DEPARTMENT OF THE INTERIOR

U.S. GEOLOGICAL SURVEY

Chemical analyses used to compute the average chemical composition of rocks and glasses for geochemical units defined in the Yakima Basalt Subgroup, Columbia River Basalt Group, Washington, Oregon, and Idaho

By

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INTRODUCTION

This report consists of a series of tables of data used to calculate the average chemical composition of geochemical units defined in Wright and others (1988). Averages were calculated using a program CHEMAVG written by the author, and the tabulated data are taken directly as output from the program. The following serves as a cross-reference between this report and Wright and others (1988).

This report	Type of data	Wright and others (1988)
Table 1	rock chemistry, Wanapum Basalt	Table 4
Table 2	rock chemistry, Saddle Mountains Basalt	Table 5
Table 3	dike chemistry, Yakima Basalt Subgroup	Table 6
Table 4	glass chemistry, Grande Ronde Basalt	Table 10
Table 5	glass chemistry, Wanapum Basalt	Table 11
Table 6	glass chemistry, Saddle Mountains Basalt	Table 12
Table 7	rock chemistry for additional analyzed flows	Table 15

Data used to calculate average rock chemistry for geochemical units in the Grande Ronde Basalt (Wright and others, 1988, Table 3) are given in Mangan and others (1985).

Table 1. Analyses used to compute the average chemical composition of geochemical units defined for the the Wanapum Basalt.

PV TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: PV

NO. OF OXIDES=39 NO. OF DATA CARDS= 4 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
46	75-009 a	51.52	15.57	9.81	3.96	10.46	3.12	1.25	3.36	0.77	0.17	555.	630.	29.5	105.0	0.630	4.95	22.0
46	75-009 b	51.52	15.57	9.81	3.96	10.46	3.12	1.25	3.36	0.77	0.17	559.	0.	27.4	96.7	-.009	4.70	0.0
46	72-286 a	51.02	15.25	10.64	3.54	10.38	3.13	1.11	3.64	0.80	0.12	775.	0.	30.0	108.0	0.639	5.32	0.0
46	72-286 b	51.02	15.25	10.64	3.54	10.38	3.13	1.11	3.64	0.80	0.12	819.	670.	28.4	102.0	0.600	5.10	16.0
	NO.POINTS	4	4	4	4	4	4	4	4	4	4	4	2	4	4	3	4	2
PV	AVERAGE	51.27	15.41	10.23	3.75	10.42	3.13	1.18	3.50	0.79	0.14	677.	650.	28.8	102.9	0.623	5.02	19.0
	STD.DEV.	0.29	0.18	0.48	0.24	0.05	0.01	0.08	0.16	0.02	0.03	140.	28.	1.2	4.8	0.020	0.26	4.2
	MAXIMUM	51.52	15.57	10.64	3.96	10.46	3.13	1.25	3.64	0.80	0.17	819.	670.	30.0	108.0	0.639	5.32	22.0
	MINIMUM	51.02	15.25	9.81	3.54	10.38	3.12	1.11	3.36	0.77	0.12	555	630	27.4	96.7	0.600	4.70	16.0
	DIFFERENCE	0.50	0.32	0.83	0.42	0.08	0.01	0.14	0.28	0.03	0.05	264.	40.	2.6	11.3	0.039	0.62	6.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
46	75-009 a	25.9	38.0	342.	1.21	4.14	0.999	48.0	206.	159.	216.	41.1	30.1	59.3	37.3	9.3	2.71	8.8
46	75-009 b	27.0	0.0	0.	1.15	3.60	1.100	0.0	189.	100.	0.	38.3	28.0	54.0	34.0	8.9	2.53	8.3
46	72-286 a	30.9	0.0	0.	1.22	4.12	1.230	0.0	225.	-419.	0.	40.9	31.7	60.3	38.5	9.7	2.84	10.1
46	72-286 b	29.0	25.0	317.	1.14	3.70	1.100	53.0	211.	140.	197.	39.4	30.0	62.0	40.0	9.5	2.68	9.7
	NO.POINTS	4	2	2	4	4	4	2	4	3	2	4	4	4	4	4	4	4
PV	AVERAGE	28.2	31.5	330.	1.18	3.89	1.107	50.5	208.	133.	207.	39.9	30.0	58.9	37.5	9.4	2.69	9 2
	STD.DEV.	2.2	9.2	18.	0.04	0.28	0.095	3.5	15.	30.	13.	1.3	1.5	3.5	2.6	0.3	0.13	0 8
	MAXIMUM	30.9	38.0	342.	1.22	4.14	1.230	53.0	225.	159.	216.	41.1	31.7	62.0	40.0	9.7	2.84	10.1
	MINIMUM	25.9	25.0	317.	1.14	3.60	0.999	48.0	189.	100.	197.	38.3	28.0	54.0	34.0	8.9	2.53	8.3
	DIFFERENCE	5.0	13.0	25.	0.08	0.54	0.231	5.0	36.	59.	19.	2.8	3.7	8.0	6.0	0.8	0 31	1 8

	SAMPLE	Tb	Yb	Lu	Cu	Ni
46	75-009 a	1.46	4.44	0.79	39.0	29.0
46	75-009 b	1.39	4.40	0.61	0.0	0.0
46	72-286 a	1.62	4.82	0.82	51.0	34.0
46	72-286 b	1.40	4.80	0.69	0.0	0.0
	NO.POINTS	4	4	4	2	2
PV	AVERAGE	1.47	4.62	0.73	45.0	31.5
	STD.DEV.	0.11	0.23	0.10	8.5	3.5
	MAXIMUM	1.62	4.82	0.82	51.0	34.0
	MINIMUM	1.39	4.40	0.61	39.0	29.0
	DIFFERENCE	0.23	0.42	0.21	12.0	5.0

LOLO INC TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: LOLO INC

NO. OF OXIDES=39 NO. OF DATA CARDS= 12 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
47	72-180 a	49.18	14.46	13.92	5.70	8.95	2.55	1.02	3.16	0.65	0.19	497.	505.	38.9	93.7	0.300	4.40	16.0
47	72-180 b	49.18	14.46	13.92	5.70	8 95	2.55	1.02	3.16	0.65	0.19	573.	0.	40.8	99.6	0.600	4.50	0.0
47	73-167 a	49.54	13.44	14.73	5.48	8.66	2.59	1.03	3.21	0.74	0.21	521.	0.	40.5	90.8	0.400	4.50	0.0
47	73-167 b	49.54	13.44	14.73	5.48	8.66	2.59	1.03	3.21	0.74	0.21	594.	0.	41.0	94.2	0.700	4.70	0.0
47	71-042 a	49.95	14.13	13.57	5.45	8.77	2 62	1.11	3.23	0.82	0.20	479.	0.	39.1	96.5	.009	4.80	0.0
47	71 042 b	49.95	14.13	13.57	5.45	8.77	2.62	1.11	3.23	0.82	0.20	484.	454.	39.2	96.3	.009	4.70	13.0
47	72 132 a	49.74	14.21	13.74	5.28	9.04	2.54	1.12	3.15	0.83	0.19	452.	0.	40.1	97.1	.009	4.56	0.0
47	72 132 b	49.74	14.21	13.74	5.28	9.04	2 54	1.12	3.15	0.83	0.19	476.	0.	39.1	97.0	0.600	4.30	0 0

47	72-158 a	50.68	14.83	12.51	4.53	9.59	2.37	0.93	3.30	0.64	0.16	578.	0.	45.2	100.2	0.776	4.69	0 0
47	72-158 b	50.68	14.83	12.51	4.53	9.59	2.37	0.93	3.30	0.64	0.16	583.	386.	43.5	91.6	.009	4.40	17.0
47	73-166 a	50.77	13.68	14.87	4.46	7.76	2.84	1.11	3.24	0.73	0.20	606.	580.	37.3	13.5	1.000	5.10	17.0
47	73-166 b	50.77	13.68	14.87	4.46	7.76	2.84	1.11	3.24	0.73	0.20	627.	0.	38.3	13.2	1.200	5 30	0 0
	NO.POINTS	12	12	12	12	12	12	12	12	12	12	12	4	12	12	8	12	4
LOLO INC	AVERAGE	49.98	14.13	13.89	5.15	8.80	2.58	1.05	3.21	0.73	0.19	539.	481.	40.2	82.0	0.697	4.66	15.8
	STD.DEV.	0.60	0.48	0.82	0.50	0.57	0.15	0.07	0.05	0.08	0.02	60.	82.	2.2	32.2	0.297	0.29	1.9
	MAXIMUM	50.77	14.83	14.87	5.70	9.59	2.84	1.12	3.30	0.83	0.21	627.	580.	45.2	100.2	1.200	5.30	17.0
	MINIMUM	49.18	13.44	12.51	4.46	7.76	2.37	0.93	3.15	0.64	0.16	452.	386.	37.3	13.2	0.300	4.30	13.0
	DIFFERENCE	1.59	1.39	2.36	1.24	1.83	0.47	0.19	0.15	0.19	0.05	175.	194.	7.9	87.0	0 900	1 00	4 0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
47	72-180 a	20.0	29.0	318.	0.98	3.30	0.600	42.0	147.	150	185.	34.7	26.0	51.0	30.0	6.5	2.33	7 6
47	72-180 b	42.0	0.0	0.	1.04	3.80	1.000	0.0	147.	210.	0	36.1	27.0	55.0	32.0	6.7	2.56	9.5
47	73-167 a	26.0	0.0	0.	1.04	3.70	1.000	0.0	151.	170.	0.	35.4	26.0	51.0	27.0	6.8	2.37	7.8
47	73-167 b	29.0	0.0	0.	1.13	3.60	0.800	0.0	148.	290.	0.	35.7	27.0	56.0	31.0	7 1	2.56	8.3
47	71-042 a	26.0	0.0	0.	1.20	4.00	1.100	0.0	165.	0.	0.	37.6	26.0	59.0	39.0	7.8	2.52	10.0
47	71-042 b	17.0	28.0	274.	1.10	3.20	0.900	41.0	166.	0.	210.	37.1	26.0	56.0	37.0	8.3	2.43	8.3
47	72-132 a	31.4	0.0	0.	1.23	3.48	0.000	0.0	224.	0.	0.	36.5	30.5	59.6	35.9	8.9	2.86	0.0
47	72-132 b	13.0	0.0	0.	1.13	3.60	0.000	0.0	204.	215.	0.	34.5	29.0	59.0	32.0	8.8	2.50	0.0
47	72-158 a	20.0	0.0	0.	0.85	3.29	0.000	0.0	168.	241.	0.	37.4	29.9	60.1	46.5	9.0	2.70	0.0
47	72-158 b	17.0	20.0	292.	0.99	2.90	0.000	41.0	211.	217.	191.	36.0	29.0	60.0	34.0	9.0	2.63	0.0
47	73-166 a	42.0	32.0	322.	1.14	4.00	0.800	43.0	152.	230.	207.	34.9	30.0	60.0	33.0	7.7	2.54	9.1
47	73-166 b	36.0	0.0	0.	1.27	3.90	0.800	0.0	154.	280.	0.	35.9	30.0	62.0	35.0	7.6	2.66	7.8
	NO.POINTS	12	4	4	12	12	8	4	12	9	4	12	12	12	12	12	12	8
LOLO INC	AVERAGE	26.6	27.3	302.	1.09	3.56	0.875	41.8	170.	223.	198.	36.0	28.0	57.4	34.4	7.8	2.56	8.6
	STD.DEV.	9.8	5.1	23.	0.12	0.34	0.158	1.0	27.	45.	12.	1.0	1.9	3.6	5.0	0.9	0.15	0.9
	MAXIMUM	42.0	32.0	322.	1.27	4.00	1.100	43.0	224.	290.	210.	37.6	30.5	62.0	46.5	9.0	2.86	10 0
	MINIMUM	13.0	20.0	274.	0.85	2.90	0.600	41.0	147.	150.	185.	34.5	26.0	51.0	27.0	6.5	2.33	7.6
	DIFFERENCE	29.0	12.0	48.	0.42	1.10	0.500	2.0	77.	140.	25.	3.1	4.5	11.0	19.5	2.5	0.53	2 4

