TENAS CORRELATION

013601

COMPANY: DuPont of Canada

PROJECT No.:

ATTENTION: Marshall Smith

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE 604) 980-5814

NOV 19 1976

FILE No.: 2951

DATE: Nov. 18, 1976.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb	Ba ppm	Sr ppm	B ppm
CAL CAL-23	4	23	12	41	12	3	0.6	20050	43	8	445	15	600	35	8.9
63	5	21	29	96	34	14	0.8	40200	55	8	1480	10	1230	45	29.0
90	4	43	7	39	17	5	0.4	16800	38	1	230	5	460	15	2.6
146	3	9	10	18	6	2	0.3	8400	10	1	330	5	320	70	0.1
229	4	21	11	49	11	10	0.7	40100	33	12	770	10	1100	130	14.3
319	4	26	13	93	12	10	0.6	30200	118	2	635	5	940	115	10.9
428	7	15	8	60	18	8	0.5	30300	33	2	170	5	610	45	10.7
540	3	14	43	270	16	6	0.8	30200	29	4	1640	<5	480	100	5.8
TRAS 1-7	2	7	22	85	39	13	1.2	50150	38	2	270	5	830	110	39.3
19.5	4	240	14200	37500	55	22	1950	60100	149	400	1620	10	530	260	39.6
58	4	28	565	440	41	15	6.8	40500	55	3	650	5	1400	300	40.1
113	3	78	134	104	36	22	2.7	50200	10	3	910	5	1000	360	53.9
143	4	49	41	127	32	12	1.7	40500	29	1	610	5	1100	530	36.0
165	11	11	54	290	43	14	2.2	40300	33	1	1010	5	1250	300	34.8
191	4	40	138	156	38	13	1.8	40900	20	8	1950	5	880	95	38.2
301	7	21	34	130	53	15	1.4	70200	29	1	575	10	1050	160	75.5
TRAS 2-33	13	235	118	132	131	124	2.7	200000	15	1	520	5	700	75	49.8
77	4	52	25	112	60	37	0.8	70300	10	1	260	10	850	70	81.1
109	5	33	23	110	32	22	1.0	60700	20	2	245	5	825	55	69.3
168	20	31	30	44	43	3	0.5	9200	10	1	140	<5	360	25	1.7
192	9	134	31	78	56	20	1.4	30400	10	1	545	5	130	600	4.3
232	13	39	33	81	33	8	1.4	30900	33	2	440	10	2200	205	53.9
277	10	258	31	5650	37	25	2.2	100200	154	1	805	<5	500	130	8.9
302	14	47	76	540	39	11	1.6	40100	43	1	255	<5	200	220	65.0
386	38	265	46	118	66	36	2.5	100300	25	3	260	5	1000	410	48.7
352	11	28	21	72	188	32	1.4	50400	38	4	680	5	100	320	29.0
409	63	14	19	240	40	5	0.6	18100	15	2	240	5	150	390	80.6
434	10	47	53	300	179	17	1.6	20400	10	2	370	10	2100	295	47.5
469	12	14	34	71	184	19	1.5	40600	20	8	360	5	1350	365	76.5
498	13	25	20	53	34	15	1.7	30700	43	4	435	<5	1200	305	63.3

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DATE: Nov. 18, 1976.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb	V ppm	Cd ppm	Li ppm
CAL CAL-23													12	0.1	4
63													125	0.8	18
90													45	0.1	5
146													20	0.1	3
229													30	0.6	11
319													62	0.2	15
428													25	0.5	3
540													24	1.3	6
TRAS 1-7													81	0.2	34
19.5													653	62.6	28
58													115	6.3	22
113													80	1.0	21
143													91	1.5	23
165													560	0.4	18
191													90	0.9	25
301													145	0.1	34
TRAS 2-33													55	0.1	32
77													37	0.3	17
109													63	0.1	22
168													1127	0.2	18
192													220	0.6	13
232													100	0.3	15
277													105	55.9	13
302													197	8.6	15
386													765	1.2	14
352													290	0.1	24
409													1600	2.1	28
434													188	2.9	23
469													112	0.1	36
498													65	0.1	38

MIN-EN LABORATORIES LTD.
705 WEST 15TH STREET
NORTH VANCOUVER, B.C.
Phone: 980-5814

NOV 19 1976

Certificate of Assay

TO: DuPont of Canada Explorations,
102-1550 Alberni St.,
Vancouver, B.C.

Attn: M. Smith
PROJECT No.
DATE Nov.18/76.
Filo No. 2951

SAMPLE No.		Na_2O %	MgO %	K_2O %
CalCal 1	-23	1.35	.45	2.05
	63	6.02	2.23	3.71
	90	1.85	.61	1.98
	146	3.45	.14	1.15
	229	2.20	.52	2.27
	319	2.75	1.08	2.35
	428	2.65	.51	2.10
CalCal 1	-540	2.32	1.52	1.95
Tenas 1	-7	1.80	4.73	2.65
	19.5	2.10	3.32	1.27
	58	1.90	2.55	2.82
	113	2.15	2.07	2.93
	143	3.25	1.83	2.45
	165	1.42	7.25	4.02
	191	2.45	2.73	3.15
Tenas 1	-301	1.03	2.47	2.25
Tenas 2	-33	1.63	1.60	2.05
	77	1.97	1.32	4.15
	109	2.08	1.95	3.70
	168	1.63	.23	.72
	192	3.63	6.65	.13
Tenas 2	-232	1.70	1.93	3.50

MIN-EN Laboratories Ltd.

CERTIFIED BY

MIN-EN LABORATORIES LTD.
705 WEST 15TH STREET
NORTH VANCOUVER, B.C.
Phone: 980-5814

NOV 19 1976

Certificate of Assay

TO: DuPont of Canada Explorations,
102=1550 Alberni St.,
Vancouver, B.C.

Attn: M. Smith
PROJECT No.
DATE Nov.18/76.
File No. 2951

SAMPLE No.		Na_2O %	MgO %	K_2O %
Tenas 2	-277	4.00	2.01	.17
	302	6.25	1.53	4.05
	386	2.20	1.52	1.42
	352	11.20	10.30	.22
	409	1.63	9.50	1.17
	434	1.03	.95	.82
	469	1.87	3.15	3.32
Tenas 2	-498	1.75	3.32	3.95

MIN-EN Laboratories Ltd.

CERTIFIED BY J. P. Kline

Pearson's r, which is computed both by SCATTERGRAM and PEARSON CORR, serves a dual purpose. Besides its role as an indicator of the goodness of fit of the linear regression, it is a measure of association indicating the strength of the linear relationship between the two variables. The regression coefficient b does not serve this purpose; it merely denotes the slope of the line. When we want to know the strength and direction of a linear relationship, we consult r. If the value of r is close to zero, we can assume there is little or no *linear* relationship between the two variables. If the value of r approaches $+1.0$ or -1.0, we can assume there is a strong *linear* relationship.

If we square the Pearson's r we get another statistic, denoted by r^2. Actually, r^2 is a more easily interpreted measure of association when our concern is with strength of relationship rather than direction of relationship. (It ranges from a minimum of 0 to a maximum of 1.0.) Its usefulness derives from the fact that r^2 is a measure of the proportion of variance in one variable "explained" by the other.

Variance is a measure of the variability, or lack of homogeneity, in a variable (see Sec. 14.1 for further details). When the cases cluster close to the mean, variance will be small; as the cases become more spread out, variance increases. The objective of correlation analysis is to determine the extent to which variation in one variable is linked to variation in the other (referred to as *concomitant variation*).

Concomitant variation of one variable with another explains variance in the following sense. If we want to predict the value of some variable Y (for example, the percentage of the adult population which is literate) for a given country without having any prior knowledge of the country's characteristics, our best guess would be the average (mean) literacy figure for all the countries. The variance of Y gives an indication as to how far off our prediction is likely to be, since it is based on the sum of squared distances of the cases from the mean of the variable. Now, if we find some characteristic X (for instance, daily newspaper circulation) of these countries which happens to be linearly correlated with Y, our ability to predict the level of literacy will be improved. The prediction strategy is to compute the regression line and to predict that the value of Y (literacy) is the point on the regression line corresponding to the country's position on X (newspaper circulation). Thus, if we knew that a particular country had a newspaper circulation of 100 per thousand adults, a regression line to fit the data depicted in Fig. 18.1 would predict a literacy rate of about 20 percent. Yet, clearly, the several countries with this level of newspaper circulation have actual literacy rates ranging from about 10 to 30 percent. If there is a high correlation, as measured by r, most of the data points will fall very close to the line, and the differences (errors) between our predictions and the true values will be much smaller on the average than the discrepancy which would occur by always predicting the mean value of Y.

The size of the error is measured by the vertical distance from the actual data point to the regression line. These distances are squared and then summed together over all the cases and divided by the number of cases minus one $(N-1)$. We thus have a statistic called *residual variance*, that is, the amount of original (total) variance which cannot be explained by using the regression line as a prediction device. Residual variance will never be greater than total variance, and the proportion that it is less is the proportion of variance explained (r^2). That is,

$$r^2 = \frac{\text{total variance} - \text{residual variance}}{\text{total variance}}$$

Since r and r^2 are symmetric measures of association, it does not matter which variable is considered to be predicting the other. Both r and r^2 measure the strength of the *linear* relationship.

Often, we are not even interested in prediction or the regression line itself. Rather, we wish only to know the strength of the relationship or to obtain the correlation coefficient for other statistical purposes. The PEARSON CORR subprogram is very convenient for such situations since it can easily compute a large number of correlation coefficients without taking the time to display a scattergram or compute a regression equation.

