ZONE H BACKGROUND INFORMATION CNC CHARLESTON SC

5/20/1997

NAVFAC SOUTHERN

ZONE H BACKGROUND

Effect of changing background reference values: additional chemicals exceeding background

Zone H surface soil 3-24-97

Site	Chemical	Maximum Detection (mg/kg)	Exceedances			Failed Wilcoxon Test
			2xMean	$UTL_{90,90}$	Revised $UTL_{95,95}$	
SWMU 13	--	--	--	--	--	--
SWMU 14	As	13.6	X	X		X
	Be	1.2	X	X		X
	Mn	473	X	X		X
	Tl	0.55				X
	V	71.9	X	X		X
SWMU 15	Be	0.805	X			
	Cr_6	50.95_T	X	X		
	Mn	506	X	X		X
	V	51.7	X			
SWMU 17	V	61.8	X	X		
SWMU 19	Mn	320	X			
SWMU 20	--	--	--	--	--	--
SWMU 121	--	--	--	--	--	--
SWMU 159	As	12.8	X	X		
	Be	1.2	X	X		
	Cr_6	72.3_T	X	X	X	
	Mn	307	X			
	V	62.6	X	X		
SWMU 178	--	--	--	--	--	--
AOC 649	--	--	--	--	--	--
AOC 650	Be	1.1	X	X		

AOC 650	Tl	0.54	X			
AOC 653	--	--	--	--	--	--
AOC 654	Cr_6	53.3_T	X	X		
AOC 655	As	12.7	X	X		
	Be	0.91	X			
	Mn	382	X	X		
AOC 656	Al	17,400	X			
	As	14.8	X	X		
	Be	0.92	X			
	V	56.1	X	X		
AOC 660	--	--	--	--	--	--
AOC 662	--	--	--	--	--	--
AOC 136/663	Be	1.4	X	X	X	
	Cr_6	54.3_T	X	X		
AOC 665	--	--	--	--	--	--
AOC 666	--	--	--	--	--	--
AOC 138/667	Be	0.935	X	X		
	Cr_6	56.7_T	X	X		
AOC 670	Al	21,700	X	X		X
	Be	1.2	X	X		X
	Cr_6	74.2_T	X	X	X	X
	Mn	418	X	X		X
	V	68.3	X	X		X
Aoc 684	Cr_6	57.8_T	X	X		X
	V	72	X	X		X
G80 (OIA)	As	11.7	X			

Zone H subsurface soil

Site	Chemical	Maximum Detection (µg/L)	Exceedances			Failed Wilcoxon Test
			2xMean	$UTL_{90,90}$	Revised $UTL_{95,95}$	
SWMU 14	Cr_6	61.3_T	X			NA
SWMU 17	As	25.6	X	X	X	NA
SWMU 159	Cr_6	68.1_T	X	X		NA
AOC 654	As	18.4	X	X		NA
	Cr_6	70.7_T	X	X		NA
AOC 670	As	29.4	X	X	X	NA
	Cr_6	64.9_T	X			NA
AOC 684	As	17.8	X			NA

Note: No hexavalent chromium was detected in any Zone H samples.

Effect of changing background reference values: additional chemicals exceeding background

Zone H groundwater 3-24-97

Site	Chemical	Maximum Detection (mg/kg)	Exceedances			Shallow/deep Exceedance (S/D)
			2xMean	$UTL_{95/95}$	Revised $UTL_{95/95}$	
SWMU 13	As	16.4	X			S
	Tl	4.2	X	X		S
SWMU 14	As	10.2	X	X	X	D
	Mn	2,680	X	X	X	S
SWMU 17	As	17.2	X			S
AOC 656	As	18.0	X	X		S
AOC 660	As	12.8	X			S
	Tl	3.7	X			S
AOC 662	Tl	4.0	X			S
AOC 136/663	As	12.2	X			S

Zone H 3-24-97
Outliers removed from grid-based background datasets

Surface soil

Manganese	GDHSB04101	983 mg/kg

Subsurface soil

Arsenic	GDHSB04302	136 mg/kg
Chromium	GDHSB08602	95.2 mg/kg

Shallow groundwater

Arsenic	GDHGW00301	26.6U μg/L
Manganese	GDHGW00901	4,570 μg/L
	00902	3,190 μg/L
	00903	3,250 μg/L
	00904	2,620 μg/L
Thallium	GDHGW00901	105 μg/L

Deep groundwater

Arsenic	GDHGW01D03	36U μg/L

Memorandum

To: Naval Base Charleston Project Team

From: Todd Haverkost, P.G.
E/A&H

Date: May 22, 1997

Re: Zone H RFI Resolution of Final Comments

As reflected in the draft Project Team technical subcommittee minutes provided to members of the team, all outstanding SCDHEC comments on the Zone H RFI report have were resolved with the exception of AOC 653, AOC 659, AOC 660, AOC 661, AOC 665, AOC 666, and AOC 667/SWMU 138. Where available, additional information has been compiled to resolve the outstanding comments. Some sites will require a limited amount of sampling to complete the RFI process and determine if corrective measures will be required. Attached is a summary of the outstanding issue(s) for each site, recommendations, and supporting documentation with the intent of finalizing the RFI in Zone H. Please review the attachments and provide feedback as to whether the recommendations are acceptable. Pending acceptance of the recommendations, E/A&H is committed to revising the Zone H RFI report and submit it in final form within 15 working days.

AOC 653, Hobby Shop

Site History: One of four buildings which make up the automotive hobby shop complex. A hydraulic fluid storage tank formerly located at the east end of Building 1508 was suspected to have leaked. In addition, various paints, solvents, thinners and petroleum products have been used and stored at the site. Subsequent to the RFI, the storage tank and surrounding contaminated soil were excavated by the Environmental Detachment as an interim measure.

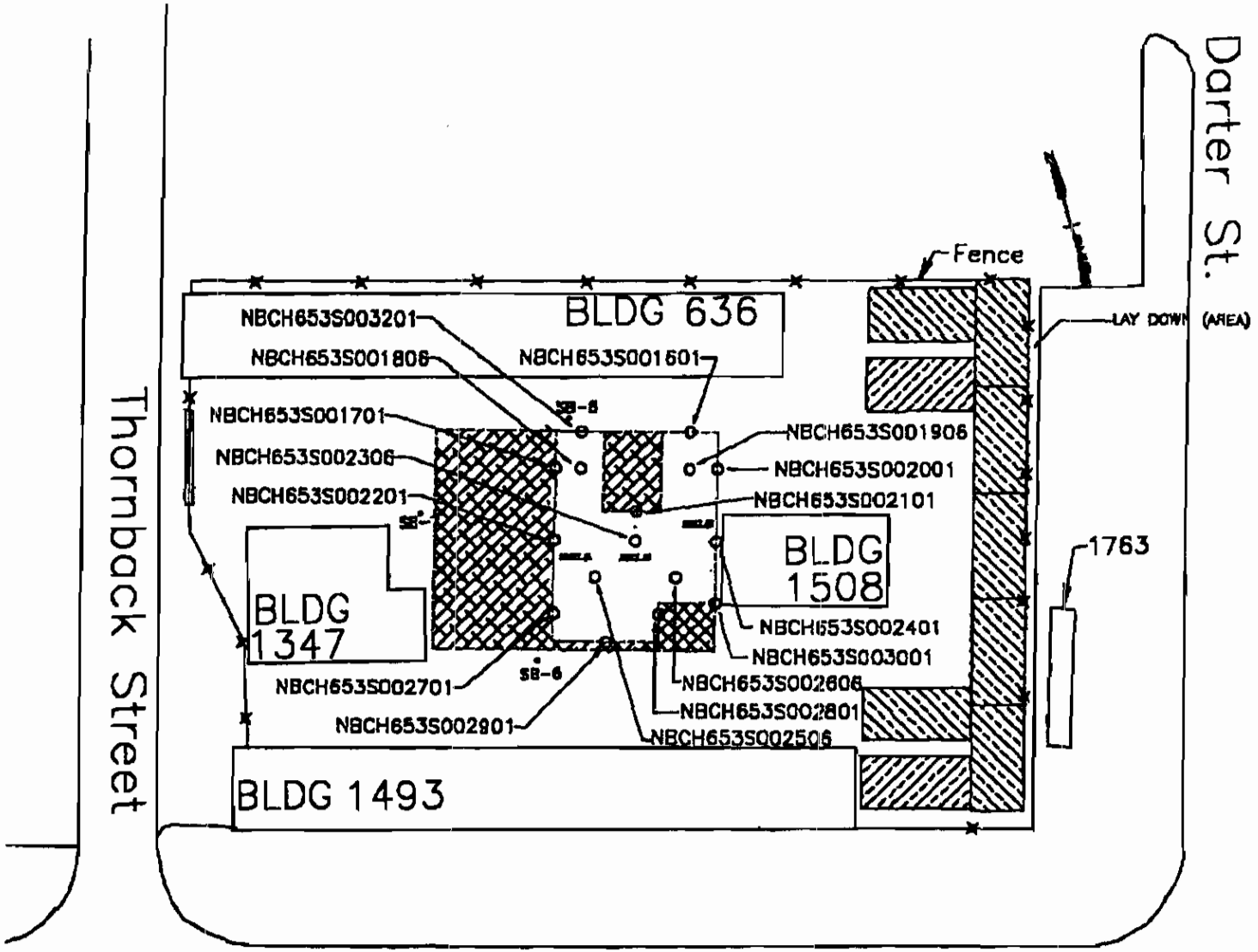
Concern/Outstanding Issue:

CMS decision pending review of analytical results of confirmation samples collected following the interim measures action.

Recommendation:

No further action based on the analytical data provided by the Detachment. Benzo(a)pyrene was detected in one sample at a concentration of .285 ppm which does exceed the residential RBC; however, the concentration is between the residential remedial goal options of .06 ppm and .6 ppm which correspond to a 1E-06 and 1E-05 risk respectively. The total risk due to surface soil exposure was less than 1E-06 prior to the removal and obviously remains below that level subsequent to the removal. Arsenic is above the Zone H background level of 15.6 ppm at one location but, upon backfilling of the site the surface exposure pathway will be eliminated. Arsenic in groundwater was the risk driver at this site. Of the 2 wells at the site, arsenic only exceeded the MCL of 50 ppm in one quarter of sampling from one of the wells.

CONFIRMATORY SAMPLES FOR AOC 653				
SAMPLES	**BTEX &NAPHT**	**TPH (PPM)**	**RCRA METALS**	**PAH**
NBCH653S001601 (SPORT0268-2)	UN-DETECTABLE	1080	BELOW LIMITS	BENZO(a) PYRENE 0.285PPM IND 0.78 RES 0.088
NBCH653S001701 (SPORT0268-3)	UN-DETECTABLE	160	BELOW LIMITS	UNDETEC-TABLE
NBCH653S001806 (SPORT0265-1)	UN-DETECEABLE	210	BELOW LIMITS	UNDETEC-TABLE
NBCH653S001906 (SPORT0265-2)	UN-DETECTABLE	120	BELOW LIMITS	UNDETEC-TABLE
NBCH653S002001 (SPORT0268-4)	UN-DETECTABLE	30.0	BELOW LIMITS	UNDETEC-TABLE
NBCH653S002101 (SPORT0268-5)	UN-DETECTABLE	20.0	ARSENIC 38.2PPM IND 610, RES 23	UNDETEC-TABLE
NBCH653S002201 (SPORT0268-6)	UN-DETECTABLE	380	BELOW LIMITS	UNDETEC-TABLE
NBCH653S002306 (SPORT0265-3)	UN-DETECTABLE	280	BELOW LIMITS	UNDETEC-TABLE
NBCH653S002401 (SPORT0268-7)	UN-DETECTABLE	340	BELOW LIMITS	UNDETEC-TABLE
NBCH653S002506 (SPORT0265-4)	UN-DETECTABLE	410	BELOW LIMITS	UNDETEC-TABLE
NBCH653S002606 (SPORT0265-5)	UN-DETECTABLE	90.0	BELOW LIMITS	UNDETEC-TABLE
NBCH653S002701 (SPORT0268-8)	UN-DETECTABLE	230	BELOW LIMITS	BELOW LIMITS
NBCH653S002801 (SPORT0268-9)	UN-DETECTABLE	500	BELOW LIMITS	UNDETEC-TABLE
NBCH653S002901 (SPORT0268-10)	UN-DETECTABLE	270	BELOW LIMITS	UNDETEC-TABLE
NBCH653S003001 (SPORT0268-11)	UN-DETECTABLE	280	BELOW LIMITS	UNDETEC-TABLE
NBCH653S003201 (SPORT0268-1)	UN-DETECTABLE	60.0	BELOW LIMITS	BELOW LIMITS



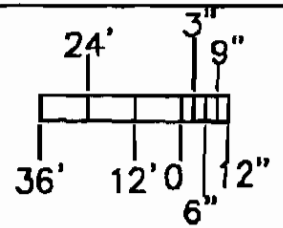
Encl. (1)

Encl. (1)

SAMPLE MAP LOCATIONS

LEGEND

• Soil Boring (SB)



GRAPHIC SCALE

SCALE: 12"=12'-0"

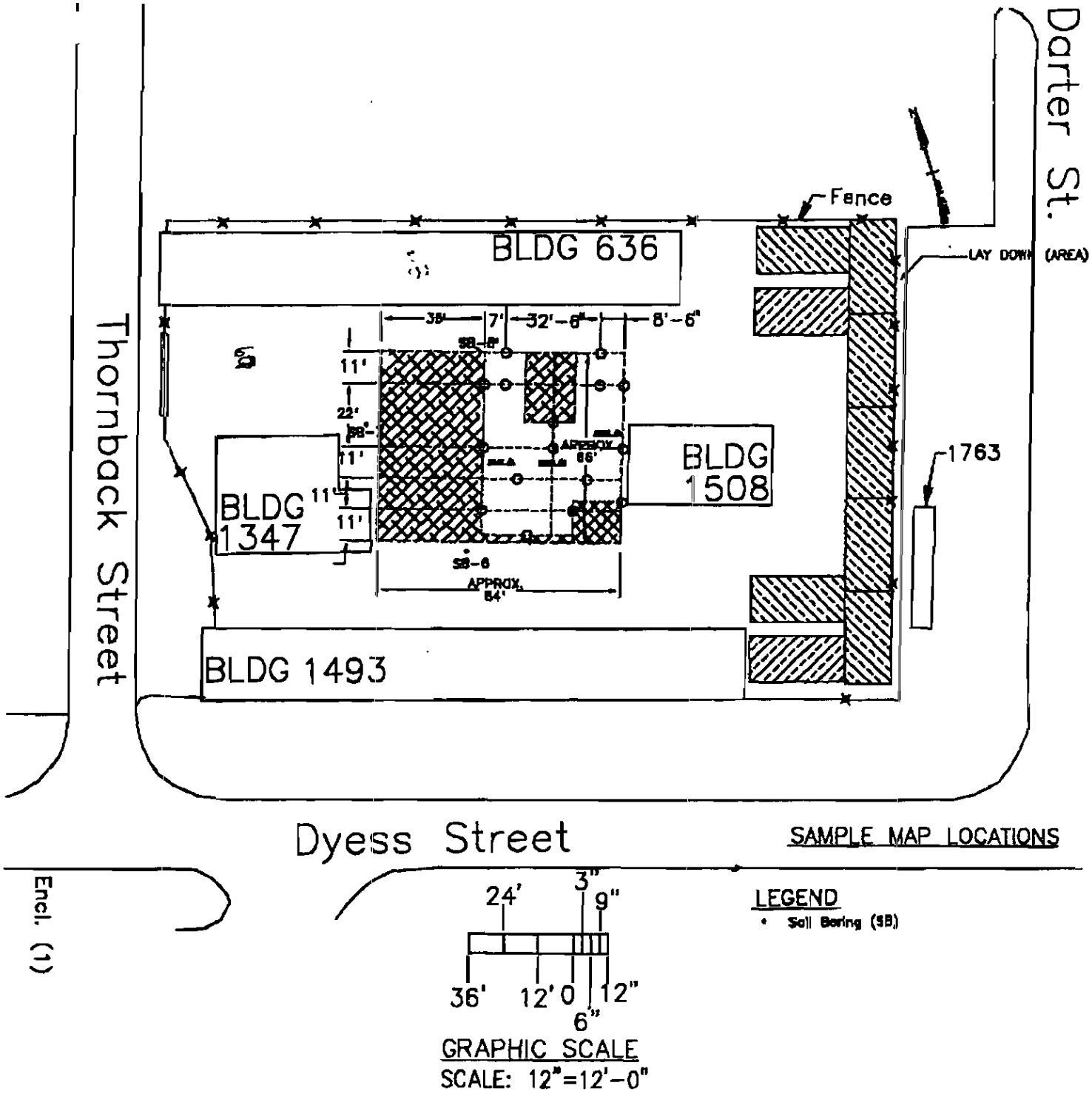

Darter St.
Encl. (1)
Fence
BLDG 636
LAY DOWN (AREA)
Thornback Street
BLDG 1347
BLDG 1508
1763
BLDG 1493
Dyess Street
Encl. (1)
SAMPLE MAP LOCATIONS
LEGEND
Soil Boring (SB)
24'
3"
9"
36'
12'
0
12"
6"
GRAPHIC SCALE
SCALE: 12"=12'-0"

Table 6.2.7.15
Summary of Risk and Hazard for AOC 653
NAVBASE - Charleston Zone H
Charleston, South Carolina

Medium	Exposure Pathway	HI (Adult)	HI (Child)	ILCR (LWA)	HI (Worker)	ILCR (Worker)
Surface Soil	Incidental Ingestion	ND	ND	6E-07	ND	7E-08
	Dermal Contact	ND	ND	3E-07	ND	1E-07
Shallow Groundwater	Ingestion	3	7	8E-04	1	2E-04
Sum of All Pathways		3	7	8E-04	1	2E-04

Notes:
ND indicates not determined due to the lack of available risk information.
ILCR indicates incremental excess lifetime cancer risk
HI indicates hazard index

Chemicals Detected in Zone H Monitoring Wells
Sampling Rounds 1, 2, 3, and 4
Packet 2

Name	Round 1	Round 2	Round 3	Round 4	RBC	UTL	MCL
Monitoring Well NBCH653001							
Inorganic Chemicals (mg/L)							
Aluminum (Al)	ND	189	ND	ND	3,700	NA	NL
Arsenic (As)	ND	37	54	45	0	28	50
Calcium (Ca)	108,000	94,200	100,000	107,000	NA	NA	NL
Iron (Fe)	9,280	10,550	11,500	14,500	1,100	NA	NL
Magnesium (Mg)	86,200	66,850	64,300	65,000	NA	NA	NL
Manganese (Mn)	672	680	719	779	84	3,391	NL
Potassium (K)	58,200	37,850	45,600	36,100	NA	NA	NL
Selenium (Se)	1	ND	ND	ND	18	3	50
Sodium (Na)	598,000	476,500	501,000	453,000	NA	NA	NL
Thallium (Tl)	1	ND	ND	3	0	8	2
Pesticide/PCB Compounds (µg/L)							
4,4'-DDT	0	ND	ND	ND	0	NA	NL
Semi-volatile Organic Compounds (µg/L)							
bis(2-Ethylhexyl)phthalate (BEHP)	ND	3	ND	ND	5	NA	NL 6

Note:
ND = Not detected at or above the method detection limit
NA = Not applicable
NL = Not listed
NS = Not sampled

Chemicals Detected in Zone H Monitoring Wells
Sampling Rounds 1, 2, 3, and 4
Packet 2

Name	Round 1	Round 2	Round 3	Round 4	RBC	UTL	MCL
Monitoring Well NBCH653002							
Inorganic Chemicals (mg/L)							
Aluminum (Al)	ND	248	ND	ND	3,700	NA	NL
Arsenic (As)	ND	ND	23	10	0	28	50
Calcium (Ca)	44,300	56,700	57,300	77,500	NA	NA	NL
Iron (Fe)	6,230	9,510	8,120	8,850	1,100	NA	NL
Magnesium (Mg)	59,900	60,600	48,900	68,100	NA	NA	NL
Manganese (Mn)	91	128	109	154	84	3,391	NL
Potassium (K)	52,300	44,300	42,000	44,700	NA	NA	NL
Selenium (Se)	1	ND	ND	ND	18	3	50
Sodium (Na)	707,000	539,000	370,000	524,000	NA	NA	NL
Vanadium (V)	5	ND	ND	ND	26	NA	NL
Semi-volatile Organic Compounds (µg/L)							
Benzoic acid	ND	ND	ND	1	15,000	NA	NL

Note:
ND = Not detected at or above the method detection limit
NA = Not applicable
NL = Not listed
NS = Not sampled

AOC 659, Diesel Storage

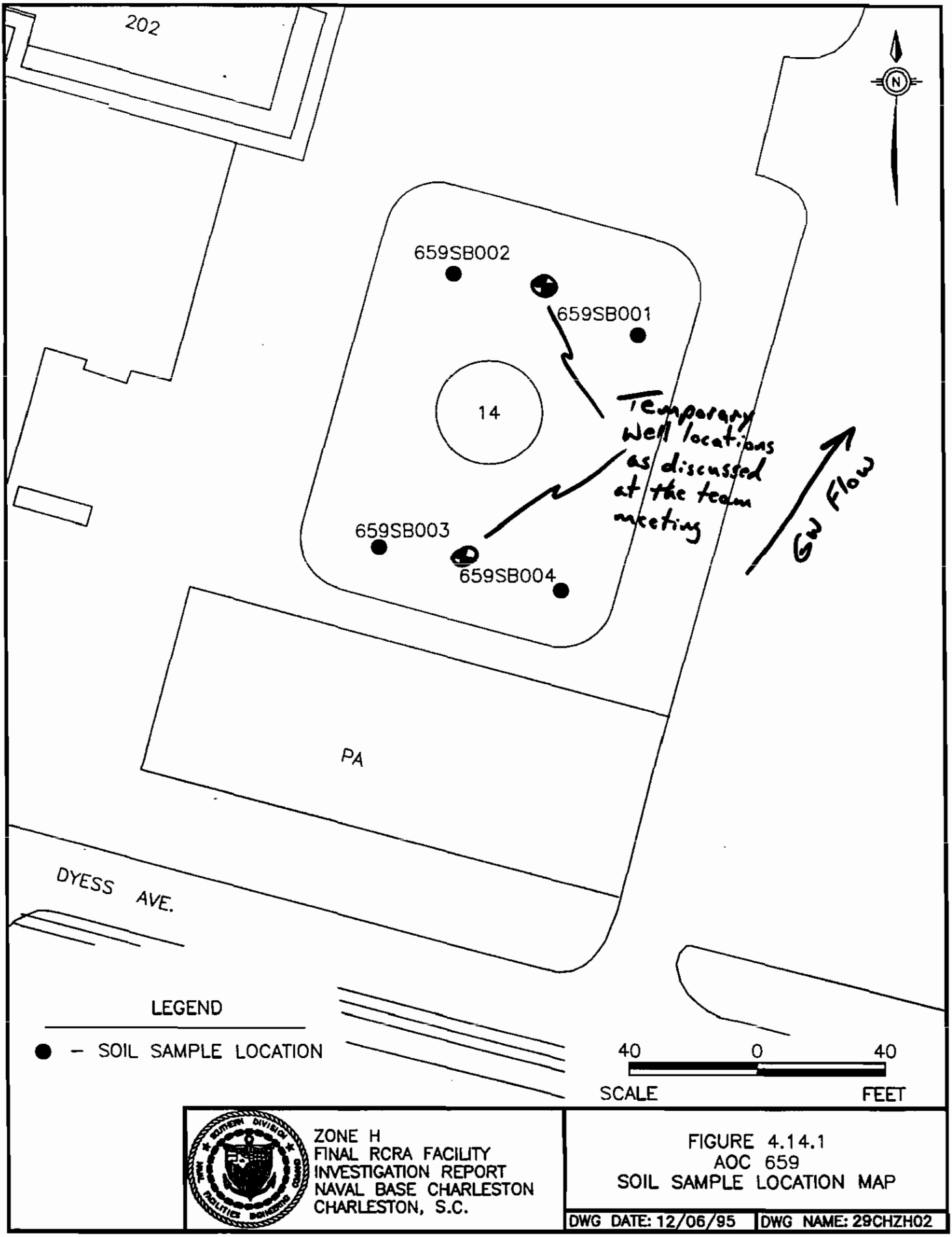
Site History: 30,000-gallon steel AST south of Hobson Avenue in a 5-foot-high earthen berm used to store diesel fuel from 1958 until 1990. The facility is no longer in use and the AST has been removed.

Concern/Outstanding Issue:

SCDHEC is concerned with two methylene chloride hits in soil which exceeded the SSL of 20 ppb.

Recommendation:

Because there was inadequate evidence to support the hypothesis the methylene chloride was a laboratory artifact, the team agreed to install two temporary monitoring wells inside the bermed area. The intent is to ascertain whether methylene chloride is present in groundwater. E/A&H suggests that the current Zone H RFI report conclusions reflect this decision and that the final results and CMS recommendation be submitted in an addendum to the RFI report. This solution will prevent further delay in finalizing the report.



ZONE H
FINAL RCRA FACILITY
INVESTIGATION REPORT
NAVAL BASE CHARLESTON
CHARLESTON, S.C.

FIGURE 4.14.1
AOC 659
SOIL SAMPLE LOCATION MAP

DWG DATE: 12/06/95 | DWG NAME: 29CHZH02

AOC 660, Mosquito Control

Site History: Used for mosquito control in the 1950s; possibly used for storage, mixing, and rinsing pesticides; currently an asphalt parking lot northwest of Building NS-53.

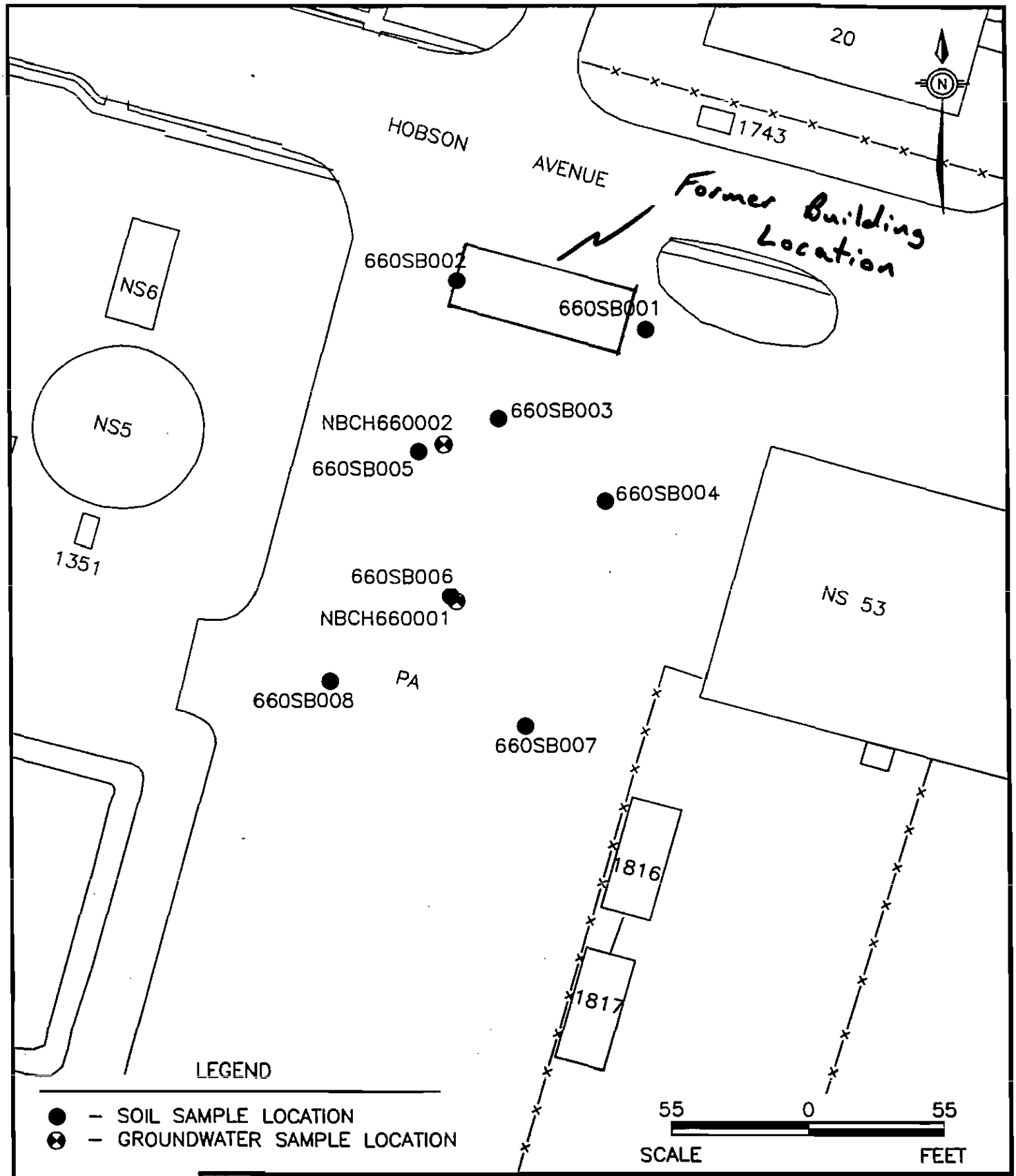
Concern/Outstanding Issue:

SCDHEC is concerned whether or not sampling was completed in or near enough to the former building foot print to detect any releases which may have occurred.

Recommendation:

No further action is recommended. E/A&H reviewed base maps from 1955 and 1962 to determine the location of the building. While it does appear the building footprint was located in the northern portion of the sampling pattern, the sampling locations were significantly biased enough to detect any release which may have occurred.

Based on 1955 + 1962 Maps



ZONE H
FINAL RCRA FACILITY
INVESTIGATION REPORT
NAVY BASE CHARLESTON
CHARLESTON, S.C.

FIGURE 4.15.1
AOC 660
SOIL & GROUNDWATER SAMPLE
LOCATION MAP

DWG DATE: 12/06/95 | DWG NAME: 29CHZH03

AOC 661, Explosives Storage

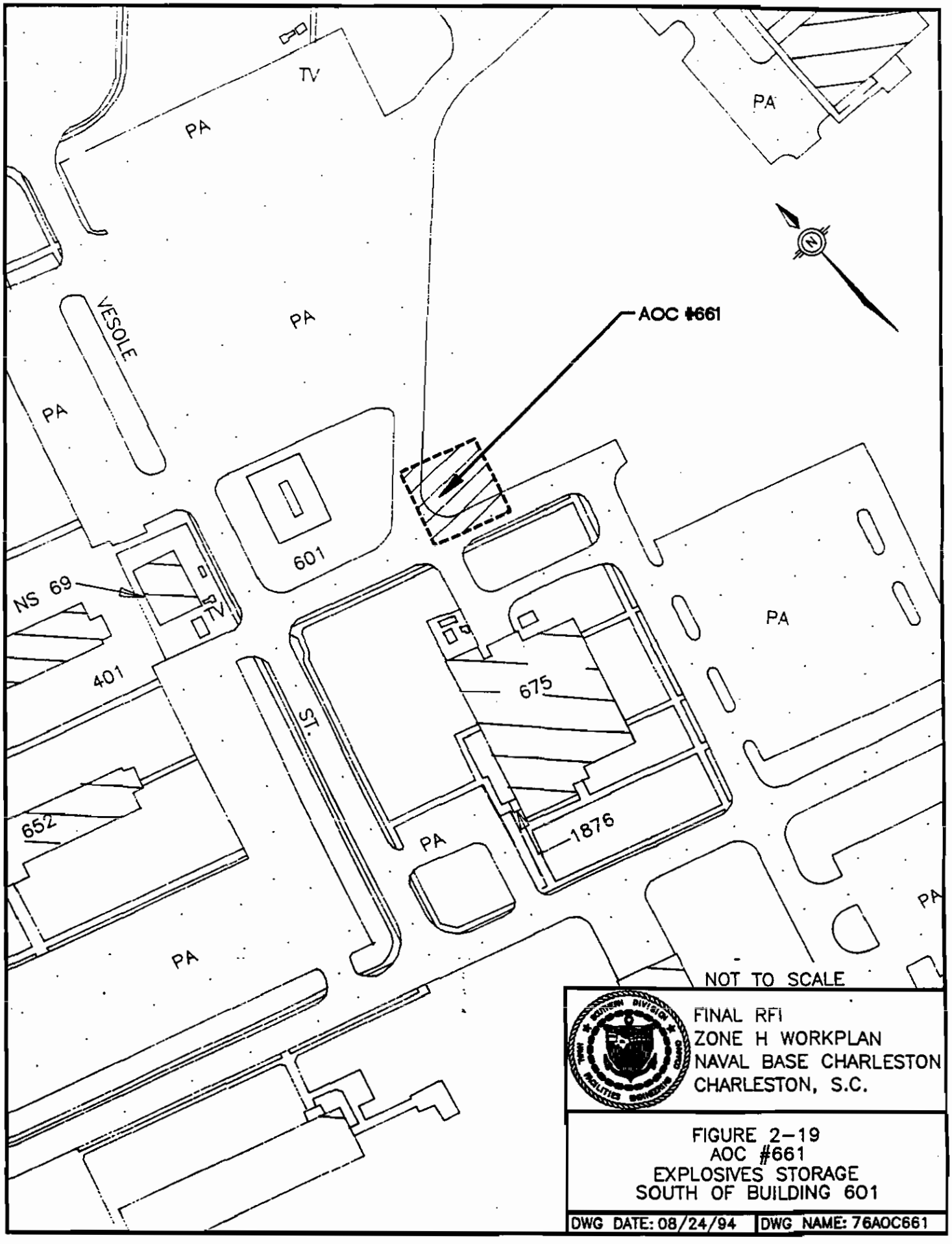
Site History: Unknown explosives were stored during the 1950s in a now demolished building; currently a grassy area south of Building 601 and northwest of Building 675.

Concern/Outstanding Issue:

The facility has is yet to be surveyed for possible UXO and no soil samples have been collected.

Recommendation:

Soil samples will be collected for confirmation that no releases of explosives compounds occurred. Samples should be analyzed for explosives by Method 8330. Based on the apparent size of the former building, 3 soil borings should be sufficient to determine whether a release occurred. E/A&H suggests that the current Zone H RFI report conclusions reflect this decision and that the final results and CMS recommendation be submitted in an addendum to the RFI report. This solution will prevent further delay in finalizing the report.



FINAL RFI
ZONE H WORKPLAN
NAVAL BASE CHARLESTON
CHARLESTON, S.C.

FIGURE 2-19
AOC #661
EXPLOSIVES STORAGE
SOUTH OF BUILDING 601

DWG DATE: 08/24/94 | DWG NAME: 76AOC661

AOC 665, Pyrotechnics Storage

Site History: A former shed which stored unknown pyrotechnic explosives from 1943 until its demolition at an unknown date; currently Buildings 1889 and NS-46 are on the site where the pyrotechnic shed was located.

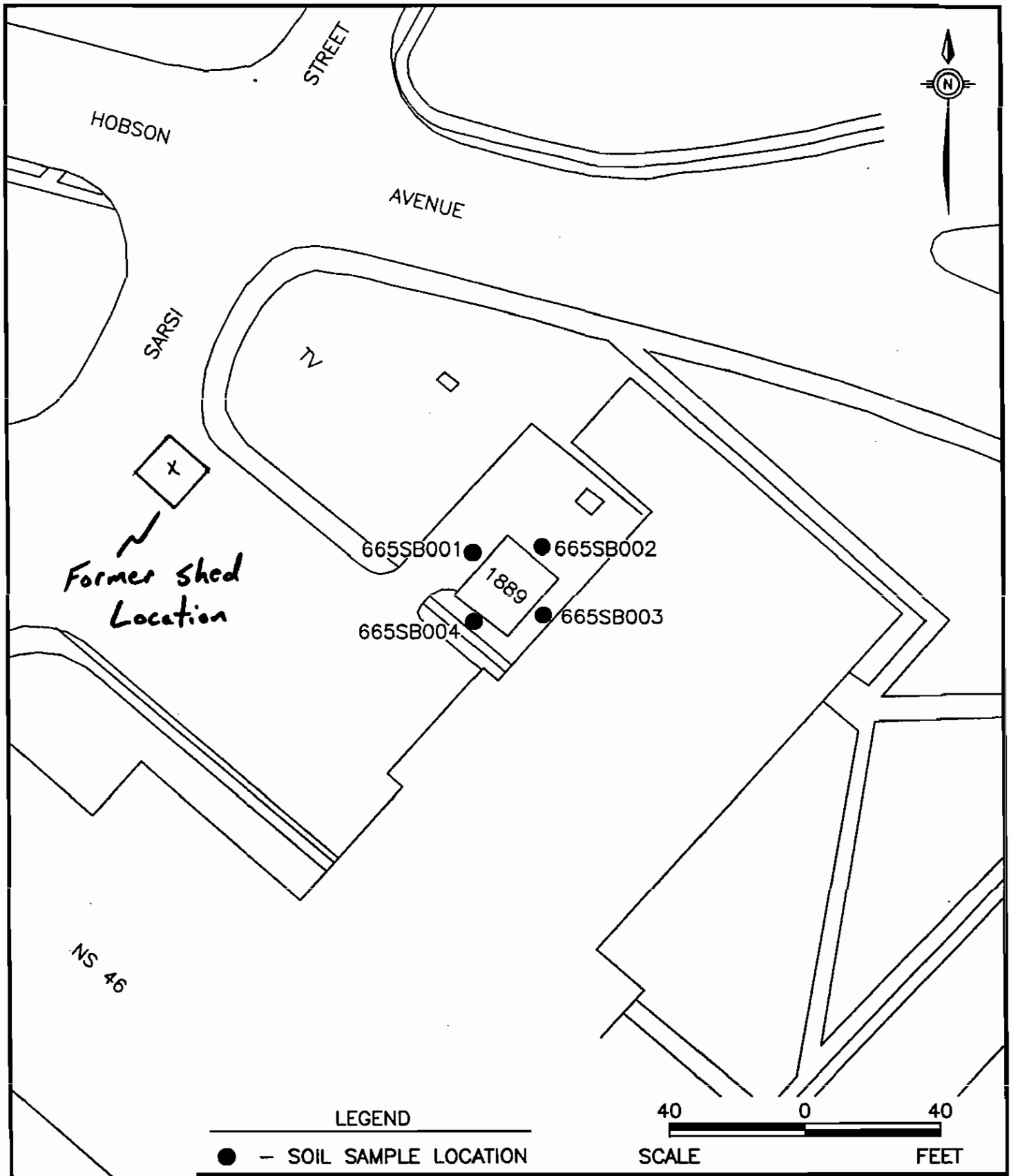
Concern/Outstanding Issue:

Samples were collected from 4 locations around Building 1889; however, SCDHEC is concerned whether or not sampling was completed in or near enough to the former building foot print to detect any releases which may have occurred.

Recommendation:

Base maps from 1941 and 1943 which indicate the site was approximately 100 feet west of where the samples were collected. E/A&H suggests that several additional samples be collected in the area now believed to be the location of the former pyrotechnics shed. The samples only need to be analyzed for pyrotechnics by Method 8330. The Zone H RFI report conclusions reflect this decision and that the final results and CMS recommendation be submitted in an addendum to the RFI report. This solution will prevent further delay in finalizing the report. Three soil borings are proposed.

Used on 1941 & 1943 Maps



ZONE H
FINAL RCRA FACILITY
INVESTIGATION REPORT
NAVAL BASE CHARLESTON
CHARLESTON, S.C.

FIGURE 4.18.1
AOC 665
SOIL SAMPLE LOCATION MAP

DWG DATE: 12/06/95 | DWG NAME: 29CHZH04

AOC 666, Fuel Storage Area

Site History: The site is a UST enclosed by creosote-treated railroad ties, approximately 10 x 30 feet (Facility NS-45), which supplies No. 2 fuel oil to the adjacent heating plant (NS-44). The exact capacity of the tank is unknown. The site was constructed in 1958. The surrounding area was an airstrip prior to 1958. Subsequent to the RFI the UST was removed.

Concern/Outstanding Issue:

SCDHEC has requested that the Detachment Closure Report be reviewed to determine source of backfill material.

Recommendations:

According to the Detachment, the soil excavated from the tank pit was sampled, analyzed, and determined to be clean enough be placed back in the excavation. Based on the information provided to E/A&H, it seems SCDHEC is now concerned because groundwater sampled directly from the tank pit contained unacceptable levels of contamination. It is E/A&H's opinion that the water sampled from the tank pit is not representative of ambient groundwater conditions because of the multiple ways in which contamination could have been introduced to the groundwater in the pit during excavation. Four quarters of groundwater data were collected from the two monitoring wells at the site and the only organic constituent detected was acenapthene at a maximum concentration of 14 ppb. There is not an RBSL established under the South Carolina RBCA guidelines for this compound nor is there an MCL. The USEPA Region III tap water RBC is 2200 ppb. E/A&H recommends no further action at this site.

DATALCP3
05/20/97

CHARLESTON - ZONE H
CHARLESTON ZONE H - QUARTERLY '95
AOC 666 Volatiles in Groundwater

SW846-VOA															
	SAMPLE ID ------>	666-G-W001-01		666-G-W001-02		666-G-W001-03		666-G-W001-04		666-G-W002-01		666-G-W002-02	
	ORIGINAL ID ----->	666GW00101		666GW00102		666GW00103		666GW00104		666GW00201		666GW00202	
	LAB SAMPLE ID -->	41974-001		43518-010		45463-002		25130.03		41974-002		43518-011	
	ID FROM REPORT -->	102701		666GW00102		666GW00103		666GW00104		102702		666GW00202	
	SAMPLE DATE ----->	10/26/94		04/04/95		09/13/95		04/02/96		10/26/94		04/04/95	
	DATE ANALYZED --->	11/03/94		04/18/95		10/05/95		04/08/96		11/03/94		04/18/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	CHS22	VAL	CHS41	VAL	CHS51	VAL	25067	VAL	CHS22	VAL	CHS41	VAL
74-87-3	Chloromethane	6.	J	10.	UJ	10.	UJ	10.	U	10.	U	10.	UJ
74-83-9	Bromomethane	10.	U	10.	U	10.	UJ	10.	U	10.	U	10.	U
75-01-4	Vinyl chloride	2.1	J	10.	U	10.	U	10.	U	10.	U	10.	U
75-00-3	Chloroethane	5.	U	5.	U	5.	UJ	10.	U	5.	U	5.	U
75-09-2	Methylene chloride	10.	U	10.	U	10.	U	5.	U	10.	U	10.	U
67-64-1	Acetone	25.	U	25.	U	200.	UJ	10.	U	25.	U	25.	U
75-15-0	Carbon disulfide	5.	UJ	5.	UJ	5.	UJ	5.	U	5.	UJ	5.	UJ
109-99-9	Tetrahydrofuran	25.	U	25.	U	25.	U	25.	U	25.	U	25.	U
75-69-4	Trichlorofluoromethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-35-4	1,1-Dichloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-34-3	1,1-Dichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
67-66-3	Chloroform	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
107-06-2	1,2-Dichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
78-93-3	2-Butanone (MEK)	25.	U	25.	U	25.	U	10.	U	25.	U	25.	U
71-55-6	1,1,1-Trichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
56-23-5	Carbon tetrachloride	5.	U	5.	UJ	5.	U	5.	U	5.	U	5.	UJ
108-05-4	Vinyl acetate	10.	U	10.	U	10.	U	10.	UJ	10.	U	10.	U
75-27-4	Bromodichloromethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
78-87-5	1,2-Dichloropropane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-01-6	Trichloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
124-48-1	Dibromochloromethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
71-43-2	Benzene	5.	U	5.	U	5.	U	1.	J	5.	U	5.	U
75-25-2	Bromoform	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25.	U	25.	U	25.	U	10.	U	25.	U	25.	U
591-78-6	2-Hexanone	25.	U	25.	U	25.	U	10.	U	25.	U	25.	U
127-18-4	Tetrachloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-88-3	Toluene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-90-7	Chlorobenzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
100-41-4	Ethylbenzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
100-42-5	Styrene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
1330-20-7	Xylene (Total)	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
110-75-8	2-Chloroethyl vinyl ether	10.	U	10.	U	10.	U	10.	UJ	10.	U	10.	U

*** Validation Complete ***

CHARLESTON - ZONE H
CHARLESTON ZONE H - QUARTERLY '95
AOC 666 Volatiles in Groundwater

SW846-VOA			
	SAMPLE ID ------>	666-G-W002-03	666-G-W002-04
	ORIGINAL ID ---->	666GW00203	666GW00204
	LAB SAMPLE ID -->	45463-001	25130.D4
	ID FROM REPORT -->	666GW00203	666GW00204
	SAMPLE DATE ----->	09/23/95	04/02/96
	DATE ANALYZED --->	10/05/95	04/11/96
	MATRIX ---------->	Water	Water
	UNITS ----------->	UG/L	UG/L

CAS #	Parameter	CHS51	VAL	25067	VAL
74-87-3	Chloromethane	10.	UJ	10.	U
74-83-9	Bromomethane	10.	UJ	10.	U
75-01-4	Vinyl chloride	10.	UJ	10.	U
75-00-3	Chloroethane	5.	UJ	10.	U
75-09-2	Methylene chloride	10.	U	5.	U
67-64-1	Acetone	25.	UJ	10.	U
75-15-0	Carbon disulfide	5.	UJ	5.	U
109-99-9	Tetrahydrofuran	25.	U	25.	U
75-69-4	Trichlorofluoromethane	5.	U	5.	U
75-35-4	1,1-Dichloroethene	5.	U	5.	U
75-34-3	1,1-Dichloroethane	5.	U	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U	5.	U
67-66-3	Chloroform	5.	U	5.	U
107-06-2	1,2-Dichloroethane	5.	U	5.	U
78-93-3	2-Butanone (MEK)	25.	U	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U	5.	U
56-23-5	Carbon tetrachloride	5.	U	5.	U
108-05-4	Vinyl acetate	10.	U	10.	UJ
75-27-4	Bromodichloromethane	5.	U	5.	U
78-87-5	1,2-Dichloropropane	5.	U	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U	5.	U
79-01-6	Trichloroethene	5.	U	5.	U
124-48-1	Dibromochloromethane	5.	U	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U	5.	U
71-43-2	Benzene	5.	U	5.	U
75-25-2	Bromoform	5.	U	5.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25.	U	10.	U
591-78-6	2-Hexanone	25.	U	10.	U
127-18-4	Tetrachloroethene	5.	U	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U	5.	U
108-88-3	Toluene	5.	U	5.	U
108-90-7	Chlorobenzene	5.	U	5.	U
100-41-4	Ethylbenzene	5.	U	5.	U
100-42-5	Styrene	5.	U	5.	U
1330-20-7	Xylene (Total)	5.	U	5.	U
110-75-8	2-Chloroethyl vinyl ether	10.	U	10.	U

*** Validation Complete ***

CHARLESTON - ZONE H
CHARLESTON ZONE H - QUARTERLY '95
AOC 666 SVOCs in Groundwater

SW846-SVOA	SAMPLE ID ------>	666-G-W001-01	666-G-W001-02	666-G-W001-03	666-G-W001-04	666-G-W002-01	666-G-W002-02
	ORIGINAL ID ----->	666GW00101	666GW00102	666GW00103	666GW00104	666GW00201	666GW00202
	LAB SAMPLE ID --->	41974-006	43518-002	45463-013	25130.03	41974-007	43518-003
	ID FROM REPORT -->	102701	666GW00102	666GW00103	666GW00104	102702	666GW00202
	SAMPLE DATE ----->	10/26/94	04/04/95	09/23/95	04/02/96	10/26/94	04/04/95
	DATE EXTRACTED -->	10/28/94	04/06/95	09/28/95	04/03/96	10/28/94	04/06/95
	DATE ANALYZED --->	11/02/94	04/12/95	10/03/95	04/16/96	11/02/94	04/12/95
	MATRIX ---------->	Water	Water	Water	Water	Water	Water
	UNITS ---------->	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L

CAS #	Parameter	CHS22	VAL	CHS41	VAL	CHS51	VAL	25067	VAL	CHS22	VAL	CHS41	VAL
62-75-9	N-Nitrosodimethylamine	11.	U	11.	U	11.	U	NR		11.	U	12.	U
99-09-2	3-Nitroaniline	54.	U	57.	U	55.	U	50.	U	55.	U	60.	U
108-95-2	Phenol	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
83-32-9	Acenaphthene	11.	U	11.	U	11.	U	2.	J	14.		9.5	J
62-53-3	Aniline	11.	U	11.	U	11.	U	NR		11.	U	12.	U
51-28-5	2,4-Dinitrophenol	54.	U	57.	U	55.	U	50.	U	55.	U	60.	U
111-44-4	bis(2-Chloroethyl)ether	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
100-02-7	4-Nitrophenol	54.	U	57.	U	55.	U	50.	U	55.	U	60.	U
95-57-8	2-Chlorophenol	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
132-64-9	Dibenzofuran	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
541-73-1	1,3-Dichlorobenzene	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
121-14-2	2,4-Dinitrotoluene	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
106-46-7	1,4-Dichlorobenzene	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
84-66-2	Diethylphthalate	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
100-51-6	Benzyl alcohol	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
7005-72-3	4-Chlorophenylphenylether	11.	U	11.	U	11.	UJ	10.	U	11.	U	12.	U
95-50-1	1,2-Dichlorobenzene	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
86-73-7	fluorene	11.	U	11.	U	11.	UJ	10.	U	11.	U	12.	U
95-48-7	2-Methylphenol (o-Cresol)	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
100-01-6	4-Nitroaniline	54.	U	57.	U	55.	U	50.	U	55.	U	60.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	54.	U	57.	U	55.	U	50.	U	55.	U	60.	U
106-44-5	4-Methylphenol (p-Cresol)	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
86-30-6	N-Nitrosodiphenylamine	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
621-64-7	N-Nitroso-di-n-propylamine	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
103-33-3	Azobenzene	11.	U	11.	U	11.	U	NR		11.	U	12.	U
67-72-1	Hexachloroethane	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
101-55-3	4-Bromophenyl-phenylether	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
98-95-3	Nitrobenzene	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
118-74-1	Hexachlorobenzene	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
78-59-1	Isophorone	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
87-86-5	Pentachlorophenol	11.	U	11.	U	11.	U	50.	U	11.	U	12.	U
88-75-5	2-Nitrophenol	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
85-01-8	Phenanthrene	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
105-67-9	2,4-Dimethylphenol	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
120-12-7	Anthracene	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U

*** Validation Complete ***

CHARLESTON - ZONE H
CHARLESTON ZONE H - QUARTERLY '95
AOC 666 SVOCs in Groundwater

SW846-SVOA	SAMPLE ID ------>	666-G-W001-01	666-G-W001-02	666-G-W001-03	666-G-W001-04	666-G-W002-01	666-G-W002-02
	ORIGINAL ID ----->	666GW00101	666GW00102	666GW00103	666GW00104	666GW00201	666GW00202
	LAB SAMPLE ID --->	41974-006	43518-002	45463-013	25130.03	41974-007	43518-003
	ID FROM REPORT -->	102701	666GW00102	666GW00103	666GW00104	102702	666GW00202
	SAMPLE DATE ----->	10/26/94	04/04/95	09/23/95	04/02/96	10/26/94	04/04/95
	DATE EXTRACTED -->	10/28/94	04/06/95	09/28/95	04/03/96	10/28/94	04/06/95
	DATE ANALYZED --->	11/02/94	04/12/95	10/03/95	04/16/96	11/02/94	04/12/95
	MATRIX ---------->	Water	Water	Water	Water	Water	Water
	UNITS ----------->	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L

CAS #	Parameter	CHS22	VAL	CHS41	VAL	CHS51	VAL	25067	VAL	CHS22	VAL	CHS41	VAL
65-85-0	Benzoic acid	54.	U	57.	UJ	55.	UJ	50.	U	55.	U	60.	UJ
84-74-2	Di-n-butylphthalate	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
111-91-1	bis(2-Chloroethoxy)methane	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
206-44-0	Fluoranthene	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
120-83-2	2,4-Dichlorophenol	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
92-87-5	Benzidine	54.	U	57.	UJ	55.	UR	NR		55.	U	60.	UJ
120-82-1	1,2,4-Trichlorobenzene	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
129-00-0	Pyrene	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
91-20-3	Naphthalene	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
85-68-7	Butylbenzylphthalate	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
106-47-8	4-Chloroaniline	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
91-94-1	3,3'-Dichlorobenzidine	22.	U	23.	U	22.	UJ	20.	U	22.	U	24.	U
87-68-3	Hexachlorobutadiene	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
56-55-3	Benzo(a)anthracene	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
59-50-7	4-Chloro-3-methylphenol	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
218-01-9	Chrysene	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
91-57-6	2-Methylnaphthalene	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	11.	U	7.4	U	11.	U	10.	U	11.	U	9.4	U
77-47-4	Hexachlorocyclopentadiene	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
117-84-0	Di-n-octyl phthalate	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
88-06-2	2,4,6-Trichlorophenol	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
205-99-2	Benzo(b)fluoranthene	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
95-95-4	2,4,5-Trichlorophenol	54.	U	57.	U	55.	U	50.	U	55.	U	60.	U
207-08-9	Benzo(k)fluoranthene	11.	U	11.	U	11.	U	10.	UJ	11.	U	12.	U
91-58-7	2-Chloronaphthalene	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
50-32-8	Benzo(a)pyrene	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
88-74-4	2-Nitroaniline	54.	U	57.	U	55.	U	50.	U	55.	U	60.	U
193-39-5	Indeno(1,2,3-cd)pyrene	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
131-11-3	Dimethyl phthalate	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
53-70-3	Dibenz(a,h)anthracene	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
208-96-8	Acenaphthylene	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
191-24-2	Benzo(g,h,i)perylene	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U
606-20-2	2,6-Dinitrotoluene	11.	U	11.	U	11.	U	10.	U	11.	U	12.	U

*** Validation Complete ***

CHARLESTON - ZONE H
CHARLESTON ZONE H - QUARTERLY '95
AOC 666 SVOCs in Groundwater

SW846-SVOA	SAMPLE ID ------>	666-G-W002-03	666-G-W002-04
	ORIGINAL ID ----->	666GW00203	666GW00204
	LAB SAMPLE ID --->	45463-012	25130.04
	ID FROM REPORT -->	666GW00203	666GW00204
	SAMPLE DATE ----->	09/23/95	04/02/96
	DATE EXTRACTED -->	09/28/95	04/03/96
	DATE ANALYZED --->	10/03/95	04/16/96
	MATRIX ---------->	Water	Water
	UNITS ----------->	UG/L	UG/L

CAS #	Parameter	CHS51	VAL	25067	VAL
62-75-9	N-Nitrosodimethylamine	11.	U	NR	
99-09-2	3-Nitroaniline	56.	U	50.	U
108-95-2	Phenol	11.	U	10.	U
83-32-9	Acenaphthene	13.		6.	J
62-53-3	Aniline	11.	U	NR	
51-28-5	2,4-Dinitrophenol	56.	U	50.	U
111-44-4	bis(2-Chloroethyl)ether	11.	U	10.	U
100-02-7	4-Nitrophenol	56.	U	50.	U
95-57-8	2-Chlorophenol	11.	U	10.	U
132-64-9	Dibenzofuran	11.	U	10.	U
541-73-1	1,3-Dichlorobenzene	11.	U	10.	U
121-14-2	2,4-Dinitrotoluene	11.	U	10.	U
106-46-7	1,4-Dichlorobenzene	11.	U	10.	U
84-66-2	Diethylphthalate	11.	U	10.	U
100-51-6	Benzyl alcohol	11.	U	10.	U
7005-72-3	4-Chlorophenylphenylether	11.	UJ	10.	U
95-50-1	1,2-Dichlorobenzene	11.	U	10.	U
86-73-7	Fluorene	11.	UJ	10.	U
95-48-7	2-Methylphenol (o-Cresol)	11.	U	10.	U
100-01-6	4-Nitroaniline	56.	U	50.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	11.	U	10.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	56.	U	50.	U
106-44-5	4-Methylphenol (p-Cresol)	11.	U	10.	U
86-30-6	N-Nitrosodiphenylamine	11.	U	10.	U
621-64-7	N-Nitroso-di-n-propylamine	11.	U	10.	U
103-33-3	Azobenzene	11.	U	NR	
67-72-1	Hexachloroethane	11.	U	10.	U
101-55-3	4-Bromophenyl-phenylether	11.	U	10.	U
98-95-3	Nitrobenzene	11.	U	10.	U
118-74-1	Hexachlorobenzene	11.	U	10.	U
78-59-1	Isophorone	11.	U	10.	U
87-86-5	Pentachlorophenol	11.	U	50.	U
88-75-5	2-Nitrophenol	11.	U	10.	U
85-01-8	Phenanthrene	11.	U	10.	U
105-67-9	2,4-Dimethylphenol	11.	U	10.	U
120-12-7	Anthracene	11.	U	10.	U

*** Validation Complete ***

CHARLESTON - ZONE H
CHARLESTON ZONE H - QUARTERLY '95
AOC 666 SVOCs in Groundwater

SW846-SVOA			
	SAMPLE ID ------->	666-G-W002-03	666-G-W002-04
	ORIGINAL ID ----->	666GW00203	666GW00204
	LAB SAMPLE ID --->	45463-012	25130.04
	ID FROM REPORT -->	666GW00203	666GW00204
	SAMPLE DATE ----->	09/23/95	04/02/96
	DATE EXTRACTED -->	09/28/95	04/03/96
	DATE ANALYZED --->	10/03/95	04/16/96
	MATRIX ---------->	Water	Water
	UNITS ---------->	UG/L	UG/L

CAS #	Parameter	CHS51	VAL	25067	VAL
65-85-0	Benzoic acid	56.	UJ	50.	U
84-74-2	Di-n-butylphthalate	11.	U	10.	U
111-91-1	bis(2-Chloroethoxy)methane	11.	U	10.	U
206-44-0	Fluoranthene	11.	U	10.	U
120-83-2	2,4-Dichlorophenol	11.	U	10.	U
92-87-5	Benzidine	56.	UR	NR	
120-82-1	1,2,4-Trichlorobenzene	11.	U	10.	U
129-00-0	Pyrene	11.	U	10.	U
91-20-3	Naphthalene	11.	U	10.	U
85-68-7	Butylbenzylphthalate	11.	U	10.	U
106-47-8	4-Chloroaniline	11.	U	10.	U
91-94-1	3,3'-Dichlorobenzidine	22.	UJ	20.	U
87-68-3	Hexachlorobutadiene	11.	U	10.	U
56-55-3	Benzo(a)anthracene	11.	U	10.	U
59-50-7	4-Chloro-3-methylphenol	11.	U	10.	U
218-01-9	Chrysene	11.	U	10.	U
91-57-6	2-Methylnaphthalene	11.	U	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	11.	U	10.	U
77-47-4	Hexachlorocyclopentadiene	11.	U	10.	U
117-84-0	Di-n-octyl phthalate	11.	U	10.	U
88-06-2	2,4,6-Trichlorophenol	11.	U	10.	U
205-99-2	Benzo(b)fluoranthene	11.	U	10.	U
95-95-4	2,4,5-Trichlorophenol	56.	U	50.	U
207-08-9	Benzo(k)fluoranthene	11.	U	10.	UJ
91-58-7	2-Chloronaphthalene	11.	U	10.	U
50-32-8	Benzo(a)pyrene	11.	U	10.	U
88-74-4	2-Nitroaniline	56.	U	50.	U
193-39-5	Indeno(1,2,3-cd)pyrene	11.	U	10.	U
131-11-3	Dimethyl phthalate	11.	U	10.	U
53-70-3	Dibenz(a,h)anthracene	11.	U	10.	U
208-96-8	Acenaphthylene	11.	U	10.	U
191-24-2	Benzo(g,h,i)perylene	11.	U	10.	U
606-20-2	2,6-Dinitrotoluene	11.	U	10.	U

*** Validation Complete ***

AOC 667/SWMU 138, Vehicle Maintenance Area/Satellite Accumulation Area

Site History: A two-story brick structure (Building 1776) which includes an oil/water separator. The site was used for the routine maintenance of automobiles and heavy equipment, including oil changes and repairing hydraulic parts from the equipment. The site used a 550-gallon portable storage tank to store waste oil. Numerous oil stains have been noted around the building.

SAA located 50 feet southwest of Building 1776. The SAA stored hazardous waste in 55-gallon drums which are immediately transferred to a permitted hazardous waste storage facility

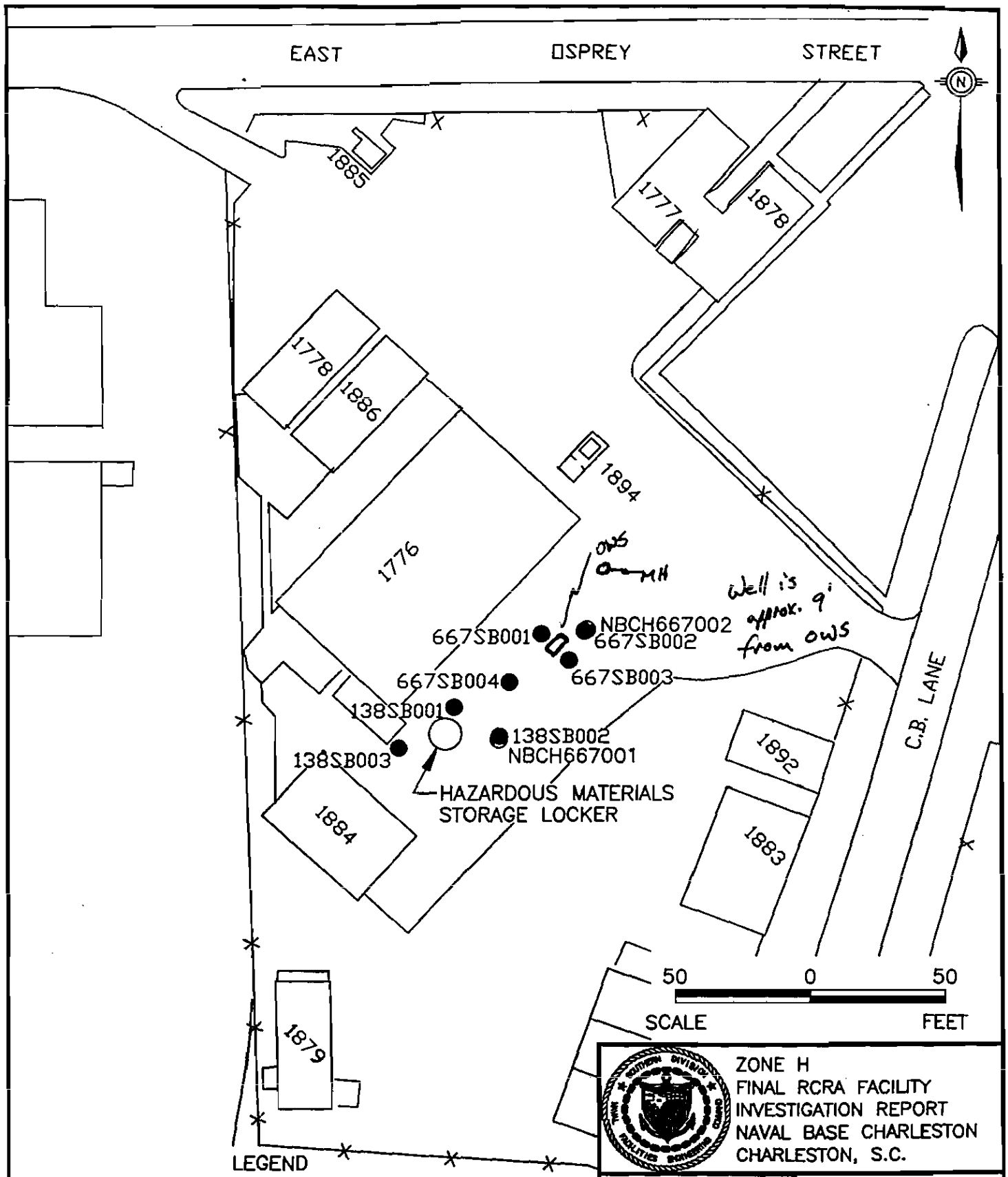
Concern/Outstanding Issue:

SCDHEC is concerned with the chlorinated solvent hits at site and has requested that wells in Zone H be looked at for solvent hits (eg, global perspective) to determine relevance to hits at AOC 667. Of particular concern as a possible source is an oil/water separator at the site.

Recommendations:

E/A&H suggests that the site be carried forward into the CMS on the basis of what appears widespread groundwater contamination originating from the site in the vicinity of the oil/water separator. A broad perspective review of the data which included information from downgradient wells in Zone I has revealed that chlorinated compounds similar to those found in NBCH-667-02 were detected in the shallow grid well NBCI-GDI-011 during all four quarters of sampling. The Zone I grid well is directly downgradient and approximately 900 feet from AOC 667. As discussed in the team meeting, additional groundwater samples should be collected using a DPT rig. The efforts will be coordinated with the Zone L DPT sampling which is currently underway.

GW Flow
ABANDONED SUBSURFACE
CHEMICAL DISPOSAL AREA
DIKE
PARTRIDGE AVE.
EAST
C.B. LANE
OSPREY
OSPREY ST.
KITE AVE.
MAGPIE
AVE.
THOMPSON
AVE.
JUNEAU AVE.
PA
TV
NS 59
NS 54
NS 43
NS 44
NS 45
NS 36
NS 37
NS 32
NS 31
NS 7
37
36
35
34
33
28
46
654
670
675
676
677
678
686
1448
1681
1721
1776
1777
1778
1786
1790
1795
1799
1843
1875
1877
1878
1879
1880
1881
1882
1883
1884
1885
1886
1887
1888
1892
1893
1894
1896
1897
1984
X54
1869
NBCH136001
NBCH662002
NBCH662001
NBCH667001
NBCH014001
NBCH014010
NBCH014002
NBCH014020
NBCH014030
NBCH014003
NBCIRD0010
NBCIRD0100
NBCIRD0012
NBCIRD011
NBCIRD110


EAST
OSPREY
STREET
1885
1777
1878
1778
1886
1894
1776
OWS
MH
Well is approx. 9' from OWS
667SB001
NBCH667002
667SB002
667SB003
667SB004
138SB001
138SB002
NBCH667001
138SB003
HAZARDOUS MATERIALS STORAGE LOCKER
1884
1892
1883
C.B. LANE
1879
50
0
50
SCALE
FEET
LEGEND
● – SOIL SAMPLE LOCATION
⊗ – GROUNDWATER SAMPLE LOCATION
ZONE H
FINAL RCRA FACILITY
INVESTIGATION REPORT
NAVAL BASE CHARLESTON
CHARLESTON, S.C.
FIGURE 4.19.1
AOC 667 & SWMU 138
SOIL & GOUNDWATER SAMPLE
LOCATION MAP
DWG DATE: 12/06/95
DWG NAME: 29CHZH10

DATALCP3
05/20/97

CHARLESTON - ZONE I
CHARLESTON ZONE I
Zone I Grid Wells 10 & 11 VOC Results

SW846-VOA	SAMPLE ID ------>	GDI-G-W010-01		GDI-G-W011-01	
	ORIGINAL ID ----->	GRDGW01001		GDIGW01101	
	LAB SAMPLE ID --->	711604		720427	
	ID FROM REPORT -->	GRDGW01001		GDIGW01101	
	SAMPLE DATE ----->	05/02/95		05/19/95	
	DATE ANALYZED --->	05/13/95		06/03/95	
	MATRIX ---------->	Water		Water	
	UNITS ----------->	UG/L		UG/L	

CAS #	Parameter	0006V	VAL	0007V	VAL
100-41-4	Ethylbenzene	10.	U	10.	UJ
100-42-5	Styrene	5.	U	5.	UJ
10061-01-5	cis-1,3-Dichloropropene	15.	U	15.	UJ
10061-02-6	trans-1,3-Dichloropropene	10.	U	10.	UJ
107-06-2	1,2-Dichloroethane	5.	UJ	5.	UJ
108-05-4	Vinyl acetate	10.	U	10.	UJ
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	UJ	10.	UJ
108-88-3	Toluene	5.	U	5.	UJ
108-90-7	Chlorobenzene	10.	U	10.	UJ
124-48-1	Dibromochloromethane	10.	U	10.	UJ
127-18-4	Tetrachloroethene	10.	U	4.	J
1330-20-7	Xylene (Total)	15.	U	15.	UJ
540-59-0	1,2-Dichloroethene (total)	10.	U	2.	J
56-23-5	Carbon tetrachloride	10.	U	10.	UJ
591-78-6	2-Hexanone	15.	UJ	15.	UJ
67-64-1	Acetone	15.	UJ	23.	UJ
67-66-3	Chloroform	5.	U	5.	UJ
71-43-2	Benzene	10.	U	10.	UJ
71-55-6	1,1,1-Trichloroethane	10.	U	10.	UJ
74-83-9	Bromomethane	10.	U	10.	UJ
74-87-3	Chloromethane	15.	UJ	15.	UJ
75-00-3	Chloroethane	10.	U	10.	UJ
75-01-4	Vinyl chloride	10.	U	10.	UJ
75-09-2	Methylene chloride	10.	UJ	20.	UJ
75-15-0	Carbon disulfide	10.	U	9.	J
75-25-2	Bromoform	10.	UJ	10.	UJ
75-27-4	Bromodichloromethane	10.	U	10.	UJ
75-34-3	1,1-Dichloroethane	5.	U	2.	J
75-35-4	1,1-Dichloroethene	5.	U	5.	UJ
75-69-4	Trichlorofluoromethane	10.	U	10.	UJ
78-87-5	1,2-Dichloropropane	10.	U	10.	UJ
78-93-3	2-Butanone (MEK)	20.	U	20.	UJ
79-00-5	1,1,2-Trichloroethane	5.	U	5.	UJ
79-01-6	Trichloroethene	5.	U	6.	
79-34-5	1,1,2,2-Tetrachloroethane	10.	U	10.	UJ
107-02-8	Acrolein	90.	U	90.	UJ
354-58-5	1,1,1-trichloro-2,2,2-trifluoromethane	15.	U	15.	UJ

*** Validation Complete ***

CHARLESTON - ZONE I
CHARLESTON ZONE I
Zone I Grid Wells 10 & 11 VOC Results

SW846-VOA									
	SAMPLE ID ------>	GDI-G-W010-01		GDI-G-W011-01					
	ORIGINAL ID ----->	GRDGW01001		GDIGW01101					
	LAB SAMPLE ID --->	711604		720427					
	ID FROM REPORT -->	GRDGW01001		GDIGW01101					
	SAMPLE DATE ----->	05/02/95		05/19/95					
	DATE ANALYZED --->	05/13/95		06/03/95					
	MATRIX ---------->	Water		Water					
	UNITS ---------->	UG/L		UG/L					
CAS #	Parameter	0006V	VAL	0007V	VAL				
76-13-1	Trichlorotrifluoroethane (Freon 113)	25.	U	25.	UJ				
74-88-4	Methyl iodide	5.	U	5.	UJ				
107-05-1	3-Chloropropene	15.	U	15.	UJ				
75-05-8	Acetonitrile	60.	U	60.	UJ				
107-13-1	Acrylonitrile	95.	U	95.	UJ				
107-12-0	Propionitrile	220.	U	220.	UJ				
126-98-7	Methacrylonitrile	20.	U	20.	UJ				
4170-30-3	Crotonaldehyde	300.	UR	300.	UR				
78-83-1	Isobutyl alcohol	2800.	UR	2800.	UR				
74-95-3	Methylene bromide	10.	U	10.	UJ				
80-62-6	Methyl methacrylate	20.	U	20.	UJ				
123-91-1	1,4-Dioxane	3700.	UR	3700.	UR				
110-75-8	2-Chloroethyl vinyl ether	10.	UR	10.	UR				
97-63-2	Ethyl methacrylate	10.	U	10.	UJ				
106-93-4	1, 2-Dibromoethane	10.	U	10.	UJ				
630-20-6	1,1,1,2-Tetrachloroethane	10.	U	10.	UJ				
1476-11-5	Cis-1,4-Dichloro-2-Butene	5.	UJ	5.	UJ				
96-18-4	1,2,3-Trichloropropane	10.	U	10.	UJ				
110-57-6	trans-1,4-Dichloro-2-butene	10.	UJ	10.	UJ				
96-12-8	1,2-Dibromo-3-Chloropropane	10.	UJ	10.	UJ				

*** Validation Complete ***

DATALCP3
05/20/97

CHARLESTON - ZONE I
CHARLESTON ZONE I - QUARTERLY SAMPLING
Zone I Grid Wells 10 & 11 VOC Results

SW846-VOA	SAMPLE ID ------>	GDI-G-W010-02	GDI-G-W010-03	GDI-G-W010-04	GDI-G-W011-02	GDI-G-W011-03	GDI-G-W011-04
	ORIGINAL ID ----->	GDIGW01002	GDIGW01003	GDIGW01004	GDIGW01102	GDIGW01103	GDIGW01104
	LAB SAMPLE ID --->	24276.03	25826.01	26740.01	24325.05	25741.01	26796.05
	ID FROM REPORT -->	GDIGW01002	GDIGW01003	GDIGW01004	GDIGW01102	GDIGW01103	GDIGW01104
	SAMPLE DATE ----->	12/11/95	05/31/96	08/26/96	12/14/95	05/23/96	08/29/96
	DATE ANALYZED --->	12/14/95	06/05/96	08/30/96	12/20/95	06/03/96	09/04/96
	MATRIX ---------->	Water	Water	Water	Water	Water	Water
	UNITS ---------->	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L

CAS #	Parameter	24276	VAL	25814	VAL	26711	VAL	24310	VAL	25724	VAL	26768	VAL
74-87-3	Chloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
74-83-9	Bromomethane	10.	U	10.	U	10.	UJ	10.	UJ	10.	U	10.	UJ
75-01-4	Vinyl chloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-00-3	Chloroethane	10.	UJ	10.	U	10.	U	10.	UJ	10.	U	10.	UJ
75-09-2	Methylene chloride	5.	U	7.	UJ	5.	U	9.	U	6.	U	22.	U
67-64-1	Acetone	10.	U	4800.	D	10.	U	24.	UJ	24.	U	10.	U
75-15-0	Carbon disulfide	5.	U	5.	U	5.	U	5.	U	2.	J	5.	U
75-35-4	1,1-Dichloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-34-3	1,1-Dichloroethane	5.	U	5.	U	5.	U	1.	J	5.	U	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U	5.	U	5.	U	7.		5.		4.	J
67-66-3	Chloroform	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
107-06-2	1,2-Dichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
78-93-3	2-Butanone (MEK)	3.	J	10.	U	10.	U	10.	UJ	10.	U	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
56-23-5	Carbon tetrachloride	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-05-4	Vinyl acetate	10.	U	10.	UJ	10.	U	10.	UJ	10.	UJ	10.	UJ
75-27-4	Bromodichloromethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
78-87-5	1,2-Dichloropropane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-01-6	Trichloroethene	5.	U	5.	U	5.	U	4.	J	10.		12.	
124-48-1	Dibromochloromethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
71-43-2	Benzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
110-75-8	2-Chloroethyl vinyl ether	10.	U	10.	UR	10.	U	10.	UJ	10.	UR	10.	U
75-25-2	Bromoform	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
591-78-6	2-Hexanone	10.	U	10.	UJ	10.	U	10.	UJ	10.	U	10.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	U	10.	U	10.	U	10.	UJ	10.	U	10.	U
127-18-4	Tetrachloroethene	5.	U	5.	U	5.	U	1.	J	5.	U	4.	J
108-88-3	Toluene	5.	U	5.	U	5.	U	2.	J	5.	U	5.	U
108-90-7	Chlorobenzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
100-41-4	Ethylbenzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
100-42-5	Styrene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
1330-20-7	Xylene (Total)	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U

*** Validation Complete ***

CHARLESTON - ZONE I
CHARLESTON ZONE I
Zone I Grid Wells 10D & 11D VOC Results

SW846-VOA	SAMPLE ID ------>	GD1-G-W10D-01		GD1-G-W11D-01	
	ORIGINAL ID ----->	GD1GW10D01		GD1GW11D01	
	LAB SAMPLE ID --->	726754		728940	
	ID FROM REPORT -->	GD1GW10D01		GD1GW11D01	
	SAMPLE DATE ----->	06/01/95		06/07/95	
	DATE ANALYZED --->	06/09/95		06/12/95	
	MATRIX ---------->	Water		Water	
	UNITS ---------->	UG/L		UG/L	

CAS #	Parameter	0008V	VAL	0010V	VAL
100-41-4	Ethylbenzene	10.	U	10.	U
100-42-5	Styrene	5.	U	5.	U
10061-01-5	cis-1,3-Dichloropropene	15.	U	15.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U	10.	U
107-06-2	1,2-Dichloroethane	5.	U	5.	U
108-05-4	Vinyl acetate	10.	UJ	10.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	U	10.	U
108-88-3	Toluene	5.	U	5.	U
108-90-7	Chlorobenzene	10.	U	10.	U
124-48-1	Dibromochloromethane	10.	UJ	10.	U
127-18-4	Tetrachloroethene	10.	U	10.	U
1330-20-7	Xylene (Total)	15.	U	15.	U
540-59-0	1,2-Dichloroethene (total)	10.	U	10.	U
56-23-5	Carbon tetrachloride	10.	U	10.	U
591-78-6	2-Hexanone	15.	U	15.	UJ
67-64-1	Acetone	15.	U	15.	U
67-66-3	Chloroform	5.	U	5.	U
71-43-2	Benzene	10.	U	10.	U
71-55-6	1,1,1-Trichloroethane	10.	U	10.	U
74-83-9	Bromomethane	10.	UJ	10.	U
74-87-3	Chloromethane	15.	U	15.	UJ
75-00-3	Chloroethane	10.	U	10.	U
75-01-4	Vinyl chloride	10.	U	10.	U
75-09-2	Methylene chloride	10.	U	10.	U
75-15-0	Carbon disulfide	10.	U	10.	U
75-25-2	Bromoform	10.	U	10.	U
75-27-4	Bromodichloromethane	10.	U	10.	U
75-34-3	1,1-Dichloroethane	5.	U	5.	U
75-35-4	1,1-Dichloroethene	5.	U	5.	U
75-69-4	Trichlorofluoromethane	10.	U	10.	UJ
78-87-5	1,2-Dichloropropane	10.	U	10.	U
78-93-3	2-Butanone (MEK)	20.	U	20.	UR
79-00-5	1,1,2-Trichloroethane	5.	UJ	5.	U
79-01-6	Trichloroethene	5.	U	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U	10.	U
107-02-8	Acrolein	90.	U	90.	U
354-58-5	1,1,1-trichloro-2,2,2-trifluoromethane	15.	U	15.	U

*** Validation Complete ***

CHARLESTON - ZONE I
CHARLESTON ZONE I
Zone I Grid Wells 10D & 11D VOC Results

SW846-VOA	SAMPLE ID ------>	GD1-G-W10D-01		GD1-G-W11D-01	
	ORIGINAL ID ----->	GD1GW10D01		GD1GW11D01	
	LAB SAMPLE ID --->	726754		728940	
	ID FROM REPORT -->	GD1GW10D01		GD1GW11D01	
	SAMPLE DATE ----->	06/01/95		06/07/95	
	DATE ANALYZED --->	06/09/95		06/12/95	
	MATRIX ---------->	Water		Water	
	UNITS ---------->	UG/L		UG/L	

CAS #	Parameter	0008V	VAL	0010V	VAL
76-13-1	Trichlorotrifluoroethane (Freon 113)	25.	U	25.	U
74-88-4	Methyl Iodide	5.	U	5.	U
107-05-1	3-Chloropropene	15.	U	15.	U
75-05-8	Acetonitrile	60.	U	60.	U
107-13-1	Acrylonitrile	95.	U	95.	U
107-12-0	Propionitrile	220.	U	220.	UR
126-98-7	Methacrylonitrile	20.	U	20.	U
4170-30-3	Crotonaldehyde	300.	UR	300.	UR
78-83-1	Isobutyl alcohol	2800.	UR	2800.	UR
74-95-3	Methylene bromide	10.	U	10.	U
80-62-6	Methyl methacrylate	20.	U	20.	UR
123-91-1	1,4-Dioxane	3700.	UR	3700.	UR
110-75-8	2-Chloroethyl vinyl ether	10.	UR	10.	UR
97-63-2	Ethyl methacrylate	10.	U	10.	UJ
106-93-4	1, 2-Dibromoethane	10.	UJ	10.	U
630-20-6	1,1,1,2-Tetrachloroethane	10.	U	10.	U
1476-11-5	Cis-1,4-Dichloro-2-Butene	5.	UR	5.	UR
96-18-4	1,2,3-Trichloropropane	10.	U	10.	U
110-57-6	trans-1,4-Dichloro-2-butene	10.	UR	10.	UR
96-12-8	1,2-Dibromo-3-Chloropropane	10.	U	10.	UJ

*** Validation Complete ***

CHARLESTON - ZONE I
CHARLESTON ZONE I - QUARTERLY SAMPLING
Zone I Grid Wells 10D & 11D VOC Results

SW846-VOA	SAMPLE ID ------>	GDI-G-W10D-02		GDI-G-W10D-03		GDI-G-W10D-04		GDI-G-W11D-02		GDI-G-W11D-03		GDI-G-W11D-04	
	ORIGINAL ID ----->	GDIGW10D02		GDIGW10D03		GDIGW10D04		GDIGW11D02		GDIGW11D03		GDIGW11D04	
	LAB SAMPLE ID --->	24276.04		25826.02		26740.02		24336.03		25750.02		26798.01	
	ID FROM REPORT -->	GDIGW10D02		GDIGW10D03		GDIGW10D04		GDIGW11D02		GDIGW11D03		GDIGW11D04	
	SAMPLE DATE ----->	12/11/95		05/31/96		08/26/96		12/15/95		05/24/96		08/30/96	
	DATE ANALYZED --->	12/14/95		06/06/96		09/01/96		12/22/95		05/31/96		09/05/96	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	24276	VAL	25814	VAL	26711	VAL	24310	VAL	25724	VAL	26768	VAL
74-87-3	Chloromethane	10.	U	10.	U	10.	UJ	10.	U	10.	U	10.	U
74-83-9	Bromomethane	10.	U	10.	U	10.	UJ	10.	UJ	10.	U	10.	UJ
75-01-4	Vinyl chloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-00-3	Chloroethane	10.	UJ	10.	U	10.	U	10.	U	10.	U	10.	UJ
75-09-2	Methylene chloride	5.	U	5.	U	5.	U	17.	U	5.	U	5.	U
67-64-1	Acetone	10.	U	10.	U	10.	U	21.	U	10.	UJ	10.	U
75-15-0	Carbon disulfide	5.	U	5.	U	5.	UJ	5.	U	5.	U	5.	U
75-35-4	1,1-Dichloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-34-3	1,1-Dichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
67-66-3	Chloroform	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
107-06-2	1,2-Dichloroethane	5.	U	5.	UJ	5.	U	5.	U	5.	U	5.	U
78-93-3	2-Butanone (MEK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
56-23-5	Carbon tetrachloride	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-05-4	Vinyl acetate	10.	U	10.	UJ	10.	UJ	10.	U	10.	UJ	10.	UJ
75-27-4	Bromodichloromethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
78-87-5	1,2-Dichloropropane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-01-6	Trichloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
124-48-1	Dibromochloromethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
71-43-2	Benzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
110-75-8	2-Chloroethyl vinyl ether	10.	U	10.	UR	10.	U	10.	UJ	10.	UR	10.	U
75-25-2	Bromoform	5.	U	5.	U	5.	UJ	5.	U	5.	U	5.	U
591-78-6	2-Hexanone	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
127-18-4	Tetrachloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-88-3	Toluene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-90-7	Chlorobenzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
100-41-4	Ethylbenzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
100-42-5	Styrene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
1330-20-7	Xylene (Total)	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U

*** Validation Complete ***

DATALCP3
05/20/97

CHARLESTON - ZONE I
CHARLESTON ZONE I
Zone I Grid Wells 12D & 12D VOC Results

SW846-VOA					
	SAMPLE ID ------>	GDI-G-W012-01		GDI-G-W12D-01	
	ORIGINAL ID ----->	GD1GW01201		GDIGW12D01	
	LAB SAMPLE ID --->	718082		730095	
	ID FROM REPORT -->	GD1GW01201		GDIGW12D01	
	SAMPLE DATE ----->	05/15/95		06/09/95	
	DATE ANALYZED --->	05/27/95		06/16/95	
	MATRIX ---------->	Water		Water	
	UNITS ---------->	UG/L		UG/L	
CAS #	Parameter	0006V	VAL	0010V	VAL
100-41-4	Ethylbenzene	10.	U	10.	U
100-42-5	Styrene	5.	U	5.	U
10061-01-5	cis-1,3-Dichloropropene	15.	U	15.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U	10.	U
107-06-2	1,2-Dichloroethane	5.	U	5.	U
108-05-4	Vinyl acetate	10.	U	10.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	U	10.	U
108-88-3	Toluene	5.	U	5.	U
108-90-7	Chlorobenzene	10.	U	10.	U
124-48-1	Dibromochloromethane	10.	U	10.	U
127-18-4	Tetrachloroethene	10.	U	10.	U
1330-20-7	Xylene (Total)	15.	U	15.	U
540-59-0	1,2-Dichloroethene (total)	10.	U	10.	U
56-23-5	Carbon tetrachloride	10.	U	10.	U
591-78-6	2-Hexanone	15.	U	15.	U
67-64-1	Acetone	10.	U	15.	UJ
67-66-3	Chloroform	5.	U	5.	U
71-43-2	Benzene	10.	U	10.	U
71-55-6	1,1,1-Trichloroethane	10.	U	10.	U
74-83-9	Bromomethane	10.	U	10.	U
74-87-3	Chloromethane	15.	UJ	15.	U
75-00-3	Chloroethane	10.	U	10.	U
75-01-4	Vinyl chloride	10.	U	10.	U
75-09-2	Methylene chloride	10.	U	10.	U
75-15-0	Carbon disulfide	10.	U	10.	U
75-25-2	Bromoform	10.	U	10.	U
75-27-4	Bromodichloromethane	10.	U	10.	U
75-34-3	1,1-Dichloroethane	5.	U	5.	U
75-35-4	1,1-Dichloroethene	5.	U	5.	U
75-69-4	Trichlorofluoromethane	10.	U	10.	U
78-87-5	1,2-Dichloropropane	10.	U	10.	U
78-93-3	2-Butanone (MEK)	20.	U	20.	UR
79-00-5	1,1,2-Trichloroethane	5.	U	5.	U
79-01-6	Trichloroethene	5.	U	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U	10.	U
107-02-8	Acrolein	90.	U	90.	U
354-58-5	1,1,1-trichloro-2,2,2-trifluoromethane	15.	UJ	15.	U

*** Validation Complete ***

CHARLESTON - ZONE I
CHARLESTON ZONE I
Zone I Grid Wells 12D & 12D VOC Results

SW846-VOA	SAMPLE ID ------>	GDI-G-W012-01	GD1-G-W12D-01
	ORIGINAL ID ----->	GD1GW01201	GDIGW12D01
	LAB SAMPLE ID --->	718082	730095
	ID FROM REPORT -->	GD1GW01201	GD1GW12D01
	SAMPLE DATE ----->	05/15/95	06/09/95
	DATE ANALYZED --->	05/27/95	06/16/95
	MATRIX ---------->	Water	Water
	UNITS ---------->	UG/L	UG/L

CAS #	Parameter	0006V	VAL	0010V	VAL
76-13-1	Trichlorotrifluoroethane (Freon 113)	25.	UJ	25.	U
74-88-4	Methyl iodide	5.	U	5.	U
107-05-1	3-Chloropropene	15.	UJ	15.	U
75-05-8	Acetonitrile	60.	U	60.	U
107-13-1	Acrylonitrile	95.	U	95.	U
107-12-0	Propionitrile	220.	U	220.	UR
126-98-7	Methacrylonitrile	20.	U	20.	U
4170-30-3	Crotonaldehyde	300.	UR	300.	UR
78-83-1	Isobutyl alcohol	2800.	UR	2800.	UR
74-95-3	Methylene bromide	10.	U	10.	U
80-62-6	Methyl methacrylate	20.	U	20.	UR
123-91-1	1,4-Dioxane	3700.	UR	3700.	UR
110-75-8	2-Chloroethyl vinyl ether	10.	UR	10.	U
97-63-2	Ethyl methacrylate	10.	U	10.	U
106-93-4	1, 2-Dibromoethane	10.	U	10.	U
630-20-6	1,1,1,2-Tetrachloroethane	10.	U	10.	U
1476-11-5	Cis-1,4-Dichloro-2-Butene	5.	U	5.	U
96-18-4	1,2,3-Trichloropropane	10.	U	10.	U
110-57-6	trans-1,4-Dichloro-2-butene	10.	U	10.	U
96-12-8	1,2-Dibromo-3-Chloropropane	10.	U	10.	U

*** Validation Complete ***

DATALCP3
05/20/97

CHARLESTON - ZONE I
CHARLESTON ZONE I - QUARTERLY SAMPLING
Zone I Grid Wells 12 & 12D VOC Results

SW846-VOA	SAMPLE ID ------>	GDI-G-W012-02	GDI-G-W012-03	GDI-G-W012-04	GDI-G-W12D-02	GDI-G-W12D-03	GDI-G-W12D-04
	ORIGINAL ID ----->	GDIGW01202	GDIGW01203	GDIGW01204	GDIGW12D02	GDIGW12D03	GDIGW12D04
	LAB SAMPLE ID --->	24290.01	25789.07	26798.02	24290.02	25789.08	26798.03
	ID FROM REPORT -->	GDIGW01202	GDIGW01203	GDIGW01204	GDIGW12D02	GDIGW12D03	GDIGW12D04
	SAMPLE DATE ----->	12/12/95	05/29/96	08/30/96	12/12/95	05/29/96	08/30/96
	DATE ANALYZED --->	12/18/95	06/03/96	09/05/96	12/18/95	06/04/96	09/05/96
	MATRIX ---------->	Water	Water	Water	Water	Water	Water
	UNITS ---------->	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L

CAS #	Parameter	24276	VAL	25724	VAL	26768	VAL	24276	VAL	25724	VAL	26768	VAL
74-87-3	Chloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
74-83-9	Bromomethane	10.	U	10.	U	10.	UJ	10.	U	10.	U	10.	UJ
75-01-4	Vinyl chloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-00-3	Chloroethane	10.	UJ	10.	U	10.	UJ	10.	UJ	10.	U	10.	UJ
75-09-2	Methylene chloride	28.		5.	U	5.	U	5.	U	5.	U	5.	U
67-64-1	Acetone	200.	UJ	12.	UJ	10.	UJ	10.	UJ	15.	U	10.	UJ
75-15-0	Carbon disulfide	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-35-4	1,1-Dichloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
75-34-3	1,1-Dichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
67-66-3	Chloroform	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
107-06-2	1,2-Dichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
78-93-3	2-Butanone (MEK)	10.	UJ	10.	U	10.	U	10.	UJ	10.	U	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
56-23-5	Carbon tetrachloride	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-05-4	Vinyl acetate	10.	UJ	10.	UJ	10.	U	10.	UJ	10.	UJ	10.	U
75-27-4	Bromodichloromethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
78-87-5	1,2-Dichloropropane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-01-6	Trichloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
124-48-1	Dibromochloromethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
71-43-2	Benzene	5.	U	5.	U	5.	U	1.	J	5.	U	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
110-75-8	2-Chloroethyl vinyl ether	10.	U	10.	UR	10.	U	10.	U	10.	UR	10.	U
75-25-2	Bromoform	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
591-78-6	2-Hexanone	10.	UJ	10.	U	10.	U	10.	UJ	10.	U	10.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	UJ	10.	U	10.	U	10.	UJ	10.	U	10.	U
127-18-4	Tetrachloroethene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
108-88-3	Toluene	9.		5.	U	5.	U	1.	J	5.	U	5.	U
108-90-7	Chlorobenzene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
100-41-4	Ethylbenzene	2.	J	5.	U	5.	U	5.	U	5.	U	5.	U
100-42-5	Styrene	5.	U	5.	U	5.	U	5.	U	5.	U	5.	U
1330-20-7	Xylene (Total)	10.		5.	U	5.	U	5.	U	5.	U	5.	U

*** Validation Complete ***

Chemicals Detected in Zone H Monitoring Wells
Sampling Rounds 1, 2, 3, and 4
Packet 2

Name	Round 1	Round 2	Round 3	Round 4	RBC	UTL	MCL
Monitoring Well NBCH667001							
Inorganic Chemicals (mg/L)							
Barium (Ba)	13	18	ND	ND	260	323	2,000
Beryllium (Be)	ND	ND	ND	0	0	0	4
Calcium (Ca)	113,000	81,900	85,200	82,450	NA	NA	NL
Iron (Fe)	86	39	90	34	1,100	NA	NL
Magnesium (Mg)	90,600	121,000	50,650	90,650	NA	NA	NL
Manganese (Mn)	37	69	17	44	84	3,391	NL
Potassium (K)	41,600	25,300	25,850	43,550	NA	NA	NL
Sodium (Na)	584,000	1,220,000	234,500	747,000	NA	NA	NL
Vanadium (V)	ND	3	ND	2	26	NA	NL
Volatile Organic Compounds (µg/L)							
Carbon disulfide	ND	ND	79	ND	100	NA	NL
1,1-Dichloroethane	3	ND	3	ND	81	NA	NL
1,2-Dichloroethene (total)	ND	ND	ND	5	6	NA	70

ND = Not detected at or above the method detectionlimit
NA = Not applicable
NL = Not listed
NS = Not sampled

Chemicals Detected in Zone H Monitoring Wells
Sampling Rounds 1, 2, 3, and 4
Packet 2

Name	Round 1	Round 2	Round 3	Round 4	RBC	UTL	MCL
Monitoring Well NBCH667002							
Inorganic Chemicals (mg/L)							
Barium (Ba)	61	48	ND	ND	260	323	2,000
Beryllium (Be)	ND	ND	ND	0	0	0	4
Calcium (Ca)	154,000	114,000	130,000	127,000	NA	NA	NL
Iron (Fe)	361	853	943	177	1,100	NA	NL
Magnesium (Mg)	144,000	232,000	108,000	185,000	NA	NA	NL
Manganese (Mn)	58	155	73	70	84	3,391	NL
Potassium (K)	66,100	91,800	56,700	99,900	NA	NA	NL
Sodium (Na)	1,500,000	2,580,000	1,180,000	2,150,000	NA	NA	NL
Vanadium (V)	ND	5	ND	1	26	NA	NL
Volatile Organic Compounds (µg/L)							
Chloroethane	150	74	650	260	860	NA	NL
1,1-Dichloroethane	17	9	18	8	81	NA	NL

ND = Not detected at or above the method detectionlimit
NA = Not applicable
NL = Not listed
NS = Not sampled

CHARLESTON - ZONE H
Groundwater: Shallow Grid Wells
Metals Only

SW846-META	SAMPLE ID ------->	GDH-G-W001-01		GDH-G-W002-01		GDH-G-W003-01		GDH-G-W004-01		GDH-G-W005-01		GDH-G-W006-01	
	ORIGINAL ID ----->	GDHGW00101		GDHGW00201		GDHGW00301		GDHGW00401		GDHGW00501		GDHGW00601	
	LAB SAMPLE ID --->	42057-006		42084-010		42029-022		42288-006		42096-004		42278-009	
	ID FROM REPORT -->	GDHGW00101		GDHGW00201		110207		GDHGW00401		GDHGW00501		GDHGW00601	
	SAMPLE DATE ----->	11/03/94		11/04/94		11/01/94		11/17/94		11/07/94		11/18/94	
	DATE EXTRACTED -->	11/14/94		11/14/94		11/04/94		11/28/94		11/14/94		11/28/94	
	DATE ANALYZED ---->	11/16/94		11/21/94		11/14/94		12/01/94		11/16/94		12/01/94	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A
CAS #	Parameter	CHS25	VAL	CHS25	VAL	CHS24	VAL	CHS26	VAL	CHS25	VAL	CHS26	VAL
29-90-5	Aluminum (Al)	14.	U	1560.	U	125.		14.	U	14.	U	14.	U
7440-36-0	Antimony (Sb)	16.	U	112.	U	16.	U	16.	U	16.	U	16.	U
7440-38-2	Arsenic (As)	8.	J	4.5	U	26.6	U	0.8	U	7.6	U	7.2	J
7440-39-3	Barium (Ba)	0.8	U	26.2	U	3.6	U	13.1	J	11.1	U	3.2	J
7440-41-7	Beryllium (Be)	0.3	U	2.1	U	0.3	U	0.3	U	0.3	U	0.3	U
7440-43-9	Cadmium (Cd)	2.1	U	14.7	U	2.1	U	2.1	U	2.1	U	2.1	U
7440-70-2	Calcium (Ca)	152000.		286000.		153000.		102000.		235000.		243000.	
7440-47-3	Chromium (Cr)	4.3	U	30.1	U	4.3	U	4.3	U	4.3	U	4.3	U
7440-48-4	Cobalt (Co)	2.4	U	16.8	U	2.4	U	2.4	J	2.4	U	2.4	U
7440-50-8	Copper (Cu)	3.3	U	23.1	U	3.3	U	3.3	U	3.3	U	3.3	U
7439-89-6	Iron (Fe)	10600.		791.	U	10700.		490.	J	5730.		1420.	
7439-92-1	Lead (Pb)	2.3	U	2.3	U	1.	UJ	1.6	J	2.3	U	2.8	J
7439-95-4	Magnesium (Mg)	28100.		1090000.		47500.		48500.		133000.		44500.	
7439-96-5	Manganese (Mn)	514.		3.5	U	1090.		82.7		1310.		958.	
7439-97-6	Mercury (Hg)	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
7440-02-0	Nickel (Ni)	10.3	U	72.1	U	10.3	UJ	10.3	U	10.3	U	10.3	U
7440-09-7	Potassium (K)	12400.		297000.		23000.		26200.		46200.		22100.	
7782-49-2	Selenium (Se)	0.9	U	0.9	U	3.3	UJ	0.9	UJ	1.2	J	1.1	J
7440-22-4	Silver (Ag)	3.4	U	23.8	U	3.4	U	3.4	U	3.4	U	3.4	U
40-23-5	Sodium (Na)	41700.		8590000.		430000.		86700.		616000.		61500.	
40-28-0	Thallium (Tl)	1.	U	10.	U	4.	UJ	1.9	J	10.	U	2.2	J
7440-62-2	Vanadium (V)	3.1	U	21.7	U	3.2	U	3.1	U	3.1	U	3.1	U
7440-66-6	Zinc (Zn)	3.5	U	24.5	U	5.2	U	13.6	U	7.8	U	19.1	U
7440-31-5	Tin (Sn)	??????????		??????????		??????????		??????????		??????????		??????????	

