZN	29	10	35	69	92

DATE MO-YR	CODE	REPORTED VALUE	PCT.DEV. FROM MEAN	METHOD
11-72	1	210	2.1	OTHER
11-72	3			NOT DETERMINED
11-72	4			NOT DETERMINED
11-72	5	270	25.9	OTHER
12-72	6			NOT DETERMINED
11-72	7	190	11.4	OTHER
11-72	8	250	16.6	OTHER
11-72	9			NOT DETERMINED
11-72	10	250	16.6	FERRON-ORTHOPHENANTHROLINE: USGS TWRI BK5 CH A1
11-72	11			NOT DETERMINED
11-72	13			NOT DETERMINED
11-72	14	210	2.1	FERRON-ORTHOPHENANTHROLINE: USGS TWRI BK5 CH A1
11-72	15	240	11.9	FERRON-ORTHOPHENANTHROLINE: USGS TWRI BK5 CH A1
11-72	16			NOT DETERMINED
11-72	17	240	11.9	FERRON-ORTHOPHENANTHROLINE: USGS TWRI BK5 CH A1
11-72	18	200	6.7	OTHER
11-72	19			NOT DETERMINED
11-72	20	450	109.8	REJECT FERRON-ORTHOPHENANTHROLINE: USGS TWRI BK5 CH A1
11-72	21			NOT DETERMINED
11-72	22	200	6.7	OTHER
11-72	24			NOT DETERMINED
11-72	25	200	6.7	OTHER
11-72	27			NOT DETERMINED
11-72	28	200	6.7	FERRON-ORTHOPHENANTHROLINE: USGS TWRI BK5 CH A1
11-72	30	210	2.1	OTHER
11-72	31	200	6.7	FERRON-ORTHOPHENANTHROLINE: USGS TWRI BK5 CH A1
11-72	32			NOT DETERMINED
11-72	33	210	2.1	ATOMIC ABS-CHELATION/EXTRACTION: USGS PROVISIONAL
11-72	34	200	6.7	FERRON-ORTHOPHENANTHROLINE: USGS TWRI BK5 CH A1
12-72	35	200	6.7	FERRON-ORTHOPHENANTHROLINE: USGS TWRI BK5 CH A1
11-72	36	180	16.1	8-QUINOLINOL, EXTRACTION: 1971 ASTM PT23 D857-69

TOTAL RANGE	180	-	450					SAMPLE 39
MEAN		214.4442		AVERAGE DEVIATION	19.7529			
STANDARD DEVIATION		24.5481		95 PCT.CONF.INTVL OF MEAN	214.4442 +OR-	12.2086		AL

DATE MO-YR	CODE	REPORTED VALUE	PCT.DEV. FROM MEAN	METHOD
11-72	1	880 7	4.3	ATOMIC ABS-DIRECT: 1971 ASTM PT23 D2576-70
11-72	3	830 3	1.6	PHENANTHROLINE: APHA STD METH, 13ED
11-72	4	100 1	88.1	REJECT ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	5	820 1	2.8	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
12-72	6	660 5	21.8	REJECT ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	7	940 1	11.4	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	8	1100 20	30.4	REJECT OTHER
11-72	9	920 5	9.0	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	10	840 1	0.5	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	11	840 2	0.5	BIPYRIDINE: USGS TWRI BK5 CH A1
11-72	13	900 2	6.7	BIPYRIDINE: USGS TWRI BK5 CH A1
11-72	14	930 2	10.2	BIPYRIDINE: USGS TWRI BK5 CH A1
11-72	15	810 2	4.0	BIPYRIDINE: USGS TWRI BK5 CH A1
11-72	16	860 1	1.9	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	17	840 1	0.5	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	18	860 20	1.9	OTHER
11-72	19	1200 1	42.2	REJECT ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	20	790 3	6.4	PHENANTHROLINE: APHA STD METH, 13ED
11-72	21	820 3	2.8	PHENANTHROLINE: APHA STD METH, 13ED
11-72	22	830 1	1.6	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	24	900 20	6.7	OTHER
11-72	25	800 1	5.2	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	27	580 20	31.3	REJECT OTHER
11-72	28	840 1	0.5	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	30	800 1	5.2	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	31	830 2	1.6	BIPYRIDINE: USGS TWRI BK5 CH A1
11-72	32	730 2	13.5	BIPYRIDINE: USGS TWRI BK5 CH A1
11-72	33	800 1	5.2	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	34	840 2	0.5	BIPYRIDINE: USGS TWRI BK5 CH A1
12-72	35	840 2	0.5	BIPYRIDINE: USGS TWRI BK5 CH A1
11-72	36	850 2	0.7	BIPYRIDINE: USGS TWRI BK5 CH A1