18.2 SUBPROGRAM PEARSON CORR: PEARSON PRODUCT-MOMENT CORRELATION COEFFICIENTS

Subprogram PEARSON CORR computes Pearson product-moment correlations for pairs of variables. (These are *zero-order* correlations because no controls for the influence of other variables are made. Higher-order *partial* correlations are produced by the PARTIAL CORR subprogram.) The Pearson correlation coefficient r is used to measure the strength of relationship between two interval-level variables. In this case, the strength of relationship indicates both the goodness of fit of a linear regression line to the data and, when r is squared, the proportion of variance in one variable explained by the other (see the discussion in Sec. 18.1).

Mathematically, r is defined as the ratio of covariation to square root of the product of the variation in X and the variation in Y, where X and Y symbolize the two variables. This corresponds to the formula

$$r = \frac{\sum_{i=1}^{N}(X_i - \bar{X})(Y_i - \bar{Y})}{\left\{\left[\sum_{i=1}^{N}(X_i - \bar{X})^2\right]\left[\sum_{i=1}^{N}(Y_i - \bar{Y})^2\right]\right\}^{1/2}}$$

where X_i = ith observation of variable X
Y_i = ith observation of variable Y
N = number of observations
$\bar{X} = \sum_{i=1}^{N} X_i/N$ = mean of variable X
$\bar{Y} = \sum_{i=1}^{N} Y_i/N$ = mean of variable Y

This formula can be restated by dividing the numerator and denominator by $N - 1$ to show that the correlation coefficient can also be defined as the covariance in X and Y divided by the product of their standard deviations. The covariance in X and Y is defined as

$$\frac{\sum_{i=1}^{N}(X_i - \bar{X})(Y_i - \bar{Y})}{N - 1}$$

The actual formula used by SPSS for computing Pearson correlation coefficients is

$$r = \frac{\sum_{i=1}^{N} X_i Y_i - \left(\sum_{i=1}^{N} X_i\right)\left(\sum_{i=1}^{N} Y_i\right)/N}{\left\{\left[\sum_{i=1}^{N} X_i^2 - \left(\sum_{i=1}^{N} X_i\right)^2/N\right]\left[\sum_{i=1}^{N} Y_i^2 - \left(\sum_{i=1}^{N} Y_i\right)^2/N\right]\right\}^{1/2}}$$

Significance tests are reported for each coefficient and are derived from the use of Student's t with $N-2$ degrees of freedom for the computed quantity

$$r\left[\frac{N-2}{1-r^2}\right]^{1/2}$$

The user has an option of selecting a one- or two-tailed test of significance.

Output from this program includes the coefficient; the test of significance; and the number of cases, N, upon which the correlation coefficient was computed. Users may optionally have a matrix of correlations written or punched on cards, tape, or disk for input into other SPSS subprograms, into their own programs, or into other statistical packages. A matrix of correlations may be produced or specific sets of coefficients can be requested. Multiple matrices and/or multiple lists of specific correlations may be produced on a given pass. In other words, users have complete control over the variables to be entered into the correlations within the size limits of the program. Cases containing missing values may be excluded from the computations pairwise or listwise. In *pairwise deletion* a case is deleted from the computation of a given coefficient when either of the variables involved in that coefficient is missing; that case will, however, be included in the computation of all coefficients for which there is complete information for that case. When the *listwise deletion* option is selected, the case is deleted from the computation of all coefficients within that list or matrix, if that case has a missing value for any one of the variables in the list. This means that within a given list or matrix, all correlation coefficients are computed for an identical population. When a correlation coefficient cannot be calculated, as will happen if the variable is either missing for all cases or takes the same value for all cases, SPSS will assign a value of 99.0, which is a flag to the user that the coefficient was not calculable.

The means and standard deviations, as well as the cross-product deviations and covariances, can be printed if the user requests them. All of the options and statistics, as well as the procedure for requesting correlations, are described in detail in the following sections.

18.3 SUBPROGRAM NONPAR CORR: SPEARMAN AND/OR KENDALL RANK-ORDER CORRELATION COEFFICIENTS

Subprogram NONPAR CORR computes Spearman and/or Kendall rank-order correlation coefficients. The control word NONPAR is based on the fact that these two correlation coefficients are nonparametric. That is, neither depends upon a normal distribution or the metric quality of interval scales. Both of these procedures do require that the variables be at least ordinal in scale and numeric in type.

Both Spearman's rho (denoted r_s) and Kendall's tau (τ) require the use of rankings, rather than the absolute values of variables, in the computation of the coefficients; hence, the first task of the NONPAR CORR subprogram is to read-in the variables and replace their initial values with ordinal rankings. The processing of missing data often requires the rankings to be continually adjusted, since each variable for which coefficients are desired is paired with each other variable. For these reasons, NONPAR CORR requires that all the data be core resident, i.e., in the computer's memory, during the entire computational procedure. The requirement of core residency places severe limitations on the quantity of data which can be processed.

The NONPAR CORR and SCATTERGRAM procedures are the only SPSS subprograms which theoretically cannot process an infinite number of cases, and they are the only procedures in which there is a direct tradeoff between the number of variables which can be processed and the number of cases which can be processed. The nature of the computations also makes this subprogram relatively slower than PEARSON CORR, for example.

Output from this subprogram may include either or both Spearman r_s and Kendall tau coefficients. A test of statistical significance and the number of cases upon which the coefficient was computed accompanies each coefficient, just as in PEARSON CORR. Also similar to PEARSON CORR, a matrix of coefficients may be output on a medium of the user's choice for future use. Similarly, a matrix of correlations may be produced, or specific sets of coefficients can be requested. Multiple matrices and/or multiple lists of specific correlations may be produced on a given pass. Also like PEARSON CORR, missing data may be excluded pairwise, listwise, or it may be included in the computation of the coefficients. Because of the many similarities between NONPAR CORR and PEARSON CORR, the reader will often be referred to the description of PEARSON CORR rather than having identical detailed descriptions repeated here.

The chief differences between Spearman's r_s and Kendall's tau seem to be that the Kendall coefficients are somewhat more meaningful when the data contain a large number of tied ranks. Spearman's r_s, on the other hand, seems to yield a closer approximation to product-moment correlation coefficients when the data is more or less continuous, i.e., not characterized by a large number of ties at each rank. As a rule of thumb, one might use tau more readily when a fairly large number of cases were classified into a relatively small number of categories and r_s when the ratio of cases to categories is smaller. Each of the procedures, however, has a correction for ties, and there is no fixed rule about selecting one over the other. In actuality, the basic concepts underlying these two coefficients are quite similar as are usually the resulting coefficients when the two are computed on the same data. Both coefficients vary from +1.0 to −1.0, but in general, the absolute value of tau tends to be smaller than that of Pearson's r.

Spearman's r_s is defined as the sum of the squared differences in the paired ranks for two variables over all cases, divided by a quantity which can perhaps best be described as follows: it is what the sum of the squared differences in ranks would have been had the two sets of rankings been totally independent. This formula is identical to that used to compute tau b in the CROSSTABS procedure. This quotient is then subtracted from 1 to produce the standardized coefficient. Spearman r_s is then formally defined as:

$$r_s = 1 - \frac{6\sum_{i=1}^{N} d_i^2}{N^3 - N}$$

For computational purposes and particularly to correct for the occurrence of tied ranks, Spearman's r_s can be redefined as

$$r_s = \frac{T_x + T_y - \sum_{i=1}^{N} d_i^2}{2(T_x T_y)^{1/2}}$$

where d_i is the difference between the ranks of the two variables for case i, and where T_x or T_y is to be defined by the quantity

$$\frac{N(N^2 - 1) - \Sigma R(R^2 - 1)}{12}$$

where R is the number of ties at a given rank for X or Y, respectively. The significance on any r_s coefficient can be determined by comparing the quantity

$$r_s\left(\frac{N-2}{1-r_s^2}\right)^{1/2}$$

with the Student's t distribution with $N - 2$ degrees of freedom.

Kendall's tau is quite similar to r_s in that both are techniques for producing standardized coefficients based on the amount of agreement between two sets of ordinal rankings. While we arrive at r_s by manipulating (in order to standardize) the square of the differences in the two sets of rankings, Kendall's tau begins by computing a statistic called S. Given that the rankings of one variable are placed in their natural order (i.e., arranged by their ranks in order from 1 to N), S is computed by comparing the number of pairs of rankings of a second variable which are also arranged in their correct or natural order when they are sorted according to the natural order of the rankings of the first variable. S is then computed by beginning with the observation ranked 1 on the first variable and counting the number of ranks on the second variable which are greater than the rank of that case on the second variable. Once this has been done, the number of ranks below this observation which are smaller than its rank on the second variable are subtracted from the first quantity. When this procedure is repeated for all ranks, the sum of these remainders is equal to the statistic S. The computed or actual S is then divided by the maximum possible S which could have been obtained with that number of rankings had the two sets of rankings been in total agreement. This number can be expressed as $\frac{1}{2}N(N-1)$, where N is the number of observations or cases. The general formula for tau is then

$$\tau = \frac{S}{\frac{1}{2}N(N-1)}$$

When the correction for tied ranks is introduced, the formula becomes

$$\tau = \frac{S}{\sqrt{\frac{1}{2}N(N-1) - T_x}\sqrt{\frac{1}{2}N(N-1) - T_y}}$$

where $T_x = \frac{1}{2}\Sigma t(t-1)$, t is the number of tied observations in each group of ties on the S variable, and T_y is the same quantity for the Y variable. The significance of tau is determined by comparing tau to a normal distribution with a standard deviation equal to

$$\left(\frac{4N+10}{9N(N-1)}\right)^{1/2}$$

When a correlation coefficient cannot be calculated, as will happen if the variable is either missing for all cases or takes the same value for all cases, SPSS will assign a value of 99.0, which is a flag to the user that the coefficient was not calculable.

Ranking of Pearson Correlation.

Pb: Ag, As, Zn, Cd, Hg, Mn, Cu, Au, Li, Fe, Sr.