*** Validation Complete ***

CHARLESTON - ZONE H
Groundwater: Shallow Grid Wells
Metals Only

SW846-META	SAMPLE ID ------>	GDH-G-W007-01		GDH-G-W008-01		GDH-G-W009-01		GDH-G-W010-01		GDH-G-W011-01	
	ORIGINAL ID ----->	GDHGW00701		GDHGW00801		GDHGW00901		GDHGW01001		GDHGW01101	
	LAB SAMPLE ID --->	42393-002		42140-005		42316-018		42316-020		42316-017	
	ID FROM REPORT -->	GDHGW00701		GDHGW00801		GDHGW00901		GDHGW01001		GDHGW01101	
	SAMPLE DATE ----->	11/29/94		11/08/94		11/21/94		11/21/94		11/21/94	
	DATE EXTRACTED -->	12/02/94		11/14/94		11/28/94				11/28/94	
	DATE ANALYZED --->	12/12/94		11/17/94		12/09/94				12/02/94	
	MATRIX ---------->	Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A
CAS #	Parameter	CHS26	VAL	CHS25	VAL	CHS26	VAL	CHS26	VAL	CHS26	VAL
7429-90-5	Aluminum (Al)	35.6	U	14.	U	280.	U	14.	U	201.	U
7440-36-0	Antimony (Sb)	16.	U	16.	U	16.	U	16.	U	16.	U
7440-38-2	Arsenic (As)	0.8	J	1.6	U	10.9		13.9		4.7	J
7440-39-3	Barium (Ba)	2.9	J	14.8	U	54.5	J	6.8	J	40.3	J
7440-41-7	Beryllium (Be)	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
7440-43-9	Cadmium (Cd)	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
7440-70-2	Calcium (Ca)	55500.		233000.		720000.		204000.		201000.	
7440-47-3	Chromium (Cr)	4.3	U	4.3	U	4.3	U	4.3	U	4.3	U
7440-48-4	Cobalt (Co)	2.4	U	2.4	U	2.4	U	2.4	U	2.4	U
7440-50-8	Copper (Cu)	3.3	U	3.3	U	3.3	U	3.3	U	3.3	U
7439-89-6	Iron (Fe)	278.	U	15500.		28000.	J	2850.	J	9200.	J
7439-92-1	Lead (Pb)	2.3	J	2.3	U	1.1	J	2.2	J	3.2	J
7439-95-4	Magnesium (Mg)	10000.	J	69500.		235000.		65600.		532000.	
7439-96-5	Manganese (Mn)	19.2		1320.		4570.		428.		507.	
7439-97-6	Mercury (Hg)	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
7440-02-0	Nickel (Ni)	10.3	U	10.3	U	10.3	U	20.7	J	10.3	U
7440-09-7	Potassium (K)	5010.		35800.		69500.		21200.		135000.	
7782-49-2	Selenium (Se)	1.4	J	0.9	U	1.8	J	1.6	J	0.9	UJ
7440-22-4	Silver (Ag)	3.4	U	3.4	U	3.4	U	3.4	U	3.4	U
7440-23-5	Sodium (Na)	18700.		77200.		1240000.		206000.		3910000.	
7440-28-0	Thallium (Tl)	1.	U	1.	U	105.	J	4.	U	10.	U
7440-62-2	Vanadium (V)	3.1	U	3.1	U	3.1	U	3.1	U	7.6	J
7440-66-6	Zinc (Zn)	17.7	U	4.9	U	13.6	U	6.	U	21.7	U
7440-31-5	Tin (Sn)	??????????		??????????		??????????		??????????		??????????	

*** Validation Complete ***

CHARLESTON - ZONE H
Groundwater: Shallow Grid Wells
Metals Only

APX9-METAL											
	SAMPLE ID ------>	GDH-H-W004-01			GDH-H-W006-01			GDH-H-W007-01			
	ORIGINAL ID ----->	GDHHW00401			GDHHW00601			GDHHW00701			
	LAB SAMPLE ID --->	42289-004			42289-002			42392-001			
	ID FROM REPORT -->	GDHHW00401			GDHHW00601			GDHHW00701			
	SAMPLE DATE ----->	11/18/94			11/18/94			11/29/94			
	DATE EXTRACTED -->	11/22/94			11/22/94			12/02/94			
	DATE ANALYZED --->	11/22/94			11/22/94			12/05/94			
	MATRIX ---------->	Water			Water			Water			
	UNITS ---------->	MG/L		A	MG/L		A	MG/L		A	
CAS #	Parameter	APX14		VAL	APX14		VAL	APX14		VAL	
7439-92-1	Lead (Pb)	1.1		U	1.1		U	1.1		U	
7439-97-6	Mercury (Hg)	0.1		U	0.1		U	0.1		U	
7440-02-0	Nickel (Ni)	10.3		U	10.3		U	10.3		U	
7440-22-4	Silver (Ag)	3.4		U	3.4		U	3.4		U	
7440-28-0	Thallium (Tl)	1.		U	1.		U	1.		U	
7440-31-5	Tin (Sn)	17.8		U	17.8		U	17.8		U	
7440-36-0	Antimony (Sb)	16.		U	16.		U	16.		U	
7440-38-2	Arsenic (As)	0.85		J	7.		J	0.8		U	
7440-39-3	Barium (Ba)	10.6		U	1.7		U	3.4		U	
7440-41-7	Beryllium (Be)	0.3		U	0.3		U	0.3		U	
7440-43-9	Cadmium (Cd)	2.1		U	2.1		U	2.1		U	
7440-47-3	Chromium (Cr)	4.3		U	4.3		U	4.3		U	
7440-48-4	Cobalt (Co)	2.4		U	2.4		U	2.4		U	
7440-50-8	Copper (Cu)	3.3		U	3.3		U	3.3		U	
7440-62-2	Vanadium (V)	3.1		U	3.1		U	3.1		U	
7440-66-6	Zinc (Zn)	20.4		U	16.1		U	18.4		U	
7782-49-2	Selenium (Se)	0.9		U	1.4		U	0.9		U	

*** Validation Complete ***

CHARLESTON - ZONE H
Groundwater: Deep Grid Wells
Metals Only

SW846-METAL	SAMPLE ID ------>	GDH-G-W01D-01		GDH-G-W02D-01		GDH-G-W03D-01		GDH-G-W04D-01		GDH-G-W05D-01		GDH-G-W06D-01	
	ORIGINAL ID ----->	GDHGW01D01		GDHGW02D01		GDHGW03D01		GDHGW04D01		GDHGW05D01		GDHGW06D01	
	LAB SAMPLE ID --->	42057-007		42086-009		42029-021		42288-007		42096-005		42278-010	
	ID FROM REPORT -->	GDHGW01D01		GDHGW02D01		110206		GDHGW04D01		GDHGW05D01		GDHGW06D01	
	SAMPLE DATE ----->	11/03/94		11/05/94		11/01/94		11/17/94		11/07/94		11/18/94	
	DATE EXTRACTED -->	11/14/94		11/14/94		11/04/94		11/28/94		11/14/94		11/28/94	
	DATE ANALYZED --->	11/16/94		11/21/94		11/14/94		12/01/94		11/16/94		12/01/94	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A
CAS #	Parameter	CHS25	VAL	CHS25	VAL	CHS24	VAL	CHS26	VAL	CHS25	VAL	CHS26	VAL
7429-90-5	Aluminum (Al)	14.	U	105.	U	14.	U	14.	U	30.	U	292.	U
7440-36-0	Antimony (Sb)	16.	U	16.	U	16.	U	16.	U	16.	U	16.	U
7440-38-2	Arsenic (As)	0.8	U	0.8	U	3.8	U	2.6	J	0.87	U	8.2	J
7440-39-3	Barium (Ba)	25.	U	24.4	U	59.8	J	48.3	J	60.7	U	95.7	J
7440-41-7	Beryllium (Be)	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
7440-43-9	Cadmium (Cd)	2.1	U	2.1	U	2.6	J	2.1	U	2.1	U	2.1	U
7440-70-2	Calcium (Ca)	120000.		95800.		162000.		213000.		145000.		150000.	
7440-47-3	Chromium (Cr)	4.3	U	4.3	U	4.3	U	4.3	U	4.3	U	7.4	J
7440-48-4	Cobalt (Co)	2.4	U	2.4	U	2.4	UJ	2.6	J	2.4	U	3.	J
7440-50-8	Copper (Cu)	3.3	U	3.3	U	3.3	U	3.3	U	3.3	U	3.3	U
7439-89-6	Iron (Fe)	5010.		4270.		139.	U	1540.	J	4430.		528.	J
7439-92-1	Lead (Pb)	3.	J	2.3	U	1.	UJ	2.6	J	2.3	U	2.4	J
7439-95-4	Magnesium (Mg)	914000.		629000.		751000.		874000.		943000.		672000.	
7439-96-5	Manganese (Mn)	555.		109.		0.65	U	132.		462.		12.2	
7439-97-6	Mercury (Hg)	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
7440-02-0	Nickel (Ni)	10.3	U	12.8	J	10.3	UJ	10.3	U	10.3	U	10.3	U
7440-09-7	Potassium (K)	224000.		180000.		217000.		143000.		236000.		199000.	
7782-49-2	Selenium (Se)	1.4	J	0.9	J	3.3	UJ	0.9	UJ	0.9	J	0.9	UJ
7440-22-4	Silver (Ag)	3.4	U	3.4	U	3.4	U	3.4	U	3.4	U	3.4	U
7440-23-5	Sodium (Na)	6810000.		5100000.		6230000.		6630000.		6720000.		5040000.	
7440-28-0	Thallium (Tl)	4.	U	1.	U	5.	UJ	10.	U	10.	U	10.	U
7440-62-2	Vanadium (V)	3.1	U	3.7	J	5.3	U	6.8	J	3.1	U	10.3	U
7440-66-6	Zinc (Zn)	3.5	U	3.5	U	3.5	U	3.5	U	3.5	U	61.9	
7440-31-5	Tin (Sn)	??????????		??????????		??????????		??????????		??????????		??????????	

*** Validation Complete ***

CHARLESTON - ZONE H
Groundwater: Deep Grid Wells
Metals Only

SW846-METHOD											
SAMPLE ID ------>	GDH-G-W07D-01		GDH-G-W08D-01		GDH-G-W09D-01		GDH-G-W10D-01		GDH-G-W11D-01		
ORIGINAL ID ----->	GDHGW07D01		GDHGW08D01		GDHGW09D01		GDHGW10D01		GDHGW11D01		
LAB SAMPLE ID --->	42614-003		42136-007		42316-019		42607-003		42593-004		
ID FROM REPORT -->	GDHGW07D01		GDHGW08D01		GDHGW09D01		GDHGW10D01		GDHGW11D01		
SAMPLE DATE ----->	12/19/94		11/09/94		11/21/94		12/16/94		12/15/94		
DATE EXTRACTED -->	12/20/94		11/14/94		12/02/94		12/20/94		12/20/94		
DATE ANALYZED --->	12/21/94		11/17/94		12/07/94		12/21/94		12/21/94		
MATRIX ---------->	Water		Water		Water		Water		Water		
UNITS ---------->	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A	
CAS #	Parameter	CHS27	VAL	CHS25	VAL	CHS26	VAL	CHS27	VAL	CHS27	VAL
7429-90-5	Aluminum (Al)	16.1	J	14.	U	151.	U	105.		207.	
7440-36-0	Antimony (Sb)	16.	U	16.	U	16.	U	16.	U	16.	U
7440-38-2	Arsenic (As)	3.8	U	0.8	U	2.2	J	3.8	U	3.8	U
7440-39-3	Barium (Ba)	84.7	J	66.5	U	30.1	J	39.4	U	40.6	U
7440-41-7	Beryllium (Be)	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
7440-43-9	Cadmium (Cd)	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
7440-70-2	Calcium (Ca)	203000.		171000.		112000.		92900.		103000.	
7440-47-3	Chromium (Cr)	4.3	U	4.3	U	4.3	U	4.3	U	4.3	U
7440-48-4	Cobalt (Co)	2.4	U	2.4	U	2.4	U	2.4	U	2.4	U
7440-50-8	Copper (Cu)	3.3	U	3.3	U	3.3	U	13.8	U	17.	U
7439-89-6	Iron (Fe)	923.		271.	U	2640.	J	2980.		6470.	
7439-92-1	Lead (Pb)	1.	UJ	2.3	U	2.9	J	1.	UJ	1.	UJ
7439-95-4	Magnesium (Mg)	852000.		789000.		927000.		692000.		688000.	
7439-96-5	Manganese (Mn)	126.		355.		185.		446.		281.	
7439-97-6	Mercury (Hg)	0.1	UJ	0.1	U	0.1	U	0.1	J	0.1	U
7440-02-0	Nickel (Ni)	10.3	U	10.3	U	10.3	U	10.3	U	10.3	U
7440-09-7	Potassium (K)	190000.		205000.		211000.		192000.		193000.	
7782-49-2	Selenium (Se)	3.3	UJ	0.9	U	0.9	J	3.3	UJ	3.3	UJ
7440-22-4	Silver (Ag)	3.4	U	3.4	U	3.4	U	3.4	U	3.4	U
7440-23-5	Sodium (Na)	6520000.		6230000.		6350000.		5570000.		5980000.	
7440-28-0	Thallium (Tl)	5.8	UJ	5.6	J	2.	U	5.8	UJ	5.8	UJ
7440-62-2	Vanadium (V)	4.4	UJ	4.1	J	4.	U	3.1	U	3.1	U
7440-66-6	Zinc (Zn)	35.	U	3.5	U	3.5	U	40.7	U	50.7	U
7440-31-5	Tin (Sn)	??????????		??????????		??????????		??????????		??????????	

*** Validation Complete ***

CHARLESTON - ZONE H
Groundwater: Deep Grid Wells
Metals Only

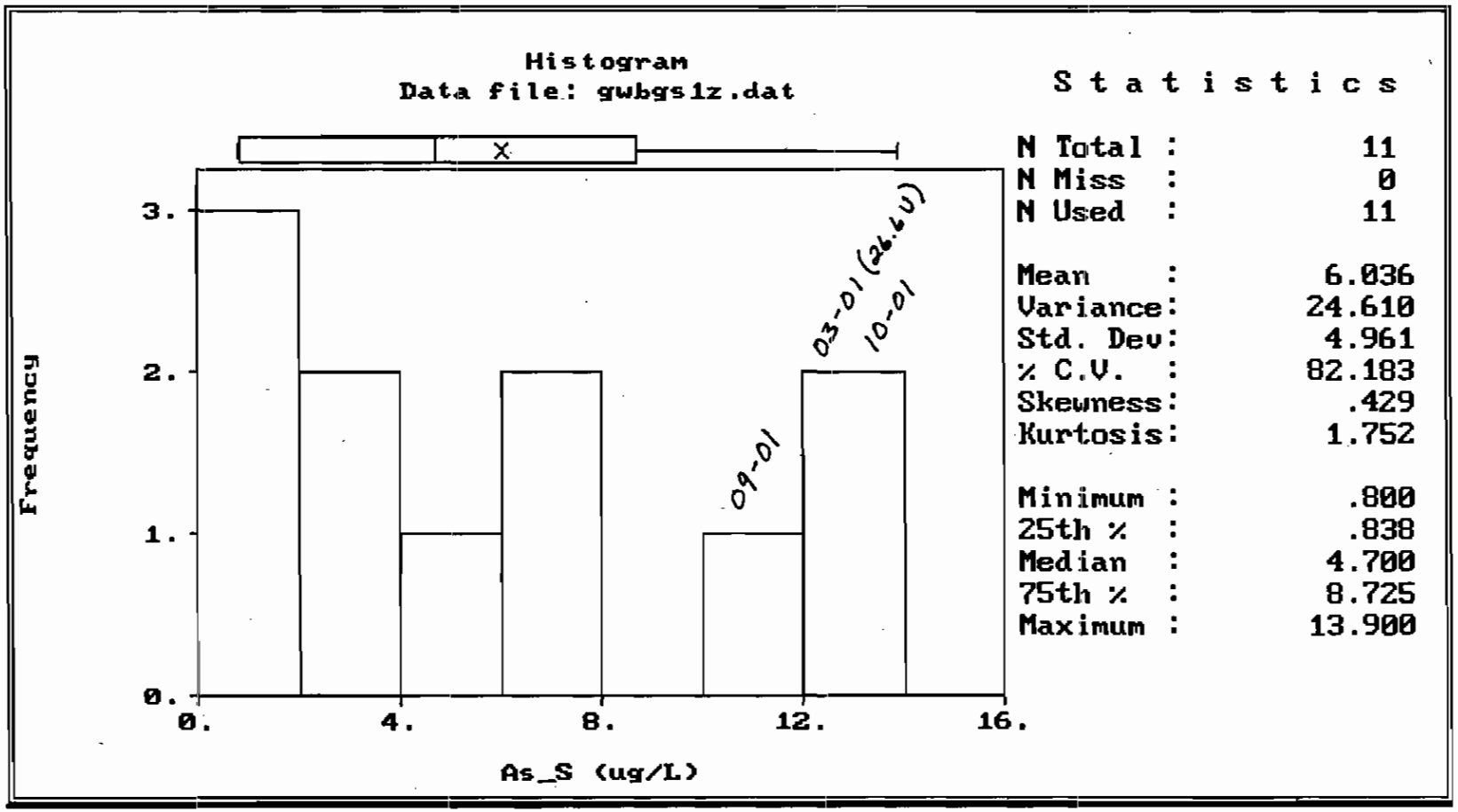
APX9-METAL

SAMPLE ID ------->	GDH-H-W10D-01
ORIGINAL ID ----->	GDHHW10D01
LAB SAMPLE ID --->	42605-001
ID FROM REPORT -->	GDHHW10D01
SAMPLE DATE ----->	12/16/94
DATE EXTRACTED -->	12/20/94
DATE ANALYZED ---->	12/22/94
MATRIX ---------->	Water
UNITS ---------->	MG/L A

CAS #	Parameter	APX14	VAL
7439-92-1	Lead (Pb)	4.4	U
7439-97-6	Mercury (Hg)	0.1	U
7440-02-0	Nickel (Ni)	10.3	U
7440-22-4	Silver (Ag)	3.4	U
7440-28-0	Thallium (Tl)	1.	U
7440-31-5	Tin (Sn)	17.8	U
7440-36-0	Antimony (Sb)	16.	U
7440-38-2	Arsenic (As)	0.8	U
7440-39-3	Barium (Ba)	39.1	U
7440-41-7	Beryllium (Be)	0.3	U
7440-43-9	Cadmium (Cd)	2.1	U
7440-47-3	Chromium (Cr)	4.3	U
7440-48-4	Cobalt (Co)	2.4	U
7440-50-8	Copper (Cu)	17.4	U
7440-62-2	Vanadium (V)	3.1	U
7440-66-6	Zinc (Zn)	44.	U
7782-49-2	Selenium (Se)	4.6	U

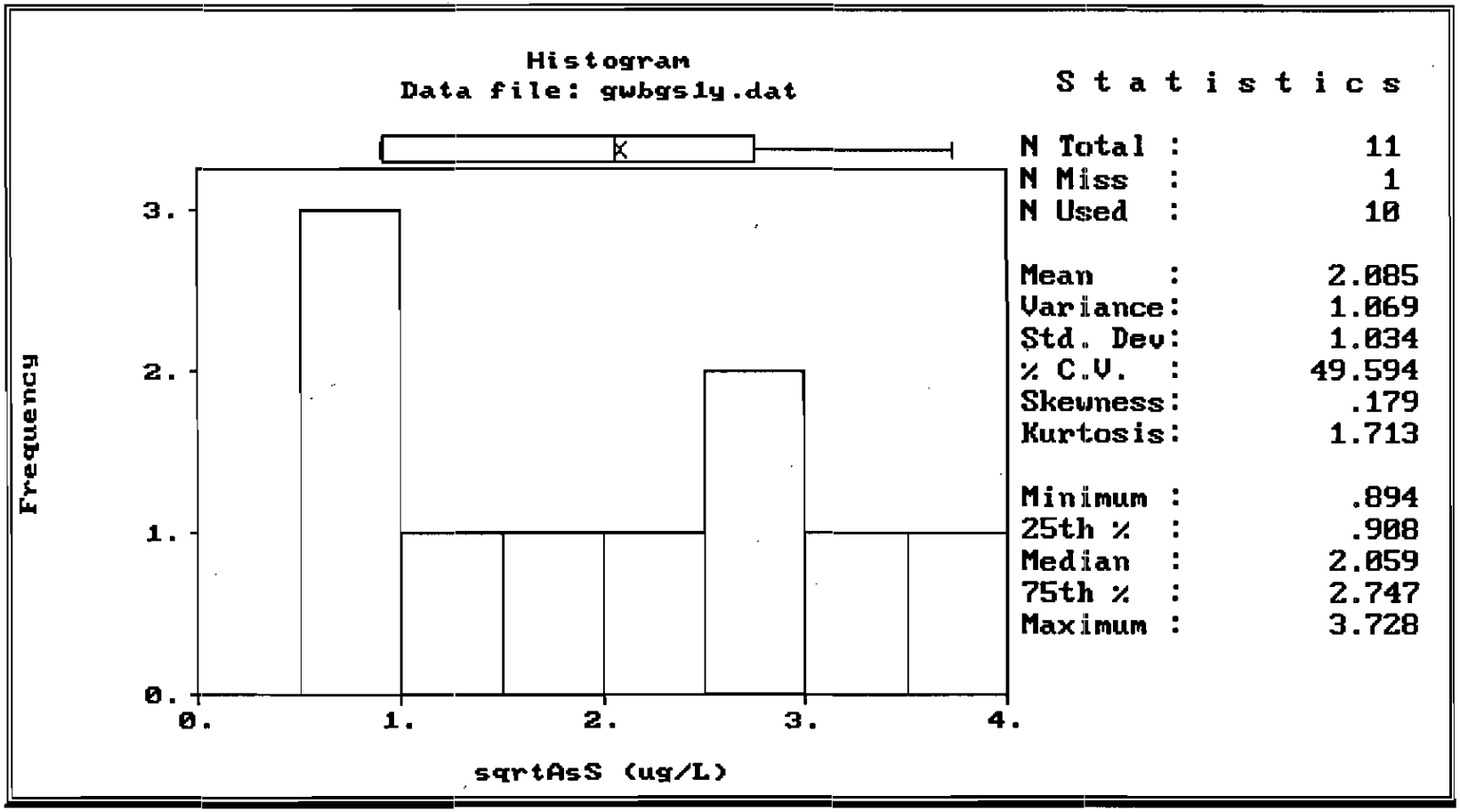
*** Validation Complete ***

Zone H
Arsenic in shallow GW grid samples
Original dataset (N = 11)
Original values



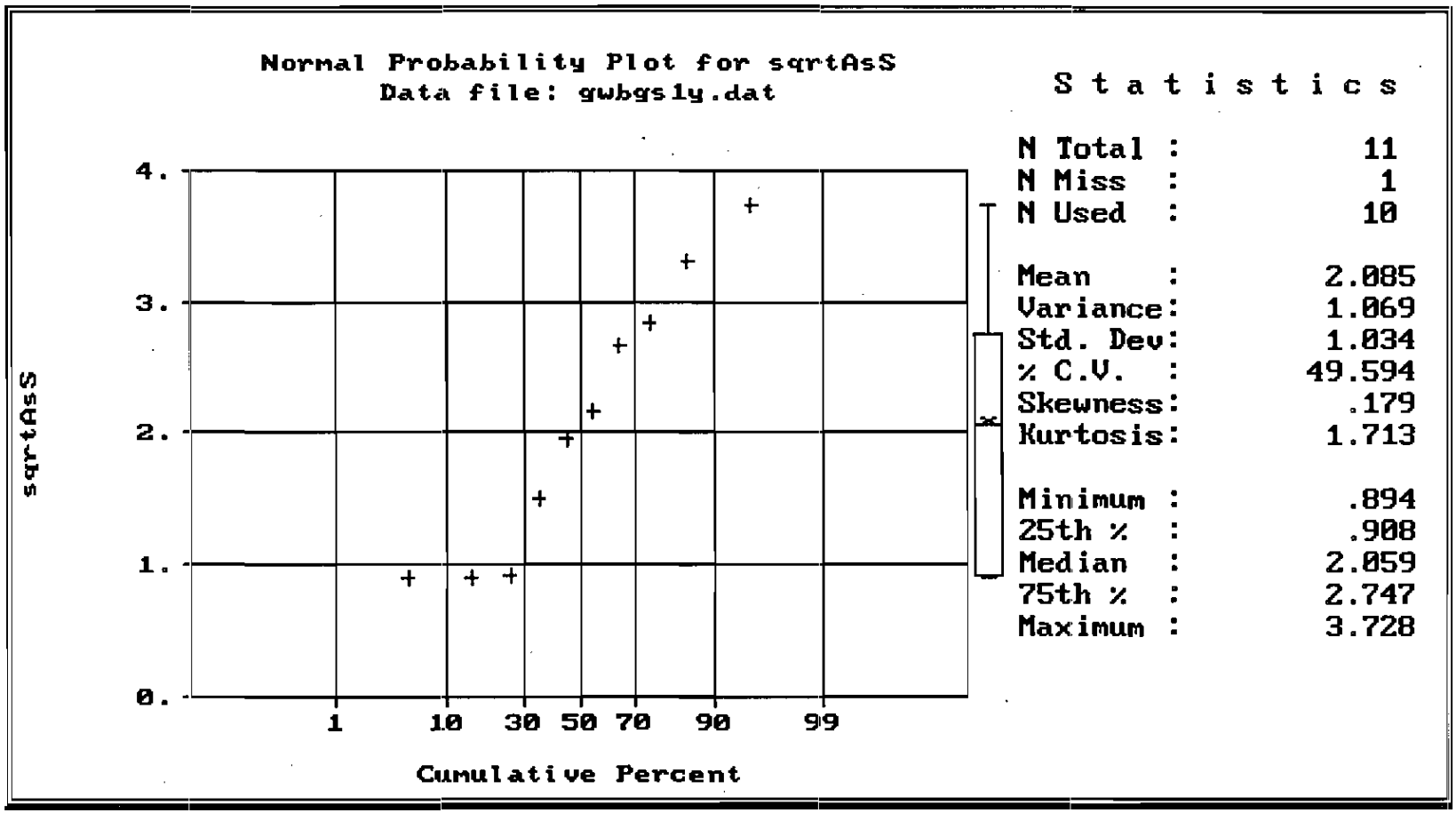
Zone H
Arsenic in shallow GW grid samples
Sample # 003-01 removed
Square-root transformation

2a

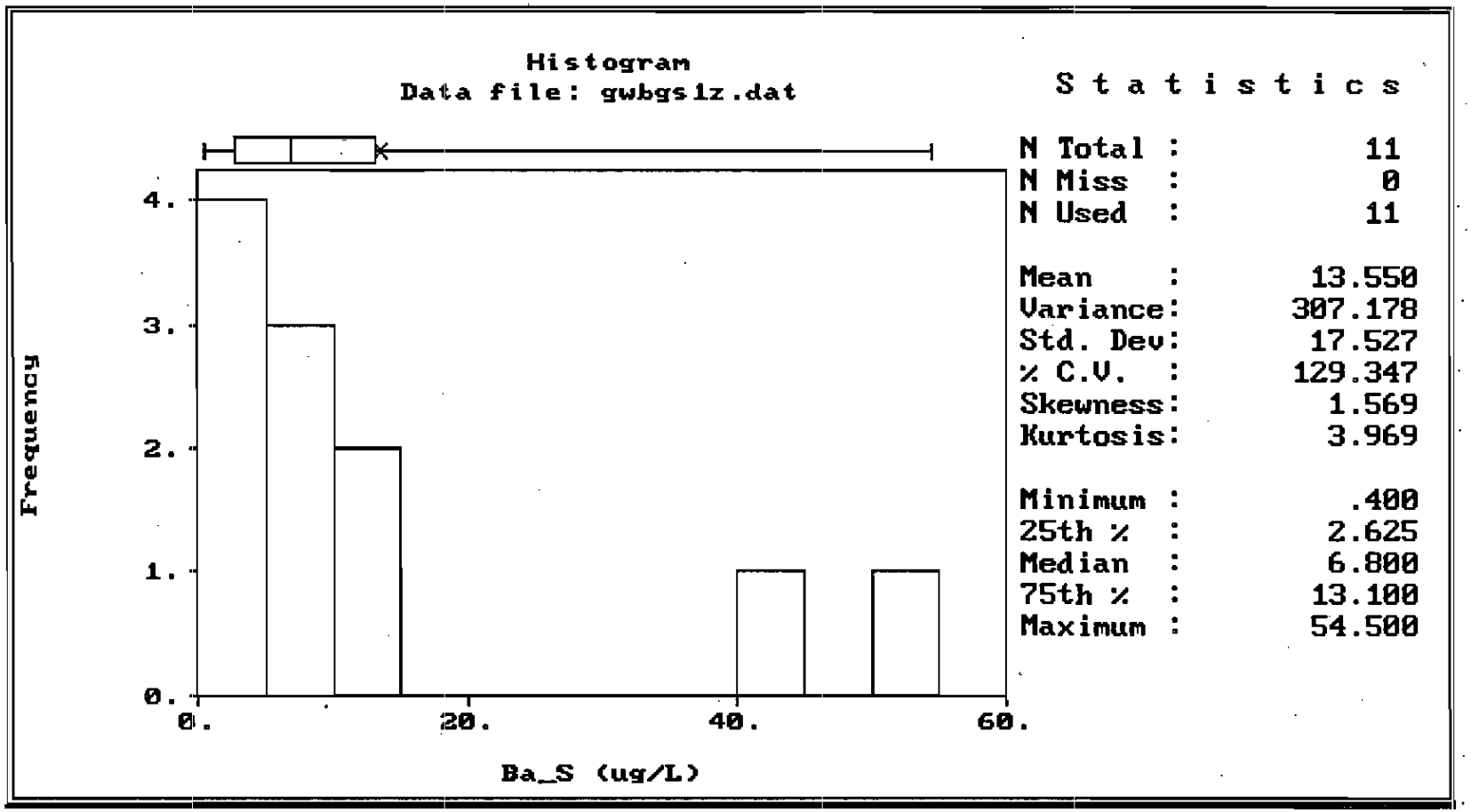


Statistics

N Total :	11
N Miss :	1
N Used :	10
Mean :	2.085
Variance:	1.069
Std. Dev:	1.034
% C.V. :	49.594
Skewness:	.179
Kurtosis:	1.713
Minimum :	.894
25th % :	.908
Median :	2.059
75th % :	2.747
Maximum :	3.728

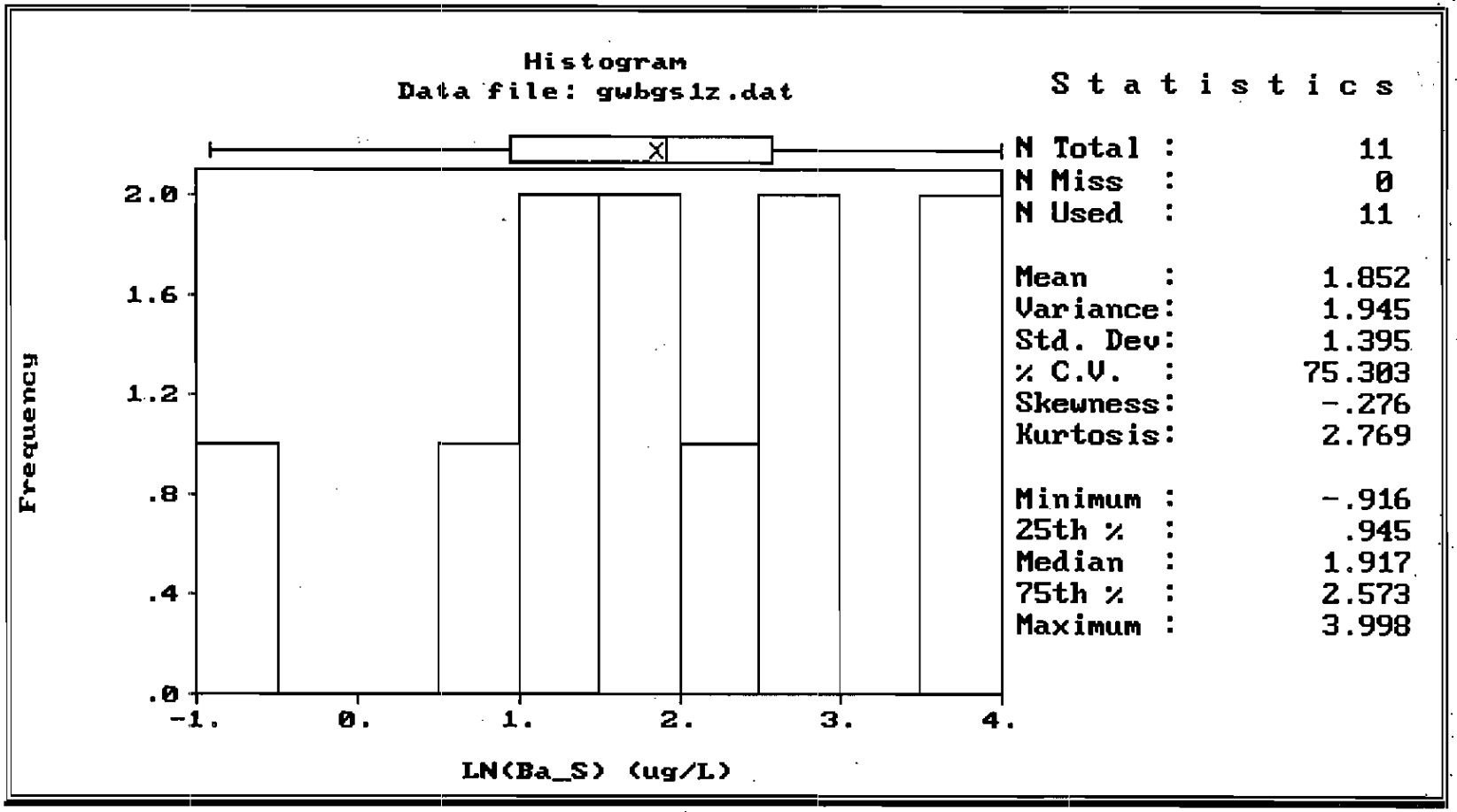

Normal Probability Plot for sqrtAsS
Data file: gwbgs1y.dat
sqrtAsS
4.
3.
2.
1.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 11
N Miss : 1
N Used : 10
Mean : 2.085
Variance: 1.069
Std. Dev: 1.034
% C.V. : 49.594
Skewness: .179
Kurtosis: 1.713
Minimum : .894
25th % : .908
Median : 2.059
75th % : 2.747
Maximum : 3.728

Zone H
Barium in shallow GW grid samples
Original dataset (N = 11)
Original values

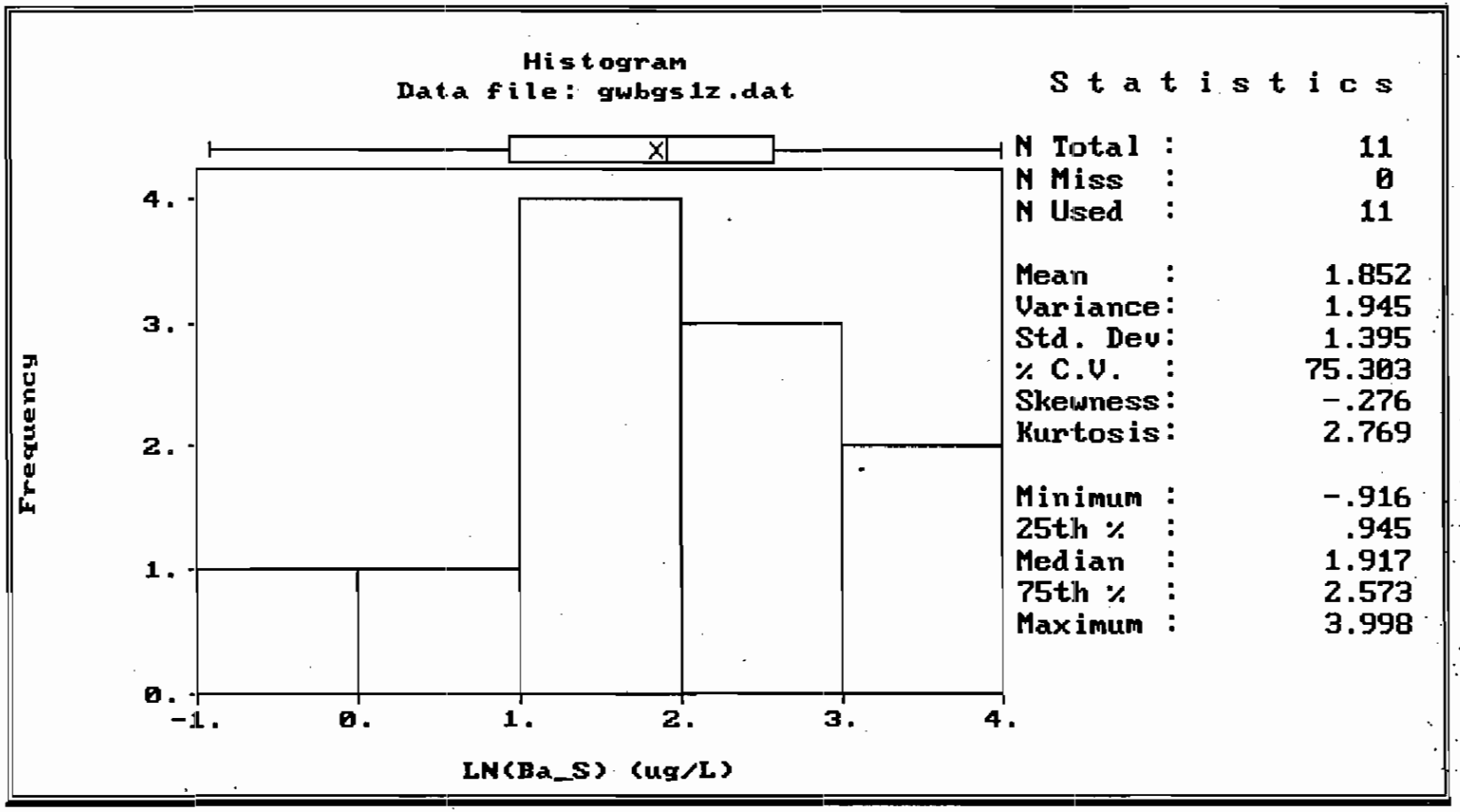


Zone H
Barium in shallow GW grid samples
Original dataset
LN-transformed values

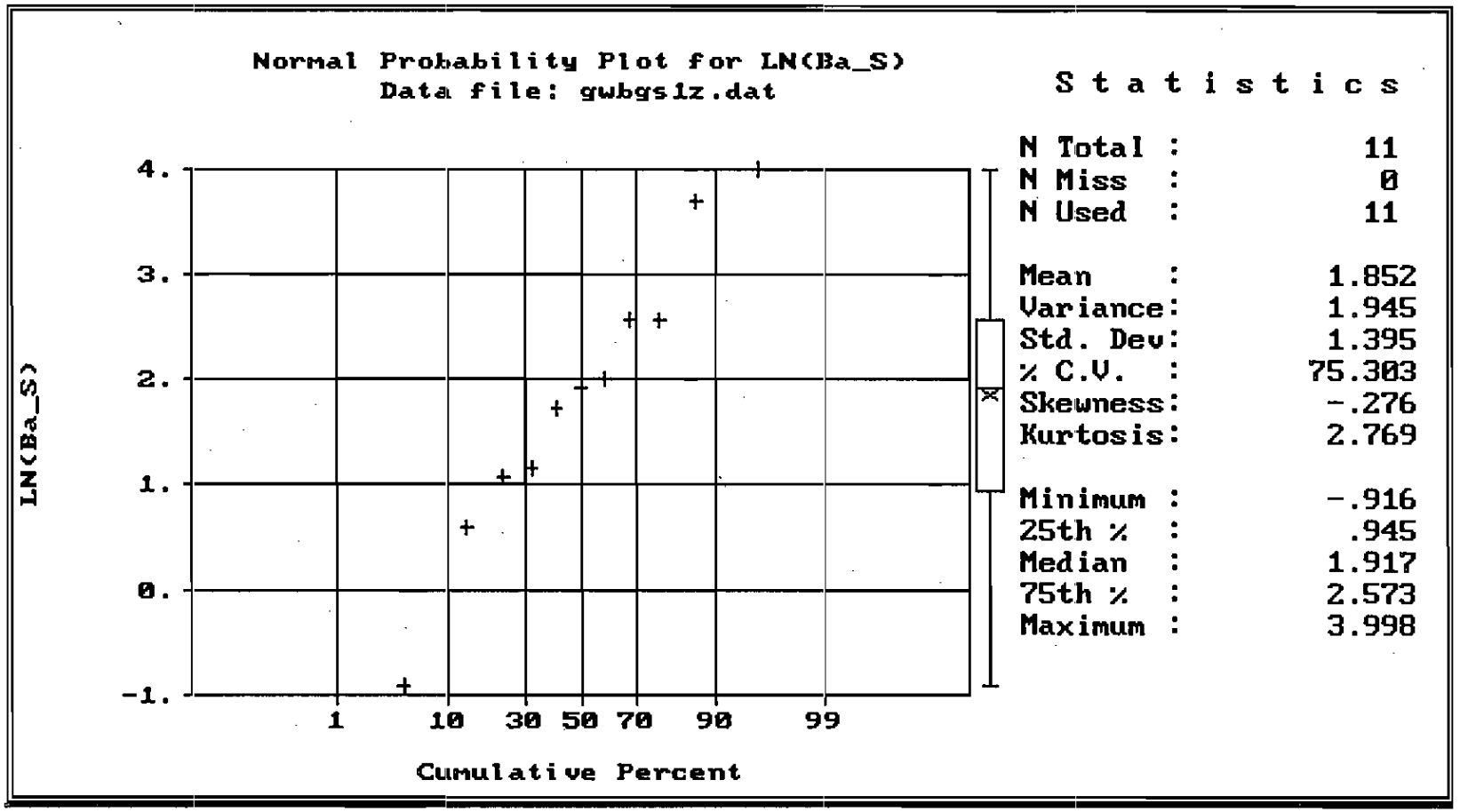
2a



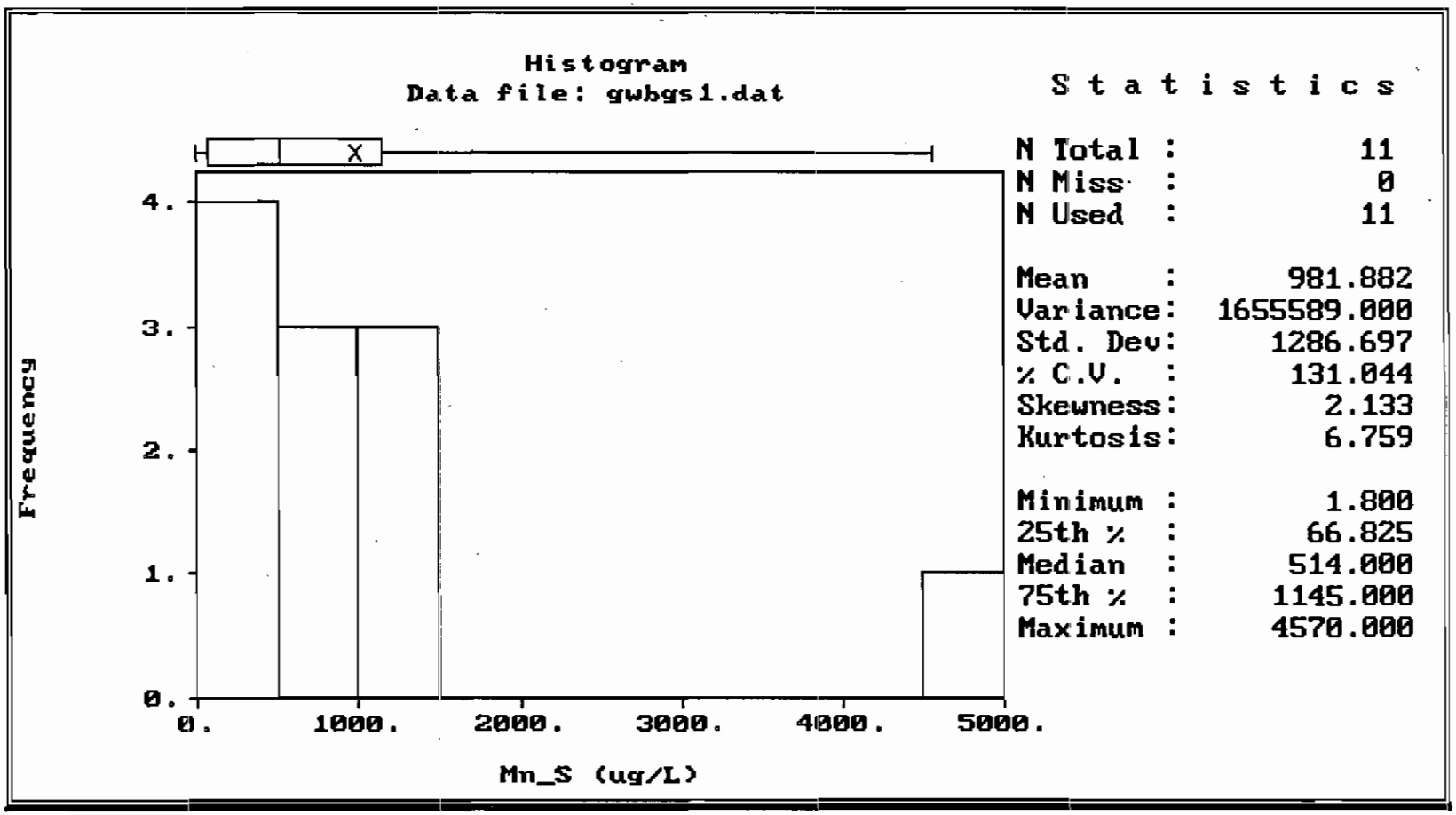
Zone H
Barium in shallow GW grid samples – generalized view
Original dataset
LN-transformed values



2c


Normal Probability Plot for LN(Ba_S)
Data file: gwbgs1z.dat
LN(Ba_S)
4.
3.
2.
1.
0.
-1.
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 11
N Miss : 0
N Used : 11
Mean : 1.852
Variance: 1.945
Std. Dev: 1.395
% C.V. : 75.303
Skewness: -.276
Kurtosis: 2.769
Minimum : -.916
25th % : .945
Median : 1.917
75th % : 2.573
Maximum : 3.998

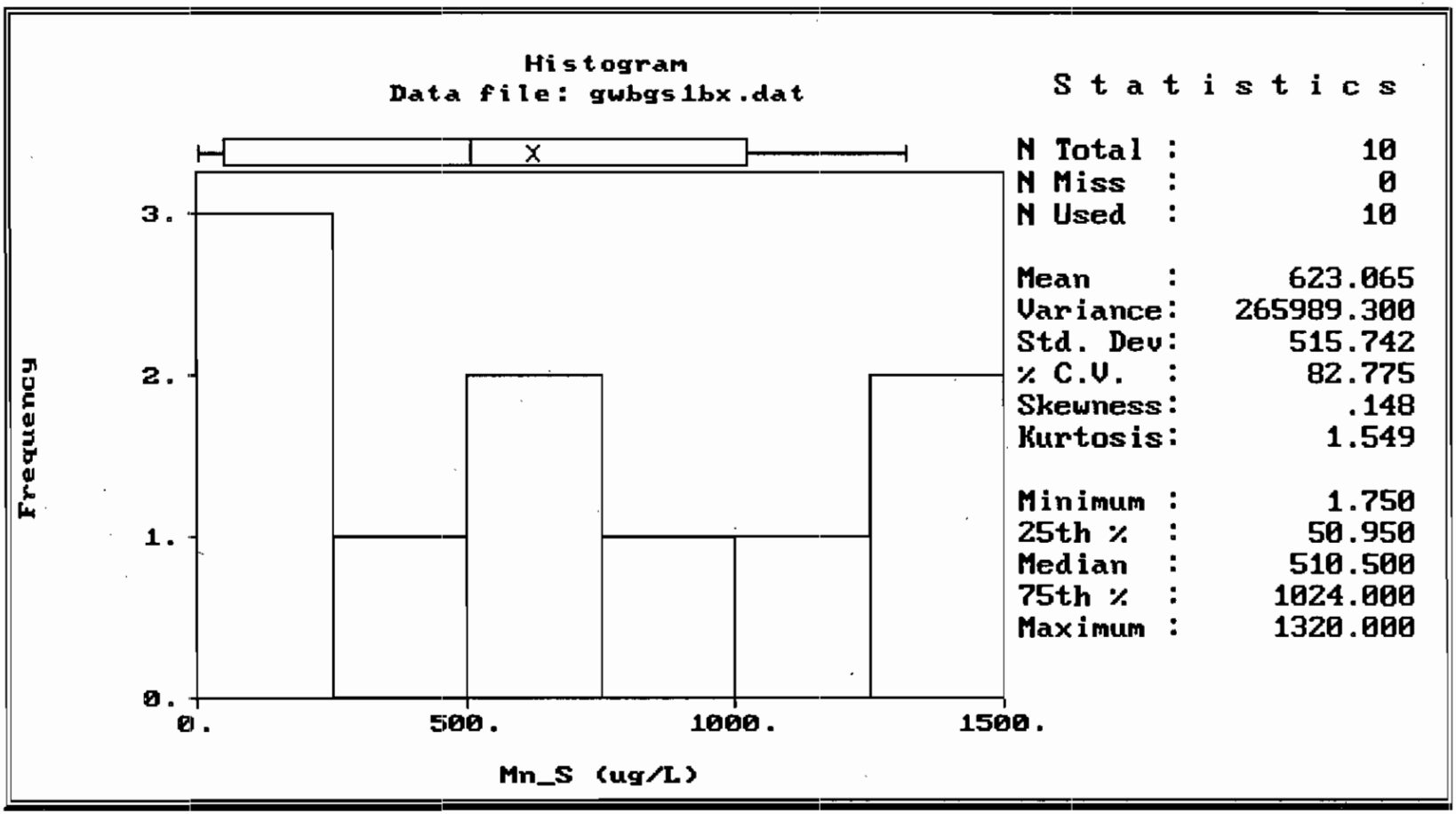
Zone H
Manganese in shallow GW grid samples
Original dataset (N = 11)
Original values

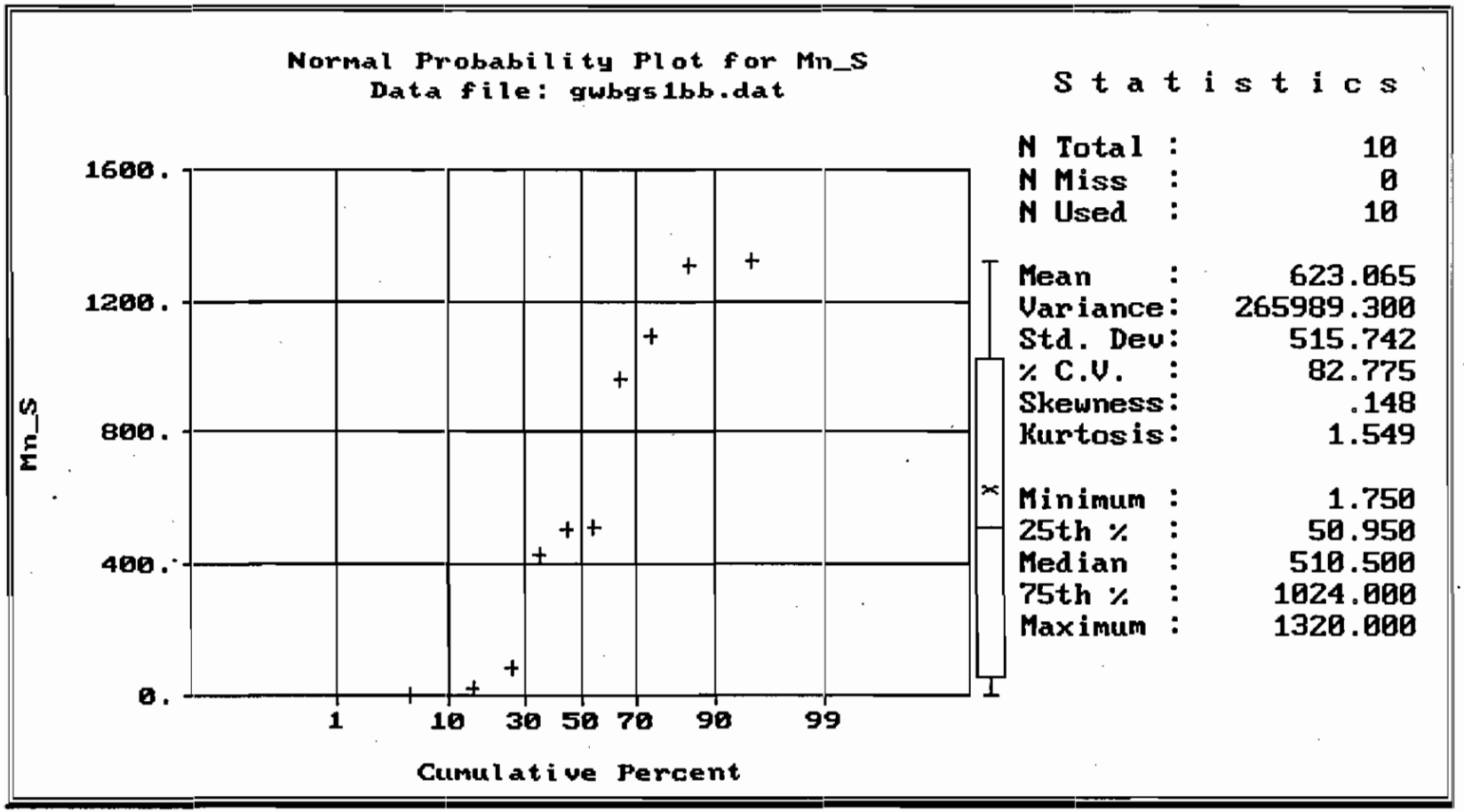


Statistics

N Total :	11
N Miss :	0
N Used :	11
Mean :	981.882
Variance:	1655589.000
Std. Dev:	1286.697
% C.V. :	131.044
Skewness:	2.133
Kurtosis:	6.759
Minimum :	1.800
25th % :	66.825
Median :	514.000
75th % :	1145.000
Maximum :	4570.000

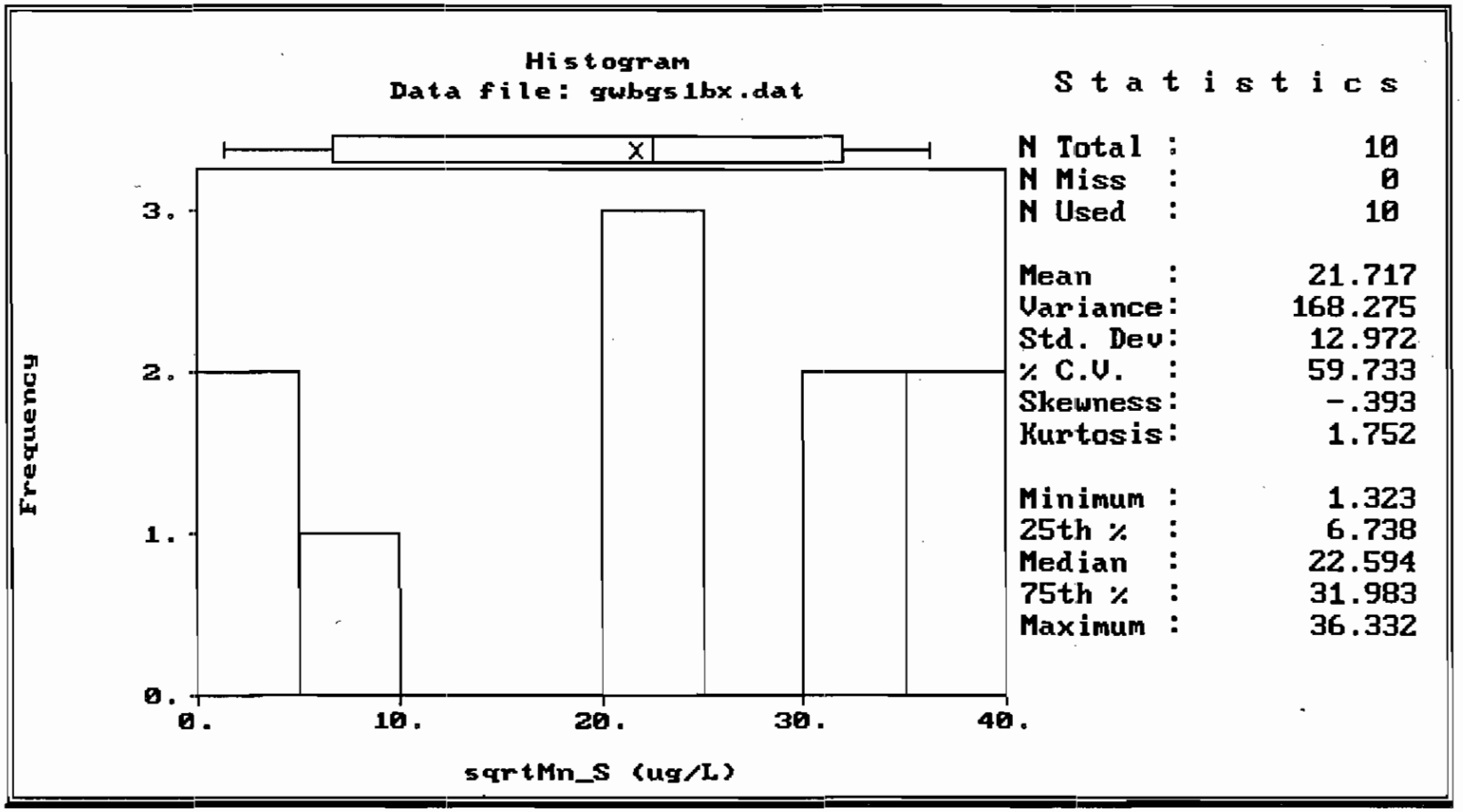
Zone H
Manganese in shallow GW grid samples
Sample # 009-01 removed
Original data values

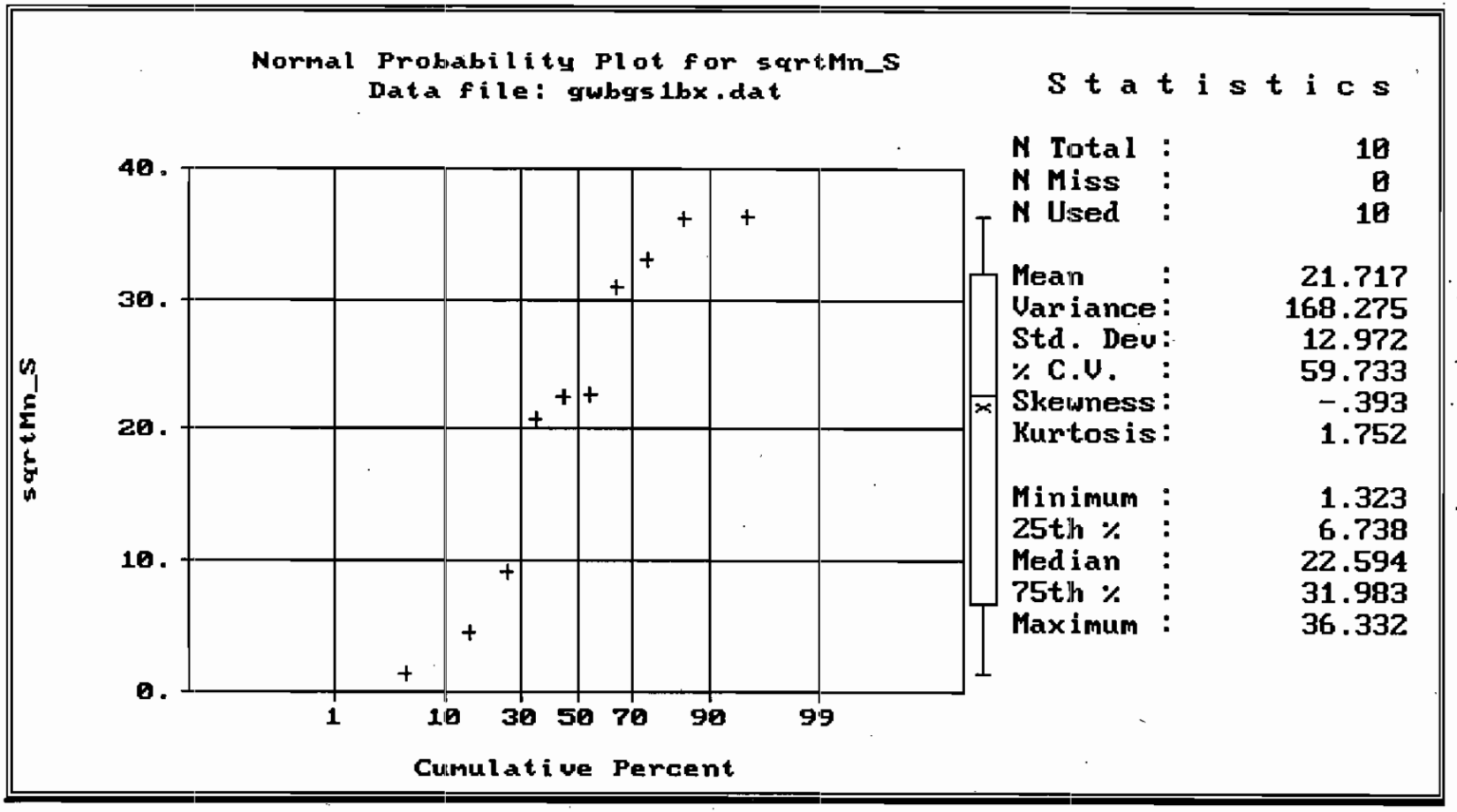



Normal Probability Plot for Mn_S
Data file: gwbgs1bb.dat
Mn_S
1600.
1200.
800.
400.
0.
1
10
30
50
70
90
99
Cumulative Percent
x
Statistics
N Total : 10
N Miss : 0
N Used : 10
Mean : 623.065
Variance: 265989.300
Std. Dev: 515.742
% C.V. : 82.775
Skewness: .148
Kurtosis: 1.549
Minimum : 1.750
25th % : 50.950
Median : 510.500
75th % : 1024.000
Maximum : 1320.000

Zone H
Manganese in shallow GW grid samples
Sample # 009-01 removed
Square-root transformed values

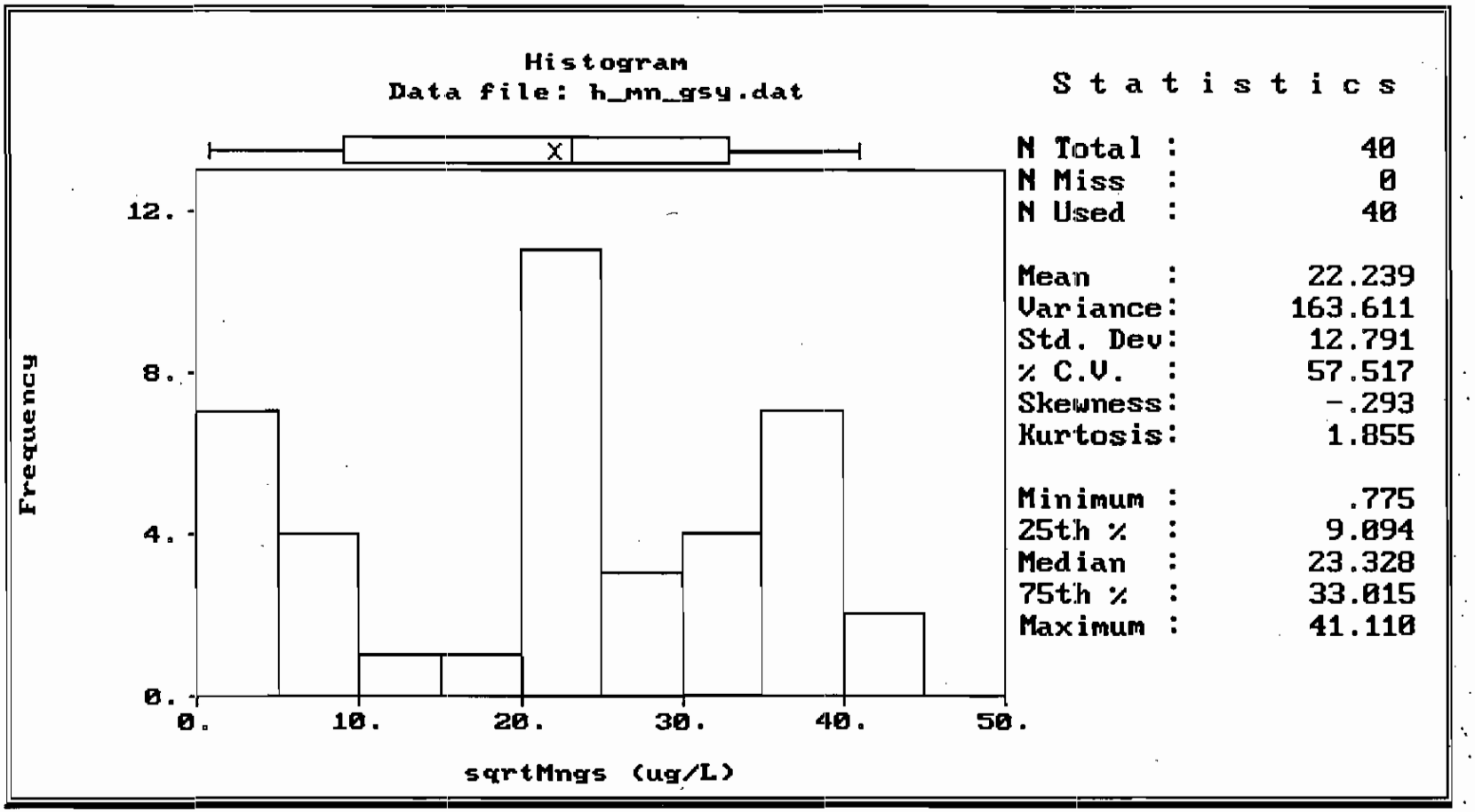
3a

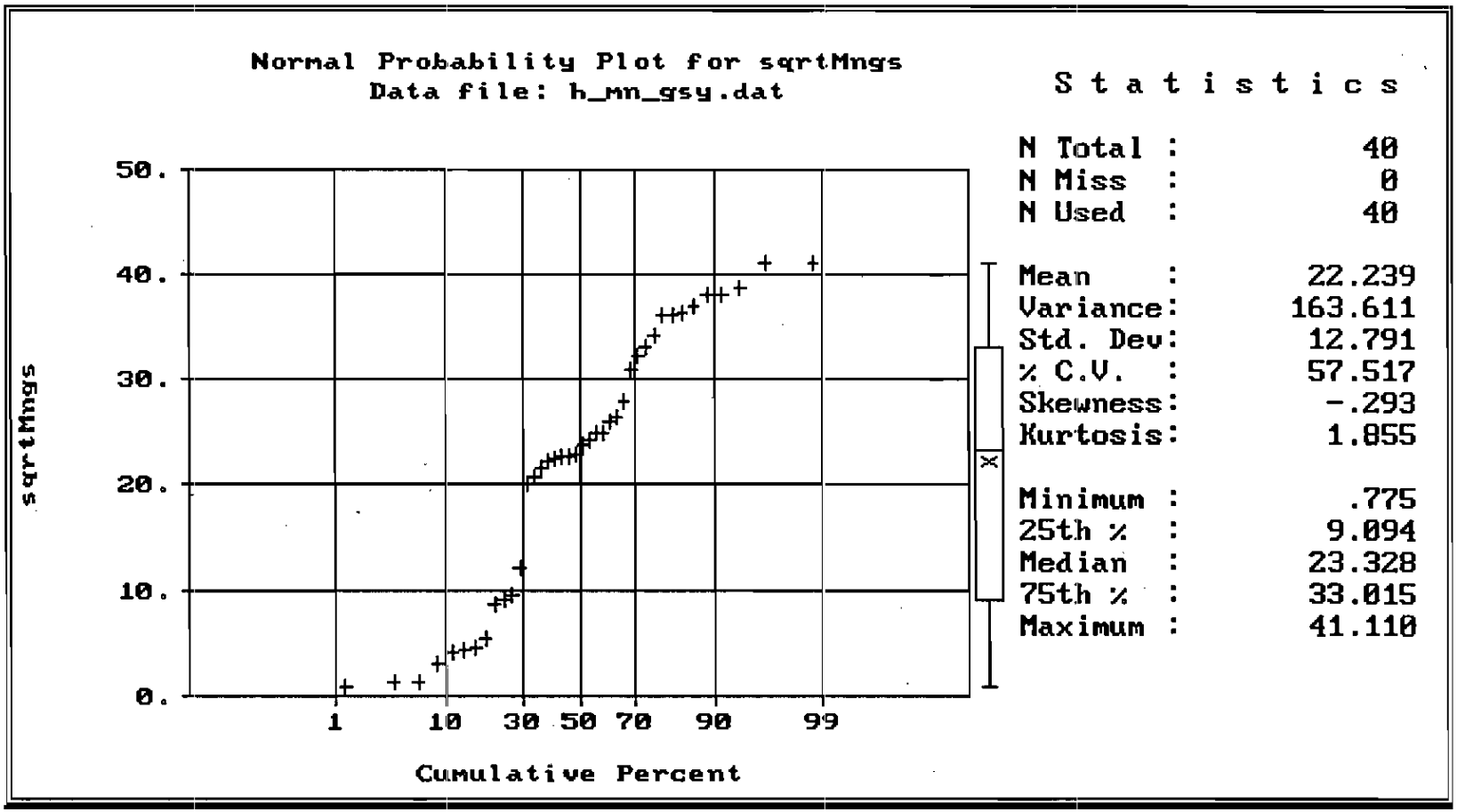



Normal Probability Plot for sqrtMn_S
Data file: gwbgs1bx.dat
sqrtMn_S
40.
30.
20.
10.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 10
N Miss : 0
N Used : 10
Mean : 21.717
Variance: 168.275
Std. Dev: 12.972
% C.V. : 59.733
Skewness: -.393
Kurtosis: 1.752
Minimum : 1.323
25th % : 6.738
Median : 22.594
75th % : 31.983
Maximum : 36.332

Zone H
Manganese in shallow GW grid samples – 4 rounds
All four samples from well -009 removed
Square-root transformed values

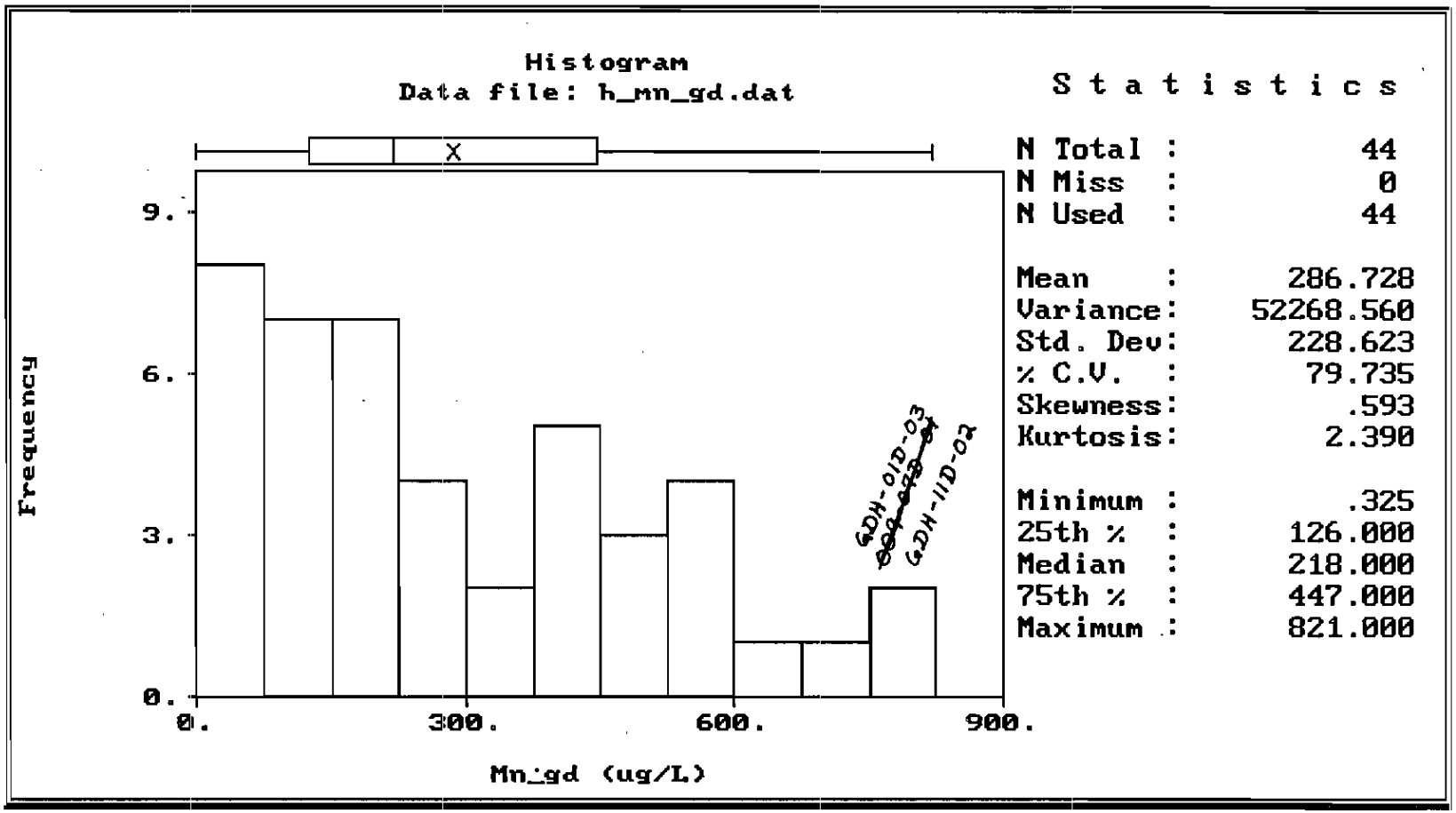
4a

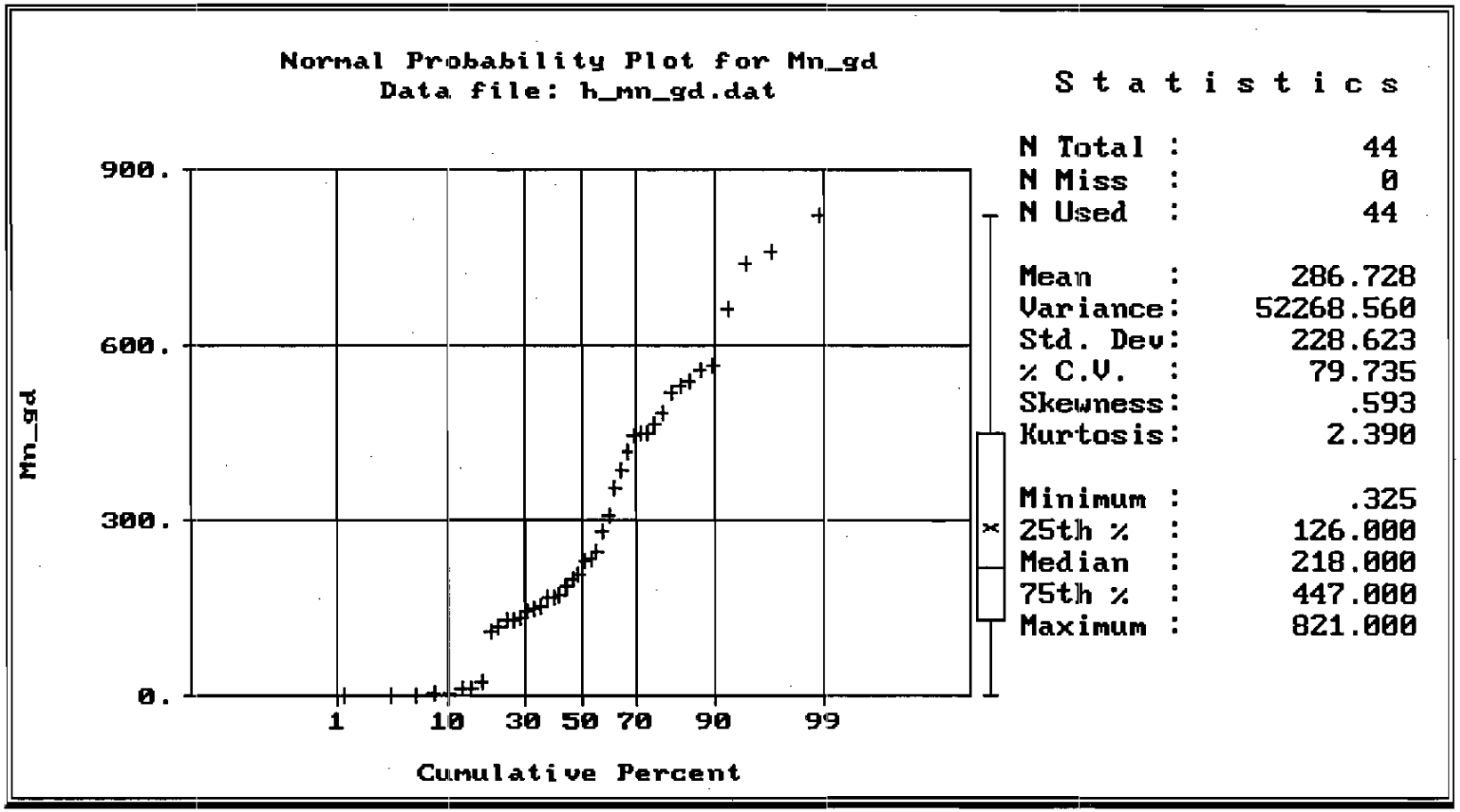



Normal Probability Plot for sqrtMngs
Data file: h_mn_gsy.dat
sqrtMngs
50.
40.
30.
20.
10.
0.
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 40
N Miss : 0
N Used : 40
Mean : 22.239
Variance: 163.611
Std. Dev: 12.791
% C.V. : 57.517
Skewness: -.293
Kurtosis: 1.855
Minimum : .775
25th % : 9.094
Median : 23.328
75th % : 33.015
Maximum : 41.110

Zone H
Manganese in deep groundwater grid samples
Original dataset — 4 sampling rounds
Original values

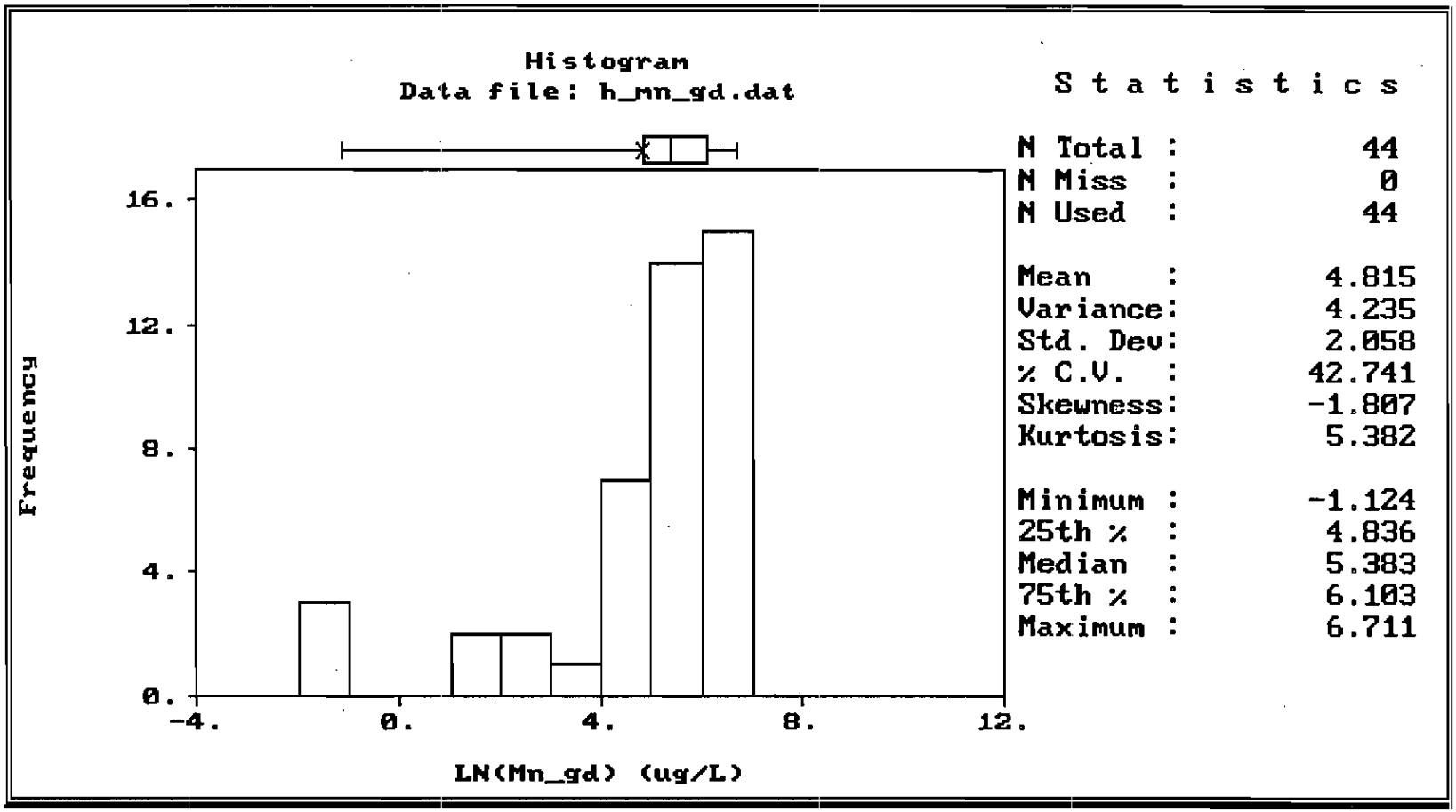
1a




Normal Probability Plot for Mn_gd
Data file: h_mn_gd.dat
900.
600.
300.
0.
Mn_gd
1
10
30
50
70
90
99
Cumulative Percent
x
Statistics
N Total : 44
N Miss : 0
N Used : 44
Mean : 286.728
Variance: 52268.560
Std. Dev: 228.623
% C.V. : 79.735
Skewness: .593
Kurtosis: 2.390
Minimum : .325
25th % : 126.000
Median : 218.000
75th % : 447.000
Maximum : 821.000

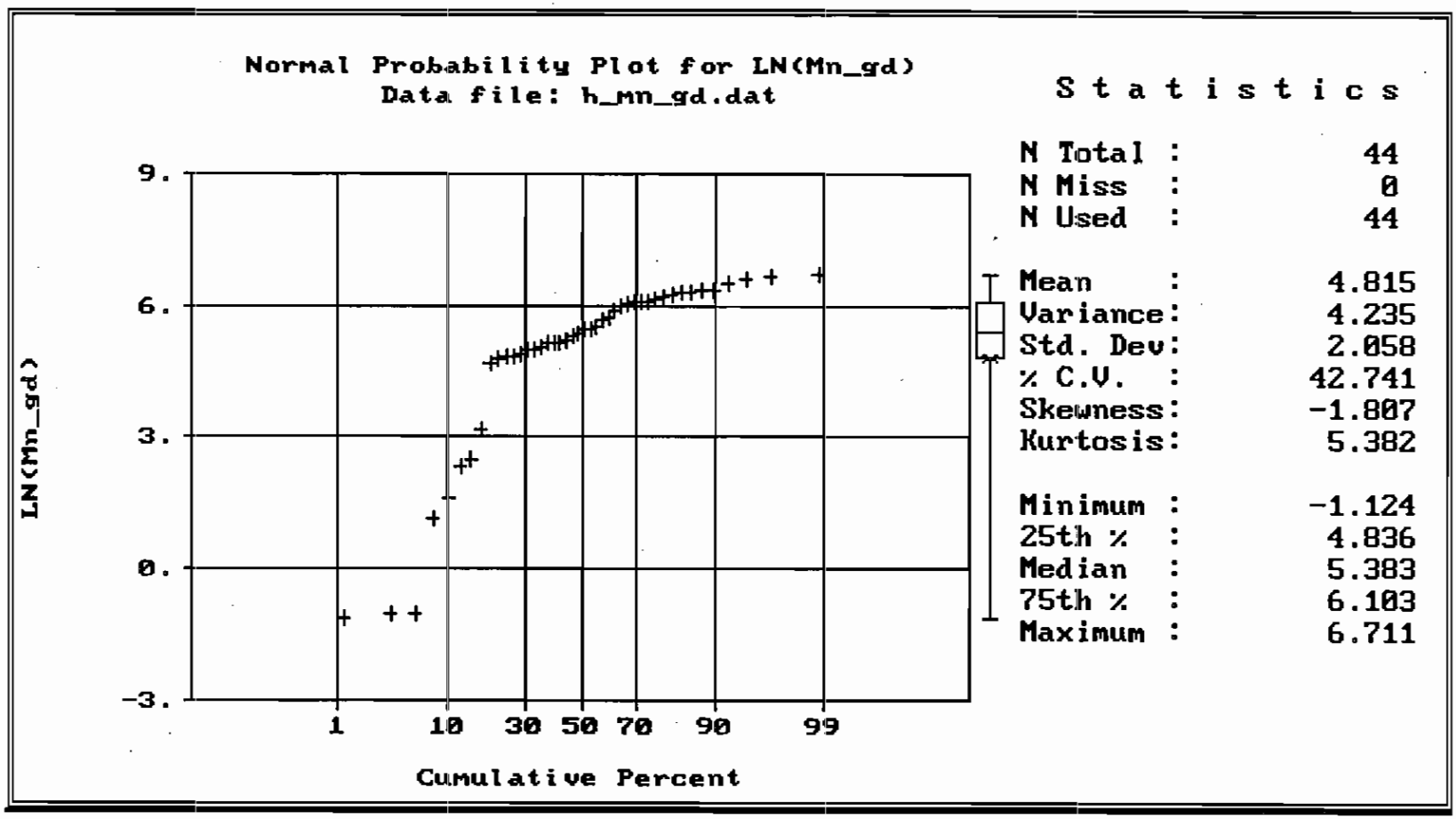
Zone H
Mn in deep GW grid samples
Original dataset – 4 sampling rounds
LN-transformed values

2a



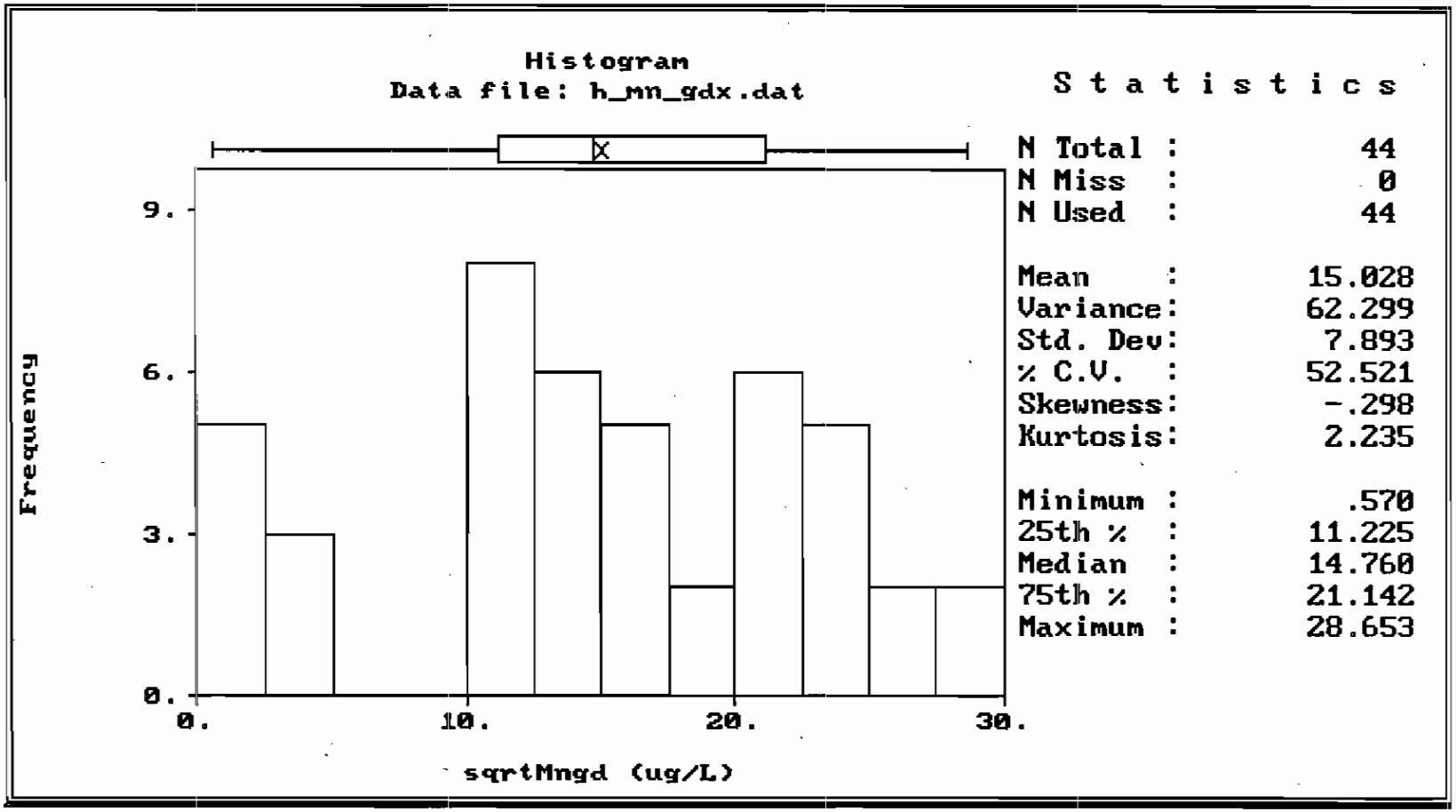
Statistics

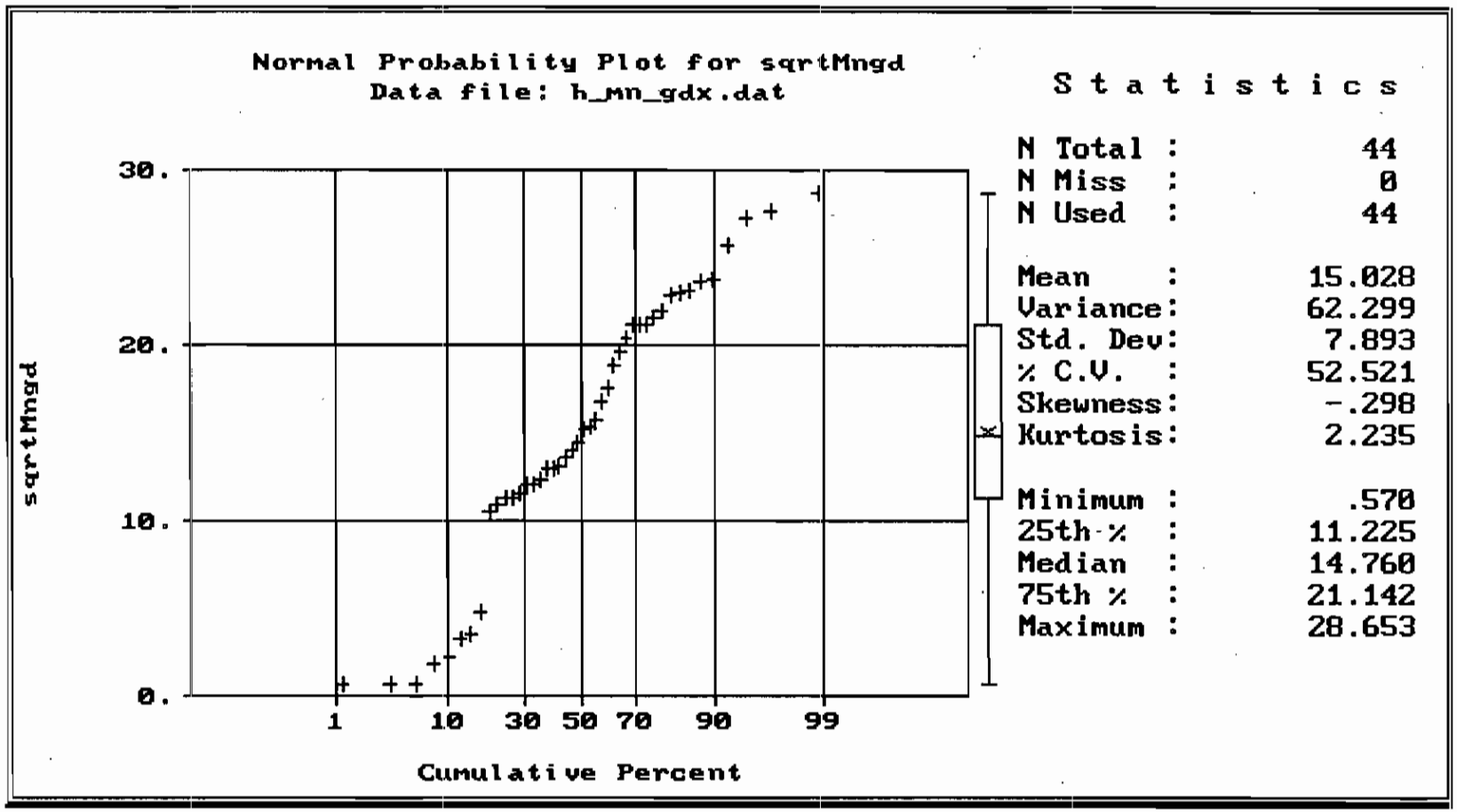
N Total :	44
N Miss :	0
N Used :	44
Mean :	4.815
Variance:	4.235
Std. Dev:	2.058
% C.V. :	42.741
Skewness:	-1.807
Kurtosis:	5.382
Minimum :	-1.124
25th % :	4.836
Median :	5.383
75th % :	6.103
Maximum :	6.711


Normal Probability Plot for LN(Mn_gd)
Data file: h_mn_gd.dat
LN(Mn_gd)
9.
6.
3.
0.
-3.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 44
N Miss : 0
N Used : 44
Mean : 4.815
Variance: 4.235
Std. Dev: 2.058
% C.V. : 42.741
Skewness: -1.807
Kurtosis: 5.382
Minimum : -1.124
25th % : 4.836
Median : 5.383
75th % : 6.103
Maximum : 6.711

Zone H
Mn in deep GW grid samples
Original dataset – 4 sampling rounds
Square-root transformed values

3a




Normal Probability Plot for sqrtMngd
Data file: h_mn_gdx.dat
sqrtMngd
30.
20.
10.
0.
1
10
30
50
70
90
99
Cumulative Percent
K
Statistics
N Total : 44
N Miss : 0
N Used : 44
Mean : 15.028
Variance: 62.299
Std. Dev: 7.893
% C.V. : 52.521
Skewness: -.298
Kurtosis: 2.235
Minimum : .570
25th % : 11.225
Median : 14.760
75th % : 21.142
Maximum : 28.653

Zone H soil 3-24-97

Alternative background reference values (mg/kg)

	Surface Soil					Subsurface Soil				
Chemical	RBC	2xMean	$UTL_{90,90}$	$UTL_{95,95}$	UTL_{orig}	SSL	2xMean	$UTL_{90,90}$	$UTL_{95,95}$	UTL_{orig}
Aluminum	7,800	16,800	18,800	26,000	25,310	--	--	--	--	--
Arsenic	0.43c	11.7	12.6	15.6	14.81	29	15.7	17.9	22.5	35.52
Beryllium	0.15c	0.75	0.93	1.37	1.466	--	--	--	--	--
Chromium	39	46.8	48.3	59.1	85.65	38	60.7	67.5	84.2	83.86
Manganese	180	243	352	583	636.4	--	--	--	--	--
Thallium	0.63		0.63 (?)	1.1	0.63	0.7		1.3	1.3	1.3
Vanadium	55	45.9	52.4	73.0	77.38	--	--	--	--	--

Zone H groundwater

Alternative background reference values (μg/L)

	Shallow Groundwater					Deep Groundwater			
Chemical	RBC/MCL	2xMean	$UTL_{90,90}$	$UTL_{95,95}$	UTL_{orig}	2xMean	$UTL_{90,90}$	$UTL_{95,95}$	UTL_{orig}
Arsenic	0.045/50	10.6	17.8	26.0	27.99	3.61	3.65	8.2	14.98
Barium	260/2000	27.1	105	323	323	--	--	--	--
Manganese	84/NA	1,310	1,820	2,440	3,391	573	757	998	776.2
Thallium	0.29/2.0	3.4	4.2	5.3	7.66	--	--	--	--

MEMO 4-4-97

TO: Project Team members
FROM: EnSafe

RE: Possible alternative background values for arsenic in shallow groundwater at Zone H

At the subcommittee meeting on March 25th, EnSafe proposed a background reference value of 26.0 μg/L for arsenic in shallow groundwater at Zone H. This number represented a $UTL_{95,95}$ based on a dataset of 10 values from the first quarterly sampling round; the ambiguous result of 26.6U μg/L from sample GDHGW00301 had been removed from the original dataset. The full four rounds of sample results were not used at that time because of questions about high concentrations in some of the later rounds. At the meeting, EnSafe was tasked with an action item to recalculate a background value for arsenic using all four rounds of data from the shallow grid-based wells. This memo and accompanying graphs present several possible alternative background values.