	SAMPLE	Tb	Yb	Lu	Cu	Ni
47	72-180 a	1.25	4.00	0.56	38.0	50.0
47	72-180 b	1.17	4.00	0.60	0.0	0.0
47	73-167 a	1.26	4.00	0.57	0.0	0.0
47	73-167 b	1.43	4.00	0.59	0.0	0.0
47	71-042 a	-1.02	3.90	0.58	40.0	37.0
47	71-042 b	1.40	4.10	0.56	0.0	0.0
47	72-132 a	1.52	3.45	0.67	0.0	0.0
47	72-132 b	1.25	3.60	0.64	0.0	0.0
47	72-158 a	1.36	3.53	0.64	0.0	0.0
47	72-158 b	1.50	3.40	0.68	0.0	0.0
47	73-166 a	1.44	4.40	0.66	34.0	18.0
47	73-166 b	1.48	4.70	0.65	0.0	0.0
	NO.POINTS	11	12	12	3	3
LOLO INC	AVERAGE	1.37	3.92	0.62	37.3	35.0
	STD.DEV.	0.12	0.39	0.04	3.1	16.1
	MAXIMUM	1.52	4.70	0.68	40.0	50.0
	MINIMUM	1.17	3.40	0.56	34.0	18.0
	DIFFERENCE	0.35	1.30	0.12	6.0	32.0

ROSALIA TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: ROSALIA

NO. OF OXIDES=39 NO. OF DATA CARDS= 10 DATA SORTED ON: MGO

SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX

49	72-313 a	49.58	13.07	14.88	4.63	8.94	2.72	1.21	3.62	0.84	0.20	521.	0.	38.2	16.9	1.032	5.54	0.0
49	72-313 b	49.58	13.07	14.88	4.63	8.94	2.72	1.21	3.62	0.84	0.20	547.	448.	37.1	14.2	0.900	5.20	18 0
49	72-313 c	49.58	13.07	14.88	4.63	8.94	2.72	1.21	3.62	0.84	0.20	603.	0.	36.5	13.1	0.900	5.40	0 0
49	72-313 d	49.58	13.07	14.88	4.63	8.94	2.72	1.21	3.62	0.84	0.20	617.	0.	37.7	13.9	1.000	5.60	0.0
49	78-066 a	49.14	13.55	14.71	4.61	8.74	3.05	1.29	3.61	0.84	0.22	609.	566.	38.0	14.7	0.900	5.50	19 0
49	78-066 b	49.14	13.55	14.71	4.61	8.74	3.05	1.29	3.61	0.84	0.22	601.	0.	38.5	14.7	0.700	5.60	0.0
49	72-330 a	49.89	13.30	14.27	4.54	8.86	2.82	1.21	3.63	0.85	0.20	633.	0.	38.9	11.6	0.900	5.40	0.0
49	72-330 b	49.89	13.30	14.27	4.54	8.86	2.82	1.21	3.63	0.85	0.20	669.	558.	41.2	13.3	1.100	5.50	14 0
49	72-329 a	50.73	13.98	14.89	3.98	7.74	2.65	1.12	3.47	0.82	0.19	581	0.	33.5	11.6	-.300	5.10	0.0
49	72-329 b	50.73	13.98	14.89	3.98	7.74	2.65	1.12	3 47	0.82	0.19	616.	0.	36 9	11.9	0.600	5.50	0 0
	NO.POINTS	10	10	10	10	10	10	10	10	10	10	10	3	10	10	9	10	3
ROSALIA	AVERAGE	49.78	13.39	14.73	4.48	8.64	2.79	1.21	3.59	0.84	0.20	600.	524.	37.7	13.6	0.892	5.43	17.0
	STD.DEV.	0.56	0.36	0.25	0.26	0.48	0.15	0.06	0.06	0.01	0.01	42.	66.	2.0	1.7	0.157	0.17	2.6
	MAXIMUM	50.73	13.98	14.89	4.63	8.94	3.05	1.29	3.63	0.85	0.22	669.	566.	41.2	16.9	1.100	5.60	19.0
	MINIMUM	49.14	13.07	14.27	3.98	7.74	2.65	1.12	3.47	0.82	0.19	521.	448.	33.5	11.6	0.600	5.10	14.0
	DIFFERENCE	1.59	0.91	0.62	0.65	1.20	0.40	0.17	0.16	0.03	0.03	148.	118.	7.7	5.3	0.500	0.50	5.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
49	72-313 a	23.6	0.0	0.	1.21	4.25	0.000	0.0	227.	314.	0.	37.1	33.9	68.0	-50.6	0.0	2.85	0.0
49	72-313 b	32.0	31.0	270.	1.02	3.90	0.000	44.0	213.	302.	220.	36.3	33.0	70.0	39.0	0.0	2.77	0.0
49	72-313 c	36.0	0.0	0.	1.23	3.90	0.800	0.0	162.	230.	0.	36.8	31.0	59.0	30.0	7.6	2.49	8.3
49	72-313 d	42.0	0.0	0.	1.37	4.00	1.100	0.0	162.	230.	0.	38.2	31.0	65.0	38.0	7.6	2.75	9.4
49	78-066 a	29.0	33.0	301.	1.31	4.30	1.200	47.0	162.	210.	230.	38.4	31.0	63.0	39.0	7.9	2.61	9.8
49	78-066 b	43.0	0.0	0.	1.11	4.20	1.400	0.0	169.	210.	0.	39.0	31.0	64.0	37.0	8.0	2.78	10 8
49	72-330 a	32.0	0.0	0.	1.30	4.00	0.700	0.0	170.	290.	0.	37.9	30.0	59.0	34.0	7.3	2.55	9.0
49	72-330 b	40.0	31.0	286.	1.26	4.20	0.800	40.0	167.	200.	221.	39.7	31.0	63.0	37.0	7.8	2.67	11 0
49	72-329 a	34.0	0.0	0.	1.15	3.70	0.500	0.0	147.	190.	0.	33.7	29.0	56.0	33.0	7.2	2.45	9.4
49	72-329 b	34.0	0.0	0.	1.22	3.90	0.900	0.0	147.	200.	0.	36.3	30.0	60.0	35.0	7.4	2.67	7.5
	NO.POINTS	10	3	3	10	10	8	3	10	10	3	10	10	10	9	8	10	8
ROSALIA	AVERAGE	34.6	31.7	286.	1.22	4.04	0.925	43.7	173.	238.	224.	37.3	31.1	62.7	35.8	7.6	2.66	9.4
	STD.DEV.	6.0	1.2	16.	0.10	0.19	0.292	3.5	26.	47.	6.	1.7	1.4	4.3	3.0	0.3	0.13	1.2
	MAXIMUM	43.0	33.0	301.	1.37	4.30	1.400	47.0	227.	314.	230.	39.7	33.9	70.0	39.0	8.0	2.85	11.0
	MINIMUM	23.6	31.0	270.	1.02	3.70	0.500	40.0	147.	190.	220.	33.7	29.0	56.0	30.0	7.2	2.45	7.5
	DIFFERENCE	19.4	2.0	31.	0.35	0.60	0.900	7.0	80.	124.	10.	6.0	4.9	14.0	9.0	0.8	0.40	3 5

	SAMPLE	Tb	Yb	Lu	Cu	Ni
49	72-313 a	-1.77	4.43	0.74	28.0	32.0
49	72-313 b	1.60	4.10	0.72	0.0	0.0
49	72-313 c	1.44	4.70	0.68	0.0	0.0
49	72-313 d	1.47	4.60	0.70	0.0	0.0
49	78-066 a	1.45	4.90	0.69	24.0	15.0
49	78-066 b	1.45	4.90	0.69	0.0	0.0
49	72-330 a	1.42	4.60	0.65	31.0	34.0
49	72-330 b	1.40	4.90	0.70	0.0	0.0
49	72-329 a	1.31	4.50	0.63	0.0	0.0
49	72-329 b	1.38	4.60	0.67	0.0	0.0
	NO.POINTS	9	10	10	3	3
ROSALIA	AVERAGE	1.44	4.62	0.69	27.7	27.0
	STD.DEV.	0.08	0.25	0.03	3.5	10.4
	MAXIMUM	1.60	4.90	0.74	31.0	34.0
	MINIMUM	1.31	4.10	0.63	24.0	15.0
	DIFFERENCE	0.29	0.80	0.11	7.0	19.0