Zn: Cd, Ag, Pb, As, Hg, Mn, Cu, Au, Li, Fe

Dis correlation:

Pb: K_2O, Mo, Ba, V, B, Na_2O, Ni, MgO, Co

Zn: K_2O, Ba, Mo, V, B, Ni, Na_2O, Sr, MgO, Co.

Ranking of Spearman Correlation:

Pb: Ag, Zn, Mn, Cd, Cu, Ba, Au, Fe, As, K_2O, Co, Hg, Ni, Na_2O, Sr

Zn: Cd, Pb, Ag, Hg, Mn, Cu, Fe, Au, Co, Na_2O, V, Ba

dis-correlation

Pb: Mo, MgO, V, B, Li.

Zn: Li, Mo, As, Sr, MgO, K_2O, Ni, B.

FILE TENAS8 (CREATION DATE = 12/21/76)

VARIABLE	CASES	MEAN	STD DEV
MO	22	12.8545	13.6930
CU	22	77.0909	87.5045
PB	22	715.8182	3013.9501
ZN	22	2110.5909	7991.2075
NI	22	66.3182	52.0955
CO	22	22.7273	24.3001
AG	22	10.6227	41.2005
CE	22	$4325.0000	19880.2370
HG	22	36.7727	39.2876
AS	22	20.5455	84.7769
MN	22	597.7273	451.3333
AU	22	5.4091	2.9706
BA	22	895.6818	569.2273
CR	22	253.6364	155.3658
B	22	47.1364	23.2245
V	22	279.5909	398.1994
CD	22	20.2545	77.3708
LI	22	23.3182	7.7790
NA2O	22	2.6668	2.2283
MGO	22	3.3141	2.7168
K2O	22	2.3141	1.3727

FILE TENASB (CREATION DATE = 12/21/76)

PEARSON CORRELATION COEFFICIENTS

	MO	CU	PB	ZN	NI	CO	AG
MO	1.0000	.0912	-.1457	-.1421	-.0086	-.0547	-.1445
	(221)	(221)	(221)	(221)	(221)	(221)	(221)
	S= .001	S= .360	S= .259	S= .268	S= .485	S= .408	S= .261
CU	.0912	1.0000	.8181	.8802	.0130	.5448	.8208
	(221)	(221)	(221)	(221)	(221)	(221)	(221)
	S= .360	S= .001	S= .028	S= .012	S= .477	S= .009	S= .026
PB	-.1457	.8181	1.0000	.9883	-.0527	-.0048	.9999
	(221)	(221)	(221)	(221)	(221)	(221)	(221)
	S= .259	S= .028	S= .001	S= .001	S= .408	S= .492	S= .001
ZN	-.1421	.8802	.9883	1.0000	-.0582	-.0057	.9892
	(221)	(221)	(221)	(221)	(221)	(221)	(221)
	S= .268	S= .012	S= .001	S= .001	S= .381	S= .490	S= .001
NI	-.0086	.0130	-.0527	-.0582	1.0000	.3730	-.0502
	(221)	(221)	(221)	(221)	(221)	(221)	(221)
	S= .485	S= .477	S= .408	S= .381	S= .001	S= .048	S= .412
CO	-.0547	.5448	-.0048	-.0057	.3730	1.0000	-.0014
	(221)	(221)	(221)	(221)	(221)	(221)	(221)
	S= .408	S= .009	S= .492	S= .490	S= .048	S= .001	S= .497
AG	-.1445	.8208	.9999	.9892	-.0502	-.0014	1.0000
	(221)	(221)	(221)	(221)	(221)	(221)	(221)
	S= .261	S= .026	S= .001	S= .001	S= .412	S= .497	S= .001
FE	-.0569	.6785	.0336	.0680	.1721	.9148	.0387
	(221)	(221)	(221)	(221)	(221)	(221)	(221)
	S= .398	S= .001	S= .481	S= .392	S= .222	S= .001	S= .432
MG	-.1756	.5304	.6407	.7352	-.1799	-.0594	.6440
	(221)	(221)	(221)	(221)	(221)	(221)	(221)
	S= .217	S= .006	S= .001	S= .001	S= .212	S= .396	S= .001
AS	-.1392	.8110	.9991	.9882	-.0404	-.0097	.9993
	(221)	(221)	(221)	(221)	(221)	(221)	(221)
	S= .258	S= .029	S= .001	S= .001	S= .429	S= .483	S= .001

(COEFFICIENT / (CASES) / SIGNIFICANCE) (A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED)

FILE TENASB (CREATION DATE = 12/21/76)

PEARSON CORRELATION COEFFICIENTS

	MO	CU	PB	ZN	NI	CO	AG
PH	-.3531	.2168	.5139	.5194	-.1242	-.0229	.5174
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .053	S= .166	S= .007	S= .007	S= .291	S= .460	S= .007
AU	-.1757	-.0262	.3439	.2939	.2127	.0491	.3429
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .217	S= .454	S= .059	S= .092	S= .171	S= .414	S= .059
BA	-.2521	-.2273	-.1358	-.1652	.1169	-.1130	-.1354
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .129	S= .155	S= .273	S= .231	S= .302	S= .308	S= .274
SR	.2329	.0410	.0102	-.0162	.1148	-.2156	.0138
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .148	S= .429	S= .482	S= .472	S= .305	S= .168	S= .475
	.2105	-.3176	-.0752	-.1239	.0712	.0510	-.0763
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .174	S= .075	S= .370	S= .291	S= .376	S= .411	S= .368
V	.5754	-.0380	-.1267	-.1334	-.0985	-.2337	-.1282
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .001	S= .349	S= .287	S= .277	S= .331	S= .148	S= .285
CD	-.1816	.9818	.9977	.9999	-.0708	-.0099	.9885
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .266	S= .012	S= .001	S= .001	S= .377	S= .484	S= .001
LI	-.0484	-.2738	.1330	.0867	.2741	.1552	.1326
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .415	S= .109	S= .278	S= .351	S= .109	S= .245	S= .278
NA2O	-.0620	.0973	-.0507	-.0358	.3226	.0209	-.0589
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .392	S= .447	S= .398	S= .437	S= .072	S= .463	S= .397
MGO	.3498	-.2321	-.0051	-.0159	.1771	-.1289	-.0038
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .055	S= .149	S= .491	S= .472	S= .215	S= .284	S= .493

(COEFFICIENT / (CASES) / SIGNIFICANCE) (A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED)

FILE TENASB (CREATION DATE = 12/21/76)

PEARSON CORRELATION COEFFICIENTS

	MO	CU	PB	ZN	NI	CO	AG
H2O	-.2800	-.4534	-.1698	-.2171	-.3090	-.0807	-.1672
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .103	S= .017	S= .232	S= .166	S= .081	S= .361	S= .228

(COEFFICIENT / (CASES) / SIGNIFICANCE) (A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED)

FILE TENASB (CREATION DATE = 12/21/76)

PEARSON CORRELATION COEFFICIENTS

	FE	MG	AS	MN	AU	BA	SR
MO	-.0669	-.1756	-.1392	-.3531	-.1757	-.2521	.2929
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .384	S= .217	S= .268	S= .053	S= .217	S= .129	S= .188
CU	.6785	.5308	.4110	.2168	-.0262	-.2273	.0410
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .001	S= .005	S= .029	S= .166	S= .454	S= .155	S= .428
PB	.0335	.6407	.9991	.5139	.3439	-.1358	.0102
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .441	S= .001	S= .001	S= .007	S= .059	S= .273	S= .482
ZN	.0680	.7352	.9982	.5194	.2938	-.1652	-.0152
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .382	S= .001	S= .001	S= .007	S= .092	S= .231	S= .472
NI	.1721	-.1799	-.0404	-.1242	.2127	.1169	.1148
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .222	S= .212	S= .429	S= .291	S= .171	S= .302	S= .305
CO	.9148	-.0594	-.0097	-.0229	.0491	-.1130	-.2156
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .001	S= .396	S= .483	S= .460	S= .414	S= .308	S= .168
AG	.0337	.6440	.9993	.5124	.3429	-.1354	.0138
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .437	S= .001	S= .001	S= .007	S= .059	S= .274	S= .476
FE	1.0000	.1677	.0281	.0364	.0770	-.1253	-.2972
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .001	S= .228	S= .451	S= .436	S= .465	S= .289	S= .090
MG	.1677	1.0000	.6356	.4210	-.0718	-.1632	-.1039
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .228	S= .001	S= .001	S= .026	S= .375	S= .234	S= .323
AS	.0281	.6356	1.0000	.5153	.3436	-.1394	.0107
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .451	S= .001	S= .001	S= .007	S= .059	S= .268	S= .481

(COEFFICIENT / (CASES) / SIGNIFICANCE) (A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED)

FILE TENASB (CREATION DATE = 12/21/76)

PEARSON CORRELATION COEFFICIENTS

	FE	MG	AS	MN	AU	BA	SR
MN	.0364	.4210	.5153	1.0000	.1565	-.0266	-.0103
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .435	S= .026	S= .007	S= .001	S= .243	S= .453	S= .482
AU	.0200	-.0718	.3436	.1565	1.0000	.4660	-.0054
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .465	S= .375	S= .059	S= .243	S= .001	S= .014	S= .490
BA	-.1253	-.1532	-.1394	-.0266	.4660	1.0000	.0021
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .249	S= .234	S= .268	S= .453	S= .014	S= .001	S= .496
SR	-.2972	-.1039	.0107	-.0103	-.0054	.0021	1.0000
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .090	S= .323	S= .481	S= .482	S= .490	S= .496	S= .001
P	.0550	-.2986	-.0580	-.2570	.3507	.2581	-.0985
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .404	S= .092	S= .392	S= .124	S= .055	S= .123	S= .331
V	-.2720	-.2250	-.1219	-.2898	-.2342	-.3380	.1320
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .110	S= .156	S= .291	S= .095	S= .147	S= .062	S= .279
CO	.0660	.7392	.9973	.5170	.2879	-.1677	-.0141
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .385	S= .001	S= .001	S= .007	S= .097	S= .228	S= .475
LI	.0932	-.0563	.1440	.0468	.0806	.1037	-.1009
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .340	S= .385	S= .261	S= .419	S= .361	S= .323	S= .328
NA2O	-.0210	.1507	-.0552	.0393	-.2832	-.5111	.1594
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .463	S= .252	S= .404	S= .431	S= .101	S= .008	S= .225
PSO	-.2254	-.0250	.0027	.1000	-.0486	-.4109	.4035
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .156	S= .456	S= .495	S= .329	S= .415	S= .029	S= .031