1. Use all sample results (n = 44; 24 detections). The LN-transformation gives the closest approximation to normality (Figs. 1a, 1b, 1c, 1d).

$$UTL_{95,95} = \exp[1.583 + (2.099)(1.099)] = 48.9\ \mu g/L.$$

2. Remove sample GDHGW00203 (=36.0U μg/L) as ambiguous because it does not fit with the other three rounds of sample results from well 002 (see sample results list) (n = 43; 24 detections). The LN-transformation again gives the best distribution (Figs. 2a, 2b, 2c, 2d).

$$UTL = \exp[1.552 + (2.105)(1.093)] = 47.1\ \mu g/L.$$

3. Also remove all four rounds of sample results from well 003: the round 1 result is a high nondetect (26.6U μg/L) while the other three rounds are anomalously high detections (24.8, 41.0, and 42.1 μg/L) (n = 39; 21 detections). The LN-transformation provides the best distribution (Figs. 3a, 3b, 3c, 3d). $UTL = \exp[1.372 + (2.133)(0.968)] = 31.1\ \mu g/L$

4. Also remove the round 3 and round 4 sample results from well 006 (43.05 and 27.35 μg/L), which were anomalous compared to the first and second round results (7.1 and 7.3 μg/L) (n = 37; 19 detections). The LN-transformation provides the best distribution (Figs. 4a, 4b, 4c, 4d).

$$UTL = \exp[1.255 + (2.150)(0.844)] = 21.5\ \mu g/L$$

There is no obvious soil source for the somewhat elevated arsenic concentrations in shallow grid wells GDH003 and GDH006, or in site wells 009011 and 653001. The highest reported subsurface soil concentration in the vicinity was 18.3 mg/kg in sample GDHSB03902, collected next to the parking lot of the former McDonald's. Two subsurface soil samples at AOC 653 (SB001 and SB003) reported results between 14 and 15 mg/kg.

Risk Assessment used 27.9. Using method 2 which would eliminate AOC 655.

RECOMMENDATION: The only sample result that appears out of place and/or mistaken is GDHGW00203 (36.0U μg/L), which is grossly inconsistent with the other three rounds' results from the same well. The relatively high detections seen in samples from wells GDH003 and GDH006 should be considered accurate; whether they are representative of background conditions in Zone H is debatable. If the background reference value is to be based on results from all four rounds, the subcommittee should probably choose between alternatives #2 and #4 above.

Note: The original UTL for arsenic in shallow groundwater at Zone H was 27.99 μg/L. Changing this value to 48.9 μg/L (alternative #1) or 47.1 μg/L (alternative #2) would have the effect of dropping arsenic in groundwater from the risk assessment for AOC 655; changing the UTL to 31.1 μg/L (alternative #3) or 21.5 μg/L (alternative #4) would have no effect on the risk assessments.

Zone H: Arsenic in shallow GW grab samples – 4 rounds.

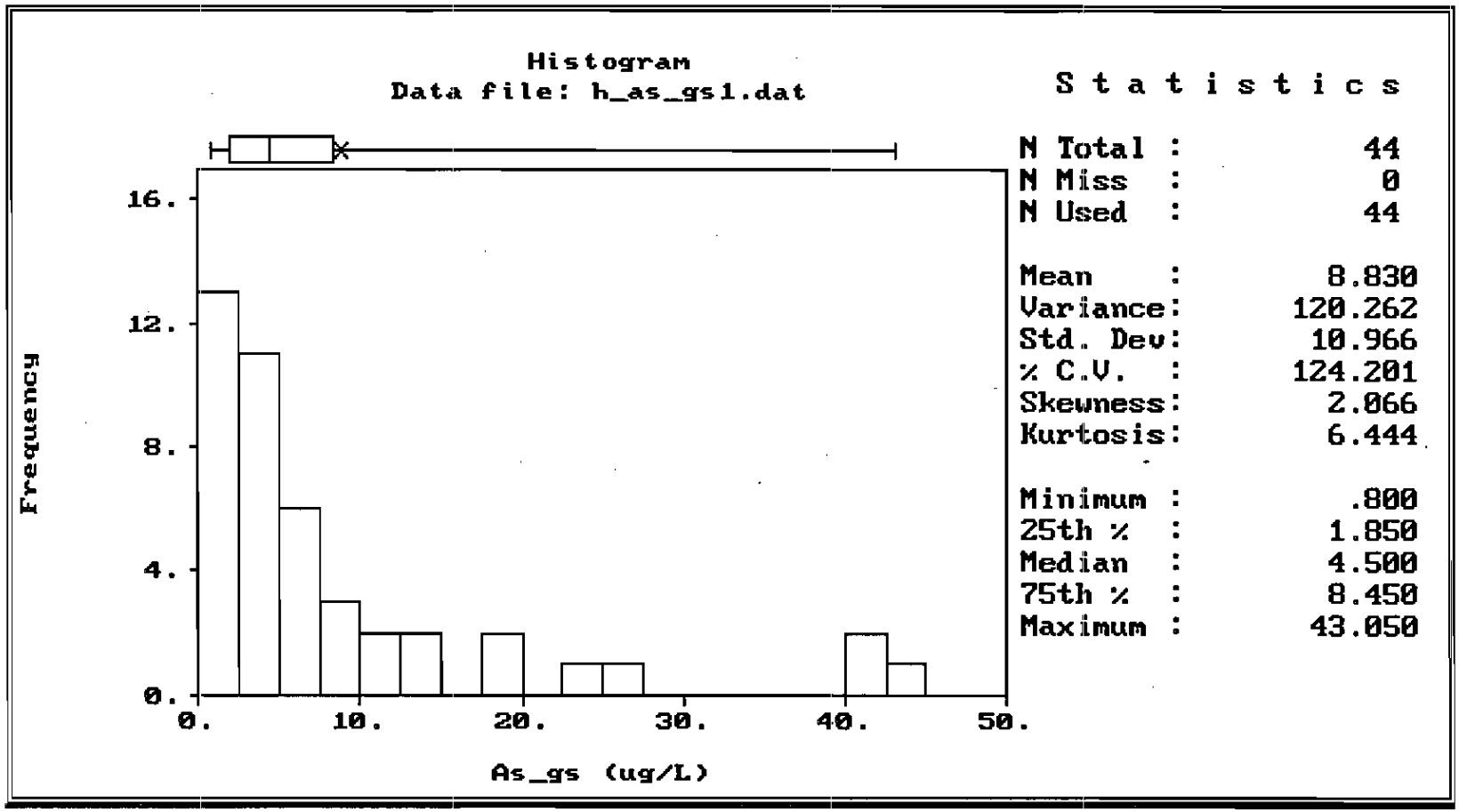
Nondetects < 9.0 U have been changed to "½ U" values, and their U qualifiers have been dropped.

GDHGW00101	8.0000	J
GDHGW00102	4.4500	
GDHHW00103	6.0000	J
GDHGW00104	4.0000	
GDHGW00201	2.2500	
GDHGW00202	1.8500	
GDHGW00203	36.0000	U
GDHGW00204	2.2000	
GDHGW00301	26.6000	U *
GDHGW00302	24.8000	
GDHGW00303	41.0000	J
GDHGW00304	42.1000	
GDHHW00401	0.8500	J
GDHGW00402	1.3000	
GDHGW00403	3.1000	J
GDHGW00404	4.4000	
GDHGW00501	3.8000	
GDHGW00502	10.8000	UJ *
GDHGW00503	10.4000	
GDHGW00504	9.1000	U *
GDHGW00601	7.1000	J
GDHGW00602	7.3000	
GDHGW00603	43.0500	
GDHGW00604	27.3500	
GDHGW00701	0.8000	J
GDHGW00702	1.3000	
GDHGW00703	3.6000	J
GDHGW00704	7.6000	J
GDHGW00801	0.8000	
GDHGW00802	1.3500	
GDHGW00803	1.6000	J
GDHGW00804	1.2500	
GDHGW00901	10.9000	
GDHGW00902	4.1500	
GDHGW00903	6.6000	J
GDHGW00904	3.3000	J
GDHGW01001	13.9000	
GDHGW01002	13.9000	UJ *
GDHGW01003	8.4500	J
GDHGW01004	18.8500	
GDHGW01101	4.7000	J
GDHGW01102	1.4000	
GDHGW01103	3.2000	J
GDHGW01104	1.2500	

Ambiguous value, deleted from alternate dataset, for versions 2, 3, and 4.

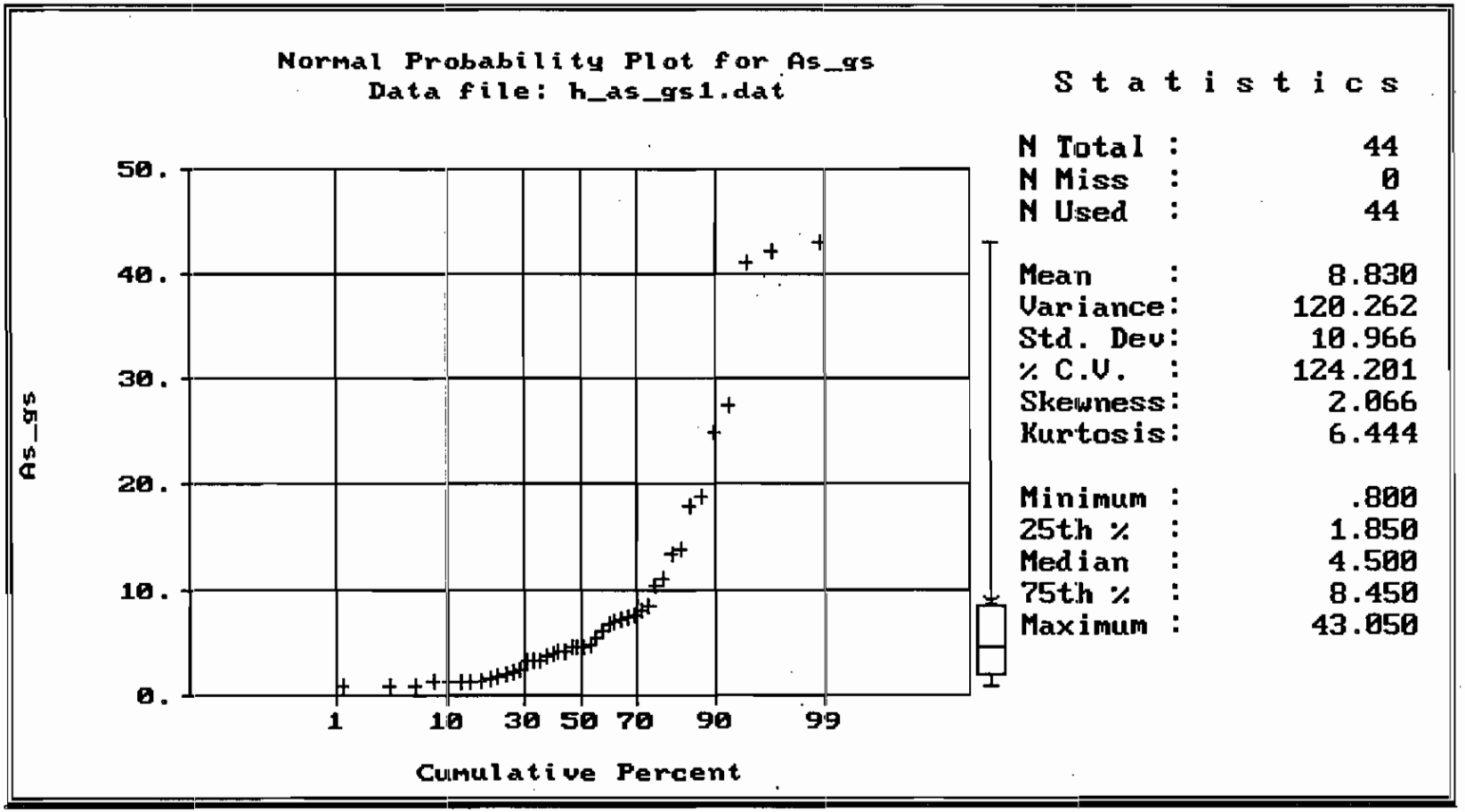
* These U-qualified values are consistent in size with detected values in other sampling rounds from the same wells. For these samples, "½ U" was used as an estimated value.

1a

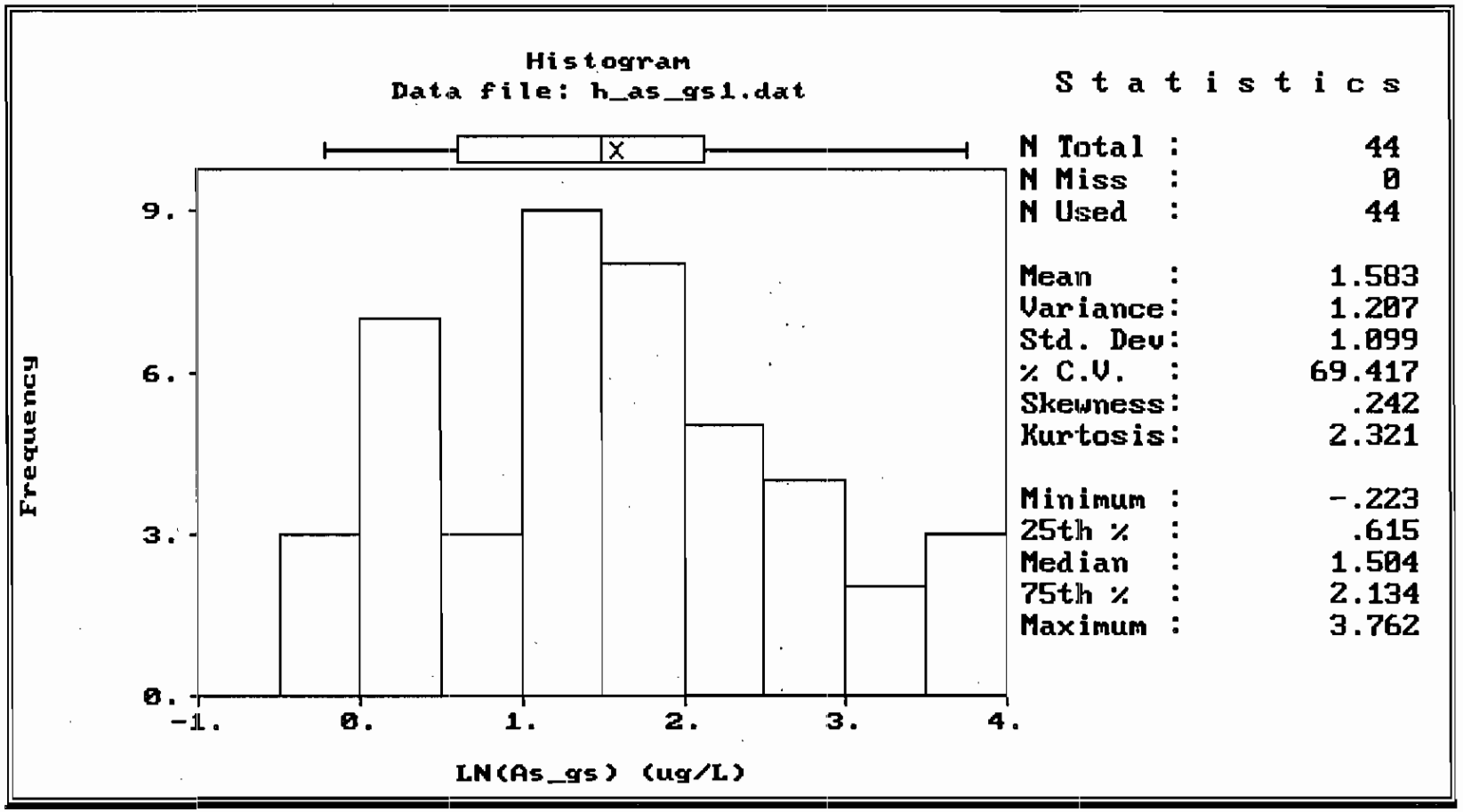


Statistics

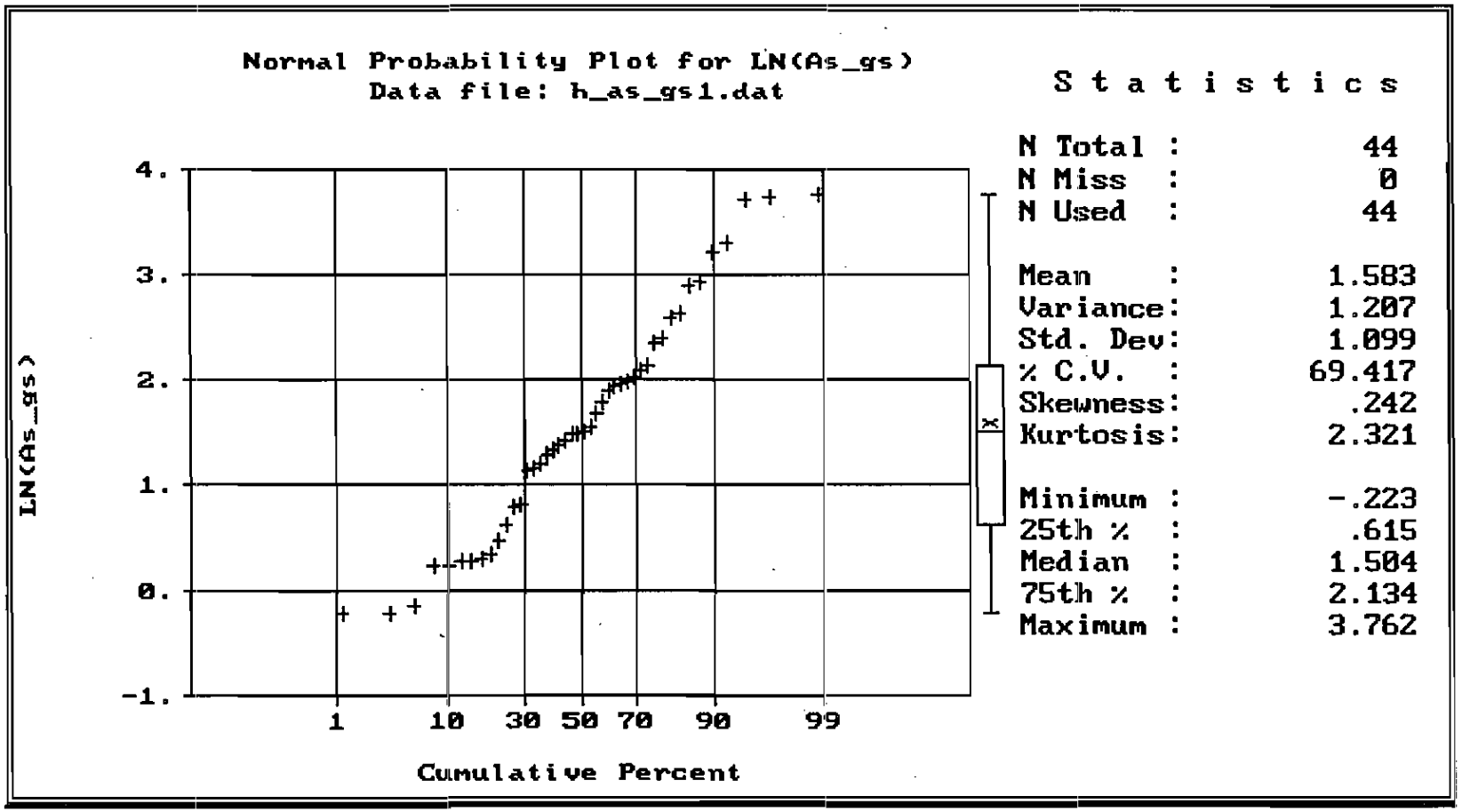
N Total :	44
N Miss :	0
N Used :	44
Mean :	8.830
Variance:	120.262
Std. Dev:	10.966
% C.V. :	124.201
Skewness:	2.066
Kurtosis:	6.444
Minimum :	.800
25th % :	1.850
Median :	4.500
75th % :	8.450
Maximum :	43.050


Normal Probability Plot for As_gs
Data file: h_as_gs1.dat
As_gs
50.
40.
30.
20.
10.
0.
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 44
N Miss : 0
N Used : 44
Mean : 8.830
Variance: 120.262
Std. Dev: 10.966
% C.V. : 124.201
Skewness: 2.066
Kurtosis: 6.444
Minimum : .800
25th % : 1.850
Median : 4.500
75th % : 8.450
Maximum : 43.050

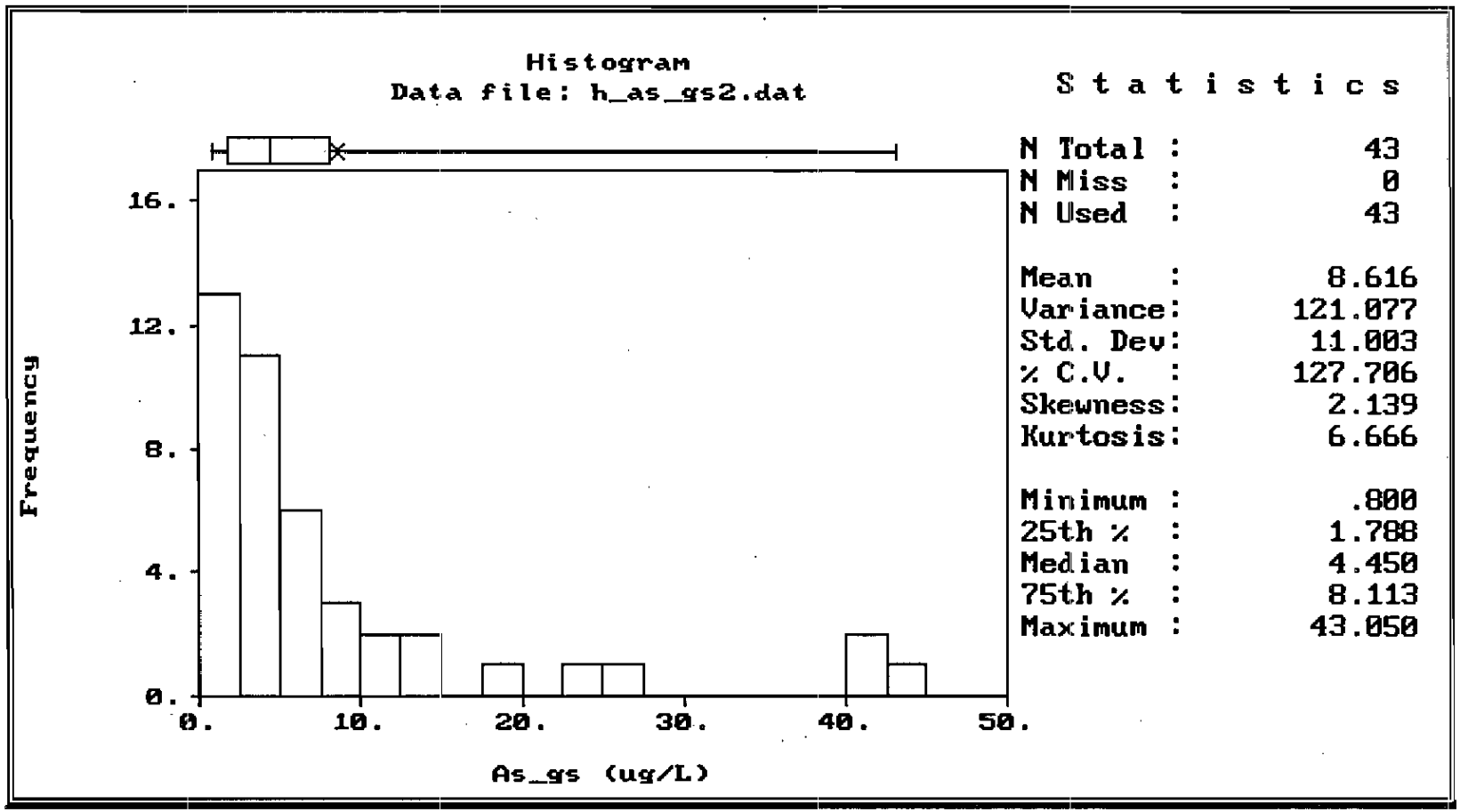
1c


Histogram
Data file: h_as_gs1.dat
Frequency
9.
6.
3.
0.
-1.
0.
1.
2.
3.
4.
LN(As_gs) (ug/L)
Statistics
N Total : 44
N Miss : 0
N Used : 44
Mean : 1.583
Variance: 1.207
Std. Dev: 1.099
% C.V. : 69.417
Skewness: .242
Kurtosis: 2.321
Minimum : -.223
25th % : .615
Median : 1.504
75th % : 2.134
Maximum : 3.762

1d

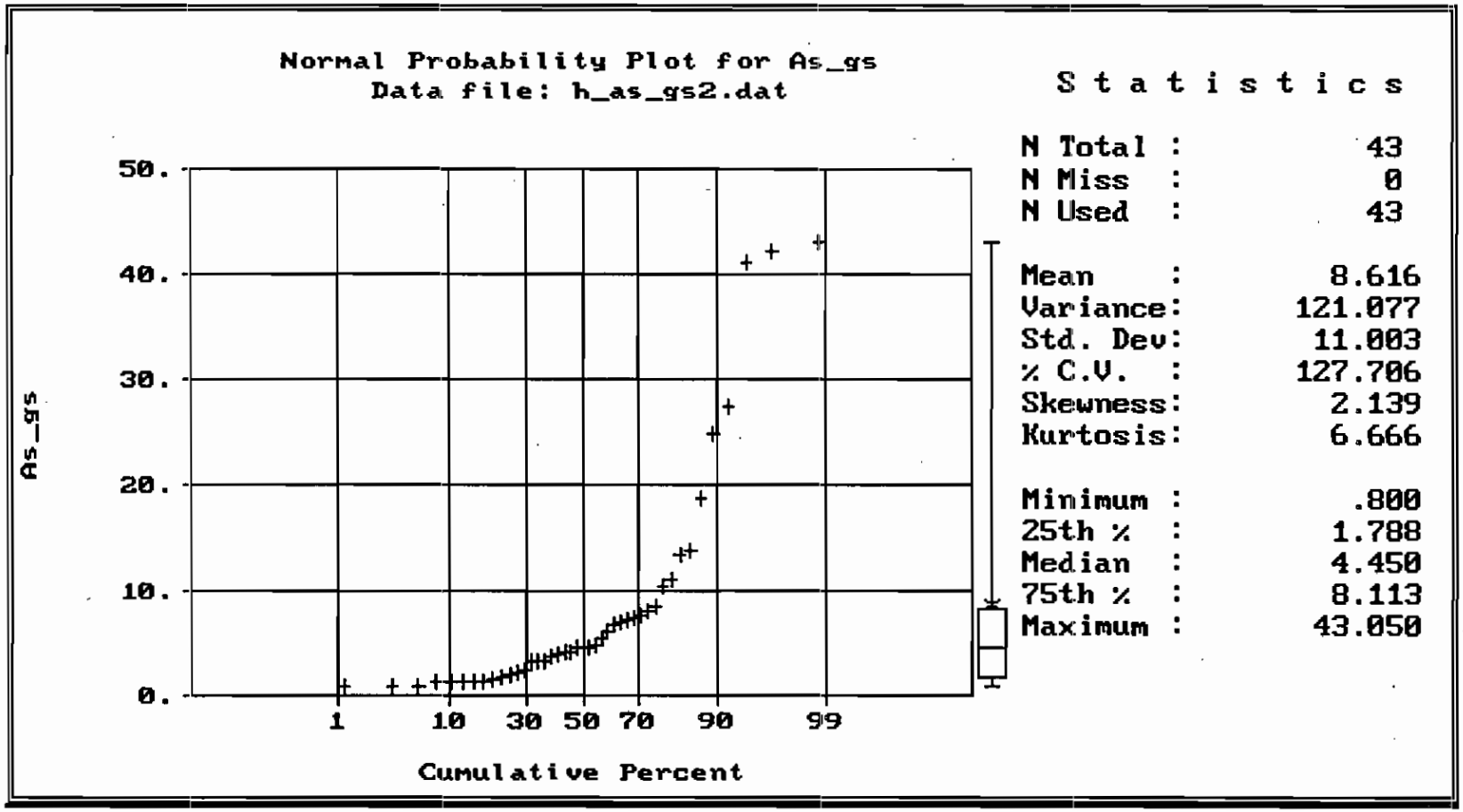

Normal Probability Plot for LN(As_gs)
Data file: h_as_gs1.dat
LN(As_gs)
4.
3.
2.
1.
0.
-1.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 44
N Miss : 0
N Used : 44
Mean : 1.583
Variance: 1.207
Std. Dev: 1.099
% C.V. : 69.417
Skewness: .242
Kurtosis: 2.321
Minimum : -.223
25th % : .615
Median : 1.504
75th % : 2.134
Maximum : 3.762

2a

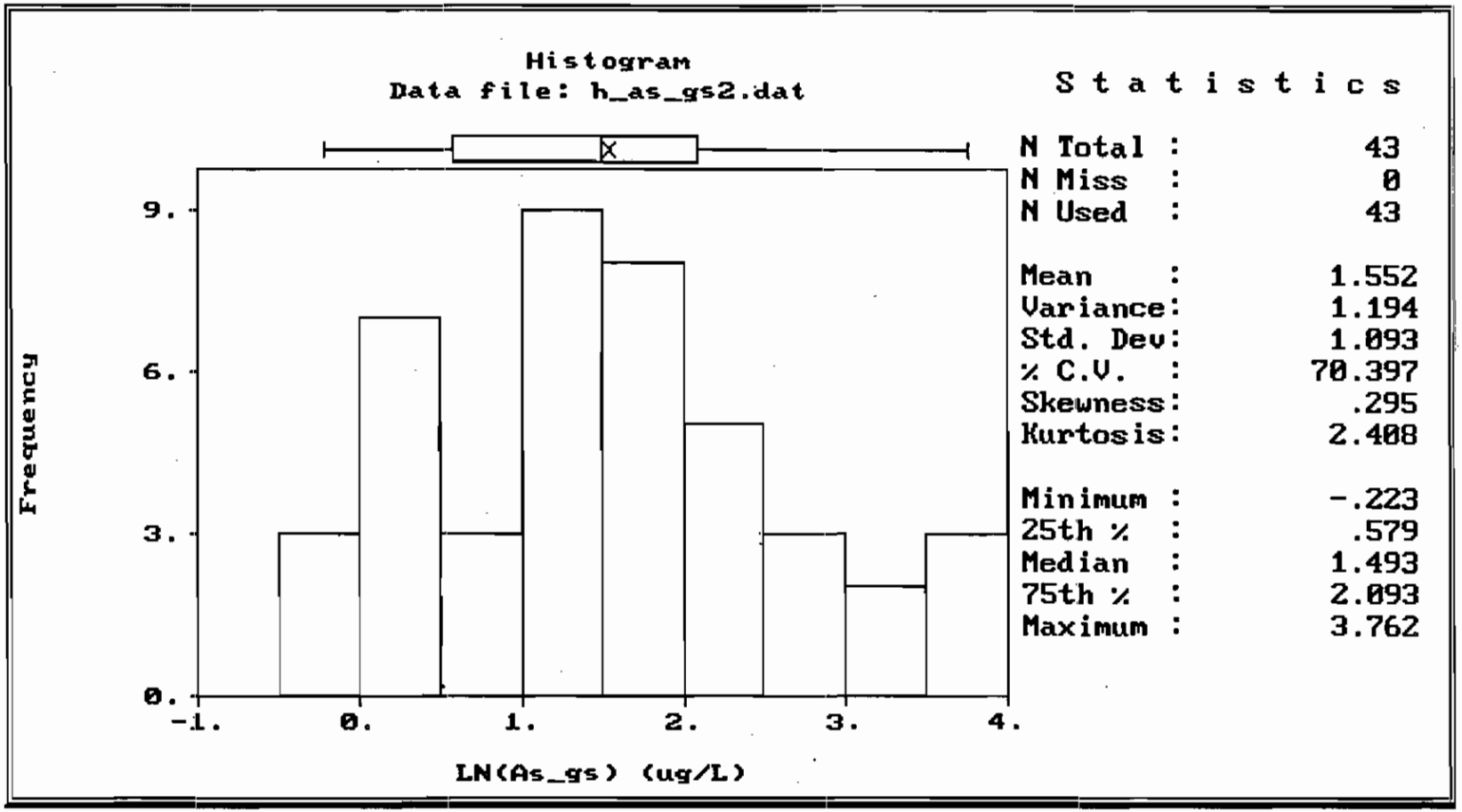


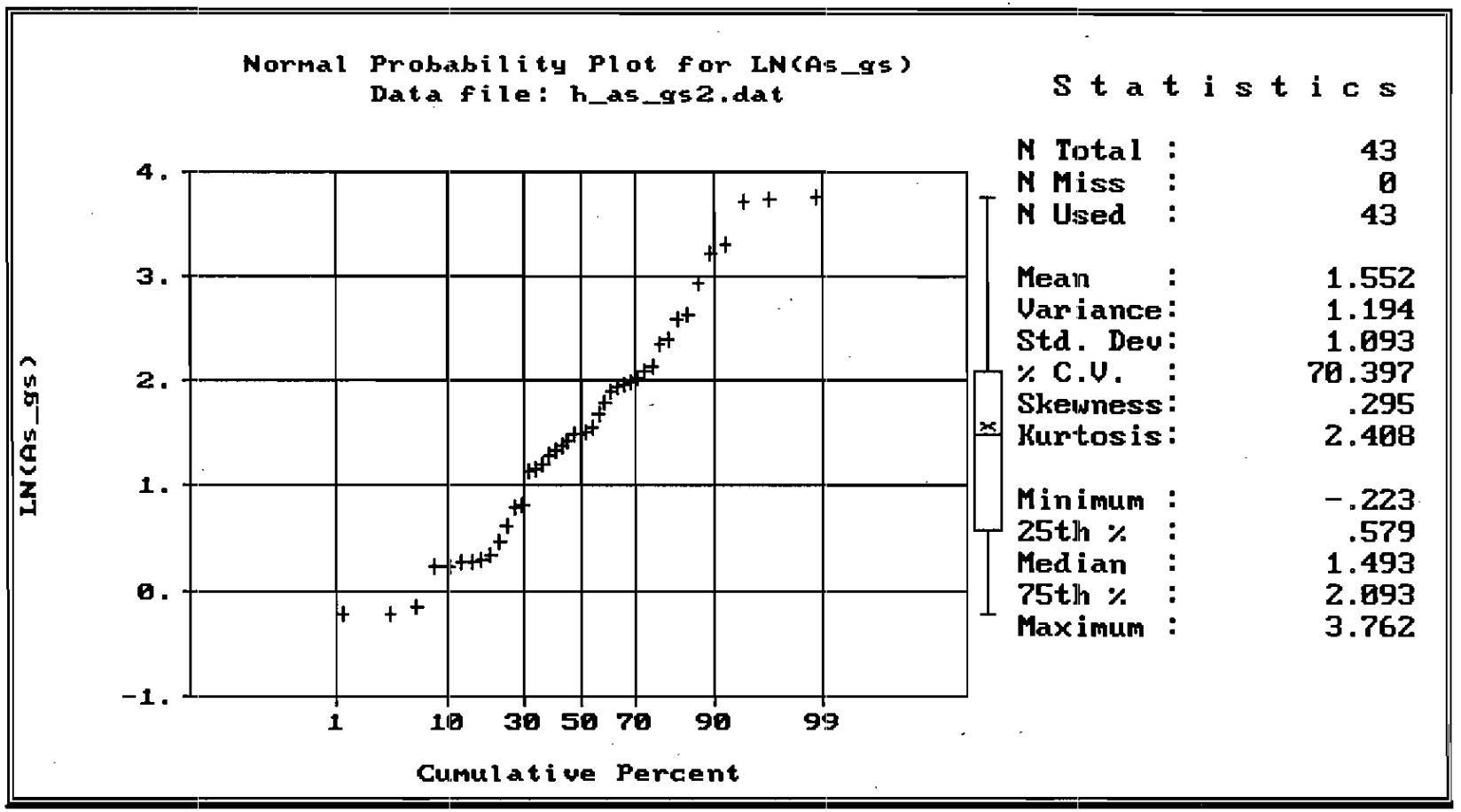
Statistics

N Total :	43
N Miss :	0
N Used :	43
Mean :	8.616
Variance:	121.077
Std. Dev:	11.003
% C.V. :	127.706
Skewness:	2.139
Kurtosis:	6.666
Minimum :	.800
25th % :	1.788
Median :	4.450
75th % :	8.113
Maximum :	43.050

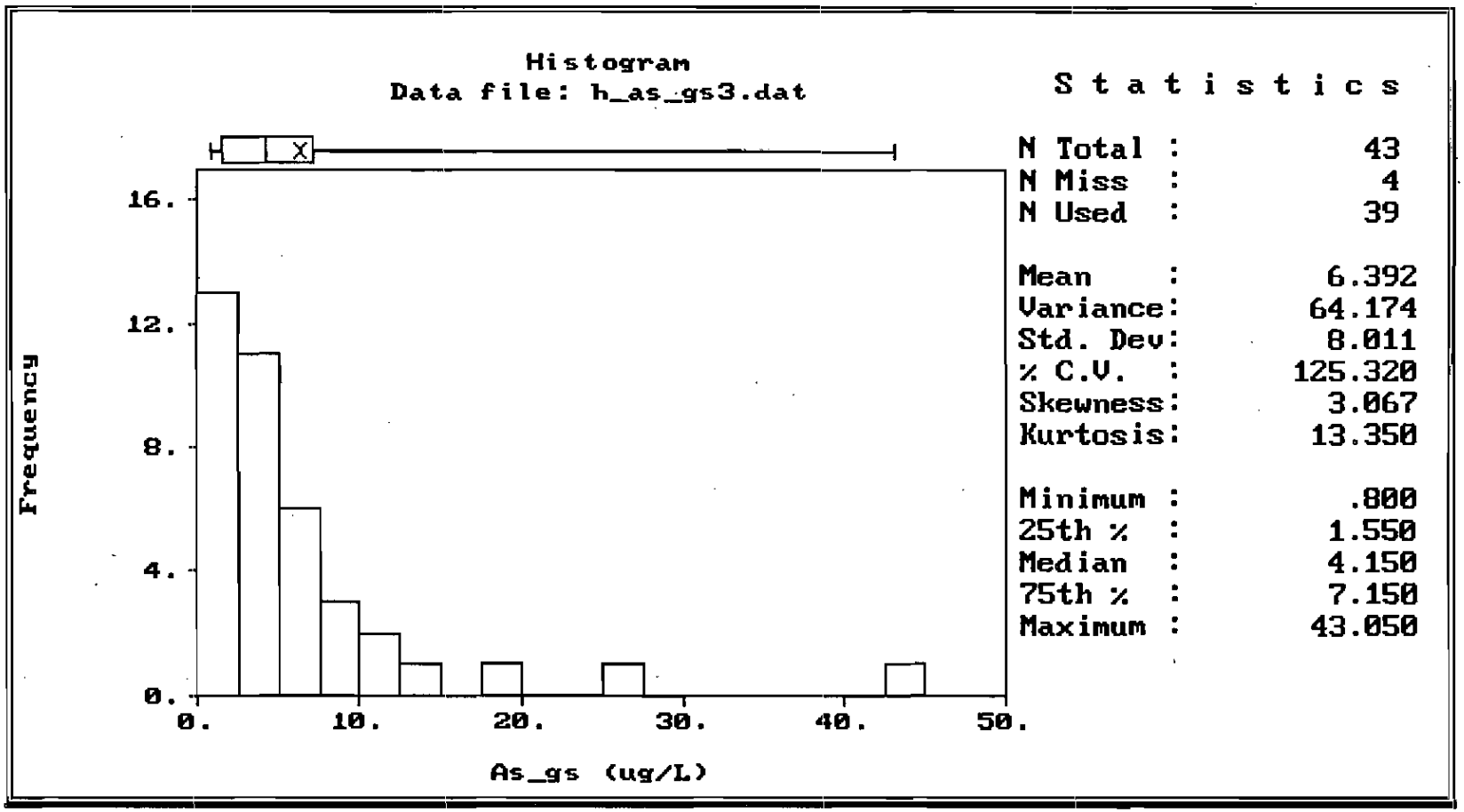

Normal Probability Plot for As_gs
Data file: h_as_gs2.dat
As_gs
50.
40.
30.
20.
10.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 43
N Miss : 0
N Used : 43
Mean : 8.616
Variance: 121.077
Std. Dev: 11.003
% C.V. : 127.706
Skewness: 2.139
Kurtosis: 6.666
Minimum : .800
25th % : 1.788
Median : 4.450
75th % : 8.113
Maximum : 43.050

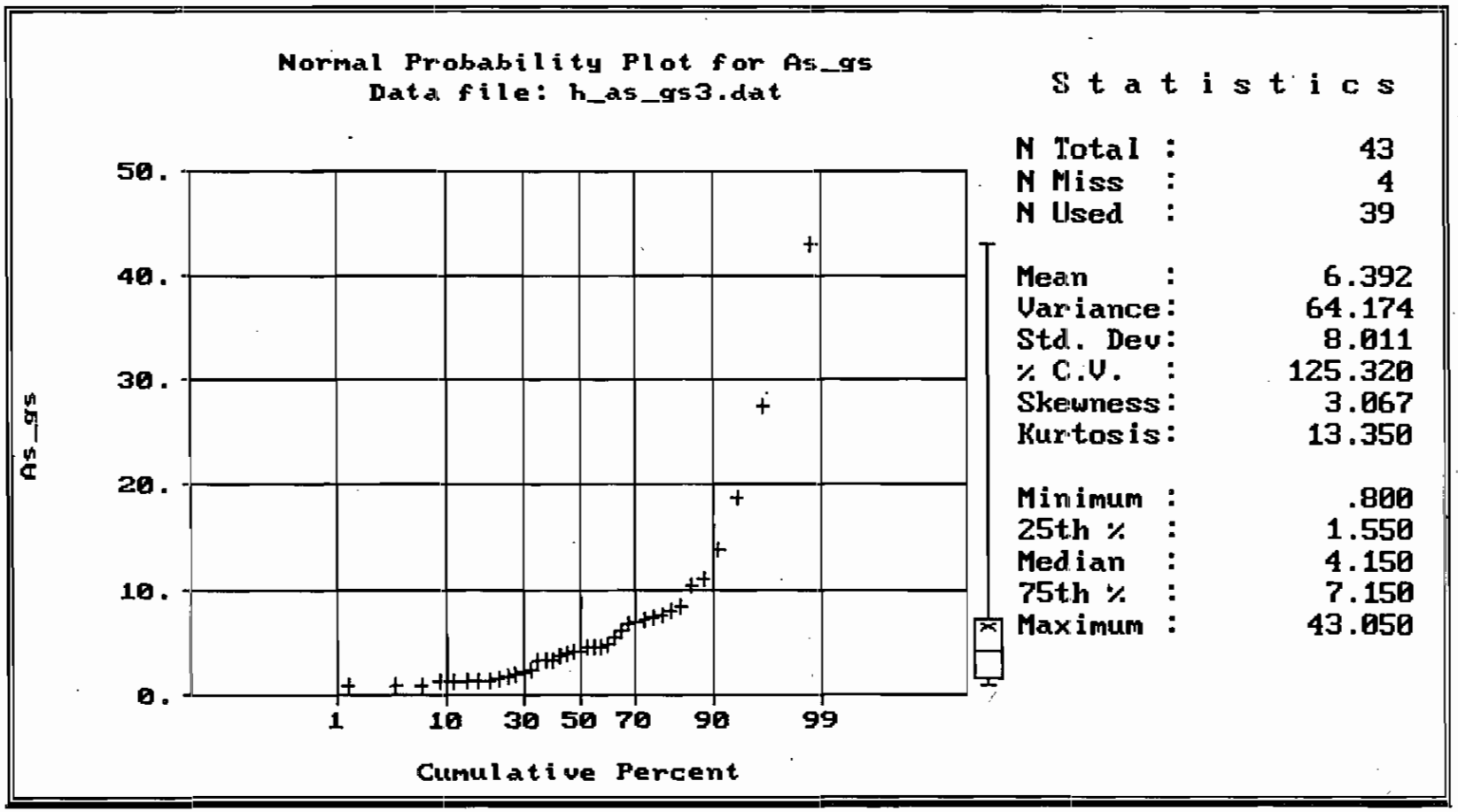
2c


Histogram
Data file: h_as_gs2.dat
Frequency
9.
6.
3.
0.
-1.
0.
1.
2.
3.
4.
LN(As_gs) (ug/L)
Statistics
N Total : 43
N Miss : 0
N Used : 43
Mean : 1.552
Variance: 1.194
Std. Dev: 1.093
% C.V. : 70.397
Skewness: .295
Kurtosis: 2.408
Minimum : -.223
25th % : .579
Median : 1.493
75th % : 2.093
Maximum : 3.762

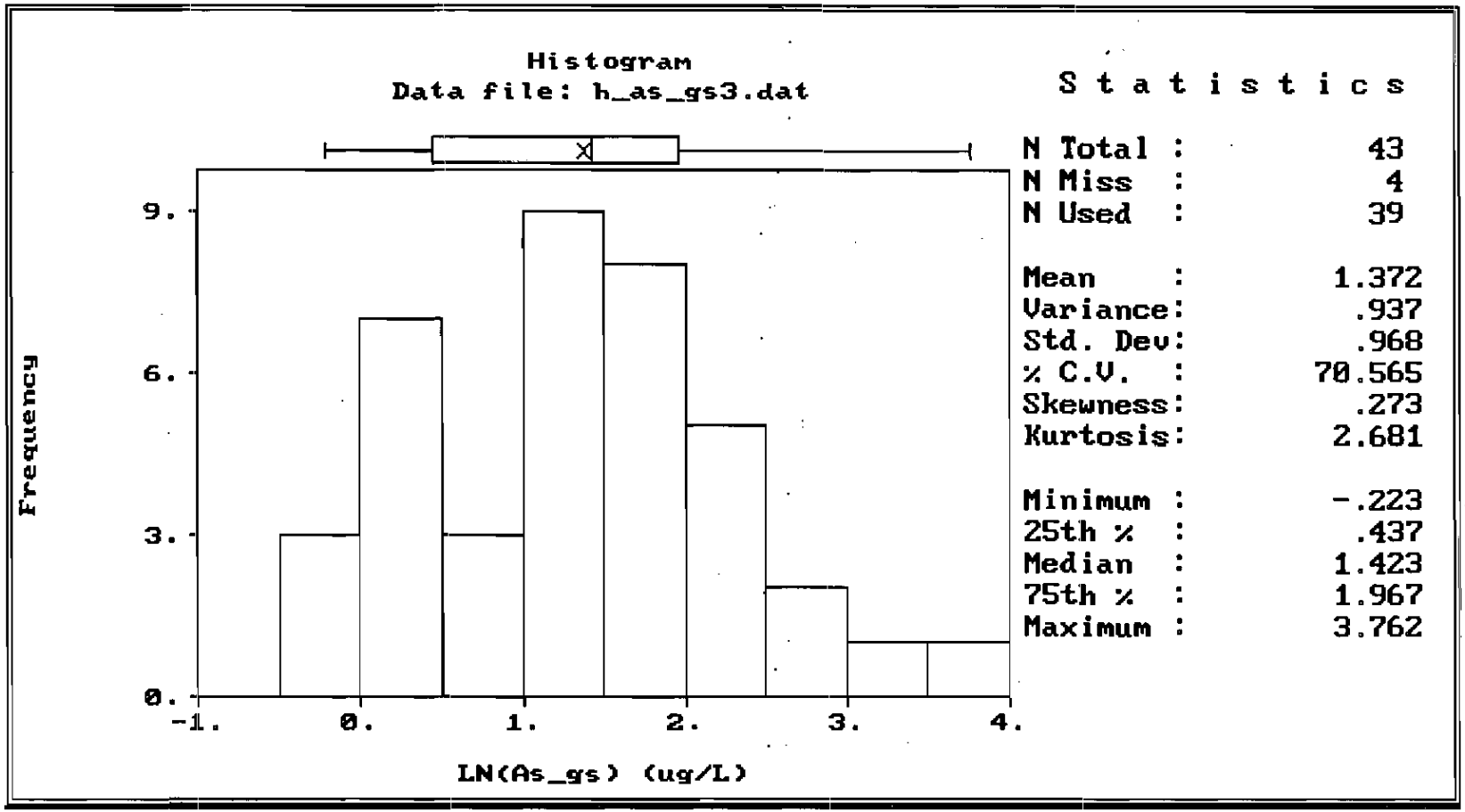

Normal Probability Plot for LN(As_gs)
Data file: h_as_gs2.dat
LN(As_gs)
4.
3.
2.
1.
0.
-1.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 43
N Miss : 0
N Used : 43
Mean : 1.552
Variance: 1.194
Std. Dev: 1.093
% C.V. : 70.397
Skewness: .295
Kurtosis: 2.408
Minimum : -.223
25th % : .579
Median : 1.493
75th % : 2.093
Maximum : 3.762

3a

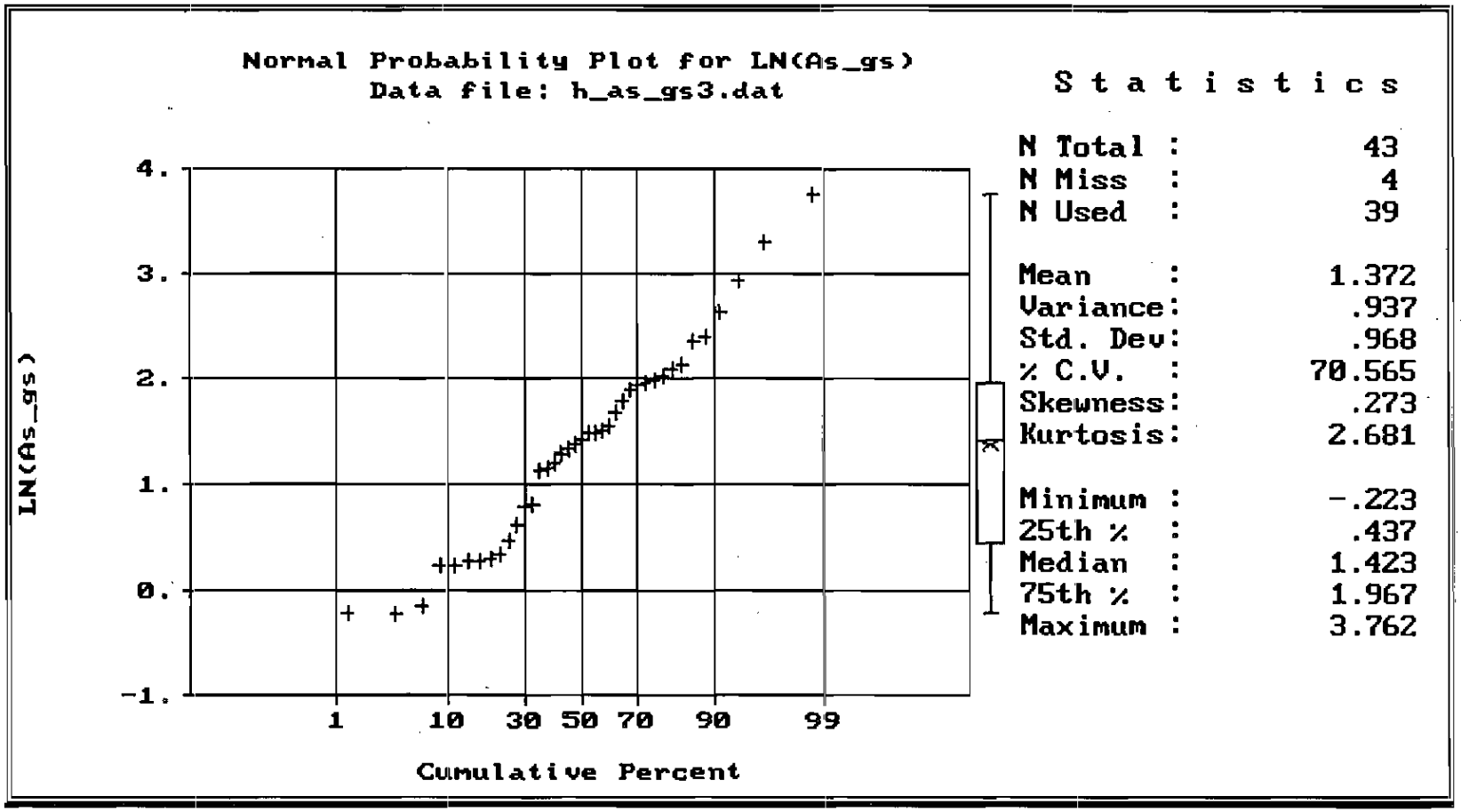

Histogram
Data file: h_as_gs3.dat
Statistics
N Total : 43
N Miss : 4
N Used : 39
Mean : 6.392
Variance: 64.174
Std. Dev: 8.011
% C.V. : 125.320
Skewness: 3.067
Kurtosis: 13.350
Minimum : .800
25th % : 1.550
Median : 4.150
75th % : 7.150
Maximum : 43.050
Frequency
16.
12.
8.
4.
0.
0.
10.
20.
30.
40.
50.
As_gs (ug/L)


Normal Probability Plot for As_gs
Data file: h_as_gs3.dat
As_gs
50.
40.
30.
20.
10.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 43
N Miss : 4
N Used : 39
Mean : 6.392
Variance: 64.174
Std. Dev: 8.011
% C.V. : 125.320
Skewness: 3.067
Kurtosis: 13.350
Minimum : .800
25th % : 1.550
Median : 4.150
75th % : 7.150
Maximum : 43.050

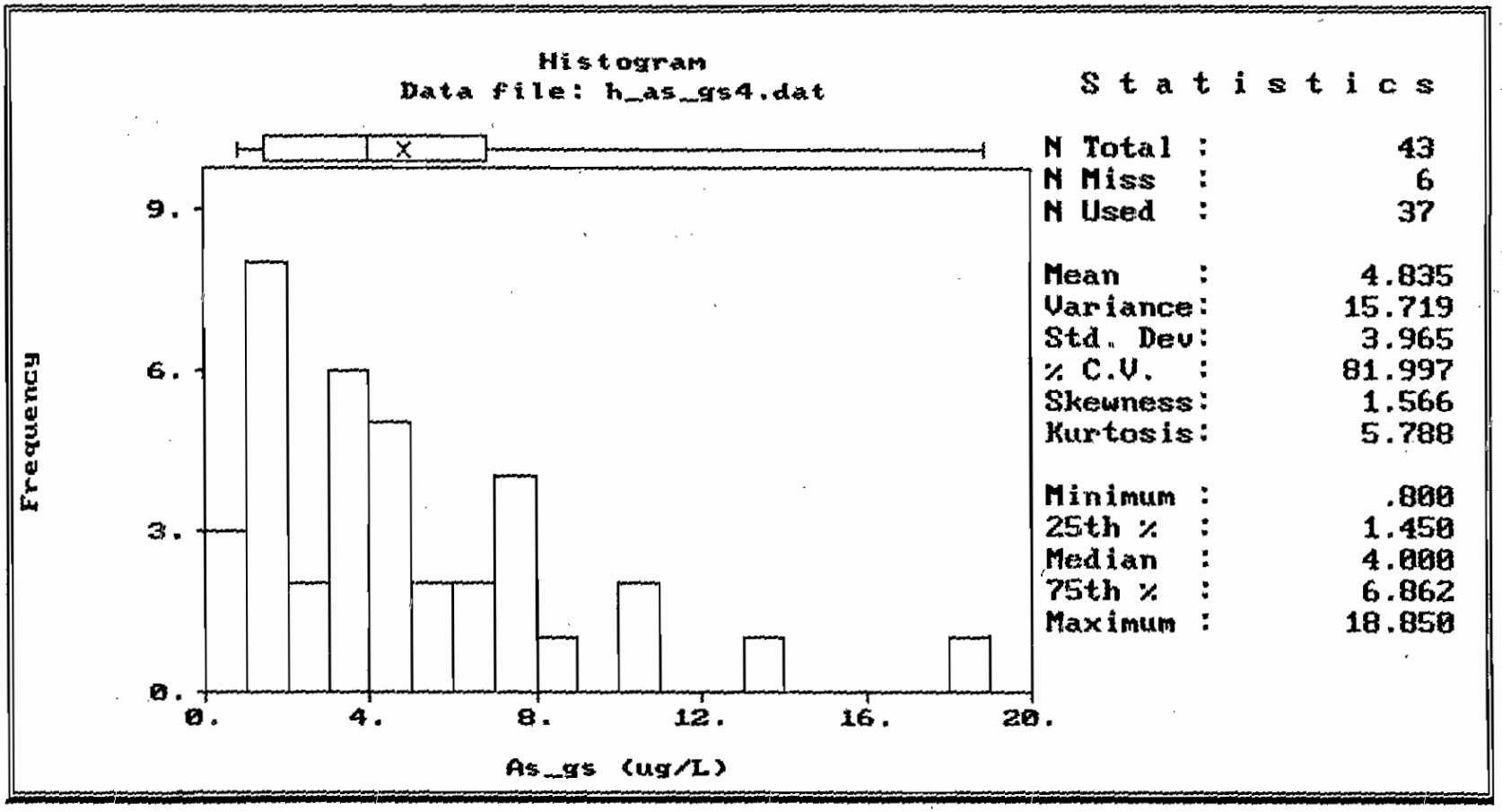
3c


Histogram
Data file: h_as_gs3.dat
Frequency
9.
6.
3.
0.
-1.
0.
1.
2.
3.
4.
LN(As_gs) (ug/L)
Statistics
N Total : 43
N Miss : 4
N Used : 39
Mean : 1.372
Variance: .937
Std. Dev: .968
% C.V. : 70.565
Skewness: .273
Kurtosis: 2.681
Minimum : -.223
25th % : .437
Median : 1.423
75th % : 1.967
Maximum : 3.762

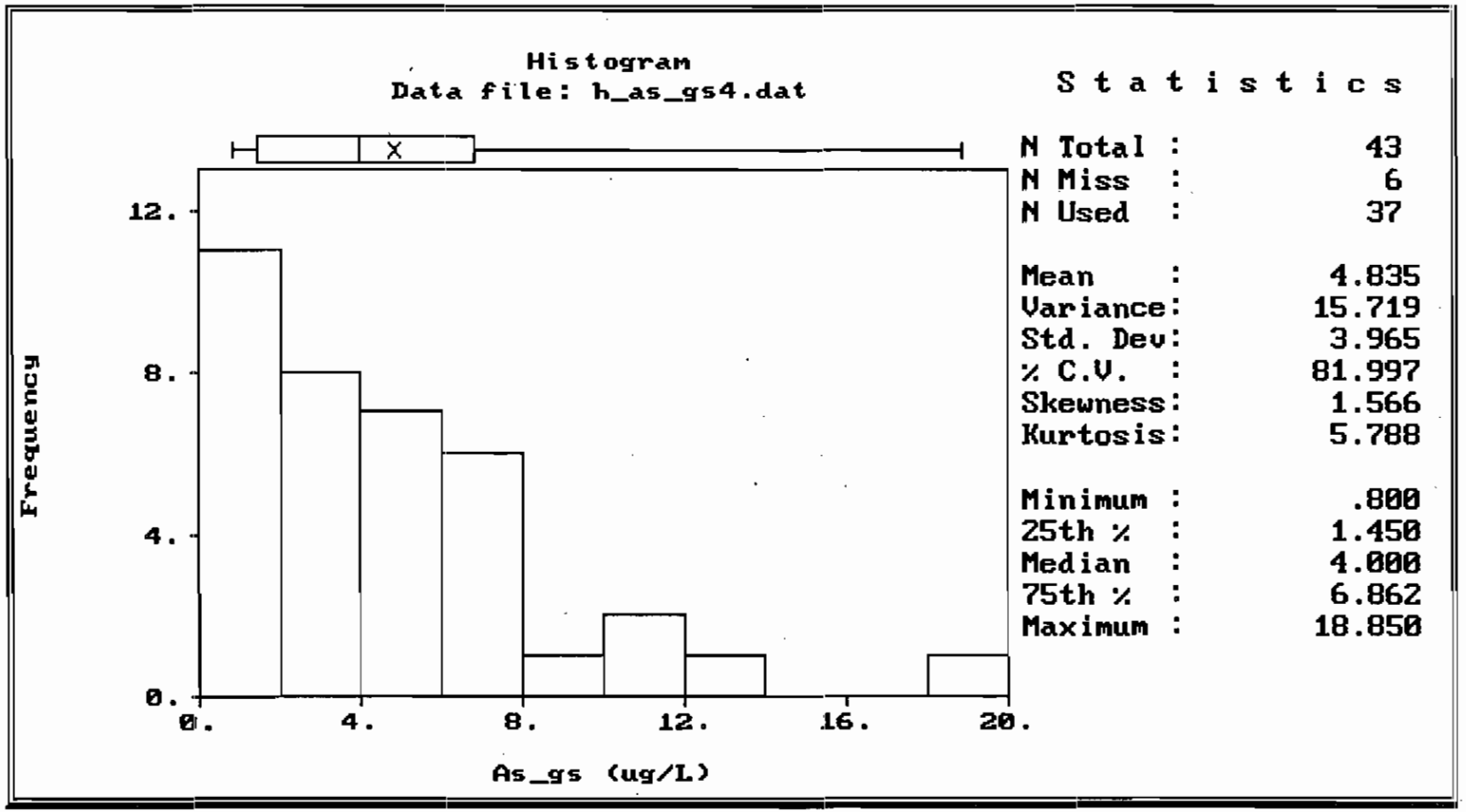
3d

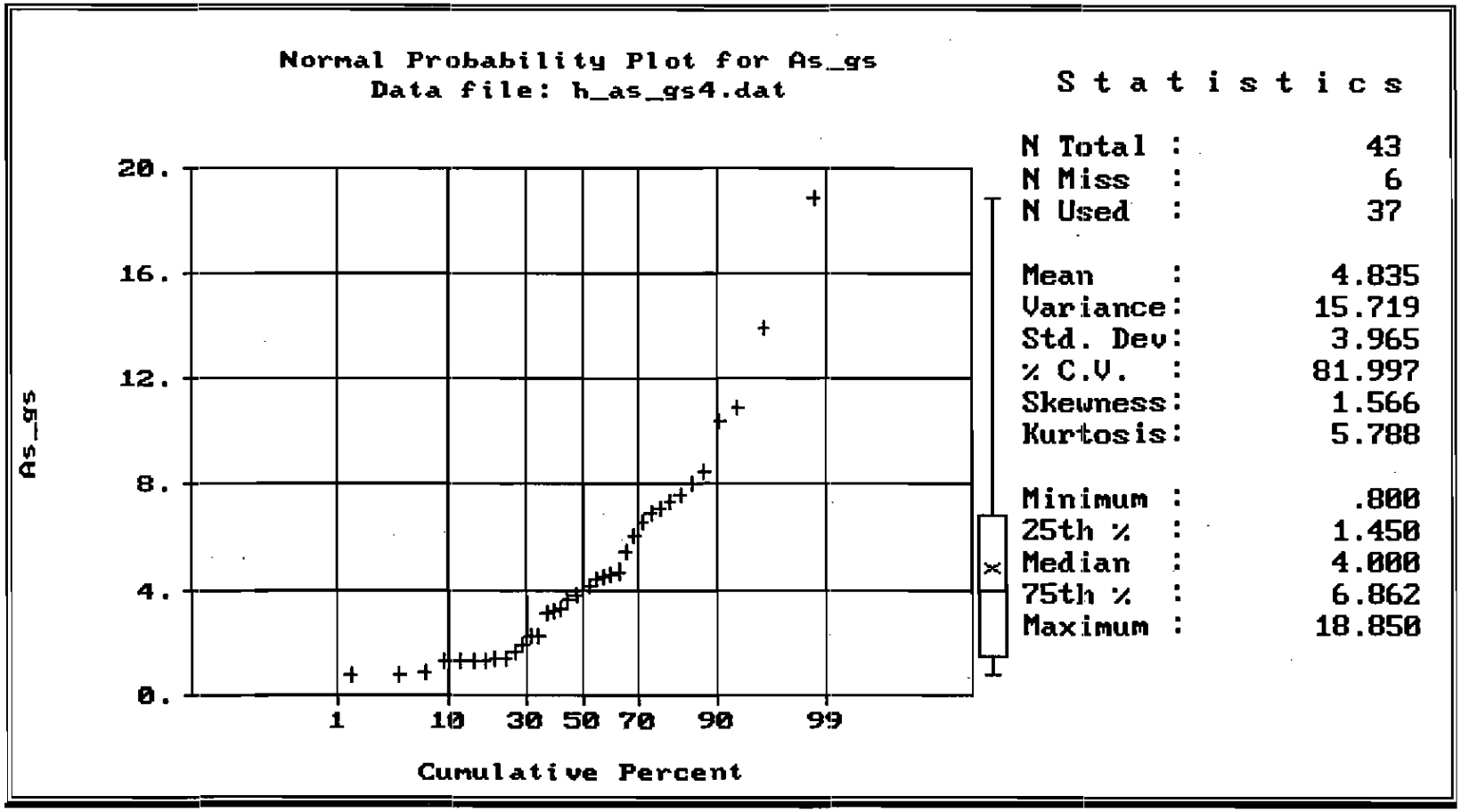

Normal Probability Plot for LN(As_gs)
Data file: h_as_gs3.dat
LN(As_gs)
4.
3.
2.
1.
0.
-1.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 43
N Miss : 4
N Used : 39
Mean : 1.372
Variance: .937
Std. Dev: .968
% C.V. : 70.565
Skewness: .273
Kurtosis: 2.681
Minimum : -.223
25th % : .437
Median : 1.423
75th % : 1.967
Maximum : 3.762

4a,

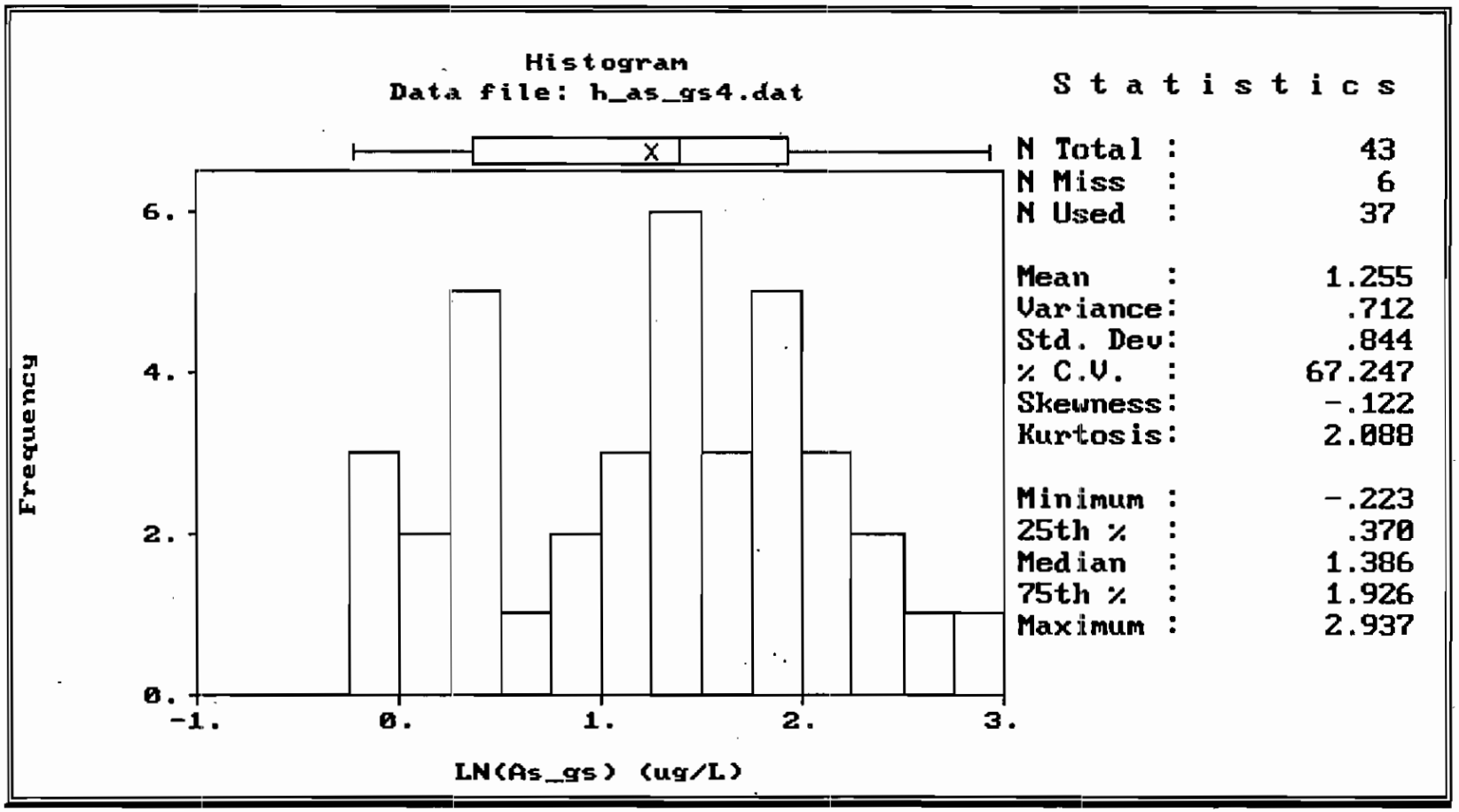

Histogram
Data file: h_as_gs4.dat
Frequency
9.
6.
3.
0.
0.
4.
8.
12.
16.
20.
As_gs (ug/L)
Statistics
N Total : 43
N Miss : 6
N Used : 37
Mean : 4.835
Variance: 15.719
Std. Dev: 3.965
% C.V. : 81.997
Skewness: 1.566
Kurtosis: 5.788
Minimum : .800
25th % : 1.450
Median : 4.000
75th % : 6.862
Maximum : 18.850

4a2

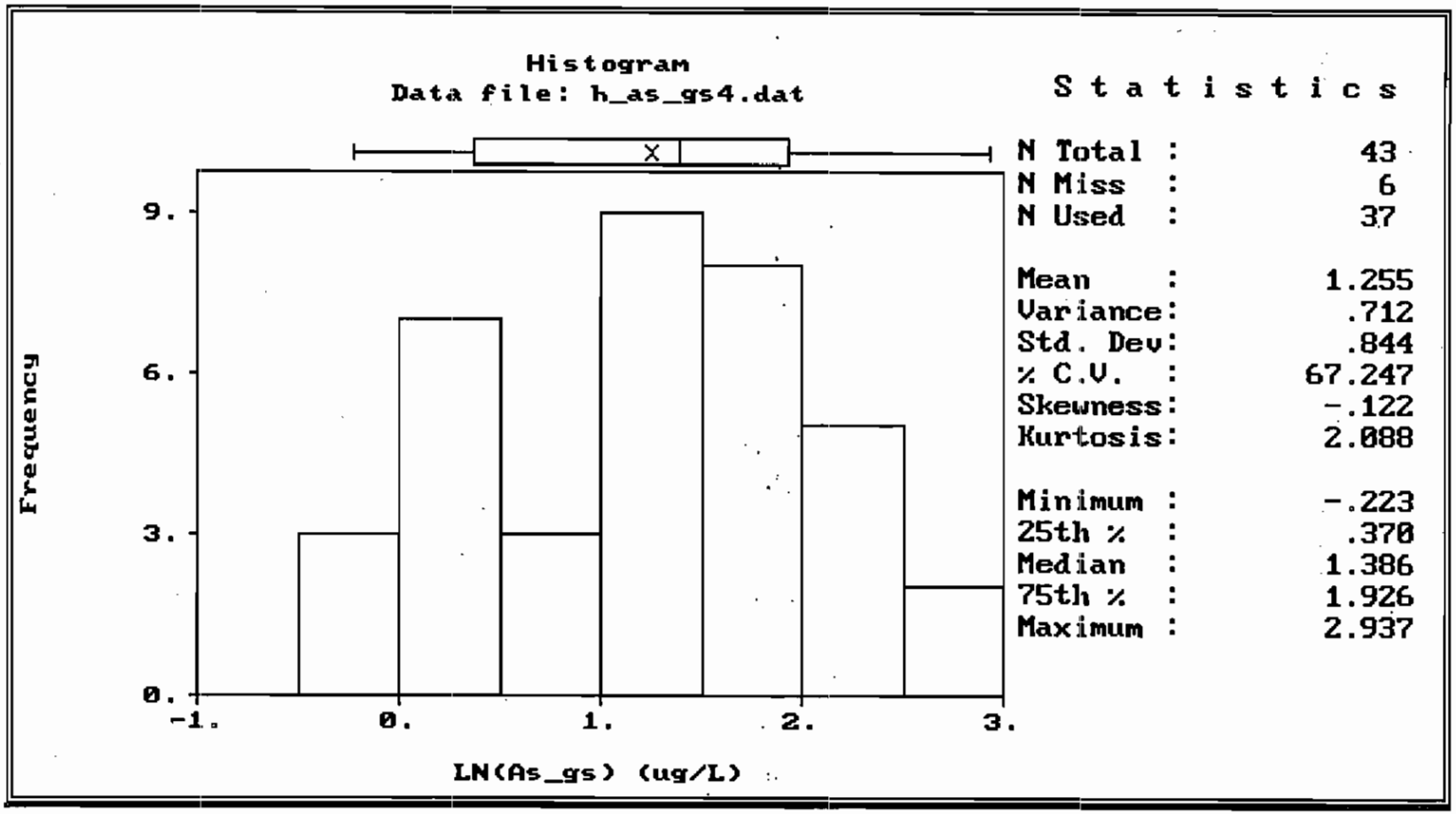

Histogram
Data file: h_as_gs4.dat
Frequency
12.
8.
4.
0.
0.
4.
8.
12.
16.
20.
As_gs (ug/L)
Statistics
N Total : 43
N Miss : 6
N Used : 37
Mean : 4.835
Variance: 15.719
Std. Dev: 3.965
% C.V. : 81.997
Skewness: 1.566
Kurtosis: 5.788
Minimum : .800
25th % : 1.450
Median : 4.000
75th % : 6.862
Maximum : 18.850


Normal Probability Plot for As_gs
Data file: h_as_gs4.dat
As_gs
20.
16.
12.
8.
4.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 43
N Miss : 6
N Used : 37
Mean : 4.835
Variance: 15.719
Std. Dev: 3.965
% C.V. : 81.997
Skewness: 1.566
Kurtosis: 5.788
Minimum : .800
25th % : 1.450
Median : 4.000
75th % : 6.862
Maximum : 18.850

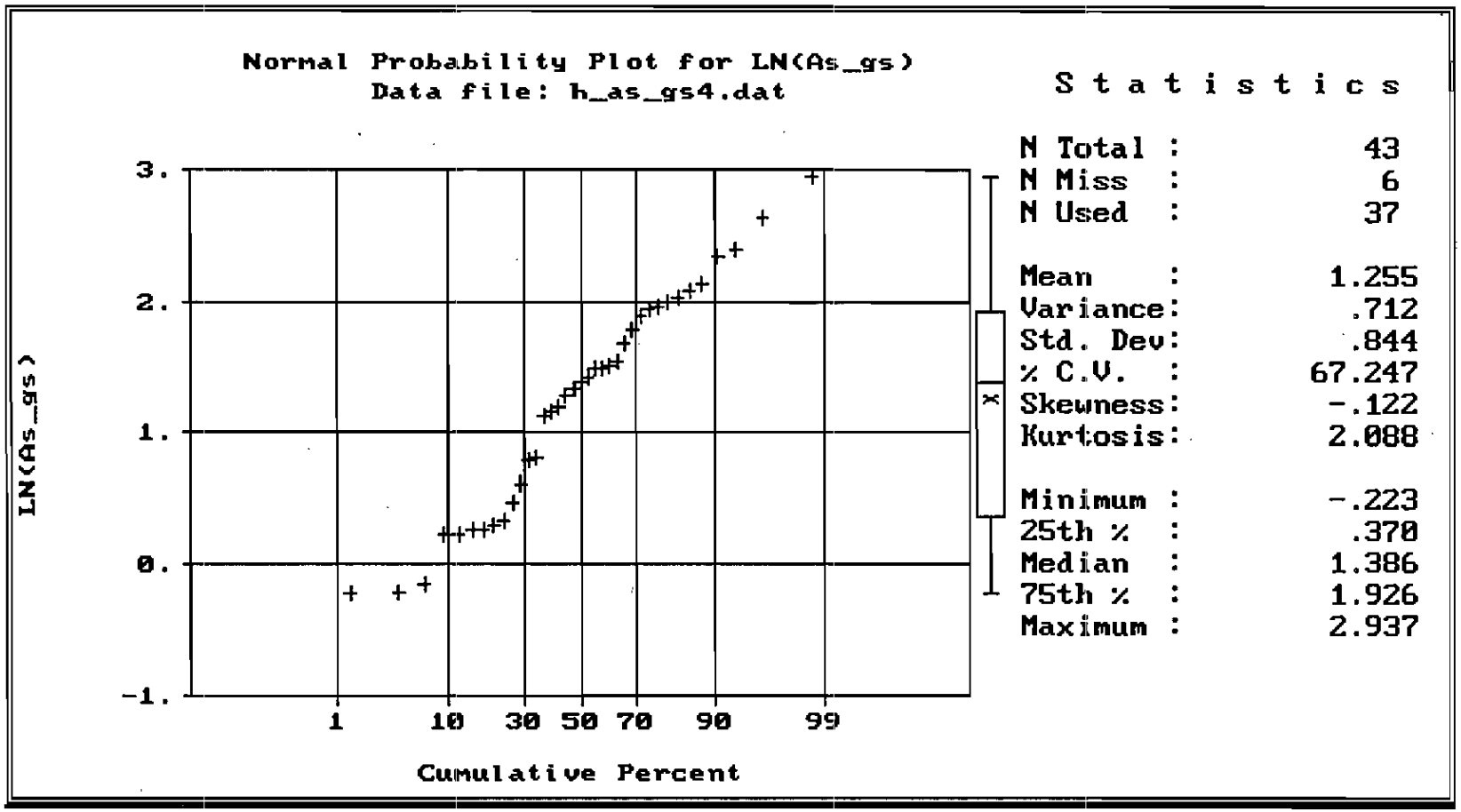
4c,


Histogram
Data file: h_as_gs4.dat
Frequency
6.
4.
2.
0.
-1.
0.
1.
2.
3.
LN(As_gs) (ug/L)
Statistics
N Total : 43
N Miss : 6
N Used : 37
Mean : 1.255
Variance: .712
Std. Dev: .844
% C.V. : 67.247
Skewness: -.122
Kurtosis: 2.088
Minimum : -.223
25th % : .370
Median : 1.386
75th % : 1.926
Maximum : 2.937

4c2


Histogram
Data file: h_as_gs4.dat
Frequency
9.
6.
3.
0.
-1.
0.
1.
2.
3.
LN(As_gs) (ug/L)
Statistics
N Total : 43
N Miss : 6
N Used : 37
Mean : 1.255
Variance: .712
Std. Dev: .844
% C.V. : 67.247
Skewness: -.122
Kurtosis: 2.088
Minimum : -.223
25th % : .370
Median : 1.386
75th % : 1.926
Maximum : 2.937

4d


Normal Probability Plot for LN(As_gs)
Data file: h_as_gs4.dat
LN(As_gs)
3.
2.
1.
0.
-1.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 43
N Miss : 6
N Used : 37
Mean : 1.255
Variance: .712
Std. Dev: .844
% C.V. : 67.247
Skewness: -.122
Kurtosis: 2.088
Minimum : -.223
25th % : .370
Median : 1.386
75th % : 1.926
Maximum : 2.937

MEMO 3-6-97

TO: Project Team members
FROM: EnSafe

RE: Summary of dataset adjustments, data transformations, and calculations used to obtain background reference values for Zone H

Because datasets for grid-based soil and groundwater samples in Zone H were large enough to allow computation of statistically based background reference values (n =104 for upper interval soil; n =63 for lower interval soil; n = 11 for both shallow and deep groundwater), parametric upper tolerance limits (UTLs) with 95% coverage and 95% confidence were calculated for inorganics in these four media categories. For datasets with fewer than 50% but more than 10% detections, nonparametric UTLs were obtained by choosing the largest or second largest detected value, depending on the size of the dataset. As reported in a table dated 2-14-97 and faxed to the Project Team members following the February Team meeting, calculated background reference values for Zone H equaled or exceeded RBCs for upper interval soil for aluminum (UTL = 25,310 mg/kg; RBC = 7,800 mg/kg), arsenic (UTL = 14.81 mg/kg; RBC = 0.43 mg/kg), beryllium (UTL = 1.466 mg/kg; RBC = 0.15 mg/kg), chromium (UTL = 85.65 mg/kg; hexachrome RBC = 39 mg/kg), manganese (UTL = 636.4 mg/kg; RBC = 180 mg/kg), thallium (UTL = 0.63 mg/kg; RBC = 0.63 mg/kg), and vanadium (UTL = 77.38 mg/kg; RBC = 55 mg/kg). For lower interval soil, calculated UTLs exceeded generic soil screening levels (SSLs) for arsenic (UTL = 35.52 mg/kg; SSL = 29 mg/kg), chromium (UTL = 83.86 mg/kg; hexachrome SSL = 38 mg/kg), and thallium (UTL = 1.3 mg/kg; SSL = 0.7 mg/kg). For shallow groundwater, UTLs exceeded tap water RBCs for arsenic (UTL = 27.99 μg/L; RBC = 0.045 μg/L), barium (UTL = 323 μg/L; RBC = 260 μg/L), manganese (UTL = 3,391 μg/L; RBC = 84 μg/L), and thallium (UTL = 7.66 μg/L; RBC = 0.29 μg/L). For deep groundwater, UTLs exceeded tap water RBCs for arsenic (UTL = 14.98 μg/L; RBC = 0.045 μg/L) and manganese (UTL = 776.2 μg/L; RBC = 84 μg/L). This memo examines the data and calculations involved in determining those background reference values, listed above, which exceed their corresponding risk-based standards. Possible causes of the high background values are discussed. In most cases, background reference values are recalculated and revised.

The background reference values for Zone H were the first set of such values calculated as part of the environmental investigation at NAVBASE. Three changes have since been made in the way that UTLs are calculated, to make the process more statistically sound:

- Nonparametric UTLs for small datasets are less powerful than the parametric UTLs used when detections exceed 50%, because their associated coverage is lower. For a dataset with n = 11 (such as for shallow or deep groundwater in Zone H), minimum coverage is 76.2% with 95% confidence rather than the desired 95% coverage with 95% confidence. Theoretically, this low coverage would result in a false positive rate of 24% for exceedances

of the UTLs. To avoid this situation, "modified nonparametric UTLs" were originally calculated in situations where nonparametric UTLs would normally have been called for. As explained in Appendix J of the Zone H RFI Report, a modified nonparametric UTL is the mean of a parametric and a nonparametric UTL calculated from the same data. Because parametric UTLs that are based largely on estimated values for nondetects are likely to be inaccurate, modified nonparametric UTLs were not used in the recalculations in this memo. Instead, conventional nonparametric UTLs (i.e., the highest detected value) were used. The net effect of this change would generally be a lower UTL, giving lower coverage.