840
900
930
810
830
730
840
850
841 ± 56

TOTAL RANGE 100 - 1200
MEAN 843.8428
STANDARD DEVIATION 46.9959

AVERAGE DEVIATION
95 PCT.CONF.INTVL OF MEAN

34.2594
843.8428 +OR- 18.9863

SAMPLE 39
FE

12 848 ± 4.6
14 891 ± 11.9
15 875 ± 12.9

DATE MO-YR	CODE	REPORTED VALUE	PCT.DEV. FROM MEAN		METHOD
11-72	1	110	0.4		ATOMIC ABS-DIRECT: 1971 ASTM PT23 D2576-70
11-72	3	60	45.7	REJECT	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	4	110	0.4		ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	5	90	18.5		ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
12-72	6	120	8.7		ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	7	110	0.4		ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	8	90	18.5		OTHER
11-72	9	20	81.9	REJECT	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	10	120	8.7		ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	11	110	0.4		ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	13	120	8.7		ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	14	90	18.5		ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	15	120	8.7		ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	16	110	0.4		ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	17	100	9.4		ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	18	130	17.7		ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	19	110	0.4		ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	20			NOT DETERMINED	
11-72	21	150	35.8	REJECT	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	22	110	0.4		ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	24	100	9.4		OTHER
11-72	25	120	8.7		ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	27			NOT DETERMINED	
11-72	28	110	0.4		ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	30	100	9.4		ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	31			NOT DETERMINED	
11-72	32	200	81.1	REJECT	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	33	110	0.4		ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	34	120	8.7		ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
12-72	35	120	8.7		ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	36	120	8.7		ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1

TOTAL RANGE	20	-	200						
MEAN		110.4164		AVERAGE DEVIATION	8.0208				SAMPLE 39
STANDARD DEVIATION		10.8264		95 PCT.CONF.INTVL OF MEAN	110.4164 +OR-	4.5723			MN