(COEFFICIENT / (CASES) / SIGNIFICANCE) (A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED)

FILE TENASB (CREATION DATE = 12/21/76)

PEARSON CORRELATION COEFFICIENTS

	FE	MG	AS	MN	AU	BA	SR
K2O	-.0658	-.2555	-.1655	-.0168	.0416	.3933	-.2422
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .385	S= .126	S= .231	S= .471	S= .427	S= .035	S= .139

(COEFFICIENT / (CASES) / SIGNIFICANCE) (A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED)

FILE TENASB (CREATION DATE = 12/21/76)

PEARSON CORRELATION COEFFICIENTS

	B	V	CO	LI	NA2O	MGO	K2O
MO	.2105	.9754	-.1816	-.0494	-.0620	.3498	-.2800
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .174	S= .001	S= .265	S= .415	S= .392	S= .055	S= .103
CU	-.3175	-.0980	.9818	-.2738	.0073	-.2321	-.4534
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .075	S= .349	S= .012	S= .109	S= .487	S= .149	S= .017
PB	-.0752	-.1267	.9877	.1330	-.0607	-.0051	-.1648
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .370	S= .287	S= .001	S= .278	S= .394	S= .491	S= .232
ZN	-.1239	-.1138	.9949	.0867	-.0358	-.0159	-.2171
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .291	S= .277	S= .001	S= .351	S= .437	S= .472	S= .166
NI	.0712	-.0985	-.0708	.2741	.3226	.1771	-.3090
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .376	S= .331	S= .377	S= .109	S= .072	S= .215	S= .081
CO	.0510	-.2337	-.0099	.1552	.0209	-.1299	-.0307
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .411	S= .148	S= .484	S= .245	S= .463	S= .284	S= .361
AG	-.0759	-.1282	.9885	.1325	-.0589	-.0038	-.1672
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .369	S= .285	S= .001	S= .278	S= .397	S= .493	S= .228
FE	.0550	-.2720	.0660	.0932	-.0210	-.2264	-.0654
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .404	S= .110	S= .385	S= .340	S= .463	S= .156	S= .386
HG	-.2985	-.2260	.7392	-.0663	.1507	-.0250	-.2555
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .092	S= .156	S= .001	S= .385	S= .252	S= .456	S= .126
AS	-.0590	-.1239	.9973	.1440	-.0552	.0027	-.1655
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .392	S= .291	S= .001	S= .261	S= .404	S= .495	S= .231

(COEFFICIENT / (CASES) / SIGNIFICANCE) (A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED)

FILE TENAS8 (CREATION DATE = 12/21/76)

PEARSON CORRELATION COEFFICIENTS

	B	V	CO	LI	NA2O	MGO	K2O
MN	-.2570	-.2498	.5170	.0468	.0393	.1000	-.0168
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .124	S= .095	S= .007	S= .418	S= .431	S= .329	S= .471
AU	.3507	-.2342	.2879	.0805	-.2832	-.0486	.0416
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .055	S= .147	S= .097	S= .361	S= .101	S= .415	S= .427
BA	.2591	-.3380	-.1677	.1037	-.5111	-.4109	.3933
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .123	S= .062	S= .228	S= .323	S= .008	S= .029	S= .035
SR	-.0995	.1320	-.0181	-.1009	.1694	.4035	-.2422
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .331	S= .279	S= .475	S= .328	S= .225	S= .031	S= .139
B	1.0000	-.0503	-.1253	.4290	-.2565	-.0677	.6081
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .001	S= .412	S= .299	S= .023	S= .125	S= .382	S= .001
V	-.0503	1.0000	-.1343	-.1423	-.0786	.3648	-.3471
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .412	S= .001	S= .276	S= .264	S= .364	S= .048	S= .057
CO	-.1253	-.1343	1.0000	.0815	-.0312	-.0200	-.2181
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .299	S= .276	S= .001	S= .359	S= .445	S= .465	S= .165
LI	.4290	-.1423	.0815	1.0000	-.2269	.1331	.1799
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .023	S= .264	S= .359	S= .001	S= .155	S= .277	S= .213
NA2O	-.2565	-.0786	-.0312	-.2269	1.0000	.4511	-.2912
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .125	S= .364	S= .445	S= .155	S= .001	S= .018	S= .094
MGO	-.0677	.3648	-.0200	.1331	.4511	1.0000	-.2648
	(22)	(22)	(22)	(22)	(22)	(22)	(22)
	S= .382	S= .048	S= .465	S= .277	S= .018	S= .001	S= .117

(COEFFICIENT / (CASES) / SIGNIFICANCE) (A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED)

FILE TEXAS8 (CREATION DATE = 12/21/76)

- - - - - - - - - - - - PEARSON CORRELATION COEFFICIENTS - - - - - - - - - - -

	B	V	CO	LI	NA2O	MGO	K2O
K2O	.5081	-.3471	-.2141	.1789	-.2912	-.2648	1.0000
	(221)	(221)	(221)	(221)	(221)	(221)	(221)
	S= .001	S= .057	S= .155	S= .213	S= .094	S= .117	S= .001

(COEFFICIENT / (CASES) / SIGNIFICANCE) (A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED)

FILE TEXAS8 (CREATION DATE = 12/22/76)

KENDALL CORRELATION COEFFICIENTS

VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR	
MO	1.0000	MO	-.0496	MO	-.1888	MO	-.1074	MO	.1577	MO	-.1227
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
MO	SIG .001	CU	SIG .377	PB	SIG .116	ZN	SIG .247	NI	SIG .159	CO	SIG .220
MO	-.1098	MO	-.2064	MO	-.0373	MO	-.1014	MO	-.3903	MO	-.2732
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
AG	SIG .246	FE	SIG .095	MG	SIG .409	AS	SIG .275	MN	SIG .007	AU	SIG .064
MO	-.1122	MO	.1032	MO	.0942	MO	.4352	MO	-.0837	MO	-.0773
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
BA	SIG .238	SR	SIG .256	P	SIG .275	V	SIG .003	CD	SIG .302	LI	SIG .314
MO	-.1084	MO	-.1211	MO	-.0716	CU	-.0496	CU	1.0000	CU	.2801
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
NA2O	SIG .247	MGO	SIG .221	K2O	SIG .324	MO	SIG .377	CU	SIG .001	PB	SIG .035
CU	.1917	CU	.0395	CU	.4027	CU	.3252	CU	.2926	CU	-.0817
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
ZN	SIG .107	NI	SIG .400	CO	SIG .005	AG	SIG .019	FE	SIG .029	MG	SIG .304
CU	-.1037	CU	.1528	CU	.0453	CU	-.1041	CU	.0306	CU	-.1703
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
AS	SIG .267	MN	SIG .161	AU	SIG .398	BA	SIG .176	SR	SIG .422	P	SIG .135
CU	-.1616	CU	.3305	CU	-.3850	CU	.3429	CU	-.3362	CU	-.2004
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
V	SIG .148	CD	SIG .018	LI	SIG .007	NA2O	SIG .014	MGO	SIG .015	K2O	SIG .097
PB	-.1888	PB	.2801	PB	1.0000	PB	.4391	PB	.0438	PB	.0618
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
MO	SIG .116	CU	SIG .035	PB	SIG .001	ZN	SIG .002	NI	SIG .389	CO	SIG .346

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FILE TENASB (CREATION DATE = 12/22/76)

KENDALL CORRELATION COEFFICIENTS

VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR	
PB	.6268	PB	.1656	PB	.0498	PB	.0936	PB	.3922	PB	.1637
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
AG	SIG .001	FE	SIG .142	HG	SIG .377	ZS	SIG .287	MN	SIG .006	AU	SIG .175
PB	-.1917	PB	.0174	PB	-.0871	PB	-.1046	PB	.3659	PB	-.0662
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
BA	SIG .107	SR	SIG .455	B	SIG .286	V	SIG .249	CD	SIG .010	LI	SIG .336
PB	.0395	PB	-.1307	PB	.0478	ZN	-.1074	ZN	.1917	ZN	.4391
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
NA2O	SIG .400	MGO	SIG .199	K2O	SIG .378	MO	SIG .247	CU	SIG .107	PB	SIG .002
ZN	1.0000	ZN	-.0174	ZN	.0703	ZN	.3231	ZN	.1735	ZN	.2480
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
ZN	SIG .001	NI	SIG .455	CO	SIG .325	AG	SIG .019	FE	SIG .130	HG	SIG .059
ZN	-.1079	ZN	.2256	ZN	.1293	ZN	.0260	ZN	-.0434	ZN	-.0174
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
AS	SIG .258	MN	SIG .071	AU	SIG .229	BA	SIG .433	SR	SIG .389	B	SIG .455
ZN	-.0347	ZN	.6207	ZN	-.1231	ZN	.0393	ZN	-.0521	ZN	-.0563
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
V	SIG .411	CD	SIG .001	LI	SIG .214	NA2O	SIG .400	MGO	SIG .367	K2O	SIG .357
NI	.1577	NI	.0395	NI	.0438	NI	-.0174	NI	1.0000	NI	.3319
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
MO	SIG .159	CU	SIG .400	PB	SIG .389	ZN	SIG .455	NI	SIG .001	CO	SIG .017
NI	.0089	NI	.1092	NI	-.1634	NI	.0592	NI	-.0393	NI	.2320
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
AG	SIG .477	FE	SIG .240	HG	SIG .152	AS	SIG .361	MN	SIG .400	AU	SIG .093

A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.