- Calculation of parametric UTLs involves a tolerance factor whose magnitude depends partly on the sample size. For UTLs with 95% coverage and 95% confidence, the tolerance factor for a dataset of n = 63 is 2.007; for a dataset of n = 104, the tolerance factor is 1.919. For the sake of simplicity, a tolerance factor of 2.0 was used in all of the original UTL calculations for Zone H soils. In the recalculations, a tolerance factor corresponding to the actual sample size was used. The net effect of this change would generally be to increase the UTL for lower interval soil (n = 63) and decrease it for upper interval soil (n = 104).

- The original UTLs were calculated in a two-step process, as explained in Appendix J of the RFI Report. A preliminary UTL was calculated using all of the values available, then applied to the original dataset to identify and remove "outliers." The final UTL was then calculated using the remaining values. In datasets with no natural outliers, the effect of this procedure was to remove legitimate data values inappropriately. In the recalculations, EnSafe has attempted to identify outliers in more conventional fashion, as discussed in Appendix J. Where any question existed as to whether a high value was an outlier, it was generally removed from the dataset. The net effect of this change, where it could be identified, was most often a slight increase in the UTL.

Enclosed are analytical results for all Zone H grid-based soil and groundwater samples, and histograms and normal probability plots (produced with EPA's GeoEAS program) for datasets used to calculate UTLs for inorganics in soil. Relevant EPA guidance for generic soil screening levels and associated dilution-attenuation factors as well as a table of tolerance factors for datasets of various sizes were included with the earlier package covering Zone B background values. Sample IDs that include a "C" (e.g., GDH-C-B007-01) represent field duplicates; analytical results are averaged with those of the primary sample (the "S" sample) to obtain a single value for each location. UTL calculations are discussed below. Some calculated values are slightly different from those in the Zone H report due to rounding differences.

Upper interval soil

Aluminum data values exhibit a very regular, lognormal distribution (pgs. 1a, 1b, 2a, 2b). Applying the parametric UTL formula

$$UTL = X + ks$$

where X = the sample mean, s = the sample standard deviation, and k = the tolerance factor, the preliminary UTL was calculated for a lognormal distribution as UTL = exp [8.797 + (2)(0.713)] = 27,529 mg/kg. This value was applied to the original dataset as a screen, resulting in the removal of samples GDHSB04101 (32,700 mg/kg) and GDHSB04901 (29,600 mg/kg). The final UTL was then calculated as UTL = exp [8.767 + (2)(0.686)] = 25,311 mg/kg, rounded to 25,300 mg/kg. This is a case where the two high values should not have been removed as outliers. Virtually all of the aluminum in Zone H soil appears to be present as aluminosilicate clay minerals, probably smectite and kaolinite; indeed, aluminum probably serves as an accurate gauge of clay content in the soil samples. Aluminum and iron concentrations are highly correlated in Zone H soil ($r = 0.90$ for upper interval soil grid samples; for lower interval soil grid samples, $r = 0.95$). Although iron is not a clay matrix element like aluminum, it is strongly associated with the surfaces of clay minerals. Taken together, aluminum and iron account for much of the variability of the other metals, as can be seen when crossplots are constructed for aluminum or iron vs. the trace metals. The two soil samples that were removed from the dataset were among the highest in iron as well as aluminum, indicating simply that their clay content was high. The correct UTL calculated for the original dataset (n = 104) should be UTL = exp [8.797 + (1.919)(0.713)] = 25,984 mg/kg, rounded to **26,000 mg/kg**.

The distribution of **arsenic** is strongly skewed to the right (pg. 1a), but LN-transformation overcorrected it, resulting in negative skewness (pgs. 2a, 2b). A square-root transformation provided a better approximation of normality (pgs. 3a, 3b), leading to a preliminary UTL calculation of UTL = $[2.259 + (2)(0.879)]^2 = 16.14$ mg/kg. This value was applied as a screen to the original dataset, resulting in the removal of three high values: GDHSB03401 = 17.2 mg/kg; GDHSB03501 = 17.6 mg/kg; and GDHSB04101 = 18.4 mg/kg. The reduced dataset (n = 101) was square-root transformed (pgs. 4a, 4b) and the UTL was recalculated as UTL = $[2.201 + (2)(0.823)]^2 = 14.8$ mg/kg, which was used in the RFI Report. When the three "outliers" were examined, they were found to have been collected from the same low-lying, grassy field in the eastern part of the zone. Given the possibility that the area could be contaminated, two other samples collected from the same field were removed (GDHSB03601 = 13.7 mg/kg and GDHSB04201 = 9.1 mg/kg), the dataset was again square-root transformed (pgs. 5a, 5b), and a new UTL (n = 99) was calculated as UTL = $[2.178 + (1.926)(0.813)]^2 = 14.0$ mg/kg. Further examination of the five "outliers," however, revealed that the aluminum and iron concentrations of samples 34-01, 35-01, 36-01, and 41-01 were among the very highest of the upper interval soil grid samples, as were concentrations of many other trace metals in these samples. Sample 42-01, which had been removed because of its location in the field rather than its high arsenic concentration (AS = 9.1 mg/kg, which is less than one standard deviation above the mean), exhibited much lower aluminum and iron concentrations:

Sample	AS (mg/kg)	AL (mg/kg)	FE (mg/kg)
GDHSB03401	17.2	23,400	30,900
GDHSB03501	17.6	20,200	31,800
GDHSB03601	13.7	20,700	30,300
GDHSB04101	18.4	32,700	38,800
GDHSB04201	9.1	5,760	7,460

The relationship of the aluminum and iron concentrations shown above to the overall aluminum and iron distributions can be seen on the enclosed histograms "Distribution of AL in surface soil grid samples" and "Distribution of FE in surface soil grid samples." Correlation of arsenic and aluminum concentrations among grid samples is $r = 0.69$; correlation of arsenic and iron concentrations is $r = 0.80$. The field where the five "outliers" were collected is low-lying and occasionally subject to standing water. Chemical analyses of the samples reflect high clay content, with relatively high levels of trace metals adsorbed to the surfaces of the clay particles. Since the elevated arsenic concentrations of the five samples appear to be naturally occurring, the samples were added back into the dataset and the UTL was recalculated as UTL = $[2.259 + (1.919)(0.879)]^2$ = **15.6 mg/kg**.

Beryllium concentrations are lognormally distributed (pgs. 1a, 1b, 2a, 2b). The original UTL was calculated as UTL = exp [-1.308 + (2)(0.845)] = 1.465 mg/kg. When this value was applied as a screen, none of the original values exceeded it, and it was used in the report. The probability plot (pg. 2b) shows that the highest values in the dataset are slightly lower than would be expected in a lognormal distribution. Of the seven samples with the highest beryllium concentrations, six also have concentrations of aluminum and iron that are among the highest in the zone:

Sample	BE (mg/kg)	AL (mg/kg)	FE (mg/kg)
GDHSB034	1.0	23,400	30,900
GDHSB036	1.1	20,700	30,300
GDHSB041	1.4	32,700	38,800
GDHSB049	1.2	29,600	32,200
GDHSB068	1.0	5,850	8,100
GDHSB079	1.2	26,600	28,100
GDHSB090	1.2	22,300	36,700

Three of the seven samples shown above (34-01, 36-01, and 41-01) were among the five potential

outliers for arsenic. Because the highest beryllium concentrations detected in the samples are considered to be naturally occurring, the UTL was recalculated only to correct the tolerance factor, as follows: UTL = exp [-1.308 + (1.919)(0.845)] = 1.368 mg/kg, rounded to **1.37 mg/kg**.

The **chromium** distribution is also positively skewed (pgs. 1a, 1b), and it was LN-transformed (pgs. 2a, 2b). The preliminary UTL was calculated as UTL = exp [2.951 + (2)(0.799)] = 94.54 mg/kg. When this value was applied as a screen, two data points (GDHSB08601 = 114 mg/kg; GDHSB08701 = 107 mg/kg) were removed, and the final UTL for n = 102 was calculated as UTL = exp [2.916 + (2)(0.767)] = 85.63 mg/kg (pgs. 4a, 4b). The relationship of chromium to aluminum and iron in samples with high chromium concentrations is as follows:

Sample	CR (mg/kg)	AL (mg/kg)	FE (mg/kg)
GDHSB03501	55.5	20,200	31,800
GDHSB01501	56.9	5,880	6,830
GDHSB04101	57.0	32,700	38,800
GDHSB04901	61.8	29,600	32,200
GDHSB07501	63.5	8,180	8,640
GDHSB08501	63.8	8,550	7,830
GDHSB07901	65.6	26,600	28,100
GDHSB09001	87.6	22,300	36,700
GDHSB08701	107	10,800	9,090
GDHSB08601	114	4,400.	5,970

Although the prominence of samples with unusually high levels of aluminum and iron is apparent in the table above, the argument for naturally occurring chromium is not as strong as that for arsenic and beryllium because correlations with the two normalizing metals are lower. Chromium correlates with both aluminum and iron at $r = 0.58$. Based on conventional criteria for identifying outliers, three samples have now been removed from the original dataset: the two formerly removed, plus GDHSB09001 (87.6 mg/kg). A new UTL based on a LN-transformation would be UTL = exp [2.901 + (1.923)(0.755)] = 77.7 mg/kg; the new UTL based on a square-root transformation would be UTL = $[4.56 + (1.923)(1.625)]^2$ = **59.1 mg/kg**. The square-root transformation is preferred because of lower skewness and kurtosis, as well as a more regular box and whisker plot.

The distribution of **manganese** values is strongly skewed to the right (pg.1a), and remains slightly skewed in a positive direction after being LN-transformed (pg.2a). The preliminary UTL was

calculated as UTL = exp [4.282 + (2)(1.167)] = 747 mg/kg. When this value was applied as a screen, two values were removed: GDHSB04201 (1,200 mg/kg) and GDHSB04101 (983 mg/kg). The calculated UTL for the reduced dataset of n = 102 was UTL = exp [4.229 + (2)(1.114)] = 637 mg/kg. The two values that were removed both represented samples from the open field that was the source of the arsenic "outliers" discussed above. The three samples next lowest in manganese (79-01 = 597 mg/kg; 34-01 = 589 mg/kg; and 90-01 = 518 mg/kg) are all among the group previously identified as being high in aluminum and iron, and therefore probably clay-rich. Manganese is correlated with aluminum at $r = 0.64$; it is correlated with iron at $r = 0.70$. The two samples that were removed originally (41-01 and 42-01) have now been identified as outliers based on conventional criteria (pgs. 3a, 3b, 4a, 4b), and the UTL has been recalculated to reflect a more accurate tolerance factor: UTL = exp [4.229 + (1.921)(1.114)] = **583 mg/kg**.

The reported UTL for **thallium** is nonparametric because thallium was detected in only 10 of 104 samples. With a sample size of 104, a UTL with 95% coverage and 95% confidence is best approximated by using the second highest value, which is 1.1 mg/kg. This value was applied as a screen to remove the two highest original values, leaving 0.63 mg/kg as the second highest value in the reduced dataset. As discussed earlier, there is no statistical justification for removing data values from the background dataset unless they are identified as conventional outliers. Therefore, the nonparametric UTL for thallium should be **1.1 mg/kg**, which is the second highest value in the original dataset.

As with the other trace metals, the **vanadium** distribution is strongly skewed to the right (pgs. 1a, 1b). Both LN-transformation (pgs. 2a, 2b) and square-root transformation (pgs. 3a, 3b) were performed, with the LN-transformation considered a better approximation of normality by all criteria. The preliminary UTL was calculated as UTL = exp [2.889 + (2)(0.730)] = 77.4 mg/kg. When this value was applied as a screen, none of the original data values was eliminated, and it was used in the report. The seven highest vanadium detections (41-01 = 74.8 mg/kg; 90-01 = 71.7 mg/kg; 35-01 = 69.1 mg/kg; 49-01 = 68.3 mg/kg; 79-01 = 66.5 mg/kg; 34-01 = 60.1 mg/kg; 36-01 = 55.5 mg/kg) came from the samples that also reported the seven highest concentrations of both aluminum and iron, indicating a natural origin for the vanadium. Correlation of vanadium and aluminum is $r = 0.89$; correlation of vanadium and iron is $r = 0.90$. The UTL has been recalculated to reflect a more accurate tolerance factor: UTL = exp [2.889 + (1.919)(0.730)] = **73.0 mg/kg**.

Lower interval soil

Initial examination of the **arsenic** dataset revealed an obvious outlier for both original (pgs. 1a, 1b) and transformed (2a, 2b) data values. A preliminary UTL was calculated as UTL = exp [1.767 + (2)(1.004)] = 43.6 mg/kg and used as a screen to remove sample GDHSB04302 (136 mg/kg) from the dataset. The outlier sample was collected from a landscaped area next to barracks Building 676, WNW of SWMU 14; the corresponding upper interval soil sample reported 5.2 mg/kg AS. For the reduced dataset (n = 62), a final UTL was calculated as UTL = exp [1.716 + (2)(0.927)] = 35.5 mg/kg (pgs. 4a, 4b, 4c), which was used in the report. The samples with the highest arsenic

concentrations, including 43-02 (the outlier) were also high in both aluminum and iron:

Sample	AS (mg/kg)	AL (mg/kg)	FE (mg/kg)
GDHSB04302	136	45,300	44,600
GDHSB08202	28.3	41,400	54,300
GDHSB04002	22.8	19,100	34,900
GDHSB03402	22.3	31,700	46,800
GDHSB04602	20.3	31,100	40,400
GDHSB04502	19.1	34,600	40,600
GDHSB01502	18.5	19,600	33,600
GDHSB03902	18.3	32,600	30,000

Arsenic correlated with aluminum at $r = 0.87$, and with iron at $r = 0.92$. For the current study, data values were square-root transformed, which yielded a closer approximation to a normal distribution than the LN-transformation. A new UTL was calculated as UTL = $[2.594 + (2.01)(1.07)]^2$ = **22.5 mg/kg.**

Chromium was evaluated as original values (pgs. 1a, 1b), LN-transformed values (pgs. 2a, 2b), and square-root transformed values (pgs. 3a, 3b). A preliminary UTL based on the square-root transformation was calculated as UTL = $[5.21 + (2)(2.077)]^2$ = 87.7 mg/kg. When this value was used as a screen, sample GDHSB08602 (95.2 mg/kg) was removed from the dataset. A UTL based on the reduced dataset (n = 62) and the square-root transformation (pgs. 6a, 6b) was calculated as UTL = $[5.136 + (2)(2.011)]^2$ = 83.9 mg/kg, which was used in the report. The outlier sample, 86-02, was collected from a grassy field near the edge of a wooded area, near the parking lot around barracks Building 668 in the southern part of the zone. The sampling location had been relocated several feet after the initial boring turned up a small amount of mixed trash. The upper interval soil sample from the same location reported 114 mg/kg chromium, which was the highest chromium concentration of any Zone H grid-based soil sample. None of the 135 Zone H soil samples analyzed for hexachrome reported a detection. Sample 86-02, the outlier, was low in aluminum (4,520 mg/kg) and iron (5,920 mg/kg). Other samples that were high in chromium had varied levels of the two normalizing metals:

Sample	CR (mg/kg)	AL (mg/kg)	FE (mg/kg)
GDHSB03902	72.6	32,600	30,000
GDHSB08202	72.1	41,400	54,300
GDHSB04302	68.6	45,300	44,600
GDHSB01202	64.9	4,810	4,540
SGCSB00202	64.2	4,660	4,380
GDHSB00302	61.8	5,770	5,730

Chromium correlated with aluminum at $r = 0.58$ and with iron at $r = 0.55$. On reexamination, sample 86-02 remained as the only outlier, based on conventional criteria, and the UTL was recalculated to reflect a more accurate tolerance factor: UTL = [5.136 + (2.01)(2.011)] = **84.2 mg/kg**.

Thallium was detected in only 9 of 63 samples, at concentrations ranging from 0.36 mg/kg to 1.9 mg/kg (in GDHSB04502). The second highest value serves as the nonparametric UTL: **1.3 mg/kg** (in GDHSB03902).

Zone H soil 3-24-97

Alternative background reference values (mg/kg)

	Surface Soil					Subsurface Soil				
Chemical	RBC	2xMean	$UTL_{90,90}$	$UTL_{95,95}$	UTL_{orig}	SSL	2xMean	$UTL_{90,90}$	$UTL_{95,95}$	UTL_{orig}
Aluminum	7,800	16,800	18,800	26,000	25,310	--	--	--	--	--
Arsenic	0.43c	11.7	12.6	15.6	14.81	29	15.7	17.9	22.5	35.52
Beryllium	0.15c	0.75	0.93	1.37	1.466	--	--	--	--	--
Chromium	39	46.8	48.3	59.1	85.65	38	60.7	67.5	84.2	83.86
Manganese	180	243	352	583	636.4	--	--	--	--	--
Thallium	0.63		0.63 (?)	1.1	0.63	0.7		1.3	1.3	1.3
Vanadium	55	45.9	52.4	73.0	77.38	--	--	--	--	--

Zone H groundwater

Alternative background reference values (μg/L)

	Shallow Groundwater					Deep Groundwater			
Chemical	RBC/MCL	2xMean	$UTL_{90,90}$	$UTL_{95,95}$	UTL_{orig}	2xMean	$UTL_{90,90}$	$UTL_{95,95}$	UTL_{orig}
Arsenic	0.045/50	10.6	17.8	26.0	27.99	3.61	3.65	8.2	14.98
Barium	260/2000	27.1	105	323	323	--	--	--	--
Manganese	84/NA	1,310	1,820	2,440	3,391	573	757	998	776.2
Thallium	0.29/2.0	3.4	4.2	5.3	7.66	--	--	--	--

The following tables present selected background reference values from previously submitted RFI reports on Zones A, B, C, H, and I at NAVBASE. The values shown are all those that exceed corresponding residential RBCs (for upper interval soil), generic SSLs (for lower interval soil; assumes DAF of 20), or tap water RBCs (for shallow and deep groundwater). RBC and SSL values for chromium are shown with asterisks because they represent hexavalent chromium, while the calculated background reference values are based on total chromium analyses. Figures for iron were not tabulated because iron has been considered an essential nutrient. RBCs for noncarcinogens have been divided by 10 (THQ = 0.1) to allow for possible additive effects of multiple contaminants.

Upper interval (surface) soil:

Element	Residential RBC	Zone A	Zone B	Zone C	Zone H	Zone I
Aluminum	7,800	12,786	15,500	10,017	25,310	
Antimony	3.1					8.98
Arsenic	0.43	9.439	17.1	24.96	14.81	73.5
Beryllium	0.15		1.34		1.466	3.17
Chromium	39*	50.43	80.2		85.65	131.65
Manganese	180		589		636.4	1,980
Thallium	0.63				0.63	
Vanadium	55		156		77.38	114.16

Lower interval (subsurface) soil:

Element	Generic SSL (DAF = 20)	Zone A	Zone B	Zone H
Arsenic	29		48.9	35.52
Chromium	38*	175.7	75.7	83.86
Thallium	0.7			1.3

Background reference values were not calculated for Zones C and I.

Shallow groundwater:

Element	Tap water RBC	Zone A	Zone C	Zone H	Zone I
Arsenic	0.045	53.5		27.99	35.01
Barium	260			323	393.57
Manganese	84	378.5	557.4	3,391	23,445
Thallium	0.29			7.66	

Because no monitoring wells were installed at the only site in Zone B (AOC 507), no groundwater background reference values were calculated for the zone.

Deep groundwater:

Element	Tap water RBC	Zone A	Zone H
Arsenic	0.045	10.67	14.98
Manganese	84	2,786	776.2
Thallium	0.29	165	

Because no deep monitoring wells were installed at any sites in Zones B, C, or I, no deep groundwater background reference values were calculated for those zones.

CHARLESTON - ZONE H
Surface Soil Grid Samples
Metals Only

APX9-METAL																					
	SAMPLE ID ------>	GDH-C-B007-01			GDH-C-B009-01			GDH-C-B011-01			GDH-C-B025-01			GDH-C-B044-01			GDH-C-B057-01		
	ORIGINAL ID ----->	GDHCB00701			GDHCB00901			GDHCB01101			GDHCB02501			GDHCB04401			GDHCB05701		
	LAB SAMPLE ID --->	41668-001			41668-003			41668-002			41735-004			41751-003			41782-003		
	ID FROM REPORT -->	092801			092803			092802			100524			100620			100803		
	SAMPLE DATE ----->	09/22/94			09/27/94			09/27/94			10/04/94			10/05/94			10/07/94		
	DATE EXTRACTED -->	10/05/94			10/05/94			10/05/94			10/07/94			10/11/94			10/11/94		
	DATE ANALYZED --->	10/06/94			10/06/94			10/06/94			10/10/94			10/12/94			10/12/94		
	MATRIX ---------->	Soil			Soil			Soil			Soil			Soil			Soil		
	UNITS ---------->	MG/KG		A	MG/KG		A	MG/KG		A	MG/KG		A	MG/KG		A	MG/KG		A
CAS #	Parameter	APX06		VAL	APX06		VAL	APX06		VAL	APX10		VAL	APX10		VAL	APX10		VAL
7439-92-1	Lead (Pb)	83.3	J		14.4	J		30.3	J		11.			2.6	J		21.9	U	
7439-97-6	Mercury (Hg)	0.18			0.04	J		0.1			0.03	U		0.22			0.02	U	
7440-02-0	Nickel (Ni)	6.6			1.6	J		4.5	J		6.2			1.2	J		9.9	J	
7440-22-4	Silver (Ag)	0.33	U		0.38	U		0.39	U		0.27	U		0.31	U		2.7	U	
7440-31-5	Tin (Sn)	1.7	U		2.	U		2.1	U		1.4	U		1.6	U		14.2	U	
7440-36-0	Antimony (Sb)	1.5	UJ		1.8	UJ		1.9	UJ		1.3	U		1.5	UJ		12.8	U	
7440-38-2	Arsenic (As)	6.			3.			1.4	J		2.9			1.3			4.2		
7440-39-3	Barium (Ba)	22.7	U		10.9	U		12.4	U		7.6	U		3.9	U		0.64	U	
7440-41-7	Beryllium (Be)	0.45	J		0.15	J		0.11	J		0.16	J		0.14	J		0.26	J	
7440-43-9	Cadmium (Cd)	0.2	U		0.24	U		0.24	U		0.17	U		0.19	U		1.7	U	
7440-47-3	Chromium (Cr)	25.9			8.2			15.3			13.8			4.			12.3		
7440-48-4	Cobalt (Co)	2.9	J		0.95	J		0.93	J		0.96	J		0.73	J		4.5	J	
7440-50-8	Copper (Cu)	19.3	U		4.5	U		14.8	U		4.	U		1.6	U		15.	J	
7440-62-2	Vanadium (V)	26.9			9.9			14.1			14.7			3.7	J		10.7	J	
7440-66-6	Zinc (Zn)	85.2	UJ		16.1	UJ		25.3	UJ		22.1			8.	U		33.6		
7782-49-2	Selenium (Se)	0.14	J		0.14	J		0.09	J		0.27	UJ		0.3	UJ		0.26	UJ	
7440-28-0	Thallium (Tl)	0.38	J		0.07	J		0.26	UJ		0.47	U		0.53	U		0.46	U	

*** Validation Complete ***

CHARLESTON - ZONE H
Surface Soil Grid Samples
Metals Only

APX9-METAL	SAMPLE ID ------>	GDH-C-B074-01		GDH-C-B082-01		GDH-C-B104-01	
	ORIGINAL ID ---->	GDHCB07401		GDHCB08201		GDHCB10401	
	LAB SAMPLE ID -->	41925-001		41940-006		42984-001	
	ID FROM REPORT -->	102201		102403		GDHCB10401	
	SAMPLE DATE ---->	10/21/94		10/22/94		02/06/95	
	DATE EXTRACTED -->	10/25/94		10/25/94		02/10/95	
	DATE ANALYZED --->	10/26/94		10/26/94		02/13/95	
	MATRIX --------->	Soil		Soil		Soil	
	UNITS ---------->	MG/KG	A	MG/KG	A	MG/KG	A

CAS #	Parameter	APX11	VAL	APX11	VAL	APX16	VAL
7439-92-1	Lead (Pb)	3.1	J	10.1		17.2	
7439-97-6	Mercury (Hg)	0.02	U	0.03	U	0.03	J
7440-02-0	Nickel (Ni)	5.	U	8.6	U	4.2	U
7440-22-4	Silver (Ag)	0.26	U	0.29	U	0.15	UJ
7440-31-5	Tin (Sn)	1.3	U	1.5	U	0.42	U
7440-36-0	Antimony (Sb)	1.2	U	1.4	U	0.95	U
7440-38-2	Arsenic (As)	4.1		6.9		1.4	
7440-39-3	Barium (Ba)	4.6	U	14.2	U	11.4	J
7440-41-7	Beryllium (Be)	0.24	U	0.38	U	0.09	U
7440-43-9	Cadmium (Cd)	0.16	U	0.28	U	0.12	J
7440-47-3	Chromium (Cr)	13.5	U	24.8	U	9.8	
7440-48-4	Cobalt (Co)	0.91	U	1.4	U	0.98	U
7440-50-8	Copper (Cu)	4.6	U	7.1	U	1.6	J
7440-62-2	Vanadium (V)	8.9	U	17.3	U	21.9	
7440-66-6	Zinc (Zn)	17.6	U	30.1	U	11.3	
7782-49-2	Selenium (Se)	0.41	U	0.6	U	0.28	UJ
7440-28-0	Thallium (Tl)	0.44	J	0.5	U	0.3	U

*** Validation Complete ***

CHARLESTON - ZONE H
Surface Soil Grid Samples
Metals Only

SW846-METHOD													
	SAMPLE ID ------>	GDH-S-B001-01		GDH-S-B002-01		GDH-S-B003-01		GDH-S-B004-01		GDH-S-B005-01		GDH-S-B006-01	
	ORIGINAL ID ----->	GDHSB00101		GDHSB00201		GDHSB00301		GDHSB00401		GDHSB00501		GDHSB00601	
	LAB SAMPLE ID --->	41665-039		41665-041		41665-043		41665-045		41665-047		41665-049	
	ID FROM REPORT -->	092806		092808		092810		092812		092814		092816	
	SAMPLE DATE ----->	09/27/94		09/27/94		09/27/94		09/27/94		09/27/94		09/27/94	
	DATE EXTRACTED -->	10/05/94		10/05/94		10/05/94		10/05/94		10/05/94		10/05/94	
	DATE ANALYZED --->	10/06/94		10/06/94		10/06/94		10/06/94		10/06/94		10/06/94	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A
CAS #	Parameter	CHS15	VAL	CHS15	VAL	CHS15	VAL	CHS15	VAL	CHS15	VAL	CHS15	VAL
[illegible]29-90-5	Aluminum (Al)	3070.	J	1500.	J	8420.	J	5690.	J	4630.	J	4840.	J
[illegible]39-89-6	Iron (Fe)	4330.		2510.		7760.		5900.		4150.		3530.	
7439-92-1	Lead (Pb)	69.5		47.8		45.9		15.6	U	29.2		5.7	
7440-02-0	Nickel (Ni)	7.2		8.1		12.3		13.5	J	8.7		1.8	J
7440-09-7	Potassium (K)	155.	J	112.	J	677.		693.	J	324.		195.	J
7440-22-4	Silver (Ag)	0.3	UJ	0.26	UJ	0.3	UJ	2.5	UJ	0.22	UJ	0.23	UJ
7440-23-5	Sodium (Na)	295.	J	102.	J	559.	J	566.	J	276.	J	41.	J
7440-28-0	Thallium (Tl)	0.34	U	0.3	U	0.35	U	0.29	U	0.25	U	0.26	U
7440-36-0	Antimony (Sb)	1.4	UJ	1.3	U	1.5	U	12.1	U	1.	U	1.1	J
7440-38-2	Arsenic (As)	3.3		15.3		6.3		5.5		5.7		1.7	
7440-39-3	Barium (Ba)	22.9		16.		12.2		0.83	U	7.6	J	9.3	
7440-41-7	Beryllium (Be)	0.26	J	0.58		0.44	J	0.39	J	0.27	J	0.27	J
7440-43-9	Cadmium (Cd)	0.18	U	0.3	J	0.35	J	1.5	U	0.22	J	0.13	U
7440-48-4	Cobalt (Co)	2.5	J	1.7	J	2.	J	2.6	U	1.3	J	1.6	J
7440-50-8	Copper (Cu)	68.7	J	23.9		34.5		17.4	J	13.3		1.9	
7440-62-2	Vanadium (V)	17.9		16.8		24.3		22.5		16.9		6.9	
7440-66-6	Zinc (Zn)	119.	J	34.6		431.		59.		41.8		7.9	
7782-49-2	Selenium (Se)	0.34	U	0.37	J	0.47	J	0.79	J	0.41	J	0.26	U
7439-97-6	Mercury (Hg)	0.23	J	0.06	J	0.11	J	0.09	J	0.11	J	0.03	J
[illegible]39-95-4	Magnesium (Mg)	1250.		752.		3320.		3330.		1600.		422.	
[illegible]39-96-5	Manganese (Mn)	127.		19.6		77.2		74.		37.7		42.6	
7440-70-2	Calcium (Ca)	52400.		20100.		109000.		159000.		83000.		10500.	
7440-47-3	Chromium (Cr)	17.8		10.2		32.4		37.9		21.		7.	
7440-31-5	Tin (Sn)	??????????		??????????		??????????		??????????		??????????		??????????	

*** Validation Complete ***

CHARLESTON - ZONE H
Surface Soil Grid Samples
Metals Only

SW846-METAL	SAMPLE ID ------>	GDH-S-B007-01		GDH-S-B008-01		GDH-S-B009-01		GDH-S-B010-01		GDH-S-B011-01		GDH-S-B012-01	
	ORIGINAL ID ----->	GDHSB00701		GDHSB00801		GDHSB00901		GDHSB01001		GDHSB01101		GDHSB01201	
	LAB SAMPLE ID --->	41665-051		41665-053		41665-055		41666-003		41667-009		41667-011	
	ID FROM REPORT -->	092818		092820		092822		092805		092825		092827	
	SAMPLE DATE ----->	09/27/94		09/27/94		09/27/94		09/27/94		09/27/94		09/27/94	
	DATE EXTRACTED -->	10/05/94		10/05/94		10/05/94		10/05/94		09/29/94		09/29/94	
	DATE ANALYZED --->	10/06/94		10/06/94		10/06/94		10/07/94		09/30/94		09/30/94	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A
CAS #	Parameter	CHS15	VAL	CHS15	VAL	CHS15	VAL	CHS16	VAL	CHS14	VAL	CHS14	VAL
7429-90-5	Aluminum (Al)	8510.	J	10200.	J	4260.	J	13400.		6460.		5060.	
7439-89-6	Iron (Fe)	10600.		11900.		4830.		23700.		4980.		3880.	
7439-92-1	Lead (Pb)	74.		22.9		17.3		31.1	J	41.3		40.3	
7440-02-0	Nickel (Ni)	7.9		6.1		2.2	J	8.2		7.7		6.9	
7440-09-7	Potassium (K)	769.		742.		235.	J	1450.		211.	U	265.	U
7440-22-4	Silver (Ag)	0.29	UJ	0.28	UJ	0.28	UJ	0.3	U	0.24	U	0.25	U
7440-23-5	Sodium (Na)	136.	J	90.5	J	29.4	J	96.4	J	51.2	J	183.	
7440-28-0	Thallium (Tl)	0.33	U	0.32	U	0.32	U	0.34	UJ	0.35	U	0.37	U
7440-36-0	Antimony (Sb)	1.4	U	1.4	U	1.4	U	1.4	UR	1.2	U	1.2	U
7440-38-2	Arsenic (As)	6.3		6.4		2.6		14.8		2.4	J	3.5	J
7440-39-3	Barium (Ba)	17.		17.3		10.8		21.3		11.3		11.5	
7440-41-7	Beryllium (Be)	0.45	J	0.46	J	0.17	J	0.83		0.17	J	0.22	J
7440-43-9	Cadmium (Cd)	0.17	U	0.17	U	0.17	U	0.18	U	0.16	J	0.15	U
7440-48-4	Cobalt (Co)	2.7	J	2.7	J	0.91	J	4.2		1.1	J	1.1	J
7440-50-8	Copper (Cu)	19.		10.3		6.3		13.		19.1		11.1	
7440-62-2	Vanadium (V)	25.1		26.3		12.2		42.3		17.5		13.9	
7440-66-6	Zinc (Zn)	92.2		49.4		17.4		48.7		33.6	U	83.5	
7782-49-2	Selenium (Se)	0.33	U	0.32	U	0.32	U	0.34	U	0.66	J	0.37	UJ
7439-97-6	Mercury (Hg)	0.83	J	0.09	J	0.19	J	0.6	J	0.05	J	0.07	
7439-95-4	Magnesium (Mg)	1790.		1480.		490.		2570.		722.		1060.	
7439-96-5	Manganese (Mn)	239.		178.		56.7		254.	J	66.5		31.8	
7440-70-2	Calcium (Ca)	63400.		8040.		5150.		6710.		7450.		47500.	
7440-47-3	Chromium (Cr)	27.1		27.9		9.9		33.2		18.8		17.8	
7440-31-5	Tin (Sn)	??????????		??????????		??????????		??????????		??????????		??????????	

*** Validation Complete ***

CHARLESTON - ZONE H
Surface Soil Grid Samples
Metals Only

SW846-META	SAMPLE ID ------>	GDH-S-B013-01	GDH-S-B014-01	GDH-S-B015-01	GDH-S-B016-01	GDH-S-B017-01	GDH-S-B018-01
	ORIGINAL ID ----->	GDHSB01301	GDHSB01401	GDHSB01501	GDHSB01601	GDHSB01701	GDHSB01801
	LAB SAMPLE ID --->	41693-018	41693-020	41693-022	41693-024	41713-020	41713-022
	ID FROM REPORT -->	093003	093005	093007	093009	100401	100403
	SAMPLE DATE ----->	09/29/94	09/29/94	09/29/94	09/29/94	10/03/94	10/03/94
	DATE EXTRACTED -->	10/05/94	10/05/94	10/05/94	10/05/94	10/05/94	10/05/94
	DATE ANALYZED --->	10/06/94	10/06/94	10/06/94	10/06/94	10/07/94	10/07/94
	MATRIX ---------->	Soil	Soil	Soil	Soil	Soil	Soil
	UNITS ---------->	MG/KG A	MG/KG A	MG/KG A	MG/KG A	MG/KG A	MG/KG A

CAS #	Parameter	CHS16	VAL	CHS16	VAL	CHS16	VAL	CHS16	VAL	CHS16	VAL	CHS16	VAL
O29-90-5	Aluminum (Al)	4240.		3550.		5880.		3440.		9210.		10100.	
7439-89-6	Iron (Fe)	2620.		3700.		6830.		3400.		16600.		16500.	
7439-92-1	Lead (Pb)	26.2		78.5		172.		29.2		23.2	U	24.4	U
7440-02-0	Nickel (Ni)	2.4	J	3.8		7.6		2.2	J	8.6		8.7	
7440-09-7	Potassium (K)	141.	J	216.	J	454.		185.	J	983.		972.	
7440-22-4	Silver (Ag)	0.28	U	0.22	U	0.26	U	0.21	U	0.29	U	0.21	U
7440-23-5	Sodium (Na)	22.4	J	32.3	J	65.9	J	17.	J	239.		206.	
7440-28-0	Thallium (Tl)	0.32	UJ	0.25	UJ	0.3	UJ	0.25	U	0.33	UJ	0.24	UJ
7440-36-0	Antimony (Sb)	1.4	U	1.	U	1.3	U	1.	U	2.2	J	1.	U
7440-38-2	Arsenic (As)	2.5		2.2		3.8		1.2		11.3		10.1	
7440-39-3	Barium (Ba)	18.2		26.9		19.1		15.3		13.2		14.1	
7440-41-7	Beryllium (Be)	0.14	J	0.17	J	0.26	J	0.12	J	0.63		0.56	
7440-43-9	Cadmium (Cd)	0.17	U	1.4		0.22	J	0.13	U	0.17	U	0.13	U
7440-48-4	Cobalt (Co)	1.1	J	1.1	J	1.7	J	1.	J	3.7		3.1	
7440-50-8	Copper (Cu)	6.5		14.1		14.9		7.4		11.1		10.3	
7440-62-2	Vanadium (V)	7.7		9.9		25.3		8.4		35.5		31.6	
7440-66-6	Zinc (Zn)	34.4		137.		64.2		37.3		47.		41.2	
7782-49-2	Selenium (Se)	0.32	U	0.25	U	0.3	U	0.25	UJ	0.33	U	0.24	U
7439-97-6	Mercury (Hg)	0.25	J	1.6		0.37	J	0.26	J	0.75		0.51	
O39-95-4	Magnesium (Mg)	298.		551.		1680.		358.		2600.		2560.	
O39-96-5	Manganese (Mn)	49.1		85.9		107.		39.5		401.		316.	
7440-70-2	Calcium (Ca)	1950.		6620.		2730.		1460.		31700.		35800.	
7440-47-3	Chromium (Cr)	9.7		17.2		56.9		12.7		27.		24.9	
7440-31-5	Tin (Sn)	??????????		??????????		??????????		??????????		??????????		??????????	

*** Validation Complete ***

CHARLESTON - ZONE H
Surface Soil Grid Samples
Metals Only

SW846-METAL	SAMPLE ID ------>	GDH-S-B019-01	GDH-S-B020-01	GDH-S-B021-01	GDH-S-B022-01	GDH-S-B023-01	GDH-S-B024-01
	ORIGINAL ID ------>	GDHSB01901	GDHSB02001	GDHSB02101	GDHSB02201	GDHSB02301	GDHSB02401
	LAB SAMPLE ID --->	41713-023	41713-025	41713-026	41713-028	41734-050	41734-052
	ID FROM REPORT -->	100404	100406	100407	100409	100510	100512
	SAMPLE DATE ----->	10/03/94	10/03/94	10/03/94	10/03/94	10/04/94	10/04/94
	DATE EXTRACTED -->	10/05/94	10/05/94	10/05/94	10/05/94	10/10/94	10/10/94
	DATE ANALYZED --->	10/06/94	10/06/94	10/06/94	10/06/94	10/11/94	10/17/94
	MATRIX ---------->	Soil	Soil	Soil	Soil	Soil	Soil
	UNITS ---------->	MG/KG A	MG/KG A	MG/KG A	MG/KG A	MG/KG A	MG/KG A

CAS #	Parameter	CHS16	VAL	CHS16	VAL	CHS16	VAL	CHS16	VAL	CHS17	VAL	CHS17	VAL
29-90-5	Aluminum (Al)	4240.		5710.		6520.		4580.		5360.		11700.	
7439-89-6	Iron (Fe)	2880.		2340.		5540.		2990.		4140.		11500.	
7439-92-1	Lead (Pb)	11.3	U	7.2	U	22.	U	35.		26.3		47.	
7440-02-0	Nickel (Ni)	3.4		3.4		5.		6.2		5.7	U	10.	
7440-09-7	Potassium (K)	210.	J	104.	J	189.	J	132.	J	311.		878.	
7440-22-4	Silver (Ag)	0.3	U	0.23	U	0.27	U	0.25	U	0.2	UJ	0.22	UJ
7440-23-5	Sodium (Na)	134.		181.		130.		50.9	J	107.	J	280.	
7440-28-0	Thallium (Tl)	0.34	UJ	0.26	UJ	0.31	UJ	0.29	UJ	0.23	U	0.25	U
7440-36-0	Antimony (Sb)	1.5	U	1.1	U	1.3	U	1.2	U	0.97	UJ	1.3	U
7440-38-2	Arsenic (As)	2.2		3.2		2.6		1.9		4.4	U	7.8	
7440-39-3	Barium (Ba)	6.5	J	6.2	J	10.3		8.6	J	10.3		11.4	
7440-41-7	Beryllium (Be)	0.09	J	0.13	J	0.12	J	0.12	J	0.12	J	0.45	
7440-43-9	Cadmium (Cd)	0.18	U	0.14	U	0.16	U	0.15	U	0.17	J	0.27	U
7440-48-4	Cobalt (Co)	0.75	J	0.67	J	1.1	J	1.2	J	0.9	J	2.2	U
7440-50-8	Copper (Cu)	2.9		2.7		5.1		6.		5.3	U	68.1	
7440-62-2	Vanadium (V)	12.4		10.		20.6		17.4		19.4		29.9	
7440-66-6	Zinc (Zn)	14.8		11.7		30.1		90.3		24.6	J	92.4	
7782-49-2	Selenium (Se)	0.34	U	0.26	U	0.31	U	0.29	U	0.23	U	0.48	J
7439-97-6	Mercury (Hg)	0.23	U	0.25	U	0.25	J	0.41	J	0.05	J	0.1	
39-95-4	Magnesium (Mg)	707.		677.		607.		712.		632.		2850.	
39-96-5	Manganese (Mn)	19.5		14.7		22.5		49.5		33.2		143.	
7440-70-2	Calcium (Ca)	15700.		17000.		9620.		8750.		12800.		48200.	
7440-47-3	Chromium (Cr)	11.4		9.9		16.5		13.6		13.4		27.2	
7440-31-5	Tin (Sn)	??????????		??????????		??????????		??????????		??????????		??????????	

*** Validation Complete ***

CHARLESTON - ZONE H
Surface Soil Grid Samples
Metals Only

SW846-META	SAMPLE ID ------>	GDH-S-B025-01		GDH-S-B026-01		GDH-S-B027-01		GDH-S-B028-01		GDH-S-B029-01		GDH-S-B030-01	
	ORIGINAL ID ----->	GDHSB02501		GDHSB02601		GDHSB02701		GDHSB02801		GDHSB02901		GDHSB03001	
	LAB SAMPLE ID --->	41734-053		41734-054		41734-056		41734-058		41734-059		41734-060	
	ID FROM REPORT -->	100513		100514		100516		100518		100519		100520	
	SAMPLE DATE ----->	10/04/94		10/04/94		10/04/94		10/04/94		10/04/94		10/04/94	
	DATE EXTRACTED -->	10/10/94		10/10/94		10/10/94		10/10/94		10/10/94		10/10/94	
	DATE ANALYZED --->	10/17/94		10/11/94		10/11/94		10/11/94		10/17/94		10/17/94	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A
CAS #	Parameter	CHS17	VAL	CHS17	VAL	CHS17	VAL	CHS17	VAL	CHS17	VAL	CHS17	VAL
29-90-5	Aluminum (Al)	9720.		7940.		3970.		6040.		6100.		6470.	
7439-89-6	Iron (Fe)	4480.		3270.		3250.		3770.		1810.		1910.	
7439-92-1	Lead (Pb)	13.7		53.3		109.		26.3		8.7		12.6	
7440-02-0	Nickel (Ni)	6.7	U	5.8	U	17.1		6.3	U	5.6	U	2.9	U
7440-09-7	Potassium (K)	361.		312.		336.		196.	J	83.2	J	113.	J
7440-22-4	Silver (Ag)	0.19	UJ	0.27	UJ	0.3	UJ	0.22	UJ	0.19	UJ	0.19	UJ
7440-23-5	Sodium (Na)	318.		90.6	J	160.		95.4		13.6	J	29.7	J
7440-28-0	Thallium (Tl)	0.22	U	0.31	U	0.34	U	0.25	U	0.21	U	0.21	U
7440-36-0	Antimony (Sb)	1.	U	1.3	U	2.	U	1.1	U	0.9	U	0.9	U
7440-38-2	Arsenic (As)	1.	U	2.3	U	2.5	U	2.6	U	0.78	U	1.1	U
7440-39-3	Barium (Ba)	12.2		18.1		18.		7.3	J	5.4	U	4.8	U
7440-41-7	Beryllium (Be)	0.22	J	0.14	J	0.15	J	0.09	J	0.06	J	0.05	J
7440-43-9	Cadmium (Cd)	0.18	U	0.25	U	0.63	U	1.5	U	0.13	U	0.13	U
7440-48-4	Cobalt (Co)	0.92	U	0.99	U	1.4	U	0.72	U	0.45	U	0.52	U
7440-50-8	Copper (Cu)	5.2	U	9.2		22.5		23.2		3.6	U	5.4	U
7440-62-2	Vanadium (V)	18.2		20.3		46.6		24.5		24.8		11.6	
7440-66-6	Zinc (Zn)	31.2		42.4		104.		104.		13.9		11.9	U
7782-49-2	Selenium (Se)	0.22	U	0.31	U	0.34	U	0.25	U	0.21	U	0.21	U
7439-97-6	Mercury (Hg)	0.02	J	0.06	J	2.4		0.03	J	0.05	J	0.05	J
39-95-4	Magnesium (Mg)	1270.		616.		1410.		585.		132.		287.	
39-96-5	Manganese (Mn)	26.9		27.5		44.1		20.3		5.3		13.1	
7440-70-2	Calcium (Ca)	38700.		8960.		28700.		13600.		1070.		4160.	
7440-47-3	Chromium (Cr)	19.5		19.9		31.3		13.5		8.8		9.2	
7440-31-5	Tin (Sn)	??????????		??????????		??????????		??????????		??????????		??????????	

*** Validation Complete ***

CHARLESTON - ZONE H
Surface Soil Grid Samples
Metals Only

SW846-METAL	SAMPLE ID ------>	GDH-S-B031-01	GDH-S-B032-01	GDH-S-B033-01	GDH-S-B034-01	GDH-S-B035-01	GDH-S-B036-01
	ORIGINAL ID ----->	GDHSB03101	GDHSB03201	GDHSB03301	GDHSB03401	GDHSB03501	GDHSB03601
	LAB SAMPLE ID --->	41734-041	41734-043	41734-045	41734-047	41734-049	41733-004
	ID FROM REPORT -->	100501	100503	100505	100507	100509	GDHSB03601
	SAMPLE DATE ----->	10/04/94	10/04/94	10/04/94	10/04/94	10/04/94	10/04/94
	DATE EXTRACTED -->	10/10/94	10/10/94	10/10/94	10/10/94	10/10/94	10/11/94
	DATE ANALYZED --->	10/17/94	10/17/94	10/11/94	10/17/94	10/17/94	10/18/94
	MATRIX ---------->	Soil	Soil	Soil	Soil	Soil	Soil
	UNITS ---------->	MG/KG A	MG/KG A	MG/KG A	MG/KG A	MG/KG A	MG/KG A
CAS #	Parameter	CHS17 VAL	CHS17 VAL	CHS17 VAL	CHS17 VAL	CHS17 VAL	CHS18 VAL
429-90-5	Aluminum (Al)	12800.	16900.	9310.	23400.	20200.	20700.
7439-89-6	Iron (Fe)	6740.	19700.	15000.	30900.	31800.	30300.
7439-92-1	Lead (Pb)	10.9	70.5	15.8	28.4	37.4	20.6
7440-02-0	Nickel (Ni)	7.8	13.9	8.3	13.7	11.6	10.6
7440-09-7	Potassium (K)	403.	777.	1090.	2130.	2470.	1190.
7440-22-4	Silver (Ag)	0.25 UJ	0.31 UJ	0.35 UJ	0.25 UJ	0.41 UJ	0.32 UJ
7440-23-5	Sodium (Na)	1000.	113. J	147.	207.	240.	182.
7440-28-0	Thallium (Tl)	0.28 U	0.36 U	0.4 U	0.57 U	0.47 U	1.1 J
7440-36-0	Antimony (Sb)	1.2 U	1.5 U	1.7 U	1.2 U	2.2 U	1.5 U
7440-38-2	Arsenic (As)	5.4	8.9	8.5	17.2	17.6	13.7
7440-39-3	Barium (Ba)	15.2	26.5	16.2	25.9	28.7	22.5
7440-41-7	Beryllium (Be)	0.3 J	0.59	0.5 J	1.	0.81	1.1
7440-43-9	Cadmium (Cd)	0.2 U	0.3 U	1. U	0.15 U	0.24 U	0.19 U
7440-48-4	Cobalt (Co)	1.8 U	3.6	2.6 U	5.5	5.	5.7
7440-50-8	Copper (Cu)	4.4 U	17.8	15.1	20.7	16.2	16.6
7440-62-2	Vanadium (V)	25.6	48.7	31.4	60.1	69.1	55.5
7440-66-6	Zinc (Zn)	18.8	85.8	52.3	80.5	76.9	64.8
7782-49-2	Selenium (Se)	0.28 U	0.36 U	0.4 U	0.57 U	0.81 J	0.89 J
7439-97-6	Mercury (Hg)	0.03 U	0.16	3.8	0.21	0.17	0.16 J
7439-95-4	Magnesium (Mg)	828.	2270.	1920.	4370.	3450.	3410.
7439-96-5	Manganese (Mn)	62.8	284.	376.	589.	228.	388.
7440-70-2	Calcium (Ca)	43300.	7440.	20200.	28500.	2900.	45200.
7440-47-3	Chromium (Cr)	21.3	53.	24.3	47.4	55.5	38.9
7440-31-5	Tin (Sn)	??????????	??????????	??????????	??????????	??????????	??????????

*** Validation Complete ***

CHARLESTON - ZONE H
Surface Soil Grid Samples
Metals Only

SW846-METAL	SAMPLE ID ------>	GDH-S-B037-01		GDH-S-B038-01		GDH-S-B039-01		GDH-S-B040-01		GDH-S-B041-01		GDH-S-B042-01	
	ORIGINAL ID ----->	GDHSB03701		GDHSB03801		GDHSB03901		GDHSB04001		GDHSB04101		GDHSB04201	
	LAB SAMPLE ID --->	41742-037		41742-039		41742-041		41742-043		41742-045		41742-046	
	ID FROM REPORT -->	GDHSB03701		GDHSB03801		GDHSB03901		GDHSB04001		GDHSB04101		GDHSB04201	
	SAMPLE DATE ----->	10/05/94		10/05/94		10/05/94		10/05/94		10/05/94		10/05/94	
	DATE EXTRACTED -->	10/11/94		10/11/94		10/11/94		10/11/94		10/11/94		10/14/94	
	DATE ANALYZED --->	10/18/94		10/17/94		10/18/94		10/17/94		10/18/94		10/18/94	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A
CAS #	Parameter	CHS18	VAL	CHS18	VAL	CHS18	VAL	CHS18	VAL	CHS18	VAL	CHS18	VAL
7429-90-5	Aluminum (Al)	2560.		5640.		14900.		4030.		32700.		5760.	
7439-89-6	Iron (Fe)	5780.		5630.		17100.		2500.		38800.		7460.	
7439-92-1	Lead (Pb)	27.5	J	36.2		21.1		4.3	J	33.6		1.6	U
7440-02-0	Nickel (Ni)	7.5	U	4.3		8.9		1.9	J	18.4		10.5	
7440-09-7	Potassium (K)	1120.	J	333.	J	1090.		65.	J	2960.		730.	
7440-22-4	Silver (Ag)	2.9	UJ	0.74	J	0.34	UJ	0.28	UJ	0.36	UJ	0.26	UJ
7440-23-5	Sodium (Na)	244.	J	90.7	J	177.		13.3	J	185.		601.	
7440-28-0	Thallium (Tl)	0.34	UJ	0.3	UJ	0.92	J	0.33	UJ	1.1	J	0.63	J
7440-36-0	Antimony (Sb)	14.3	U	1.3	U	1.6	U	1.4	UJ	1.8	U	1.3	U
7440-38-2	Arsenic (As)	4.		11.8		8.4		1.6		18.4		9.1	
7440-39-3	Barium (Ba)	0.98	U	14.		21.		3.6	J	39.6		12.6	
7440-41-7	Beryllium (Be)	0.33	U	0.26	J	0.7		0.1	J	1.4		0.41	J
7440-43-9	Cadmium (Cd)	1.7	U	0.19	J	0.2	U	0.17	U	0.21	U	0.15	U
7440-48-4	Cobalt (Co)	3.1	U	1.4	J	3.5	J	1.1	J	7.9		2.9	
7440-50-8	Copper (Cu)	8.2	J	8.2		11.9		1.1	J	23.4		4.7	
7440-62-2	Vanadium (V)	13.1		14.3		35.4		7.2		74.8		19.3	
7440-66-6	Zinc (Zn)	44.1		202.		111.		10.1		100.		50.6	
7782-49-2	Selenium (Se)	0.34	U	0.3	U	0.39	U	0.35	J	1.6		0.41	J
7439-97-6	Mercury (Hg)	0.02	J	0.06	J	0.09		0.04	U	0.21		0.04	U
7439-95-4	Magnesium (Mg)	3210.		888.		2230.		323.		4660.		3470.	
7439-96-5	Manganese (Mn)	195.		82.		275.		14.1		983.		1200.	
7440-70-2	Calcium (Ca)	280000.		32700.		12500.		6940.		7850.		71900.	
7440-47-3	Chromium (Cr)	21.6		15.		32.8		8.3		57.		23.3	
7440-31-5	Tin (Sn)	??????????		??????????		??????????		??????????		??????????		??????????	

*** Validation Complete ***

CHARLESTON - ZONE H
Surface Soil Grid Samples
Metals Only

SW846-META													
	SAMPLE ID ------->	GDH-S-B043-01		GDH-S-B044-01		GDH-S-B045-01		GDH-S-B046-01		GDH-S-B047-01		GDH-S-B048-01	
	ORIGINAL ID ----->	GDHSB04301		GDHSB04401		GDHSB04501		GDHSB04601		GDHSB04701		GDHSB04801	
	LAB SAMPLE ID --->	41742-048		41742-050		41742-051		41742-053		41760-030		41760-032	
	ID FROM REPORT -->	GDHSB04301		GDHSB04401		GDHSB04501		GDHSB04601		100701		100703	
	SAMPLE DATE ----->	10/05/94		10/05/94		10/05/94		10/05/94		10/06/94		10/06/94	
	DATE EXTRACTED -->	10/11/94		10/11/94		10/11/94		10/11/94		10/14/94		10/14/94	
	DATE ANALYZED --->	10/19/94		10/18/94		10/18/94		10/18/94		10/19/94		10/20/94	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ----------->	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A
CAS #	Parameter	CHS18	VAL	CHS18	VAL	CHS18	VAL	CHS18	VAL	CHS19	VAL	CHS19	VAL
7429-90-5	Aluminum (Al)	11500.		6350.		7900.		14800.		17100.		20000.	
7439-89-6	Iron (Fe)	7960.		1850.		6780.		12300.		18000.		19400.	
7439-92-1	Lead (Pb)	12.6		4.4		11.7		14.4		11.3		35.3	
7440-02-0	Nickel (Ni)	7.6		2.6		5.2		7.5		9.9		19.4	
7440-09-7	Potassium (K)	684.		217.	J	638.		810.		1210.		1790.	
7440-22-4	Silver (Ag)	0.27	UJ	0.18	UJ	0.2	UJ	0.25	UJ	0.24	U	0.41	U
7440-23-5	Sodium (Na)	270.		53.2	J	143.		150.		302.		528.	
7440-28-0	Thallium (Tl)	0.31	UJ	0.2	UJ	0.23	UJ	0.28	UJ	0.27	U	0.47	U
7440-36-0	Antimony (Sb)	1.3	U	0.85	U	0.97	U	1.2	U	1.2	U	2.	U
7440-38-2	Arsenic (As)	5.2		1.7		4.5		5.7		9.7		13.2	
7440-39-3	Barium (Ba)	9.5	J	8.9		8.4		14.7		17.		6.8	J
7440-41-7	Beryllium (Be)	0.39	J	0.23	J	0.4		0.47		0.71		0.8	
7440-43-9	Cadmium (Cd)	0.22	J	0.1	U	0.12	U	0.15	U	0.14	U	0.24	U
7440-48-4	Cobalt (Co)	1.8	J	0.94	J	2.	J	2.6	J	3.4		3.5	J
7440-50-8	Copper (Cu)	9.4		1.3		6.		7.		11.6		17.	
7440-62-2	Vanadium (V)	21.		5.8		15.1		27.3		35.9		49.8	
7440-66-6	Zinc (Zn)	40.4		7.		29.3		35.8		62.5		85.9	
7782-49-2	Selenium (Se)	0.31	U	0.2	U	0.23	U	0.28	U	0.27	U	0.47	U
7439-97-6	Mercury (Hg)	0.05	U	0.03	U	0.02	J	0.09	J	0.09		0.06	J
7439-95-4	Magnesium (Mg)	2230.		810.		2980.		1920.		2990.		6000.	
7439-96-5	Manganese (Mn)	128.		40.		155.		142.		243.		282.	
7440-70-2	Calcium (Ca)	60800.		21500.		103000.		24700.		41600.		160000.	
7440-47-3	Chromium (Cr)	22.9		5.8		15.5		24.4		39.3		54.3	
7440-31-5	Tin (Sn)	?????????		?????????		?????????		?????????		?????????		?????????	

*** Validation Complete ***

CHARLESTON - ZONE H
Surface Soil Grid Samples
Metals Only

SW846-META	SAMPLE ID ------>	GDH-S-B049-01	GDH-S-B050-01	GDH-S-B051-01	GDH-S-B052-01	GDH-S-B053-01	GDH-S-B054-01
	ORIGINAL ID ----->	GDHSB04901	GDHSB05001	GDHSB05101	GDHSB05201	GDHSB05301	GDHSB05401
	LAB SAMPLE ID --->	41760-033	41760-034	41760-035	41760-037	41760-039	41760-041
	ID FROM REPORT -->	100704	100705	100706	100708	100710	100712
	SAMPLE DATE ----->	10/06/94	10/06/94	10/06/94	10/06/94	10/06/94	10/06/94
	DATE EXTRACTED -->	10/14/94	10/14/94	10/14/94	10/14/94	10/14/94	10/14/94
	DATE ANALYZED --->	10/20/94	10/20/94	10/20/94	10/20/94	10/18/94	10/20/94
	MATRIX ---------->	Soil	Soil	Soil	Soil	Soil	Soil
	UNITS ---------->	MG/KG A	MG/KG A	MG/KG A	MG/KG A	MG/KG A	MG/KG A

CAS #	Parameter	CHS19	VAL	CHS19	VAL	CHS19	VAL	CHS19	VAL	CHS19	VAL	CHS19	VAL
7429-90-5	Aluminum (Al)	29600.		5150.		9280.		11300.		4710.		10100.	
7439-89-6	Iron (Fe)	32200.		5470.		5840.		7940.		695.		7670.	
7439-92-1	Lead (Pb)	24.6		16.3	U	7.2		13.1		11.4		19.5	
7440-02-0	Nickel (Ni)	21.1		11.7	J	3.8		11.3		2.8		12.7	
7440-09-7	Potassium (K)	2330.		546.	J	419.		859.		95.1	U	824.	
7440-22-4	Silver (Ag)	0.36	U	2.6	U	0.2	U	0.24	U	0.25	U	0.25	U
7440-23-5	Sodium (Na)	330.		639.	J	258.		627.		142.		729.	
7440-28-0	Thallium (Tl)	0.42	U	0.3	U	0.22	U	0.27	U	0.28	U	0.28	U
7440-36-0	Antimony (Sb)	1.8	U	12.7	U	0.95	U	1.1	U	1.2	U	1.2	U
7440-38-2	Arsenic (As)	15.7		6.2		3.9		7.7		0.73	J	7.3	
7440-39-3	Barium (Ba)	27.3		0.87	U	14.		11.4		5.9	J	9.9	
7440-41-7	Beryllium (Be)	1.2		0.29	U	0.21	J	0.5		0.15	J	0.54	
7440-43-9	Cadmium (Cd)	0.22	U	1.5	U	0.12	U	0.14	J	0.15	U	0.18	J
7440-48-4	Cobalt (Co)	5.8		2.7	U	0.75	J	1.9	J	1.3	J	1.9	J
7440-50-8	Copper (Cu)	23.1		7.9	J	3.		12.7		2.4	U	9.7	
7440-62-2	Vanadium (V)	68.3		20.4		14.1		23.6		4.8		25.3	
7440-66-6	Zinc (Zn)	108.		54.		24.8		50.5		10.5		56.2	
7782-49-2	Selenium (Se)	0.42	U	0.82	J	0.22	U	0.27	U	0.28	U	0.32	J
7439-97-6	Mercury (Hg)	0.16		0.04	J	0.04	J	0.04	J	0.02	U	0.09	
7439-95-4	Magnesium (Mg)	5370.		3750.		967.		2950.		163.		3390.	
7439-96-5	Manganese (Mn)	444.		51.		47.4		97.5		5.6		86.4	
7440-70-2	Calcium (Ca)	62300.		154000.		35300.		82500.		1220.		97700.	
7440-47-3	Chromium (Cr)	61.8		40.2		14.9		33.8		7.8		45.1	
7440-31-5	Tin (Sn)	??????????		??????????		??????????		??????????		??????????		??????????	

*** Validation Complete ***

CHARLESTON - ZONE H
Surface Soil Grid Samples
Metals Only

SW846-META	SAMPLE ID ------>	GDH-S-B055-01		GDH-S-B056-01		GDH-S-B057-01		GDH-S-B058-01		GDH-S-B059-01		GDH-S-B060-01	
	ORIGINAL ID ----->	GDHSB05501		GDHSB05601		GDHSB05701		GDHSB05801		GDHSB05901		GDHSB06001	
	LAB SAMPLE ID --->	41760-043		41779-011		41780-009		41779-013		41780-005		41780-006	
	ID FROM REPORT -->	100714		100807		100814		100809		100812		100813	
	SAMPLE DATE ----->	10/06/94		10/07/94		10/07/94		10/07/94		10/07/94		10/07/94	
	DATE EXTRACTED -->	10/14/94		10/14/94		10/14/94		10/14/94		10/14/94		10/14/94	
	DATE ANALYZED --->	10/18/94		10/20/94		10/20/94		10/20/94		10/18/94		10/20/94	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A
CAS #	Parameter	CHS19	VAL	CHS19	VAL	CHS20	VAL	CHS19	VAL	CHS20	VAL	CHS20	VAL
7429-90-5	Aluminum (Al)	3810.		5480.		1610.		9070.		5060.		16200.	
7439-89-6	Iron (Fe)	2780.		5450.		3330.		10600.		12000.		14600.	
7439-92-1	Lead (Pb)	16.8		24.		11.7	U	24.6	J	63.8		23.7	
7440-02-0	Nickel (Ni)	2.2	J	6.8		7.4	J	6.2	U	7.2		12.4	
7440-09-7	Potassium (K)	92.6	U	417.		341.	U	698.	J	425.	J	1010.	
7440-22-4	Silver (Ag)	0.2	U	0.17	U	1.9	U	2.4	U	0.55	J	0.33	U
7440-23-5	Sodium (Na)	41.2	J	636.		284.	J	182.	J	142.		1660.	
7440-28-0	Thallium (Tl)	0.23	U	0.19	U	0.21	UJ	0.28	U	0.2	UJ	0.38	UJ
7440-36-0	Antimony (Sb)	0.99	U	0.81	U	9.1	U	11.8	U	1.4	J	1.6	U
7440-38-2	Arsenic (As)	3.7		5.1		3.4		5.9		4.1		9.8	
7440-39-3	Barium (Ba)	17.		11.5		0.62	U	4.7	J	17.		33.4	
7440-41-7	Beryllium (Be)	0.14	J	0.29	J	0.21	U	0.27	U	0.34		0.69	
7440-43-9	Cadmium (Cd)	0.18	J	0.15	J	1.1	U	1.4	U	0.1	U	0.2	U
7440-48-4	Cobalt (Co)	0.51	J	1.8	J	2.	J	3.1	J	1.5	J	3.8	
7440-50-8	Copper (Cu)	4.7		23.8		6.4	J	11.4	J	20.1		12.7	
7440-62-2	Vanadium (V)	7.9		15.2		6.9		23.6		17.9		36.3	
7440-66-6	Zinc (Zn)	74.4		62.3		28.3		58.1		56.		61.4	
7782-49-2	Selenium (Se)	0.23	U	0.19	U	0.21	U	0.28	U	0.28	J	0.47	J
7439-97-6	Mercury (Hg)	0.03	J	0.03	J	0.02	U	0.05	J	0.04	J	0.06	J
7439-95-4	Magnesium (Mg)	388.		1550.		3680.		2910.		855.		3220.	
7439-96-5	Manganese (Mn)	21.4		85.7		281.		403.		53.2		166.	
7440-70-2	Calcium (Ca)	5000.		61600.		333000.		174000.		11400.		27200.	
7440-47-3	Chromium (Cr)	12.5		18.3		5.8	J	23.2		20.8		48.5	
7440-31-5	Tin (Sn)	??????????		??????????		??????????		??????????		??????????		??????????	

*** Validation Complete ***

CHARLESTON - ZONE H
Surface Soil Grid Samples
Metals Only

SW846-METAL	SAMPLE ID ------>	GDH-S-B061-01		GDH-S-B062-01		GDH-S-B063-01		GDH-S-B064-01		GDH-S-B065-01		GDH-S-B066-01	
	ORIGINAL ID ----->	GDHSB06101		GDHSB06201		GDHSB06301		GDHSB06401		GDHSB06501		GDHSB06601	
	LAB SAMPLE ID --->	41779-015		41784-014		41784-015		41784-017		41784-019		41790-030	
	ID FROM REPORT -->	100811		101001		101002		101004		101006		101112	
	SAMPLE DATE ----->	10/07/94		10/08/94		10/08/94		10/08/94		10/08/94		10/10/94	
	DATE EXTRACTED -->	10/14/94		10/14/94		10/14/94		10/14/94		10/14/94		10/14/94	
	DATE ANALYZED --->	10/18/94		10/20/94		10/20/94		10/18/94		10/20/94		10/20/94	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A
CAS #	Parameter	CHS19	VAL	CHS20	VAL	CHS20	VAL	CHS20	VAL	CHS20	VAL	CHS20	VAL
7429-90-5	Aluminum (Al)	5960.	J	15200.		9290.		1090.		2630.		7260.	
7439-89-6	Iron (Fe)	4800.	J	26400.		19100.		3230.		7340.		8130.	
7439-92-1	Lead (Pb)	9.3		25.		151.		79.8		21.2	J	4.5	
7440-02-0	Nickel (Ni)	3.5		7.9		5.6		6.9		4.9	J	1.	J
7440-09-7	Potassium (K)	214.	U	2590.		494.	J	380.	J	665.	J	336.	J
7440-22-4	Silver (Ag)	0.23	U	0.26	U	0.22	U	0.29	U	1.7	U	0.22	U
7440-23-5	Sodium (Na)	134.	J	1370.		577.		109.		167.	J	126.	
7440-28-0	Thallium (Tl)	0.27	U	0.3	UJ	0.25	UJ	0.34	UJ	0.19	UJ	0.26	UJ
7440-36-0	Antimony (Sb)	1.1	UJ	1.3	U	1.7	J	1.5	J	8.1	U	1.9	J
7440-38-2	Arsenic (As)	5.3		14.4		11.3		7.9		7.6		2.8	
7440-39-3	Barium (Ba)	18.8		24.6		36.1		24.2		4.	J	16.2	
7440-41-7	Beryllium (Be)	0.22	J	0.72		0.47		0.34	J	0.27	J	0.16	J
7440-43-9	Cadmium (Cd)	0.14	J	0.15	U	0.13	J	0.17	U	0.99	U	0.13	U
7440-48-4	Cobalt (Co)	1.1	J	4.3		2.5		2.4	J	4.2	J	0.76	J
7440-50-8	Copper (Cu)	3.7		12.6		25.4		14.3		7.	J	0.94	J
7440-62-2	Vanadium (V)	12.6		44.4		19.1		11.7		12.		17.1	
7440-66-6	Zinc (Zn)	36.7	J	59.1		163.		34.5		40.		6.3	
7782-49-2	Selenium (Se)	0.27	U	1.1		0.66	J	0.34	U	0.19	U	0.26	U
7439-97-6	Mercury (Hg)	0.02	J	0.08		0.25		0.04	U	0.05		0.06	J
7439-95-4	Magnesium (Mg)	593.		2710.		843.		432.		1330.		237.	
7439-96-5	Manganese (Mn)	46.7	J	177.		124.		28.4		87.9		16.	
7440-70-2	Calcium (Ca)	16600.	J	15500.		28300.		26200.		108000.		4020.	
7440-47-3	Chromium (Cr)	15.8	J	33.3		18.4		14.6		11.1		8.6	
7440-31-5	Tin (Sn)	??????????		??????????		??????????		??????????		??????????		??????????	

*** Validation Complete ***

CHARLESTON - ZONE H
Surface Soil Grid Samples
Metals Only

SW846-META													
	SAMPLE ID ------>	GDH-S-B067-01		GDH-S-B068-01		GDH-S-B069-01		GDH-S-B070-01		GDH-S-B071-01		GDH-S-B072-01	
	ORIGINAL ID ----->	GDHSB06701		GDHSB06801		GDHSB06901		GDHSB07001		GDHSB07101		GDHSB07201	
	LAB SAMPLE ID --->	41806-025		41806-027		41806-028		41806-031		41806-032		41806-034	
	ID FROM REPORT -->	101203		101205		101206		101209		101210		101212	
	SAMPLE DATE ----->	10/11/94		10/11/94		10/11/94		10/11/94		10/11/94		10/11/94	
	DATE EXTRACTED -->	10/18/94		10/18/94		10/18/94		10/18/94		10/18/94		10/18/94	
	DATE ANALYZED --->	10/19/94		10/19/94		10/19/94		10/19/94		10/19/94		10/21/94	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A
CAS #	Parameter	CHS21	VAL	CHS21	VAL	CHS21	VAL	CHS21	VAL	CHS21	VAL	CHS21	VAL
7429-90-5	Aluminum (Al)	2380.		5850.		4330.		2840.		2780.		11300.	
7439-89-6	Iron (Fe)	4150.		8100.		2540.		2080.		3120.		19200.	
7439-92-1	Lead (Pb)	77.1		19.8		4.4		1.8	J	11.5		20.3	
7440-02-0	Nickel (Ni)	3.6	J	5.9		0.63	J	0.62	UJ	1.5	J	8.6	
7440-09-7	Potassium (K)	186.	U	367.	U	106.	U	75.1	U	154.	U	1470.	
7440-22-4	Silver (Ag)	0.19	U	0.24	U	0.2	U	0.24	U	0.22	U	0.33	UJ
7440-23-5	Sodium (Na)	99.4		290.		43.8	J	36.1	J	70.6	J	1140.	
7440-28-0	Thallium (Tl)	0.22	UJ	0.28	UJ	0.24	UJ	0.28	UJ	0.25	UJ	0.38	U
7440-36-0	Antimony (Sb)	0.93	U	1.2	U	0.99	U	1.2	UJ	1.1	U	1.6	U
7440-38-2	Arsenic (As)	9.		6.6		1.1		1.2		2.1		9.8	
7440-39-3	Barium (Ba)	7.8		72.8		9.		6.2	J	14.9		18.9	
7440-41-7	Beryllium (Be)	0.16	J	1.		0.07	J	0.04	J	0.06	J	0.74	
7440-43-9	Cadmium (Cd)	0.12	J	0.21	J	0.12	U	0.14	U	0.13	U	0.19	U
7440-48-4	Cobalt (Co)	1.2	J	2.	J	0.49	J	1.5	J	0.7	J	4.8	
7440-50-8	Copper (Cu)	5.4		6.6		1.1	J	1.1	J	3.4		14.8	
7440-62-2	Vanadium (V)	10.1		16.6		8.1		4.1		9.6		38.7	
7440-66-6	Zinc (Zn)	30.8		58.8		6.1		5.		10.7		53.7	
7782-49-2	Selenium (Se)	0.22	U	0.28	U	0.24	U	0.28	U	0.25	U	0.38	U
7439-97-6	Mercury (Hg)	0.05		0.05	J	0.02	U	0.03	U	0.02	U	0.15	
7439-95-4	Magnesium (Mg)	559.		919.		144.		134.		131.		2840.	
7439-96-5	Manganese (Mn)	69.2		53.6		13.3		13.		9.7		268.	
7440-70-2	Calcium (Ca)	24600.		26100.		1900.		3740.		1170.		15300.	
7440-47-3	Chromium (Cr)	8.6		20.1		5.9		3.4		5.5		27.	
7440-31-5	Tin (Sn)	??????????		??????????		??????????		??????????		??????????		??????????	

*** Validation Complete ***

CHARLESTON - ZONE H
Surface Soil Grid Samples
Metals Only

SW846-META	SAMPLE ID ------>	GDH-S-B073-01		GDH-S-B074-01		GDH-S-B075-01		GDH-S-B076-01		GDH-S-B077-01		GDH-S-B078-01	
	ORIGINAL ID ----->	GDHSB07301		GDHSB07401		GDHSB07501		GDHSB07601		GDHSB07701		GDHSB07801	
	LAB SAMPLE ID --->	41821-014		252468		252476		252484		252492		252506	
	ID FROM REPORT -->	101303		102204		102205		102206		102207		102208	
	SAMPLE DATE ----->	10/12/94		10/21/94		10/21/94		10/21/94		10/21/94		10/21/94	
	DATE EXTRACTED -->	10/18/94		11/10/94		11/10/94		11/10/94		11/10/94		11/10/94	
	DATE ANALYZED --->	10/19/94		11/11/94		11/11/94		11/11/94		11/11/94		11/11/94	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A
CAS #	Parameter	CHS21	VAL	CHS23	VAL	CHS23	VAL	CHS23	VAL	CHS23	VAL	CHS23	VAL
7429-90-5	Aluminum (Al)	3240.		5000.		8180.		8510.		5640.		4420.	
7439-89-6	Iron (Fe)	2910.		5130.		8640.		8610.		6150.		4000.	
7439-92-1	Lead (Pb)	2.4	J	4.6	J	89.7		6.3		7.4		18.8	
7440-02-0	Nickel (Ni)	1.1	J	6.6	J	29.6	J	11.7	J	17.1	J	3.	U
7440-09-7	Potassium (K)	111.	U	282.	J	779.	J	675.	J	814.	J	233.	J
7440-22-4	Silver (Ag)	0.16	U	1.1	U	1.1	U	0.99	U	1.1	U	0.92	U
7440-23-5	Sodium (Na)	192.		356.	J	845.	J	475.	J	1010.	J	1460.	
7440-28-0	Thallium (Tl)	0.19	UJ	1.1	U	1.1	U	0.99	U	1.1	U	0.92	U
7440-36-0	Antimony (Sb)	0.8	U	8.1	UJ	8.9	UJ	8.3	UJ	11.1	UJ	7.9	UJ
7440-38-2	Arsenic (As)	2.9		5.9		8.4		6.2		8.5		2.8	
7440-39-3	Barium (Ba)	5.	J	28.6	J	29.9	J	14.8	J	13.9	J	10.4	J
7440-41-7	Beryllium (Be)	0.14	J	0.54	J	0.42	J	0.39	J	0.48	J	0.23	U
7440-43-9	Cadmium (Cd)	0.1	U	0.81	U	0.8	U	0.74	U	0.82	U	0.69	U
7440-48-4	Cobalt (Co)	1.2	J	1.	J	2.5	J	1.7	J	1.	J	1.	J
7440-50-8	Copper (Cu)	0.97	J	4.6	J	126.		8.5		10.1		5.2	J
7440-62-2	Vanadium (V)	5.4		14.8		30.8		21.7		28.5		12.2	
7440-66-6	Zinc (Zn)	8.		24.1		125.		39.2		47.7		34.2	
7782-49-2	Selenium (Se)	0.19	U	1.1	U	1.6		0.99	U	1.7		0.92	U
7439-97-6	Mercury (Hg)	0.02	U	0.13	U	0.13	U	0.12	U	0.14	U	0.15	
7439-95-4	Magnesium (Mg)	442.		1340.	J	2890.		2840.		4780.		868.	J
7439-96-5	Manganese (Mn)	24.6		55.8		175.		109.		51.1		41.9	
7440-70-2	Calcium (Ca)	23600.		37900.		94800.		82300.		223000.		18200.	
7440-47-3	Chromium (Cr)	4.9		19.		63.5		27.8		53.9		20.3	
7440-31-5	Tin (Sn)	??????????		??????????		??????????		??????????		??????????		??????????	

*** Validation Complete ***

CHARLESTON - ZONE H
Surface Soil Grid Samples
Metals Only

SW846-META													
	SAMPLE ID ------>	GDH-S-B079-01		GDH-S-B080-01		GDH-S-B081-01		GDH-S-B082-01		GDH-S-B083-01		GDH-S-B084-01	
	ORIGINAL ID ------>	GDHSB07901		GDHSB08001		GDHSB08101		GDHSB08201		GDHSB08301		GDHSB08401	
	LAB SAMPLE ID --->	252522		252549		252565		252573		252590		42136-018	
	ID FROM REPORT -->	102210		102212		102214		102215		102217		GDHSB08401	
	SAMPLE DATE ----->	10/21/94		10/21/94		10/21/94		10/22/94		10/22/94		11/09/94	
	DATE EXTRACTED -->	11/10/94		11/10/94		11/10/94		11/10/94		11/10/94		11/14/94	
	DATE ANALYZED --->	11/11/94		11/11/94		11/11/94		11/11/94		11/11/94		11/19/94	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A
CAS #	Parameter	CHS23	VAL	CHS23	VAL	CHS23	VAL	CHS23	VAL	CHS23	VAL	CHS25	VAL
7429-90-5	Aluminum (Al)	26600.		8490.		10600.		10800.		3160.		9390.	
7439-89-6	Iron (Fe)	28100.		5880.		7080.		7730.		4820.		14500.	
7439-92-1	Lead (Pb)	69.6		42.7		9.2		15.7		7.6		27.2	U
7440-02-0	Nickel (Ni)	21.3	J	9.7	J	5.	J	10.3	J	13.9	J	39.9	
7440-09-7	Potassium (K)	2110.		446.	J	336.	J	732.	J	660.	J	1580.	U
7440-22-4	Silver (Ag)	1.1	U	0.91	U	0.91	U	0.98	U	0.92	U	3.4	U
7440-23-5	Sodium (Na)	301.	J	165.	J	285.	J	404.	J	1350.		638.	U
7440-28-0	Thallium (Tl)	1.1	U	0.91	U	0.91	U	0.98	U	0.92	U	0.47	J
7440-36-0	Antimony (Sb)	8.2	UJ	6.8	UJ	6.8	UJ	13.6	UJ	9.2	UJ	15.9	U
7440-38-2	Arsenic (As)	13.5		3.5		4.4		7.8		8.5		12.7	U
7440-39-3	Barium (Ba)	42.5	J	31.2	J	22.7	J	26.7	J	14.9	J	10.1	J
7440-41-7	Beryllium (Be)	1.2	J	0.23	U	0.25	J	0.43	J	0.52	J	0.8	J
7440-43-9	Cadmium (Cd)	1.2	J	0.68	U	0.68	U	0.74	U	0.98	J	2.1	U
7440-48-4	Cobalt (Co)	7.7	J	1.2	J	1.8	J	2.3	J	1.2	J	4.2	J
7440-50-8	Copper (Cu)	35.8		9.2		4.	J	8.2		7.5		16.9	J
7440-62-2	Vanadium (V)	66.5		24.1		21.8		23.		17.5		38.1	
7440-66-6	Zinc (Zn)	160.		51.7		19.7		41.9		32.3		79.	
7782-49-2	Selenium (Se)	2.		1.2		0.91	U	0.98	U	2.6		2.1	J
7439-97-6	Mercury (Hg)	0.34		0.11	U	0.11	U	0.12	U	0.11	U	0.03	U
7439-95-4	Magnesium (Mg)	4570.		1230.		943.	J	2830.		3320.		3330.	
7439-96-5	Manganese (Mn)	597.		43.4		25.4		57.		36.4		195.	
7440-70-2	Calcium (Ca)	35400.		21300.		23200.		62000.		141000.		148000.	
7440-47-3	Chromium (Cr)	65.6		22.2		17.4		30.8		35.		51.7	
7440-31-5	Tin (Sn)	??????????		??????????		??????????		??????????		??????????		??????????	

*** Validation Complete ***

CHARLESTON - ZONE H
Surface Soil Grid Samples
Metals Only

SW846-META													
	SAMPLE ID ------>	GDH-S-B085-01		GDH-S-B086-01		GDH-S-B087-01		GDH-S-B088-01		GDH-S-B089-01		GDH-S-B090-01	
	ORIGINAL ID ----->	GDHSB08501		GDHSB08601		GDHSB08701		GDHSB08801		GDHSB08901		GDHSB09001	
	LAB SAMPLE ID --->	42136-020		42347-013		42347-015		42347-017		42430-008		42430-009	
	ID FROM REPORT -->	GDHSB08501		GDHSB08601		GDHSB08701		GDHSB08801		GDHSB08901		GDHSB09001	
	SAMPLE DATE ----->	11/09/94		11/22/94		11/22/94		11/22/94		11/30/94		11/30/94	
	DATE EXTRACTED -->	11/14/94		12/16/94		12/16/94		12/16/94		12/16/94		12/16/94	
	DATE ANALYZED --->	11/21/94		12/22/94		12/22/94		12/21/94		12/22/94		12/22/94	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A
CAS #	Parameter	CHS25	VAL	CHS27	VAL	CHS27	VAL	CHS27	VAL	CHS27	VAL	CHS27	VAL
7429-90-5	Aluminum (Al)	8550.		4400.		10800.		8670.		17400.		22300.	
7439-89-6	Iron (Fe)	7830.		5970.		9090.		9580.		25500.		36700.	
7439-92-1	Lead (Pb)	32.3	U	1.6	UJ	8.7	UJ	19.6	J	20.3		41.3	
7440-02-0	Nickel (Ni)	29.2	J	91.8		80.8		11.7		16.1		17.1	
7440-09-7	Potassium (K)	1580.	J	797.	J	1050.	J	755.		1320.		2010.	
7440-22-4	Silver (Ag)	4.	U	2.3	U	2.	U	0.41	U	0.37	U	0.49	U
7440-23-5	Sodium (Na)	1200.	U	933.		833.		422.		643.		1260.	
7440-28-0	Thallium (Tl)	0.55	J	0.77	UJ	0.7	UJ	0.7	UJ	0.64	UJ	0.84	UJ
7440-36-0	Antimony (Sb)	18.9	U	10.7	U	9.6	U	1.9	U	1.8	U	2.3	U
7440-38-2	Arsenic (As)	8.	U	7.3		6.7		5.7		16.	U	16.1	U
7440-39-3	Barium (Ba)	5.3	U	0.53	U	14.5	J	24.9		32.1		34.	
7440-41-7	Beryllium (Be)	0.84	J	0.42	U	0.61	U	0.79		0.82		1.2	
7440-43-9	Cadmium (Cd)	2.5	U	1.4	U	1.3	U	0.25	U	0.23	U	0.3	U
7440-48-4	Cobalt (Co)	2.8	U	2.3	U	3.9	U	4.1	U	5.	U	6.6	U
7440-50-8	Copper (Cu)	6.4	J	10.1	U	10.2	U	5.5	U	16.2	U	20.7	U
7440-62-2	Vanadium (V)	39.		28.6		32.1		19.7		45.9		71.7	
7440-66-6	Zinc (Zn)	59.3	U	54.2		53.7	U	34.4	U	57.9	U	112.	
7782-49-2	Selenium (Se)	2.1	J	1.5	UJ	1.1	UJ	0.41	UJ	0.36	UJ	1.1	UJ
7439-97-6	Mercury (Hg)	0.03	U	0.03	U	0.04	J	0.03	U	0.09		0.17	
7439-95-4	Magnesium (Mg)	5960.		6210.		7850.		2330.		3810.		5310.	
7439-96-5	Manganese (Mn)	74.		36.9		79.9		135.		448.		518.	
7440-70-2	Calcium (Ca)	208000.		264000.		177000.		45800.		35000.		9460.	
7440-47-3	Chromium (Cr)	63.8		114.		107.		24.4		36.4		87.6	
7440-31-5	Tin (Sn)	??????????		??????????		??????????		??????????		??????????		??????????	

*** Validation Complete ***

CHARLESTON - ZONE H
Surface Soil Grid Samples
Metals Only

SW846-METAL	SAMPLE ID ------>	GDH-S-B091-01		GDH-S-B092-01		GDH-S-B093-01		GDH-S-B104-01		GDH-S-B105-01		GDH-S-B107-01	
	ORIGINAL ID ------>	GDHSB09101		GDHSB09201		GDHSB09301		GDHSB10401		GDHSB10501		GDHSB10701	
	LAB SAMPLE ID --->	42430-010		42574-009		42613-004		42985-009		42985-011		43002-006	
	ID FROM REPORT -->	GDHSB09101		GDHSB09201		GDHSB09301		GDHSB10401		GDHSB10501		GDHSB10701	
	SAMPLE DATE ----->	11/30/94		12/14/94		12/19/94		02/06/95		02/06/95		02/07/95	
	DATE EXTRACTED -->	12/16/94		12/29/94		12/29/94		02/08/95		02/08/95		02/10/95	
	DATE ANALYZED --->	12/21/94		01/03/95		12/30/94		02/09/95		02/09/95		02/13/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A
CAS #	Parameter	CHS27	VAL	CHS28	VAL	CHS28	VAL	CHS34	VAL	CHS34	VAL	CHS34	VAL
7429-90-5	Aluminum (Al)	4630.		17700.		4470.		6650.		7600.		3300.	
7439-89-6	Iron (Fe)	3880.		17500.		3400.		3170.		5390.		1350.	
7439-92-1	Lead (Pb)	8.2	U	12.		4.9		16.1	J	17.9	J	2.3	J
7440-02-0	Nickel (Ni)	3.4		12.9		1.9	U	5.3		6.2		1.3	J
7440-09-7	Potassium (K)	244.		1310.		183.	UJ	215.	U	442.	U	127.	U
7440-22-4	Silver (Ag)	0.24	U	0.36	U	0.26	U	0.2	U	0.16	U	0.19	U
7440-23-5	Sodium (Na)	330.		561.		55.7	J	41.1	J	300.		10.2	J
7440-28-0	Thallium (Tl)	0.4	UJ	0.12	J	0.08	UJ	0.39	U	0.31	U	0.36	U
7440-36-0	Antimony (Sb)	1.1	U	1.7	UJ	1.2	UJ	1.2	U	1.	U	1.2	U
7440-38-2	Arsenic (As)	3.3	U	9.6	J	1.3	J	1.4	J	5.4	J	0.64	J
7440-39-3	Barium (Ba)	14.5		19.5	U	7.6	U	13.6		17.3		3.3	U
7440-41-7	Beryllium (Be)	0.24	U	0.69	U	0.1	U	0.12	J	0.27	J	0.06	J
7440-43-9	Cadmium (Cd)	0.15	U	0.22	U	0.16	U	0.15	UJ	0.21	J	0.14	UJ
7440-48-4	Cobalt (Co)	1.4	U	3.8	U	1.1	U	1.1	U	1.5	U	1.4	U
7440-50-8	Copper (Cu)	2.6	U	12.9	U	3.	U	3.1	J	4.6	J	0.55	UJ
7440-62-2	Vanadium (V)	8.5		33.5		6.8	U	27.2		19.4		4.1	
7440-66-6	Zinc (Zn)	15.2	U	53.8		6.9	U	14.2		33.5		7.5	
7782-49-2	Selenium (Se)	0.23	UJ	0.93	J	0.07	UJ	0.36	U	0.29	U	0.34	U
7439-97-6	Mercury (Hg)	0.02	J	0.05	J	0.02	J	0.02	J	0.03	U	0.19	U
7439-95-4	Magnesium (Mg)	717.		3150.		463.		468.		1290.		184.	
7439-96-5	Manganese (Mn)	31.7		281.		36.1		26.2		49.9		5.8	
7440-70-2	Calcium (Ca)	6870.		66200.		23600.		13500.		33000.		169.	
7440-47-3	Chromium (Cr)	13.1		35.2		4.6	U	12.2		17.5		4.8	
7440-31-5	Tin (Sn)	??????????		??????????		??????????		??????????		??????????		??????????	

*** Validation Complete ***

CHARLESTON - ZONE H
Surface Soil Grid Samples
Metals Only

SW846-METAL	SAMPLE ID ------>	SGC-S-B001-01		SGC-S-B002-01		SGC-S-B003-01		SGC-S-B004-01		SGC-S-B005-01		SGC-S-B006-01	
	ORIGINAL ID ----->	SGCSB00101		SGCSB00201		SGCSB00301		SGCSB00401		SGCSB00501		SGCSB00601	
	LAB SAMPLE ID --->	41790-023		41790-021		41790-024		41790-026		41790-027		41790-028	
	ID FROM REPORT -->	101105		101103		101106		101108		101109		101110	
	SAMPLE DATE ----->	10/10/94		10/10/94		10/10/94		10/10/94		10/10/94		10/10/94	
	DATE EXTRACTED -->	10/14/94		10/14/94		10/14/94		10/14/94		10/14/94		10/14/94	
	DATE ANALYZED ---->	10/20/94		10/20/94		10/20/94		10/18/94		10/20/94		10/18/94	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A
CAS #	Parameter	CHS20	VAL	CHS20	VAL	CHS20	VAL	CHS20	VAL	CHS20	VAL	CHS20	VAL
7429-90-5	Aluminum (Al)	1030.		8760.		874.		3980.		8990.		3940.	
7439-89-6	Iron (Fe)	3740.		1650.		3870.		2140.		13800.		2070.	
7439-92-1	Lead (Pb)	9.8	U	2.	J	16.1	U	1.6	J	5.5		10.5	
7440-02-0	Nickel (Ni)	4.1	J	1.5	J	6.6	U	1.7	J	2.4	J	1.8	J
7440-09-7	Potassium (K)	449.	J	214.	J	471.	U	119.	J	274.	J	136.	J
7440-22-4	Silver (Ag)	1.6	U	0.18	U	2.6	U	0.19	U	0.24	U	0.23	U
7440-23-5	Sodium (Na)	133.	J	213.		130.	J	26.8	J	145.		19.2	J
7440-28-0	Thallium (Tl)	0.18	UJ	0.21	UJ	0.3	UJ	0.21	UJ	0.27	UJ	0.26	UJ
7440-36-0	Antimony (Sb)	7.6	U	0.89	U	12.5	U	0.91	U	1.1	U	1.1	U
7440-38-2	Arsenic (As)	2.1		1.		8.3		1.3		4.		1.2	
7440-39-3	Barium (Ba)	0.52	U	18.2		0.86	U	0.4	J	29.4		9.	
7440-41-7	Beryllium (Be)	0.17	U	0.37		0.29	U	0.08	J	0.3	J	0.11	J
7440-43-9	Cadmium (Cd)	0.93	U	0.11	U	1.5	U	0.11	U	0.14	U	0.13	U
7440-48-4	Cobalt (Co)	41.8		1.	J	2.7	U	0.63	J	0.9	J	0.53	J
7440-50-8	Copper (Cu)	4.1	J	2.7		3.5	J	0.47	J	0.83	J	2.1	
7440-62-2	Vanadium (V)	5.1	J	8.3		4.1	J	4.		15.4		5.5	
7440-66-6	Zinc (Zn)	24.1		7.7		34.5		4.		9.2		13.1	
7782-49-2	Selenium (Se)	0.18	U	0.21	U	0.3	U	0.21	U	0.27	U	0.26	U
7439-97-6	Mercury (Hg)	0.03	J	0.03	U	0.02	U	0.02	U	0.03	U	0.03	J
7439-95-4	Magnesium (Mg)	2200.		287.		2700.		379.		514.		538.	
7439-96-5	Manganese (Mn)	164.		32.7		163.		21.4		26.1		26.8	
7440-70-2	Calcium (Ca)	213000.		79000.		284000.		33100.		7590.		2200.	
7440-47-3	Chromium (Cr)	3.7	J	7.		5.5	J	3.8		12.2		26.1	
7440-31-5	Tin (Sn)	??????????		??????????		??????????		??????????		??????????		??????????	

*** Validation Complete ***

CHARLESTON - ZONE H
Surface Soil Grid Samples
Metals Only

SW846-META										
	SAMPLE ID ------>	SGC-S-B007-01		SGC-S-B008-01						
	ORIGINAL ID ------>	SGCSB00701		SGCSB00801						
	LAB SAMPLE ID --->	41821-012		41806-029						
	ID FROM REPORT -->	101301		101207						
	SAMPLE DATE ----->	10/12/94		10/11/94						
	DATE EXTRACTED -->	10/18/94		10/18/94						
	DATE ANALYZED ---->	10/19/94		10/19/94						
	MATRIX ---------->	Soil		Soil						
	UNITS ---------->	MG/KG	A	MG/KG	A					
CAS #	Parameter	CHS21	VAL	CHS21	VAL					
7429-90-5	Aluminum (Al)	4010.		2150.						
7439-89-6	Iron (Fe)	3090.		3080.						
7439-92-1	Lead (Pb)	19.8		25.7						
7440-02-0	Nickel (Ni)	1.6	J	2.9	J					
7440-09-7	Potassium (K)	169.	U	182.	U					
7440-22-4	Silver (Ag)	0.29	U	0.26	U					
7440-23-5	Sodium (Na)	22.4	J	67.3	J					
7440-28-0	Thallium (Tl)	0.33	UJ	0.3	UJ					
7440-36-0	Antimony (Sb)	1.4	U	1.2	U					
7440-38-2	Arsenic (As)	2.9		3.2						
7440-39-3	Barium (Ba)	21.2		10.8						
7440-41-7	Beryllium (Be)	0.14	J	0.15	J					
7440-43-9	Cadmium (Cd)	0.22	J	0.24	J					
7440-48-4	Cobalt (Co)	0.8	J	0.94	J					
7440-50-8	Copper (Cu)	3.8		9.8						
7440-62-2	Vanadium (V)	6.6		11.4						
7440-66-6	Zinc (Zn)	16.2		51.2						
7782-49-2	Selenium (Se)	0.33	U	0.3	U					
7439-97-6	Mercury (Hg)	0.03	J	0.07						
7439-95-4	Magnesium (Mg)	476.		496.						
7439-96-5	Manganese (Mn)	33.5		39.5						
7440-70-2	Calcium (Ca)	1900.		9160.						
7440-47-3	Chromium (Cr)	6.3		13.9						
7440-31-5	Tin (Sn)	??????????		??????????						