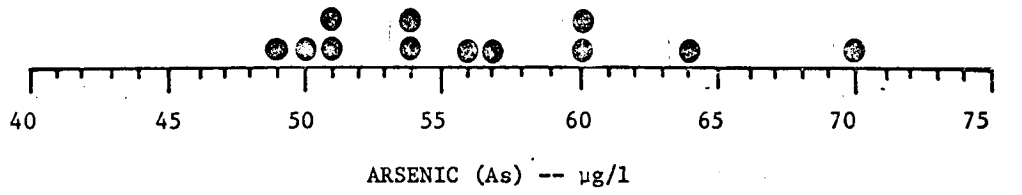
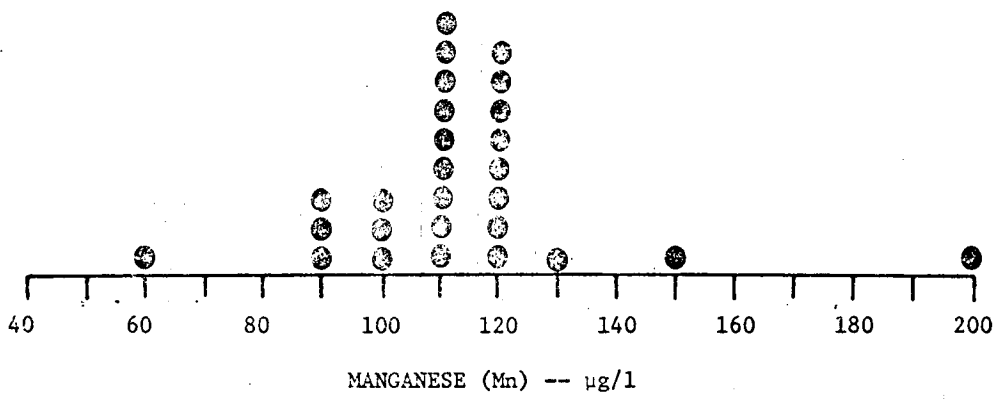
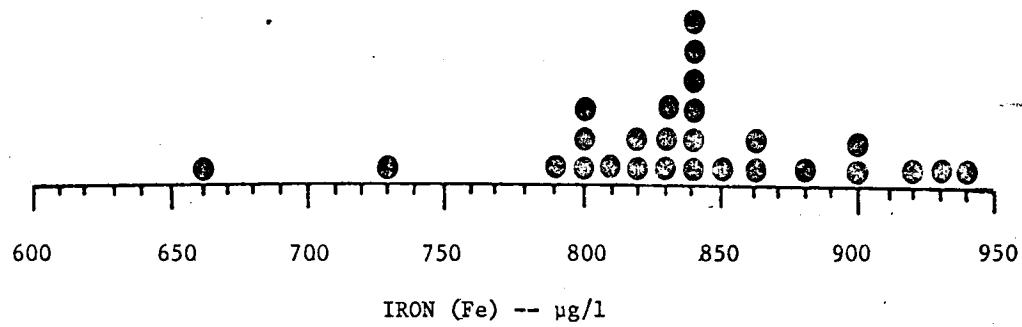
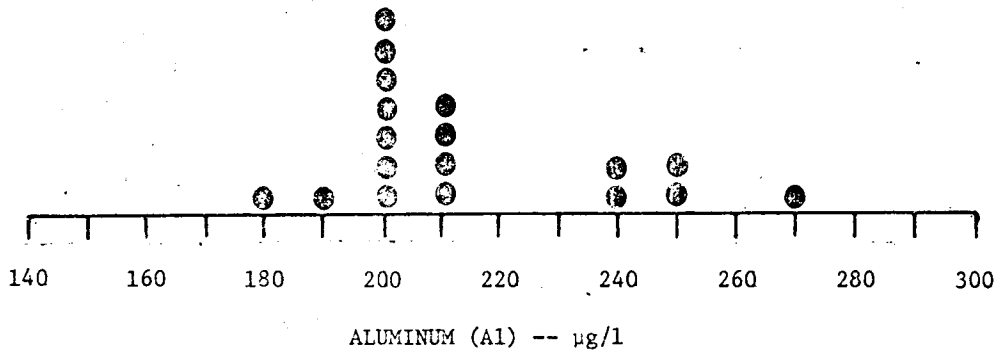
DATE MO-YR	CODE	REPORTED VALUE	PCT.DEV. FROM MEAN	METHOD
11-72	1	49	15.7	SILVER DIETHYLDITHIOCARBAMATE: APHA STD METH, 13ED
11-72	3			NOT DETERMINED
11-72	4	50	14.0	SILVER DIETHYLDITHIOCARBAMATE: USGS TWRI BK5 CH A1
11-72	5			NOT DETERMINED
12-72	6	57	1.9	SILVER DIETHYLDITHIOCARBAMATE: APHA STD METH, 13ED
11-72	7	51	12.3	SILVER DIETHYLDITHIOCARBAMATE: APHA STD METH, 13ED
11-72	8			NOT DETERMINED
11-72	9			NOT DETERMINED
11-72	10			NOT DETERMINED
11-72	11	24	58.7	SILVER DIETHYLDITHIOCARBAMATE: USGS TWRI BK5 CH A1
11-72	13			NOT DETERMINED
11-72	14	54	7.1	SILVER DIETHYLDITHIOCARBAMATE-REVISION: USGS PROVISIONAL
11-72	15	55	3.7	SILVER DIETHYLDITHIOCARBAMATE: USGS TWRI BK5 CH A1
11-72	16			NOT DETERMINED
11-72	17			NOT DETERMINED
11-72	18	70	20.4	SILVER DIETHYLDITHIOCARBAMATE-REVISION: USGS PROVISIONAL
11-72	19			NOT DETERMINED
11-72	20			NOT DETERMINED
11-72	21			NOT DETERMINED
11-72	22			NOT DETERMINED
11-72	24	96	65.1	OTHER
11-72	25	51	12.3	SILVER DIETHYLDITHIOCARBAMATE: APHA STD METH, 13ED
11-72	27			NOT DETERMINED
11-72	28	76	30.7	SILVER DIETHYLDITHIOCARBAMATE: USGS TWRI BK5 CH A1
11-72	30	60	3.2	SILVER DIETHYLDITHIOCARBAMATE-REVISION: USGS PROVISIONAL
11-72	31			NOT DETERMINED
11-72	32	64	10.1	SILVER DIETHYLDITHIOCARBAMATE: USGS TWRI BK5 CH A1
11-72	33	54	7.1	SILVER DIETHYLDITHIOCARBAMATE: USGS TWRI BK5 CH A1
11-72	34	60	3.2	SILVER DIETHYLDITHIOCARBAMATE: USGS TWRI BK5 CH A1
12-72	35			NOT DETERMINED
11-72	36			NOT DETERMINED