PH POWAT TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: PH POWAT

NO. OF OXIDES-39 NO. OF DATA CARDS= 4 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K20	TIO2	P205	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
51	77-284 a	53.94	14.40	13.09	3.42	7.01	2.94	1.81	2.67	1.17	0.28	958.	0.	-36.3	0.0	1.060	6.36	0 0
51	77-284 b	53.94	14.40	13.09	3.42	7.01	2.94	1.81	2.67	1.17	0.28	1030.	926.	-35.4	0.0	1.100	6.30	20.0
51	78-382 a	53.69	14.78	12.77	3.04	6.98	3.11	2.05	2.66	1.12	0.20	943.	0.	-44.9	0.0	1.150	6.43	0.0
51	78-382 b	53.69	14.78	12.77	3.04	6.98	3.11	2.05	2.66	1.12	0.20	1240.	983.	-44.5	0.0	1.300	6.50	20.0
	NO.POINTS	4	4	4	4	4	4	4	4	4	4	4	2	0	0	4	4	2
PH POWAT	AVERAGE	53.81	14.59	12.93	3.23	6.99	3.02	1.93	2.66	1.14	0.24	1043.	955.	0.0	0.0	1.153	6.40	20 0
	STD.DEV.	0.14	0.22	0.18	0.22	0.02	0.10	0.14	0.01	0.03	0.05	137.	40.	0.0	0.0	0.105	0.09	0.0
	MAXIMUM	53.94	14.78	13.09	3.42	7.01	3.11	2.05	2.67	1.17	0.28	1240.	983.	0.0	0.0	1.300	6.50	20.0
	MINIMUM	53.69	14.40	12.77	3.04	6.98	2.94	1.81	2.66	1.12	0.20	943.	926.	0.0	0.0	1.060	6.30	20.0
	DIFFERENCE	0.25	0.38	0.32	0.38	0.03	0.17	0.24	0.01	0.05	0.08	297.	57.	0.0	0.0	0.240	0.20	0.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
51	77-284 a	27.0	0.0	0.	1.23	5.47	1.750	0.0	153.	219.	0.	31.6	37.9	82.6	50.4	11.7	3.38	11.5
51	77-284 b	42.0	36.0	360.	1.23	5.20	1.700	57.0	151.	260.	260.	31.0	36.0	79.0	50.0	11.5	3.22	10.2
51	78-382 a	47.5	0.0	0.	1.29	5.68	1.630	0.0	153.	319.	0.	31.6	37.3	83.2	48.1	11.4	3.29	12.2
51	78-382 b	39.0	48.0	347.	1.29	5.40	1.500	55.0	152.	280.	259.	31.8	37.0	83.0	51.0	12.3	3.49	12.2
	NO.POINTS	4	2	2	4	4	4	2	4	4	2	4	4	4	4	4	4	4
PH POWAT	AVERAGE	38.9	42.0	354.	1.26	5.44	1.645	56.0	152.	270.	260.	31.5	37.1	82.0	49.9	11.7	3.35	11.5
	STD.DEV.	8.7	8.5	9.	0.03	0.20	0.108	1.4	1.	42.	1.	0.3	0.8	2.0	1.3	0.4	0.12	0.9
	MAXIMUM	47.5	48.0	360.	1.29	5.68	1.750	57.0	153.	319.	260.	31.8	37.9	83.2	51.0	12.3	3.49	12.2
	MINIMUM	27.0	36.0	347.	1.23	5.20	1.500	55.0	151.	219.	259.	31.0	36.0	79.0	48.1	11.4	3.22	10.2
	DIFFERENCE	20.5	12.0	13.	0.06	0.48	0.250	2.0	2.	100.	1.	0.8	1.9	4.2	2.9	0.9	0.27	2.0

	SAMPLE	Tb	Yb	Lu	Cu	Ni
51	77-284 a	1.98	5.56	0.86	0.0	0.0
51	77-284 b	1.76	5.60	0.79	0.0	0.0
51	78-382 a	1.90	5.78	1.01	0.0	0.0
51	78-382 b	1.83	5.80	1.00	0.0	0.0
	NO.POINTS	4	4	4	0	0
PH POWAT	AVERAGE	1.87	5.69	0.92	0.0	0.0
	STD.DEV.	0.09	0.12	0.11	0.0	0.0
	MAXIMUM	1.98	5.80	1.01	0.0	0.0
	MINIMUM	1.76	5.56	0.79	0.0	0.0
	DIFFERENCE	0.22	0.24	0.22	0.0	0.0

ROZA TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: ROZA

NO. OF OXIDES-39 NO. OF DATA CARDS- 10 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K20	TIO2	P205	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
52	78-086 a	49.94	14.55	13.25	4.88	9.00	3.11	1.27	2.93	0.63	0.20	529.	600.	38.7	53.9	0.800	4.80	18.0
52	78-086 b	49.94	14.55	13.25	4.88	9.00	3.11	1.27	2.93	0.63	0.20	554.	0.	40.6	55.0	0.800	4.80	0.0
52	71-105 a	50.92	13.49	14.21	4.87	7.99	2.84	1.22	3.25	0.73	0.19	522.	0.	36.3	29.1	0.499	4.62	0.0
52	71-105 b	50.92	13.49	14.21	4.87	7.99	2.84	1.22	3.25	0.73	0.19	585.	506.	36.0	28.7	0.600	4.80	12.0
52	72-133Aa	50.72	14.00	13.74	4.77	8.48	2.74	1.22	3.04	0.67	0.26	525.	0.	38.0	52.3	0.700	4.70	0.0
52	72-133ab	50.72	14.00	13.74	4.77	8.48	2.74	1.22	3.04	0.67	0.26	594.	0.	37.0	52.2	0.600	4.40	0.0
52	72-169 a	50.99	14.07	12.87	4.18	8.83	2.65	1.33	3.37	0.71	0.41	594.	0.	41.5	30.5	1.000	4.80	0.0
52	72-169 b	50.99	14.07	12.87	4.18	8.83	2.65	1.33	3.37	0.71	0.41	646.	630.	42.1	32.0	1.000	4.90	18.0
52	72-133 a	51.13	14.94	13.19	4.07	8.37	2.85	1.22	2.95	0.65	0.21	526.	552.	37.4	53.7	-.009	4.27	20.0
52	72-133 b	51.13	14.94	13.19	4.07	8.37	2.85	1.22	2.95	0.65	0.21	480.	0.	37.6	55.4	1.000	4.30	0.0
	NO.POINTS	10	10	10	10	10	10	10	10	10	10	10	4	10	10	9	10	4
ROZA	AVERAGE	50.74	14.21	13.45	4.55	8.53	2.84	1.25	3.11	0.68	0.25	556.	572.	38.5	44.3	0.778	4.64	17.0

	STD.DEV.	0.44	0.52	0.50	0.37	0.37	0.16	0.05	0.18	0.04	0.09	49.	54.	2.2	12.3	0.192	0.23	3.5
	MAXIMUM	51.13	14.94	14.21	4.88	9.00	3.11	1.33	3.37	0.73	0.41	646.	630.	42.1	55.4	1.000	4.90	20.0
	MINIMUM	49.94	13.49	12.87	4.07	7.99	2.65	1.22	2.93	0.63	0.19	480.	506.	36.0	28.7	0.499	4.27	12.0
	DIFFERENCE	1.19	1.45	1.34	0.81	1.01	0.46	0.11	0.44	0.10	0.22	166.	124.	6.1	26.7	0.501	0.63	8.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
52	78-086 a	28.0	40.0	322.	1.00	3.80	1.300	48.0	149.	190.	203.	36.0	27.0	54.0	28.0	6.4	2.15	8.3
52	78-086 b	37.0	0.0	0.	0.98	4.00	1.100	0.0	148.	200.	0.	37.4	27.0	56.0	34.0	6.5	2.31	8.1
52	71-105 a	34.9	0.0	0.	0.98	4.14	1.220	0.0	194.	-450.	0.	34.8	27.8	53.3	31.6	8.0	2.15	7.2
52	71-105 b	30.0	31.0	273.	1.22	4.30	1.500	34.0	183.	-50.	190.	35.6	26.0	54.0	33.0	8.2	2.23	8.1
52	72-133Aa	45.0	0.0	0.	1.10	3.80	0.900	0.0	146.	260.	0.	35.9	27.0	51.0	35.0	5.4	2.12	8.3
52	72-133ab	30.0	0.0	0.	0.99	3.80	1.100	0.0	143.	200.	0.	35.8	25.0	53.0	38.0	5.9	2.24	7.4
52	72-169 a	32.0	0.0	0.	1.10	4.10	1.200	0.0	159.	260.	0.	37.1	28.0	54.0	42.0	6.5	2.24	7.6
52	72-169 b	27.0	40.0	338.	1.14	4.30	1.400	47.0	160.	240.	213.	37.6	28.0	58.0	32.0	6.6	2.35	-3.8
52	72-133 a	21.7	40.0	318.	1.07	3.87	0.000	48.0	160.	227.	193.	35.1	26.7	56.8	35.0	7.8	2.41	0.0
52	72-133 b	28.0	0.0	0.	0.91	3.70	0.000	0.0	183.	205.	0.	35.8	27.0	52.0	39.0	7.8	2.26	0.0
	NO.POINTS	10	4	4	10	10	8	4	10	8	4	10	10	10	10	10	10	7
ROZA	AVERAGE	31.4	37.8	313.	1.05	3.98	1.215	44.3	163.	223.	200.	36.1	27.0	54.2	34.8	6.9	2.25	7.9
	STD.DEV.	6.4	4.5	28.	0.09	0.22	0.188	6.8	18.	28.	10.	0.9	0.9	2.2	4.1	1.0	0.09	0.5
	MAXIMUM	45.0	40.0	338.	1.22	4.30	1.500	48.0	194.	260.	213.	37.6	28.0	58.0	42.0	8.2	2.41	8.3
	MINIMUM	21.7	31.0	273.	0.91	3.70	0.900	34.0	143.	190.	190.	34.8	25.0	51.0	28.0	5.4	2.12	7.2
	DIFFERENCE	23.3	9.0	65.	0.31	0.60	0.600	14.0	51.	70.	23.	2.8	3.0	7.0	14.0	2.8	0.29	1.1