FILE TENASB (CREATION DATE = 12/22/76)

KENDALL CORRELATION COEFFICIENTS

VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR	
NI WITH BA	-.1179 N(22) SIG .223	NI WITH SR	.0917 N(22) SIG .277	NI WITH B	-.0044 N(22) SIG .489	NI WITH V	.2227 N(22) SIG .075	NI WITH CD	-.1132 N(22) SIG .237	NI WITH LI	.0619 N(22) SIG .346
NI WITH NA2O	-.1055 N(22) SIG .249	NI WITH MGO	.0568 N(22) SIG .357	NI WITH K2O	-.2527 N(22) SIG .051	CO WITH MO	-.1227 N(22) SIG .220	CO WITH CU	.4027 N(22) SIG .005	CO WITH PB	.0618 N(22) SIG .346
CO WITH ZN	.0703 N(22) SIG .325	CO WITH NI	.3319 N(22) SIG .017	CO WITH CO	1.0000 N(22) SIG .001	CO WITH AG	.2517 N(22) SIG .056	CO WITH FE	.3124 N(22) SIG .001	CO WITH MG	-.0366 N(22) SIG .410
CO WITH AS	.0946 N(22) SIG .287	CO WITH MN	.1278 N(22) SIG .206	CO WITH AU	.1598 N(22) SIG .183	CO WITH BA	-.1101 N(22) SIG .240	CO WITH SR	.0220 N(22) SIG .444	CO WITH B	.0661 N(22) SIG .336
CO WITH V	-.2864 N(22) SIG .033	CO WITH CD	-.1005 N(22) SIG .264	CO WITH LI	-.0402 N(22) SIG .399	CO WITH NA2O	.2040 N(22) SIG .096	CO WITH MGO	-.0661 N(22) SIG .336	CO WITH K2O	-.0879 N(22) SIG .286
AG WITH MO	-.1098 N(22) SIG .246	AG WITH CU	.3252 N(22) SIG .019	AG WITH PB	.6268 N(22) SIG .001	AG WITH ZN	.3231 N(22) SIG .019	AG WITH NI	.0089 N(22) SIG .477	AG WITH CO	.2517 N(22) SIG .056
AG WITH AG	1.0000 N(22) SIG .001	AG WITH FE	.2573 N(22) SIG .050	AG WITH HG	.2904 N(22) SIG .036	AG WITH AS	.2306 N(22) SIG .086	AG WITH MN	.5323 N(22) SIG .001	AG WITH AU	-.0115 N(22) SIG .474
AG WITH BA	.1774 N(22) SIG .128	AG WITH SR	.1774 N(22) SIG .128	AG WITH B	-.1685 N(22) SIG .141	AG WITH V	-.1419 N(22) SIG .182	AG WITH CD	.3081 N(22) SIG .027	AG WITH LI	.0090 N(22) SIG .477

A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.

FILE TENAS6 (CREATION DATE = 12/22/76)

KENDALL CORRELATION COEFFICIENTS

VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR	
AG WITH NA2O	.1027 N(22) SIG .257	AG WITH MGO	.0266 N(22) SIG .432	AG WITH K2O	-.0221 N(22) SIG .444	FE WITH MO	-.2064 N(22) SIG .095	FE WITH CU	.2926 N(22) SIG .029	FE WITH PB	.1656 N(22) SIG .142
FE WITH ZN	.1735 N(22) SIG .130	FE WITH NI	.1092 N(22) SIG .240	FE WITH CO	.6124 N(22) SIG .001	FE WITH AG	.2573 N(22) SIG .050	FE WITH FE	1.0000 N(22) SIG .001	FE WITH MG	.1084 N(22) SIG .247
FE WITH AS	.0344 N(22) SIG .418	FE WITH MN	.1783 N(22) SIG .124	FE WITH AU	.1746 N(22) SIG .159	FE WITH BA	-.1261 N(22) SIG .207	FE WITH SR	-.2043 N(22) SIG .092	FE WITH B	.1261 N(22) SIG .207
FE WITH V	-.3957 N(22) SIG .005	FE WITH CD	-.0947 N(22) SIG .274	FE WITH LI	.0308 N(22) SIG .422	FE WITH NA2O	.1751 N(22) SIG .129	FE WITH MGO	-.1174 N(22) SIG .223	FE WITH K2O	-.0174 N(22) SIG .455
MG WITH MO	-.0373 N(22) SIG .409	MG WITH CU	-.0817 N(22) SIG .304	MG WITH PB	.0498 N(22) SIG .377	MG WITH ZN	.2480 N(22) SIG .059	MG WITH NI	-.1634 N(22) SIG .152	MG WITH CO	-.0366 N(22) SIG .410
MG WITH AG	.2904 N(22) SIG .036	MG WITH FE	.1084 N(22) SIG .247	MG WITH MG	1.0000 N(22) SIG .001	MG WITH AS	.1787 N(22) SIG .148	MG WITH MN	.2620 N(22) SIG .049	MG WITH AU	-.1815 N(22) SIG .157
MG WITH BA	.0813 N(22) SIG .304	MG WITH SR	.0271 N(22) SIG .432	MG WITH B	-.1536 N(22) SIG .166	MG WITH V	-.0452 N(22) SIG .388	MG WITH CD	.1546 N(22) SIG .171	MG WITH LI	.0824 N(22) SIG .304
MG WITH NA2O	.2183 N(22) SIG .085	MG WITH MGO	.2349 N(22) SIG .069	MG WITH K2O	.1127 N(22) SIG .238	AS WITH MO	-.1014 N(22) SIG .275	AS WITH CU	-.1037 N(22) SIG .267	AS WITH PB	.0936 N(22) SIG .287

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FILE TENAS8 (CREATION DATE = 12/22/76)

KENDALL CORRELATION COEFFICIENTS

VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR	
AS	-.1079	AS	.0592	AS	.0946	AS	.2306	AS	.0344	AS	.1787
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
ZN	SIG .258	NI	SIG .361	CO	SIG .287	AG	SIG .086	FE	SIG .418	MG	SIG .148
AS	1.0000	AS	.1818	AS	.1019	AS	.1376	AS	.1818	AS	.0836
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
AS	SIG .001	MN	SIG .137	AU	SIG .295	BA	SIG .204	SR	SIG .137	B	SIG .308
AS	-.1229	AS	-.0153	AS	.3436	AS	.1435	AS	.2998	AS	.0490
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
V	SIG .230	CD	SIG .464	LI	SIG .020	NA2O	SIG .195	MGO	SIG .036	K2O	SIG .384
MN	-.3903	MN	.1528	MN	.3922	MN	.2256	MN	-.0393	MN	.1278
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
MO	SIG .007	CU	SIG .161	PB	SIG .006	ZN	SIG .071	NI	SIG .400	CO	SIG .206
MN	.5323	MN	.1783	MN	.2620	MN	.1818	MN	1.0000	MN	.1352
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
AG	SIG .001	FE	SIG .124	MG	SIG .049	AS	SIG .137	MN	SIG .001	AU	SIG .220
MN	.1261	MN	.1087	MN	-.3348	MN	-.1348	MN	.1578	MN	.0132
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
BA	SIG .207	SR	SIG .240	B	SIG .015	V	SIG .191	CD	SIG .159	LI	SIG .466
MN	.1313	MN	.2826	MN	-.0434	AU	-.2732	AU	.0453	AU	.1637
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
NA2O	SIG .198	MGO	SIG .033	K2O	SIG .389	MO	SIG .064	CU	SIG .398	PB	SIG .175
AU	.1293	AU	.2320	AU	.1598	AU	-.0115	AU	.1746	AU	-.1815
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
ZN	SIG .229	NI	SIG .093	CO	SIG .183	AG	SIG .474	FE	SIG .159	MG	SIG .157

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FILE TENAS8 (CREATION DATE = 12/22/76)

KENDALL CORRELATION COEFFICIENTS

VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR	
AU	.1019	AU	.1352	AU	1.0000	AU	.2873	AU	-.0282	AU	.2591
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
AS	SIG .295	MN	SIG .220	AU	SIG .001	BA	SIG .050	SR	SIG .436	B	SIG .069
AU	-.1690	AU	-.0175	AU	.1085	AU	-.2779	AU	-.0338	AU	.0169
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
V	SIG .167	CD	SIG .461	LI	SIG .270	NA2O	SIG .057	MGO	SIG .423	K2O	SIG .462
BA	-.1122	BA	-.1441	BA	.1917	BA	.0260	BA	-.1179	BA	-.1101
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
MO	SIG .238	CU	SIG .176	PB	SIG .107	ZN	SIG .433	NI	SIG .223	CO	SIG .240
BA	.1774	BA	-.1261	BA	.0813	BA	.1376	BA	.1261	BA	.2873
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
AG	SIG .128	FE	SIG .207	HG	SIG .304	AS	SIG .204	MN	SIG .207	AU	SIG .050
BA	1.0000	BA	.0565	BA	.1696	BA	-.1000	BA	.0135	BA	.1366
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
BA	SIG .001	SR	SIG .357	B	SIG .136	V	SIG .258	CD	SIG .466	LI	SIG .190
BA	-.3326	BA	-.1261	BA	.3471	SR	.1032	SR	.0306	SR	.0174
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
NA2O	SIG .016	MGO	SIG .207	K2O	SIG .012	MO	SIG .256	CU	SIG .422	PB	SIG .455
SR	-.0434	SR	.0917	SR	.0220	SR	.1774	SR	-.2043	SR	.0271
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
ZN	SIG .389	NI	SIG .277	CO	SIG .444	AG	SIG .128	FE	SIG .092	HG	SIG .432
SR	.1818	SR	.1087	SR	-.0282	SR	.0565	SR	1.0000	SR	-.0391
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
AS	SIG .137	MN	SIG .240	AU	SIG .436	BA	SIG .357	SR	SIG .001	B	SIG .400