TOTAL RANGE 24 - 96
MEAN 58.1332
STANDARD DEVIATION 15.5649

AVERAGE DEVIATION 10.2933
95 PCT.CONF.INTVL OF MEAN 58.1332 +OR- 8.6204

SAMPLE 39

AS



SAMPLE NO. 39

DATE MO-YR	CODE	REPORTED VALUE	PCT.DEV. FROM MEAN	METHOD
11-72	1	10	1.7	OTHER
11-72	3			NOT DETERMINED
11-72	4	87	784.7	REJECT ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	5			NOT DETERMINED
12-72	6	10	1.7	OTHER
11-72	7			NOT DETERMINED
11-72	8	65	561.0	REJECT OTHER
11-72	9	2	79.7	REJECT ATOMIC ABS-CHELATION/EXTRACTION: APHA STD METH, 13ED
11-72	10			NOT DETERMINED
11-72	11	11	11.9	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	13	10	1.7	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	14	8	18.6	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	15	8	18.6	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	16			NOT DETERMINED
11-72	17	9	8.5	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	18	9	8.5	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	19			NOT DETERMINED
11-72	20			NOT DETERMINED
11-72	21			NOT DETERMINED
11-72	22	7	28.8	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	24	12	22.0	OTHER
11-72	25	12	22.0	OTHER
11-72	27	12	22.0	ATOMIC ABS-CHELATION/EXTRACTION: APHA STD METH, 13ED
11-72	28	9	8.5	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	30	9	8.5	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	31	13	32.2	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	32			NOT DETERMINED
11-72	33	10	1.7	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	34	9	8.5	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
12-72	35	9	8.5	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	36			NOT DETERMINED

TOTAL RANGE 2
MEAN
STANDARD DEVIATION

- 87.
9.8333
1.6179

AVERAGE DEVIATION
95 PCT.CONF.INTVL OF MEAN

1.2776
9.8333 +OR- 0.8046

SAMPLE 39
CD

DATE MO-YR	CODE	REPORTED VALUE	PCT.DEV. FROM MEAN	METHOD
11-72	1	10	26.7	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	3			NOT DETERMINED
11-72	4	0	100.0	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	5			NOT DETERMINED
12-72	6	20	153.3	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	7	0	100.0	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	8			NOT DETERMINED
11-72	9	20	153.3	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	10			NOT DETERMINED
11-72	11	0	100.0	PERMANGANATE-AZIDE: USGS TWRI BK5 CH A1
11-72	13	10	26.7	PERMANGANATE-AZIDE: USGS TWRI BK5 CH A1
11-72	14	10	26.7	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	15	10	26.7	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	16			NOT DETERMINED
11-72	17	10	26.7	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	18	10	26.7	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	19			NOT DETERMINED
11-72	20			NOT DETERMINED
11-72	21			NOT DETERMINED
11-72	22	10	26.7	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	24	10	26.7	OTHER
11-72	25	10	26.7	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	27			NOT DETERMINED
11-72	28	0	100.0	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	30	0	100.0	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	31			NOT DETERMINED
11-72	32			NOT DETERMINED
11-72	33	0	100.0	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	34	10	26.7	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
12-72	35	40	406.7	REJECT ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	36	10	26.7	ATOMIC ABS-DIRECT: APHA STD METH, 13ED