	SAMPLE	Tb	Yb	Lu	Cu	Ni
52	78-086 a	1.21	4.10	0.56	35.0	48.0
52	78-086 b	1.13	4.10	0.62	0.0	0.0
52	71-105 a	1.15	4.06	0.80	56.0	19.0
52	71-105 b	-1.50	4.10	0.84	18.0	17.0
52	72-133Aa	1.15	4.00	0.57	0.0	0.0
52	72-133ab	1.16	3.90	0.59	0.0	0.0
52	72-169 a	1.16	4.10	0.59	33.0	45.0
52	72-169 b	1.17	4.20	0.65	0.0	0.0
52	72-133 a	1.30	3.37	0.60	56.0	39.0
52	72-133 b	1.27	3.00	0.61	0.0	0.0
	NO.POINTS	9	10	10	5	5
ROZA	AVERAGE	1.19	3.89	0.64	39.6	33.6
	STD.DEV.	0.06	0.39	0.10	16.3	14.6
	MAXIMUM	1.30	4.20	0.84	56.0	48.0
	MINIMUM	1.13	3.00	0.56	18.0	17.0
	DIFFERENCE	0.17	1.20	0.28	38.0	31.0

FS INC TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: FS INC

NO. OF OXIDES=39 NO. OF DATA CARDS= 8 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
53	78-408 a	51.45	13.84	13.76	4.55	8.12	2.89	1.34	2.89	0.62	0.24	543.	550.	37.0	46.9	0.800	4.40	14.0
53	78-408 b	51.45	13.84	13.76	4.55	8.12	2.89	1.34	2.89	0.62	0.24	528.	0.	39.4	47.4	1.000	4.60	0.0
53	78-411 a	51.41	13.13	14.62	4.52	8.11	2.57	1.33	2.98	0.62	0.26	548.	0.	38.8	44.7	1.000	4.40	0.0
53	78-411 b	51.41	13.13	14.62	4.52	8.11	2.57	1.33	2.98	0.62	0.26	520.	0.	37.8	44.6	0.900	4.70	0.0
53	72-321 a	51.76	13.48	14.41	4.39	7.84	2.65	1.23	3.06	0.57	0.21	585.	0.	38.4	45.4	0.812	3.96	0.0
53	72-321 b	51.76	13.48	14.41	4.39	7.84	2.65	1.23	3.06	0.57	0.21	559.	396.	38.5	43.2	1.100	3.90	12.0
53	72-296 a	51.40	13.28	14.41	4.23	8.14	2.82	1.51	3.12	0.64	0.18	518.	0.	40.2	22.5	0.926	4.71	0.0
53	72-296 b	51.40	13.28	14.41	4.23	8.14	2.82	1.51	3.12	0.64	0.18	594.	424.	40.2	21.3	0.900	4.70	13.0
	NO.POINTS	8	8	8	8	8	8	8	8	8	8	8	3	8	8	8	8	3
FS INC	AVERAGE	51.51	13.43	14.30	4.42	8.05	2.73	1.35	3.01	0.61	0.22	549.	457.	38.8	39.5	0.930	4.42	13.0

	STD.DEV.	0.16	0.28	0.35	0.14	0.13	0.14	0.11	0.09	0.03	0.03	29.	82.	1.1	10.9	0.101	0.33	1.0
	MAXIMUM	51.76	13.84	14.62	4.55	8.14	2.89	1.51	3.12	0.64	0.26	594.	550.	40.2	47.4	1.100	4.71	14.0
	MINIMUM	51.40	13.13	13.76	4.23	7.84	2.57	1.23	2.89	0.57	0.18	518.	396.	37.0	21.3	0.800	3.90	12.0
	DIFFERENCE	0.36	0.71	0.86	0.32	0.30	0.32	0.28	0.23	0.07	0.08	76.	154.	3.2	26.1	0.300	0.81	2.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
53	78-408 a	39.0	36.0	315.	0.92	4.00	0.800	41.0	138.	180.	184.	33.7	24.0	48.0	25.0	5.0	1.99	7.3
53	78-408 b	39.0	0.0	0.	0.89	4.20	1.000	0.0	148.	130.	0.	35.9	24.0	50.0	30.0	5.5	2.02	8.3
53	78-411 a	48.0	0.0	0.	1.06	4.10	0.900	0.0	149.	140.	0.	35.9	25.0	49.0	26.0	5.9	2.05	7.5
53	78-411 b	43.0	0.0	0.	0.91	4.10	0.700	0.0	138.	190.	0.	35.6	25.0	52.0	30.0	5.8	2.14	8.4
53	72-321 a	24.5	0.0	0.	0.88	3.21	0.000	0.0	214.	0.	0.	38.7	23.9	48.1	34.6	7.0	2.29	0.0
53	72-321 b	31.0	28.0	310.	0.76	3.10	0.000	40.0	191.	201.	170.	38.3	24.0	45.0	34.0	7.3	2.11	0.0
53	72-296 a	30.3	0.0	0.	1.17	3.93	0.000	0.0	204.	259.	0.	34.6	28.5	56.6	33.9	0.0	2.35	0.0
53	72-296 b	28.0	33.0	325.	1.23	4.40	0.000	43.0	193.	269.	200.	34.0	29.0	59.0	34.0	0.0	2.31	0.0
	NO.POINTS	8	3	3	8	8	4	3	8	7	3	8	8	8	8	6	8	4
FS INC	AVERAGE	35.4	32.3	317.	0.98	3.88	0.850	41.3	172.	196.	185.	35.8	25.4	51.0	30.9	6.1	2.16	7.9
	STD.DEV.	8.1	4.0	8.	0.16	0.47	0.129	1.5	32.	53.	15.	1.8	2.1	4.7	3.8	0.9	0.14	0.6
	MAXIMUM	48.0	36.0	325.	1.23	4.40	1.000	43.0	214.	269.	200.	38.7	29.0	59.0	34.6	7.3	2.35	8.4
	MINIMUM	24.5	28.0	310.	0.76	3.10	0.700	40.0	138.	130.	170.	33.7	23.9	45.0	25.0	5.0	1.99	7.3
	DIFFERENCE	23.5	8.0	15.	0.47	1.30	0.300	3.0	76.	139.	30.	5.0	5.1	14.0	9.6	2.3	0.36	1.1

	SAMPLE	Tb	Yb	Lu	Cu	Ni
53	78-408 a	0.99	3.60	0.51	32.0	45.0
53	78-408 b	1.17	3.70	0.54	0.0	0.0
53	78-411 a	1.06	3.90	0.57	0.0	0.0
53	78-411 b	1.03	3.70	0.56	0.0	0.0
53	72-321 a	1.33	3.15	0.63	48.0	48.0
53	72-321 b	1.38	3.10	0.65	0.0	0.0
53	72-296 a	1.34	3.57	0.60	26.0	25.0
53	72-296 b	1.37	3.40	0.64	0.0	0.0
	NO.POINTS	8	8	8	3	3
FS INC	AVERAGE	1.21	3.52	0.59	35.3	39.3
	STD.DEV.	0.17	0.28	0.05	11.4	12.5
	MAXIMUM	1.38	3.90	0.65	48.0	48.0
	MINIMUM	0.99	3.10	0.51	26.0	25.0
	DIFFERENCE	0.39	0.80	0.14	22.0	23.0

FS ANOM TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: FS ANOM

NO. OF OXIDES-39 NO. OF DATA CARDS= 4 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
55	73-278 a	52.83	13.47	11.76	4.32	8.58	2.88	1.44	3.49	0.67	0.20	989.	0.	39.5	18.6	1.050	5.08	0.0
55	73-278 b	52.83	13.47	11.76	4.32	8.58	2.88	1.44	3.49	0.67	0.20	994.	973.	38.9	20.0	1.200	5.10	15.0
55	72-073 a	52.52	14.40	10.56	4.26	8.77	2.84	1.32	3.55	0.74	0.25	626.	641.	68.8	29.6	0.759	5.24	20.0
55	72-073 b	52.52	14.40	10.56	4.26	8.77	2.84	1.32	3.55	0.74	0.25	638.	0.	64.5	29.5	0.800	4.90	0.0
	NO.POINTS	4	4	4	4	4	4	4	4	4	4	4	2	4	4	4	4	2
FS ANOM	AVERAGE	52.68	13.94	11.16	4.29	8.68	2.86	1.38	3.52	0.71	0.22	812.	807.	52.9	24.4	0.952	5.08	17.5
	STD.DEV.	0.18	0.54	0.69	0.03	0.11	0.02	0.07	0.03	0.04	0.03	208.	235.	15.9	5.9	0.209	0.14	3.5
	MAXIMUM	52.83	14.40	11.76	4.32	8.77	2.88	1.44	3.55	0.74	0.25	994.	973.	68.8	29.6	1.200	5.24	20.0
	MINIMUM	52.52	13.47	10.56	4.26	8.58	2.84	1.32	3.49	0.67	0.20	626.	641.	38.9	18.6	0.759	4.90	15.0
	DIFFERENCE	0.31	0.93	1.20	0.06	0.19	0.04	0.12	0.06	0.07	0.05	368.	332.	29.9	11.0	0.441	0.34	5.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
55	73-278 a	38.9	0.0	0.	1.07	4.98	1.840	0.0	241.	130.	0.	38.0	32.4	57.4	38.9	9.2	2.33	9.6

55	73-278 b	31.0	41.0	341.	1.20	5.20	1.300	58.0	209.	310.	218.	39.1	31.0	58.0	37.0	9.1	2.32	9 2
55	72-073 a	45.9	49.0	364.	1.26	5.07	1.590	58.0	217.	269.	220.	38.9	31.1	58.2	33.8	8.9	2.37	8.8
55	72-073 b	34.0	0.0	0.	1.33	4.40	1.500	0.0	196.	100.	0.	38.2	30.0	57.0	34.0	8.8	2.32	7.9
	NO.POINTS	4	2	2	4	4	4	2	4	4	2	4	4	4	4	4	4	4
FS ANOM	AVERAGE	37.5	45.0	353.	1.22	4.91	1.558	58.0	216.	202.	219.	38.6	31.1	57.7	35.9	9.0	2.34	8.9
	STD.DEV.	6.5	5.7	16.	0.11	0.35	0.224	0.0	19.	103.	1.	0.5	1.0	0.6	2.5	0.2	0.02	0.7
	MAXIMUM	45.9	49.0	364.	1.33	5.20	1.840	58.0	241.	310.	220.	39.1	32.4	58.2	38.9	9.2	2.37	9.6
	MINIMUM	31.0	41.0	341.	1.07	4.40	1.300	58.0	196.	100.	218.	38.0	30.0	57.0	33.8	8.8	2.32	7.9
	DIFFERENCE	14.9	8.0	23.	0.26	0.80	0.540	0.0	45.	210.	2.	1.1	2.4	1.2	5.1	0.4	0.05	1 7