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FILE TENASH (CREATION DATE = 12/22/76)

KENDALL CORRELATION COEFFICIENTS

VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR	
SR WITH V	.3261 N(22) SIG .017	SR WITH CD	.1487 N(22) SIG .173	SR WITH LI	-.0132 N(22) SIG .466	SR WITH NA2O	.1926 N(22) SIG .107	SR WITH MGO	.2913 N(22) SIG .029	SR WITH K2O	-.1562 N(22) SIG .155
B WITH MO	.0942 N(22) SIG .275	B WITH CU	-.1703 N(22) SIG .135	B WITH PB	-.0871 N(22) SIG .286	B WITH ZN	-.0174 N(22) SIG .455	B WITH NI	-.0044 N(22) SIG .489	B WITH CO	.0661 N(22) SIG .336
B WITH AG	-.1685 N(22) SIG .141	B WITH FE	.1261 N(22) SIG .207	B WITH MG	-.1536 N(22) SIG .166	B WITH AS	.0836 N(22) SIG .308	B WITH MN	-.3348 N(22) SIG .015	B WITH AU	.2591 N(22) SIG .069
B WITH BA	.1696 N(22) SIG .136	B WITH SR	-.0391 N(22) SIG .400	B WITH B	1.0000 N(22) SIG .001	B WITH V	-.2391 N(22) SIG .060	B WITH CD	-.1487 N(22) SIG .173	B WITH LI	.2335 N(22) SIG .067
B WITH NA2O	-.2276 N(22) SIG .071	B WITH MGO	-.0913 N(22) SIG .277	B WITH K2O	.4252 N(22) SIG .003	V WITH MO	.4352 N(22) SIG .003	V WITH CU	-.1616 N(22) SIG .148	V WITH PB	-.1046 N(22) SIG .249
V WITH ZN	-.0347 N(22) SIG .411	V WITH NI	.2227 N(22) SIG .075	V WITH CO	-.2864 N(22) SIG .033	V WITH AG	-.1419 N(22) SIG .182	V WITH FE	-.3957 N(22) SIG .005	V WITH MG	-.0452 N(22) SIG .388
V WITH AS	-.1229 N(22) SIG .230	V WITH MN	-.1348 N(22) SIG .191	V WITH AU	-.1690 N(22) SIG .167	V WITH BA	-.1000 N(22) SIG .258	V WITH SR	.3261 N(22) SIG .017	V WITH B	-.2391 N(22) SIG .060
V WITH V	1.0000 N(22) SIG .001	V WITH CD	.1307 N(22) SIG .204	V WITH LI	-.2071 N(22) SIG .092	V WITH NA2O	.0175 N(22) SIG .455	V WITH MGO	.1130 N(22) SIG .232	V WITH K2O	-.3037 N(22) SIG .024

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FILE TENASB (CREATION DATE = 12/22/76)

KENDALL CORRELATION COEFFICIENTS

VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR	
CD WITH MO	.0837 N(22) SIG .302	CD WITH CU	.3305 N(22) SIG .018	CD WITH PB	.3659 N(22) SIG .010	CD WITH ZN	.6207 N(22) SIG .001	CD WITH NI	-.1132 N(22) SIG .237	CD WITH CO	-.1005 N(22) SIG .264
CD WITH AG	.3081 N(22) SIG .027	CD WITH FE	-.0947 N(22) SIG .274	CD WITH HG	.1546 N(22) SIG .171	CD WITH AS	-.0153 N(22) SIG .464	CD WITH MN	.1578 N(22) SIG .159	CD WITH AU	-.0175 N(22) SIG .461
CD WITH BA	.0135 N(22) SIG .466	CD WITH SR	.1487 N(22) SIG .173	CD WITH B	-.1487 N(22) SIG .173	CD WITH V	.1307 N(22) SIG .204	CD WITH CD	1.0000 N(22) SIG .001	CD WITH LI	-.3152 N(22) SIG .024
CD WITH NA2O	.2178 N(22) SIG .085	CD WITH MGO	-.0856 N(22) SIG .294	CD WITH K2O	-.1619 N(22) SIG .152	LI WITH MO	-.0773 N(22) SIG .314	LI WITH CU	-.3850 N(22) SIG .007	LI WITH PB	-.0662 N(22) SIG .336
LI WITH ZN	-.1231 N(22) SIG .214	LI WITH NI	.0619 N(22) SIG .346	LI WITH CO	-.0402 N(22) SIG .399	LI WITH AG	.0090 N(22) SIG .477	LI WITH FE	.0308 N(22) SIG .422	LI WITH HG	.0824 N(22) SIG .304
LI WITH AS	.3436 N(22) SIG .020	LI WITH MN	.0132 N(22) SIG .466	LI WITH AU	.1085 N(22) SIG .270	LI WITH BA	.1366 N(22) SIG .190	LI WITH SR	-.0132 N(22) SIG .466	LI WITH B	.2335 N(22) SIG .067
LI WITH V	-.2071 N(22) SIG .092	LI WITH CD	-.3152 N(22) SIG .024	LI WITH LI	1.0000 N(22) SIG .001	LI WITH NA2O	-.2927 N(22) SIG .031	LI WITH MGO	.2511 N(22) SIG .053	LI WITH K2O	.0791 N(22) SIG .305
NA2O WITH MO	-.1084 N(22) SIG .247	NA2O WITH CU	.3429 N(22) SIG .014	NA2O WITH PB	.0395 N(22) SIG .400	NA2O WITH ZN	.0393 N(22) SIG .400	NA2O WITH NI	-.1055 N(22) SIG .249	NA2O WITH CO	.2040 N(22) SIG .096

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FILE TENASB (CREATION DATE = 12/22/76)

KENDALL CORRELATION COEFFICIENTS

VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR	
NA2O WITH AG	.1027 N(22) SIG .257	NA2O WITH FE	.1751 N(22) SIG .129	NA2O WITH MG	.2183 N(22) SIG .085	NA2O WITH AS	.1435 N(22) SIG .195	NA2O WITH MN	.1313 N(22) SIG .198	NA2O WITH AU	-.2779 N(22) SIG .057
NA2O WITH BA	-.3326 N(22) SIG .016	NA2O WITH SR	.1926 N(22) SIG .107	NA2O WITH B	-.2276 N(22) SIG .071	NA2O WITH V	.0175 N(22) SIG .455	NA2O WITH CD	.2178 N(22) SIG .085	NA2O WITH LI	-.2927 N(22) SIG .031
NA2O WITH NA2O	1.0000 N(22) SIG .001	NA2O WITH MGO	.0525 N(22) SIG .367	NA2O WITH K2O	-.0655 N(22) SIG .336	MGO WITH MO	-.1211 N(22) SIG .221	MGO WITH CU	-.3362 N(22) SIG .015	MGO WITH PB	-.1307 N(22) SIG .199
MGO WITH ZN	-.0521 N(22) SIG .367	MGO WITH NI	.0568 N(22) SIG .357	MGO WITH CO	-.0661 N(22) SIG .336	MGO WITH AG	.0266 N(22) SIG .432	MGO WITH FE	-.1174 N(22) SIG .223	MGO WITH MG	.2349 N(22) SIG .069
MGO WITH AS	.2998 N(22) SIG .036	MGO WITH MN	.2826 N(22) SIG .033	MGO WITH AU	-.0338 N(22) SIG .423	MGO WITH BA	-.1261 N(22) SIG .207	MGO WITH SR	.2913 N(22) SIG .029	MGO WITH B	-.0913 N(22) SIG .277
MGO WITH V	.1130 N(22) SIG .232	MGO WITH CD	-.0856 N(22) SIG .294	MGO WITH LI	.2511 N(22) SIG .053	MGO WITH NA2O	.0525 N(22) SIG .367	MGO WITH MGO	1.0000 N(22) SIG .001	MGO WITH K2O	-.0434 N(22) SIG .389
K2O WITH MO	-.0716 N(22) SIG .324	K2O WITH CU	-.2004 N(22) SIG .097	K2O WITH PB	.0478 N(22) SIG .378	K2O WITH ZN	-.0563 N(22) SIG .357	K2O WITH NI	-.2527 N(22) SIG .051	K2O WITH CO	-.0879 N(22) SIG .286
K2O WITH AG	-.0221 N(22) SIG .444	K2O WITH FE	-.0174 N(22) SIG .455	K2O WITH MG	.1127 N(22) SIG .238	K2O WITH AS	.0490 N(22) SIG .384	K2O WITH MN	-.0434 N(22) SIG .389	K2O WITH AU	.0169 N(22) SIG .462

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FILE TENASB (CREATION DATE = 12/22/76)

KENDALL CORRELATION COEFFICIENTS

VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR	
K20	.3471	K20	-.1562	K20	.4252	K20	-.3037	K20	-.1619	K20	.0791
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
BA	SIG .012	SR	SIG .155	B	SIG .003	V	SIG .024	CD	SIG .152	LI	SIG .305
K20	-.0655	K20	-.0434	K20	1.0000						
WITH	N(22)	WITH	N(22)	WITH	N(22)						
NA20	SIG .336	MGO	SIG .389	K20	SIG .001						

A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.