*** Validation Complete ***

CHARLESTON - ZONE H
Subsurface Soil Grid Samples
Metals Only

SW846-METAL	SAMPLE ID ------>	GDH-S-B001-02		GDH-S-B002-02		GDH-S-B003-02		GDH-S-B004-02		GDH-S-B006-02		GDH-S-B007-02	
	ORIGINAL ID ----->	GDHSB00102		GDHSB00202		GDHSB00302		GDHSB00402		GDHSB00602		GDHSB00702	
	LAB SAMPLE ID --->	41665-040		41665-042		41665-044		41665-046		41665-050		41665-052	
	ID FROM REPORT -->	092807		092809		092811		092813		092817		092819	
	SAMPLE DATE ----->	09/27/94		09/27/94		09/27/94		09/27/94		09/27/94		09/27/94	
	DATE EXTRACTED -->	10/05/94		10/05/94		10/05/94		10/05/94		10/05/94		10/05/94	
	DATE ANALYZED --->	10/06/94		10/06/94		10/06/94		10/06/94		10/06/94		10/06/94	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A
CAS #	Parameter	CHS15	VAL	CHS15	VAL	CHS15	VAL	CHS15	VAL	CHS15	VAL	CHS15	VAL
7429-90-5	Aluminum (Al)	7180.	J	5760.	J	5770.	J	3750.	J	3510.	J	6140.	J
7439-89-6	Iron (Fe)	7030.		4310.		5730.		4230.		3480.		12100.	
7439-92-1	Lead (Pb)	19.8	U	28.	J	21.1	J	23.7	U	19.		37.2	
7440-02-0	Nickel (Ni)	17.3	J	7.	J	21.7	J	17.9	J	2.	J	5.2	
7440-09-7	Potassium (K)	835.	J	978.	J	1180.	J	690.	U	212.	J	563.	
7440-22-4	Silver (Ag)	3.2	UJ	2.5	UJ	2.8	UJ	3.8	UJ	0.22	UJ	0.21	UJ
7440-23-5	Sodium (Na)	865.	J	477.	J	1290.	J	907.	J	54.4	J	161.	J
7440-28-0	Thallium (Tl)	0.36	U	0.29	U	0.32	U	0.43	U	0.26	U	0.24	U
7440-36-0	Antimony (Sb)	15.4	U	12.2	U	13.4	U	18.3	U	1.1	U	1.5	J
7440-38-2	Arsenic (As)	6.6		4.7		5.7		5.6		2.4		7.3	
7440-39-3	Barium (Ba)	6.7	J	0.84	U	0.92	U	1.3	U	9.5		11.2	
7440-41-7	Beryllium (Be)	0.6	J	0.48	J	0.55	J	0.5	J	0.23	J	0.41	
7440-43-9	Cadmium (Cd)	1.9	U	1.5	U	1.6	U	2.2	U	0.13	U	0.88	
7440-48-4	Cobalt (Co)	4.4	J	2.6	U	3.4	J	3.9	U	1.5	J	2.3	
7440-50-8	Copper (Cu)	22.3		10.3	J	11.8	J	8.4	J	2.8		23.5	
7440-62-2	Vanadium (V)	23.9		16.7		30.2		27.3		6.5		18.	
7440-66-6	Zinc (Zn)	90.2		38.8		65.6		53.3		11.7		233.	
7782-49-2	Selenium (Se)	1.1	J	0.7	J	1.4		1.7		0.26	U	0.24	U
7439-97-6	Mercury (Hg)	0.06	J	0.11	J	0.08	UJ	0.05	J	0.03	J	1.1	J
7439-95-4	Magnesium (Mg)	5230.		3150.		6670.		4330.		470.		1180.	
7439-96-5	Manganese (Mn)	45.6		39.1		51.3		19.2		67.1		153.	
7440-70-2	Calcium (Ca)	146000.		134000.		242000.		295000.		13500.		11800.	
7440-47-3	Chromium (Cr)	51.6		30.4		61.8		58.6		6.9		19.6	
7440-31-5	Tin (Sn)	?????????		?????????		?????????		?????????		?????????		?????????	

*** Validation Complete ***

CHARLESTON - ZONE H
Subsurface Soil Grid Samples
Metals Only

SW846-META	SAMPLE ID ------->	GDH-S-B008-02		GDH-S-B009-02		GDH-S-B010-02		GDH-S-B011-02		GDH-S-B012-02		GDH-S-B013-02	
	ORIGINAL ID ----->	GDHSB00802		GDHSB00902		GDHSB01002		GDHSB01102		GDHSB01202		GDHSB01302	
	LAB SAMPLE ID --->	41665-054		41665-057		41665-056		41667-010		41667-012		41693-019	
	ID FROM REPORT -->	092821		092824		092823		092826		092828		093004	
	SAMPLE DATE ----->	09/27/94		09/27/94		09/27/94		09/27/94		09/27/94		09/29/94	
	DATE EXTRACTED -->	10/05/94		10/05/94		10/05/94		09/29/94		09/29/94		10/05/94	
	DATE ANALYZED --->	10/06/94		10/06/94		10/06/94		10/03/94		10/03/94		10/06/94	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A
CAS #	Parameter	CHS15	VAL	CHS15	VAL	CHS15	VAL	CHS14	VAL	CHS14	VAL	CHS16	VAL
7429-90-5	Aluminum (Al)	27600.	J	5010.	J	15300.	J	18400.		4810.		5840.	
7439-89-6	Iron (Fe)	34200.		1900.		21000.		27100.		4540.		5950.	
7439-92-1	Lead (Pb)	36.2		6.4		22.1		36.3		10.7	U	19.6	U
7440-02-0	Nickel (Ni)	12.7		0.74	J	7.4		11.		23.6		3.9	
7440-09-7	Potassium (K)	1820.		60.1	J	910.		1610.		1360.	J	374.	
7440-22-4	Silver (Ag)	0.33	UJ	0.24	UJ	0.41	UJ	0.28	U	1.7	U	0.32	U
7440-23-5	Sodium (Na)	132.	J	11.3	J	63.1	J	463.		1420.		45.5	J
7440-28-0	Thallium (Tl)	0.38	U	0.27	U	0.47	U	0.41	U	0.36	U	0.37	UJ
7440-36-0	Antimony (Sb)	1.6	U	1.1	U	2.	U	1.3	U	8.3	U	1.6	U
7440-38-2	Arsenic (As)	16.6		0.78	J	4.5		14.3	J	8.	J	5.4	
7440-39-3	Barium (Ba)	33.4		5.3	J	23.6		25.3		0.57	U	25.2	
7440-41-7	Beryllium (Be)	1.3		0.06	J	0.58	J	0.87		0.54	J	0.33	J
7440-43-9	Cadmium (Cd)	0.2	U	0.14	U	0.24	U	0.16	U	1.2	J	0.19	U
7440-48-4	Cobalt (Co)	7.2		0.27	J	3.2	J	5.4		1.8	U	1.9	J
7440-50-8	Copper (Cu)	21.9		0.66	J	10.6		22.		10.8	J	7.	
7440-62-2	Vanadium (V)	65.1		3.8		42.5		53.5		40.		12.5	
7440-66-6	Zinc (Zn)	73.8		1.8		37.4		93.7		58.	U	22.1	
7782-49-2	Selenium (Se)	1.3		0.27	U	0.47	U	1.8	J	2.7	J	0.37	U
7439-97-6	Mercury (Hg)	0.2	J	0.04	J	0.17	J	0.24		0.03	U	0.25	U
7439-95-4	Magnesium (Mg)	3570.		79.6		1450.		3800.		6370.		629.	
7439-96-5	Manganese (Mn)	582.		8.6		115.		483.		24.9		124.	
7440-70-2	Calcium (Ca)	7710.		961.		3540.		15300.		320000.		2340.	
7440-47-3	Chromium (Cr)	49.6		6.6		30.5		41.		64.9		11.6	
7440-31-5	Tin (Sn)	??????????		??????????		??????????		??????????		??????????		??????????	

*** Validation Complete ***

CHARLESTON - ZONE H
Subsurface Soil Grid Samples
Metals Only

SW846-META	SAMPLE ID ------>	GDH-S-B014-02	GDH-S-B015-02	GDH-S-B016-02	GDH-S-B017-02	GDH-S-B019-02	GDH-S-B020-02
	ORIGINAL ID ----->	GDHSB01402	GDHSB01502	GDHSB01602	GDHSB01702	GDHSB01902	GDHSB02002
	LAB SAMPLE ID --->	41693-021	41693-023	41693-025	41713-021	41713-024	41713-027
	ID FROM REPORT -->	093006	093008	093010	100402	100405	100408
	SAMPLE DATE ----->	09/29/94	09/29/94	09/29/94	10/03/94	10/03/94	10/03/94
	DATE EXTRACTED -->	10/05/94	10/05/94	10/05/94	10/05/94	10/05/94	10/05/94
	DATE ANALYZED --->	10/07/94	10/07/94	10/07/94	10/07/94	10/06/94	10/07/94
	MATRIX ---------->	Soil	Soil	Soil	Soil	Soil	Soil
	UNITS ---------->	MG/KG A	MG/KG A	MG/KG A	MG/KG A	MG/KG A	MG/KG A

CAS #	Parameter	CHS16	VAL	CHS16	VAL	CHS16	VAL	CHS16	VAL	CHS16	VAL	CHS16	VAL
7429-90-5	Aluminum (Al)	11600.		19600.		7970.		20700.		2980.		5480.	
7439-89-6	Iron (Fe)	18300.		33600.		13000.		32900.		3610.		5310.	
7439-92-1	Lead (Pb)	19.3	U	39.4		33.9		31.7		3.4	U	16.8	U
7440-02-0	Nickel (Ni)	12.3		10.9		4.8		11.5		0.63	U	21.9	J
7440-09-7	Potassium (K)	1650.		1950.		642.		2050.		176.	J	1220.	J
7440-22-4	Silver (Ag)	0.31	U	0.44	U	0.2	U	0.41	U	0.25	U	2.7	U
7440-23-5	Sodium (Na)	268.		1350.		127.		1450.		49.5	J	811.	J
7440-28-0	Thallium (Tl)	0.36	U	0.51	UJ	0.23	UJ	0.48	UJ	0.28	UJ	0.31	UJ
7440-36-0	Antimony (Sb)	1.5	U	2.2	U	0.96	U	2.	U	1.2	U	19.4	J
7440-38-2	Arsenic (As)	11.		18.5		10.3		12.3		1.6		4.6	
7440-39-3	Barium (Ba)	13.7		26.6		23.4		26.8		8.9	J	0.89	U
7440-41-7	Beryllium (Be)	0.88		1.		0.49		1.		0.07	J	0.53	J
7440-43-9	Cadmium (Cd)	0.19	U	0.26	U	0.12	U	0.25	U	0.15	U	1.6	U
7440-48-4	Cobalt (Co)	4.6		6.6		2.7		5.6		0.26	U	4.6	J
7440-50-8	Copper (Cu)	13.3		21.2		8.4		18.1		0.64	J	6.7	J
7440-62-2	Vanadium (V)	31.3		62.3		27.6		56.3		8.		30.8	
7440-66-6	Zinc (Zn)	60.1		72.4		44.1		70.7		2.2		42.1	
7782-49-2	Selenium (Se)	0.36	UJ	0.51	U	0.23	U	0.48	U	0.28	U	1.1	
7439-97-6	Mercury (Hg)	0.78	J	1.3		0.49	J	0.97		0.19	U	0.28	U
7439-95-4	Magnesium (Mg)	4160.		4080.		1590.		3900.		153.		9100.	
7439-96-5	Manganese (Mn)	254.		501.		156.		707.		5.6		82.6	
7440-70-2	Calcium (Ca)	63300.		6060.		20000.		5800.		1570.		189000.	
7440-47-3	Chromium (Cr)	31.8		44.7		18.2		41.5		5.4		47.9	
7440-31-5	Tin (Sn)	??????????		??????????		??????????		??????????		??????????		??????????	

*** Validation Complete ***

CHARLESTON - ZONE H
Subsurface Soil Grid Samples
Metals Only

SW846-META													
	SAMPLE ID ------>	GDH-S-B023-02		GDH-S-B026-02		GDH-S-B027-02		GDH-S-B031-02		GDH-S-B032-02		GDH-S-B033-02	
	ORIGINAL ID ----->	GDHSB02302		GDHSB02602		GDHSB02702		GDHSB03102		GDHSB03202		GDHSB03302	
	LAB SAMPLE ID --->	41734-051		41734-055		41734-057		41734-042		41734-044		41734-046	
	ID FROM REPORT -->	100511		100515		100517		100502		100504		100506	
	SAMPLE DATE ----->	10/04/94		10/04/94		10/04/94		10/04/94		10/04/94		10/04/94	
	DATE EXTRACTED -->	10/10/94		10/10/94		10/10/94		10/10/94		10/10/94		10/10/94	
	DATE ANALYZED --->	10/17/94		10/11/94		10/17/94		10/17/94		10/17/94		10/17/94	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A
CAS #	Parameter	CHS17	VAL	CHS17	VAL	CHS17	VAL	CHS17	VAL	CHS17	VAL	CHS17	VAL
7429-90-5	Aluminum (Al)	8670.		3310.		6320.		6850.		21600.		15500.	
7439-89-6	Iron (Fe)	7590.		2840.		6060.		4650.		30800.		13100.	
7439-92-1	Lead (Pb)	6.5		2.1	J	14.	U	14.6	U	24.6		27.5	
7440-02-0	Nickel (Ni)	5.2	U	1.7	U	19.	J	6.	U	10.4		10.6	
7440-09-7	Potassium (K)	726.		173.	J	578.	J	426.	U	1780.		941.	
7440-22-4	Silver (Ag)	0.23	UJ	0.2	UJ	2.2	UJ	2.3	UJ	0.24	UJ	0.38	UJ
7440-23-5	Sodium (Na)	274.		135.		1060.		883.		767.		350.	
7440-28-0	Thallium (Tl)	0.26	U	0.23	U	0.26	U	0.27	U	0.55	U	0.43	U
7440-36-0	Antimony (Sb)	1.5	U	0.96	U	10.9	U	11.3	U	1.2	U	1.8	U
7440-38-2	Arsenic (As)	6.7		2.5	U	8.3		5.		13.5		8.2	
7440-39-3	Barium (Ba)	11.5		6.3	U	28.8	J	0.78	U	27.6		23.6	
7440-41-7	Beryllium (Be)	0.41	J	0.13	J	0.96	J	0.28	J	1.		0.46	J
7440-43-9	Cadmium (Cd)	0.13	U	0.12	U	1.3	U	1.4	U	0.14	U	0.22	U
7440-48-4	Cobalt (Co)	2.2	U	0.52	U	2.3	U	2.4	U	5.3		3.1	J
7440-50-8	Copper (Cu)	3.6	U	1.7	U	4.8	U	2.2	U	18.5		14.6	
7440-62-2	Vanadium (V)	19.3		8.6		33.1		12.6		56.5		33.9	
7440-66-6	Zinc (Zn)	19.4		7.2	U	49.2		13.8	J	64.8		52.8	
7782-49-2	Selenium (Se)	0.26	U	0.23	U	0.89		0.27	U	0.55	U	0.43	U
7439-97-6	Mercury (Hg)	0.03	U	0.02	U	0.04	U	0.04	U	0.21		0.97	
7439-95-4	Magnesium (Mg)	1370.		522.		6120.		1950.		4010.		3000.	
7439-96-5	Manganese (Mn)	51.9		16.7		92.8		38.8		791.		284.	
7440-70-2	Calcium (Ca)	22800.		12500.		190000.		120000.		5910.		38800.	
7440-47-3	Chromium (Cr)	16.5		11.9		45.6		16.		39.3		57.3	
7440-31-5	Tin (Sn)	??????????		??????????		??????????		??????????		??????????		??????????	

*** Validation Complete ***

CHARLESTON - ZONE H
Subsurface Soil Grid Samples
Metals Only

SW846-META													
	SAMPLE ID ------>	GDH-S-B034-02		GDH-S-B037-02		GDH-S-B038-02		GDH-S-B039-02		GDH-S-B040-02		GDH-S-B042-02	
	ORIGINAL ID ----->	GDHSB03402		GDHSB03702		GDHSB03802		GDHSB03902		GDHSB04002		GDHSB04202	
	LAB SAMPLE ID --->	41734-048		41742-038		41742-040		41742-042		41742-044		41742-047	
	ID FROM REPORT -->	100508		GDHSB03702		GDHSB03802		GDHSB03902		GDHSB04002		GDHSB04202	
	SAMPLE DATE ----->	10/04/94		10/05/94		10/05/94		10/05/94		10/05/94		10/05/94	
	DATE EXTRACTED -->	10/10/94		10/11/94		10/11/94		10/11/94		10/11/94		10/11/94	
	DATE ANALYZED --->	10/17/94		10/17/94		10/18/94		10/18/94		10/18/94		10/17/94	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A
CAS #	Parameter	CHS17	VAL	CHS18	VAL	CHS18	VAL	CHS18	VAL	CHS18	VAL	CHS18	VAL
7429-90-5	Aluminum (Al)	31700.		9140.		13500.		32600.		19100.		2770.	
7439-89-6	Iron (Fe)	46800.		8620.		12000.		30000.		34900.		3530.	
7439-92-1	Lead (Pb)	37.3		23.9		16.		18.4		23.		1.9	U
7440-02-0	Nickel (Ni)	14.		11.3		7.7		29.5		12.3		5.9	
7440-09-7	Potassium (K)	2650.		760.		828.		2800.		1400.		449.	J
7440-22-4	Silver (Ag)	0.42	UJ	0.31	UJ	0.34	UJ	0.55	UJ	0.36	UJ	0.31	UJ
7440-23-5	Sodium (Na)	889.		236.		144.		1600.		123.	J	1090.	
7440-28-0	Thallium (Tl)	0.97	U	0.41	J	0.46	J	1.3	J	1.2	J	0.35	UJ
7440-36-0	Antimony (Sb)	2.	U	1.5	U	1.7	U	2.6	U	2.5	U	1.5	U
7440-38-2	Arsenic (As)	22.3		5.2		9.6		18.3		22.8		4.9	
7440-39-3	Barium (Ba)	35.3		27.1		19.3		24.3		28.8		0.1	U
7440-41-7	Beryllium (Be)	1.3		0.52	J	0.58	J	1.3		1.2		0.32	J
7440-43-9	Cadmium (Cd)	0.25	U	0.18	U	0.2	U	0.52	J	0.21	U	0.18	U
7440-48-4	Cobalt (Co)	7.1		2.7	J	3.	J	6.6		6.		0.95	J
7440-50-8	Copper (Cu)	24.5		20.2		8.4		20.1		17.9		2.2	J
7440-62-2	Vanadium (V)	73.7		19.6		27.9		70.3		58.1		9.2	
7440-66-6	Zinc (Zn)	88.9		123.		50.		108.		70.1		14.2	
7782-49-2	Selenium (Se)	0.97	U	0.36	U	0.4	U	2.		1.	J	0.72	J
7439-97-6	Mercury (Hg)	0.23		0.02	J	0.11	J	0.1	J	0.17		0.04	J
7439-95-4	Magnesium (Mg)	5730.		1900.		1780.		7620.		2520.		2660.	
7439-96-5	Manganese (Mn)	417.		58.3		124.		430.		753.		49.1	
7440-70-2	Calcium (Ca)	8610.		41400.		15600.		99100.		7030.		88900.	
7440-47-3	Chromium (Cr)	56.4		22.8		21.8		72.6		36.3		14.3	
7440-31-5	Tin (Sn)	??????????		??????????		??????????		??????????		??????????		??????????	

*** Validation Complete ***

CHARLESTON - ZONE H
Subsurface Soil Grid Samples
Metals Only

SW846-META	SAMPLE ID ------>	GDH-S-B043-02	GDH-S-B045-02	GDH-S-B046-02	GDH-S-B047-02	GDH-S-B051-02	GDH-S-B052-02
	ORIGINAL ID ----->	GDHSB04302	GDHSB04502	GDHSB04602	GDHSB04702	GDHSB05102	GDHSB05202
	LAB SAMPLE ID --->	41742-049	41742-052	41742-054	41760-031	41760-036	41760-038
	ID FROM REPORT -->	GDHSB04302	GDHSB04502	GDHSB04602	100702	100707	100709
	SAMPLE DATE ----->	10/05/94	10/05/94	10/05/94	10/06/94	10/06/94	10/06/94
	DATE EXTRACTED -->	10/11/94	10/11/94	10/11/94	10/14/94	10/14/94	10/14/94
	DATE ANALYZED --->	10/18/94	10/18/94	10/18/94	10/20/94	10/18/94	10/20/94
	MATRIX ---------->	Soil	Soil	Soil	Soil	Soil	Soil
	UNITS ---------->	MG/KG A	MG/KG A	MG/KG A	MG/KG A	MG/KG A	MG/KG A
CAS #	Parameter	CHS18 VAL	CHS18 VAL	CHS18 VAL	CHS19 VAL	CHS19 VAL	CHS19 VAL
7429-90-5	Aluminum (Al)	45300.	34600.	31100.	15500.	7900.	12100.
7439-89-6	Iron (Fe)	44600.	40600.	40400.	14300.	6320.	8690.
7439-92-1	Lead (Pb)	34.	33.8	27.8	9.7	5.1 J	4.3 J
7440-02-0	Nickel (Ni)	20.1	17.1	15.5	9.6	15.	12.3
7440-09-7	Potassium (K)	2660.	2260.	2440.	1130.	946.	789.
7440-22-4	Silver (Ag)	0.36 UJ	0.47 UJ	0.38 UJ	0.29 U	0.37 U	0.3 U
7440-23-5	Sodium (Na)	276.	481.	298.	494.	900.	1010.
7440-28-0	Thallium (Tl)	0.92 J	1.9 J	0.96 J	0.34 U	0.42 U	0.34 U
7440-36-0	Antimony (Sb)	2. U	2.3 U	1.8 U	2. J	1.8 U	1.5 U
7440-38-2	Arsenic (As)	136.	19.1	20.3	7.7	8.2	9.3
7440-39-3	Barium (Ba)	47.5	36.3	36.6	15.4	0.12 U	12.5
7440-41-7	Beryllium (Be)	1.6	1.4	1.4	0.62	0.47 J	0.6
7440-43-9	Cadmium (Cd)	0.21 U	0.28 U	0.22 U	0.17 U	0.22 U	0.18 U
7440-48-4	Cobalt (Co)	9.4	8.2	7.5	3.4	1.5 J	2. J
7440-50-8	Copper (Cu)	28.9	25.6	27.1	9.8	8.4	9.3
7440-62-2	Vanadium (V)	87.1	81.4	85.	30.8	24.	24.4
7440-66-6	Zinc (Zn)	110.	96.7	99.9	52.3	49.6	41.3
7782-49-2	Selenium (Se)	1.5	0.54 U	0.89 J	0.34 U	0.46 J	0.76 J
7439-97-6	Mercury (Hg)	0.27	0.25	0.26	0.04 J	0.03 J	0.03 J
7439-95-4	Magnesium (Mg)	5440.	4780.	5320.	2600.	3990.	3780.
7439-96-5	Manganese (Mn)	655.	415.	737.	192.	81.4	116.
7440-70-2	Calcium (Ca)	6460.	8440.	9990.	31300.	143000.	99200.
7440-47-3	Chromium (Cr)	68.6	56.8	54.	35.4	41.3	33.7
7440-31-5	Tin (Sn)	??????????	??????????	??????????	??????????	??????????	??????????

*** Validation Complete ***

CHARLESTON - ZONE H
Subsurface Soil Grid Samples
Metals Only

SW846-METAL	SAMPLE ID ------>	GDH-S-B053-02		GDH-S-B054-02		GDH-S-B056-02		GDH-S-B058-02		GDH-S-B063-02		GDH-S-B064-02	
	ORIGINAL ID ----->	GDHSB05302		GDHSB05402		GDHSB05602		GDHSB05802		GDHSB06302		GDHSB06402	
	LAB SAMPLE ID --->	41760-040		41760-042		41779-012		41779-014		41784-016		41784-018	
	ID FROM REPORT -->	100711		100713		100808		100810		101003		101005	
	SAMPLE DATE ----->	10/06/94		10/06/94		10/07/94		10/07/94		10/08/94		10/08/94	
	DATE EXTRACTED -->	10/14/94		10/14/94		10/14/94		10/14/94		10/14/94		10/14/94	
	DATE ANALYZED --->	10/18/94		10/18/94		10/18/94		10/20/94		10/18/94		10/18/94	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A
CAS #	Parameter	CHS19	VAL	CHS19	VAL	CHS19	VAL	CHS19	VAL	CHS20	VAL	CHS20	VAL
7429-90-5	Aluminum (Al)	4230.		4400.		5420.		10600.		798.		2930.	
7439-89-6	Iron (Fe)	2280.		5800.		1920.		13100.		1570.		4920.	
7439-92-1	Lead (Pb)	3.5		2.1	J	6.1		9.5		2.5	J	5.3	
7440-02-0	Nickel (Ni)	2.3		6.4		2.4		8.9		0.54	U	1.8	J
7440-09-7	Potassium (K)	160.	U	447.		258.	U	1100.		196.	J	569.	J
7440-22-4	Silver (Ag)	0.15	U	0.24	U	0.21	U	0.23	U	0.21	U	0.21	U
7440-23-5	Sodium (Na)	312.		961.		649.		1320.		234.		175.	
7440-28-0	Thallium (Tl)	0.17	U	0.27	U	0.25	U	0.26	U	0.24	UJ	0.25	UJ
7440-36-0	Antimony (Sb)	0.73	U	1.1	U	1.	U	1.1	U	1.	U	1.	U
7440-38-2	Arsenic (As)	3.7		6.6		1.3		7.4		1.4		2.8	
7440-39-3	Barium (Ba)	13.7		10.5		8.5		11.1		2.4	J	6.3	J
7440-41-7	Beryllium (Be)	0.24	J	0.5		0.11	J	0.48		0.12	J	0.29	J
7440-43-9	Cadmium (Cd)	0.09	U	0.26	J	0.13	U	0.14	J	0.13	U	0.13	U
7440-48-4	Cobalt (Co)	1.5	J	0.89	J	0.82	J	2.4	J	0.32	J	1.2	J
7440-50-8	Copper (Cu)	0.9	U	3.5		2.4	U	15.5		0.53	J	1.3	J
7440-62-2	Vanadium (V)	4.5		15.6		6.3		24.1		2.7		8.6	
7440-66-6	Zinc (Zn)	9.5		16.5		10.3		51.3		5.7		12.2	
7782-49-2	Selenium (Se)	0.17	U	0.47	J	0.25	U	0.26	U	0.24	U	0.25	U
7439-97-6	Mercury (Hg)	0.06		0.02	U	0.02	U	0.08		0.03	U	0.03	U
7439-95-4	Magnesium (Mg)	186.		2550.		809.		2960.		277.		731.	
7439-96-5	Manganese (Mn)	7.1		43.5		17.		198.		18.7		39.2	
7440-70-2	Calcium (Ca)	346.		65200.		15200.		44300.		3920.		3460.	
7440-47-3	Chromium (Cr)	5.1		23.6		6.4		25.5		2.9		8.	
7440-31-5	Tin (Sn)	??????????		??????????		??????????		??????????		??????????		??????????	

*** Validation Complete ***

CHARLESTON - ZONE H
Subsurface Soil Grid Samples
Metals Only

SW846-META													
	SAMPLE ID ------>	GDH-S-B067-02		GDH-S-B071-02		GDH-S-B072-02		GDH-S-B073-02		GDH-S-B078-02		GDH-S-B079-02	
	ORIGINAL ID ----->	GDHSB06702		GDHSB07102		GDHSB07202		GDHSB07302		GDHSB07802		GDHSB07902	
	LAB SAMPLE ID --->	41806-026		41806-033		41806-035		41821-015		252514		252530	
	ID FROM REPORT -->	101204		101211		101213		101304		102209		102211	
	SAMPLE DATE ----->	10/11/94		10/11/94		10/11/94		10/12/94		10/21/94		10/21/94	
	DATE EXTRACTED -->	10/18/94		10/18/94		10/18/94		10/18/94		11/10/94		11/10/94	
	DATE ANALYZED --->	10/19/94		10/21/94		10/21/94		10/21/94		11/11/94		11/11/94	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A
CAS #	Parameter	CHS21	VAL	CHS21	VAL	CHS21	VAL	CHS21	VAL	CHS23	VAL	CHS23	VAL
7429-90-5	Aluminum (Al)	925.		4000.		11000.		18400.		5430.		3050.	
7439-89-6	Iron (Fe)	4270.		7540.		17900.		30100.		1380.		6320.	
7439-92-1	Lead (Pb)	2.3	J	15.2	U	12.4		24.7		3.6		2.8	
7440-02-0	Nickel (Ni)	0.65	UJ	16.	J	9.2		9.1		3.1	U	3.4	U
7440-09-7	Potassium (K)	149.	U	1550.	J	1340.		1680.		155.	U	189.	J
7440-22-4	Silver (Ag)	0.25	U	2.4	U	0.29	U	0.25	U	0.95	U	1.1	U
7440-23-5	Sodium (Na)	72.	J	1330.		2110.		679.		410.	J	78.1	J
7440-28-0	Thallium (Tl)	0.29	UJ	0.28	UJ	0.33	UJ	0.57	UJ	0.95	U	1.1	U
7440-36-0	Antimony (Sb)	1.2	U	15.8	J	1.4	U	1.2	U	7.1	UJ	7.9	UJ
7440-38-2	Arsenic (As)	4.6		8.3		12.4		13.6		1.4	J	4.	
7440-39-3	Barium (Ba)	3.	J	0.81	U	15.2		23.5		11.	J	9.7	J
7440-41-7	Beryllium (Be)	0.16	J	0.47	J	0.63		1.		0.24	U	0.29	J
7440-43-9	Cadmium (Cd)	0.15	U	1.4	U	0.17	U	0.15	U	0.71	U	0.79	U
7440-48-4	Cobalt (Co)	0.73	J	4.3	J	3.5		5.8		0.77	J	1.3	J
7440-50-8	Copper (Cu)	0.72	J	9.2	J	10.5		20.5		1.4	U	1.6	J
7440-62-2	Vanadium (V)	6.4		21.2		34.8		58.		4.5	J	8.9	J
7440-66-6	Zinc (Zn)	10.8		45.1		43.5		71.5		7.6		16.4	
7782-49-2	Selenium (Se)	0.29	U	1.	U	0.33	U	0.57	U	1.1	J	1.1	U
7439-97-6	Mercury (Hg)	0.02	U	0.03	U	0.11		0.23		0.12	U	0.13	U
7439-95-4	Magnesium (Mg)	290.		12700.		2750.		3590.		266.	J	546.	J
7439-96-5	Manganese (Mn)	51.5		178.		271.		399.		10.2		76.9	
7440-70-2	Calcium (Ca)	4090.		181000.		26200.		9010.		561.	J	4600.	
7440-47-3	Chromium (Cr)	3.2		36.4		24.9		39.1		5.8		7.8	
7440-31-5	Tin (Sn)	??????????		??????????		??????????		??????????		??????????		??????????	

*** Validation Complete ***

CHARLESTON - ZONE H
Subsurface Soil Grid Samples
Metals Only

SW846-META													
	SAMPLE ID ------->	GDH-S-B080-02		GDH-S-B082-02		GDH-S-B084-02		GDH-S-B085-02		GDH-S-B086-02		GDH-S-B087-02	
	ORIGINAL ID ----->	GDHSB08002		GDHSB08202		GDHSB08402		GDHSB08502		GDHSB08602		GDHSB08702	
	LAB SAMPLE ID --->	252557		252581		42136-019		42136-021		42347-014		42347-016	
	ID FROM REPORT -->	102213		102216		GDHSB08402		GDHSB08502		GDHSB08602		GDHSB08702	
	SAMPLE DATE ----->	10/21/94		10/22/94		11/09/94		11/09/94		11/22/94		11/22/94	
	DATE EXTRACTED -->	11/10/94		11/10/94		11/14/94		11/14/94		12/16/94		12/16/94	
	DATE ANALYZED --->	11/11/94		11/11/94		11/19/94		11/19/94		12/22/94		12/22/94	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ----------->	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A
CAS #	Parameter	CHS23	VAL	CHS23	VAL	CHS25	VAL	CHS25	VAL	CHS27	VAL	CHS27	VAL
7429-90-5	Aluminum (Al)	7120.		41400.		8660.		13300.		4520.		15400.	
7439-89-6	Iron (Fe)	7310.		54300.		7160.		12000.		5920.		19900.	
7439-92-1	Lead (Pb)	3.1		38.7		7.5		6.5	J	2.4	UJ	9.6	UJ
7440-02-0	Nickel (Ni)	23.6	J	22.8	J	13.7		16.2		78.3		14.2	
7440-09-7	Potassium (K)	1030.	J	2500.		841.	U	1210.		862.	J	1840.	
7440-22-4	Silver (Ag)	1.1	U	1.7	J	0.34	U	0.45	U	2.	U	0.44	U
7440-23-5	Sodium (Na)	669.	J	261.	J	313.	U	714.	U	1110.		482.	
7440-28-0	Thallium (Tl)	1.1	U	1.5	U	0.36	J	0.36	J	0.68	UJ	0.74	UJ
7440-36-0	Antimony (Sb)	19.9	UJ	11.3	UJ	1.6	U	2.1	U	9.4	U	2.1	U
7440-38-2	Arsenic (As)	7.5		28.3		1.8	U	6.4	U	8.1		8.1	
7440-39-3	Barium (Ba)	10.9	J	59.9	J	26.4	U	15.7	U	4.	U	20.1	
7440-41-7	Beryllium (Be)	0.31	J	1.5	J	0.87		0.68		0.53	U	1.	
7440-43-9	Cadmium (Cd)	0.85	U	1.1	U	0.21	U	0.47	J	1.2	U	0.27	U
7440-48-4	Cobalt (Co)	1.8	J	12.	J	4.3		3.1	J	2.7	U	4.7	U
7440-50-8	Copper (Cu)	9.		34.5		4.3		9.3		8.6	U	6.1	U
7440-62-2	Vanadium (V)	27.6		103.		15.		32.		26.1		29.	
7440-66-6	Zinc (Zn)	51.1		131.		34.4	U	40.5	U	37.9	U	43.2	U
7782-49-2	Selenium (Se)	3.9		1.5	U	0.62	J	2.	J	0.99	UJ	0.64	UJ
7439-97-6	Mercury (Hg)	0.14	U	0.38		0.03	U	0.03	U	0.02	U	0.04	U
7439-95-4	Magnesium (Mg)	8360.		5420.		2040.		3140.		5780.		3820.	
7439-96-5	Manganese (Mn)	114.		966.		59.6		110.		41.3		141.	
7440-70-2	Calcium (Ca)	198000.		12200.		16100.		68500.		195000.		44100.	
7440-47-3	Chromium (Cr)	43.7		72.1		19.4		38.5		95.2		31.6	
7440-31-5	Tin (Sn)	??????????		??????????		??????????		??????????		??????????		??????????	

*** Validation Complete ***

CHARLESTON - ZONE H
Subsurface Soil Grid Samples
Metals Only

SW846-META																							
	SAMPLE ID ------>	GDH-S-B088-02			GDH-S-B092-02			GDH-S-B104-02			GDH-S-B107-02			SGC-S-B002-02			SGC-S-B003-02		
	ORIGINAL ID ----->	GDHSB08802			GDHSB09202			GDHSB10402			GDHSB10702			SGCSB00202			SGCSB00302		
	LAB SAMPLE ID --->	42347-018			42574-012			42985-010			43002-007			41790-022			41790-025		
	ID FROM REPORT -->	GDHSB08802			GDHSB09202			GDHSB10402			GDHSB10702			101104			101107		
	SAMPLE DATE ----->	11/22/94			12/14/94			02/06/95			02/07/95			10/10/94			10/10/94		
	DATE EXTRACTED -->	12/16/94			12/29/94			02/08/95			02/10/95			10/14/94			10/14/94		
	DATE ANALYZED --->	12/22/94			01/03/95			02/09/95			02/13/95			10/20/94			10/18/94		
	MATRIX ---------->	Soil			Soil			Soil			Soil			Soil			Soil		
	UNITS ---------->	MG/KG		A	MG/KG		A	MG/KG		A	MG/KG		A	MG/KG		A	MG/KG		A
CAS #	Parameter	CHS27		VAL	CHS28		VAL	CHS34		VAL	CHS34		VAL	CHS20		VAL	CHS20		VAL
7429-90-5	Aluminum (Al)	13900.			13700.			2900.			4030.			4660.			1340.		
7439-89-6	Iron (Fe)	19600.			14500.			5760.			1210.			4380.			4500.		
7439-92-1	Lead (Pb)	10.5			8.1			5.4		J	3.6		J	19.		U	1.8		J
7440-02-0	Nickel (Ni)	8.7			8.4		U	1.6		J	1.1		J	19.8		J	1.1		J
7440-09-7	Potassium (K)	1610.			1110.			442.		U	154.		U	869.		J	198.		J
7440-22-4	Silver (Ag)	0.47		U	0.33		U	0.23		U	0.21		U	3.		U	0.22		U
7440-23-5	Sodium (Na)	578.			606.			41.6		J	17.7		J	1120.			110.		
7440-28-0	Thallium (Tl)	0.79		UJ	0.1		UJ	0.46		U	0.41		U	0.35		UJ	0.25		UJ
7440-36-0	Antimony (Sb)	2.2		U	1.6		UJ	1.5		U	1.3		UJ	14.7		U	1.1		U
7440-38-2	Arsenic (As)	7.5		U	8.2		J	3.9		J	1.1		J	5.7			4.4		
7440-39-3	Barium (Ba)	18.3			13.7		U	6.3		U	9.1		U	1.		U	5.5		J
7440-41-7	Beryllium (Be)	0.95			0.55		U	0.3		J	0.09		J	0.34		U	0.26		J
7440-43-9	Cadmium (Cd)	0.29		U	0.2		U	0.17		UJ	0.15		UJ	1.8		U	0.13		U
7440-48-4	Cobalt (Co)	3.9		U	2.9		U	1.3		U	0.64		U	3.1		U	0.88		J
7440-50-8	Copper (Cu)	6.3		U	7.2		U	1.7		J	0.62		UJ	10.6		J	0.87		J
7440-62-2	Vanadium (V)	27.3			24.5			10.4			4.3			35.3			6.9		
7440-66-6	Zinc (Zn)	34.6		U	34.9			13.			6.3			72.2			7.4		
7782-49-2	Selenium (Se)	0.45		UJ	0.36		J	0.43		U	0.39		U	1.6			0.25		U
7439-97-6	Mercury (Hg)	0.02		U	0.03		J	0.03		U	0.22		U	0.03		U	0.02		U
7439-95-4	Magnesium (Mg)	3110.			2460.			757.			222.			6270.			329.		
7439-96-5	Manganese (Mn)	173.			166.			45.4			8.3			17.3			52.3		
7440-70-2	Calcium (Ca)	46500.			47200.			3070.			967.			294000.			6290.		
7440-47-3	Chromium (Cr)	29.5			23.2			8.2			4.9			64.2			4.1		
7440-31-5	Tin (Sn)	??????????			??????????			??????????			??????????			??????????			??????????		

*** Validation Complete ***

CHARLESTON - ZONE H
Subsurface Soil Grid Samples
Metals Only

SW846-METAL				
SAMPLE ID ------>	SGC-S-B006-02		SGC-S-B007-02		SGC-S-B008-02	
ORIGINAL ID ----->	SGCSB00602		SGCSB00702		SGCSB00802	
LAB SAMPLE ID --->	41790-029		41821-013		41806-030	
ID FROM REPORT -->	101111		101302		101208	
SAMPLE DATE ----->	10/10/94		10/12/94		10/11/94	
DATE EXTRACTED -->	10/14/94		10/18/94		10/18/94	
DATE ANALYZED --->	10/18/94		10/19/94		10/19/94	
MATRIX ---------->	Soil		Soil		Soil	
UNITS ---------->	MG/KG	A	MG/KG	A	MG/KG	A

CAS #	Parameter	CHS20	VAL	CHS21	VAL	CHS21	VAL
7429-90-5	Aluminum (Al)	4650.		3930.		2820.	
7439-89-6	Iron (Fe)	1470.		818.		3620.	
7439-92-1	Lead (Pb)	3.2	J	3.7	J	1.7	U
7440-02-0	Nickel (Ni)	1.6	J	0.65	J	7.5	
7440-09-7	Potassium (K)	85.2	J	55.8	U	379.	U
7440-22-4	Silver (Ag)	0.23	U	0.22	U	0.27	U
7440-23-5	Sodium (Na)	17.4	J	11.8	J	505.	
7440-28-0	Thallium (Tl)	0.27	UJ	0.25	UJ	0.31	UJ
7440-36-0	Antimony (Sb)	1.1	UJ	1.1	U	1.3	U
7440-38-2	Arsenic (As)	0.54	J	0.68	J	5.1	
7440-39-3	Barium (Ba)	4.9	J	5.2	J	0.09	U
7440-41-7	Beryllium (Be)	0.03	U	0.02	U	0.24	J
7440-43-9	Cadmium (Cd)	0.14	U	0.13	U	0.16	J
7440-48-4	Cobalt (Co)	0.26	J	0.39	J	0.54	J
7440-50-8	Copper (Cu)	0.45	J	0.86	J	4.7	
7440-62-2	Vanadium (V)	5.4		3.2		11.9	
7440-66-6	Zinc (Zn)	1.8	J	4.1		24.8	
7782-49-2	Selenium (Se)	0.27	U	0.25	U	0.5	U
7439-97-6	Mercury (Hg)	0.02	U	0.03	U	0.02	U
7439-95-4	Magnesium (Mg)	146.		85.1		2550.	
7439-96-5	Manganese (Mn)	4.5		4.5		52.7	
7440-70-2	Calcium (Ca)	221.		340.		137000.	
7440-47-3	Chromium (Cr)	3.9		4.7		21.2	
7440-31-5	Tin (Sn)	??????????		??????????		??????????	

*** Validation Complete ***

CHARLESTON - ZONE H
Subsurface Soil Grid Samples
Metals Only

APX9-METAL			
SAMPLE ID ------>	GDH-C-B067-02	SGC-C-B003-02	
ORIGINAL ID ----->	GDHCB06702	SGCCB00302	
LAB SAMPLE ID --->	41807-001	41791-001	
ID FROM REPORT -->	101201	101101	
SAMPLE DATE ----->	10/11/94	10/10/94	
DATE EXTRACTED -->	10/21/94	10/21/94	
DATE ANALYZED --->	10/21/94	10/21/94	
MATRIX ---------->	Soil	Soil	
UNITS ---------->	MG/KG A	MG/KG A	

CAS #	Parameter	APX10	VAL	APX10	VAL
7439-92-1	Lead (Pb)	2.4	U	6.5	
7439-97-6	Mercury (Hg)	0.02	U	0.02	U
7440-02-0	Nickel (Ni)	0.9	U	1.7	J
7440-22-4	Silver (Ag)	0.3	U	0.28	U
7440-31-5	Tin (Sn)	1.5	U	1.5	U
7440-36-0	Antimony (Sb)	1.4	U	1.3	U
7440-38-2	Arsenic (As)	2.1		5.5	
7440-39-3	Barium (Ba)	2.1	U	8.5	U
7440-41-7	Beryllium (Be)	0.12	J	0.25	J
7440-43-9	Cadmium (Cd)	0.18	U	0.17	U
7440-47-3	Chromium (Cr)	2.6		6.9	
7440-48-4	Cobalt (Co)	0.49	J	0.87	J
7440-50-8	Copper (Cu)	0.9	U	2.2	U
7440-62-2	Vanadium (V)	3.2	J	9.9	
7440-66-6	Zinc (Zn)	7.4	U	14.5	U
7782-49-2	Selenium (Se)	0.29	UJ	0.27	UJ
7440-28-0	Thallium (Tl)	0.5	U	0.48	U

*** Validation Complete ***

E N V I R O N M E N T A L S A F E T Y & D E S I G N S

0064-00001 - CHARLESTON ZONE H SOIL,SED,SURF WTR

Samples by Chemical Report

9999900-00-5 - Hexavalent Chromium

>= 0.0000 for MG/KG

Soil

Sample ID	Ext. Orig. ID	Type	Date	Result	VQual	Units	SDG #	
009-N-0010-01	009N001001	Soil	09/08/94	0.2000	U	MG/KG	APX03	VAL
009-N-0015-01	009N001501	Soil	09/09/94	0.2000	U	MG/KG	APX03	VAL
013-C-B006-01	013CB00601	Soil	08/12/94	0.2000	U	MG/KG	APX01	VAL
013-C-B012-02	013CB01202	Soil	08/12/94	0.1000	U	MG/KG	APX01	VAL
013-C-B021-01	013CB02101	Soil	08/15/94	0.1000	U	MG/KG	APX01	VAL
013-C-B022-01	013CB02201	Soil	08/16/94	0.2000	U	MG/KG	APX01	VAL
014-S-B001-01	014SB00101	Soil	09/22/94	0.7000	U	MG/KG	APX08	VAL
014-S-B001-02	014SB00102	Soil	09/22/94	0.9000	U	MG/KG	APX08	VAL
014-S-B002-01	014SB00201	Soil	09/22/94	0.8000	U	MG/KG	APX08	VAL
014-S-B002-02	014SB00202	Soil	09/22/94	0.8000	U	MG/KG	APX08	VAL
014-S-B003-01	014SB00301	Soil	09/22/94	0.7000	U	MG/KG	APX08	VAL
014-S-B003-02	014SB00302	Soil	09/22/94	0.9000	U	MG/KG	APX08	VAL
014-S-B004-01	014SB00401	Soil	09/22/94	0.7000	U	MG/KG	APX08	VAL
014-C-B004-01	014CB00401	Soil	09/22/94	0.7000	UJ	MG/KG	APX06	VAL
014-S-B004-02	014SB00402	Soil	09/22/94	0.9000	U	MG/KG	APX08	VAL
014-S-B005-01	014SB00501	Soil	09/22/94	0.7000	U	MG/KG	APX08	VAL
014-S-B005-02	014SB00502	Soil	09/22/94	0.8000	U	MG/KG	APX08	VAL
014-S-B006-01	014SB00601	Soil	09/22/94	0.7000	U	MG/KG	APX07	VAL
014-S-B006-02	014SB00602	Soil	09/22/94	0.9000	U	MG/KG	APX07	VAL
014-S-B007-01	014SB00701	Soil	09/22/94	0.7000	U	MG/KG	APX07	VAL
014-S-B007-02	014SB00702	Soil	09/22/94	0.8000	U	MG/KG	APX07	VAL
014-S-B008-01	014SB00801	Soil	09/22/94	0.6000	U	MG/KG	APX07	VAL
014-S-B008-02	014SB00802	Soil	09/22/94	0.8000	U	MG/KG	APX07	VAL
014-S-B009-01	014SB00901	Soil	09/22/94	0.7000	U	MG/KG	APX07	VAL
014-S-B009-02	014SB00902	Soil	09/22/94	0.9000	U	MG/KG	APX07	VAL
014-S-W001-14	014SW00114	Soil	09/22/94	1.0000	U	MG/KG	APX08	VAL
015-C-B004-01	015CB00401	Soil	09/12/94	0.1000	U	MG/KG	APX03	VAL
017-E-B002-01	017EB02201	Water	01/10/95	0.1000	UJ	MG/KG	APX15	VAL
017-C-B004-02	017CB00402	Soil	08/16/94	0.6000	U	MG/KG	APX01	VAL
017-C-B013-01	017CB01301	Soil	01/13/95	0.0600	UJ	MG/KG	APX15	VAL
017-C-B018-01	017CB01801	Soil	01/12/95	0.0500	UJ	MG/KG	APX15	VAL
017-C-B022-01	017CB02201	Soil	01/11/95	0.0600	UJ	MG/KG	APX15	VAL
019-C-B002-01	019CBB00201	Soil	08/27/94	0.1000	U	MG/KG	APX02	VAL
019-C-B014-01	019CB01401	Soil	01/16/95	0.1000	UJ	MG/KG	APX15	VAL
121-C-B002-01	121CB00201	Soil	08/26/94	0.1000	U	MG/KG	APX02	VAL
138-C-B002-01	138CB00201	Soil	08/29/94	0.1000	U	MG/KG	APX02	VAL
159-C-B001-01	159CB00101	Soil	06/19/95	0.1000	U	MG/KG	APX18	VAL
159-C-B011-01	159CB01101	Soil	06/19/95	0.1000	U	MG/KG	APX18	VAL
178-C-B002-02	178CB00202	Soil	08/23/94	0.1000	U	MG/KG	APX02	VAL
649-C-B001-01	649CB00101	Soil	08/22/94	0.5000	U	MG/KG	APX02	VAL
650-C-B003-01	650CB00301	Soil	08/22/94	0.1000	U	MG/KG	APX02	VAL
650-C-B010-01	650CB01001	Soil	01/19/95	0.1000	UJ	MG/KG	APX15	VAL
653-C-B003-01	653CB00301	Soil	08/26/94	0.1000	U	MG/KG	APX02	VAL
654-C-B001-01	654CB00101	Soil	09/07/94	0.1000	U	MG/KG	APX03	VAL
655-C-B005-02	655CB00502	Soil	09/07/94	0.1000	U	MG/KG	APX03	VAL
655-C-B013-01	655CB01301	Soil	01/10/95	0.1000	UJ	MG/KG	APX15	VAL
656-C-B002-01	656CB00201	Soil	08/09/94	0.1000	U	MG/KG	APX01	VAL
656-C-B009-01	656CB00901	Soil	08/10/94	0.6000	U	MG/KG	APX01	VAL
659-C-B001-01	659CB00101	Soil	08/31/94	0.1000	U	MG/KG	APX02	VAL

E N V I R O N M E N T A L S A F E T Y & D E S I G N S

0064-00001 - CHARLESTON ZONE H SOIL,SED,SURF WTR
Samples by Chemical Report
9999900-00-5 - Hexavalent Chromium
>= 0.0000 for MG/KG

SOIL

Sample ID	Ext.	Orig. ID	Type	Date	Result	VQual	Units	SDG #	
660-C-B005-01		660CB00501	Soil	08/24/94	0.1000	U	MG/KG	APX02	VAL
662-C-B002-01		662CB00201	Soil	08/15/94	0.1000	U	MG/KG	APX01	VAL
663-C-B002-01		663CB00201	Soil	08/31/94	0.1000	U	MG/KG	APX02	VAL
665-C-B002-02		665CB00202	Soil	08/26/94	0.1000	U	MG/KG	APX02	VAL
666-C-B003-01		666CB00301	Soil	08/23/94	0.1000	U	MG/KG	APX02	VAL
667-C-B002-01		667CB00201	Soil	08/29/94	0.1000	U	MG/KG	APX02	VAL
670-M-0001-01		670M00101	Soil	09/24/94	0.8000	UJ	MG/KG	APX09	VAL
670-M-0002-01		670M00201	Soil	09/24/94	0.7000	UJ	MG/KG	APX09	VAL
670-C-B003-01		670CB00301	Soil	09/13/94	0.1000	U	MG/KG	APX03	VAL
670-C-B013-01		670CB01301	Soil	09/12/94	0.7000	U	MG/KG	APX03	VAL
670-S-B015-01		670SB01501	Soil	09/14/94	0.7000	U	MG/KG	APX04	VAL
670-S-B015-02		670SB01502	Soil	09/14/94	0.9000	U	MG/KG	APX04	VAL
670-S-B019-02		670SB01902	Soil	09/14/94	0.9000	U	MG/KG	APX04	VAL
670-S-B020-01		670SB02001	Soil	09/14/94	0.1000	U	MG/KG	APX04	VAL
670-S-B020-02		670SB02002	Soil	09/14/94	0.9000	U	MG/KG	APX04	VAL
670-S-B025-01		670SB02501	Soil	09/23/94	0.7000	U	MG/KG	APX08	VAL
670-S-B025-02		670SB02502	Soil	09/23/94	0.8000	U	MG/KG	APX08	VAL
670-S-B026-01		670SB02601	Soil	09/23/94	0.7000	UJ	MG/KG	APX09	VAL
670-S-B026-02		670SB02602	Soil	09/23/94	0.8000	UJ	MG/KG	APX09	VAL
670-S-B027-01		670SB02701	Soil	09/24/94	0.6000	UJ	MG/KG	APX09	VAL
670-S-B027-02		670SB02702	Soil	09/24/94	0.7000	UJ	MG/KG	APX09	VAL
670-C-B031-01		670CB03101	Soil	01/20/95	0.1000	UJ	MG/KG	APX16	VAL
670-S-B032-01		670SB03201	Soil	09/14/94	0.1000	U	MG/KG	APX04	VAL
670-S-B032-02		670SB03202	Soil	09/14/94	0.1000	U	MG/KG	APX04	VAL
684-M-0001-01		684M00101	Soil	09/24/94	1.0000	UJ	MG/KG	APX09	VAL
684-M-0002-01		684M00201	Soil	09/24/94	1.0000	UJ	MG/KG	APX09	VAL
684-S-B001-01		684SB00101	Soil	09/19/94	0.6000	U	MG/KG	APX04	VAL
684-S-B001-02		684SB00102	Soil	09/19/94	0.6000	U	MG/KG	APX04	VAL
684-S-B002-01		684SB00201	Soil	09/19/94	0.6000	U	MG/KG	APX04	VAL
684-C-B002-01		684CB00201	Soil	09/19/94	0.7000	UJ	MG/KG	APX06	VAL
684-S-B002-02		684SB00202	Soil	09/19/94	0.6000	U	MG/KG	APX04	VAL
684-S-B003-01		684SB00301	Soil	09/19/94	0.6000	U	MG/KG	APX04	VAL
684-S-B003-02		684SB00302	Soil	09/19/94	0.6000	U	MG/KG	APX04	VAL
684-S-B004-01		684SB00401	Soil	09/19/94	0.4000	U	MG/KG	APX04	VAL
684-S-B005-01		684SB00501	Soil	09/19/94	0.6000	U	MG/KG	APX04	VAL
684-S-B005-02		684SB00502	Soil	09/19/94	0.4000	U	MG/KG	APX04	VAL
684-S-B006-01		684SB00601	Soil	09/19/94	0.7000	U	MG/KG	APX04	VAL
684-S-B006-02		684SB00602	Soil	09/19/94	0.6000	U	MG/KG	APX04	VAL
684-S-B007-01		684SB00701	Soil	09/19/94	0.7000	U	MG/KG	APX04	VAL
684-S-B007-02		684SB00702	Soil	09/19/94	0.6000	UJ	MG/KG	APX05	VAL
684-S-B008-01		684SB00801	Soil	09/19/94	0.6000	UJ	MG/KG	APX05	VAL
684-S-B008-02		684SB00802	Soil	09/19/94	0.6000	UJ	MG/KG	APX05	VAL
684-S-B009-01		684SB00901	Soil	09/19/94	0.7000	UJ	MG/KG	APX05	VAL
684-S-B009-02		684SB00902	Soil	09/19/94	0.6000	UJ	MG/KG	APX05	VAL
684-S-B010-01		684SB01001	Soil	09/19/94	0.6000	UJ	MG/KG	APX05	VAL
684-S-B011-01		684SB01101	Soil	09/20/94	0.6000	UJ	MG/KG	APX05	VAL
684-S-B011-02		684SB01102	Soil	09/20/94	0.6000	UJ	MG/KG	APX05	VAL
684-S-B012-01		684SB01201	Soil	09/20/94	0.6000	UJ	MG/KG	APX05	VAL
684-S-B013-01		684SB01301	Soil	09/20/94	0.6000	UJ	MG/KG	APX05	VAL

E N V I R O N M E N T A L S A F E T Y & D E S I G N S

0064-00001 - CHARLESTON ZONE H SOIL,SED,SURF WTR

Samples by Chemical Report

9999900-00-5 - Hexavalent Chromium

>= 0.0000 for MG/KG

SOIL

Sample ID	Ext. Orig. ID	Type	Date	Result	VQual	Units	SDG #	
684-S-B013-02	684SB01302	Soil	09/20/94	0.6000	UJ	MG/KG	APX05	VAL
684-S-B014-01	684SB01401	Soil	09/20/94	0.7000	UJ	MG/KG	APX05	VAL
684-S-B014-02	684SB01402	Soil	09/20/94	0.6000	UJ	MG/KG	APX05	VAL
684-S-B015-01	684SB01501	Soil	09/20/94	0.7000	UJ	MG/KG	APX05	VAL
684-S-B015-02	684SB01502	Soil	09/20/94	0.9000	UJ	MG/KG	APX05	VAL
684-S-B016-01	684SB01601	Soil	09/20/94	0.6000	UJ	MG/KG	APX05	VAL
684-S-B016-02	684SB01602	Soil	09/20/94	0.8000	UJ	MG/KG	APX05	VAL
684-S-B017-01	684SB01701	Soil	09/21/94	0.6000	UJ	MG/KG	APX05	VAL
684-S-B018-01	684SB01801	Soil	09/21/94	0.6000	UJ	MG/KG	APX05	VAL
684-S-B018-02	684SB01802	Soil	09/21/94	0.6000	UJ	MG/KG	APX05	VAL
684-S-B019-01	684SB01901	Soil	09/21/94	0.6000	U	MG/KG	APX07	VAL
684-S-B019-02	684SB01902	Soil	09/21/94	0.6000	U	MG/KG	APX07	VAL
684-S-B020-01	684SB02001	Soil	09/21/94	0.7000	U	MG/KG	APX07	VAL
684-S-B021-01	684SB02101	Soil	09/21/94	0.7000	U	MG/KG	APX07	VAL
684-S-B022-01	684SB02201	Soil	09/21/94	0.6000	U	MG/KG	APX07	VAL
684-S-B022-02	684SB02202	Soil	09/21/94	1.0000	U	MG/KG	APX07	VAL
684-S-B023-01	684SB02301	Soil	09/21/94	0.6000	U	MG/KG	APX07	VAL
684-S-B023-02	684SB02302	Soil	09/21/94	0.9000	U	MG/KG	APX07	VAL
684-S-B024-01	684SB02401	Soil	09/21/94	0.7000	U	MG/KG	APX07	VAL
684-S-B024-02	684SB02402	Soil	09/21/94	0.9000	U	MG/KG	APX07	VAL
684-S-B025-01	684SB02501	Soil	09/21/94	0.7000	U	MG/KG	APX07	VAL
684-S-B025-02	684SB02502	Soil	09/21/94	1.0000	U	MG/KG	APX07	VAL
684-S-B026-01	684SB02601	Soil	09/23/94	0.7000	UJ	MG/KG	APX09	VAL
684-S-B027-01	684SB02701	Soil	09/23/94	0.7000	UJ	MG/KG	APX09	VAL
684-S-B027-02	684SB02702	Soil	09/23/94	0.9000	UJ	MG/KG	APX09	VAL
684-S-B028-01	684SB02801	Soil	09/23/94	0.7000	U	MG/KG	APX08	VAL
684-S-B029-01	684SB02901	Soil	09/23/94	0.6000	U	MG/KG	APX08	VAL
684-S-B029-02	684SB02902	Soil	09/23/94	1.0000	U	MG/KG	APX08	VAL
684-S-B030-01	684SB03001	Soil	09/23/94	0.6000	U	MG/KG	APX08	VAL
684-S-B030-02	684SB03002	Soil	09/23/94	0.8000	U	MG/KG	APX08	VAL
684-S-B031-01	684SB03101	Soil	09/23/94	0.7000	U	MG/KG	APX08	VAL
684-C-B036-01	684CB03601	Soil	01/25/95	0.1000	UJ	MG/KG	APX16	VAL
G80-C-B004-01	GDHCB09701	Soil	02/02/95	0.5000	UJ	MG/KG	APX16	VAL
GDH-C-B007-01	GDHCB00701	Soil	09/27/94	0.5000	U	MG/KG	APX06	VAL
GDH-C-B009-01	GDHCB00901	Soil	09/27/94	0.6000	U	MG/KG	APX06	VAL
GDH-C-B011-01	GDHCB01101	Soil	09/27/94	0.6000	U	MG/KG	APX06	VAL
GDH-C-B025-01	GDHCB02501	Soil	10/04/94	0.4000	UJ	MG/KG	APX10	VAL
GDH-C-B044-01	GDHCB04401	Soil	10/05/94	0.5000	UJ	MG/KG	APX10	VAL
GDH-C-B057-01	GDHCB05701	Soil	10/07/94	0.5000	UJ	MG/KG	APX10	VAL
GDH-C-B067-02	GDHCB06702	Soil	10/11/94	0.5000	UJ	MG/KG	APX10	VAL
GDH-C-B074-01	GDHCB07401	Soil	10/21/94	0.1000	U	MG/KG	APX11	VAL
GDH-C-B082-01	GDHCB08201	Soil	10/22/94	0.1000	U	MG/KG	APX11	VAL
GDH-C-B104-01	GDHCB10401	Soil	02/06/95	0.1000	UJ	MG/KG	APX16	VAL
SGC-C-B003-02	SGCCB00302	Soil	10/10/94	0.5000	UJ	MG/KG	APX10	VAL

*** End of Report ***

E N V I R O N M E N T A L S A F E T Y & D E S I G N S

2908-00005 - CHARLESTON ZONE H QUARTERLY GW

Samples by Chemical Report

9999900-00-5 - Hexavalent Chromium

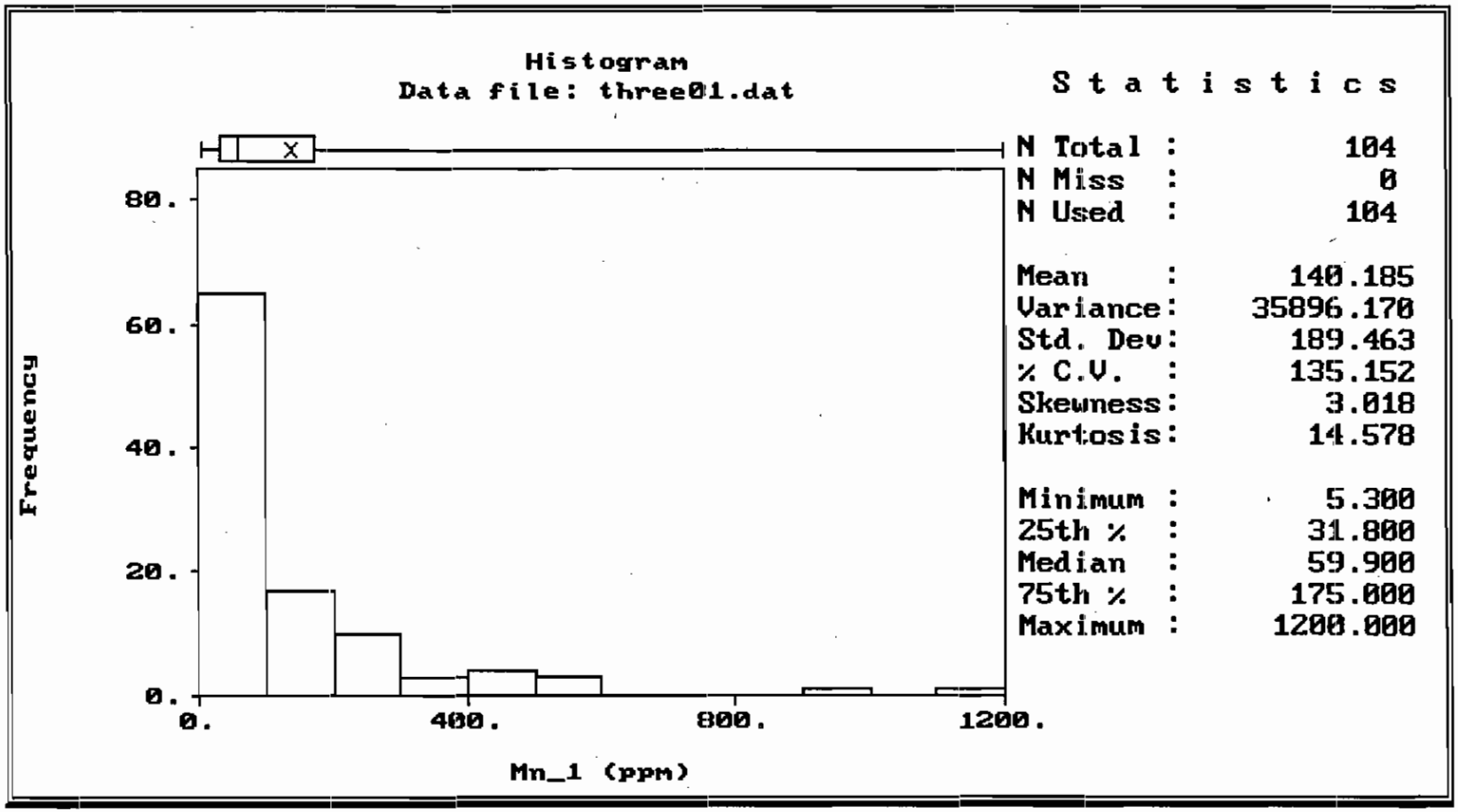
>= 0.0000 for MG/L

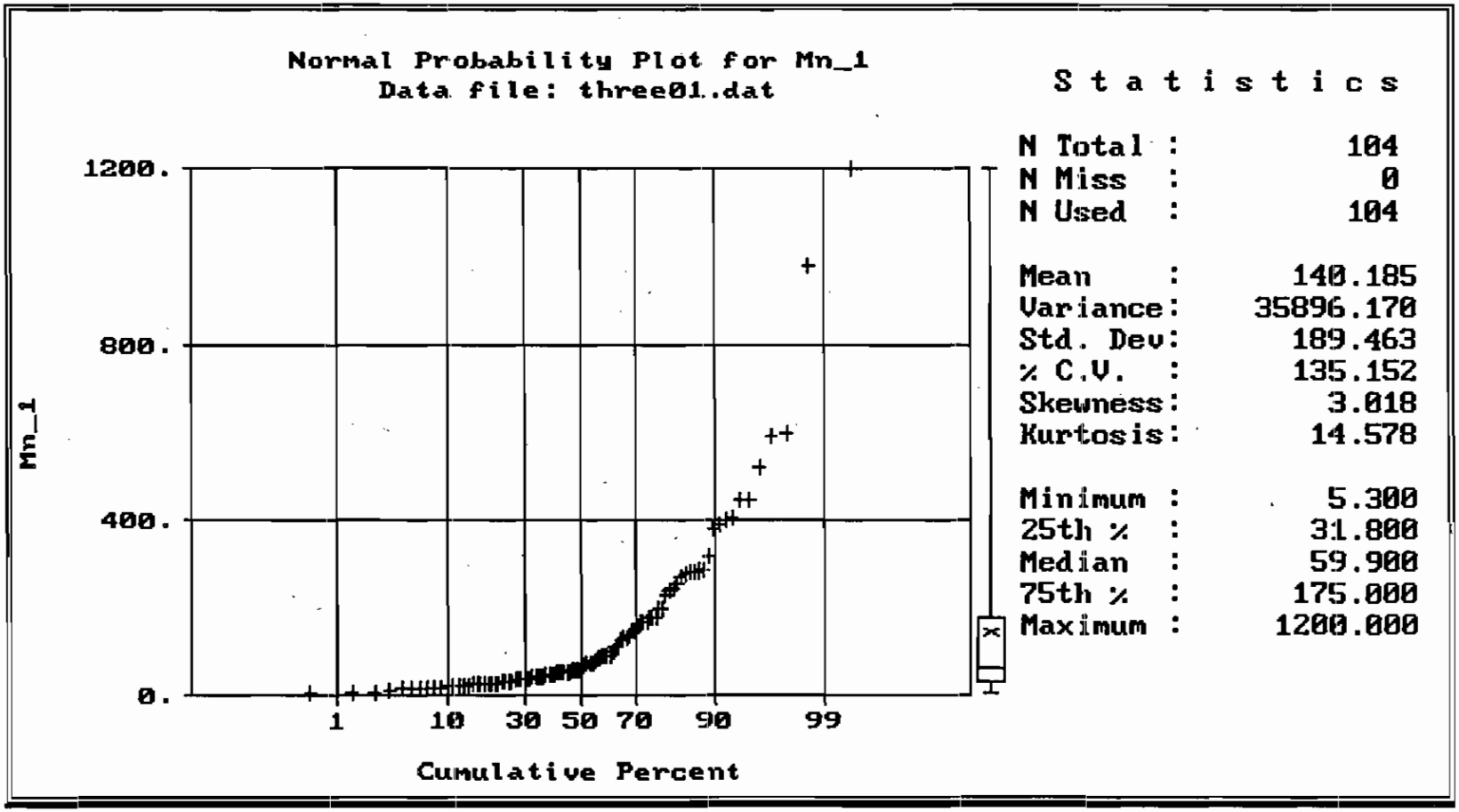
GROUNDWATER

Sample ID	Ext.	Orig. ID	Type	Date	Result	VQual	Units	SDG #	
009-H-W002-01		009HW00201	Water	11/02/94	0.0100	U	MG/L	APX12	VAL
009-H-W004-01		009HW00401	Water	11/21/94	0.0100	U	MG/L	APX14	VAL
009-H-W005-01		009HW00501	Water	11/02/94	0.0100	U	MG/L	APX12	VAL
009-H-W016-01		009HW01601	Water	04/19/95	0.0100	U	MG/L	APX17	VAL
014-W-0001-01		014W000101	Water	11/14/94	0.0100	U	MG/L	APX13	VAL
014-G-W001-01		014GW00101	Water	11/15/94	0.0100	U	MG/L	APX13	VAL
014-G-W001-04		014GW00104	Water	03/08/96	0.0500	U	MG/L	24897	VAL
014-G-W002-01		014GW00201	Water	11/15/94	0.0100	U	MG/L	APX13	VAL
014-G-W003-01		014GW00301	Water	11/16/94	0.0100	U	MG/L	APX13	VAL
014-G-W004-01		014GW00401	Water	11/16/94	0.0100	U	MG/L	APX13	VAL
014-G-W005-01		014GW00501	Water	11/16/94	0.0200	U	MG/L	APX13	VAL
014-G-W01D-01		014GW01D01	Water	11/15/94	0.0100	U	MG/L	APX13	VAL
014-G-W02D-01		014GW02D01	Water	11/15/94	0.0100	U	MG/L	APX13	VAL
014-G-W03D-01		014GW03D01	Water	11/16/94	0.0500	U	MG/L	APX13	VAL
014-G-W03D-04		014GW03D04	Water	03/13/96	0.0500	U	MG/L	24897	VAL
014-G-W04D-01		014GW04D01	Water	11/17/94	0.0100	U	MG/L	APX13	VAL
014-H-W04D-01		014HW04D01	Water	11/18/94	0.0100	U	MG/L	APX14	VAL
014-G-W05D-01		014GW05D01	Water	11/17/94	0.0100	U	MG/L	APX13	VAL
017-G-W001-04		017GW00104	Water	03/22/96	0.0500	U	MG/L	25015	VAL
017-H-W005-01		017HW00501	Water	04/18/95	0.0100	U	MG/L	APX17	VAL
656-H-W001-01		656HW00101	Water	10/27/94	0.0100	U	MG/L	APX11	VAL
663-H-W001-01		663HW00101	Water	10/25/94	0.0100	U	MG/L	APX11	VAL
GDH-H-W004-01		GDHHW00401	Water	11/18/94	0.0100	U	MG/L	APX14	VAL
GDH-H-W006-01		GDHHW00601	Water	11/18/94	0.0100	U	MG/L	APX14	VAL
GDH-H-W007-01		GDHHW00701	Water	11/29/94	0.0100	U	MG/L	APX14	VAL
GDH-H-W10D-01		GDHHW10D01	Water	12/16/94	0.0800	U	MG/L	APX14	VAL

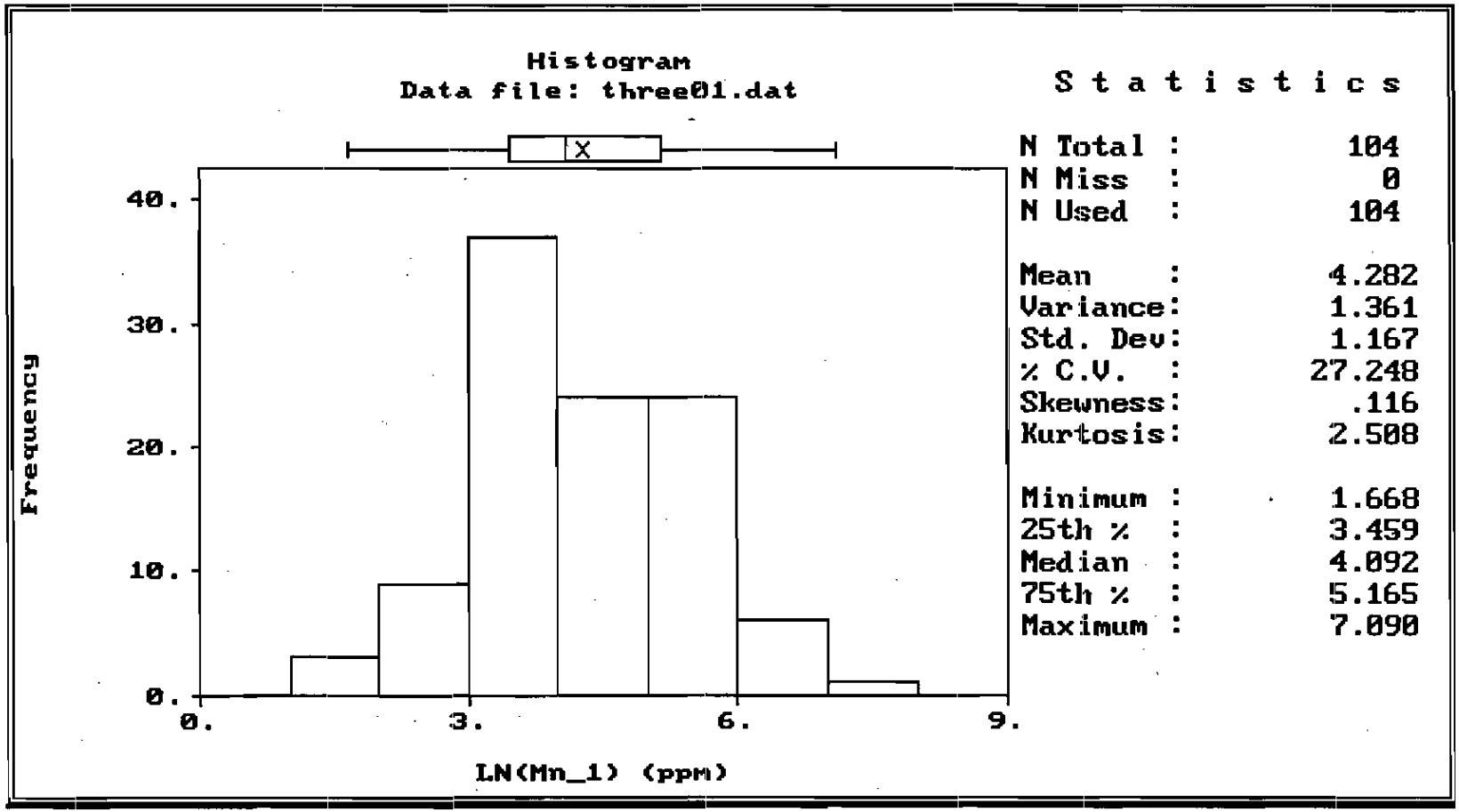
*** End of Report ***

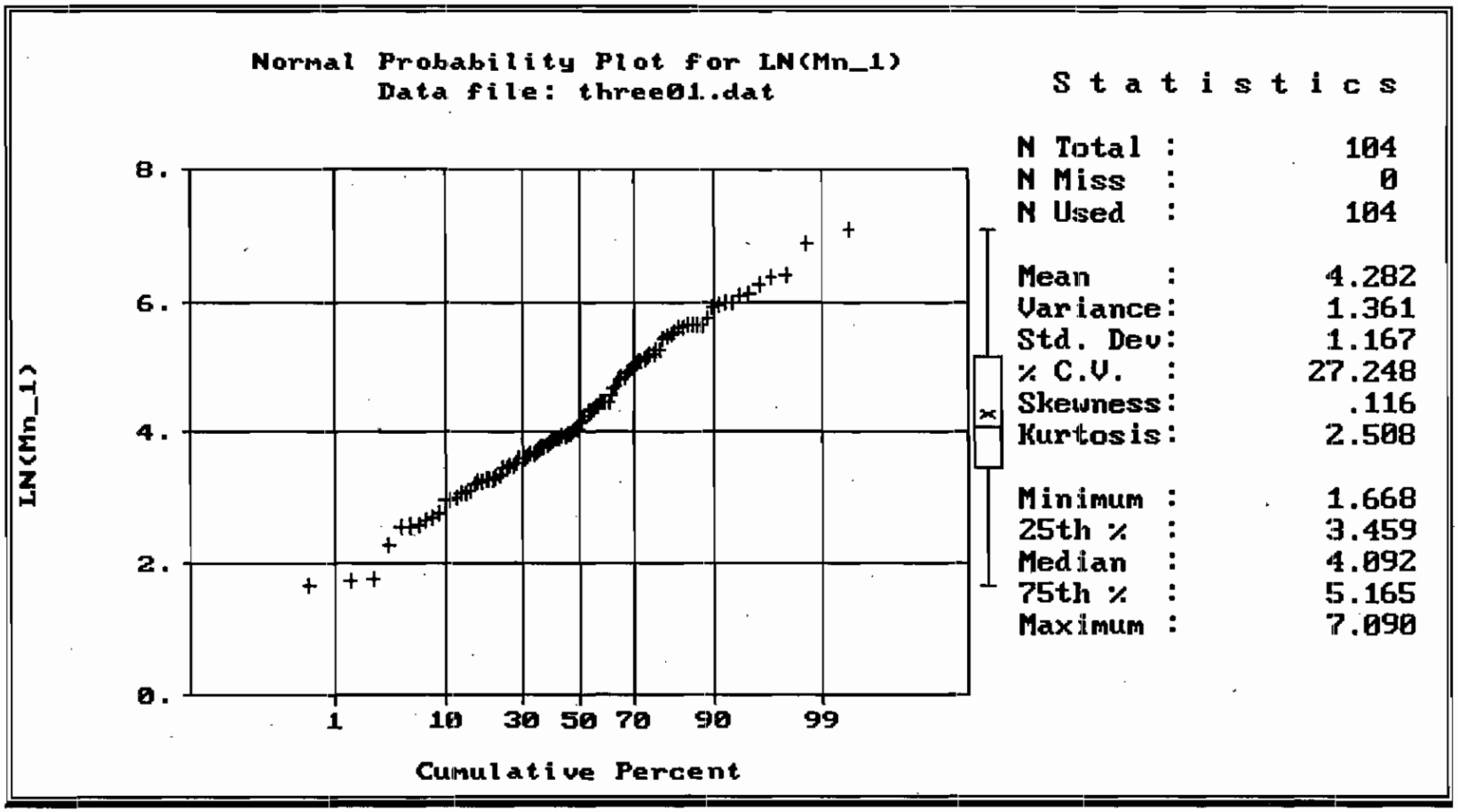
Zone H
Manganese in surface soil grid samples
Original dataset (N=104)
Original values



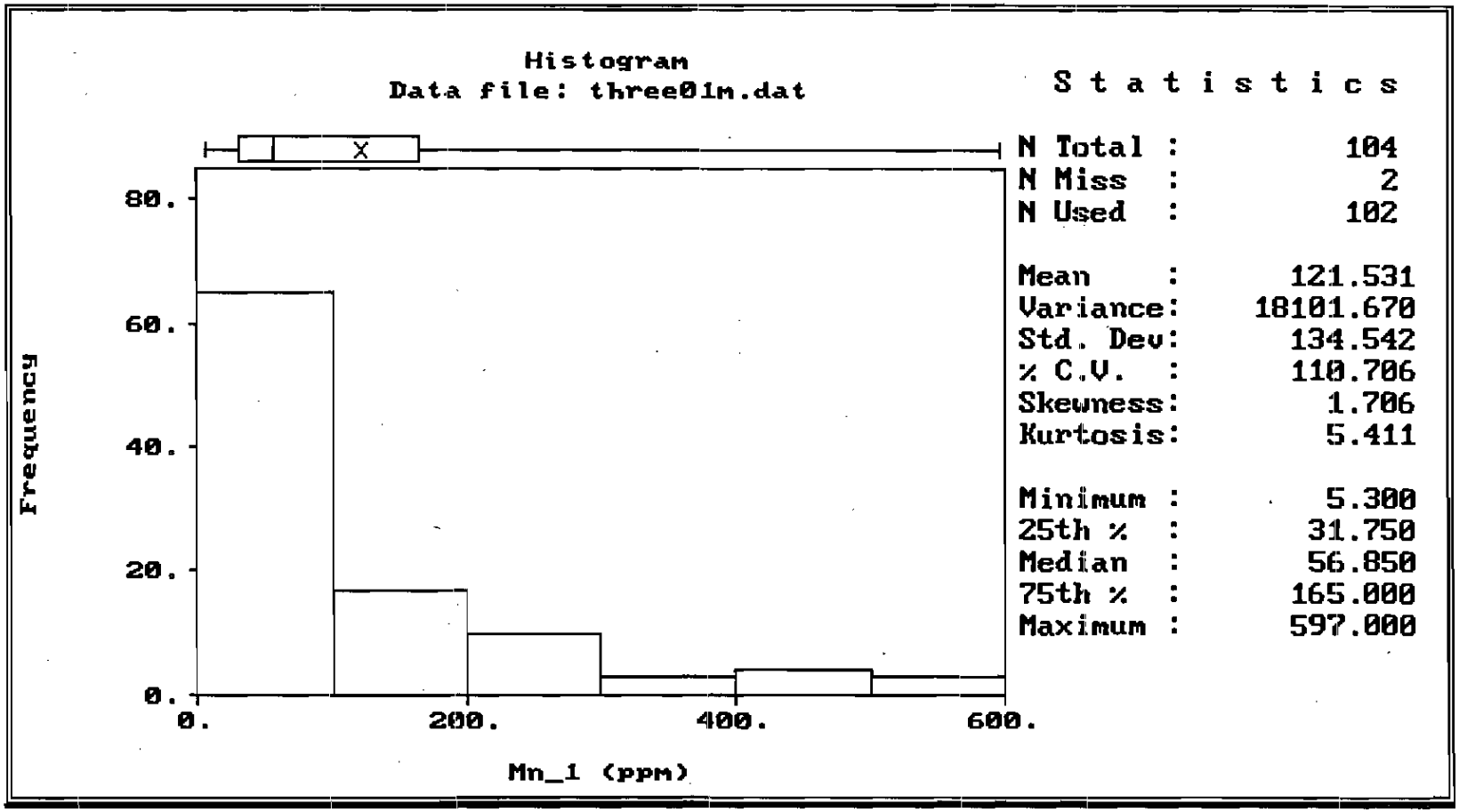

Normal Probability Plot for Mn_1
Data file: three01.dat
1200.
800.
400.
0.
Mn_1
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 104
N Miss : 0
N Used : 104
Mean : 140.185
Variance: 35896.170
Std. Dev: 189.463
% C.V. : 135.152
Skewness: 3.018
Kurtosis: 14.578
Minimum : 5.300
25th % : 31.800
Median : 59.900
75th % : 175.000
Maximum : 1200.000

Zone H
MN in surface soil grid samples
Original dataset (N = 104)
LN-transformed values



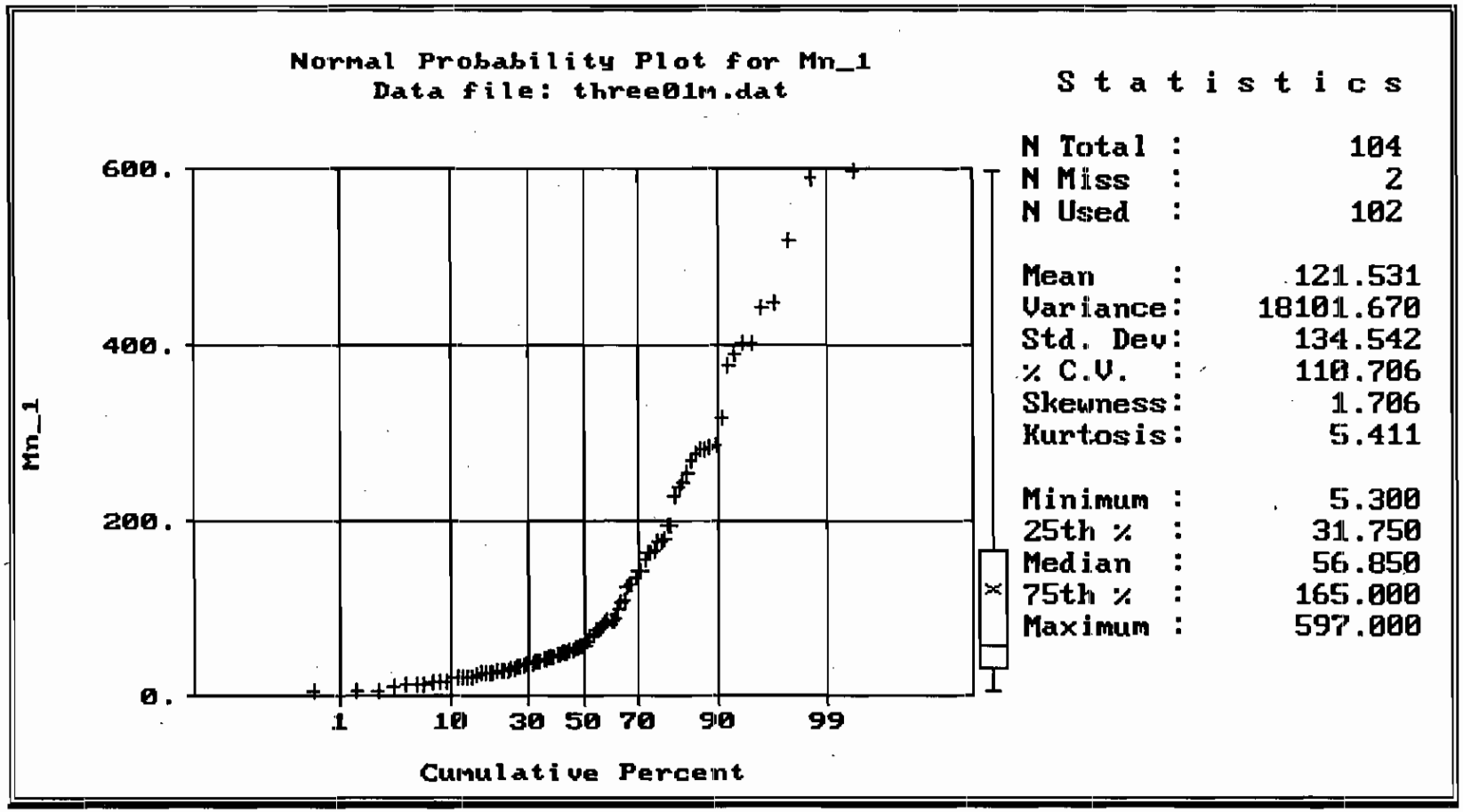

Normal Probability Plot for LN(Mn_1)
Data file: three01.dat
LN(Mn_1)
8.
6.
4.
2.
0.
1
10
30
50
70
90
99
Cumulative Percent
x
Statistics
N Total : 104
N Miss : 0
N Used : 104
Mean : 4.282
Variance: 1.361
Std. Dev: 1.167
% C.V. : 27.248
Skewness: .116
Kurtosis: 2.508
Minimum : 1.668
25th % : 3.459
Median : 4.092
75th % : 5.165
Maximum : 7.090

Zone H
MN in surface soil grid samples
Samples #41-01 and 42-01 removed
Original values

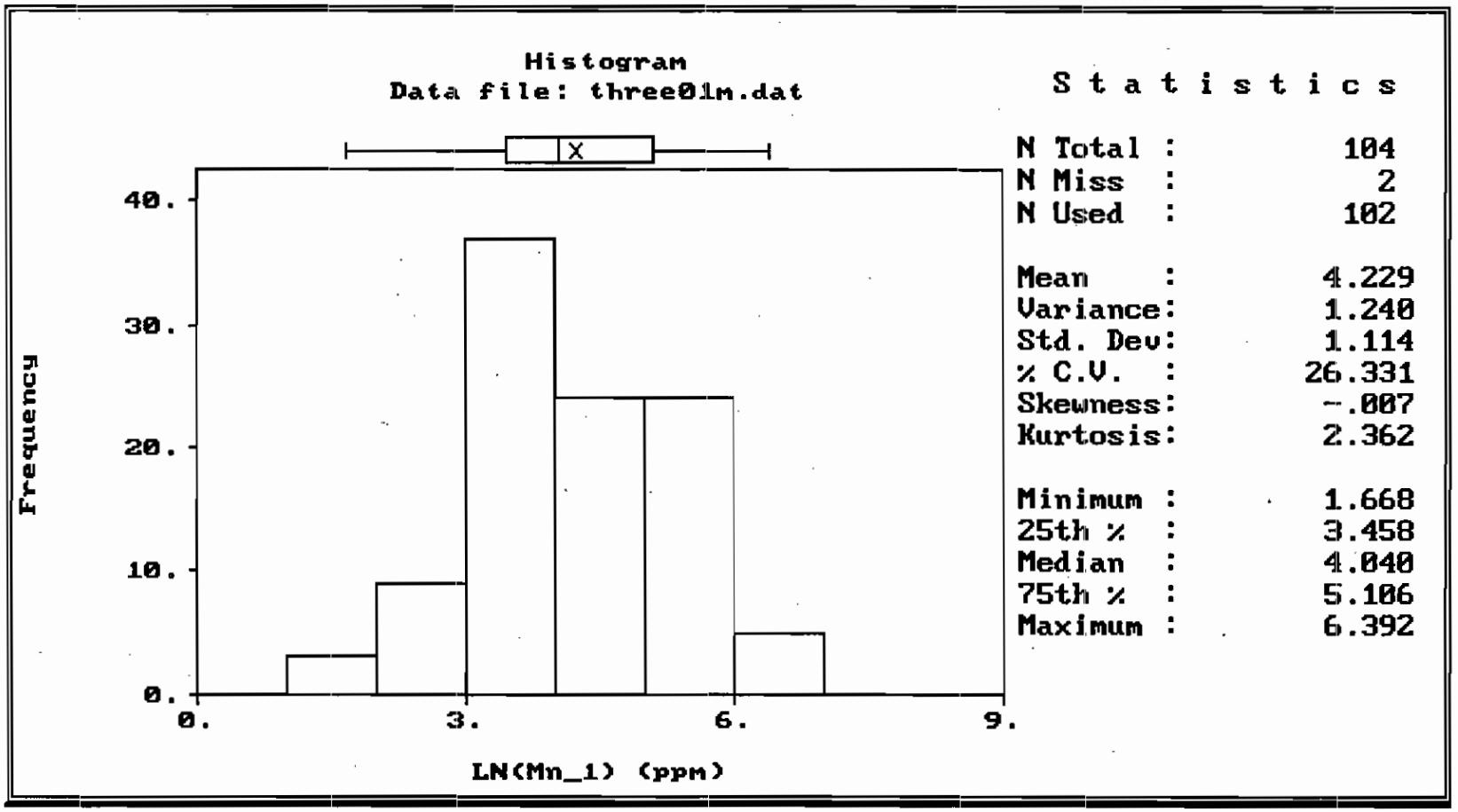


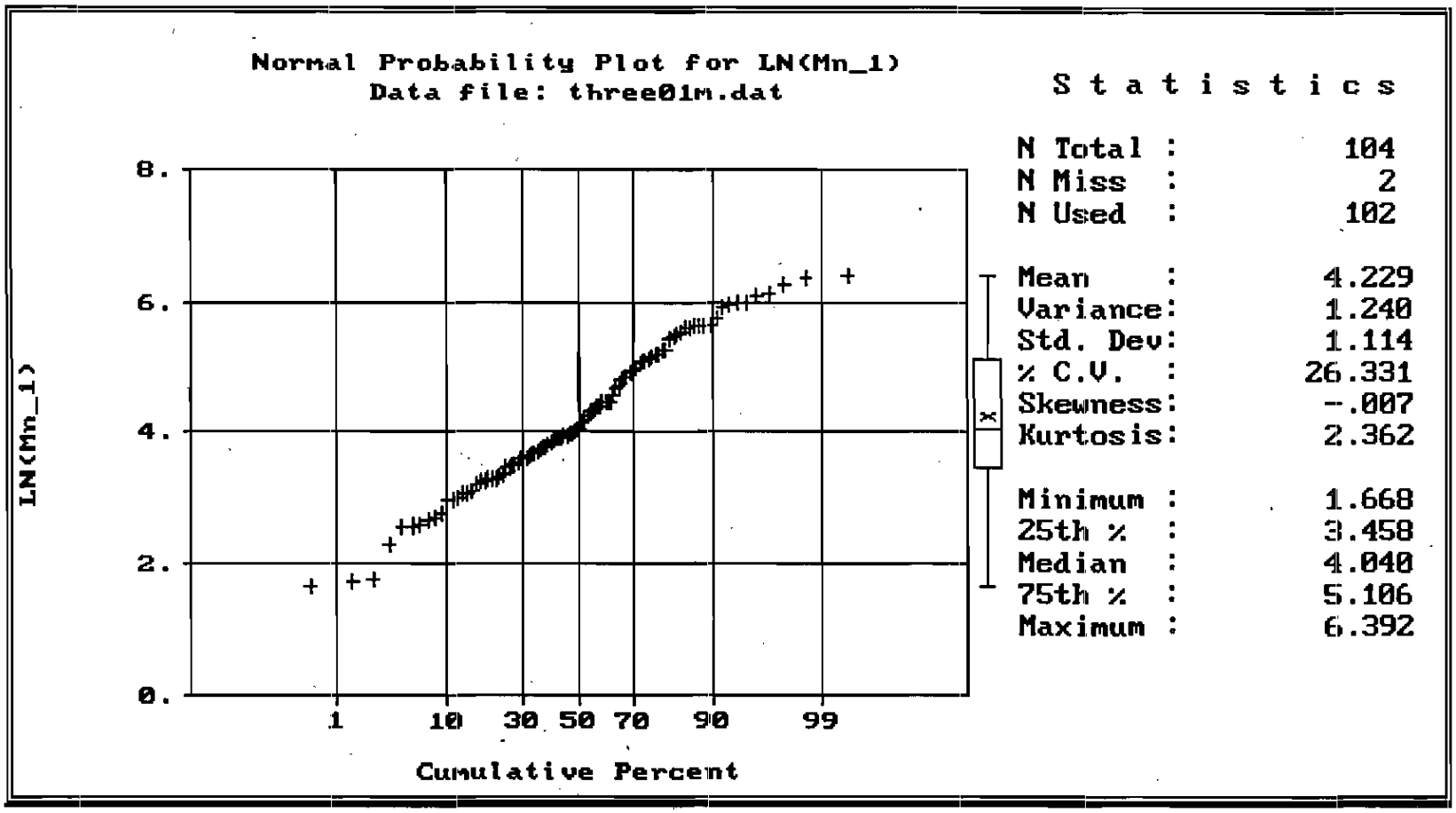
Statistics

N Total :	104
N Miss :	2
N Used :	102
Mean :	121.531
Variance:	18101.670
Std. Dev:	134.542
% C.V. :	110.706
Skewness:	1.706
Kurtosis:	5.411
Minimum :	5.300
25th % :	31.750
Median :	56.850
75th % :	165.000
Maximum :	597.000