TOTAL RANGE 0 - 40
MEAN 7.8947
STANDARD DEVIATION 6.3060

AVERAGE DEVIATION
95 PCT.CONF.INTVL OF MEAN

4.9861
7.8947 +OR-

3.0395 CR TOT

SAMPLE 39

DATE MO-YR	CODE	REPORTED VALUE	PCT.DEV. FROM MEAN	METHOD
11-72	1	600	0.8	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	3	600	0.8	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	4	590	0.8	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	5			NOT DETERMINED
12-72	6	710	19.3	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	7	650	9.2	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	8	720	21.0	OTHER
11-72	9	540	9.2	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	10	580	2.5	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	11	520	12.6	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	13	550	7.6	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	14	560	5.9	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	15	580	2.5	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	16			NOT DETERMINED
11-72	17	600	0.8	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	18	630	5.9	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	19	600	0.8	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	20	650	9.2	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	21			NOT DETERMINED
11-72	22	580	2.5	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	24	610	2.5	OTHER
11-72	25	590	0.8	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	27	650	9.2	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	28	460	22.7	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	30	620	4.2	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	31	500	16.0	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	32	600	0.8	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	33	560	5.9	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	34	560	5.9	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
12-72	35	700	17.6	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	36	550	7.6	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1

TOTAL RANGE 460
MEAN
STANDARD DEVIATION

- 720
594.9968
59.4729

AVERAGE DEVIATION
95 PCT.CONF.INTVL OF MEAN

43.5714
594.9968 +OR- 23.0631

SAMPLE 39
CU

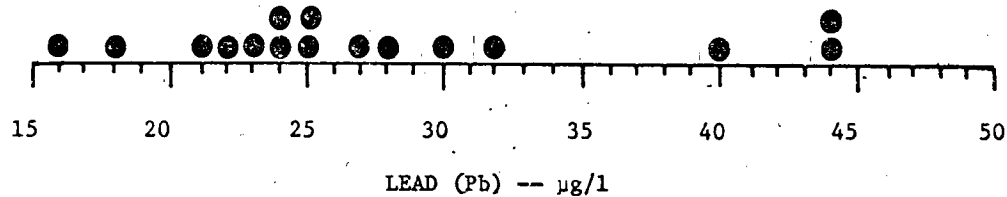
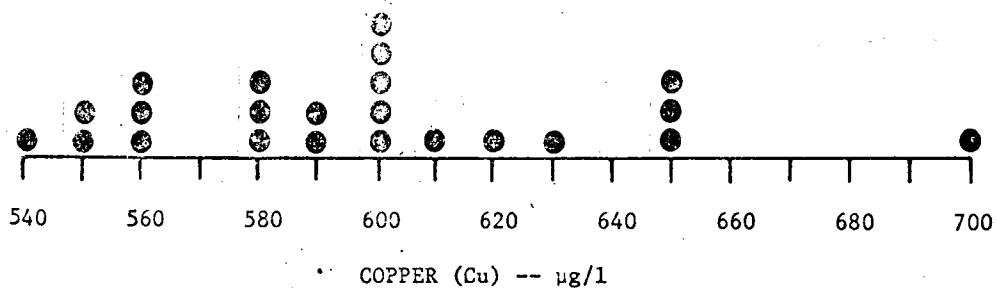
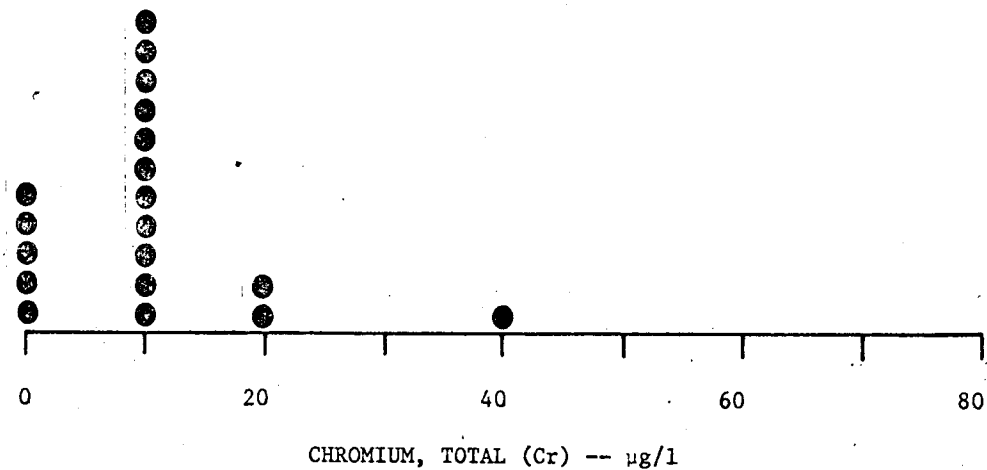
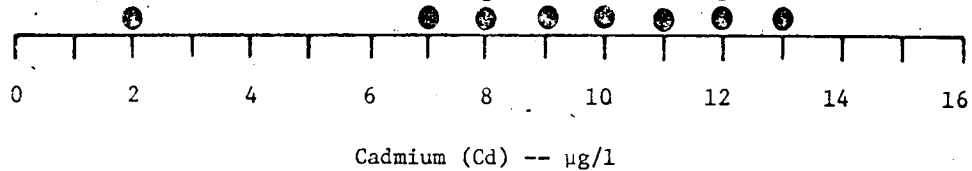
DATE MO-YR	CODE	REPORTED VALUE	PCT.DEV. FROM MEAN	METHOD
11-72	1	53	91.6	OTHER
11-72	3			NOT DETERMINED
11-72	4	240	767.5	REJECT ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	5			NOT DETERMINED
12-72	6	27	2.4	ATOMIC ABS-CHELATION/EXTRACTION: APHA STD METH, 13ED
11-72	7			NOT DETERMINED
11-72	8	2	92.8	OTHER
11-72	9	150	442.2	REJECT ATOMIC ABS-CHELATION/EXTRACTION: APHA STD METH, 13ED
11-72	10			NOT DETERMINED
11-72	11	40	44.6	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	13	16	42.2	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	14	32	15.7	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	15	21	24.1	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	16			NOT DETERMINED
11-72	17	25	9.6	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	18	30	8.4	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	19			NOT DETERMINED
11-72	20			NOT DETERMINED
11-72	21			NOT DETERMINED
11-72	22	24	13.3	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	24	44	59.0	OTHER
11-72	25	28	1.2	OTHER
11-72	27			NOT DETERMINED
11-72	28	44	59.0	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	30	25	9.6	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	31	18	34.9	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	32			NOT DETERMINED
11-72	33	22	20.5	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	34	24	13.3	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
12-72	35	23	16.9	ATOMIC ABS-CHELATION/EXTRACTION: USGS TWRI BK5 CH A1
11-72	36			NOT DETERMINED