	SAMPLE	Tb	Yb	Lu	Cu	Ni
55	73-278 a	1.37	4.77	0.90	0.0	0.0
55	73-278 b	1.39	4.80	0.73	22.0	36.0
55	72-073 a	1.42	4.55	0.86	37.0	57.0
55	72-073 b	1.37	4.40	0.64	0.0	0.0
	NO.POINTS	4	4	4	2	2
FS ANOM	AVERAGE	1.39	4.63	0.78	29.5	46.5
	STD.DEV.	0.02	0.19	0.12	10.6	14.8
	MAXIMUM	1.42	4.80	0.90	37.0	57.0
	MINIMUM	1.37	4.40	0.64	22.0	36.0
	DIFFERENCE	0.05	0.40	0.26	15.0	21.0

SHUMAKER TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: SHUMAKER

NO. OF OXIDES=39 NO. OF DATA CARDS= 6 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
56	72-273 a	54.49	13.62	13.24	3.05	6.26	3.46	1.93	2.54	0.86	0.16	998.	1022.	22.9	4.2	1.000	6.30	21 0
56	72-273 b	54.49	13.62	13.24	3.05	6.26	3.46	1.93	2.54	0.86	0.16	991.	0.	22.9	7.2	0.900	6.20	0.0
56	72-152 a	53.85	14.12	13.61	2.85	6.49	3.05	2.03	2.44	0.87	0.38	985.	0.	25.4	0.0	1.230	5.94	0.0
56	72-152 b	53.85	14.12	13.61	2.85	6.49	3.05	2.03	2.44	0.87	0.38	948.	972.	25.2	2.5	1.300	6.20	16 0
56	72-168 a	54.73	13.84	13.41	2.77	6.43	3.18	1.64	2.36	0.96	0.36	976.	1010.	23.5	3.6	0.800	6.20	21 0
56	72-168 b	54.73	13.84	13.41	2.77	6.43	3.18	1.64	2.36	0.96	0.36	1050.	0.	23.4	0.0	0.900	6.10	0 0
	NO.POINTS	6	6	6	6	6	6	6	6	6	6	6	3	6	4	6	6	3
SHUMAKER	AVERAGE	54.36	13.86	13.42	2.89	6.39	3.23	1.87	2.45	0.90	0.30	991.	1001.	23.9	4.4	1.022	6.16	19.3
	STD.DEV.	0.41	0.22	0.17	0.13	0.11	0.19	0.18	0.08	0.05	0.11	34.	26.	1.1	2.0	0.200	0.12	2.9
	MAXIMUM	54.73	14.12	13.61	3.05	6.49	3.46	2.03	2.54	0.96	0.38	1050.	1022.	25.4	7.2	1.300	6.30	21.0
	MINIMUM	53.85	13.62	13.24	2.77	6.26	3.05	1.64	2.36	0.86	0.16	948.	972.	22.9	2.5	0.800	5.94	16.0
	DIFFERENCE	0.88	0.50	0.37	0.28	0.23	0.41	0.39	0.18	0.10	0.22	102.	50.	2.5	4.7	0.500	0.36	5.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
56	72-273 a	28.0	46.0	342.	1.52	5.50	1.400	53.0	157.	310.	259.	34.4	37.0	73.0	48.0	10.2	3.28	9.5
56	72-273 b	51.0	0.0	0.	1.30	5.40	1.800	0.0	185.	430.	0.	34.0	36.0	76.0	44.0	11.3	3.23	10.2
56	72-152 a	35.9	0.0	0.	1.11	5.02	1.400	0.0	145.	277.	0.	32.0	33.3	70.0	44.9	10.6	3.16	10.3
56	72-152 b	43.0	43.0	314.	1.16	5.20	0.000	54.0	160.	280.	245.	32.5	36.0	72.0	43.0	0.0	3.15	10.0
56	72-168 a	18.0	39.0	349.	1.40	5.30	1.800	58.0	164.	-720.	263.	33.5	37.0	83.0	44.0	11.6	3.32	11.0
56	72-168 b	37.0	0.0	0.	1.49	5.20	1.900	0.0	179.	240.	0.	34.0	37.0	77.0	44.0	11.6	3.31	9.8
	NO.POINTS	6	3	3	6	6	5	3	6	5	3	6	6	6	6	5	6	6
SHUMAKER	AVERAGE	35.5	42.7	335.	1.33	5.27	1.660	55.0	165.	307.	256.	33.4	36.0	75.2	44.7	11.1	3.24	10.1
	STD.DEV.	11.5	3.5	19.	0.17	0.17	0.241	2.6	15.	73.	9.	0.9	1.4	4.6	1.7	0.6	0.07	0.5
	MAXIMUM	51.0	46.0	349.	1.52	5.50	1.900	58.0	185.	430.	263.	34.4	37.0	83.0	48.0	11.6	3.32	11.0
	MINIMUM	18.0	39.0	314.	1.11	5.02	1.400	53.0	145.	240.	245.	32.0	33.3	70.0	43.0	10.2	3.15	9.5
	DIFFERENCE	33.0	7.0	35.	0.41	0.48	0.500	5.0	40.	190.	18.	2.4	3.7	13.0	5.0	1.4	0.17	1.5

	SAMPLE	Tb	Yb	Lu	Cu	Ni
56	72-273 a	1.59	5.60	0.86	32.0	2.0
56	72-273 b	1.85	5.70	0.82	0.0	0.0
56	72-152 a	1.51	5.12	0.97	0.0	0.0
56	72-152 b	1.63	5.60	0.86	0.0	0.0
56	72-168 a	1.44	5.70	0.86	27.0	3.0
56	72-168 b	-2.20	5.60	0.80	0.0	0.0
	NO.POINTS	5	6	6	2	2
SHUMAKER	AVERAGE	1.60	5.55	0.86	29.5	2.5
	STD.DEV.	0.16	0.22	0.06	3.5	0.7
	MAXIMUM	1.85	5.70	0.97	32.0	3.0
	MINIMUM	1.44	5.12	0.80	27.0	2.0
	DIFFERENCE	0.41	0.58	0.17	5.0	1.0

PH SHUM TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: PH SHUM

NO. OF OXIDES-39 NO. OF DATA CARDS- 2 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
57	PH78091a	54.29	14.38	13.46	2.97	6.55	3.41	1.81	2.47	0.89	0.26	988.	0.	-29.8	4.9	0.819	6.25	0.0
57	PH78091b	54.29	14.38	13.46	2.97	6.55	3.41	1.81	2.47	0.89	0.26	1060.	972.	-29.8	0.0	0.900	6.40	24.0
	NO.POINTS	2	2	2	2	2	2	2	2	2	2	2	1	0	1	2	2	1
PH SHUM	AVERAGE	54.29	14.38	13.46	2.97	6.55	3.41	1.81	2.47	0.89	0.26	1024.	972.	0.0	4.9	0.859	6.33	24.0
	STD.DEV.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.	0.	0.0	0.0	0.057	0.11	0.0
	MAXIMUM	54.29	14.38	13.46	2.97	6.55	3.41	1.81	2.47	0.89	0.26	1060.	972.	0.0	4.9	0.900	6.40	24.0
	MINIMUM	54.29	14.38	13.46	2.97	6.55	3.41	1.81	2.47	0.89	0.26	988.	972.	0.0	4.9	0.819	6.25	24.0
	DIFFERENCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	72.	0.	0.0	0.0	0.081	0.15	0.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
57	PH78091a	29.9	0.0	0.	1.29	5.43	1.200	0.0	156.	219.	0.	33.8	36.3	78.4	48.9	11.2	3.31	10.6
57	PH78091b	42.0	44.0	308.	1.29	5.60	1.700	52.0	150.	290.	260.	33.4	35.0	77.0	45.0	11.1	3.25	10.4
	NO.POINTS	2	1	1	2	2	2	1	2	2	1	2	2	2	2	2	2	2
PH SHUM	AVERAGE	36.0	44.0	308.	1.29	5.51	1.450	52.0	153.	255.	260.	33.6	35.7	77.7	47.0	11.2	3.28	10.5
	STD.DEV.	8.6	0.0	0.	0.00	0.12	0.354	0.0	4.	50.	0.	0.3	0.9	1.0	2.8	0.1	0.04	0.1
	MAXIMUM	42.0	44.0	308.	1.29	5.60	1.700	52.0	156.	290.	260.	33.8	36.3	78.4	48.9	11.2	3.31	10.6
	MINIMUM	29.9	44.0	308.	1.29	5.43	1.200	52.0	150.	219.	260.	33.4	35.0	77.0	45.0	11.1	3.25	10.4
	DIFFERENCE	12.1	0.0	0.	0.00	0.17	0.500	0.0	6.	71.	0.	0.4	1.3	1.4	3.9	0.1	0.06	0.2

	SAMPLE	Tb	Yb	Lu	Cu	Ni
57	PH78091a	1.65	5.62	0.84	0.0	0.0
57	PH78091b	1.69	-4.50	0.97	0.0	0.0
	NO.POINTS	2	1	2	0	0
PH SHUM	AVERAGE	1.67	5.62	0.91	0.0	0.0
	STD.DEV.	0.03	0.00	0.09	0.0	0.0
	MAXIMUM	1.69	5.62	0.97	0.0	0.0
	MINIMUM	1.65	5.62	0.84	0.0	0.0
	DIFFERENCE	0.04	0.00	0.13	0.0	0.0