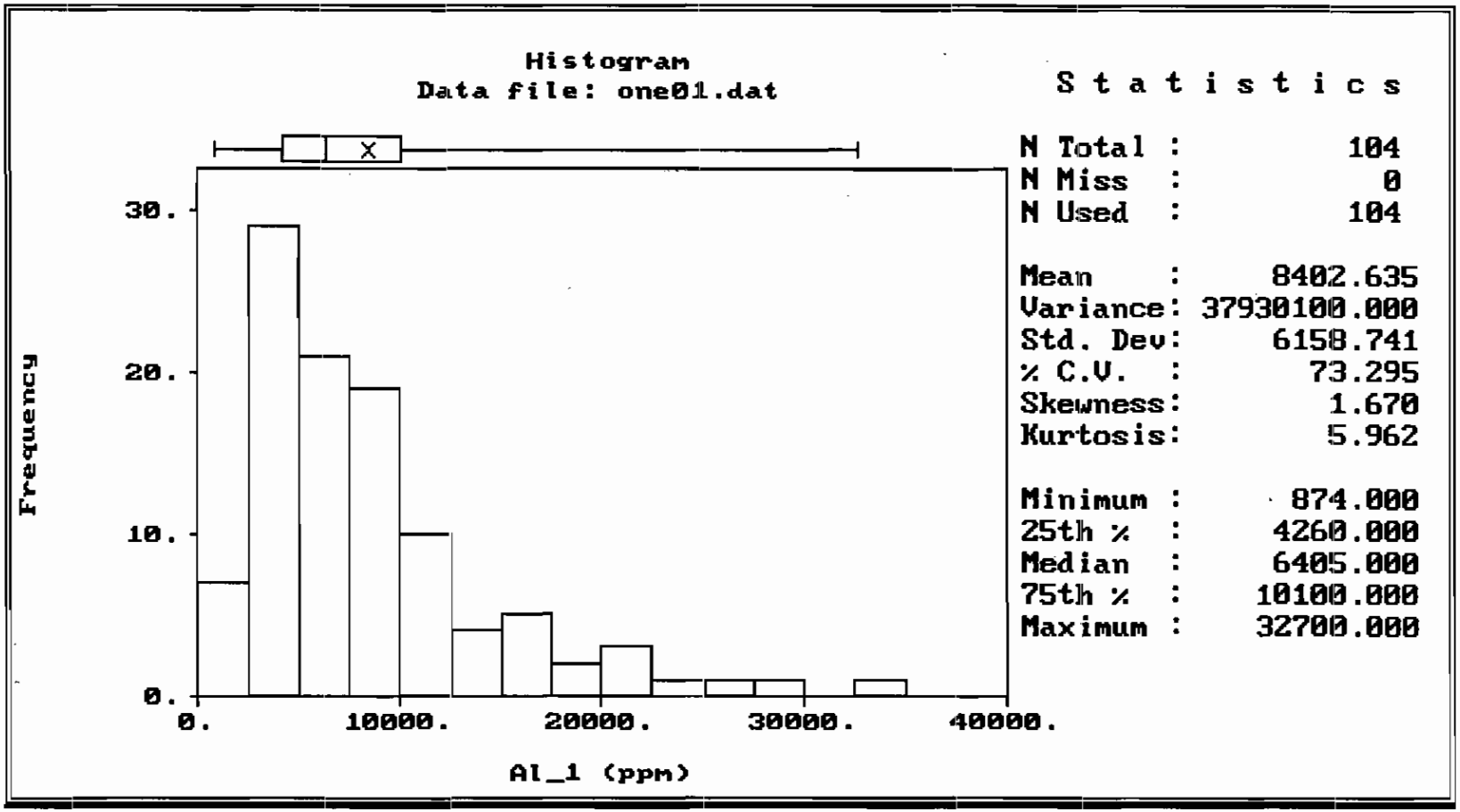

Normal Probability Plot for Mn_1
Data file: three01m.dat
600.
400.
200.
0.
Mn_1
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 104
N Miss : 2
N Used : 102
Mean : 121.531
Variance: 18101.670
Std. Dev: 134.542
% C.V. : 110.706
Skewness: 1.706
Kurtosis: 5.411
Minimum : 5.300
25th % : 31.750
Median : 56.850
75th % : 165.000
Maximum : 597.000

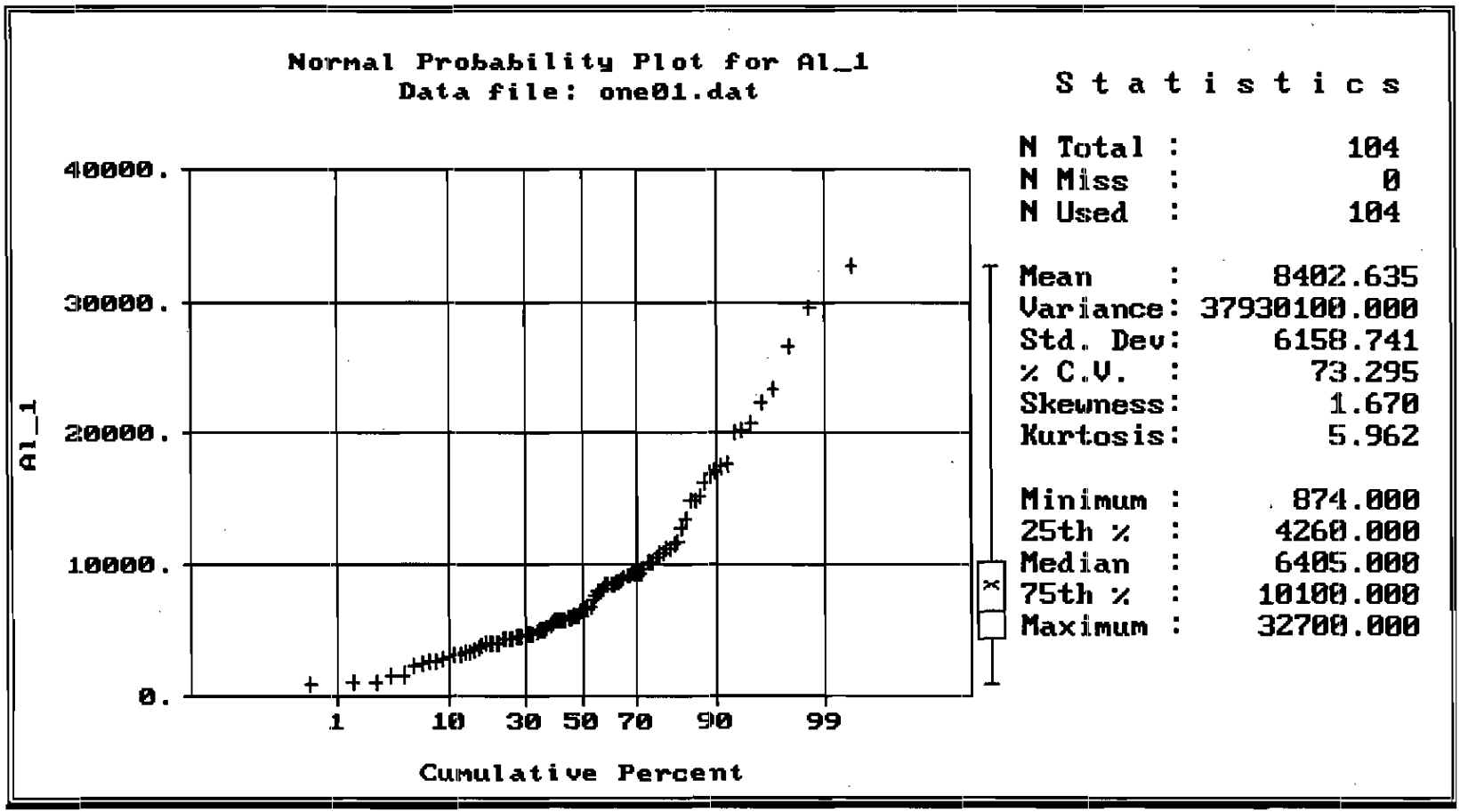
Zone H
MN in surface soil grid samples
Samples # 41-01 and 42-01 removed
LN-transformed values



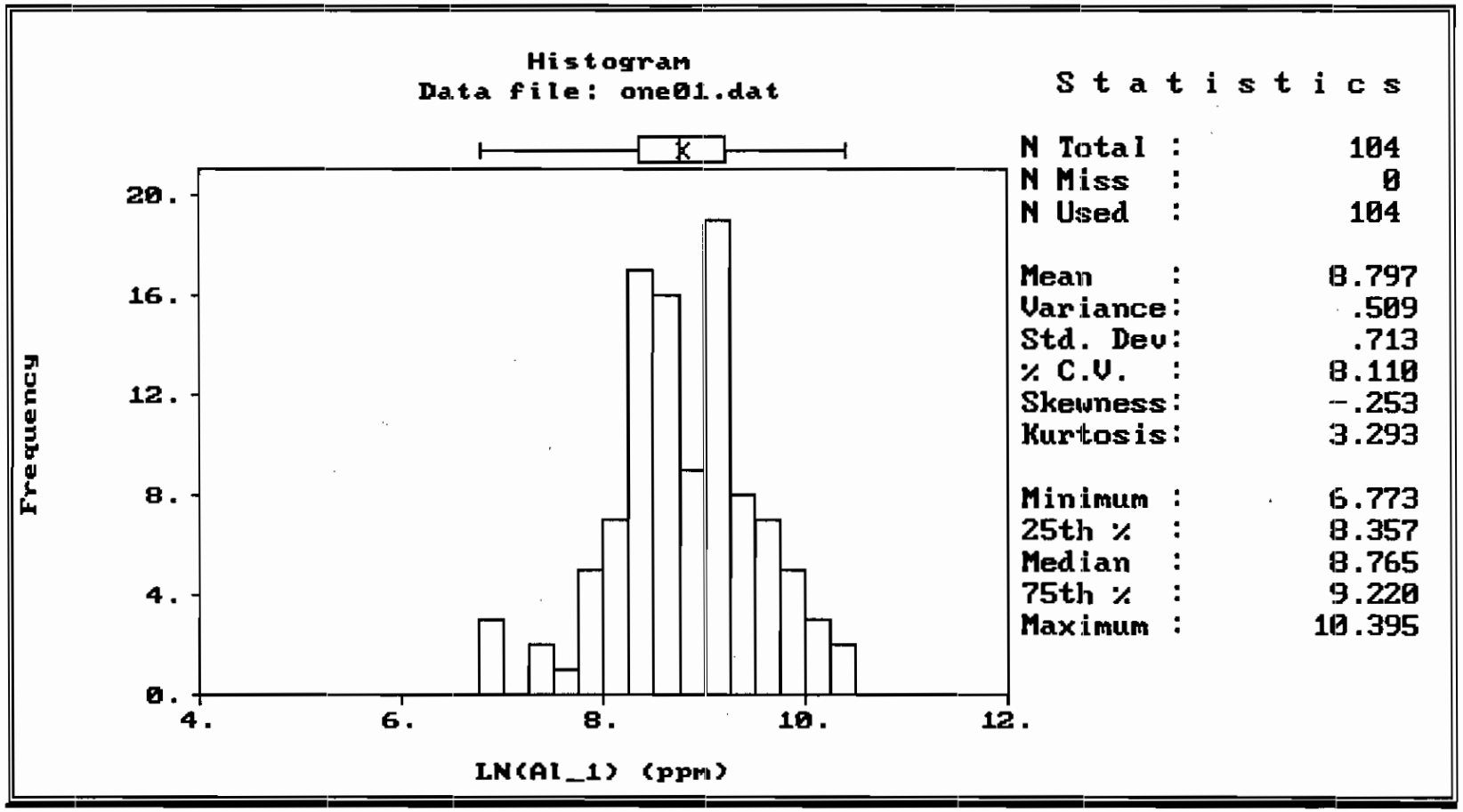

Normal Probability Plot for LN(Mn_1)
Data file: three01m.dat
LN(Mn_1)
8.
6.
4.
2.
0.
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 104
N Miss : 2
N Used : 102
Mean : 4.229
Variance: 1.240
Std. Dev: 1.114
% C.V. : 26.331
Skewness: -.007
Kurtosis: 2.362
Minimum : 1.668
25th % : 3.458
Median : 4.040
75th % : 5.106
Maximum : 6.392

Zone H
Aluminum in surface soil grid samples
Original dataset (N = 104)
Original values



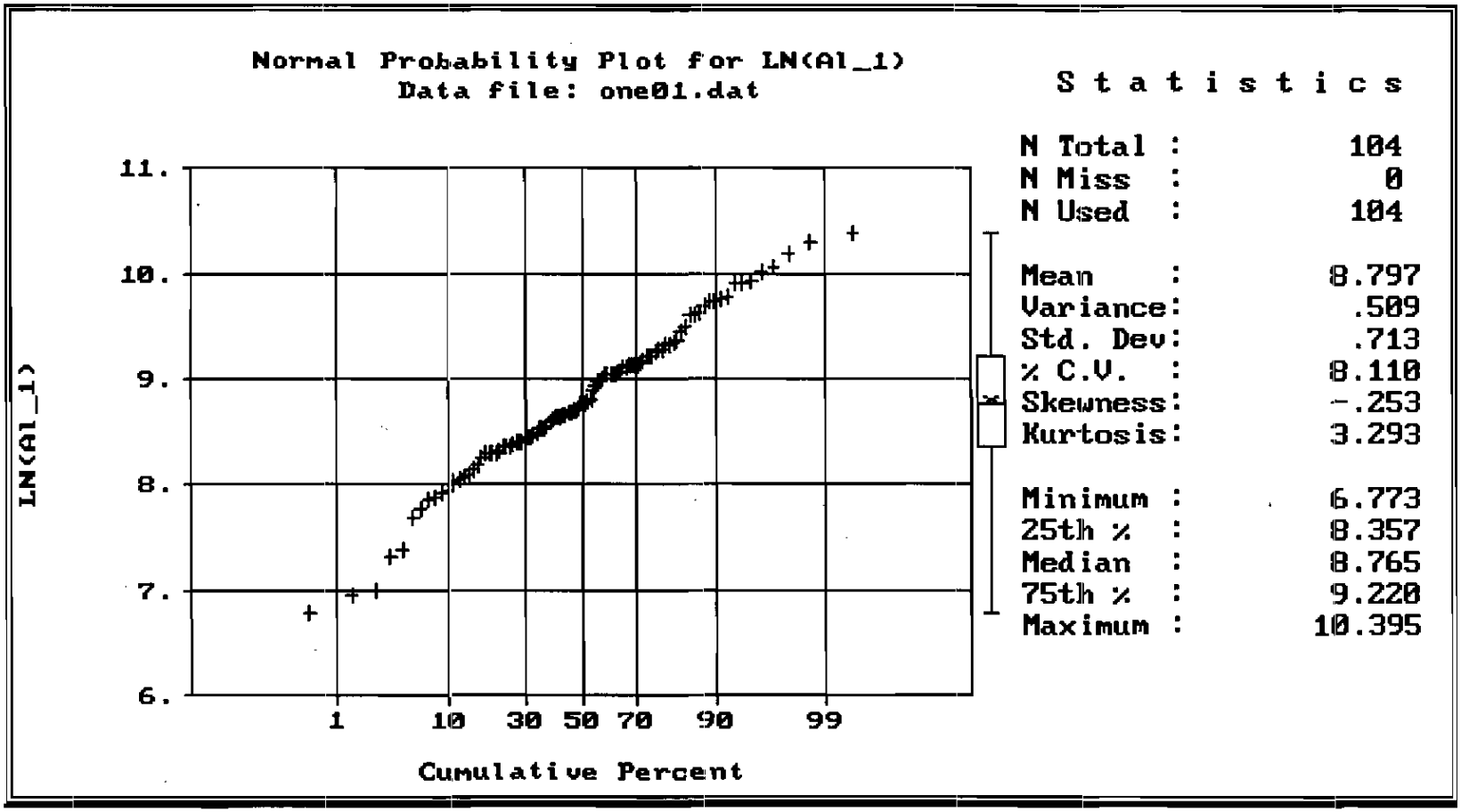

Normal Probability Plot for Al_1
Data file: one01.dat
40000.
30000.
20000.
10000.
0.
Al_1
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 104
N Miss : 0
N Used : 104
Mean : 8402.635
Variance: 37930100.000
Std. Dev: 6158.741
% C.V. : 73.295
Skewness: 1.670
Kurtosis: 5.962
Minimum : 874.000
25th % : 4260.000
Median : 6405.000
75th % : 10100.000
Maximum : 32700.000

Zone H
AL in surface soil grid samples
Original dataset (N=104)
LN-transformed values

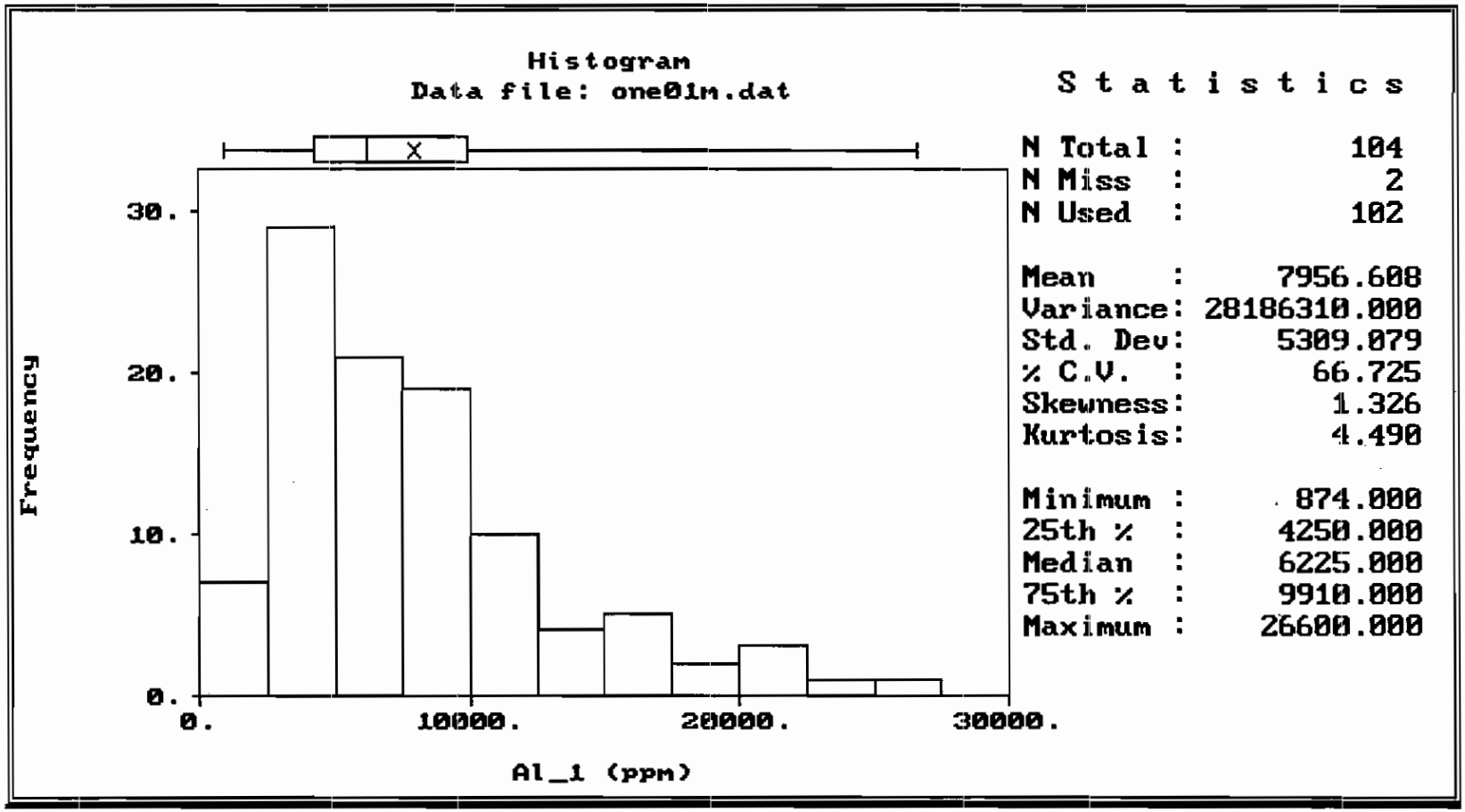


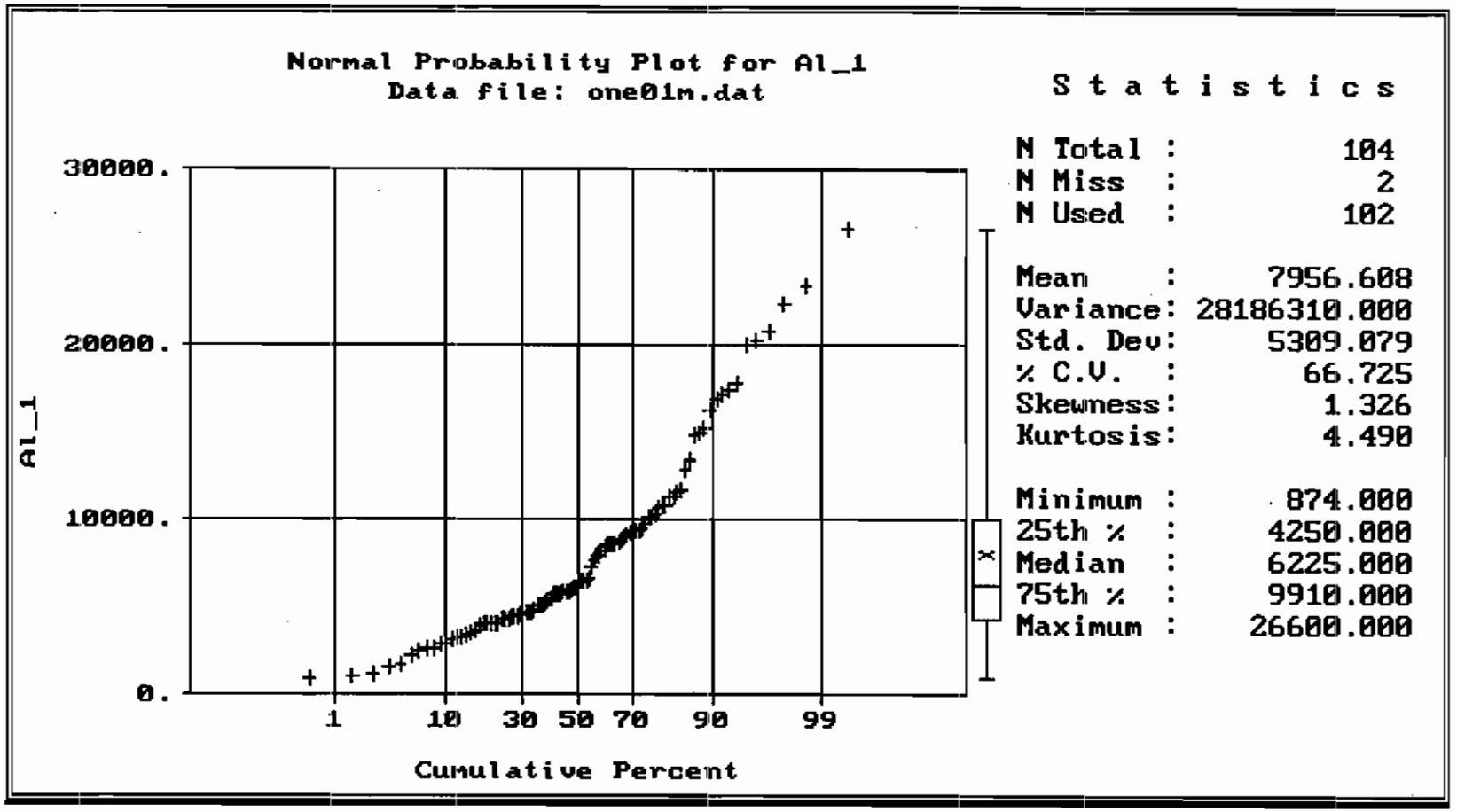
Statistics

N Total :	104
N Miss :	0
N Used :	104
Mean :	8.797
Variance:	.509
Std. Dev:	.713
% C.V. :	8.110
Skewness:	-.253
Kurtosis:	3.293
Minimum :	6.773
25th % :	8.357
Median :	8.765
75th % :	9.220
Maximum :	10.395

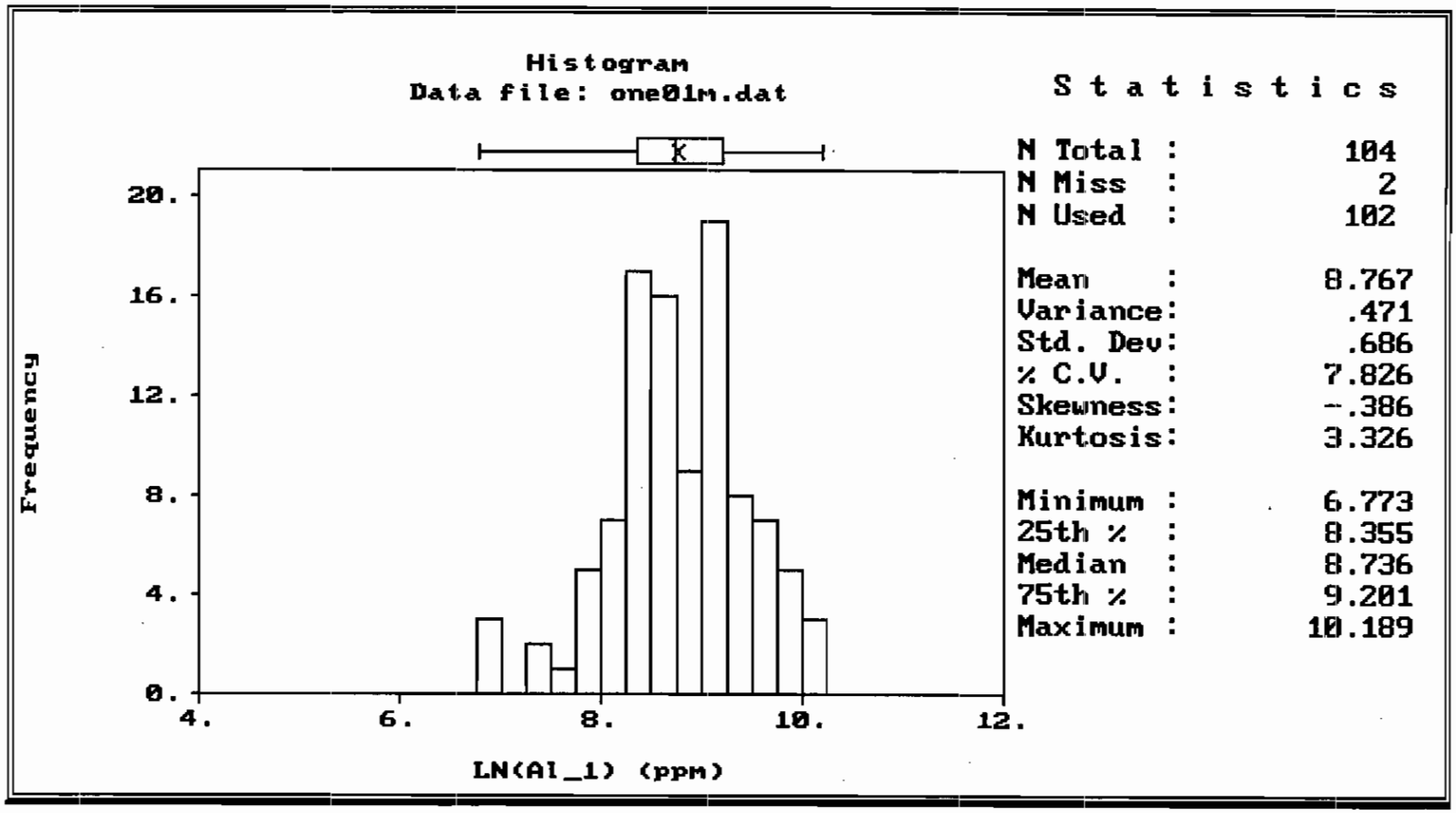

Normal Probability Plot for LN(Al_1)
Data file: one01.dat
LN(Al_1)
11.
10.
9.
8.
7.
6.
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 104
N Miss : 0
N Used : 104
Mean : 8.797
Variance: .509
Std. Dev: .713
% C.V. : 8.110
Skewness: -.253
Kurtosis: 3.293
Minimum : 6.773
25th % : 8.357
Median : 8.765
75th % : 9.220
Maximum : 10.395

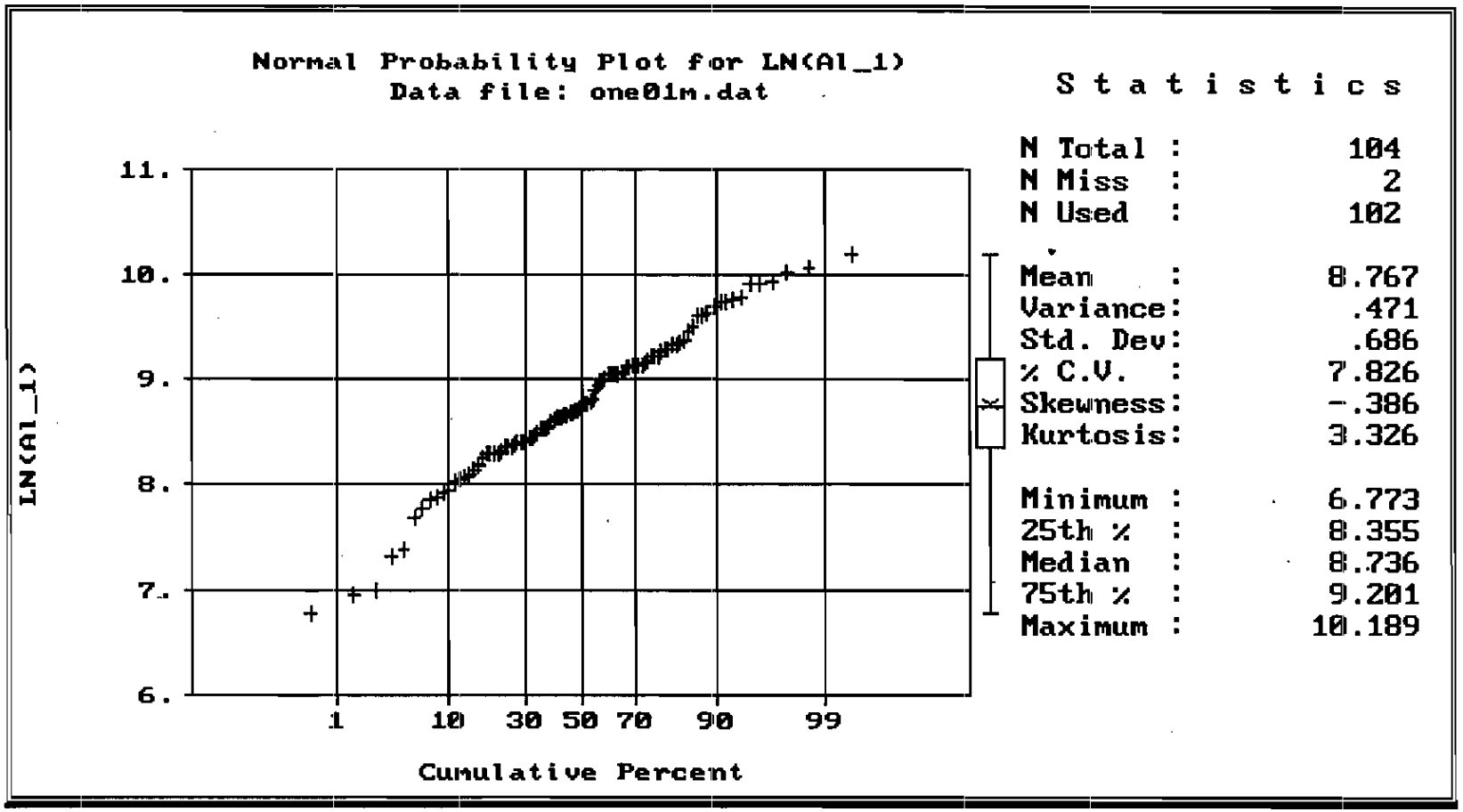
Zone #H
AL in surface soil grid samples
Samples #41-01 and 49-01 removed
Original values



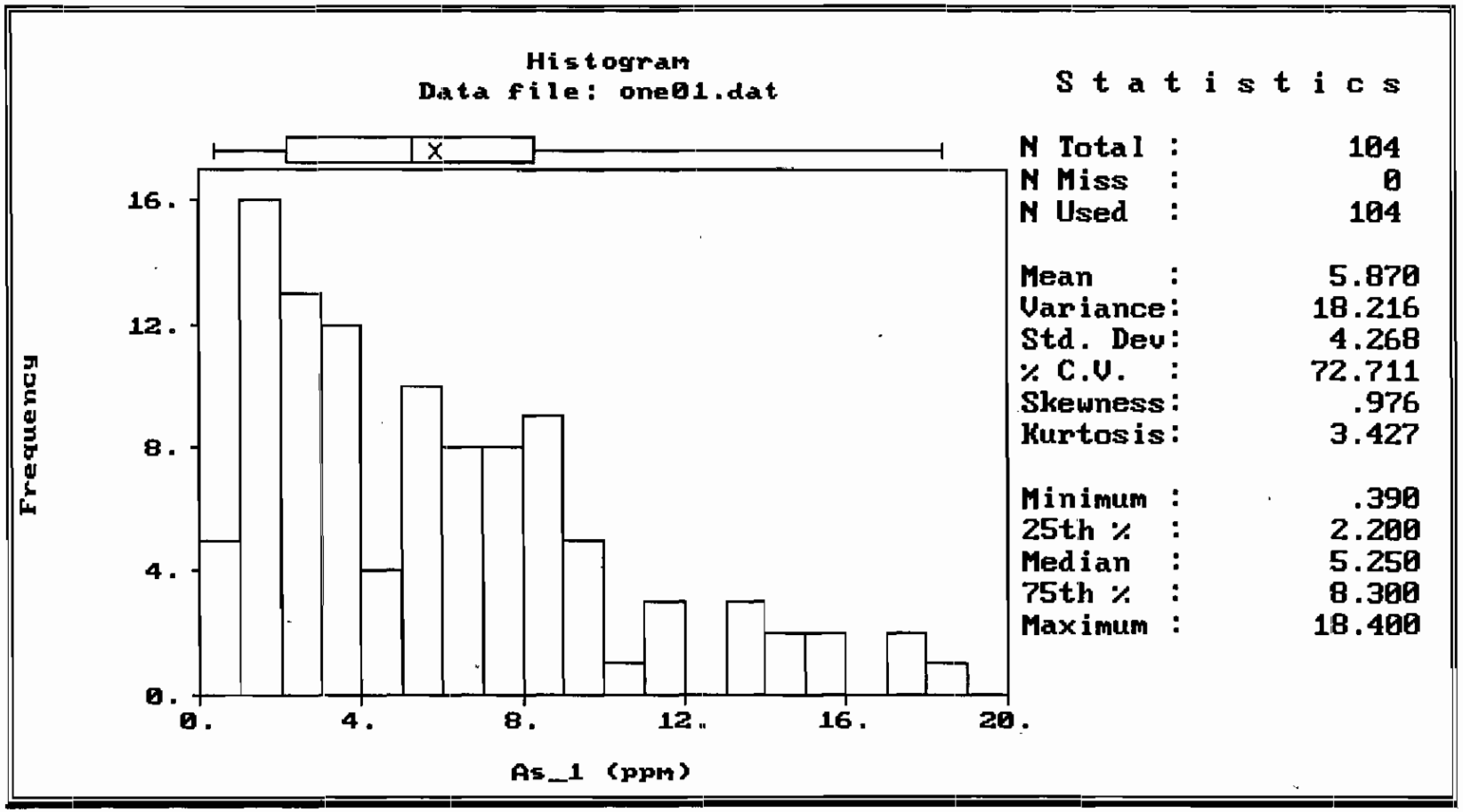

Normal Probability Plot for Al_1
Data file: one01m.dat
30000.
20000.
10000.
0.
Al_1
1
10
30
50
70
90
99
Cumulative Percent
x
S t a t i s t i c s
N Total : 104
N Miss : 2
N Used : 102
Mean : 7956.608
Variance: 28186310.000
Std. Dev: 5309.079
% C.V. : 66.725
Skewness: 1.326
Kurtosis: 4.490
Minimum : 874.000
25th % : 4250.000
Median : 6225.000
75th % : 9910.000
Maximum : 26600.000

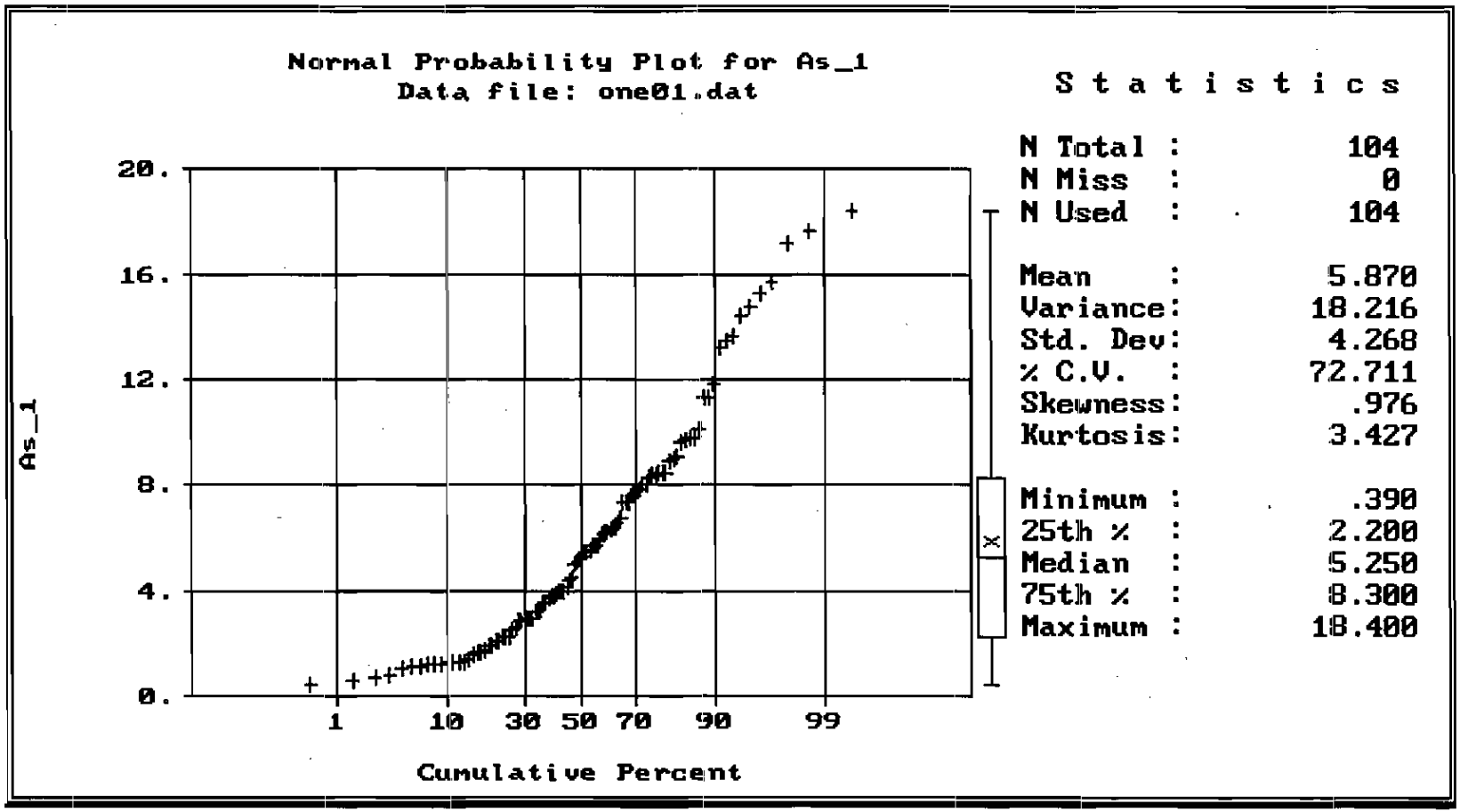
Zone H
AL in surface soil grid samples
Samples #41-01 and 49-01 removed
LN - transformed values



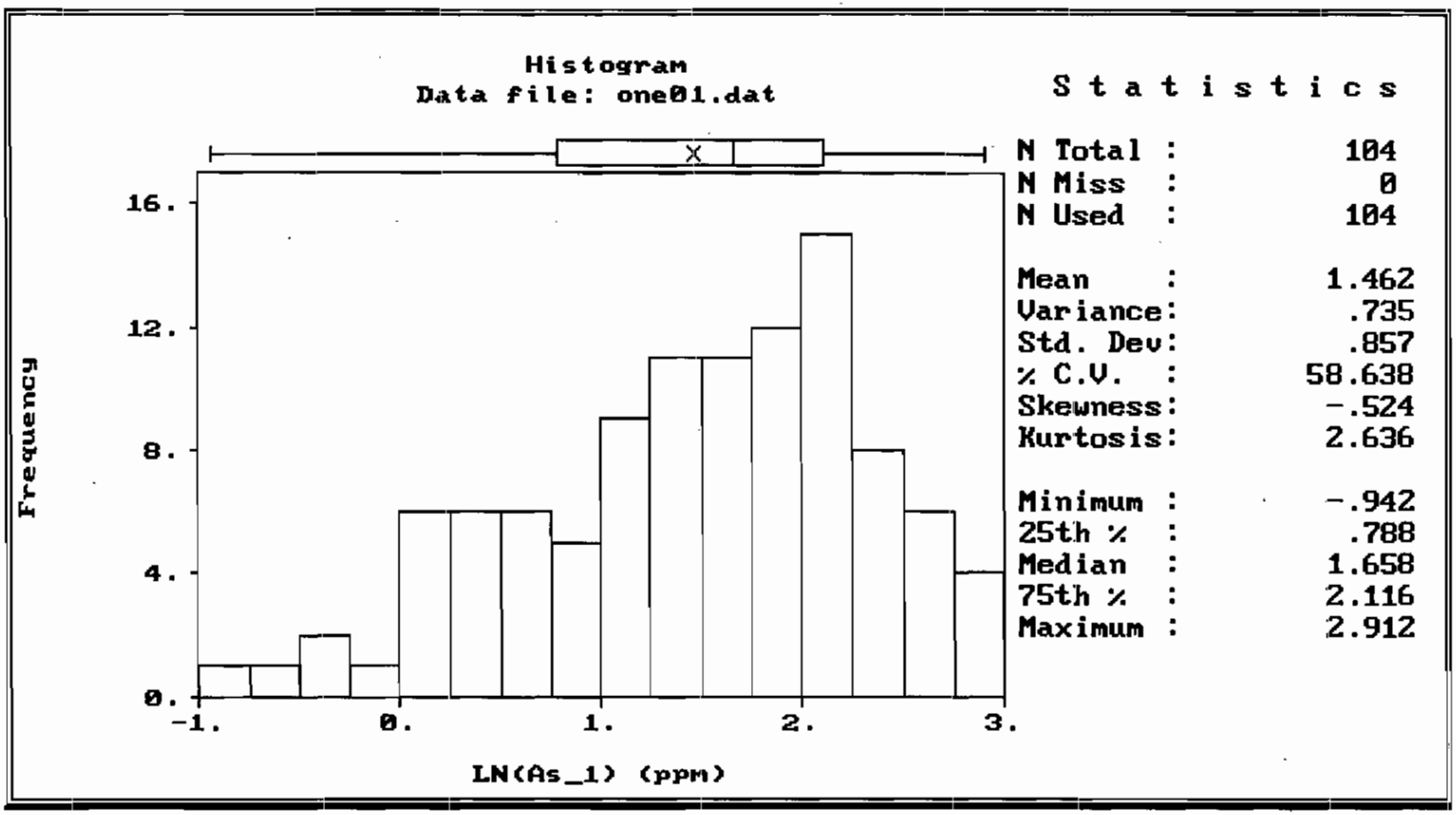

Normal Probability Plot for LN(Al_1)
Data file: one01m.dat
LN(Al_1)
11.
10.
9.
8.
7.
6.
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 104
N Miss : 2
N Used : 102
Mean : 8.767
Variance: .471
Std. Dev: .686
% C.V. : 7.826
Skewness: -.386
Kurtosis: 3.326
Minimum : 6.773
25th % : 8.355
Median : 8.736
75th % : 9.201
Maximum : 10.189

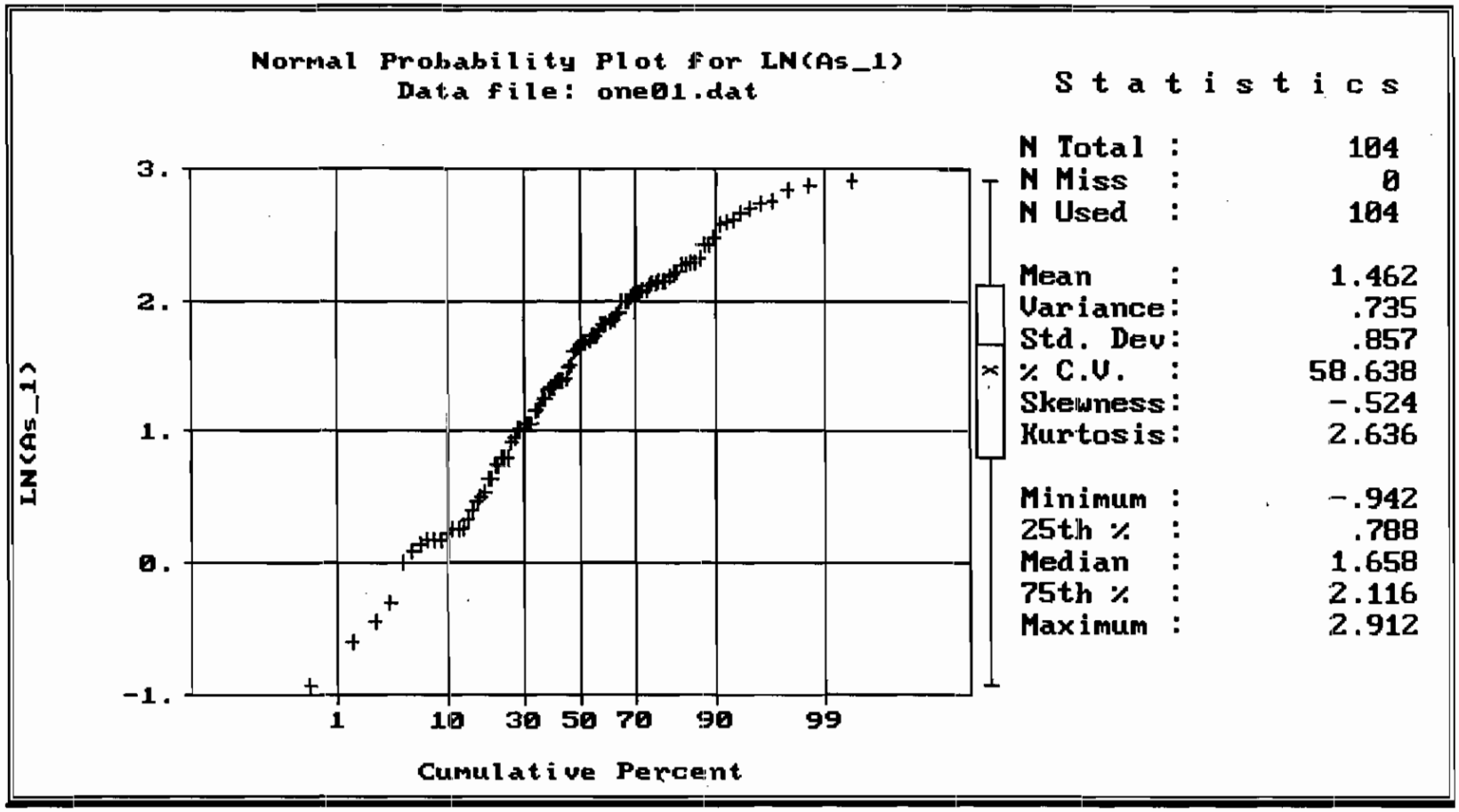
Zone H
Arsenic in surface soil grid samples
Original dataset (N = 104)
Original values



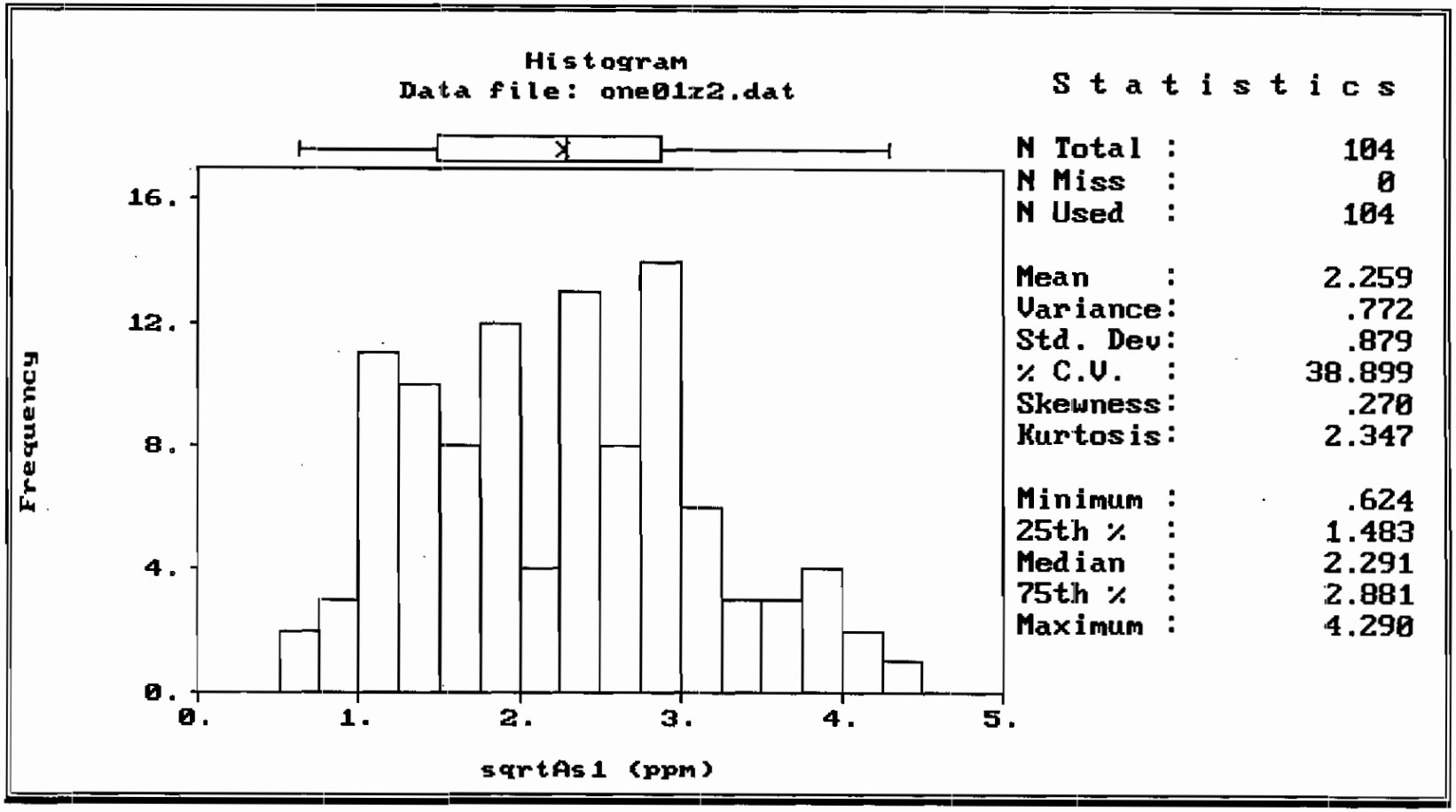

Normal Probability Plot for As_1
Data file: one01.dat
As_1
20.
16.
12.
8.
4.
0.
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 104
N Miss : 0
N Used : 104
Mean : 5.870
Variance: 18.216
Std. Dev: 4.268
% C.V. : 72.711
Skewness: .976
Kurtosis: 3.427
Minimum : .390
25th % : 2.200
Median : 5.250
75th % : 8.300
Maximum : 18.400

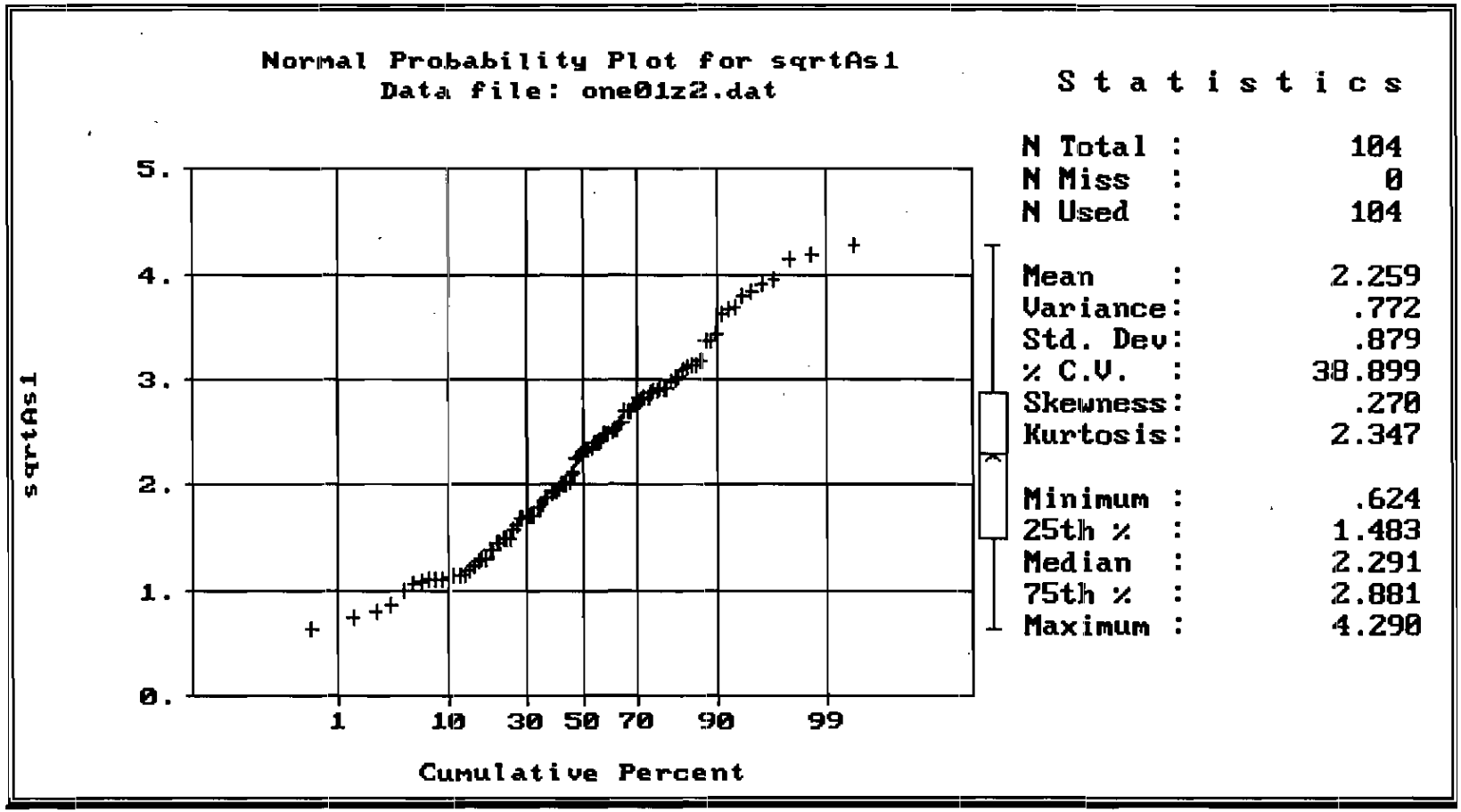
Zone H
AS in surface soil grid samples
Original dataset (N = 104)
LN-transformed values



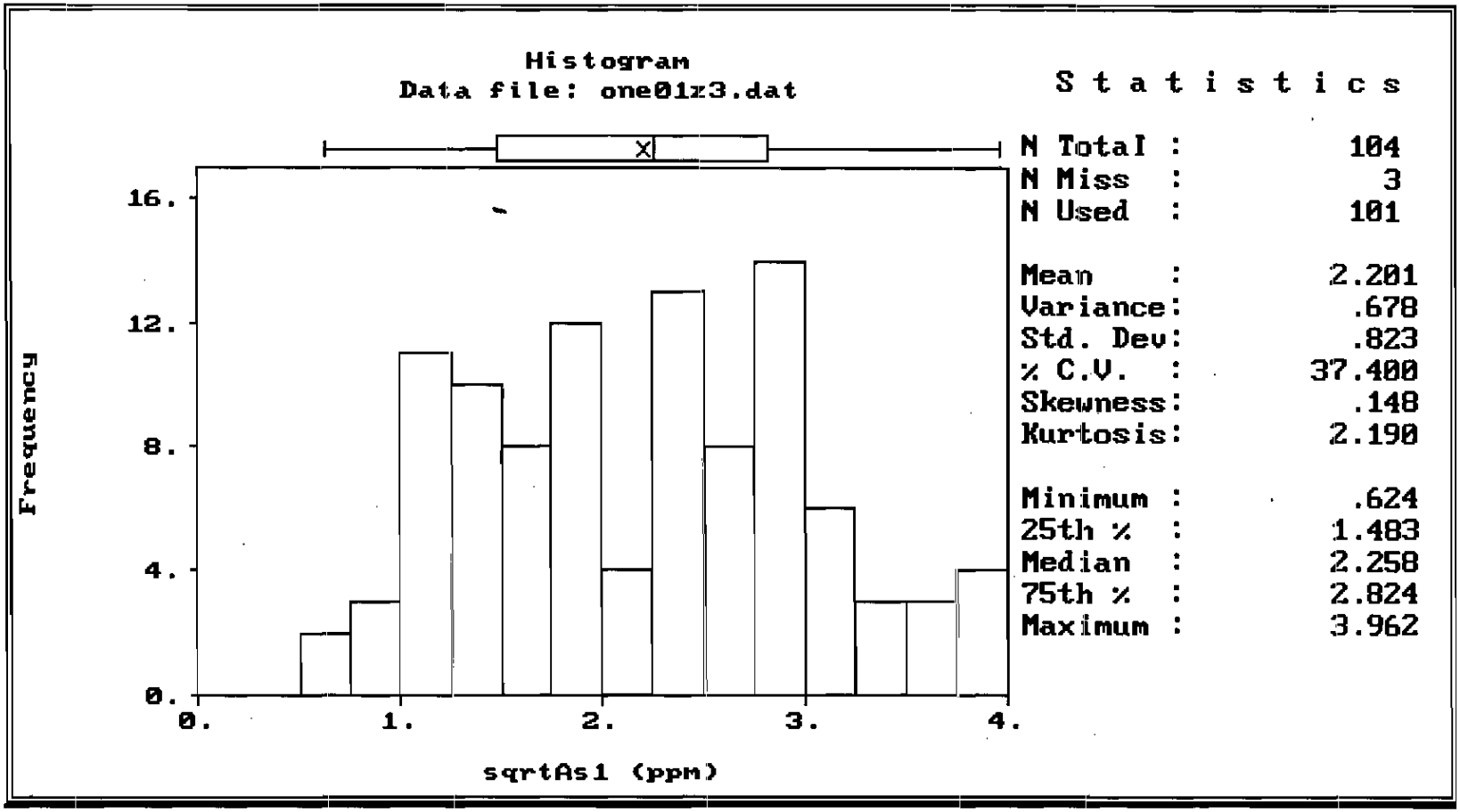

Normal Probability Plot for LN(As_1)
Data file: one01.dat
LN(As_1)
3.
2.
1.
0.
-1.
1
10
30
50
70
90
99
Cumulative Percent
x
Statistics
N Total : 104
N Miss : 0
N Used : 104
Mean : 1.462
Variance: .735
Std. Dev: .857
% C.V. : 58.638
Skewness: -.524
Kurtosis: 2.636
Minimum : -.942
25th % : .788
Median : 1.658
75th % : 2.116
Maximum : 2.912

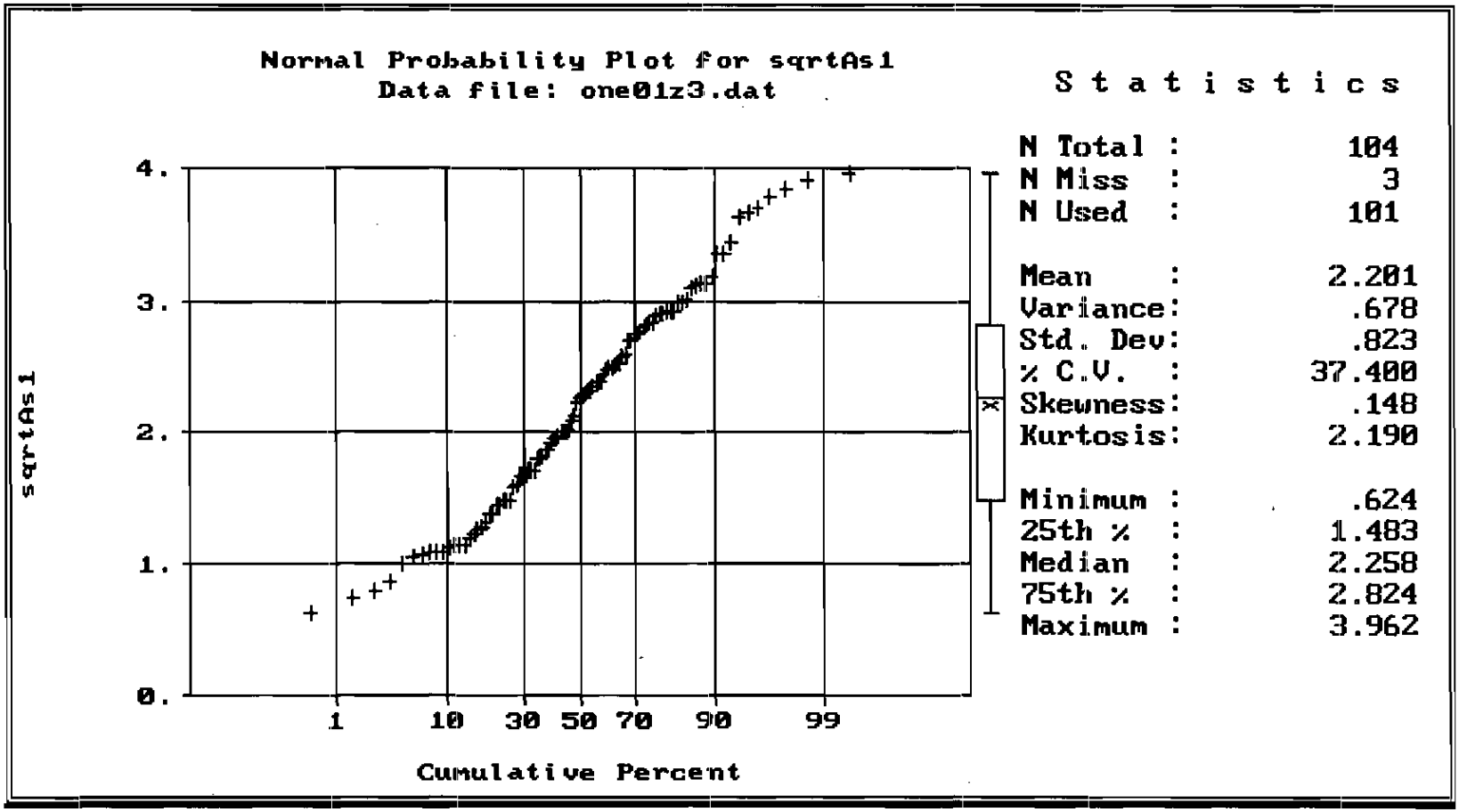
Zone H
AS in surface soil grid samples
Original dataset (N = 104)
Square-root transformed values



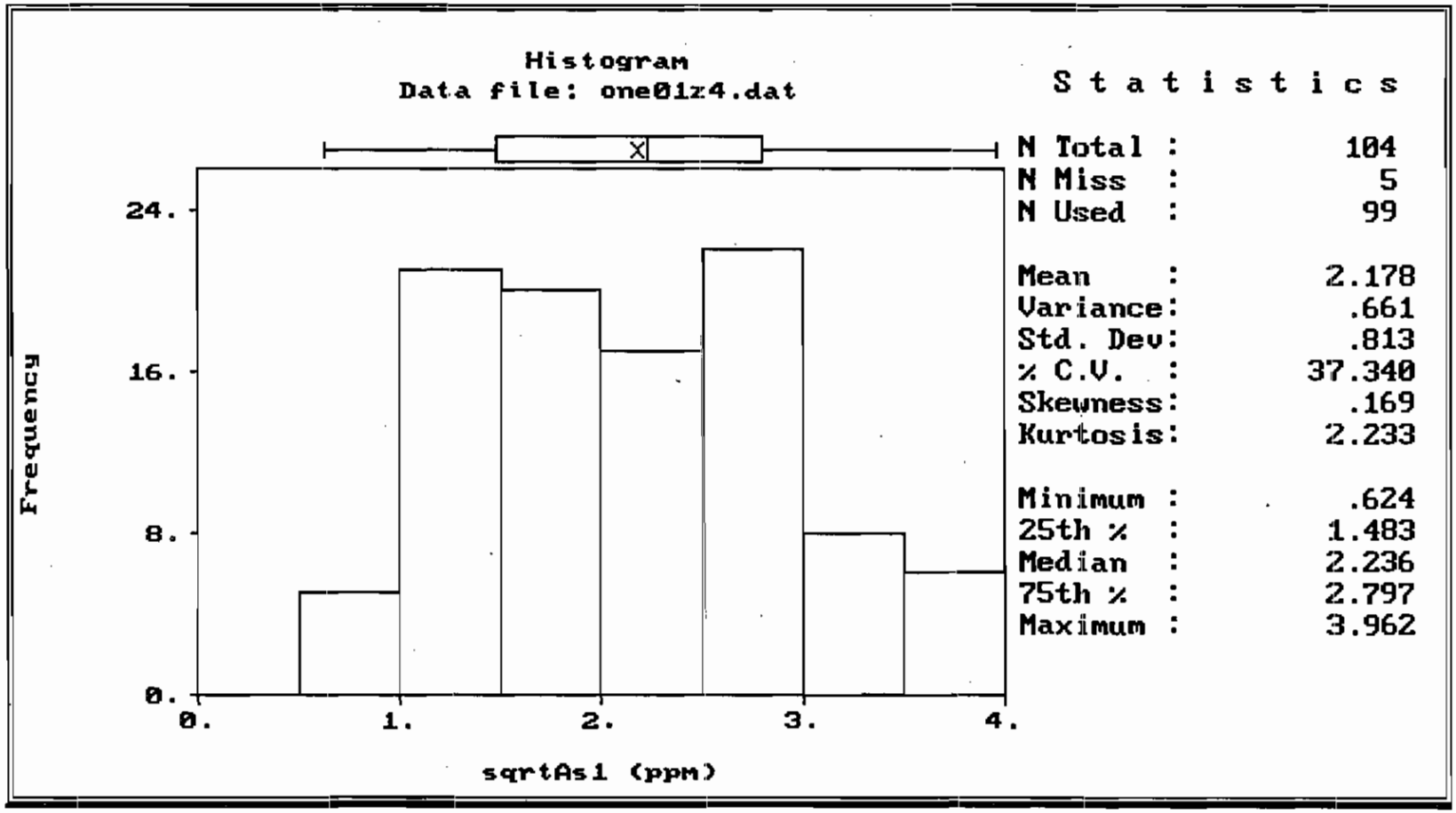

Normal Probability Plot for sqrtAs1
Data file: one01z2.dat
sqrtAs1
5.
4.
3.
2.
1.
0.
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 104
N Miss : 0
N Used : 104
Mean : 2.259
Variance: .772
Std. Dev: .879
% C.V. : 38.899
Skewness: .270
Kurtosis: 2.347
Minimum : .624
25th % : 1.483
Median : 2.291
75th % : 2.881
Maximum : 4.290

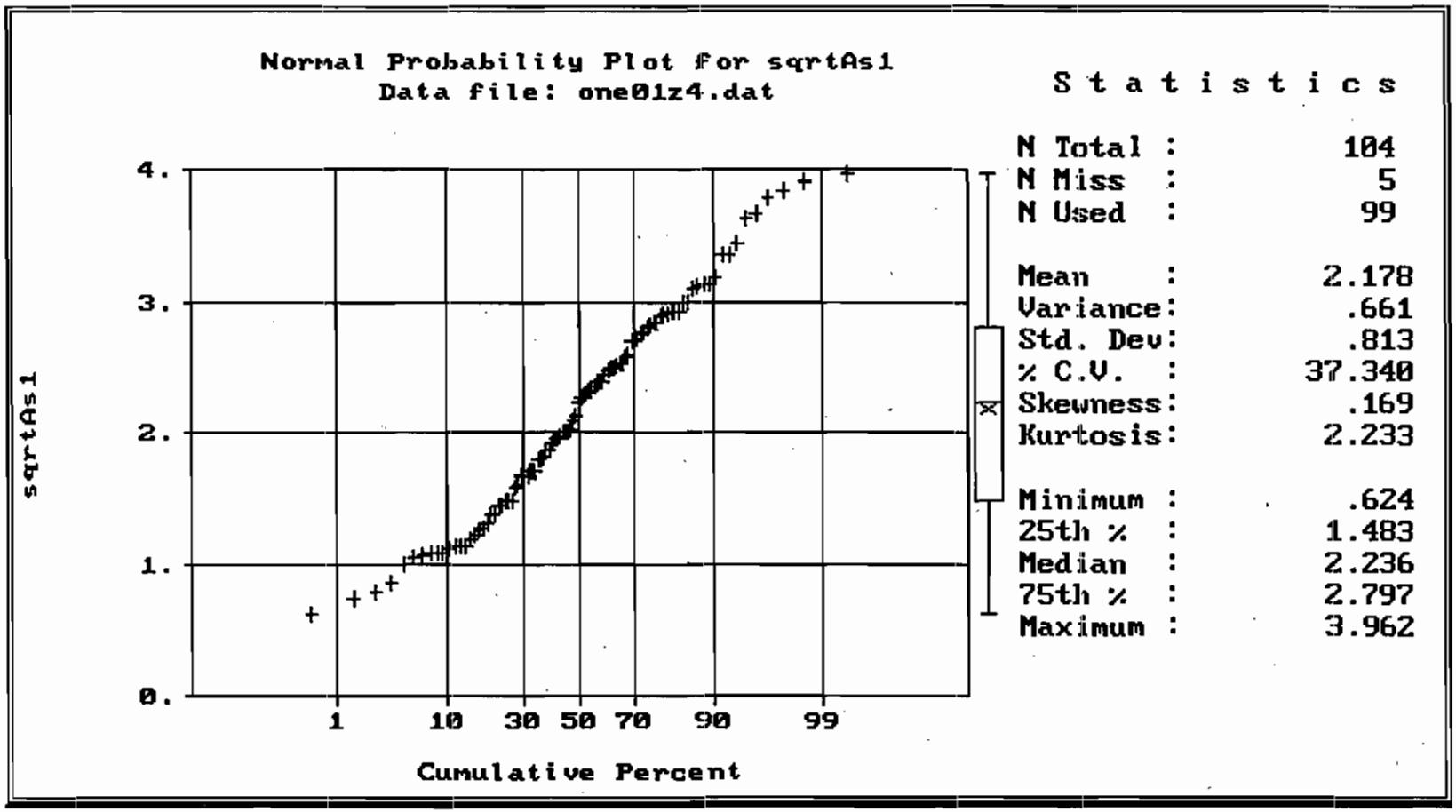
Zone H
AS in surface soil grid samples
Samples #34-01, 35-01, and 41-01 removed
Square-root transformed values




Normal Probability Plot for sqrtAs1
Data file: one01z3.dat
sqrtAs1
4.
3.
2.
1.
0.
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 104
N Miss : 3
N Used : 101
Mean : 2.201
Variance: .678
Std. Dev: .823
% C.V. : 37.400
Skewness: .148
Kurtosis: 2.190
Minimum : .624
25th % : 1.483
Median : 2.258
75th % : 2.824
Maximum : 3.962

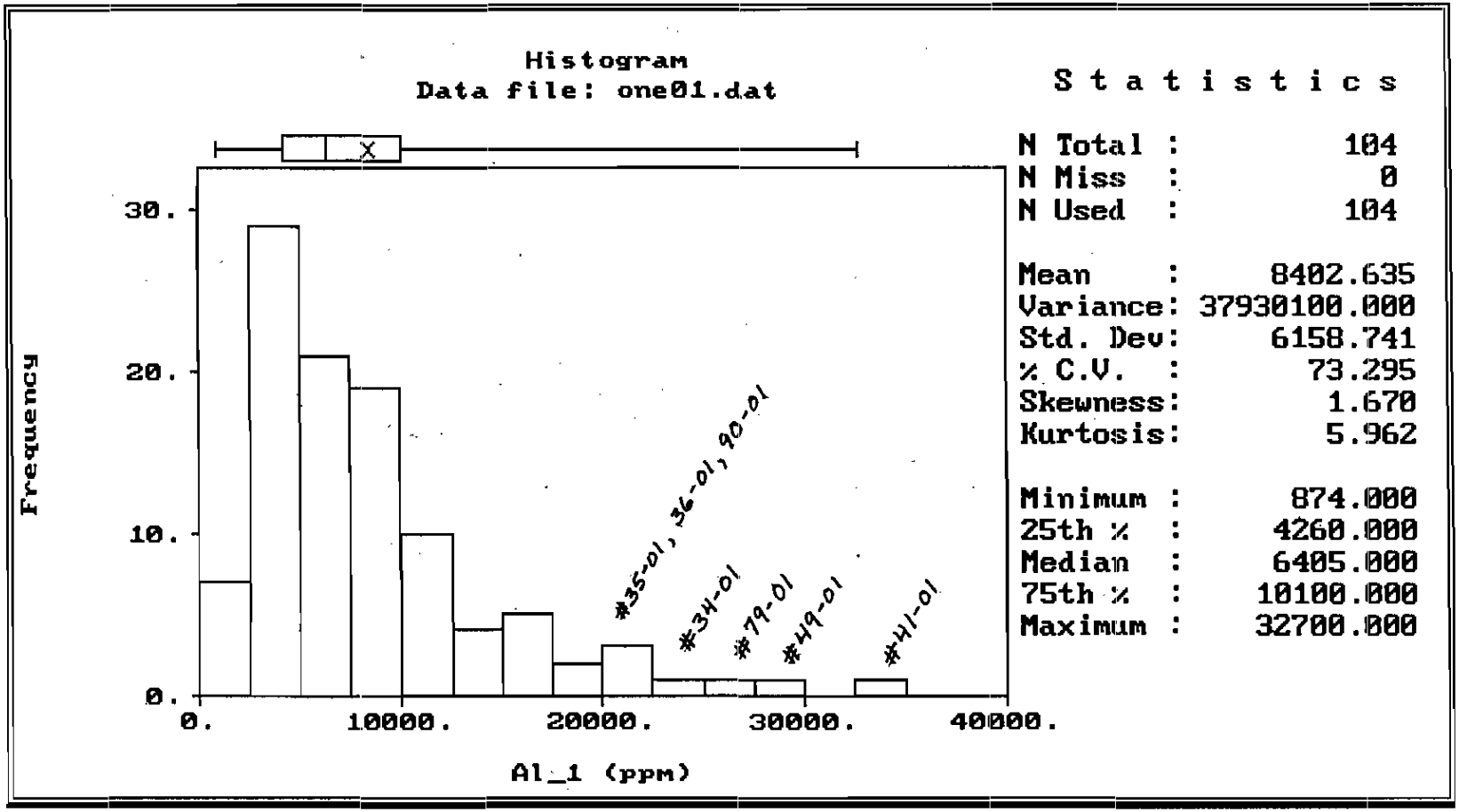
Zone H
AS in surface soil grid samples
Samples #34-01, 35-01, 36-01, 41-01, and 42-01 removed
Square-root transformed values




Normal Probability Plot For sqrtAs1
Data file: one01z4.dat
sqrtAs1
4.
3.
2.
1.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 104
N Miss : 5
N Used : 99
Mean : 2.178
Variance: .661
Std. Dev: .813
% C.V. : 37.340
Skewness: .169
Kurtosis: 2.233
Minimum : .624
25th % : 1.483
Median : 2.236
75th % : 2.797
Maximum : 3.962

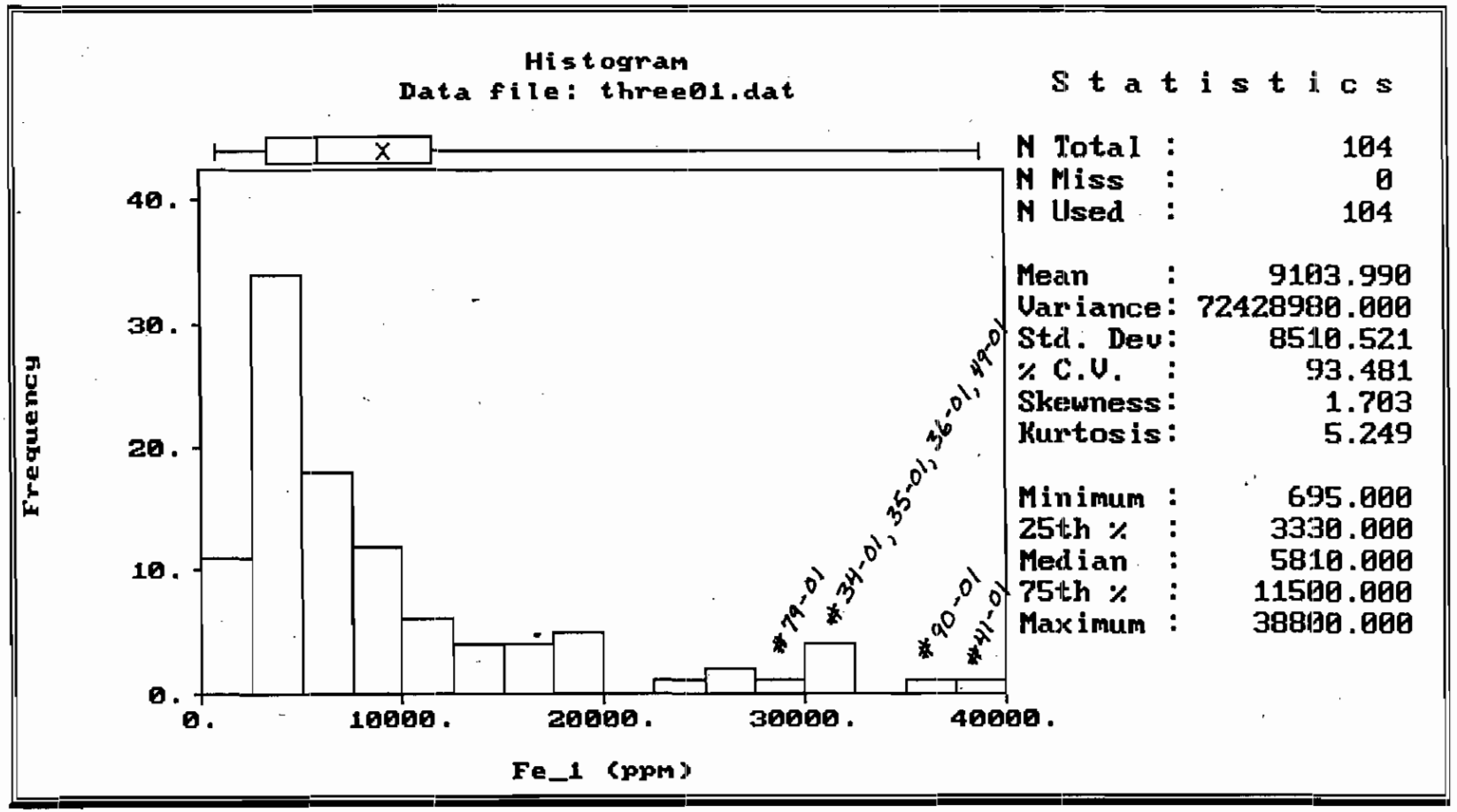
Zone H
Distribution of AL in surface soil grid samples
(for comparison with trace metal concentrations)

orig. data values
ONE01.DAT



6-6-95
orig. data value
THREE01.DAT

Zone H
Distribution of FE in surface soil grid samples
(for comparison with trace metal concentrations)



Statistics

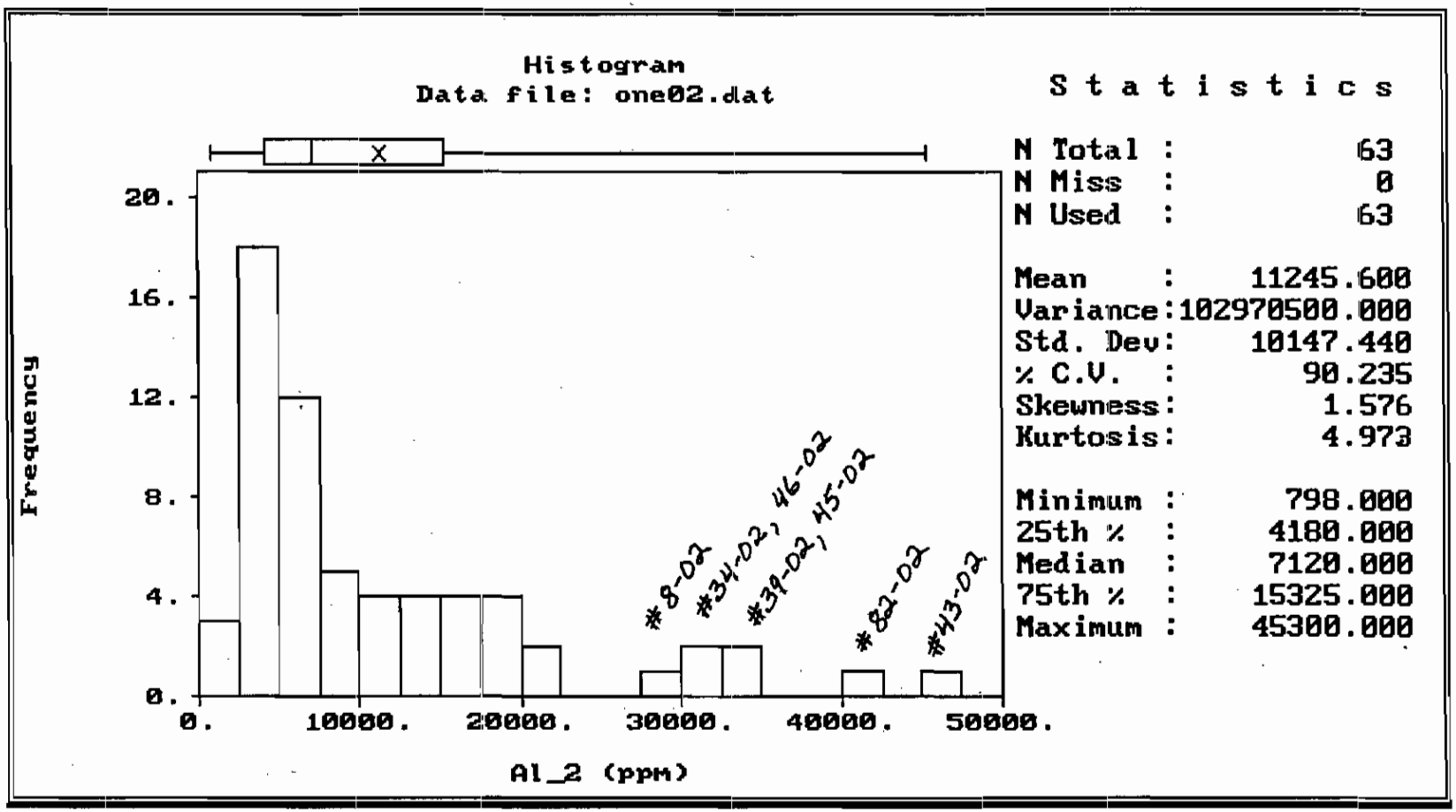
N Total :	104
N Miss :	0
N Used :	104
Mean :	9103.990
Variance:	72428980.000
Std. Dev:	8510.521
% C.V. :	93.481
Skewness:	1.703
Kurtosis:	5.249
Minimum :	695.000
25th % :	3330.000
Median :	5810.000
75th % :	11500.000
Maximum :	38800.000