TOTAL RANGE 2 - 240
 MEAN 27.6665
 STANDARD DEVIATION 11.8322

AVERAGE DEVIATION
 95 PCT.CONF.INTVL OF MEAN

8.5926
 27.6665 +OR- 5.8845

SAMPLE 39
 PB



SAMPLE NO. 39

DATE MO-YR	CODE	REPORTED VALUE	PCT.DEV. FROM MEAN	METHOD
11-72	1	7.0	14.6	ATOMIC ABS-FLAMELESS: USGS PROVISIONAL
11-72	3			NOT DETERMINED
11-72	4	6.5	6.4	OTHER
11-72	5			NOT DETERMINED
12-72	6			NOT DETERMINED
11-72	7	4.5	26.3	ATOMIC ABS-FLAMELESS: USGS PROVISIONAL
11-72	8			NOT DETERMINED
11-72	9			NOT DETERMINED
11-72	10			NOT DETERMINED
11-72	11			NOT DETERMINED
11-72	13			NOT DETERMINED
11-72	14	4.6	24.7	OTHER
11-72	15			NOT DETERMINED
11-72	16			NOT DETERMINED
11-72	17	6.3	3.1	ATOMIC ABS-FLAMELESS: USGS PROVISIONAL
11-72	18			NOT DETERMINED
11-72	19			NOT DETERMINED
11-72	20			NOT DETERMINED
11-72	21			NOT DETERMINED
11-72	22	61.0	898.7	REJECT OTHER
11-72	24	6.9	13.0	OTHER
11-72	25	5.2	14.9	OTHER
11-72	27	6.9	13.0	OTHER
11-72	28	7.9	29.3	ATOMIC ABS-FLAMELESS: USGS PROVISIONAL
11-72	30	7.7	26.1	ATOMIC ABS-FLAMELESS: USGS PROVISIONAL
11-72	31	12.0	96.5	REJECT ATOMIC ABS-FLAMELESS: USGS PROVISIONAL
11-72	32	3.5	42.7	OTHER
11-72	33	6.0	1.8	ATOMIC ABS-FLAMELESS: USGS PROVISIONAL
11-72	34			NOT DETERMINED
12-72	35	6.4	4.8	ATOMIC ABS-FLAMELESS: USGS PROVISIONAL
11-72	36			NOT DETERMINED