SW LOOK TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: SW LOOK

NO. OF OXIDES-39 NO. OF DATA CARDS- 4 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K20	TIO2	P205	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
58	78-384 a	54.17	14.56	13.27	3.00	6.67	3.01	2.02	2.73	0.73	0.20	713.	793.	-34.4	6.6	1.330	5.66	18.0
58	78-384 b	54.17	14.56	13.27	3.00	6.67	3.01	2.02	2.73	0.73	0.20	825.	0.	-34.0	6.9	1.100	5.70	0.0
58	77-321 a	54.79	14.75	13.28	2.81	6.41	3.08	1.90	2.68	0.77	0.24	771.	0.	-29.0	0.0	1.310	5.67	0.0
58	77-321 b	54.79	14.75	13.28	2.81	6.41	3.08	1.90	2.68	0.77	0.24	740.	729.	-26.5	0.0	1.100	5.50	19.0
	NO.POINTS	4	4	4	4	4	4	4	4	4	4	4	2	0	2	4	4	2
SW LOOK	AVERAGE	54.48	14.66	13.28	2.90	6.54	3.05	1.96	2.71	0.75	0.22	762.	761.	0.0	6.8	1.210	5.63	18.5
	STD.DEV.	0.36	0.11	0.01	0.11	0.15	0.04	0.07	0.03	0.02	0.02	48.	45.	0.0	0.2	0.127	0.09	0.7
	MAXIMUM	54.79	14.75	13.28	3.00	6.67	3.08	2.02	2.73	0.77	0.24	825.	793.	0.0	6.9	1.330	5.70	19.0
	MINIMUM	54.17	14.56	13.27	2.81	6.41	3.01	1.90	2.68	0.73	0.20	713.	729.	0.0	6.8	1.100	5.50	18.0
	DIFFERENCE	0.62	0.19	0.01	0.19	0.26	0.07	0.12	0.05	0.04	0.04	112.	64.	0.0	0.3	0.230	0.20	1.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
58	78-384 a	44.9	51.0	331.	1.35	5.55	1.480	48.0	153.	209.	229.	32.4	30.9	67.4	37.5	8.8	2.49	8.7
58	78-384 b	43.0	0.0	0.	1.35	5.50	1.400	0.0	144.	240.	0.	31.4	29.0	65.0	39.0	9.2	2.49	8.4
58	77-321 a	27.9	0.0	0.	1.23	5.64	1.550	0.0	141.	269.	0.	29.8	0.0	63.3	36.9	8.8	2.52	8.6
58	77-321 b	31.0	47.0	330.	1.23	5.20	1.800	49.0	125.	0.	240.	28.9	30.0	62.0	40.0	9.1	2.41	9.2
	NO.POINTS	4	2	2	4	4	4	2	4	3	2	4	3	4	4	4	4	4
SW LOOK	AVERAGE	36.7	49.0	331.	1.29	5.47	1.558	48.5	141.	239.	235.	30.6	30.0	64.4	38.4	9.0	2.48	8.7
	STD.DEV.	8.5	2.8	1.	0.07	0.19	0.173	0.7	12.	30.	8.	1.6	1.0	2.3	1.4	0.2	0.05	0.3
	MAXIMUM	44.9	51.0	331.	1.35	5.64	1.800	49.0	153.	269.	240.	32.4	30.9	67.4	40.0	9.2	2.52	9.2
	MINIMUM	27.9	47.0	330.	1.23	5.20	1.400	48.0	125.	209.	229.	28.9	29.0	62.0	36.9	8.8	2.41	8.4
	DIFFERENCE	17.0	4.0	1.	0.12	0.44	0.400	1.0	28.	60.	11.	3.5	1.9	5.4	3.1	0.4	0.11	0 8

	SAMPLE	Tb	Yb	Lu	Cu	Ni
58	78-384 a	1.34	4.80	0.70	15.0	1.0
58	78-384 b	1.66	4.30	0.84	0.0	0.0
58	77-321 a	1.25	4.80	0.00	0.0	0.0
58	77-321 b	1.18	4.70	0.80	0.0	0.0
	NO.POINTS	4	4	3	1	1
SW LOOK	AVERAGE	1.36	4.65	0.78	15.0	1.0
	STD.DEV.	0.21	0.24	0.07	0.0	0.0
	MAXIMUM	1.66	4.80	0.84	15.0	1.0
	MINIMUM	1.18	4.30	0.70	15.0	1.0
	DIFFERENCE	0.48	0.50	0.14	0.0	0.0

DODGE TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: DODGE

NO. OF OXIDES-39 NO. OF DATA CARDS= 12 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K20	TIO2	P205	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
59	73-315 a	52.20	15.29	10.14	6.22	10.14	2.96	0.79	1.43	0.38	0.20	326.	350.	36.9	181.0	-.009	2.70	9.0
59	73-315 b	52.20	15.29	10.14	6.22	10.14	2.96	0.79	1.43	0.38	0.20	311.	0.	36.6	188.0	-.009	2.80	0.0
59	71-066 c	52.11	15.07	10.81	6.19	9.91	2.79	0.73	1.44	0.33	0.19	310.	0.	37.4	173.0	-.009	2.90	0.0
59	71-066 d	52.11	15.07	10.81	6.19	9.91	2.79	0.73	1.44	0.33	0.19	354.	253.	36.8	170.0	-.009	3.00	0.0
59	71-066 a	52.11	15.07	10.81	6.19	9.91	2.79	0.73	1.44	0.33	0.19	284.	0.	38.2	173.9	-.009	2.83	0.0
59	71-066 b	52.11	15.07	10.81	6.19	9.91	2.79	0.73	1.44	0.33	0.19	353.	0.	37.9	163.6	-.009	2.80	0.0
59	73-296 a	52.14	15.59	10.57	5.99	9.64	3.10	0.63	1.45	0.36	0.15	336.	361.	34.8	158.0	-.009	2.80	10.0
59	73-296 b	52.14	15.59	10.57	5.99	9.64	3.10	0.63	1.45	0.36	0.15	319.	0.	35.9	160.0	-.009	2.80	0.0
59	73-067 a	51.76	16.39	11.53	5.60	9.31	2.70	0.33	1.24	0.34	0.09	290.	293.	36.0	166.0	-.009	2.40	7.0
59	73-067 b	51.76	16.39	11.53	5.60	9.31	2.70	0.33	1.24	0.34	0.09	287.	0.	36.8	173.0	-.009	2.60	0.0
59	72-279 a	52.57	15.03	10.52	5.15	10.28	3.03	0.86	1.72	0.39	0.08	500.	0.	38.8	106.0	-.009	3.37	0.0
59	72-279 b	52.57	15.03	10.52	5.15	10.28	3.03	0.86	1.72	0.39	0.08	501.	379.	37.1	104.0	0.500	3.30	0.0
	NO.POINTS	12	12	12	12	12	12	12	12	12	12	12	5	12	12	1	12	3

DODGE	AVERAGE	52.15	15.41	10.73	5.89	9.86	2.90	0.68	1.45	0.36	0.15	348.	327.	36.9	159.7	0.500	2.86	8.7
	STD.DEV.	0.25	0.50	0.44	0.41	0.33	0.15	0.18	0.15	0.02	0.05	75.	52.	1.1	26.9	0.000	0.27	1.5
	MAXIMUM	52.57	16.39	11.53	6.22	10.28	3.10	0.86	1.72	0.39	0.20	501.	379.	38.8	188.0	0.500	3.37	10.0
	MINIMUM	51.76	15.03	10.14	5.15	9.31	2.70	0.33	1.24	0.33	0.08	284.	253.	34.8	104.0	0.500	2.40	7.0
	DIFFERENCE	0.81	1.36	1.39	1.07	0.97	0.40	0.53	0.48	0.06	0.12	217.	126.	4.0	84.0	0.000	0.97	3.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
59	73-315 a	17.0	13.0	377.	0.58	1.20	-.009	28.0	124.	100.	115.	42.4	14.0	29.0	19.0	3.3	1.29	4.8
59	73-315 b	16.0	0.0	0.	0.60	1.00	-.009	0.0	119.	120.	0.	42.2	14.0	32.0	15.0	3.5	1.37	6.5
59	71-066 c	0.0	0.0	0.	0.40	1.30	-.009	0.0	113.	0.	0.	41.6	15.0	33.0	17.0	3.6	1.33	5.3
59	71-066 d	20.0	19.0	420.	0.55	1.30	-.009	36.0	114.	110.	124.	40.8	16.0	34.0	21.0	3.9	1.44	6.7
59	71-066 a	0.0	0.0	0.	0.56	1.23	0.000	0.0	131.	0.	0.	41.0	16.9	36.9	31.1	5.2	1.66	0.0
59	71-066 b	0.0	0.0	0.	0.57	1.20	0.000	0.0	125.	0.	0.	39.6	16.0	36.0	20.0	5.5	1.53	0.0
59	73-296 a	0.0	15.0	382.	0.48	1.10	-.009	29.0	111.	120.	125.	38.8	15.0	30.0	18.0	3.3	1.32	4.8
59	73-296 b	0.0	0.0	0.	0.49	1.20	-.009	0.0	109.	86.	0.	39.8	15.0	31.0	31.0	3.6	1.40	4.0
59	73-067 a	0.0	13.0	377.	0.51	1.00	-.009	25.0	109.	150.	115.	35.7	13.0	27.0	13.0	3.3	1.25	4.4
59	73-067 b	18.0	0.0	0.	0.39	1.00	-.009	0.0	105.	200.	0.	37.0	13.0	28.0	17.0	3.4	1.33	3.1
59	72-279 a	8.0	0.0	0.	0.48	1.20	0.549	0.0	155.	0.	0.	41.4	18.0	36.0	25.0	5.6	1.49	5.4
59	72-279 b	16.0	8.0	430.	0.56	1.20	0.500	37.0	160.	200.	140.	40.3	17.0	35.0	23.0	5.6	1.51	4.8
	NO.POINTS	6	5	5	12	12	2	5	12	8	5	12	12	12	12	12	12	10
DODGE	AVERAGE	15.8	13.6	397.	0.51	1.16	0.525	31.0	123.	136.	124.	40.0	15.2	32.3	20.8	4.2	1.41	5.0
	STD.DEV.	4.1	4.0	26.	0.07	0.11	0.035	5.2	18.	44.	10.	2.0	1.6	3.4	5.8	1.0	0.12	1.1
	MAXIMUM	20.0	19.0	430.	0.60	1.30	0.549	37.0	160.	200.	140.	42.4	18.0	36.9	31.1	5.6	1.66	6.7
	MINIMUM	8.0	8.0	377.	0.39	1.00	0.500	25.0	105.	86.	115.	35.7	13.0	27.0	13.0	3.3	1.25	3.1
	DIFFERENCE	12.0	11.0	53.	0.21	0.30	0.049	12.0	55.	114.	25.	6.7	5.0	9.9	18.1	2.3	0.41	3.6

	SAMPLE	Tb	Yb	Lu	Cu	Ni
59	73-315 a	0.76	3.20	0.47	100.0	40.0
59	73-315 b	0.80	3.20	0.45	0.0	0.0
59	71-066 c	0.76	3.30	0.48	0.0	0.0
59	71-066 d	0.74	3.20	0.47	0.0	0.0
59	71-066 a	0.79	2.62	0.51	0.0	0.0
59	71-066 b	1.03	2.50	0.52	0.0	0.0
59	73-296 a	0.70	3.10	0.46	97.0	44.0
59	73-296 b	0.92	3.30	0.49	0.0	0.0
59	73-067 a	0.70	2.80	0.38	120.0	44.0
59	73-067 b	0.67	2.90	0.40	0.0	0.0
59	72-279 a	0.99	3.43	-0.98	0.0	0.0
59	72-279 b	0.83	3.40	0.51	0.0	0.0
	NO.POINTS	12	12	11	3	3
DODGE	AVERAGE	0.81	3.08	0.47	105.7	42.7
	STD.DEV.	0.12	0.31	0.04	12.5	2.3
	MAXIMUM	1.03	3.43	0.52	120.0	44.0
	MINIMUM	0.67	2.50	0.38	97.0	40.0
	DIFFERENCE	0.36	0.93	0.14	23.0	4.0