FILE TENASB (CREATION DATE = 12/21/76)

SPEARMAN CORRELATION COEFFICIENTS

VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR	
MO	1.0000	MO	-.0592	MO	-.2781	MO	-.1805	MO	.2229	MO	-.1836
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
MO	SIG .001	CU	SIG .397	PB	SIG .109	ZN	SIG .266	NI	SIG .159	CO	SIG .207
MO	-.1982	MO	-.2976	MO	-.0539	MO	-.1345	MO	-.5013	MO	-.3519
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
AG	SIG .188	FE	SIG .099	MG	SIG .406	AS	SIG .275	MN	SIG .009	AU	SIG .054
MO	-.1582	MO	.1329	MO	.1269	MO	.5622	MO	-.1158	MO	-.1252
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
BA	SIG .241	SR	SIG .279	B	SIG .287	V	SIG .003	CD	SIG .304	LI	SIG .298
MO	-.2088	MO	-.1398	MO	-.1257	CU	-.0592	CU	1.0000	CU	.3951
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
NA2O	SIG .176	MGO	SIG .269	K2O	SIG .289	MO	SIG .397	CU	SIG .001	PB	SIG .034
CU	.2998	CU	.0608	CU	.5439	CU	.4479	CU	.4175	CU	-.1137
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
ZN	SIG .092	NI	SIG .394	CO	SIG .008	AG	SIG .018	FE	SIG .027	MG	SIG .307
CU	-.1150	CU	.1882	CU	.0582	CU	-.2227	CU	.0229	CU	-.1883
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
AS	SIG .305	MN	SIG .201	AU	SIG .405	BA	SIG .160	SR	SIG .460	B	SIG .205
CU	-.2825	CU	.4552	CU	-.5277	CU	.4830	CU	-.4867	CU	-.2984
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
V	SIG .138	CD	SIG .017	LI	SIG .006	NA2O	SIG .011	MGO	SIG .011	K2O	SIG .092
PB	-.2741	PB	.3961	PB	1.0000	PB	.5723	PB	.0893	PB	.0997
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
MO	SIG .109	CU	SIG .034	PB	SIG .001	ZN	SIG .003	NI	SIG .346	CO	SIG .329

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FILE TENAS8 (CREATION DATE = 12/21/76)

SPEARMAN CORRELATION COEFFICIENTS

VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR	
PB	.7858	PB	.1876	PB	.0937	PB	.1466	PB	.5459	PB	.2050
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
AG	SIG .001	FE	SIG .202	HG	SIG .339	AS	SIG .258	MN	SIG .009	AU	SIG .179
PB	.3142	PB	.0783	PB	-.1243	PB	-.1260	PB	.4728	PB	-.0960
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
BA	SIG .077	SR	SIG .457	B	SIG .291	V	SIG .288	CD	SIG .013	LI	SIG .336
PB	.0565	PB	-.2210	PB	.1107	ZN	-.1405	ZN	.2944	ZN	.5723
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
NA2O	SIG .398	MGO	SIG .162	K2O	SIG .312	MO	SIG .266	CU	SIG .092	PB	SIG .003
ZN	1.0000	ZN	-.0232	ZN	.0470	ZN	.5130	ZN	.2011	ZN	.3575
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
ZN	SIG .001	NI	SIG .459	CO	SIG .418	AG	SIG .007	FE	SIG .185	HG	SIG .051
ZN	-.1185	ZN	.3388	ZN	.1543	ZN	.0011	ZN	-.0774	ZN	-.0017
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
AS	SIG .300	MN	SIG .058	AU	SIG .246	BA	SIG .498	SR	SIG .366	B	SIG .497
ZN	.0095	ZN	.7853	ZN	-.1843	ZN	.0430	ZN	-.0729	ZN	-.0357
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
V	SIG .495	CD	SIG .001	LI	SIG .261	NA2O	SIG .425	MGO	SIG .374	K2O	SIG .436
NI	.2229	NI	.0508	NI	.0893	NI	-.0232	NI	1.0000	NI	.8603
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
MO	SIG .159	CU	SIG .399	PB	SIG .346	ZN	SIG .459	NI	SIG .001	CO	SIG .016
NI	.0116	NI	.1592	NI	-.2576	NI	.0832	NI	-.0441	NI	.2961
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
AG	SIG .480	FE	SIG .233	HG	SIG .124	AS	SIG .356	MN	SIG .423	AU	SIG .090

A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.

FILE TENASB (CREATION DATE = 12/21/76)

SPEARMAN CORRELATION COEFFICIENTS

VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR	
NI	-.1402	NI	.1309	NI	-.0237	NI	.3002	NI	-.1458	NI	.1121
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
PA	SIG .267	SR	SIG .281	B	SIG .458	V	SIG .087	CO	SIG .259	LI	SIG .310
NI	-.1404	NI	.0271	NI	-.3577	CO	-.1836	CO	.5479	CO	.0997
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
NA2O	SIG .267	MGO	SIG .452	K2O	SIG .051	MO	SIG .207	CU	SIG .004	PB	SIG .329
CO	.0470	CO	.4503	CO	1.0000	CO	.3478	CO	.7650	CO	-.0722
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
ZN	SIG .418	NI	SIG .016	CO	SIG .001	AG	SIG .056	FE	SIG .001	HG	SIG .375
CO	.1226	CO	.2112	CO	.1939	CO	-.1433	CO	-.0079	CO	.0730
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
AS	SIG .293	MN	SIG .173	AU	SIG .194	BA	SIG .262	SR	SIG .485	P	SIG .373
CO	-.3918	CO	-.1328	CO	-.0859	CO	.2772	CO	-.0709	CO	-.1851
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
V	SIG .036	CO	SIG .278	LI	SIG .352	NA2O	SIG .106	MGO	SIG .377	K2O	SIG .258
AG	-.1992	AG	.4479	AG	.7864	AG	.5130	AG	.0116	AG	.3878
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
MO	SIG .188	CU	SIG .018	PB	SIG .001	ZN	SIG .007	NI	SIG .490	CO	SIG .056
AG	1.0000	AG	.3428	AG	.3899	AG	.3006	AG	.5771	AG	-.0312
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
AG	SIG .001	FE	SIG .059	HG	SIG .036	AS	SIG .087	MN	SIG .001	AU	SIG .445
AG	.2901	AG	.2453	AG	-.1996	AG	-.2158	AG	.4334	AG	-.0078
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
PA	SIG .095	SR	SIG .136	B	SIG .187	V	SIG .167	CO	SIG .022	LI	SIG .487

A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.

FILE TEXAS8 (CREATION DATE = 12/21/76)

SPEARMAN CORRELATION COEFFICIENTS

VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR	
AS	.1942	AS	.0207	AG	.0096	FE	-.2976	FE	.4175	FE	.1876
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
NA20	SIG .193	MGO	SIG .459	K20	SIG .483	MO	SIG .089	CU	SIG .027	PB	SIG .202
FE	.2011	FE	.1692	FE	.7650	FE	.3428	FE	1.0000	FE	.1791
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
ZN	SIG .185	NI	SIG .233	CO	SIG .001	AG	SIG .059	FE	SIG .001	HG	SIG .213
FE	.0350	FE	.2496	FE	.1934	FE	-.0972	FE	-.2699	FE	.1496
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
AS	SIG .437	MN	SIG .132	AU	SIG .194	BA	SIG .334	SR	SIG .112	B	SIG .255
FE	-.0802	FE	-.1910	FE	.0209	FE	.2619	FE	-.1266	FE	.0367
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
V	SIG .012	CO	SIG .256	LI	SIG .463	NA20	SIG .120	MGO	SIG .287	K20	SIG .436
HG	-.0539	HG	-.1137	HG	.0937	HG	.3575	HG	-.2576	HG	-.0722
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
MO	SIG .406	CU	SIG .307	PB	SIG .339	ZN	SIG .051	NI	SIG .124	CO	SIG .375
HG	.3898	HG	.1791	HG	1.0000	HG	.2193	HG	.3980	HG	-.2163
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
AG	SIG .036	FE	SIG .213	HG	SIG .001	AS	SIG .163	MN	SIG .056	AU	SIG .167
HG	.0507	HG	.0219	HG	-.1609	HG	-.0572	HG	.2451	HG	.0938
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
BA	SIG .411	SR	SIG .461	B	SIG .237	V	SIG .400	CD	SIG .136	LI	SIG .339
HG	.2738	HG	.3277	HG	.1053	AS	-.1385	AS	-.1150	AS	.1866
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
NA20	SIG .109	MGO	SIG .058	K20	SIG .320	MO	SIG .275	CU	SIG .305	PB	SIG .258

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FILE TENAS8 (CREATION DATE = 12/21/76)

SPEARMAN CORRELATION COEFFICIENTS

VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR	
AS	-.1185	AS	.0832	AS	.1226	AS	.3006	AS	.0360	AS	.2193
WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)
ZN	SIG .300	NI	SIG .356	CO	SIG .293	AG	SIG .087	FE	SIG .437	HG	SIG .153
AS	1.0000	AS	.2498	AS	.1240	AS	.2005	AS	.2455	AS	.1250
WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)
AS	SIG .001	MN	SIG .191	AU	SIG .291	BA	SIG .196	SR	SIG .134	B	SIG .290
AS	-.1899	AS	-.0095	AS	.4394	AS	.1505	AS	.3765	AS	.0507
WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)
V	SIG .258	CD	SIG .492	LI	SIG .020	NA2O	SIG .252	MGO	SIG .042	K2O	SIG .411
MN	-.5013	MN	.1892	MN	.5459	MN	.3344	MN	-.0881	MN	.2112
WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)
MO	SIG .009	CU	SIG .201	PB	SIG .008	ZN	SIG .064	NI	SIG .423	CO	SIG .173
MN	.6771	MN	.2496	MN	.3880	MN	.2498	MN	1.0000	MN	.1761
WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)
AG	SIG .001	FE	SIG .192	HG	SIG .056	AS	SIG .131	MN	SIG .001	AU	SIG .215
MN	.1658	MN	.1740	MN	-.4345	MN	-.1909	MN	.2303	MN	.0497
WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)
BA	SIG .230	SR	SIG .219	B	SIG .022	V	SIG .198	CD	SIG .151	LI	SIG .415
MN	.2855	MN	.3998	MN	-.1045	AU	-.3519	AU	.0542	AU	.2050
WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)
NA2O	SIG .135	MGO	SIG .033	K2O	SIG .322	MO	SIG .058	CU	SIG .405	PB	SIG .179
AU	.1583	AU	.2961	AU	.1939	AU	-.0312	AU	.1934	AU	-.2163
WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)
ZN	SIG .246	NI	SIG .090	CO	SIG .194	AG	SIG .445	FE	SIG .194	HG	SIG .167