Zone H

Distribution of AL in subsurface soil grid samples

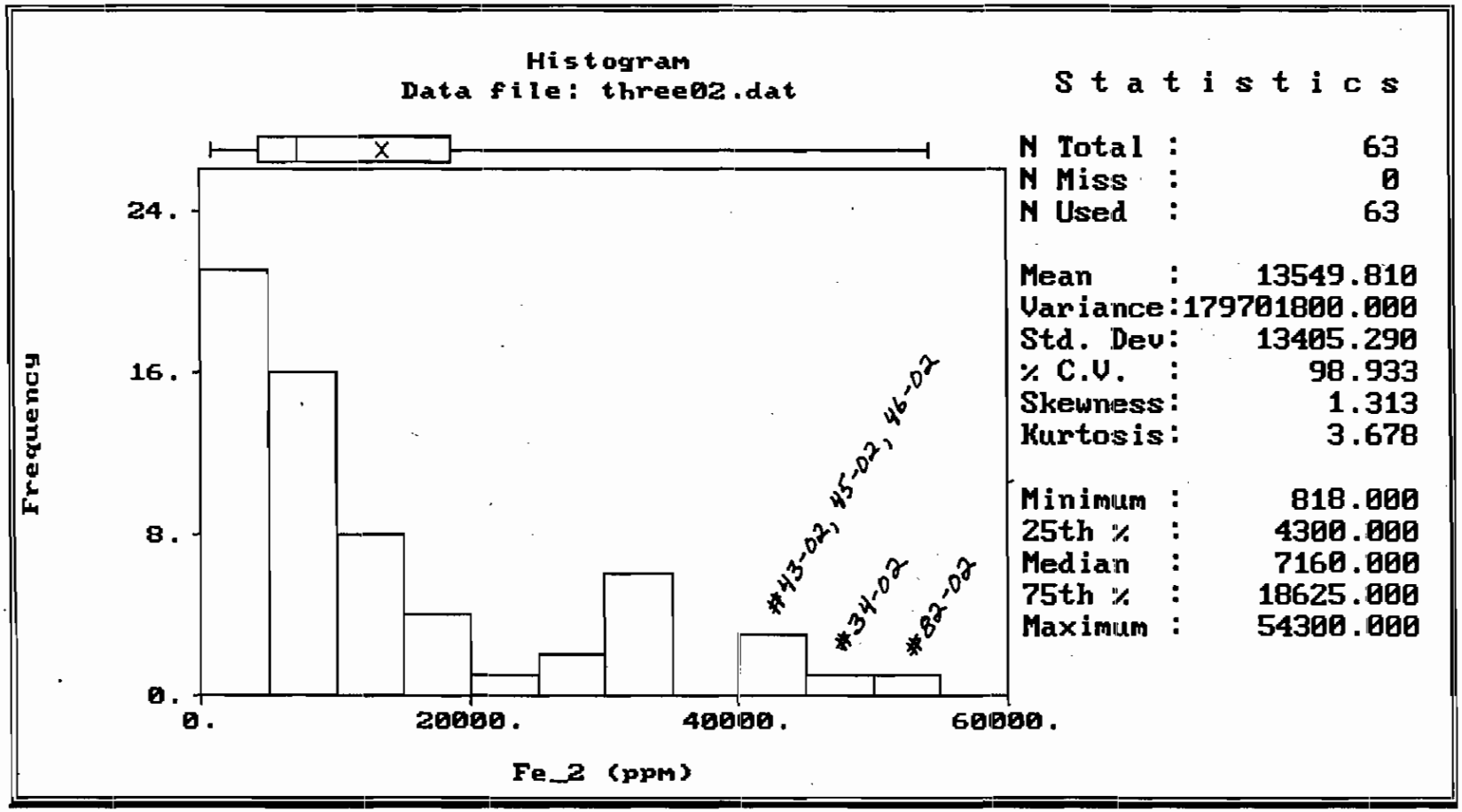
(for comparison with trace metal concentrations)

orig. data values
ONE02.DAT

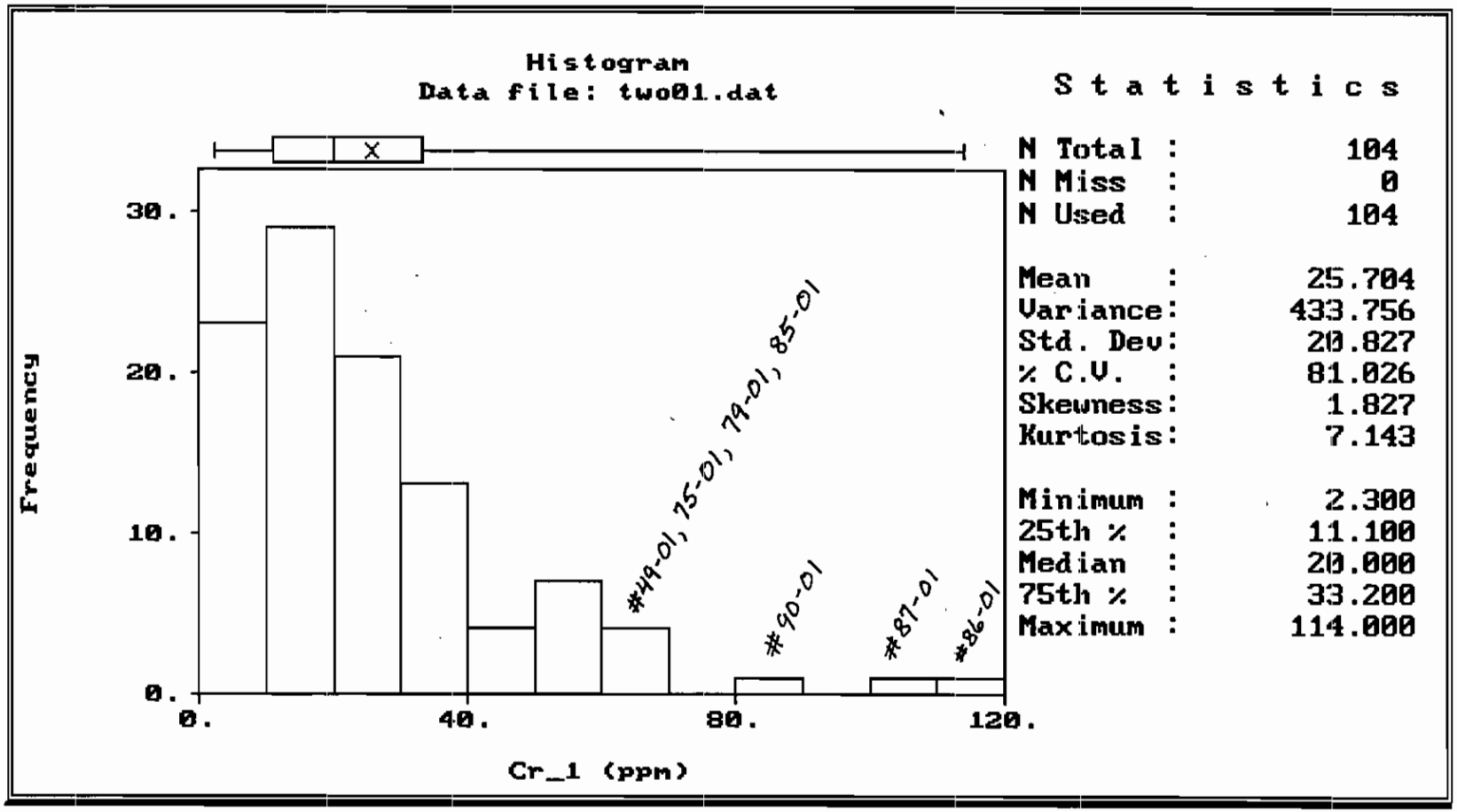


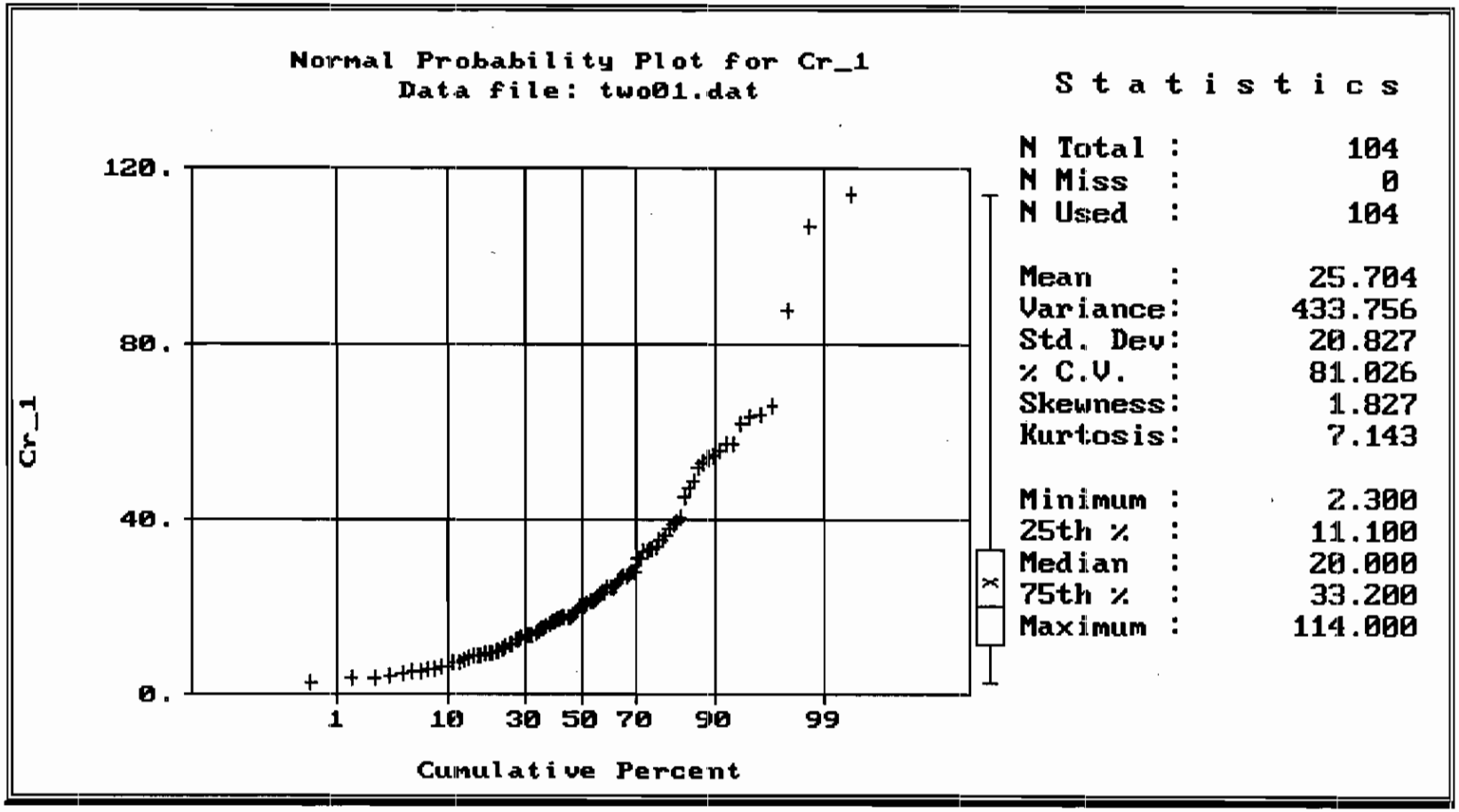
Zone H
Distribution of FE in subsurface soil grid samples
(for comparison with trace metal concentrations)

6-13-15
orig. data values.
THREE02.DAT
BG



Zone H
Chromium in surface soil grid samples
Original dataset (N=104)
Original values



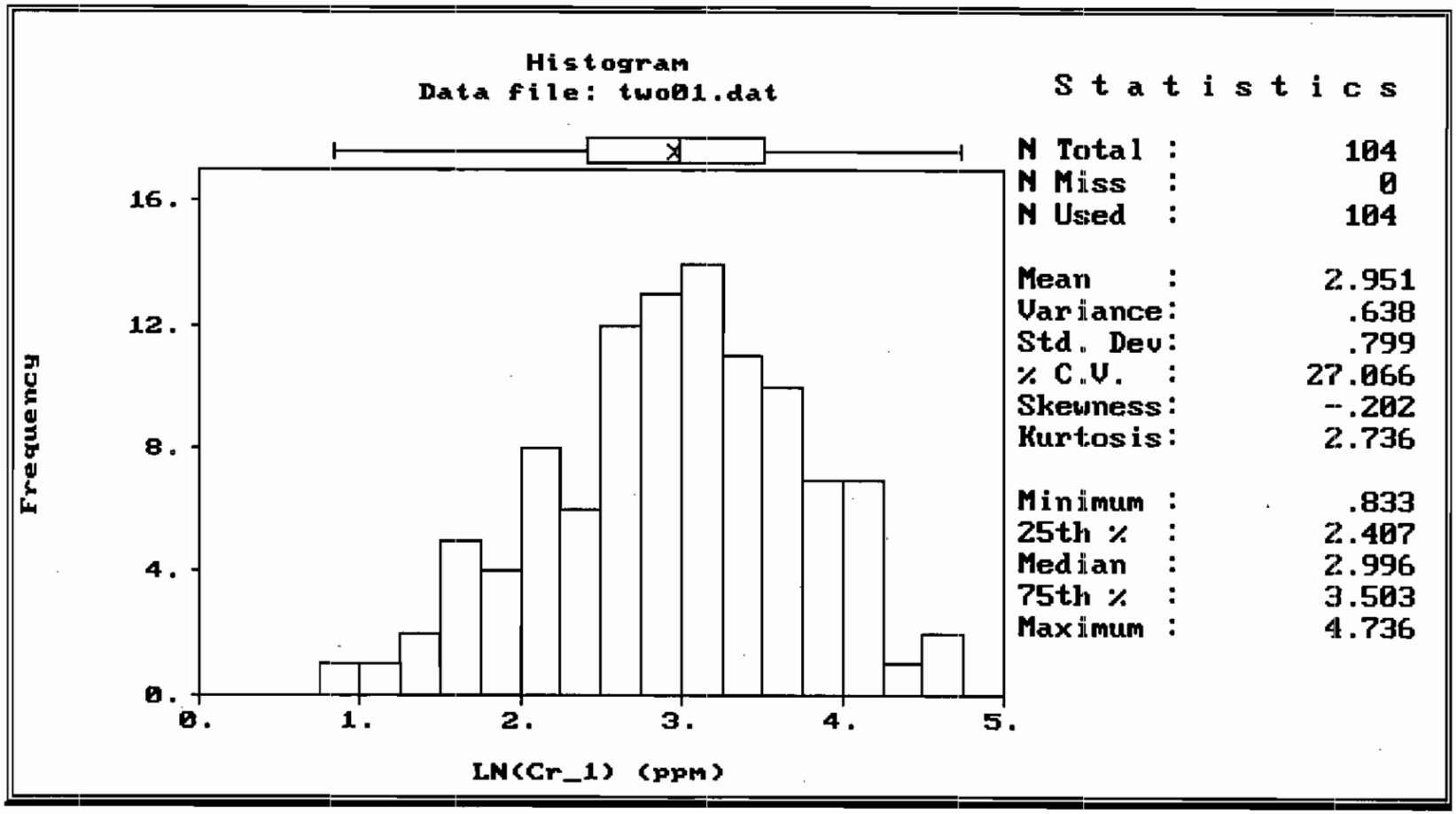

Normal Probability Plot for Cr_1
Data file: two01.dat
120.
80.
40.
0.
Cr_1
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 104
N Miss : 0
N Used : 104
Mean : 25.704
Variance: 433.756
Std. Dev: 20.827
% C.V. : 81.026
Skewness: 1.827
Kurtosis: 7.143
Minimum : 2.300
25th % : 11.100
Median : 20.000
75th % : 33.200
Maximum : 114.000

Zone H

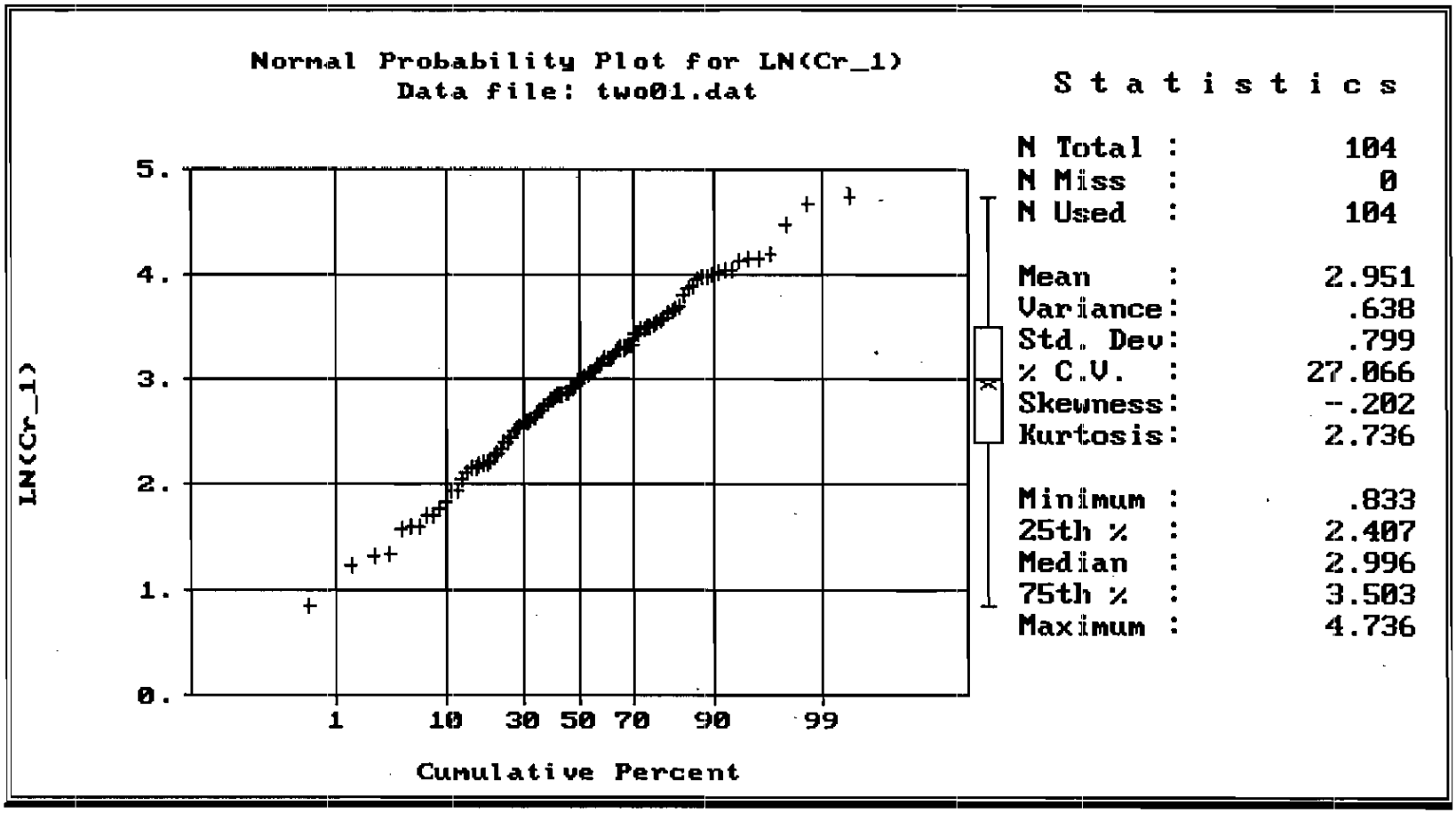
CR in surface soil grid samples

Original dataset (N = 104)

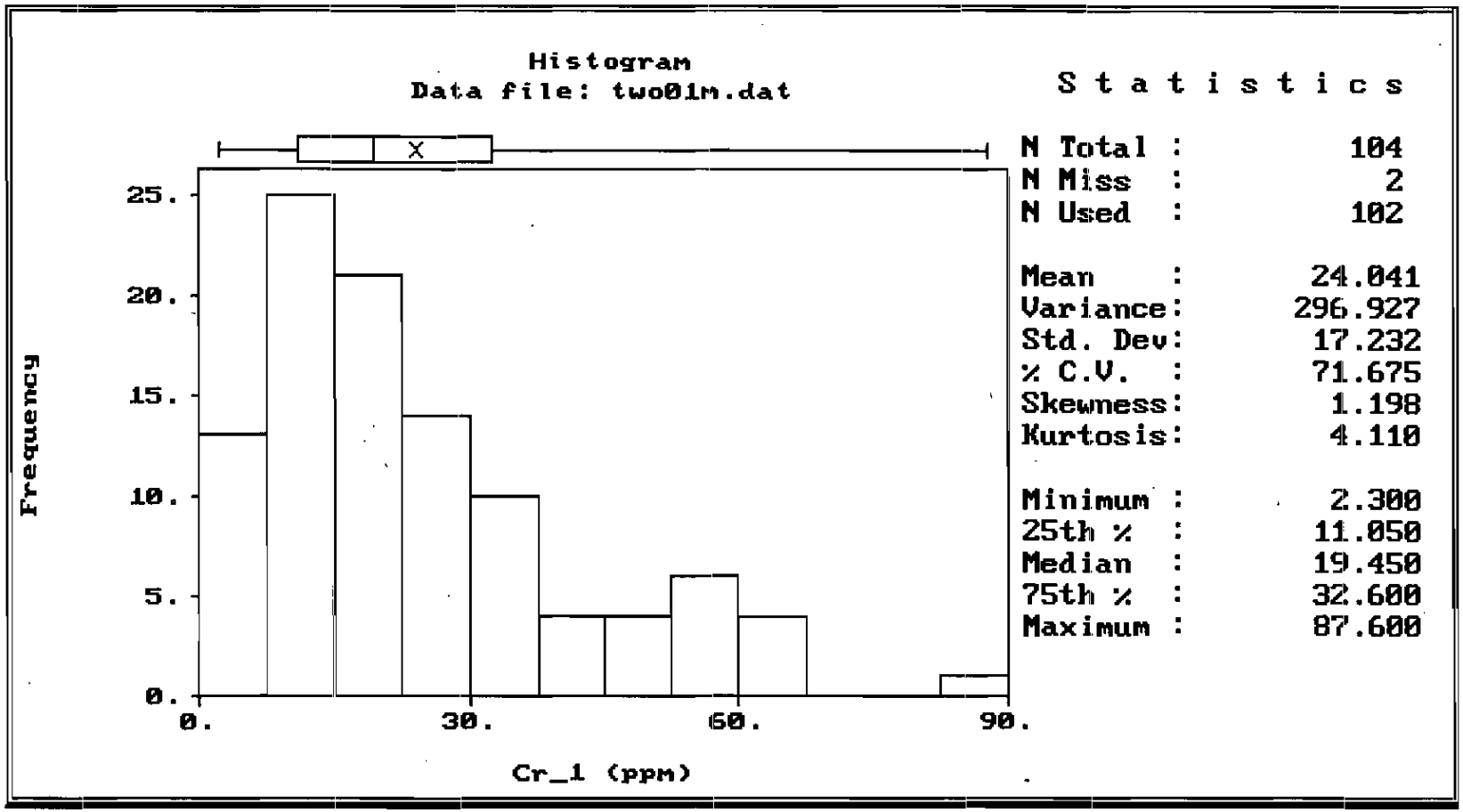
LN - transformed values

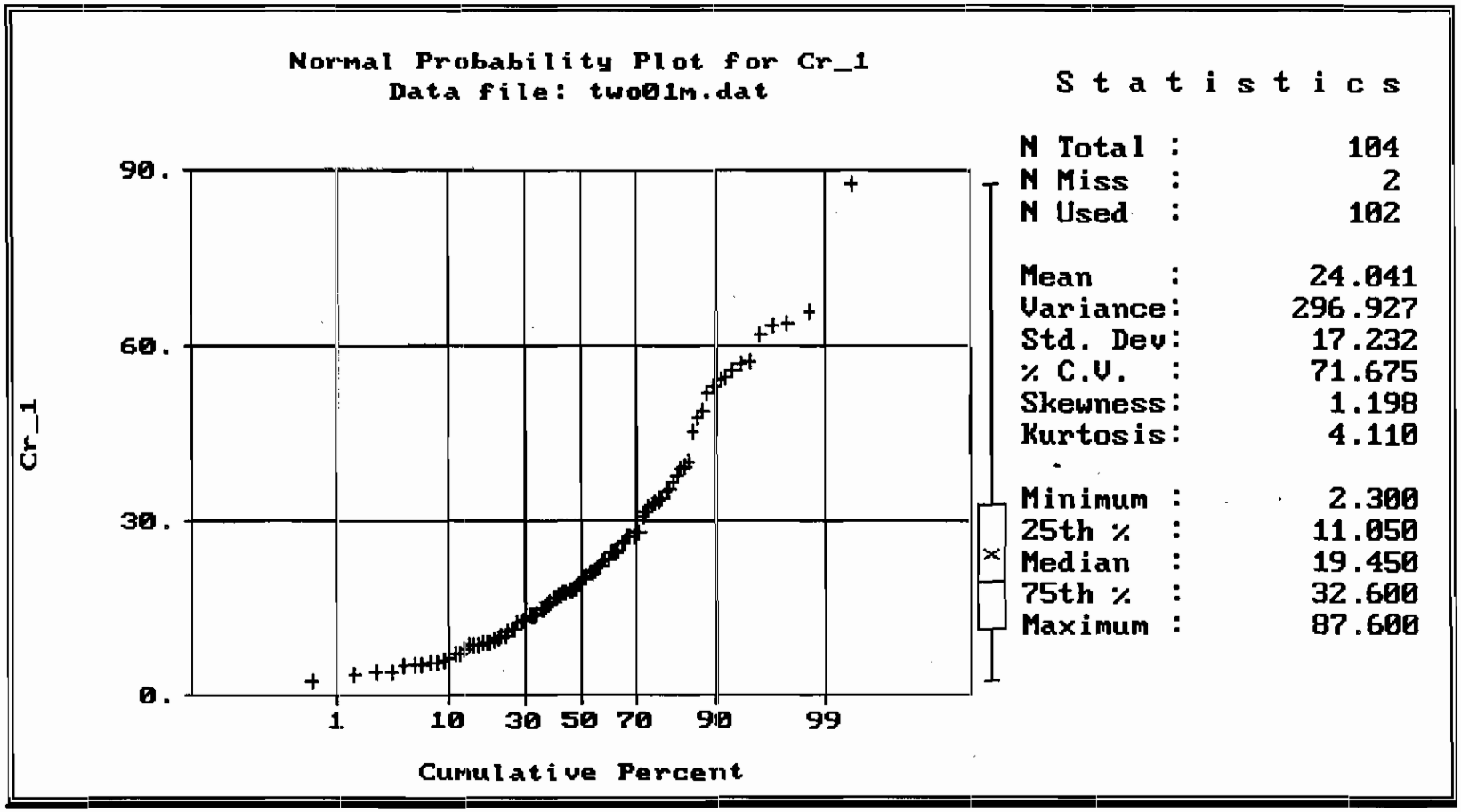


Statistics	
N Total :	104
N Miss :	0
N Used :	104
Mean :	2.951
Variance:	.638
Std. Dev:	.799
% C.V. :	27.066
Skewness:	-.202
Kurtosis:	2.736
Minimum :	.833
25th % :	2.407
Median :	2.996
75th % :	3.503
Maximum :	4.736

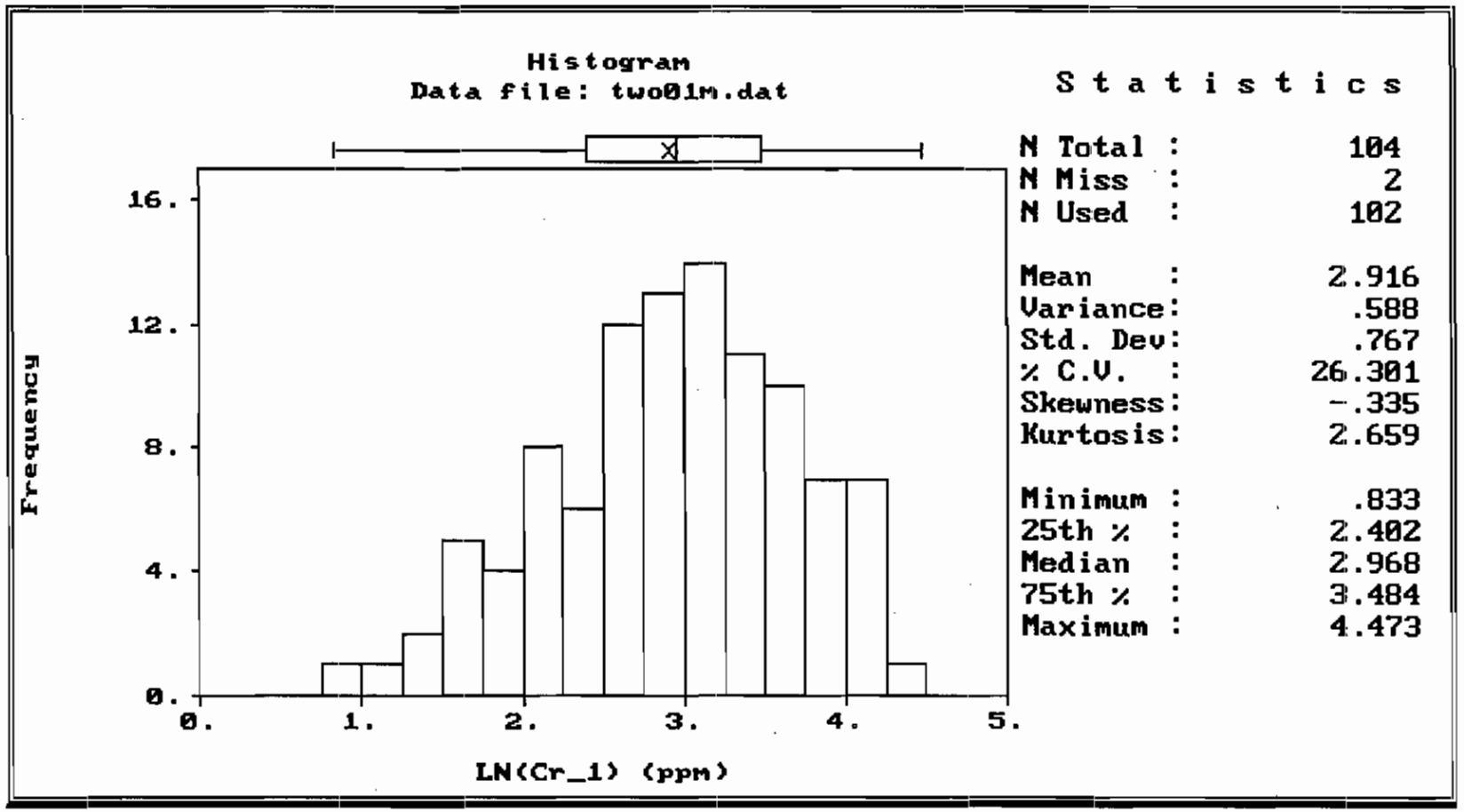

Normal Probability Plot for LN(Cr_1)
Data file: two01.dat
LN(Cr_1)
5.
4.
3.
2.
1.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 104
N Miss : 0
N Used : 104
Mean : 2.951
Variance: .638
Std. Dev: .799
% C.V. : 27.066
Skewness: -.202
Kurtosis: 2.736
Minimum : .833
25th % : 2.407
Median : 2.996
75th % : 3.503
Maximum : 4.736

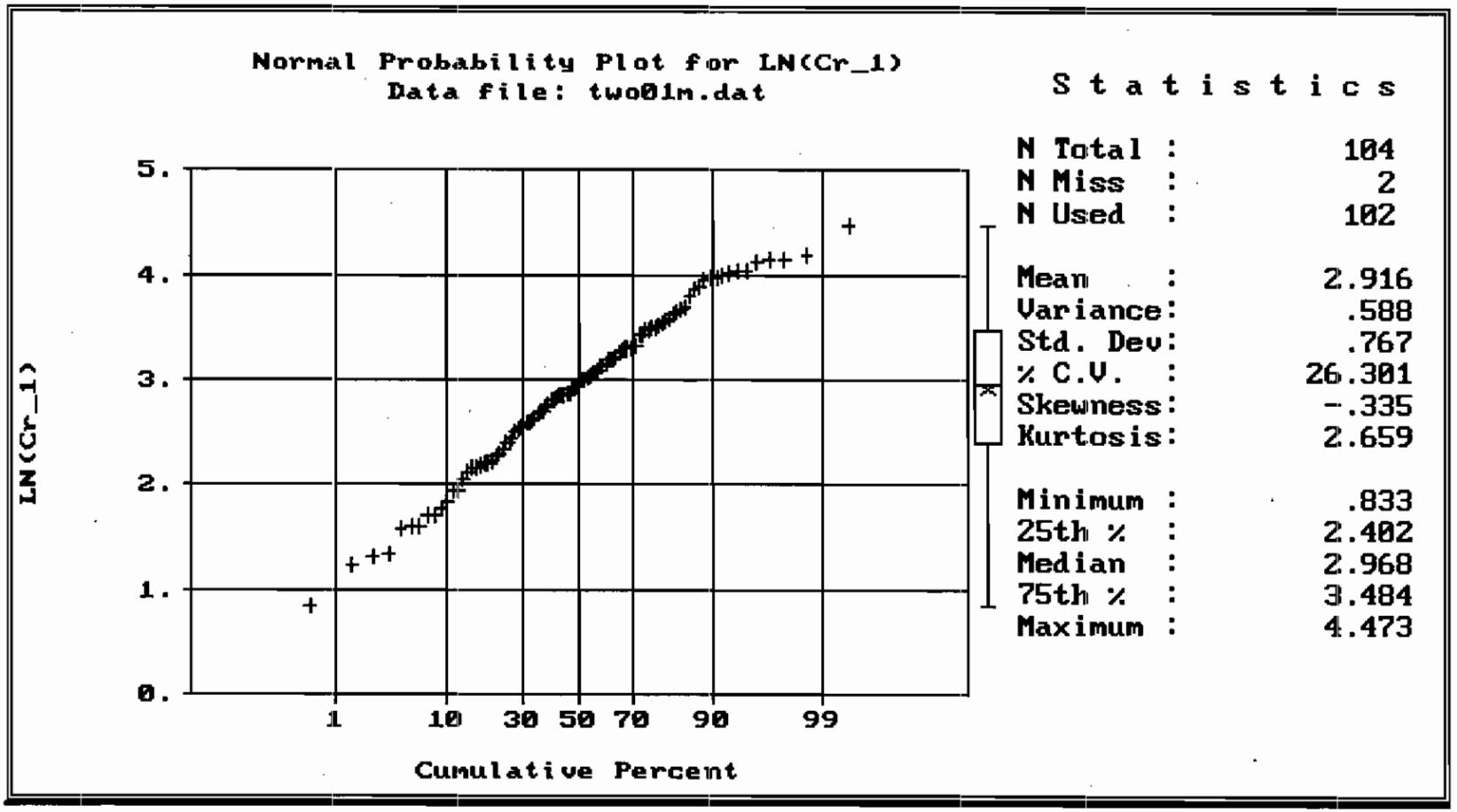
Zone H
CR in surface soil grid samples
Samples # 86-01 and 87-01 removed
Original values



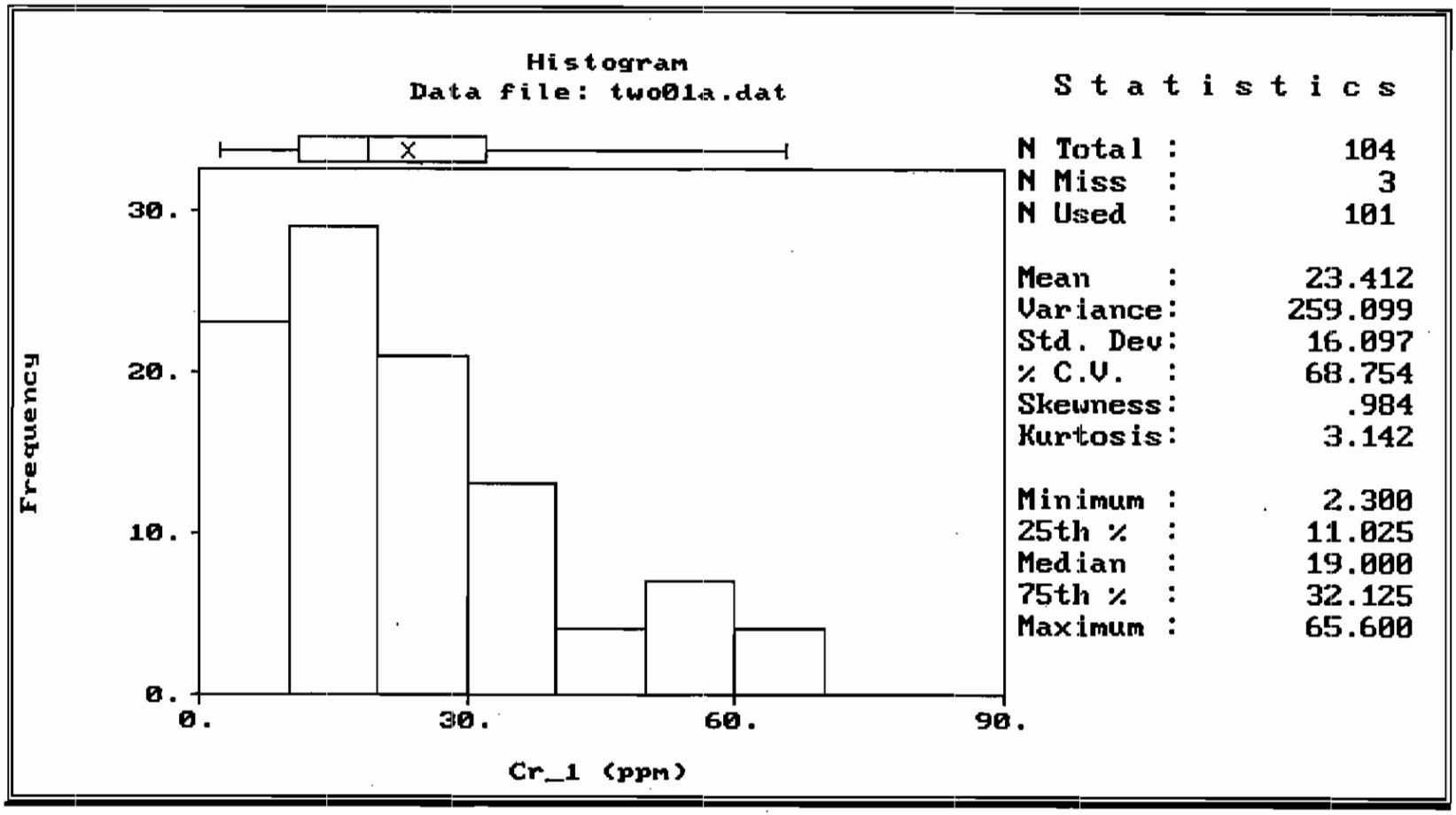

Normal Probability Plot for Cr_1
Data file: two01m.dat
90.
60.
30.
0.
Cr_1
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 104
N Miss : 2
N Used : 102
Mean : 24.041
Variance: 296.927
Std. Dev: 17.232
% C.V. : 71.675
Skewness: 1.198
Kurtosis: 4.110
Minimum : 2.300
25th % : 11.050
Median : 19.450
75th % : 32.600
Maximum : 87.600

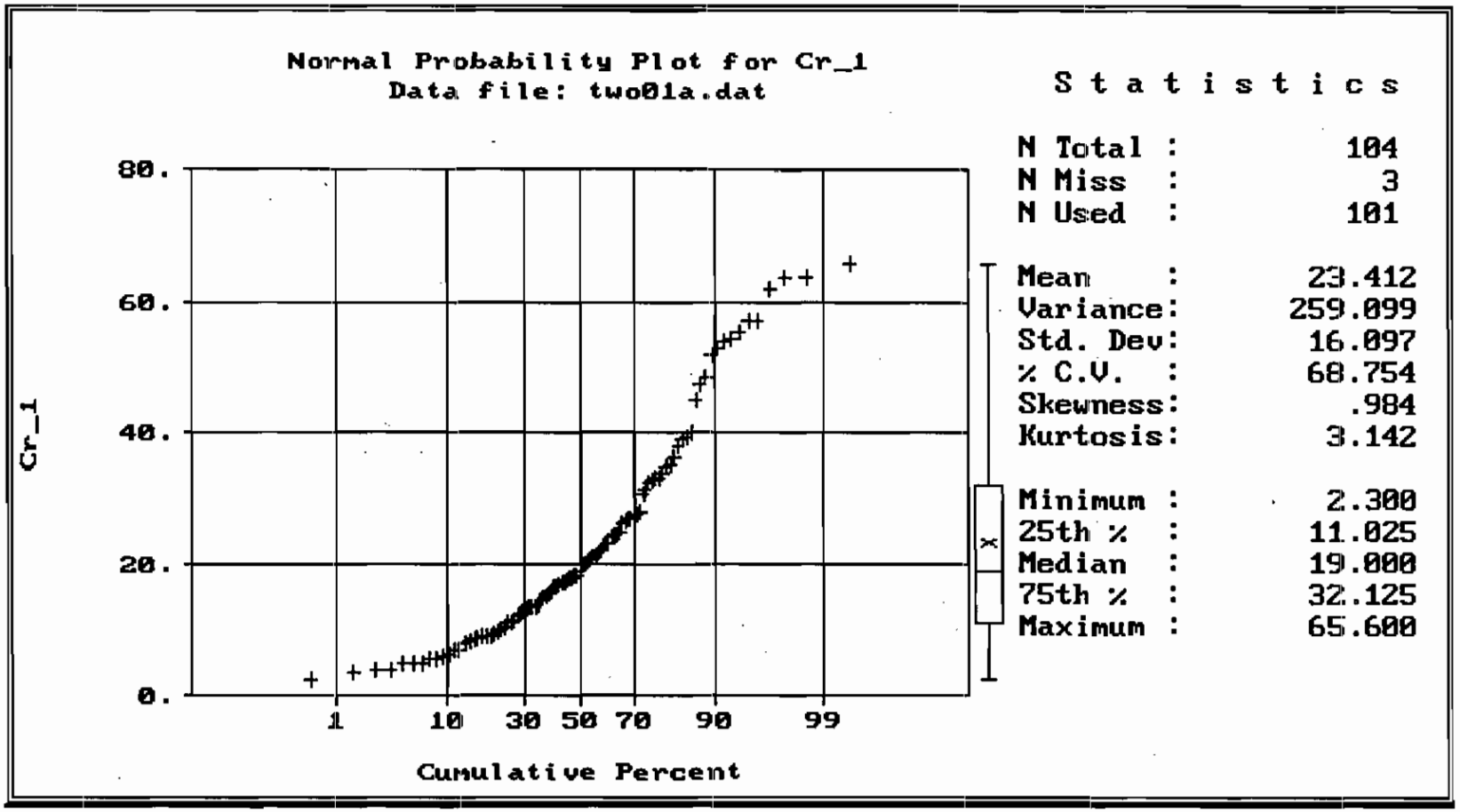
Zone H
CR in surface soil grid samples
Samples # 86-01 and 87-01 removed
LN - transformed values



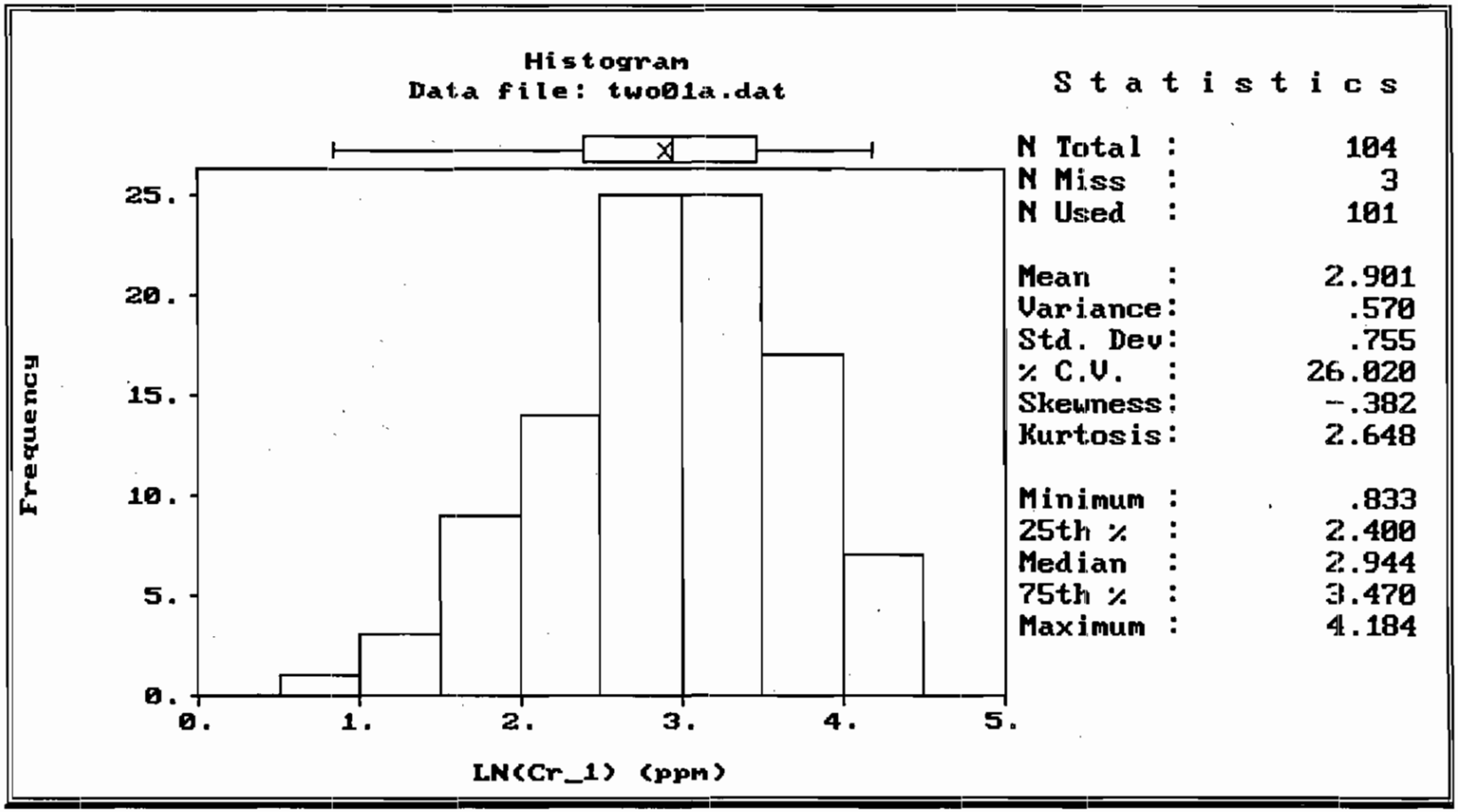

Normal Probability Plot for LN(Cr_1)
Data file: two01m.dat
LN(Cr_1)
5.
4.
3.
2.
1.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 104
N Miss : 2
N Used : 102
Mean : 2.916
Variance: .588
Std. Dev: .767
% C.V. : 26.301
Skewness: -.335
Kurtosis: 2.659
Minimum : .833
25th % : 2.402
Median : 2.968
75th % : 3.484
Maximum : 4.473

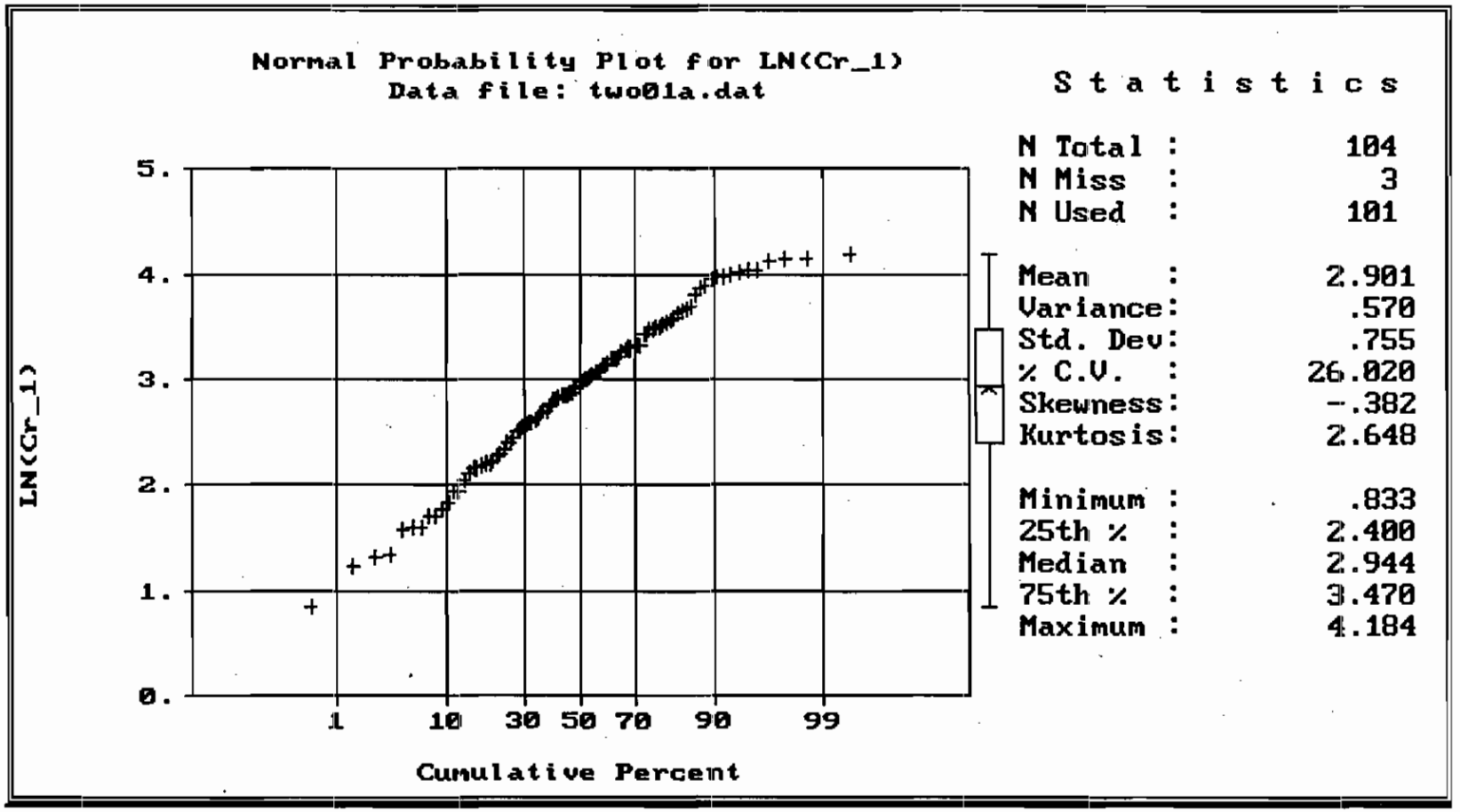
Zone H
CR in surface soil grid samples
Samples # 86-01, 87-01, and 90-01 removed
Original values



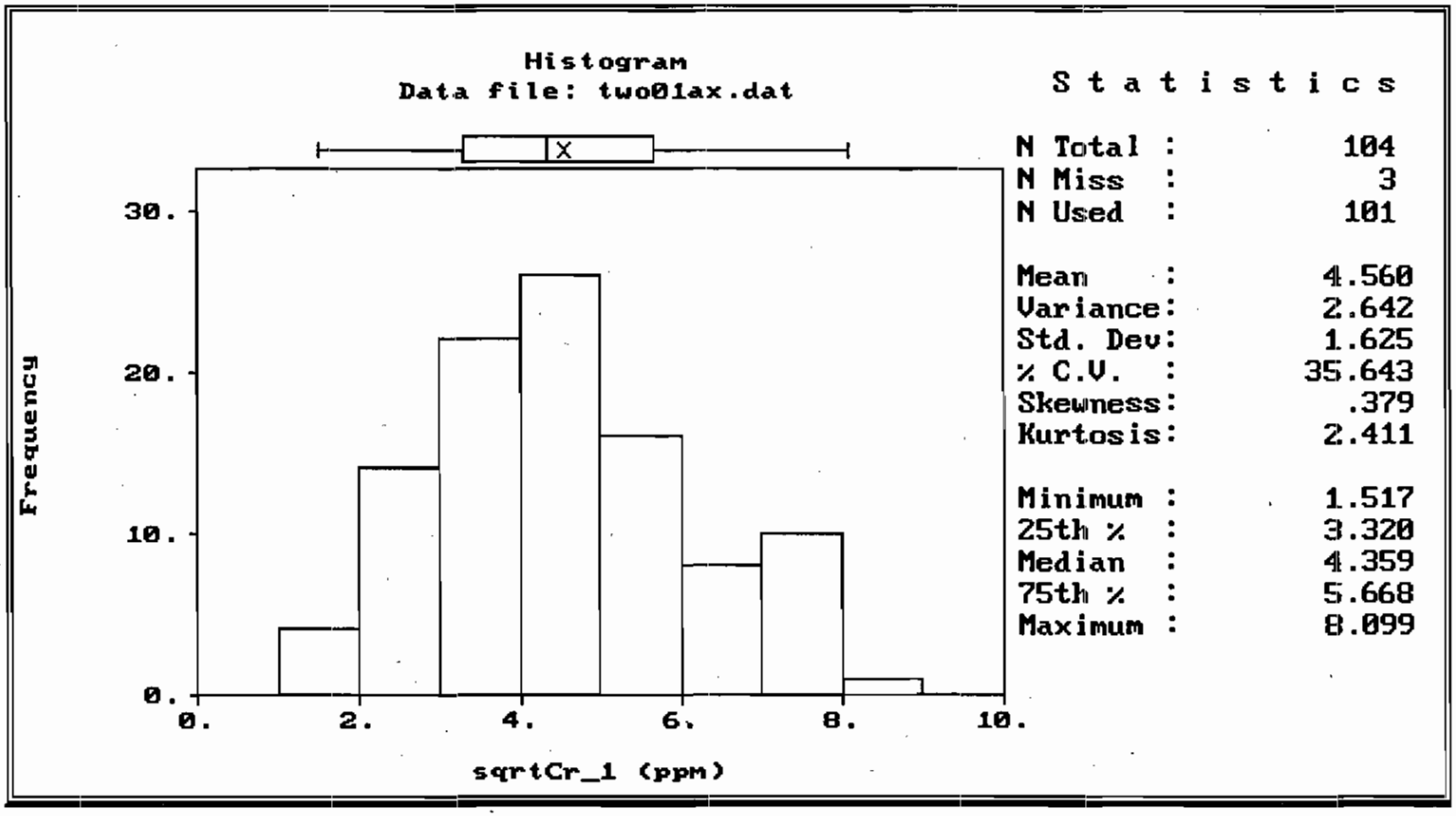

Normal Probability Plot for Cr_1
Data file: two01a.dat
Cr_1
80.
60.
40.
20.
0.
1
10
30
50
70
90
99
Cumulative Percent
x
Statistics
N Total : 104
N Miss : 3
N Used : 101
Mean : 23.412
Variance: 259.099
Std. Dev: 16.097
% C.V. : 68.754
Skewness: .984
Kurtosis: 3.142
Minimum : 2.300
25th % : 11.025
Median : 19.000
75th % : 32.125
Maximum : 65.600

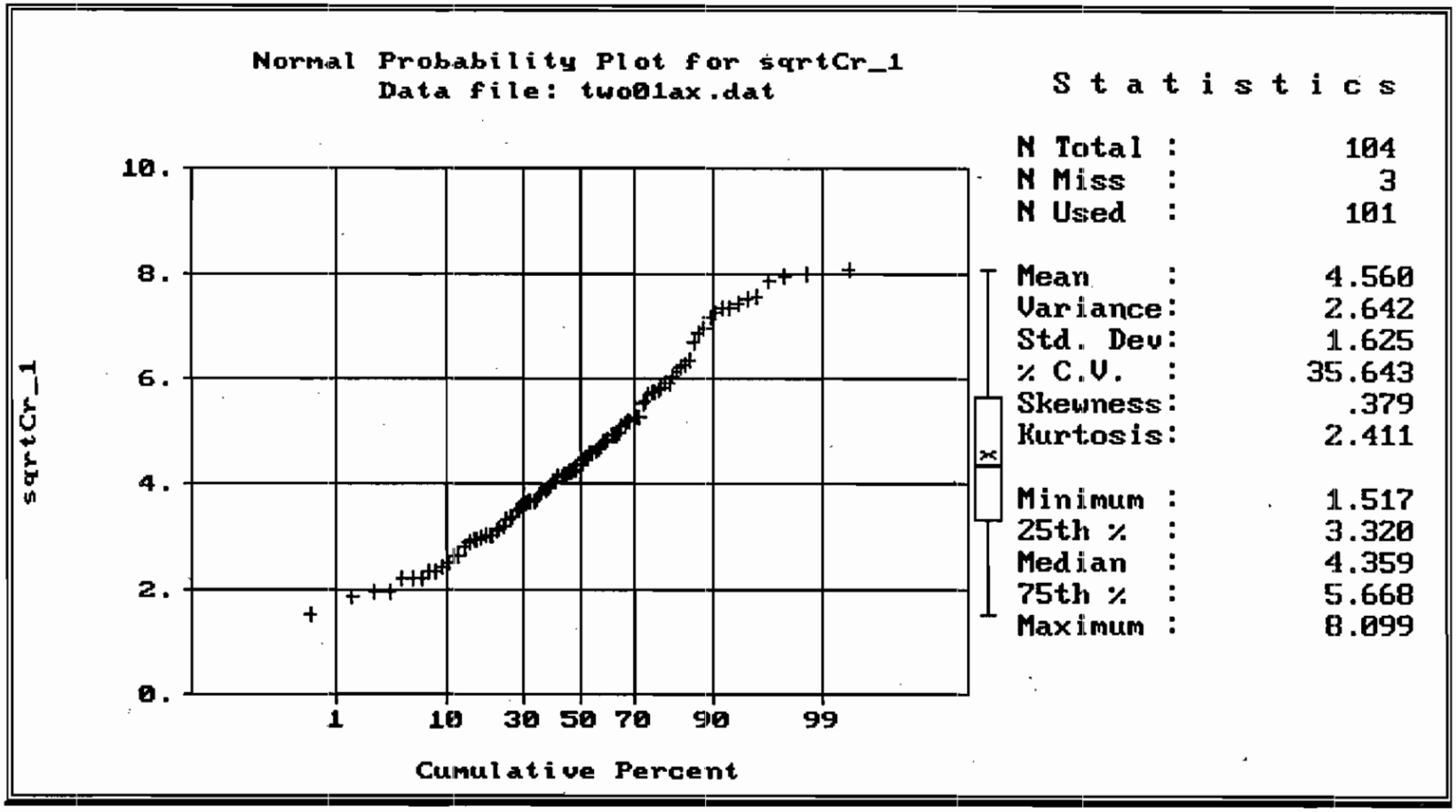
Zone H
CR in surface soil grid samples
Samples #86-01, 87-01, and 90-01 removed
LN-transformed values



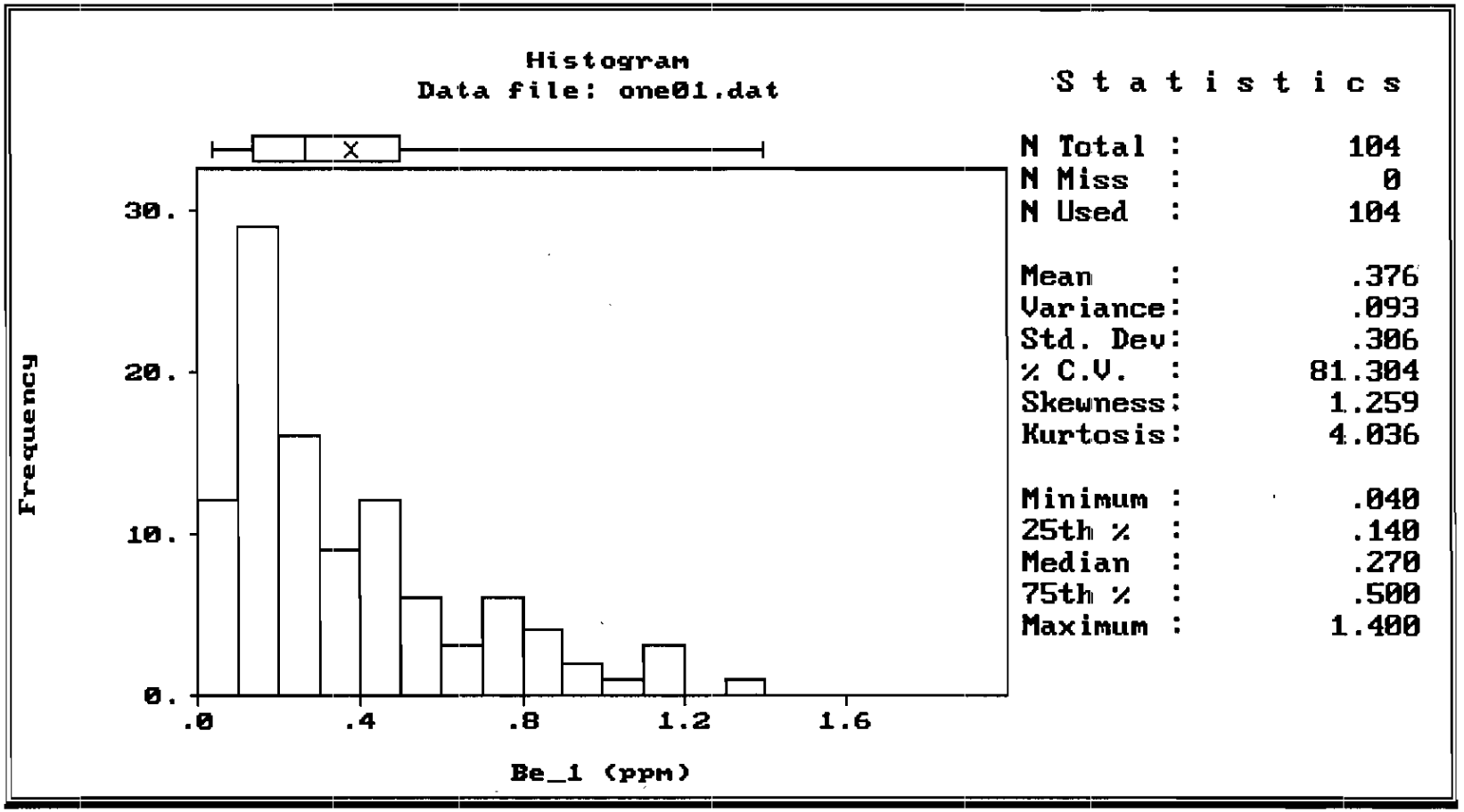

Normal Probability Plot for LN(Cr_1)
Data file: two01a.dat
LN(Cr_1)
5.
4.
3.
2.
1.
0.
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 104
N Miss : 3
N Used : 101
Mean : 2.901
Variance: .570
Std. Dev: .755
% C.V. : 26.020
Skewness: -.382
Kurtosis: 2.648
Minimum : .833
25th % : 2.400
Median : 2.944
75th % : 3.470
Maximum : 4.184

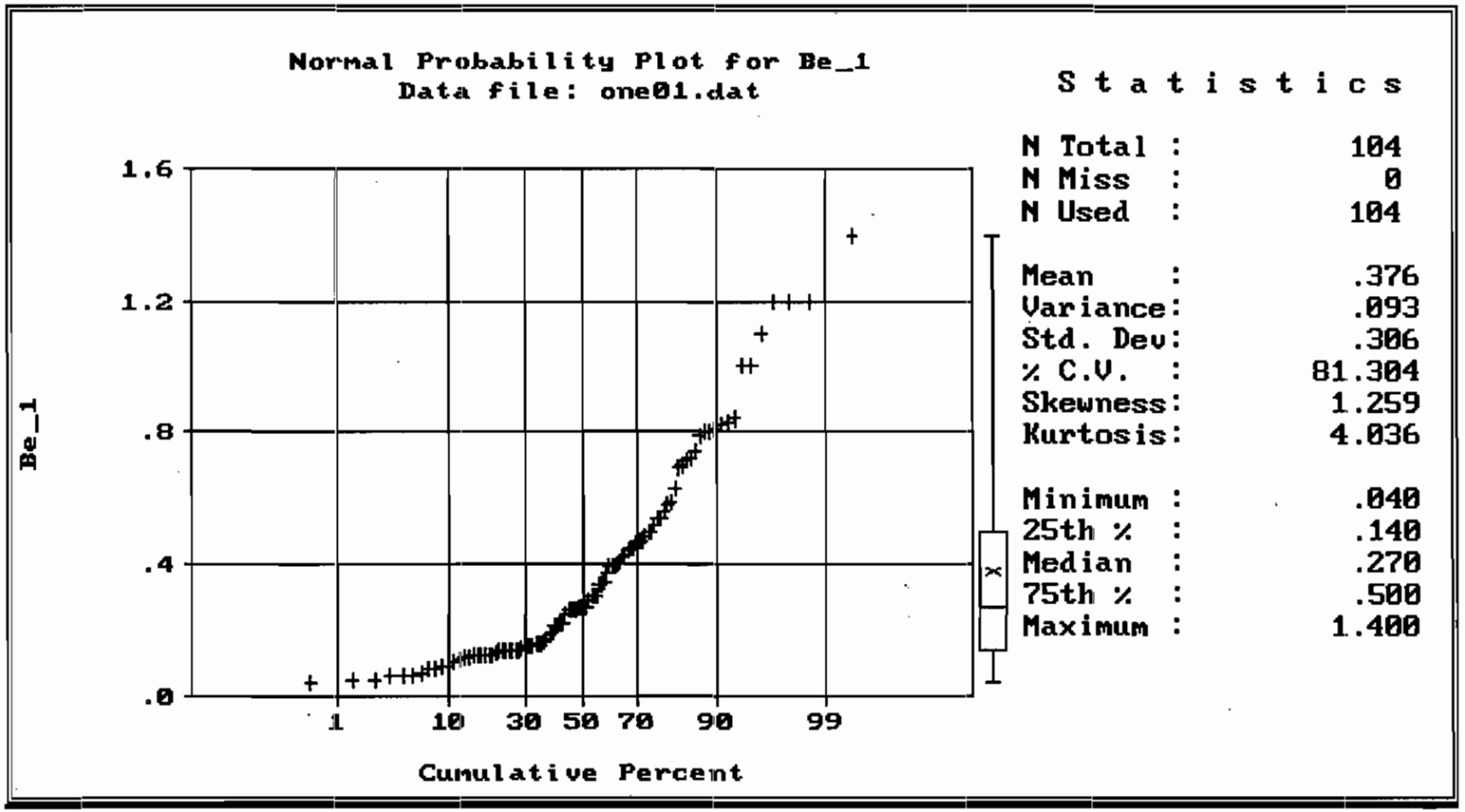
Zone H
CR in surface soil grid samples
Samples #86-01, 87-01, and 90-01 removed
Square-root transformed values



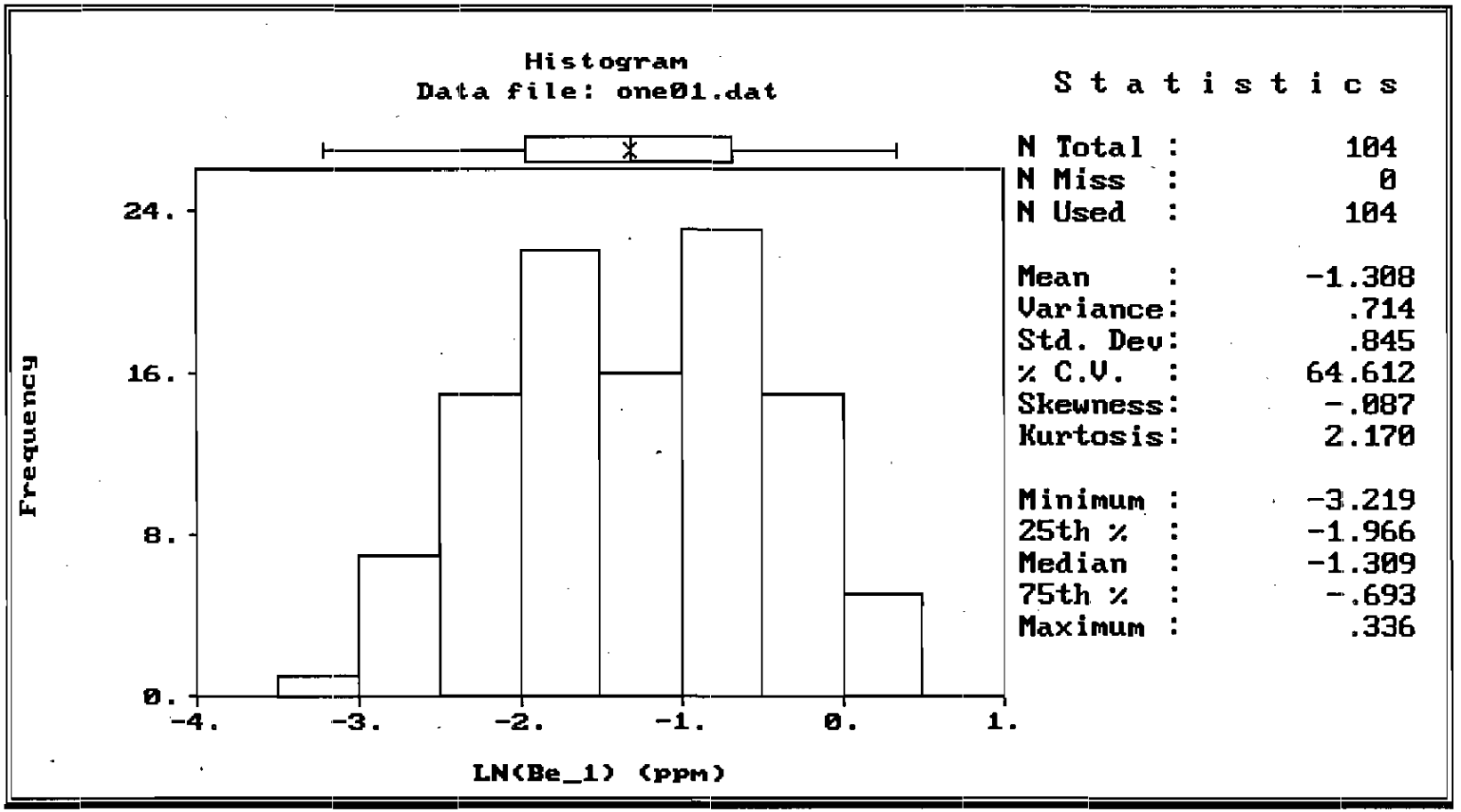

Normal Probability Plot for sqrtCr_1
Data file: two01ax.dat
sqrtCr_1
10.
8.
6.
4.
2.
0.
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 104
N Miss : 3
N Used : 101
Mean : 4.560
Variance: 2.642
Std. Dev: 1.625
% C.V. : 35.643
Skewness: .379
Kurtosis: 2.411
Minimum : 1.517
25th % : 3.320
Median : 4.359
75th % : 5.668
Maximum : 8.099

Zone H
Beryllium in surface soil grid samples
Original dataset (N = 104)
Original values




Normal Probability Plot for Be_1
Data file: one01.dat
Be_1
1.6
1.2
.8
.4
.0
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 104
N Miss : 0
N Used : 104
Mean : .376
Variance: .093
Std. Dev: .306
% C.V. : 81.304
Skewness: 1.259
Kurtosis: 4.036
Minimum : .040
25th % : .140
Median : .270
75th % : .500
Maximum : 1.400

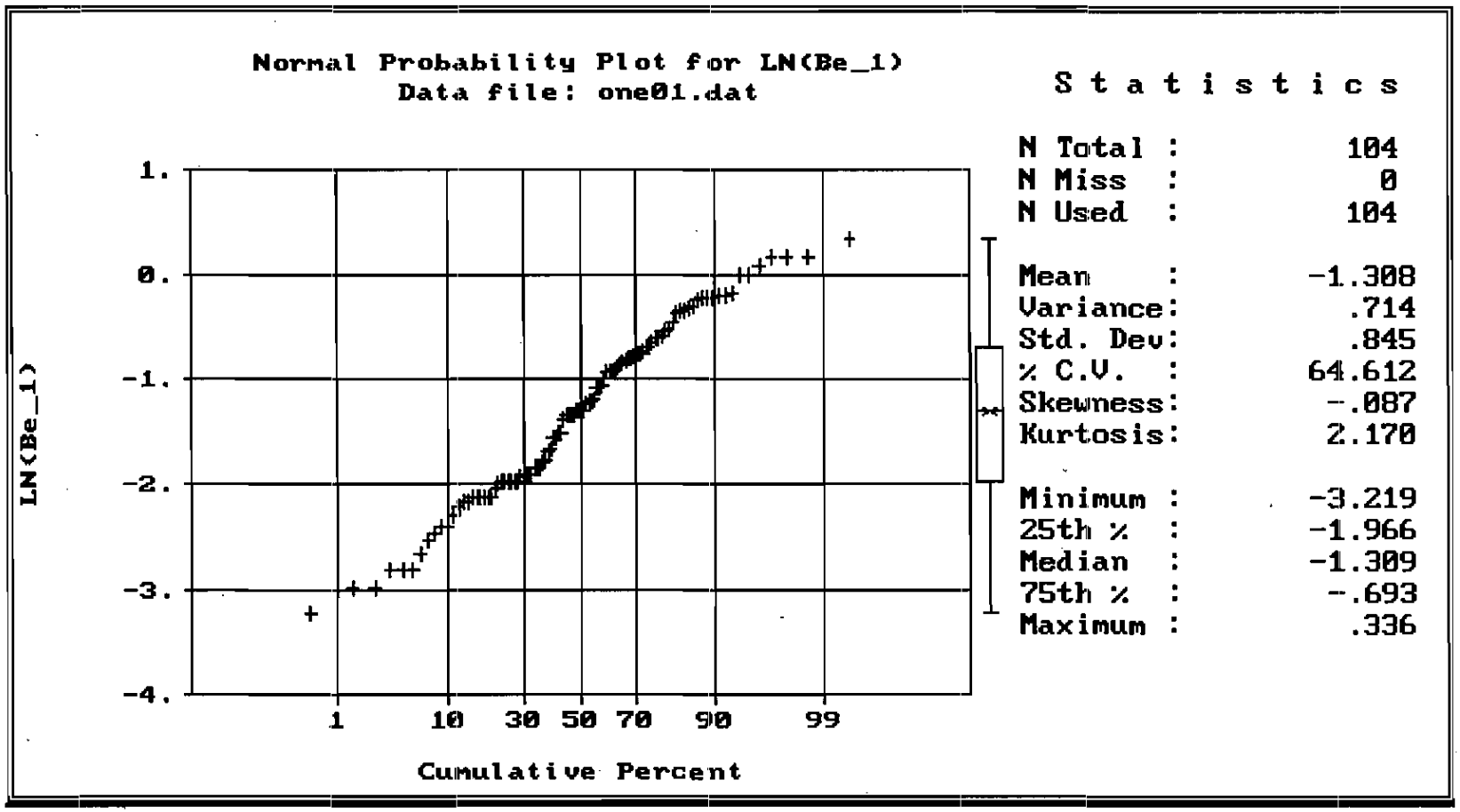
Zone H
BE in surface soil grid samples
Original dataset (N=104)
LN-transformed values



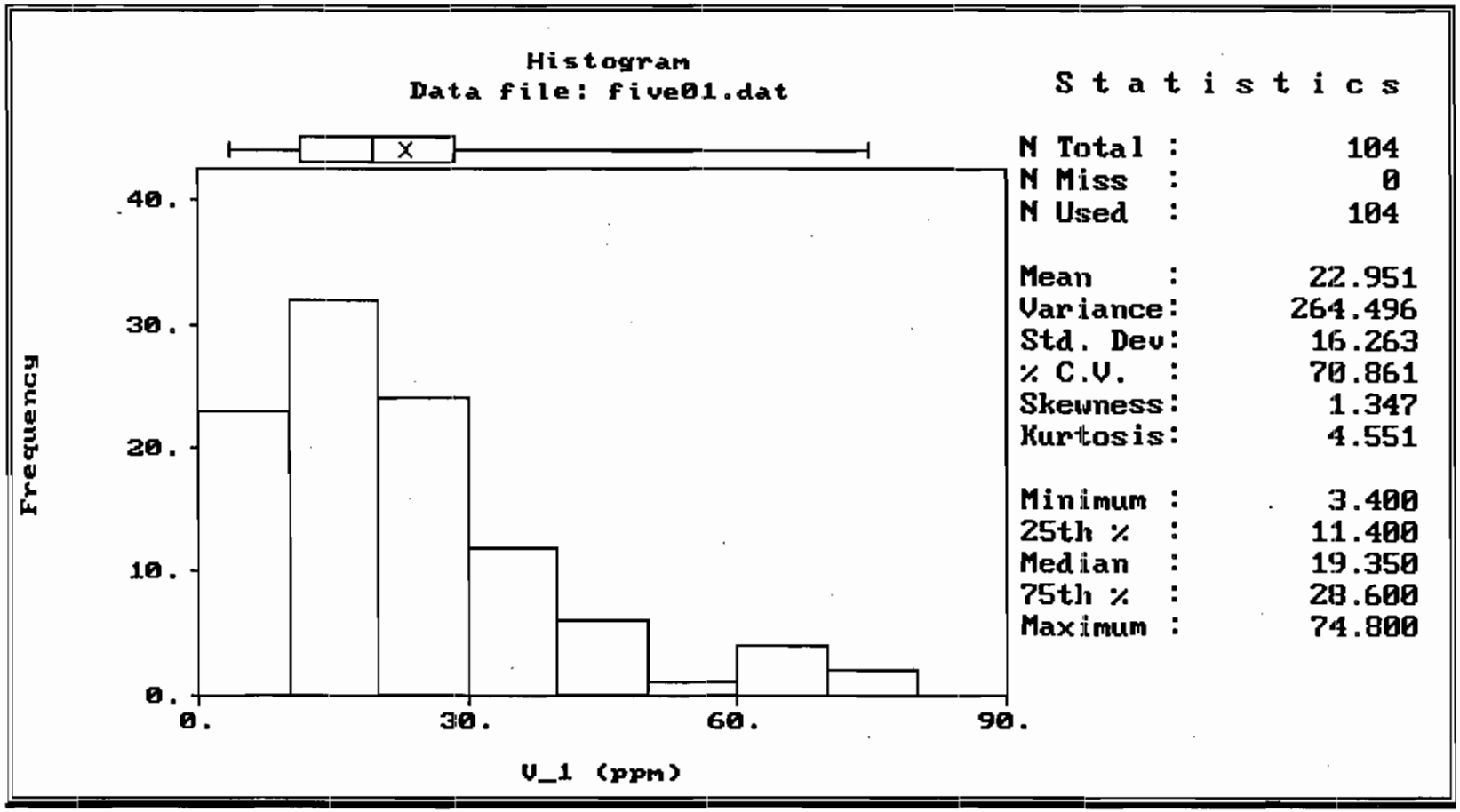
Statistics

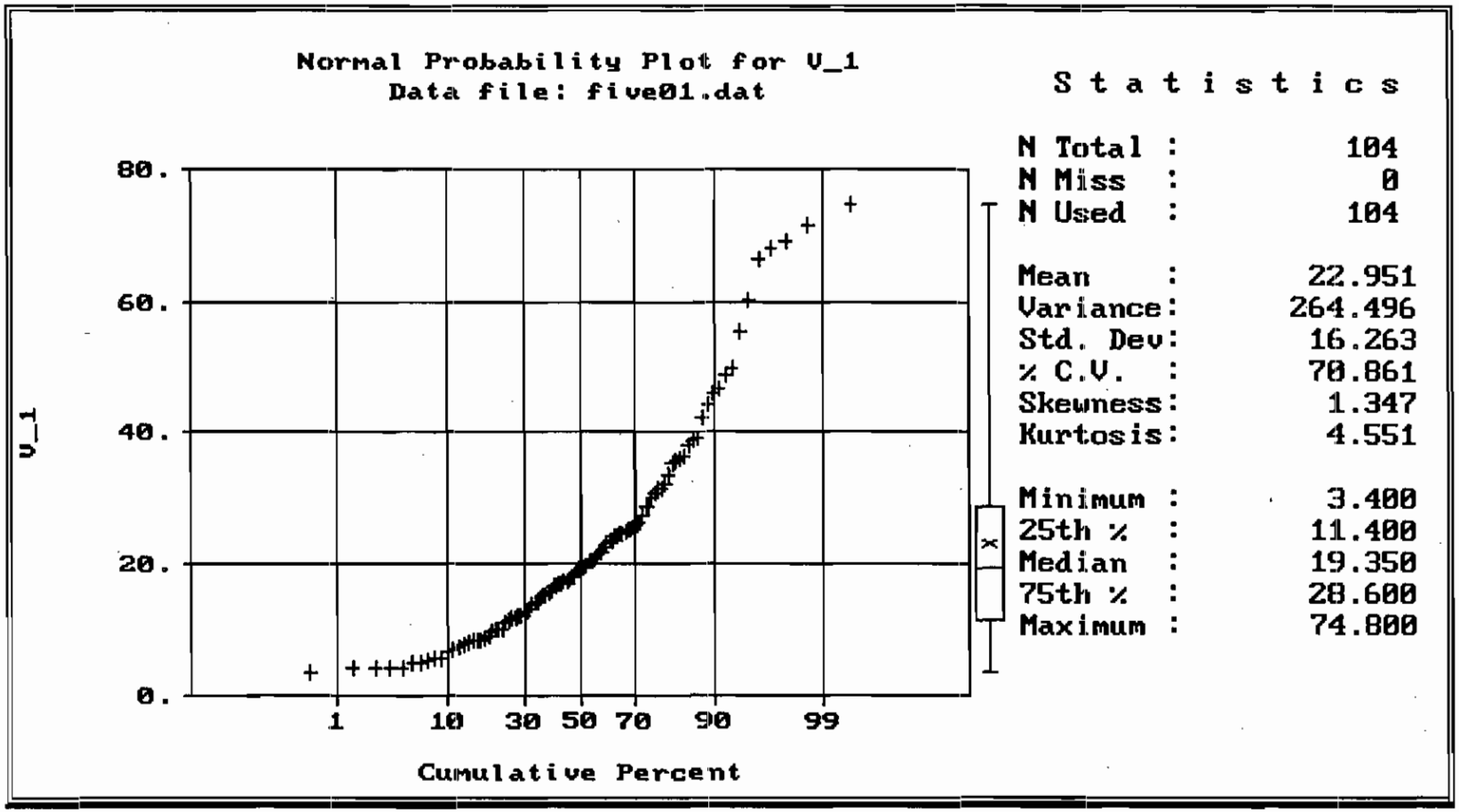
N Total :	104
N Miss :	0
N Used :	104
Mean :	-1.308
Variance:	.714
Std. Dev:	.845
% C.V. :	64.612
Skewness:	-.087
Kurtosis:	2.170
Minimum :	-3.219
25th % :	-1.966
Median :	-1.309
75th % :	-.693
Maximum :	.336

.270
2.328


Normal Probability Plot for LN(Be_1)
Data file: one01.dat
LN(Be_1)
1.
0.
-1.
-2.
-3.
-4.
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 104
N Miss : 0
N Used : 104
Mean : -1.308
Variance: .714
Std. Dev: .845
% C.V. : 64.612
Skewness: -.087
Kurtosis: 2.170
Minimum : -3.219
25th % : -1.966
Median : -1.309
75th % : -.693
Maximum : .336

Zone H
Vanadium in surface soil grid samples
Original dataset (N=104)
Original values



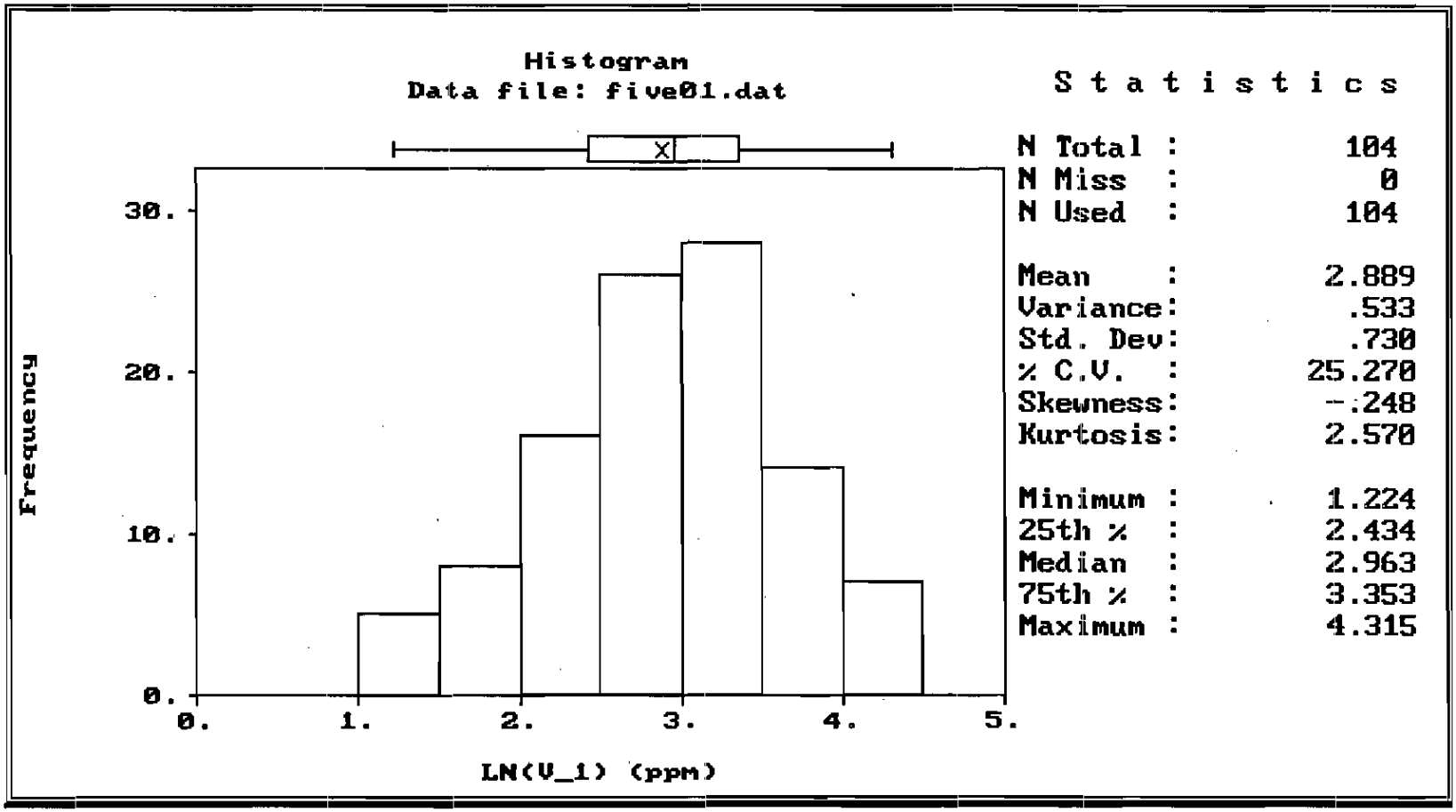

Normal Probability Plot for V_1
Data file: five01.dat
V_1
80.
60.
40.
20.
0.
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 104
N Miss : 0
N Used : 104
Mean : 22.951
Variance: 264.496
Std. Dev: 16.263
% C.V. : 70.861
Skewness: 1.347
Kurtosis: 4.551
Minimum : 3.400
25th % : 11.400
Median : 19.350
75th % : 28.600
Maximum : 74.800

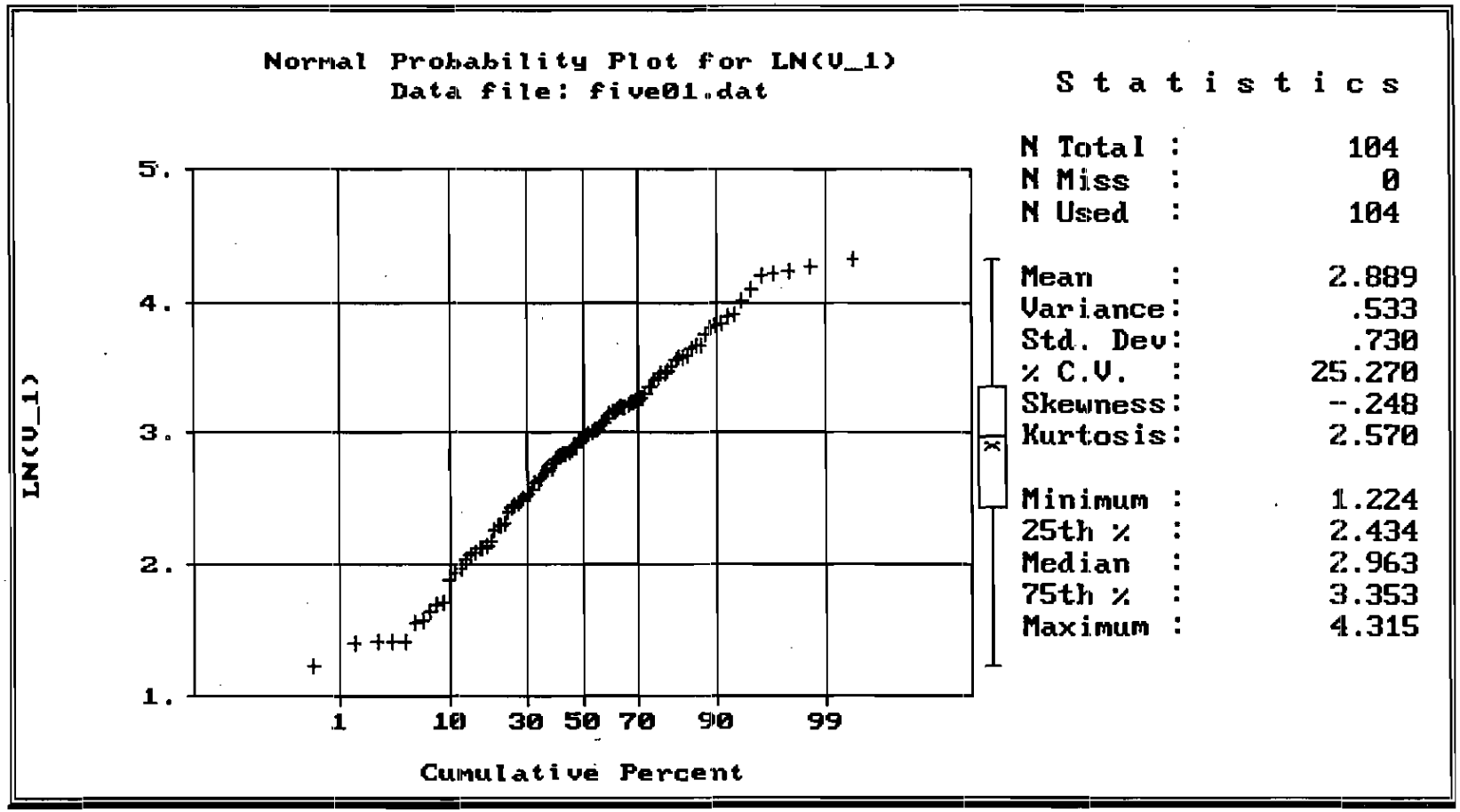
Zone H

V in surface soil grid samples

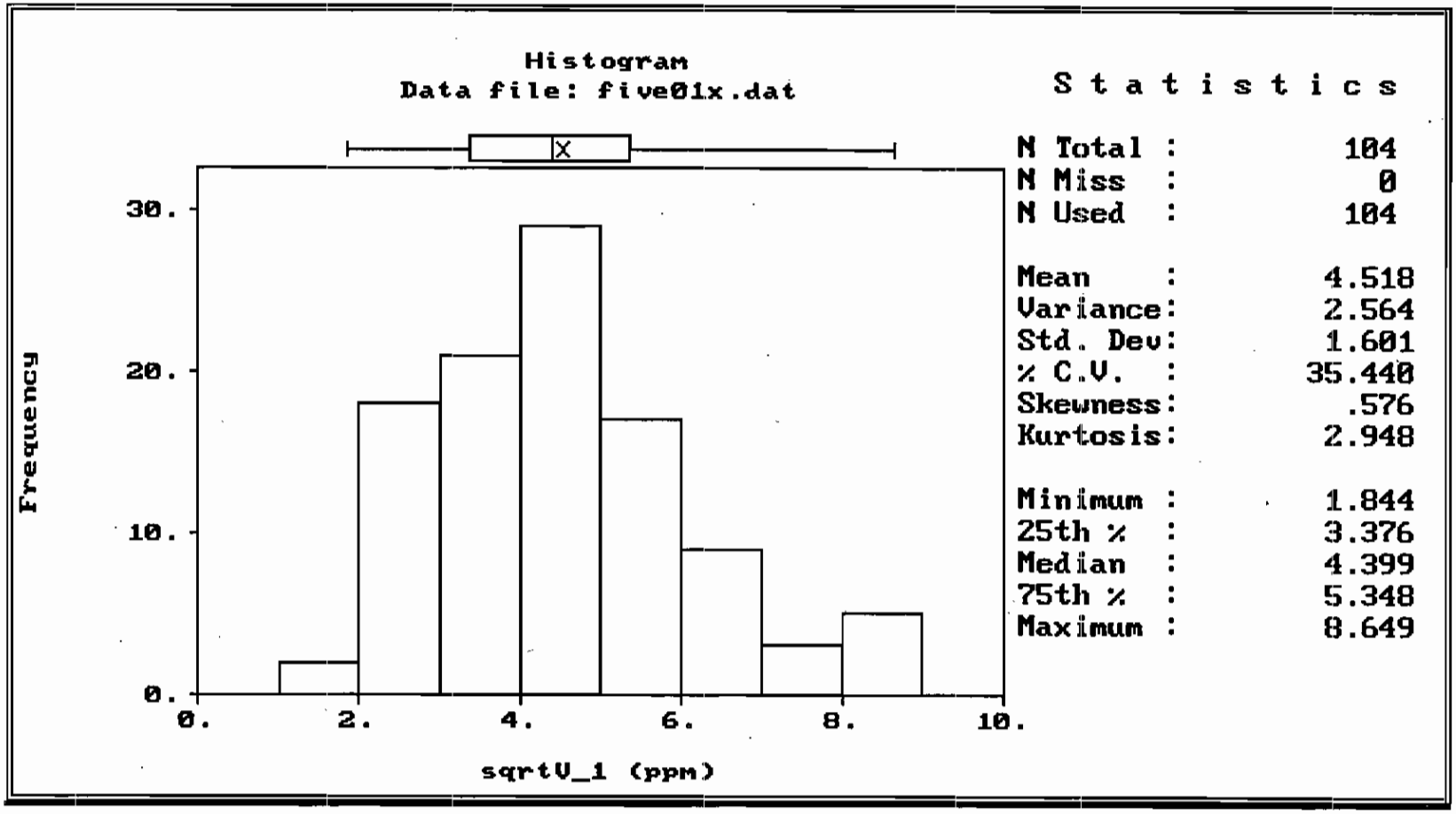
Original dataset (N = 104)

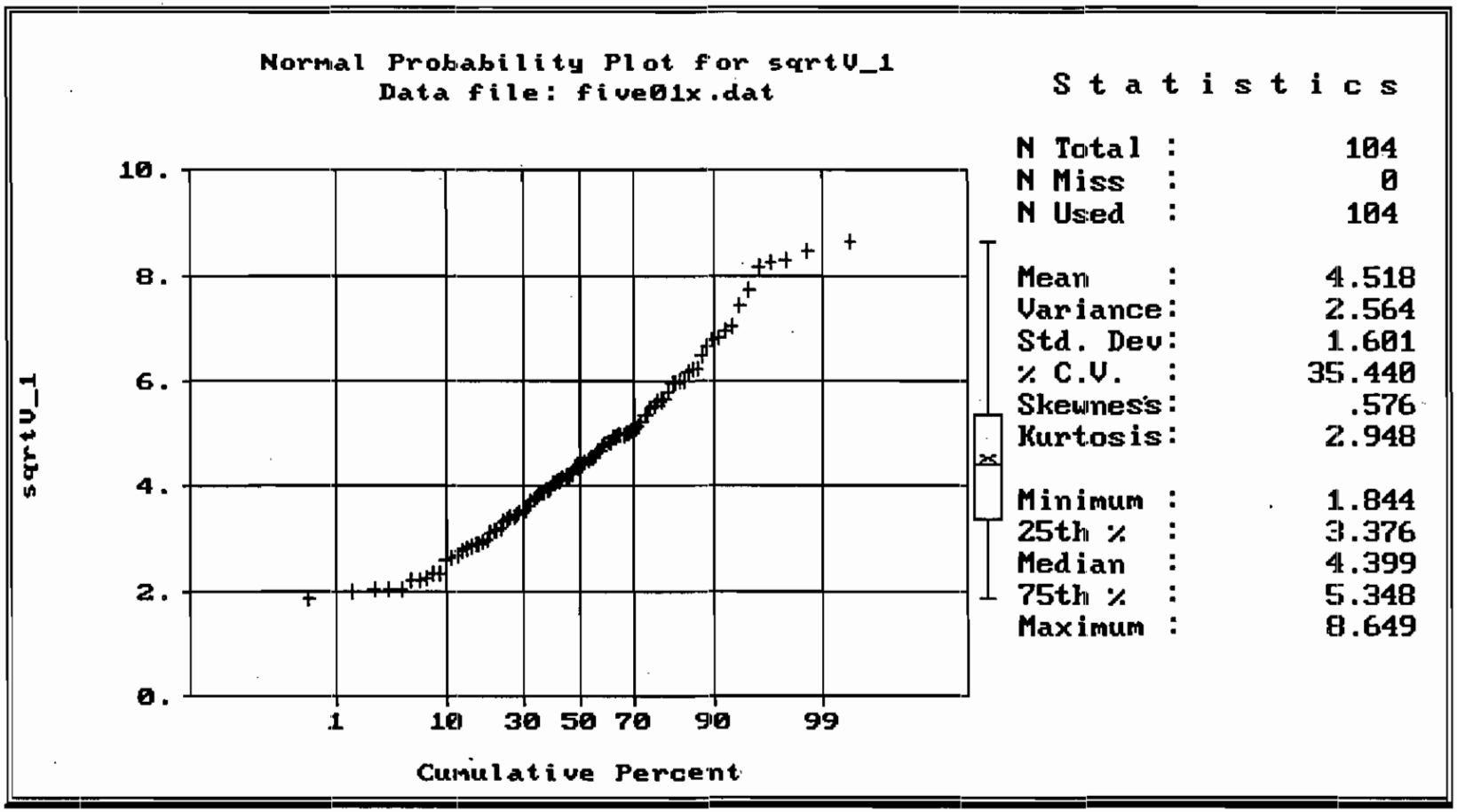
LN-transformed values




Normal Probability Plot for LN(V_1)
Data file: five01.dat
LN(V_1)
5.
4.
3.
2.
1.
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 104
N Miss : 0
N Used : 104
Mean : 2.889
Variance: .533
Std. Dev: .730
% C.V. : 25.270
Skewness: -.248
Kurtosis: 2.570
Minimum : 1.224
25th % : 2.434
Median : 2.963
75th % : 3.353
Maximum : 4.315