ROBIN TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: ROBIN

NO. OF OXIDES=39 NO. OF DATA CARDS= 5 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
61	73-322 a	49.17	16.93	10.18	8.26	11.00	2.65	0.22	1.02	0.18	0.14	160.	159.	47.6	151.0	-.009	1.50	6.0
61	73-322 b	49.17	16.93	10.18	8.26	11.00	2.65	0.22	1.02	0.18	0.14	140.	0.	46.9	151.0	-.009	1.50	0.0
61	72-120 a	50.68	15.86	9.87	8.24	11.22	2.37	0.21	0.92	0.19	0.12	210.	142.	43.8	143.0	-.009	1.50	0.0
61	72-104 a	49.94	17.08	10.20	8.09	10.40	2.22	0.61	0.95	0.15	0.14	208.	0.	47.0	154.4	-.009	1.52	0.0
61	72-104 b	49.94	17.08	10.20	8.09	10.40	2.22	0.61	0.95	0.15	0.14	157.	104.	47.8	157.4	-.009	1.40	0.0

	NO.POINTS	5	5	5	5	5	5	5	5	5	5	5	3	5	5	0	5	1
ROBIN	AVERAGE	49.78	16.78	10.13	8.19	10.80	2.42	0.37	0.97	0.17	0.14	175.	135.	46.6	151.4	0.000	1.48	6 0
	STD.DEV.	0.63	0.52	0.14	0.09	0.38	0.22	0.22	0.05	0.02	0.01	32.	28.	1.6	5.4	0.000	0.05	0.0
	MAXIMUM	50.68	17.08	10.20	8.26	11.22	2.65	0.61	1.02	0.19	0.14	210.	159.	47.8	157.4	0.000	1.52	6.0
	MINIMUM	49.17	15.86	9.87	8.09	10.40	2.22	0.21	0.92	0.15	0.12	140.	104.	43.8	143.0	0.000	1.40	6.0
	DIFFERENCE	1.51	1.22	0.33	0.17	0.82	0.43	0.40	0.10	0.04	0.02	70.	55.	4.0	14.4	0.000	0.12	0.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
61	73-322 a	0.0	0.0	350.	0.27	0.10	-.009	20.0	108.	110.	67.	37.1	7.0	16.0	14.0	2.2	0.94	3.4
61	73-322 b	0.0	0.0	0.	0.35	0.40	-.009	0.0	96.	82.	0.	37.0	7.0	17.0	11.0	2.2	0.94	3.8
61	72-120 a	0.0	0.0	360.	0.00	0.50	0.000	21.0	132.	0.	67.	35.7	8.0	15.0	12.0	2.9	1.02	3.6
61	72-104 a	0.0	0.0	0.	0.00	0.33	0.000	0.0	116.	0.	0.	36.8	7.8	15.7	16.9	3.0	1.08	0.0
61	72-104 b	0.0	0.0	350.	0.00	0.50	0.000	20.0	110.	0.	70.	36.8	8.0	18.0	10.0	3.2	1.04	0.0
	NO.POINTS	0	0	3	2	5	0	3	5	2	3	5	5	5	5	5	5	3
ROBIN	AVERAGE	0.0	0.0	353.	0.31	0.37	0.000	20.3	112.	96.	68.	36.7	7.6	16.3	12.8	2.7	1.00	3.6
	STD.DEV.	0.0	0.0	6.	0.06	0.17	0.000	0.6	13.	20.	2.	0.6	0.5	1.2	2.7	0.5	0.06	0.2
	MAXIMUM	0.0	0.0	360.	0.35	0.50	0.000	21.0	132.	110.	70.	37.1	8.0	18.0	16.9	3.2	1.08	3.8
	MINIMUM	0.0	0.0	350.	0.27	0.10	0.000	20.0	96.	82.	67.	35.7	7.0	15.0	10.0	2.2	0.94	3.4
	DIFFERENCE	0.0	0.0	10.	0.08	0.40	0.000	1.0	36.	28.	3.	1.4	1.0	3.0	6.9	1.0	0.14	0.4

	SAMPLE	Tb	Yb	Lu	Cu	Ni
61	73-322 a	0.65	2.40	0.31	88.0	91.0
61	73-322 b	0.54	2.30	0.33	0.0	0.0
61	72-120 a	0.00	2.20	0.34	74.0	130.0
61	72-104 a	0.61	1.72	0.39	74.0	130.0
61	72-104 b	0.71	1.90	0.40	0.0	0.0
	NO.POINTS	4	5	5	3	3
ROBIN	AVERAGE	0.63	2.10	0.35	78.7	117.0
	STD.DEV.	0.07	0.28	0.04	8.1	22.5
	MAXIMUM	0.71	2.40	0.40	88.0	130.0
	MINIMUM	0.54	1.72	0.31	74.0	91.0
	DIFFERENCE	0.17	0.68	0.09	14.0	39.0

Table 2. Analyses used to compute the average chemical composition of geochemical units defined for the Saddle Mountains Basalt

LM TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: LM

NO. OF OXIDES=39 NO. OF DATA CARDS= 4 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K20	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
01	73-361 a	50.34	13.99	13.72	4.91	8.71	2.65	1.45	2.93	0.70	0.21	488.	585.	41.6	21.1	1.700	4.70	25.0
01	73-361 b	50.34	13.99	13.72	4.91	8.71	2.65	1.45	2.93	0.70	0.21	560.	390.	41.4	25.0	1.000	4.60	22.0
01	72-145 a	49.68	14.25	14.59	4.82	8.49	2.71	1.41	2.91	0.58	0.19	532.	594.	41.1	23.8	1.000	4.40	30.0
01	72-145 b	49.68	14.25	14.59	4.82	8.49	2.71	1.41	2.91	0.58	0.19	584.	0.	42.1	26.0	-.009	4.80	0.0
	NO.POINTS	4	4	4	4	4	4	4	4	4	4	4	3	4	4	3	4	3
LM	AVERAGE	50.01	14.12	14.16	4.87	8.60	2.68	1.43	2.92	0.64	0.20	541.	523.	41.5	24.0	1.233	4.63	25.7
	STD.DEV.	0.38	0.15	0.50	0.05	0.13	0.03	0.02	0.01	0.07	0.01	41.	115.	0.4	2.1	0.404	0.17	4.0
	MAXIMUM	50.34	14.25	14.59	4.91	8.71	2.71	1.45	2.93	0.70	0.21	584.	594.	42.1	26.0	1.700	4.80	30.0
	MINIMUM	49.68	13.99	13.72	4.82	8.49	2.65	1.41	2.91	0.58	0.19	488.	390.	41.1	21.1	1.000	4.40	22.0
	DIFFERENCE	0.66	0.26	0.87	0.09	0.22	0.06	0.04	0.02	0.12	0.02	96.	204.	1.0	4.9	0.700	0.40	8.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
01	73-361 a	7.0	39.0	356.	1.85	5.50	1.400	40.0	137.	350.	190.	22.6	35.0	67.0	35.0	7.2	2.12	8.7
01	73-361 b	26.0	29.0	329.	1.58	4.30	1.300	29.0	158.	0.	186.	22.6	36.0	69.0	38.0	7.4	2.10	8.9
01	72-145 a	10.0	38.0	365.	1.75	5.20	1.500	37.0	137.	0.	192.	22.1	34.0	65.0	29.0	6.3	2.01	7.7
01	72-145 b	29.0	0.0	0.	1.55	4.90	1.300	0.0	156.	0.	0.	23.1	36.0	70.0	34.0	7.3	2.17	7.3
	NO.POINTS	4	3	3	4	4	4	3	4	1	3	4	4	4	4	4	4	4
LM	AVERAGE	18.0	35.3	350.	1.68	4.98	1.375	35.3	147.	350.	189.	22.6	35.3	67.8	34.0	7.1	2.10	8.2
	STD.DEV.	11.1	5.5	19.	0.14	0.51	0.096	5.7	12.	0.	3.	0.4	1.0	2.2	3.7	0.5	0.07	0.8
	MAXIMUM	29.0	39.0	365.	1.85	5.50	1.500	40.0	158.	350.	192.	23.1	36.0	70.0	38.0	7.4	2.17	8.9
	MINIMUM	7.0	29.0	329.	1.55	4.30	1.300	29.0	137.	350.	186.	22.1	34.0	65.0	29.0	6.3	2.01	7.3
	DIFFERENCE	22.0	10.0	36.	0.30	1.20	0.200	11.0	21.	0.	6.	1.0	2.0	5.0	9.0	1.1	0.16	1 6

	SAMPLE	Tb	Yb	Lu	Cu	Ni
01	73-361 a	1.33	3.10	0.47	20.0	39.0
01	73-361 b	-0.84	3.20	0.46	0.0	0.0
01	72-145 a	1.19	3.00	0.41	15.0	18.0
01	72-145 b	1.50	3.20	0.48	0.0	0.0
	NO.POINTS	3	4	4	2	2
LM	AVERAGE	1.34	3.13	0.46	17.5	28.5
	STD.DEV.	0.16	0.10	0.03	3.5	14.8
	MAXIMUM	1.50	3.20	0.48	20.0	39.0
	MINIMUM	1.19	3.00	0.41	15.0	18.0
	DIFFERENCE	0.31	0.20	0.07	5.0	21.0