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FILE TENAS8 (CREATION DATE = 12/21/76)

SPEARMAN CORRELATION COEFFICIENTS

VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR	
AU	.1240	AU	.1761	AU	1.0000	AU	.3657	AU	-.0256	AU	.3055
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
AS	SIG .291	MN	SIG .216	AU	SIG .001	BA	SIG .047	SR	SIG .455	B	SIG .083
AU	-.2207	AU	-.0078	AU	.1319	AU	-.3354	AU	-.0375	AU	.0903
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
V	SIG .162	CD	SIG .486	LI	SIG .279	NA2O	SIG .068	MGO	SIG .434	K2O	SIG .429
BA	-.1582	BA	-.2227	BA	.3182	BA	.0011	BA	-.1402	BA	-.1433
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
MO	SIG .241	CU	SIG .160	PB	SIG .077	ZN	SIG .498	NI	SIG .267	CO	SIG .262
BA	.2901	BA	-.0972	BA	.0507	BA	.2005	BA	.1658	BA	.3657
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
AG	SIG .095	FE	SIG .334	HG	SIG .411	AS	SIG .186	MN	SIG .230	AU	SIG .047
BA	1.0000	BA	.1017	BA	.2456	BA	-.1791	BA	-.0582	BA	.1703
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
BA	SIG .001	SR	SIG .326	B	SIG .134	V	SIG .213	CD	SIG .405	LI	SIG .224
BA	-.4638	BA	-.2011	BA	.4558	SR	.1329	SR	.0229	SR	.0293
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
NA2O	SIG .015	MGO	SIG .185	K2O	SIG .017	MO	SIG .278	CU	SIG .450	PB	SIG .457
SR	-.0774	SR	.1309	SR	-.0079	SR	.2453	SR	-.2698	SR	.0219
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
ZN	SIG .366	NI	SIG .281	CO	SIG .486	AG	SIG .136	FE	SIG .112	HG	SIG .461
SR	.2965	SR	.1740	SR	-.0256	SR	.1017	SR	1.0000	SR	-.0508
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
AS	SIG .138	MN	SIG .219	AU	SIG .455	BA	SIG .326	SR	SIG .001	B	SIG .411

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FILE TENASB (CREATION DATE = 12/21/76)

SPEARMAN CORRELATION COEFFICIENTS

VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR	
SR	.8130	SR	.2837	SR	-.0209	SR	.2494	SR	.8058	SR	-.2203
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
V	SIG .028	CD	SIG .137	LI	SIG .463	NA2O	SIG .131	MGO	SIG .030	K2O	SIG .162
B	.1259	B	-.1983	B	-.1283	B	-.0017	B	-.0237	B	.0730
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
MO	SIG .297	CU	SIG .206	PB	SIG .291	ZN	SIG .497	NI	SIG .458	CO	SIG .373
B	-.1996	B	.1896	B	-.1609	B	.1250	B	-.4345	B	.3055
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
AG	SIG .187	FE	SIG .255	HG	SIG .237	AS	SIG .290	MN	SIG .022	AU	SIG .093
B	.2856	B	-.0509	B	1.0000	B	-.3017	B	-.2115	B	.3189
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
BA	SIG .139	SR	SIG .411	B	SIG .001	V	SIG .086	CD	SIG .172	LI	SIG .077
B	-.2936	B	-.1362	B	.5614	V	.5622	V	-.2425	V	-.1260
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
NA2O	SIG .092	MGO	SIG .273	K2O	SIG .003	MO	SIG .003	CU	SIG .138	PB	SIG .298
V	.0095	V	.3092	V	-.3918	V	-.2158	V	-.4802	V	-.0572
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
ZN	SIG .485	NI	SIG .087	CO	SIG .035	AG	SIG .167	FE	SIG .012	HG	SIG .400
V	-.1899	V	-.1904	V	-.2207	V	-.1791	V	.4130	V	-.3017
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
AS	SIG .254	MN	SIG .198	AU	SIG .162	BA	SIG .213	SR	SIG .028	B	SIG .096
V	1.0000	V	.2035	V	-.2936	V	-.0622	V	.1435	V	-.4299
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
V	SIG .001	CD	SIG .182	LI	SIG .095	NA2O	SIG .392	MGO	SIG .262	K2O	SIG .023

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FILE TEXAS8 (CREATION DATE = 12/21/76)

SPEARMAN CORRELATION COEFFICIENTS

VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR	
CO	-.1158	CO	.0562	CO	.0728	CO	.7453	CO	-.1454	CO	-.1328
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
MO	SIG .304	CU	SIG .017	PB	SIG .013	ZN	SIG .001	NI	SIG .259	CO	SIG .278
CO	.0338	CO	-.1910	CO	.2451	CO	-.0045	CO	.2303	CO	-.0078
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
AG	SIG .022	FE	SIG .256	HG	SIG .136	AS	SIG .492	MN	SIG .151	AU	SIG .486
CO	-.0542	CO	.2937	CO	-.2115	CO	.2035	CO	1.0000	CO	-.0398
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
BA	SIG .405	SR	SIG .137	B	SIG .172	V	SIG .182	CO	SIG .001	LI	SIG .021
CO	.3123	CO	-.1276	CO	-.2083	LI	-.1262	LI	-.5277	LI	-.0960
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
NA2O	SIG .079	MGO	SIG .286	K2O	SIG .176	MO	SIG .288	CU	SIG .006	PB	SIG .336
LI	-.1843	LI	.1121	LI	-.0859	LI	-.0074	LI	.0209	LI	.0938
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
ZN	SIG .761	NI	SIG .310	CO	SIG .352	AG	SIG .487	FE	SIG .463	HG	SIG .339
LI	.4398	LI	.0897	LI	.1319	LI	.1703	LI	-.0209	LI	.3149
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
AS	SIG .020	MN	SIG .415	AU	SIG .279	BA	SIG .224	SR	SIG .463	B	SIG .077
LI	-.2906	LI	-.4399	LI	1.0000	LI	-.4045	LI	.3738	LI	.0905
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
V	SIG .095	CO	SIG .021	LI	SIG .001	NA2O	SIG .031	MGO	SIG .093	K2O	SIG .344
NA2O	-.2098	NA2O	.4830	NA2O	.0665	NA2O	.0430	NA2O	-.1404	NA2O	.2772
WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)	WITH	N(22)
PO	SIG .176	CU	SIG .011	PB	SIG .384	ZN	SIG .425	NI	SIG .267	CO	SIG .106

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FILE TEXASB (CREATION DATE = 12/21/76)

SPEARMAN CORRELATION COEFFICIENTS

VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR	
NA20	.1942	NA20	.2519	NA20	.2734	NA20	.1505	NA20	.2955	NA20	-.3358
WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)
AG	SIG .193	FE	SIG .120	HG	SIG .109	AS	SIG .252	MN	SIG .135	AU	SIG .068
NA20	-.4638	NA20	.2498	NA20	-.2936	NA20	-.0622	NA20	.3123	NA20	-.4085
WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)
BA	SIG .015	SR	SIG .131	B	SIG .092	V	SIG .392	CD	SIG .079	LI	SIG .031
NA20	1.0000	NA20	.0922	NA20	-.1097	MGO	-.1394	MGO	-.4867	MGO	-.2210
WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)
NA20	SIG .001	MGO	SIG .342	K20	SIG .313	MO	SIG .269	CU	SIG .011	PB	SIG .162
MGO	-.0729	MGO	.0271	MGO	-.0708	MGO	.0207	MGO	-.1266	MGO	.3277
WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)
ZN	SIG .374	NI	SIG .452	CO	SIG .377	AS	SIG .464	FE	SIG .287	HG	SIG .058
MGO	.3765	MGO	.3994	MGO	-.0375	MGO	-.2011	MGO	.4068	MGO	-.1362
WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)
AS	SIG .042	MN	SIG .033	AU	SIG .434	BA	SIG .185	SR	SIG .030	B	SIG .273
MGO	.1835	MGO	-.1276	MGO	.3739	MGO	.0922	MGO	1.0000	MGO	-.1057
WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)
V	SIG .262	CD	SIG .286	LI	SIG .043	NA20	SIG .342	MGO	SIG .001	K20	SIG .318
K20	-.1257	K20	-.2948	K20	.1107	K20	-.0367	K20	-.3577	K20	-.1851
WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)
MO	SIG .289	CU	SIG .092	PB	SIG .312	ZN	SIG .436	NI	SIG .051	CO	SIG .258
K20	.0096	K20	.0367	K20	.1053	K20	.0507	K20	-.1045	K20	.0403
WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)
AG	SIG .893	FE	SIG .436	HG	SIG .320	AS	SIG .411	MN	SIG .322	AU	SIG .479

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FILE TENAS9 (CREATION DATE = 12/21/76)

SPEARMAN CORRELATION COEFFICIENTS

VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR		VARIABLE PAIR	
K20	.4558	K20	-.2203	K20	.5614	K20	-.0298	K20	-.2083	K20	.0905
WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)	WITH	N(221)
BA	SIG .017	SR	SIG .162	B	SIG .003	V	SIG .023	CD	SIG .176	LI	SIG .344
K20	-.1097	K20	-.1057	K20	1.0000						
WITH	N(221)	WITH	N(221)	WITH	N(221)						
NA20	SIG .313	MGO	SIG .318	K20	SIG .001						

A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.

DATA TRANSFORMATION DONE UP TO THIS POINT..