Zone H
V in surface soil grid samples
Original dataset (N = 104)
Square-root transformed values



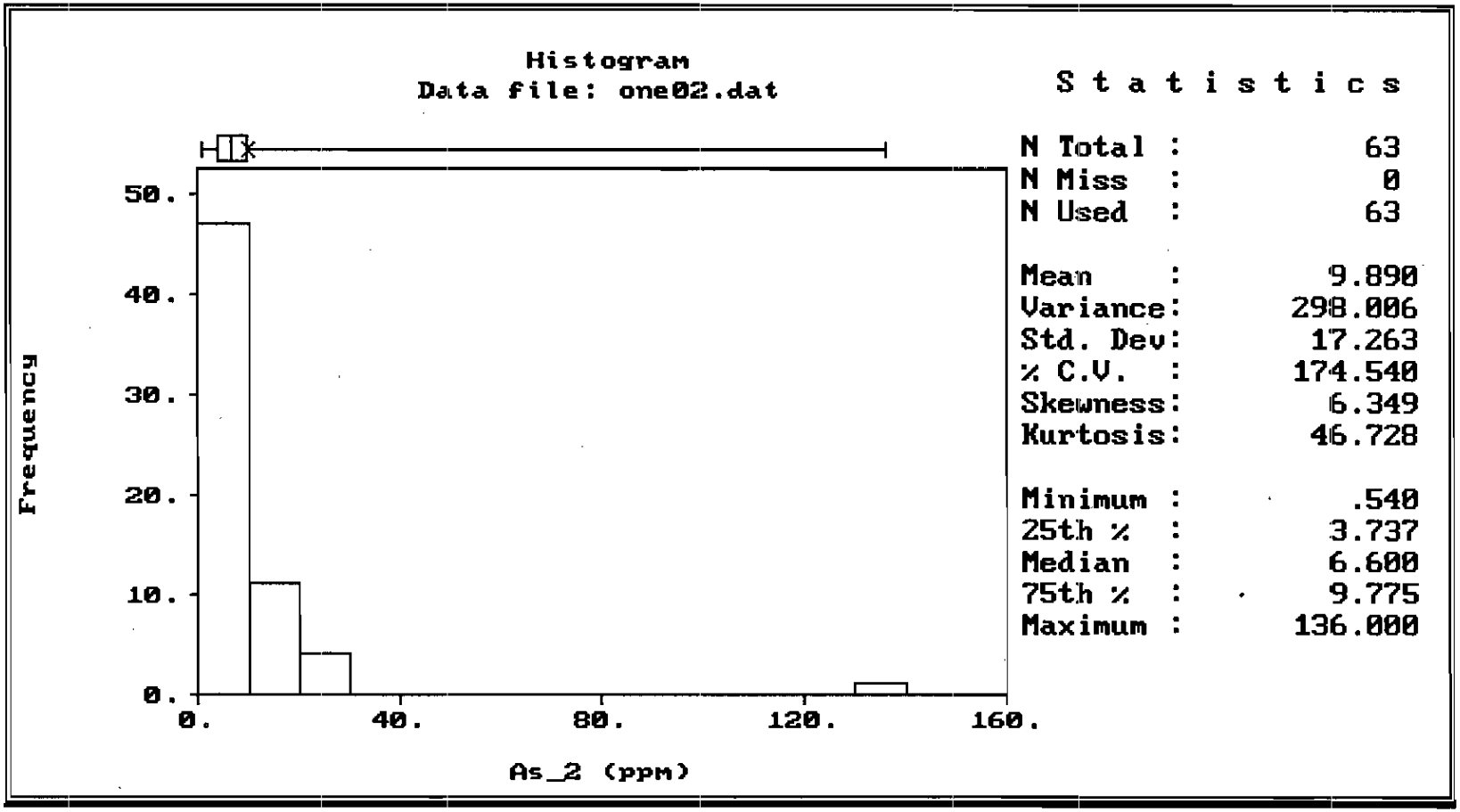

Normal Probability Plot for sqrtV_1
Data file: five01x.dat
sqrtV_1
10.
8.
6.
4.
2.
0.
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 104
N Miss : 0
N Used : 104
Mean : 4.518
Variance: 2.564
Std. Dev: 1.601
% C.V. : 35.440
Skewness: .576
Kurtosis: 2.948
Minimum : 1.844
25th % : 3.376
Median : 4.399
75th % : 5.348
Maximum : 8.649

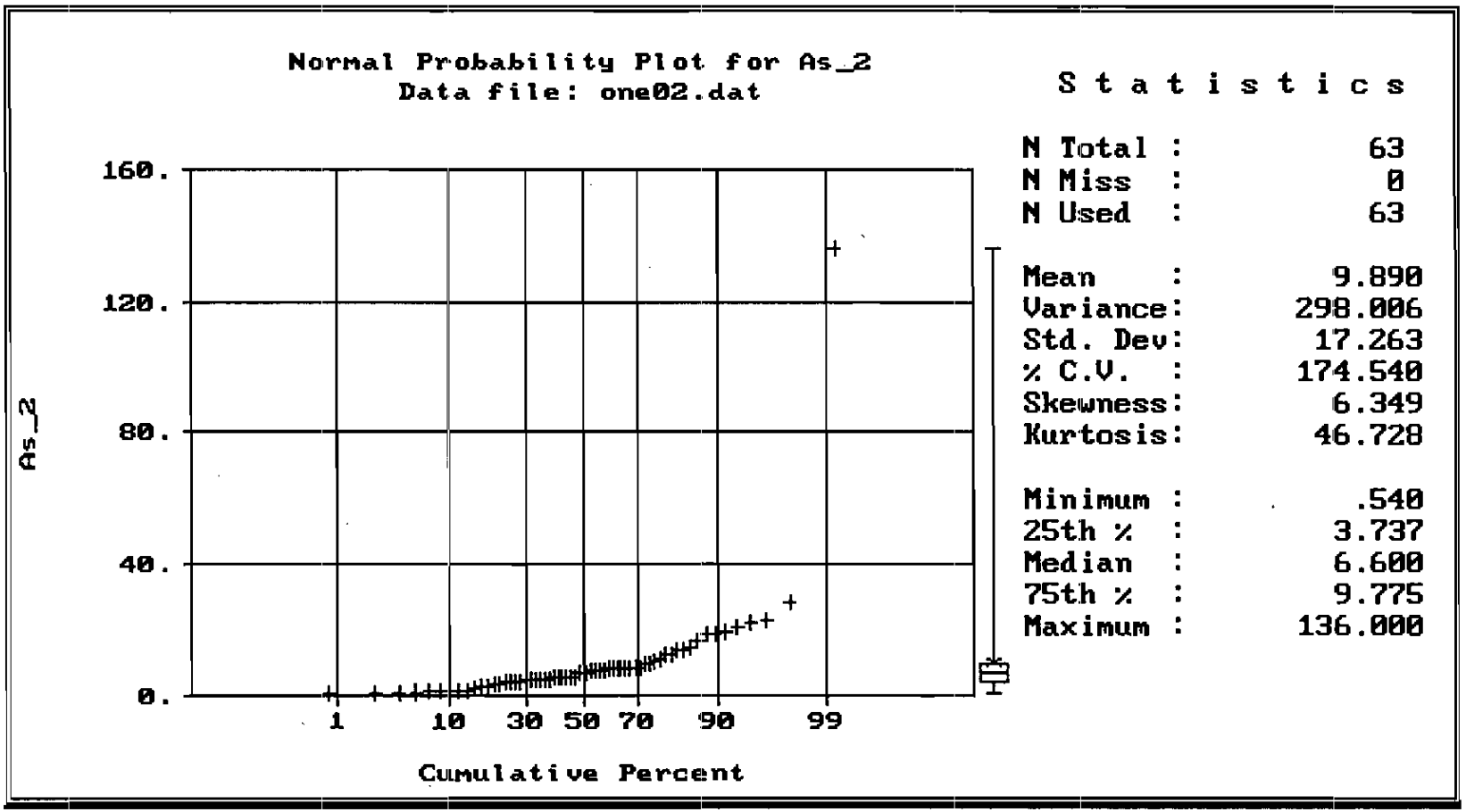
Zone H

Arsenic in subsurface soil grid samples

Original dataset (N=63)

Original values

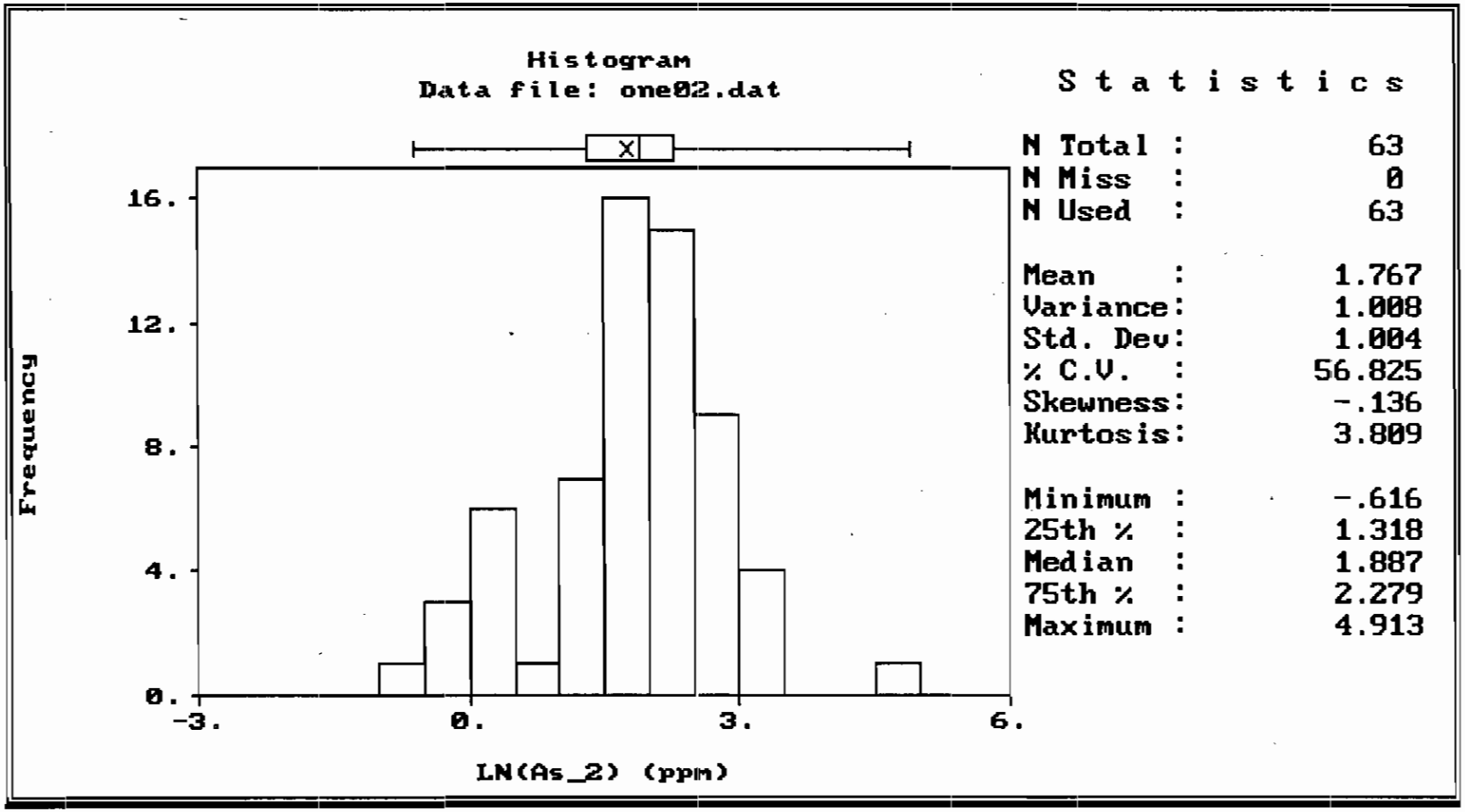


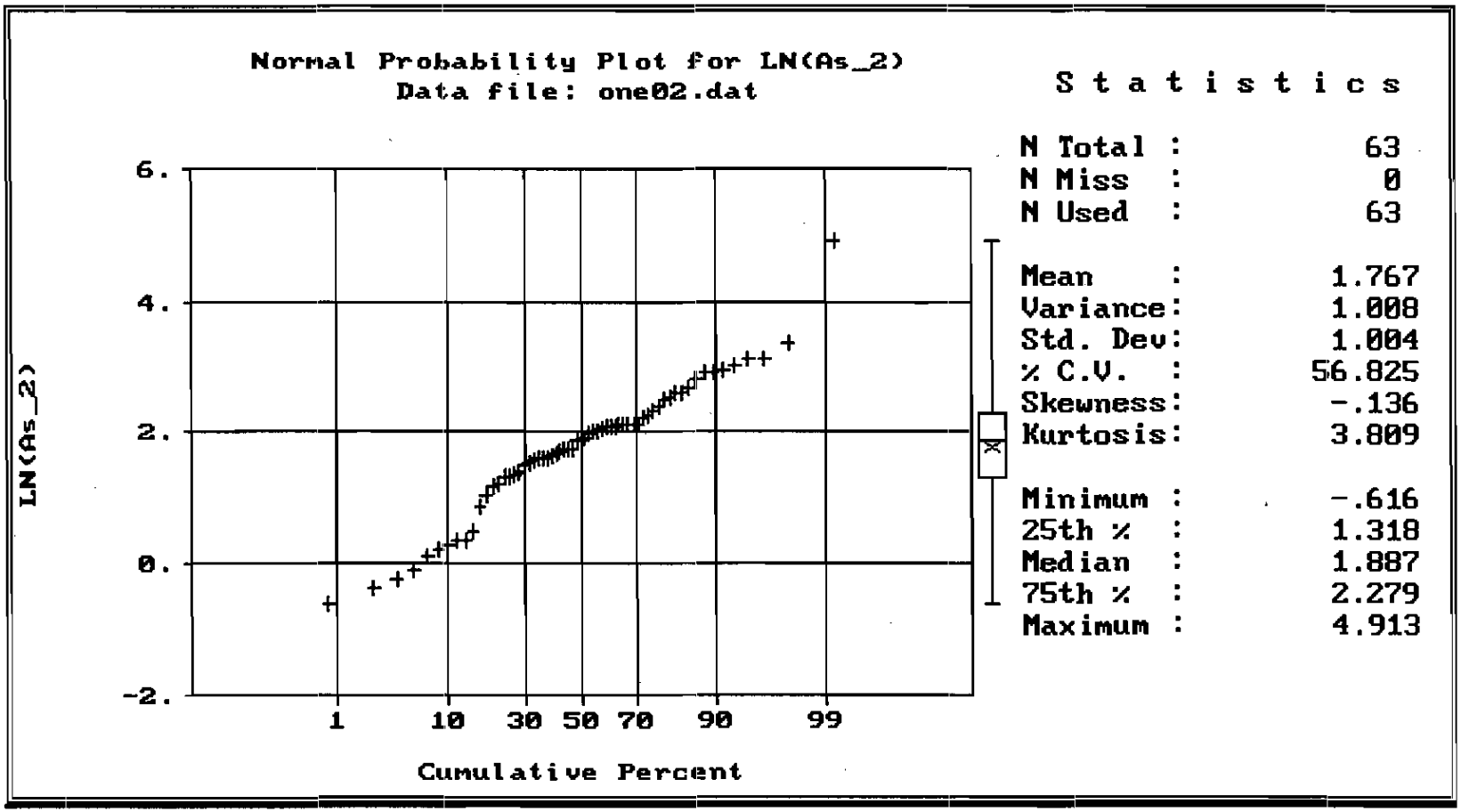


Statistics

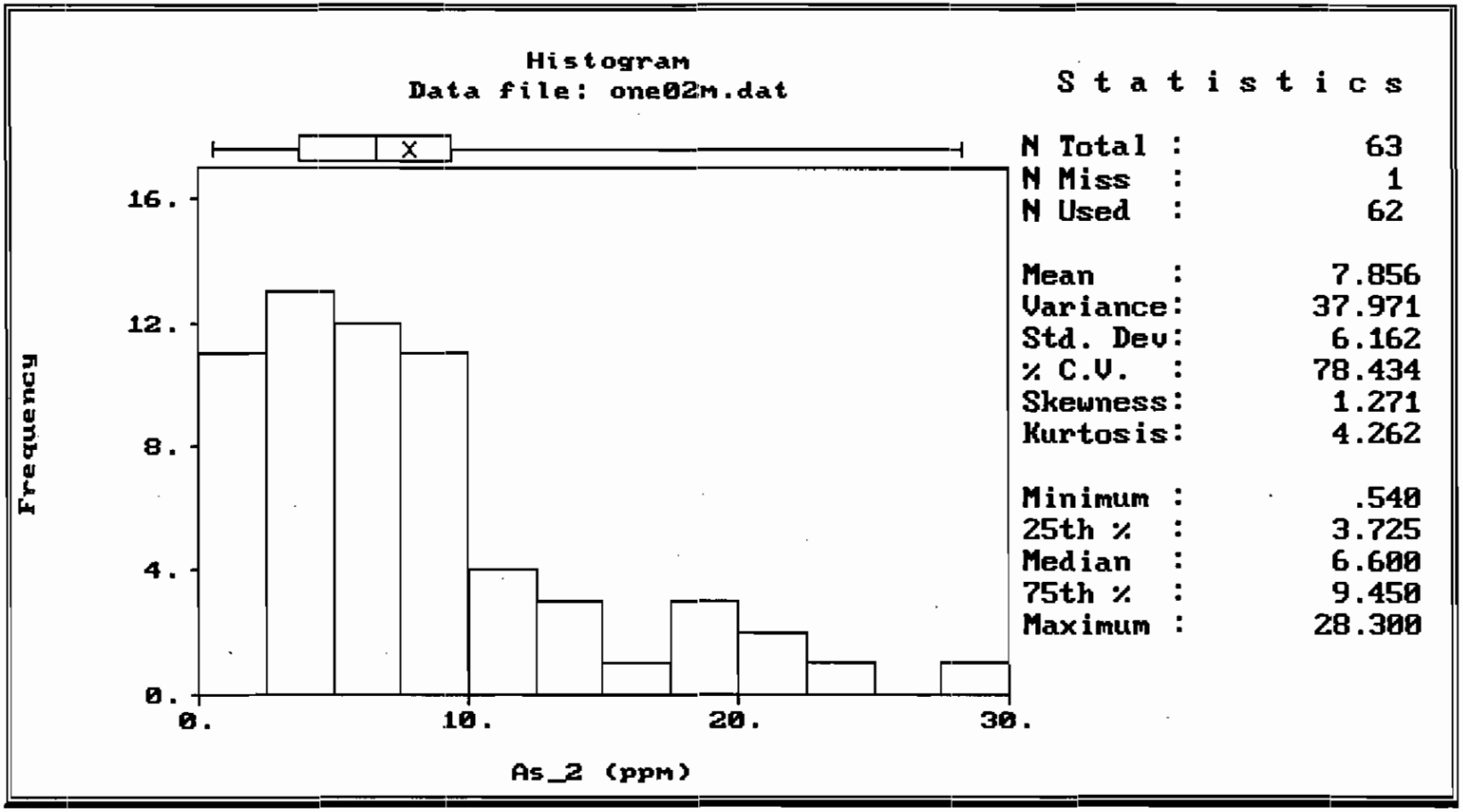
N Total :	63
N Miss :	0
N Used :	63
Mean :	9.890
Variance:	298.006
Std. Dev:	17.263
% C.V. :	174.540
Skewness:	6.349
Kurtosis:	46.728
Minimum :	.540
25th % :	3.737
Median :	6.600
75th % :	9.775
Maximum :	136.000

Zone H
AS in subsurface soil grid samples
Original dataset (N=63)
LN-transformed values



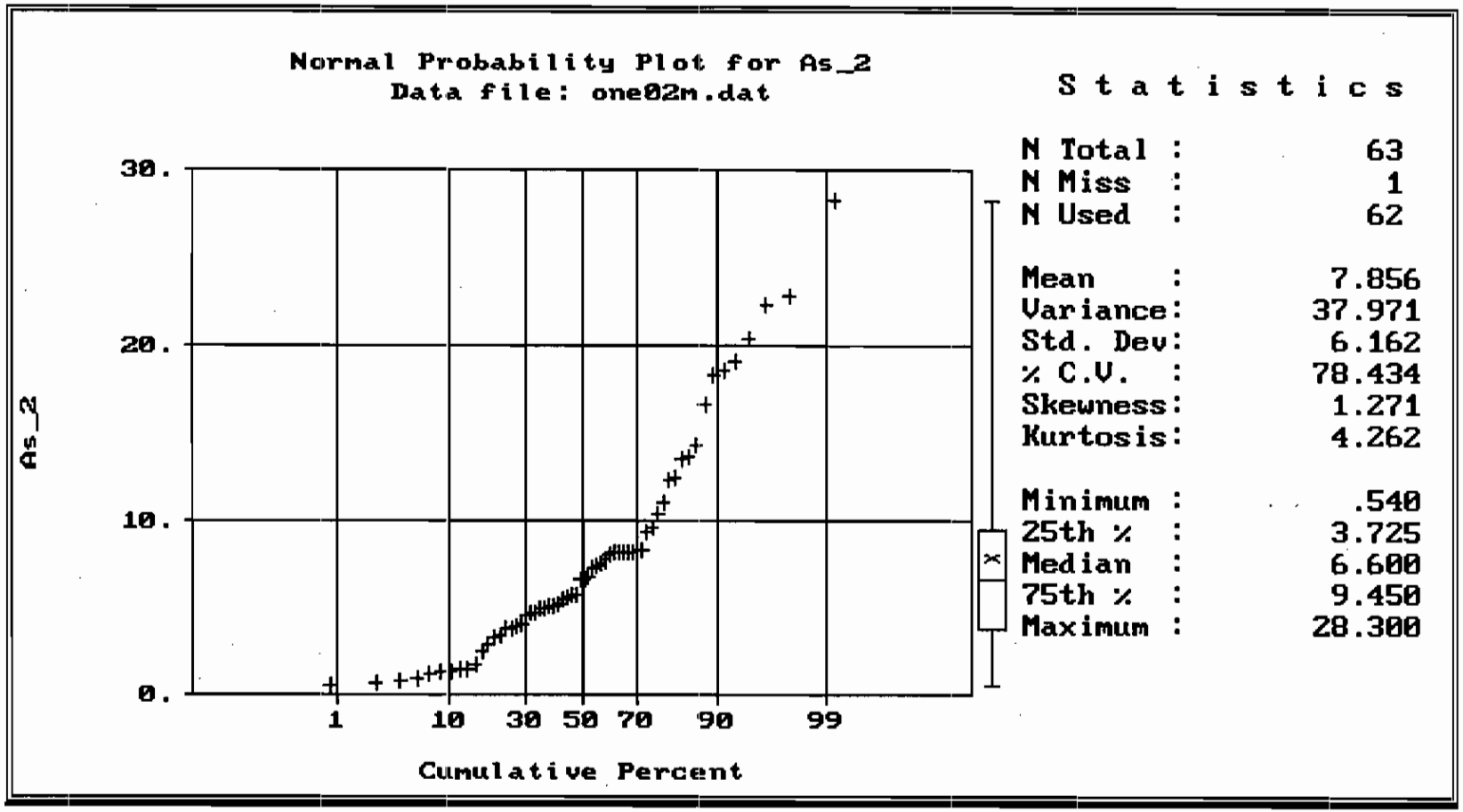

Normal Probability Plot for LN(As_2)
Data file: one02.dat
LN(As_2)
6.
4.
2.
0.
-2.
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 63
N Miss : 0
N Used : 63
Mean : 1.767
Variance: 1.008
Std. Dev: 1.004
% C.V. : 56.825
Skewness: -.136
Kurtosis: 3.809
Minimum : -.616
25th % : 1.318
Median : 1.887
75th % : 2.279
Maximum : 4.913

Zone H
AS in subsurface soil
Sample #43-02 removed
Original data values

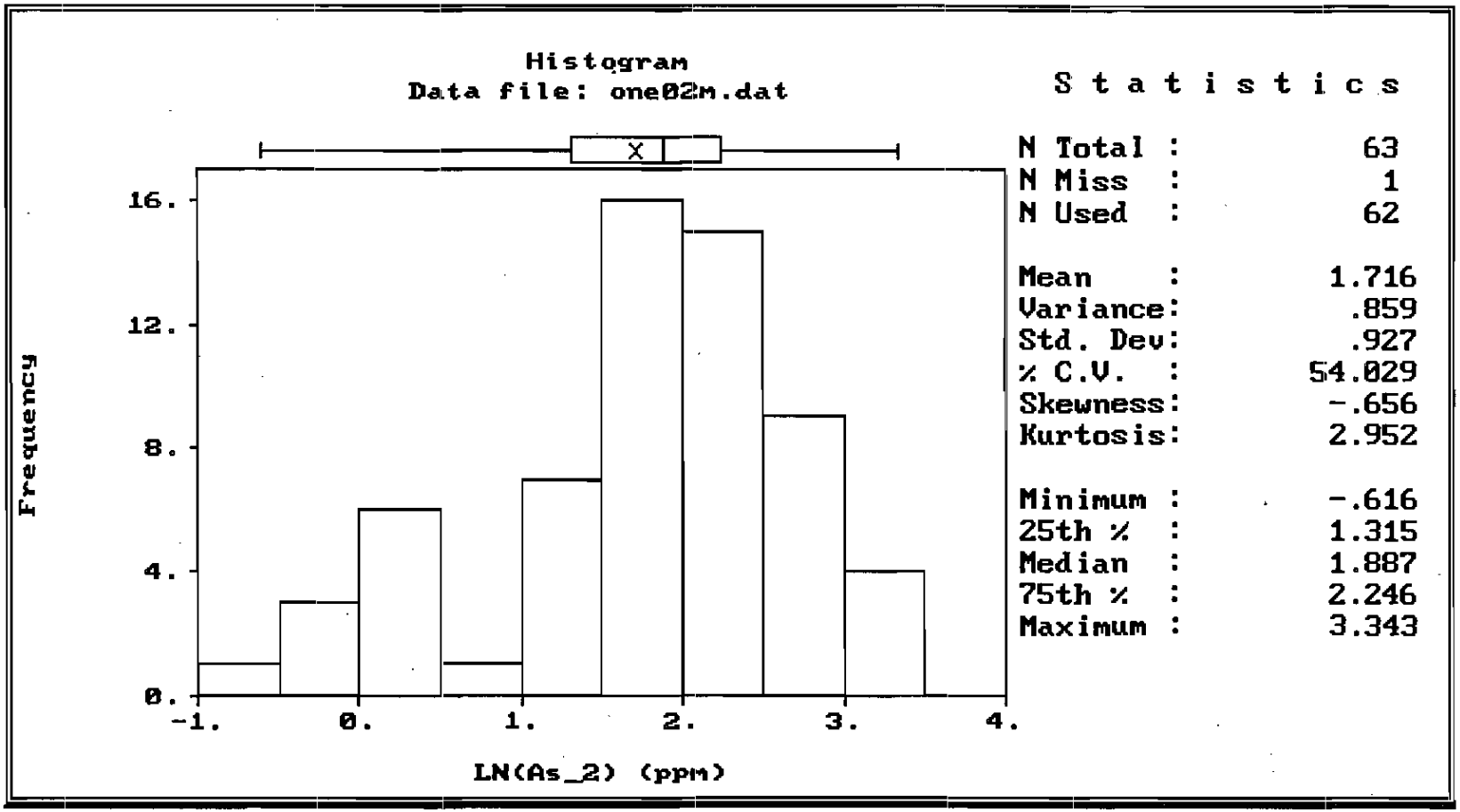


Statistics

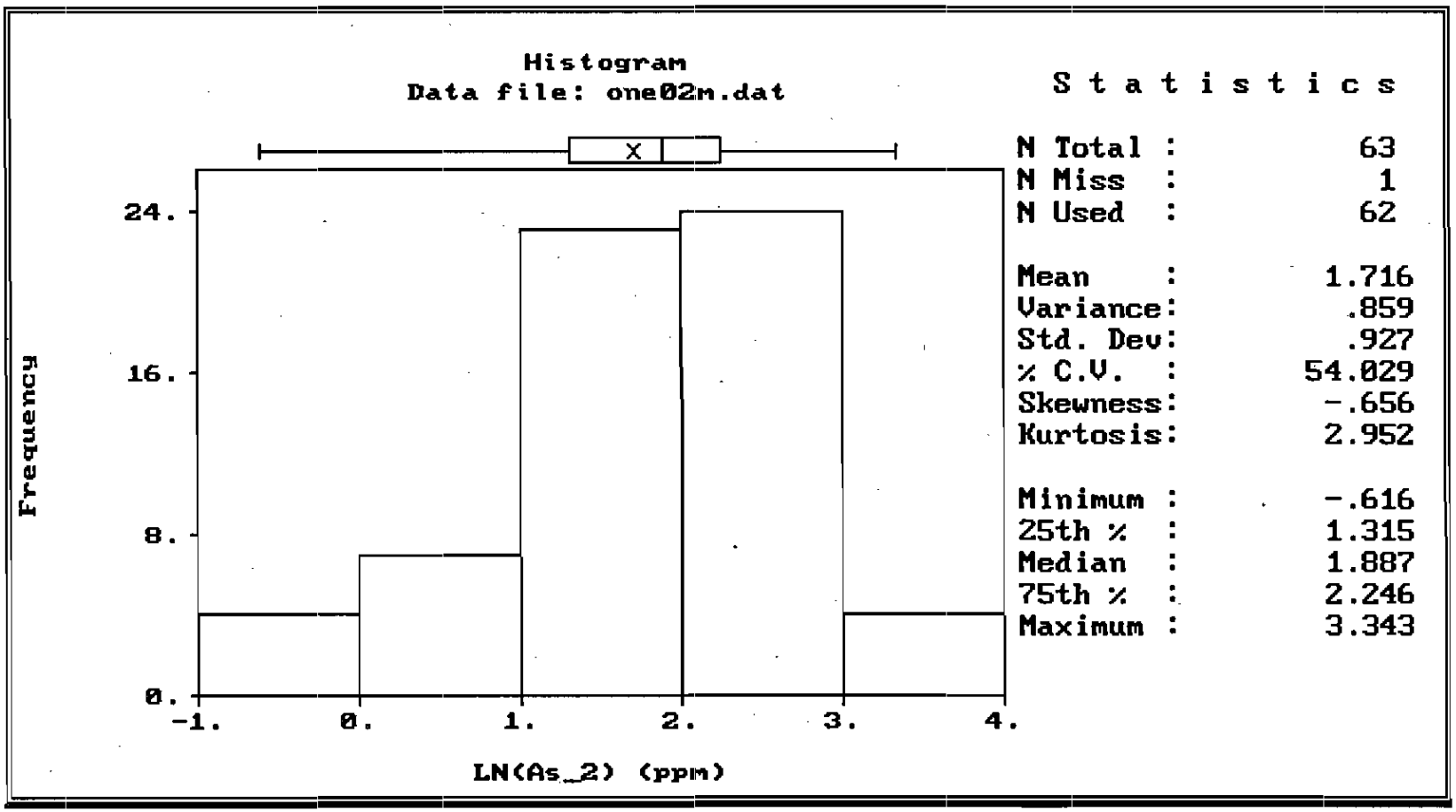
N Total :	63
N Miss :	1
N Used :	62
Mean :	7.856
Variance:	37.971
Std. Dev:	6.162
% C.V. :	78.434
Skewness:	1.271
Kurtosis:	4.262
Minimum :	.540
25th % :	3.725
Median :	6.600
75th % :	9.450
Maximum :	28.300

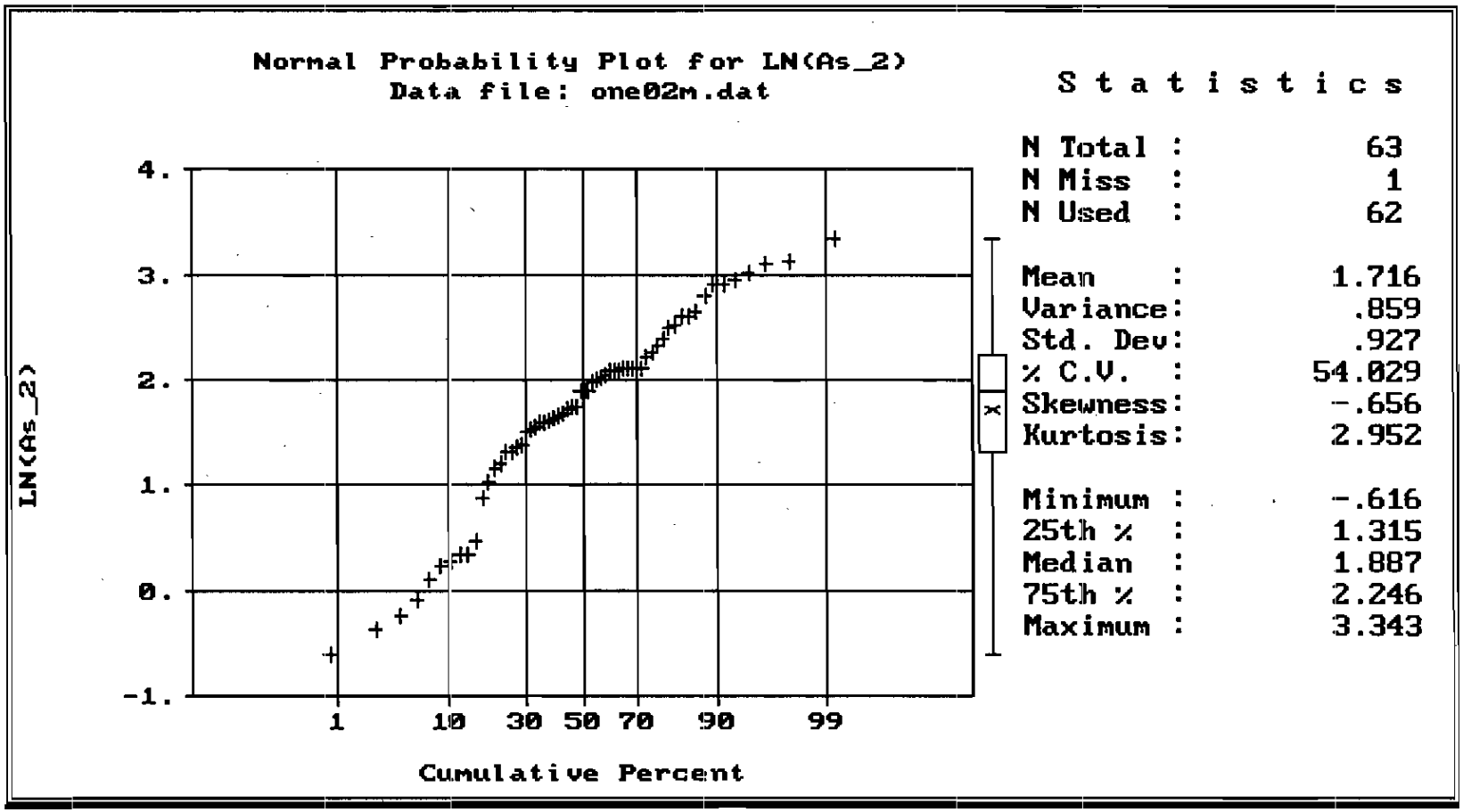

Normal Probability Plot for As_2
Data file: one02m.dat
As_2
30.
20.
10.
0.
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 63
N Miss : 1
N Used : 62
Mean : 7.856
Variance: 37.971
Std. Dev: 6.162
% C.V. : 78.434
Skewness: 1.271
Kurtosis: 4.262
Minimum : .540
25th % : 3.725
Median : 6.600
75th % : 9.450
Maximum : 28.300

Zone H
AS in subsurface soil grid samples
Sample # 43-02 removed
LN- transformed values

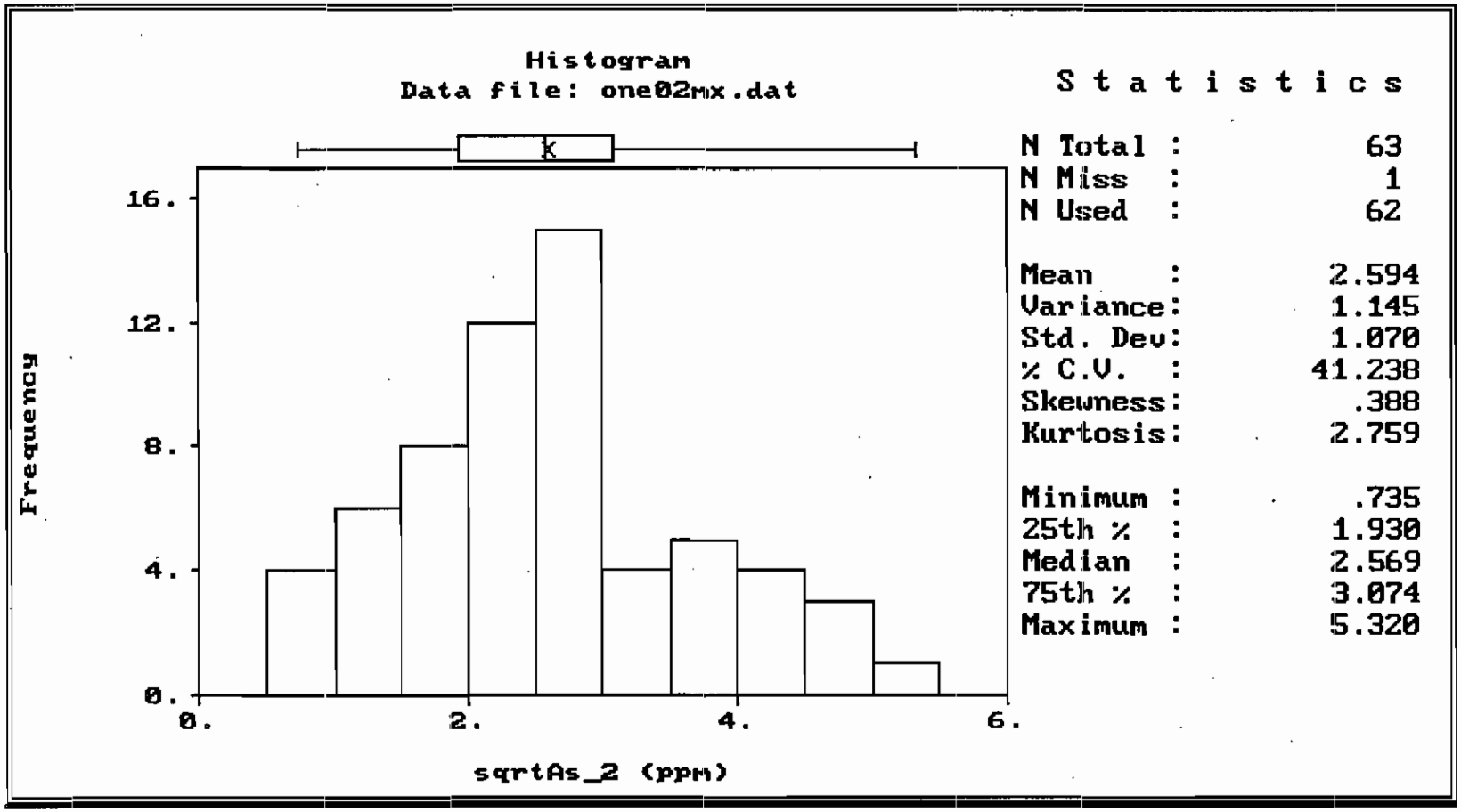


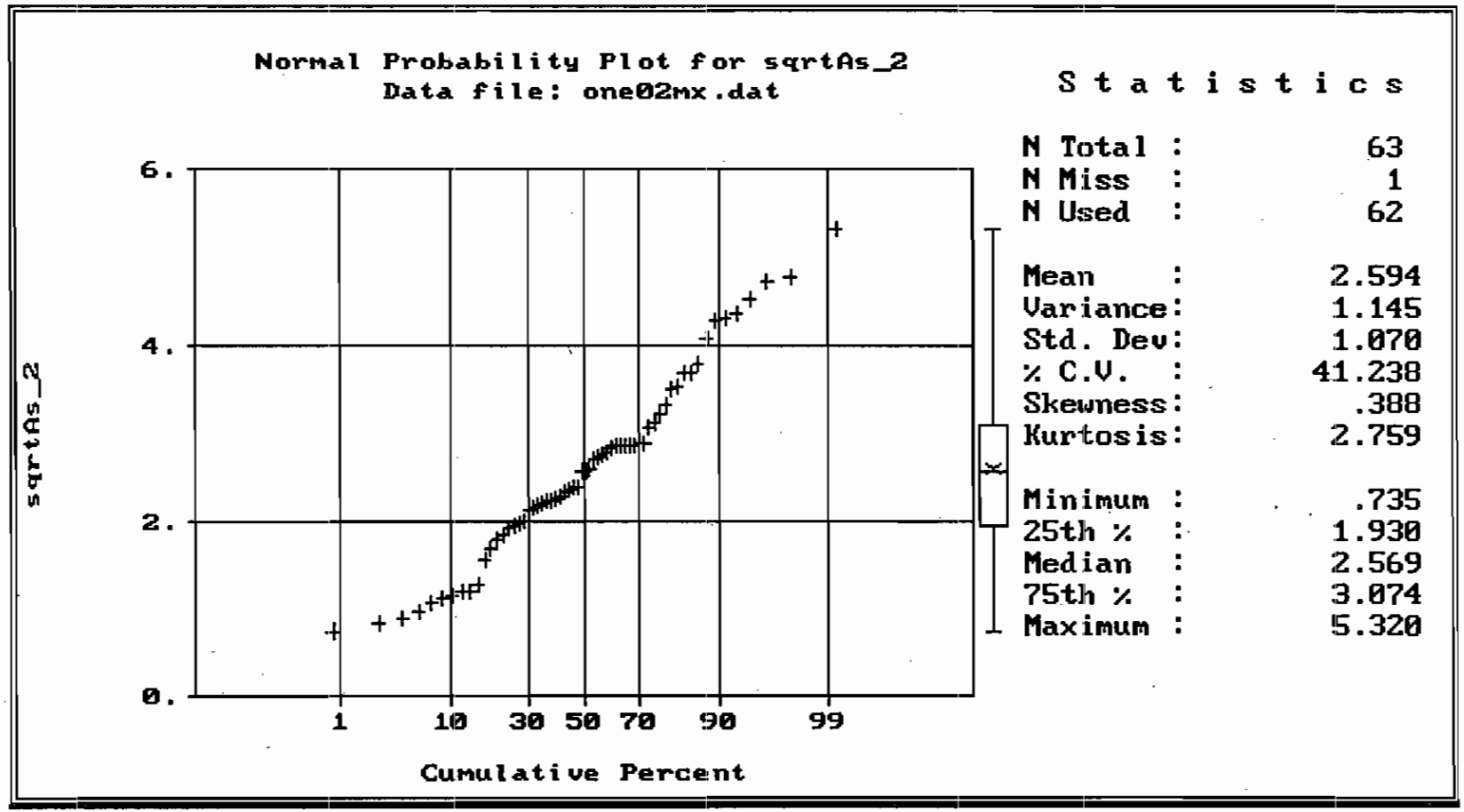
Zone H
AS in subsurface soil grid samples — generalized presentation
Sample #43-02 removed
LN-transformed values



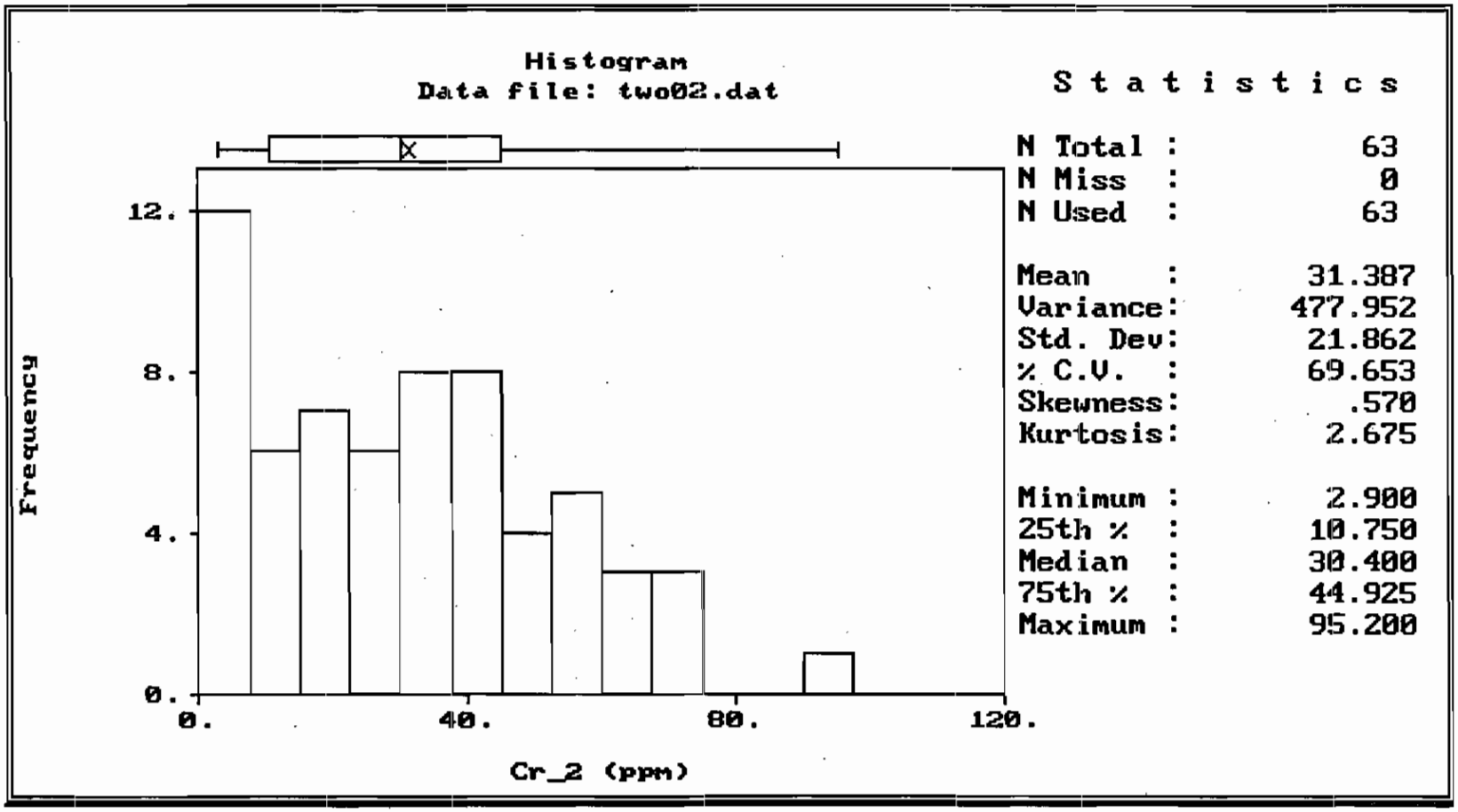

Normal Probability Plot for LN(As_2)
Data file: one02m.dat
LN(As_2)
4.
3.
2.
1.
0.
-1.
1
10
30
50
70
90
99
Cumulative Percent
x
Statistics
N Total : 63
N Miss : 1
N Used : 62
Mean : 1.716
Variance: .859
Std. Dev: .927
% C.V. : 54.029
Skewness: -.656
Kurtosis: 2.952
Minimum : -.616
25th % : 1.315
Median : 1.887
75th % : 2.246
Maximum : 3.343

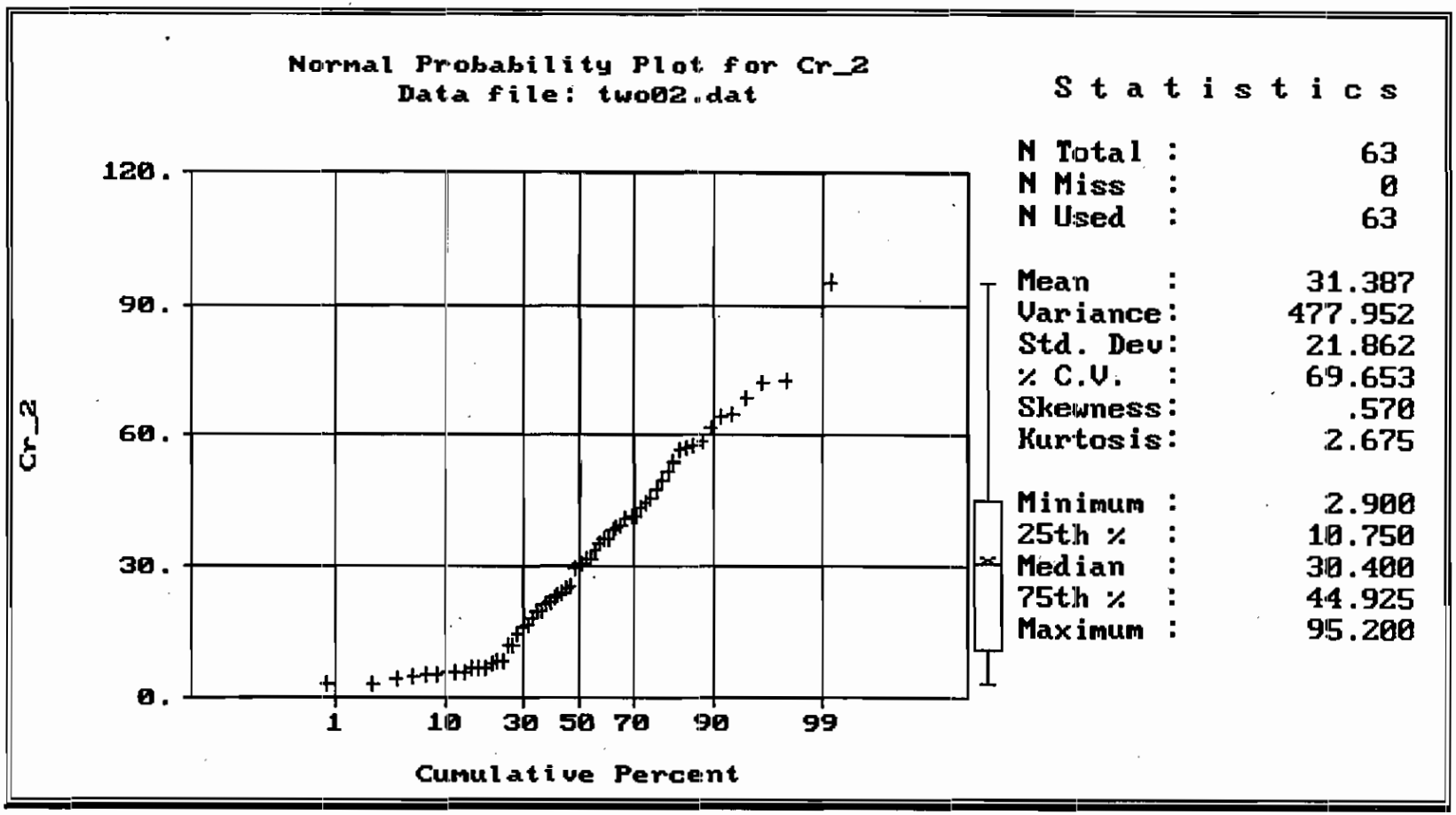
Zone H
AS in subsurface soil grid samples
Sample #43-02 removed
Square-root transformed values



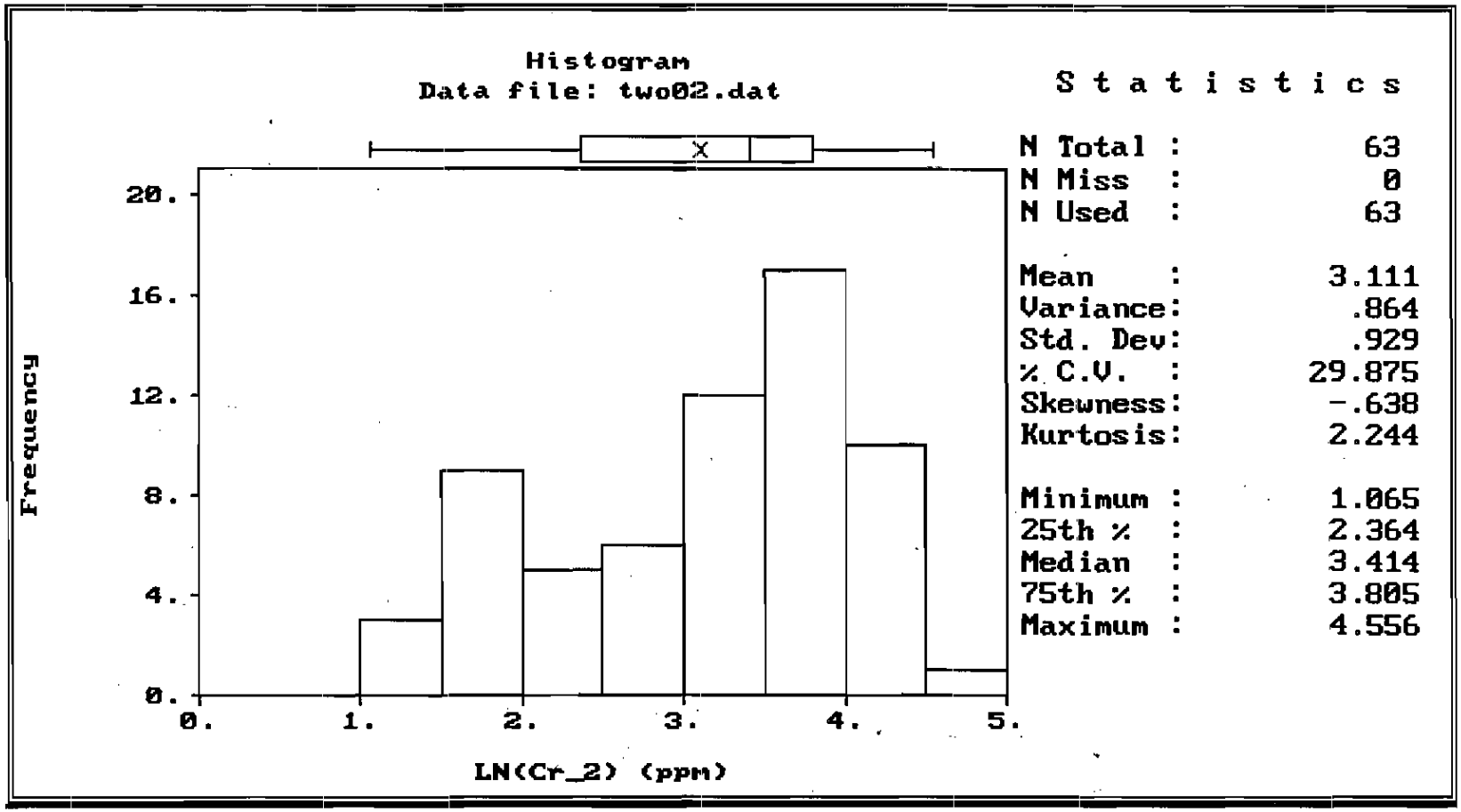

Normal Probability Plot for sqrtAs_2
Data file: one02mx.dat
sqrtAs_2
6.
4.
2.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 63
N Miss : 1
N Used : 62
Mean : 2.594
Variance: 1.145
Std. Dev: 1.070
% C.V. : 41.238
Skewness: .388
Kurtosis: 2.759
Minimum : .735
25th % : 1.930
Median : 2.569
75th % : 3.074
Maximum : 5.320

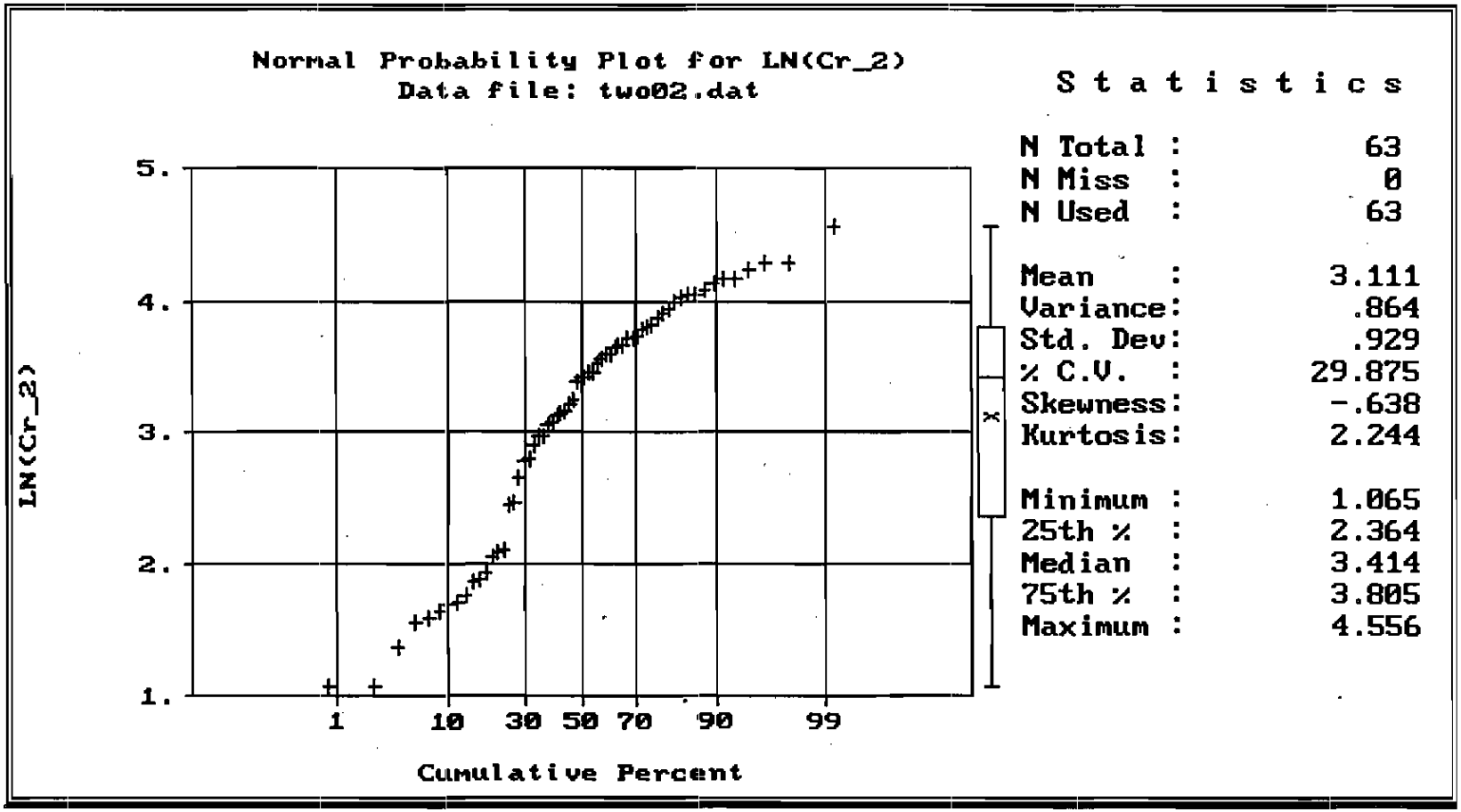
Zone H
Chromium in subsurface soil grid samples
Original dataset (N=63)
Original values



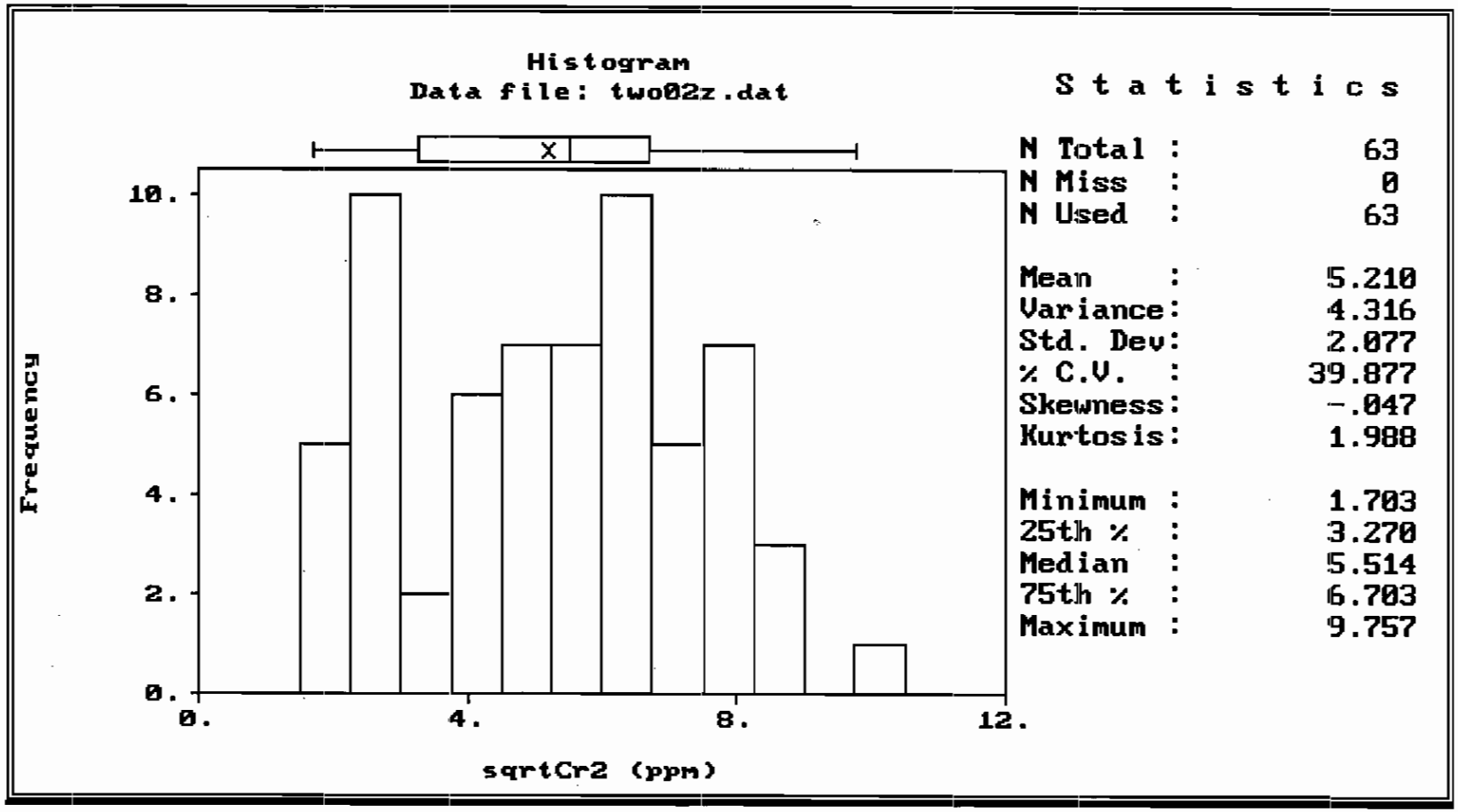

Normal Probability Plot for Cr_2
Data file: two02.dat
Cr_2
120.
90.
60.
30.
0.
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 63
N Miss : 0
N Used : 63
Mean : 31.387
Variance: 477.952
Std. Dev: 21.862
% C.V. : 69.653
Skewness: .570
Kurtosis: 2.675
Minimum : 2.900
25th % : 10.750
Median : 30.400
75th % : 44.925
Maximum : 95.200

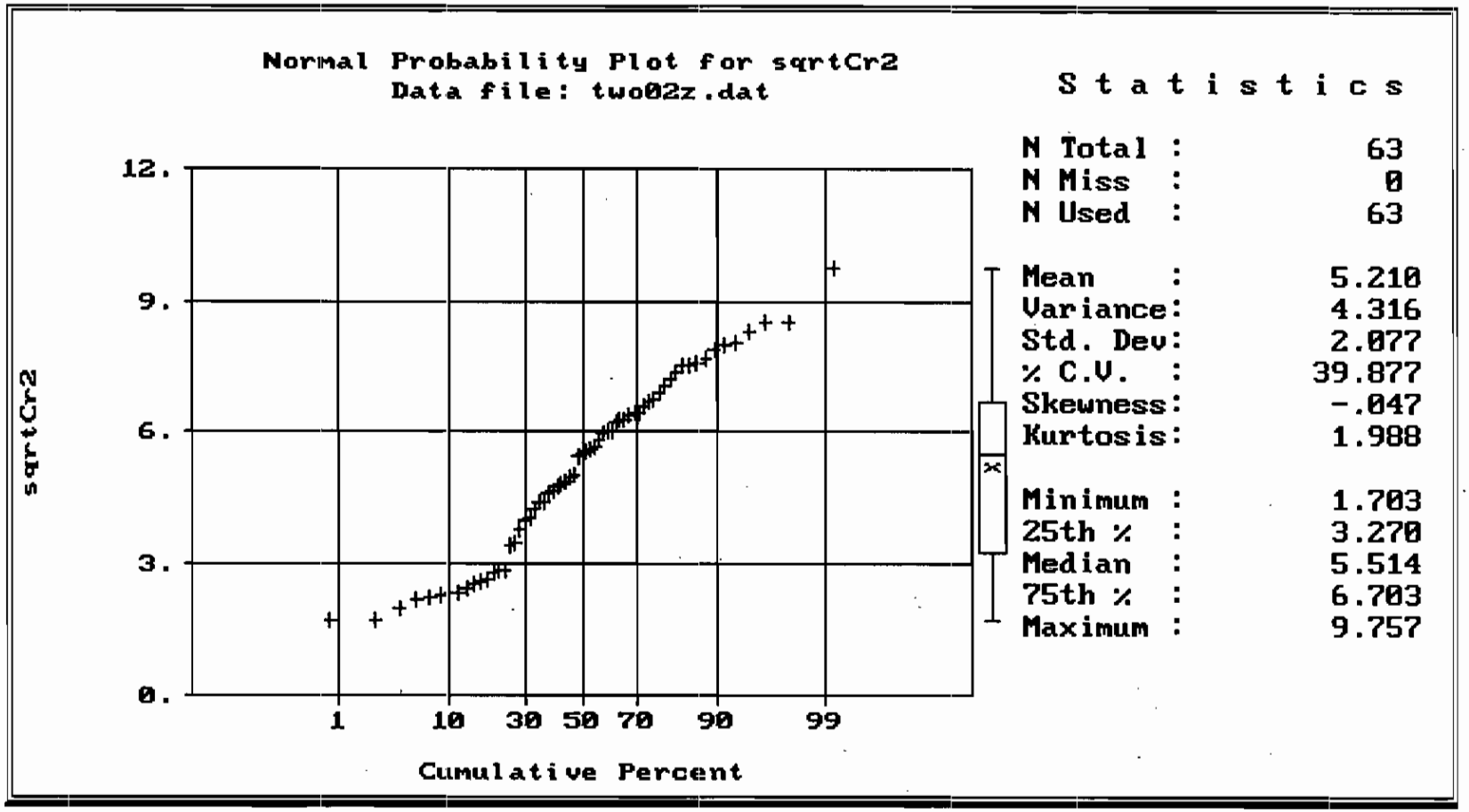
Zone H
CR in subsurface soil grid samples
Original dataset (N = 63)
LN-transformed values



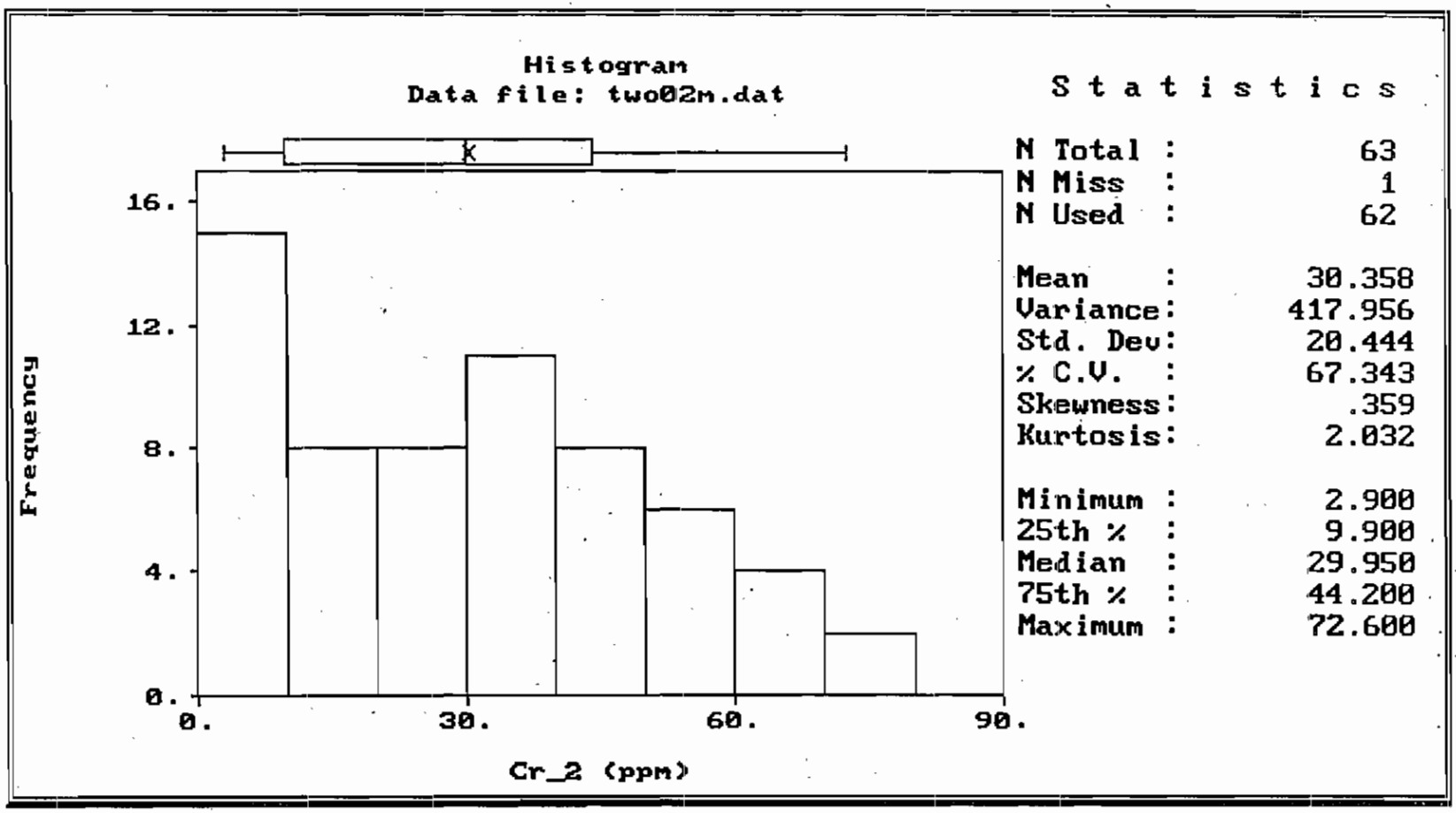

Normal Probability Plot for LN(Cr_2)
Data file: two02.dat
LN(Cr_2)
5.
4.
3.
2.
1.
1
10
30
50
70
90
99
Cumulative Percent
x
Statistics
N Total : 63
N Miss : 0
N Used : 63
Mean : 3.111
Variance: .864
Std. Dev: .929
% C.V. : 29.875
Skewness: -.638
Kurtosis: 2.244
Minimum : 1.065
25th % : 2.364
Median : 3.414
75th % : 3.805
Maximum : 4.556

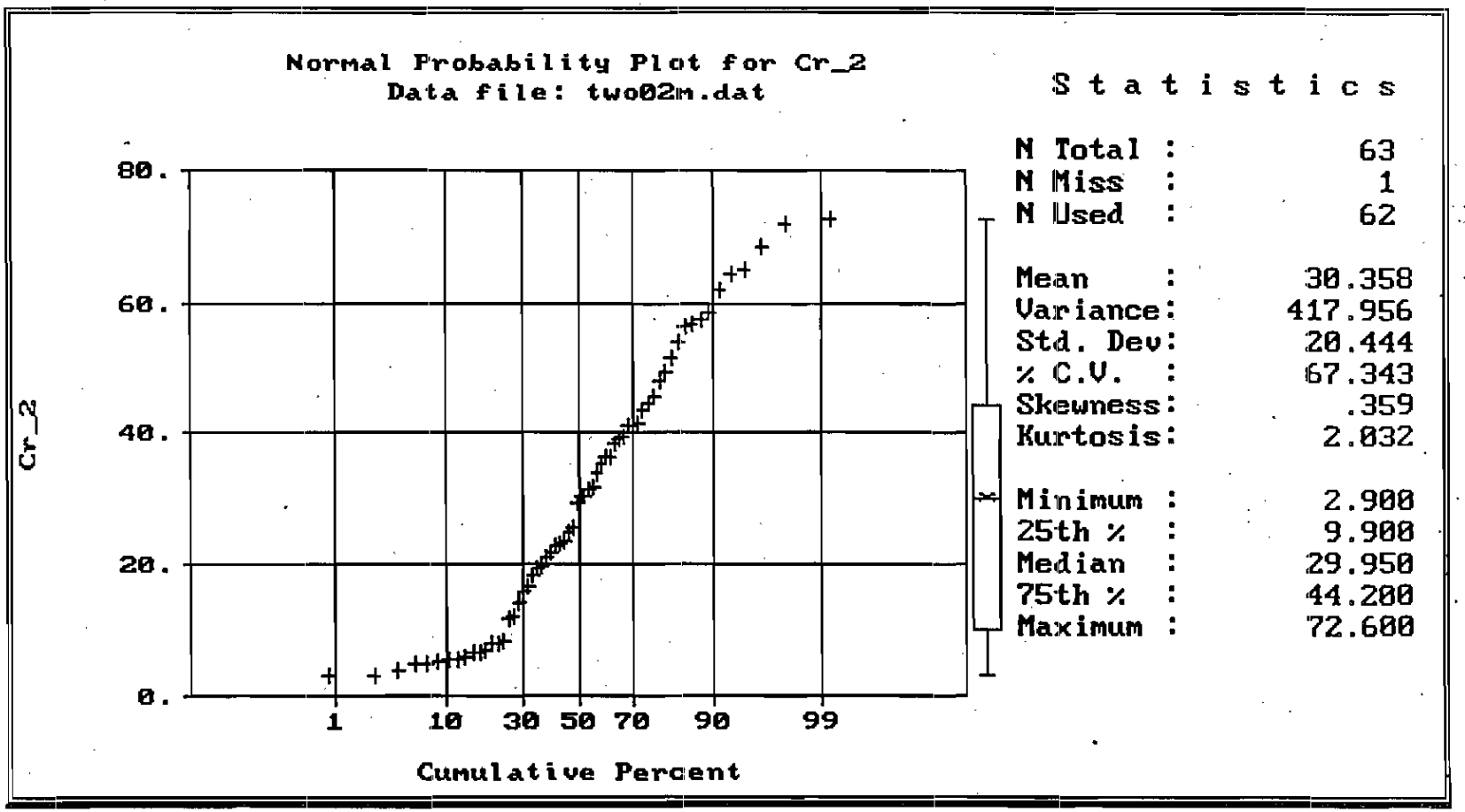
Zone H
CR in subsurface soil grid samples
Original dataset (N=63)
Square-root transformed values



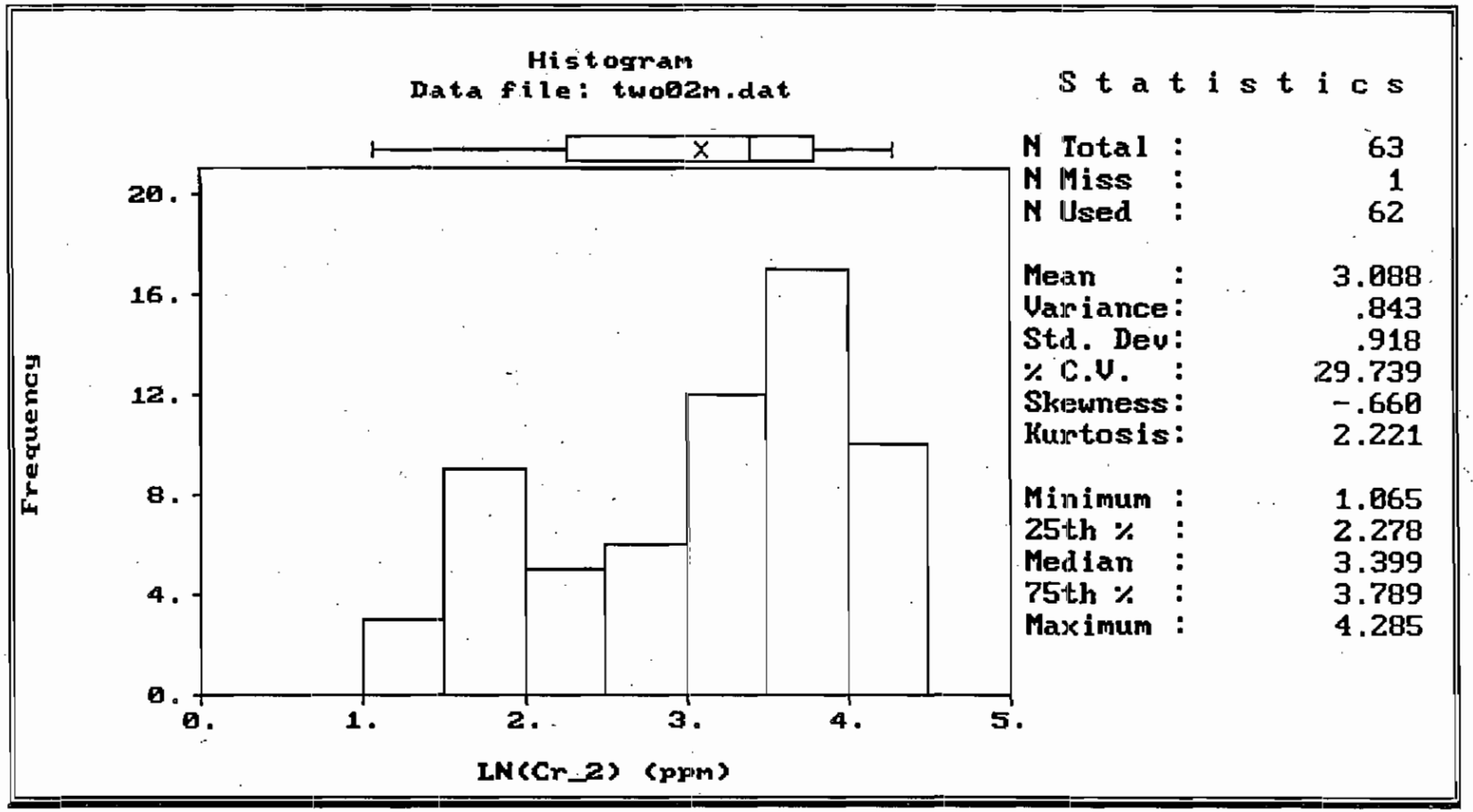

Normal Probability Plot for sqrtCr2
Data file: two02z.dat
12.
9.
6.
3.
0.
sqrtCr2
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 63
N Miss : 0
N Used : 63
Mean : 5.210
Variance: 4.316
Std. Dev: 2.077
% C.V. : 39.877
Skewness: -.047
Kurtosis: 1.988
Minimum : 1.703
25th % : 3.270
Median : 5.514
75th % : 6.703
Maximum : 9.757

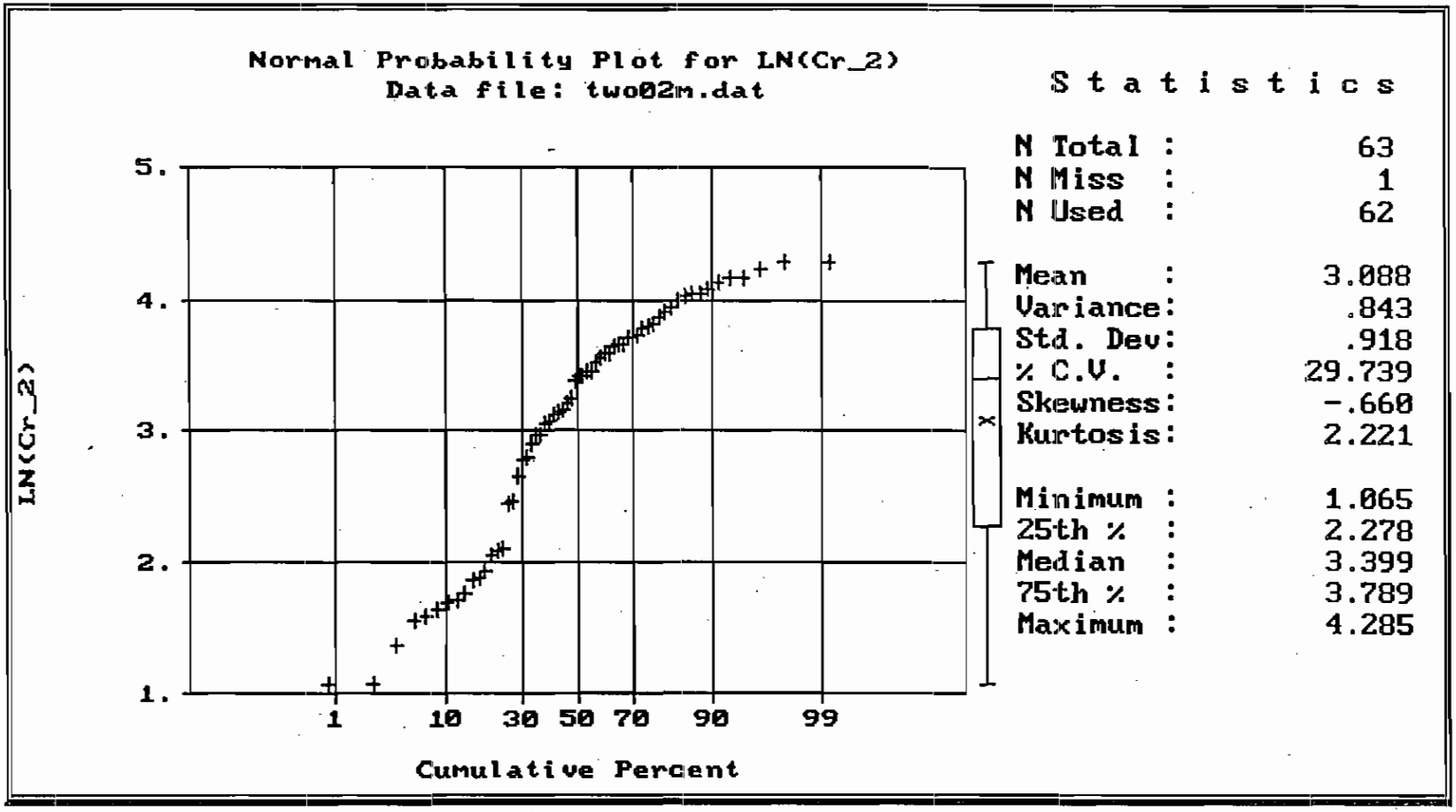
Zone H
CR in subsurface soil grid samples
Sample # 86-02 removed
Original values



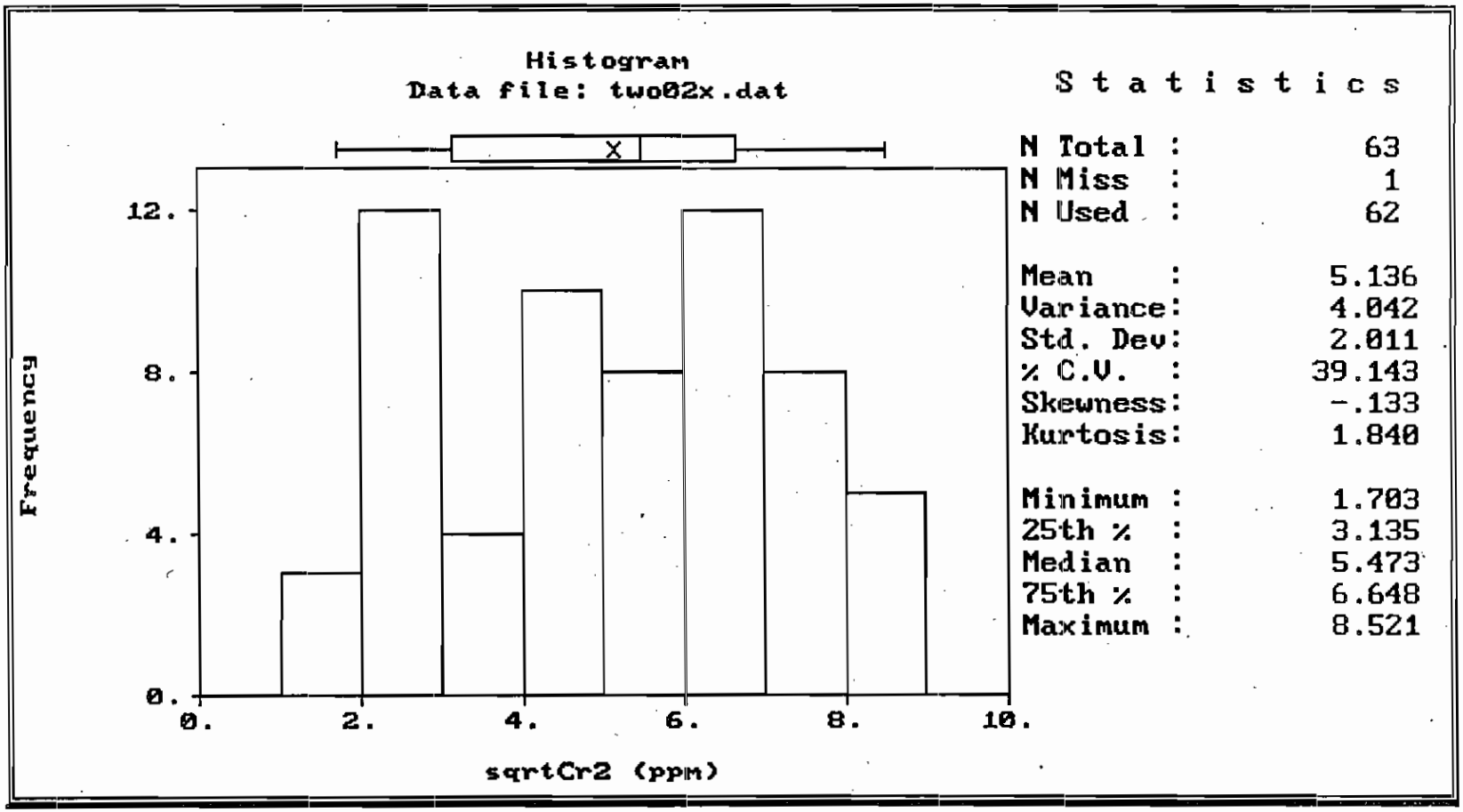

Normal Probability Plot for Cr_2
Data file: two02m.dat
Cr_2
80.
60.
40.
20.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 63
N Miss : 1
N Used : 62
Mean : 30.358
Variance: 417.956
Std. Dev: 20.444
% C.V. : 67.343
Skewness: .359
Kurtosis: 2.032
Minimum : 2.900
25th % : 9.900
Median : 29.950
75th % : 44.200
Maximum : 72.600

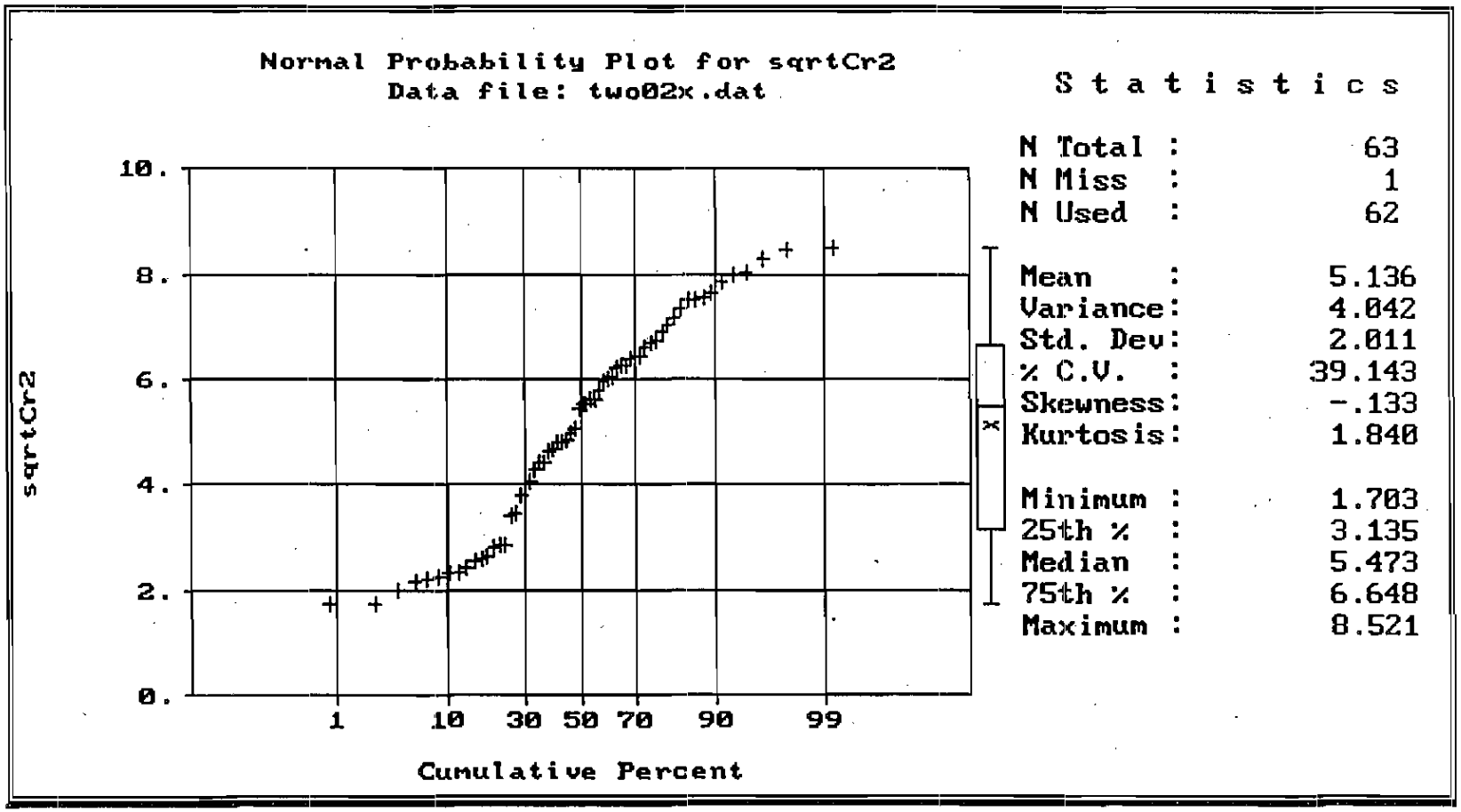
Zone H
CR in subsurface soil grid samples
Sample # 86-02 removed
LN-transformed values




Normal Probability Plot for LN(Cr_2)
Data file: two02m.dat
LN(Cr_2)
5.
4.
3.
2.
1.
1
10
30
50
70
90
99
Cumulative Percent
x
Statistics
N Total : 63
N Miss : 1
N Used : 62
Mean : 3.088
Variance: .843
Std. Dev: .918
% C.V. : 29.739
Skewness: -.660
Kurtosis: 2.221
Minimum : 1.065
25th % : 2.278
Median : 3.399
75th % : 3.789
Maximum : 4.285

Zone H
CR in subsurface soil grid samples
Sample # 86-02 removed
Square-root transformed values




Normal Probability Plot for sqrtCr2
Data file: two02x.dat
sqrtCr2
10.
8.
6.
4.
2.
0.
1
10
30
50
70
90
99
Cumulative Percent
x
Statistics
N Total : 63
N Miss : 1
N Used : 62
Mean : 5.136
Variance: 4.042
Std. Dev: 2.011
% C.V. : 39.143
Skewness: -.133
Kurtosis: 1.840
Minimum : 1.703
25th % : 3.135
Median : 5.473
75th % : 6.648
Maximum : 8.521