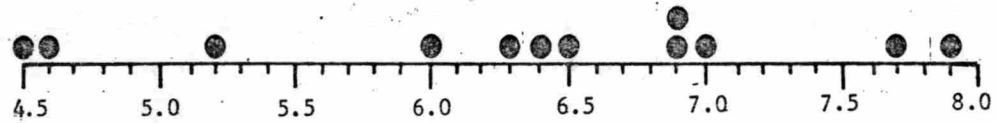
TOTAL RANGE	3.5	-	61						
MEAN		6.1077		AVERAGE DEVIATION		1.0367			SAMPLE 39
STANDARD DEVIATION		1.3092		95 PCT.CONF.INTVL OF MEAN		6.1077 +OR-	0.7912		HG

DATE MO-YR	CODE	REPORTED VALUE	PCT.DEV. FROM MEAN	METHOD
11-72	1	560	0.4	ATOMIC ABS-DIRECT: 1971 ASTM PT23 D2576-70
11-72	3	320	43.1	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	4	550	2.2	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	5			NOT DETERMINED
12-72	6	810	44.1	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	7	1000	77.9	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	8	220	60.9	OTHER
11-72	9	0	100.0	REJECT ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	10	550	2.2	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	11	530	5.7	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	13	760	35.2	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	14	510	9.3	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	15	570	1.4	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	16			NOT DETERMINED
11-72	17	560	0.4	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	18	570	1.4	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	19	590	4.9	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	20	520	7.5	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	21			NOT DETERMINED
11-72	22	760	35.2	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	24	560	3.2	OTHER
11-72	25	550	2.2	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	27	250	55.5	OTHER
11-72	28	500	11.1	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	30	600	6.7	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	31	500	11.1	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	32	580	3.2	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	33	540	4.0	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
11-72	34	560	0.4	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1
12-72	35	580	3.2	ATOMIC ABS-DIRECT: APHA STD METH, 13ED
11-72	36	560	0.4	ATOMIC ABS-DIRECT: USGS TWRI BK5 CH A1

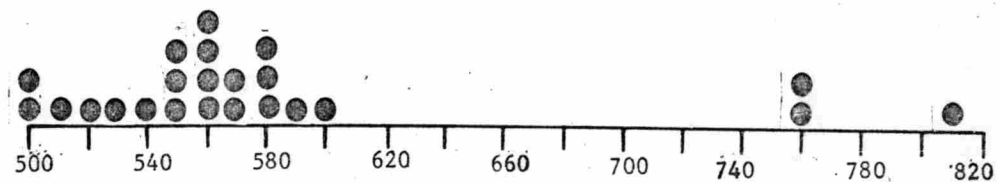
TOTAL RANGE 0 - 1000
MEAN 562.2192
STANDARD DEVIATION 154.6790

AVERAGE DEVIATION 90.0406
95 PCT.CONF.INTVL OF MEAN 562.2192 +OR- 61.2030

SAMPLE 39
ZN



MERCURY (Hg) -- µg/l



ZINC (Zn) -- µg/l

DETERMINATION	NO. LABS REPORTING	PCT. OF VALUES REJECTED	PCT. OF UNREJECTED VALUES WITHIN		
			95 PCT. CI	X +OR- STD	X +OR- 2STD
AL	19	5	22	67	94
FE	31	16	46	73	92
MN	28	14	38	83	100
AS	15	0	67	80	87
CD	21	14	22	61	100
CR TOT	20	5	58	58	100
CU	28	0	39	79	93
PB	20	10	56	72	89
HG	15	13	31	62	100
ZN	28	4	67	74	89