GOOSE TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: GOOSE

NO. OF OXIDES=39 NO. OF DATA CARDS= 10 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K20	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
02	71-104 a	47.70	12.25	17.36	4.56	8.78	2.33	1.22	3.75	1.52	0.27	800.	0.	37.6	47.6	-.009	10.73	0.0
02	71-104 b	47.70	12.25	17.36	4.56	8.78	2.33	1.22	3.75	1.52	0.27	837.	0.	37.6	51.4	-.009	10.60	0.0
02	71-104 c	47.70	12.25	17.36	4.56	8.78	2.33	1.22	3.75	1.52	0.27	829.	0.	37.5	40.9	0.500	11.10	0.0
02	71-104 d	47.70	12.25	17.36	4.56	8.78	2.33	1.22	3.75	1.52	0.27	838.	0.	38.1	43.6	0.400	11.30	0.0
02	73-114 a	47.83	12.58	17.16	4.54	8.63	2.37	1.13	3.92	1.34	0.25	809.	775.	39.7	39.6	0.600	10.30	61.0
02	73-114 b	47.83	12.58	17.16	4.54	8.63	2.37	1.13	3.92	1.34	0.25	824.	0.	38.4	39.0	0.300	10.00	0.0
02	75-035 a	47.23	12.32	17.45	4.41	8.81	2.53	1.24	3.78	1.70	0.28	876.	885.	38.0	41.5	-.009	10.72	36.0
02	75-035 b	47.23	12.32	17.45	4.41	8.81	2.53	1.24	3.78	1.70	0.28	844.	0.	36.9	38.6	-.009	10.20	0.0

02	75-035 c	47.23	12.32	17.45	4.41	8.81	2.53	1.24	3.78	1.70	0.28	916.	0.	38.9	37.1	-.009	11.50	0.0
02	75-035 d	47.23	12.32	17.45	4.41	8.81	2.53	1.24	3.78	1.70	0.28	951.	0.	37.8	33.8	-.009	10.90	0.0
	NO.POINTS	10	10	10	10	10	10	10	10	10	10	10	2	10	10	4	10	2
GOOSE	AVERAGE	47.54	12.34	17.36	4.50	8.76	2.42	1.21	3.80	1.56	0.27	852.	830.	38.0	41.3	0.450	10.73	48.5
	STD.DEV.	0.27	0.13	0.11	0.07	0.07	0.10	0.04	0.07	0.14	0.01	48.	78.	0.8	5.1	0.129	0.48	17.7
	MAXIMUM	47.83	12.58	17.45	4.56	8.81	2.53	1.24	3.92	1.70	0.28	951.	885.	39.7	51.4	0.600	11.50	61.0
	MINIMUM	47.23	12.25	17.16	4.41	8.63	2.33	1.13	3.75	1.34	0.25	800.	775.	36.9	33.8	0.300	10.00	36.0
	DIFFERENCE	0.60	0.33	0.29	0.15	0.18	0.20	0.11	0.17	0.36	0.03	151.	110.	2.8	17.6	0.300	1.50	25.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
02	71-104 a	-18.1	0.0	0.	2.90	4.31	0.000	0.0	271.	573.	0.	36.6	78.9	154.5	92.0	21.6	5.69	0.0
02	71-104 b	25.0	0.0	0.	3.23	4.50	0.000	0.0	-390.	494.	0.	36.6	77.0	159.0	76.0	0.0	5.70	0.0
02	71-104 c	28.0	0.0	0.	2.97	4.30	0.800	0.0	219.	472.	0.	37.6	72.0	148.0	79.0	15.5	5.38	17.9
02	71-104 d	37.0	0.0	0.	3.19	4.60	0.900	0.0	227.	539.	0.	37.5	75.0	148.0	92.0	19.3	5.26	20.1
02	73-114 a	25.0	21.0	220.	2.73	4.00	1.400	85.0	206.	467.	425.	37.0	68.0	140.0	86.0	16.0	5.10	18.3
02	73-114 b	27.0	0.0	0.	2.93	3.90	1.000	0.0	205.	414.	0.	36.1	67.0	134.0	84.0	16.3	4.81	15.6
02	75-035 a	0.0	24.0	219.	3.24	4.19	0.000	94.0	229.	462.	447.	38.9	78.5	156.0	85.6	21.2	5.80	0.0
02	75-035 b	26.0	0.0	0.	3.00	4.60	0.000	0.0	234.	490.	0.	38.7	74.0	149.0	84.0	20.8	5.51	0.0
02	75-035 c	37.0	0.0	0.	3.19	4.60	1.100	0.0	228.	570.	0.	38.8	76.0	155.0	98.0	18.9	5.43	21.0
02	75-035 d	36.0	0.0	0.	3.31	4.40	1.500	0.0	218.	538.	0.	37.2	75.0	146.0	92.0	18.7	5.38	17.3
	NO.POINTS	8	2	2	10	10	6	2	9	10	2	10	10	10	10	9	10	6
GOOSE	AVERAGE	30.1	22.5	220.	3.07	4.34	1.117	89.5	226.	502.	436.	37.5	74.1	148.9	86.9	18.7	5.41	18.4
	STD.DEV.	5.5	2.1	1.	0.19	0.25	0.279	6.4	20.	52.	16.	1.0	4.1	7.7	6.7	2.3	0.30	1.9
	MAXIMUM	37.0	24.0	220.	3.31	4.60	1.500	94.0	271.	573.	447.	38.9	78.9	159.0	98.0	21.6	5.80	21.0
	MINIMUM	25.0	21.0	219.	2.73	3.90	0.800	85.0	205.	414.	425.	36.1	67.0	134.0	76.0	15.5	4.81	15.6
	DIFFERENCE	12.0	3.0	1.	0.58	0.70	0.700	9.0	66.	159.	22.	2.8	11.9	25.0	22.0	6.1	0.99	5.4

	SAMPLE	Tb	Yb	Lu	Cu	Ni
02	71-104 a	3.34	8.49	1.38	0.0	0.0
02	71-104 b	3.38	8.60	1.42	0.0	0.0
02	71-104 c	2.12	8.90	1.26	28.0	11.0
02	71-104 d	2.18	9.40	1.41	0.0	0.0
02	73-114 a	2.01	9.10	1.25	0.0	0.0
02	73-114 b	2.09	8.60	1.23	0.0	0.0
02	75-035 a	3.31	9.20	1.40	26.0	8.5
02	75-035 b	3.45	9.30	1.38	0.0	0.0
02	75-035 c	2.30	9.70	1.37	0.0	0.0
02	75-035 d	2.38	9.50	1.40	0.0	0.0
	NO.POINTS	10	10	10	2	2
GOOSE	AVERAGE	2.66	9.08	1.35	27.0	9.8
	STD.DEV.	0.62	0.42	0.07	1.4	1.8
	MAXIMUM	3.45	9.70	1.42	28.0	11.0
	MINIMUM	2.01	8.49	1.23	26.0	8.5
	DIFFERENCE	1.44	1.21	0.19	2.0	2.5

13

INDIAN TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: INDIAN

NO. OF OXIDES=39 NO. OF DATA CARDS= 6 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
03	73-060 a	49.82	14.48	13.55	5.57	8.66	2.23	1.11	3.24	0.88	0.23	662.	0.	41.8	119.0	0.400	6.80	0.0
03	73-060 b	49.82	14.48	13.55	5.57	8.66	2.23	1.11	3.24	0.88	0.23	678.	0.	42.5	120.0	0.600	6.80	0.0
03	75-036 a	48.85	13.40	14.77	5.32	9.36	2.50	0.94	3.48	0.82	0.23	703.	687.	41.4	113.9	-.009	6.55	29.0
03	75-036 b	48.85	13.40	14.77	5.32	9.36	2.50	0.94	3.48	0.82	0.23	735.	0.	40.1	114.9	-.009	6.50	0.0
03	75-036 c	48.85	13.40	14.77	5.32	9.36	2.50	0.94	3.48	0.82	0.23	692.	0.	41.9	120.0	-.009	6.90	0.0
03	75-036 d	48.85	13.40	14.77	5.32	9.36	2.50	0.94	3.48	0.82	0.23	733.	0.	41.8	117.0	-.009	6.90	0.0

	NO.POINTS	6	6	6	6	6	6	6	6	6	6	6	1	6	6	2	6	1
INDIAN	AVERAGE	49.17	13.76	14.36	5.40	9.13	2.41	1.00	3.40	0.84	0.23	701.	687.	41.6	117.5	0.500	6.74	29.0
	STD.DEV.	0.50	0.56	0.63	0.13	0.36	0.14	0.09	0.12	0.03	0.00	29.	0.	0.8	2.6	0.141	0.17	0.0
	MAXIMUM	49.82	14.48	14.77	5.57	9.36	2.50	1.11	3.48	0.88	0.23	735.	687.	42.5	120.0	0.600	6.90	29.0
	MINIMUM	48.85	13.40	13.55	5.32	8.66	2.23	0.94	3.24	0.82	0.23	662.	687.	40.1	113.9	0.400	6.50	29.0
	DIFFERENCE	0.97	1.08	1.22	0.25	0.70	0.27	0.17	0.24	0.06	0.00	73.	0.	2.4	6.1	0.200	0.40	0.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
03	73-060 a	34.0	0.0	0.	1.81	3.70	1.000	0.0	165.	250.	0.	37.5	45.0	86.0	60.0	10.1	3.08	10.3
03	73-060 b	35.0	0.0	0.	2.01	3.70	0.900	0.0	166.	320.	0.	37.2	44.0	85.0	56.0	10.9	3.05	9.3
03	75-036 a	19.6	16.0	233.	1.78	3.40	0.000	52.0	185.	297.	273.	38.7	49.9	99.1	44.8	12.9	3.57	0.0
03	75-036 b	0.0	0.0	0.	2.05	3.50	0.000	0.0	194.	287.	0.	40.2	48.0	96.0	55.0	12.1	3.21	0.0
03	75-036 c	29.0	0.0	0.	1.83	3.40	0.900	0.0	164.	280.	0.	38.8	44.0	90.0	51.0	9.4	3.30	10.6
03	75-036 d	24.0	0.0	0.	2.04	3.50	0.800	0.0	163.	350.	0.	38.3	45.0	89.0	53.0	10.4	3.14	10.1
	NO.POINTS	5	1	1	6	6	4	1	6	6	1	6	6	6	6	6	6	4
INDIAN	AVERAGE	28.3	16.0	233.	1.92	3.53	0.900	52.0	173.	297.	273.	38.5	46.0	90.9	53.3	11.0	3.22	10.1
	STD.DEV.	6.6	0.0	0.	0.13	0.14	0.082	0.0	13.	34.	0.	1.1	2.4	5.6	5.2	1.3	0.19	0.6
	MAXIMUM	35.0	16.0	233.	2.05	3.70	1.000	52.0	194.	350.	273.	40.2	49.9	99.1	60.0	12.9	3.57	10.6
	MINIMUM	19.6	16.0	233.	1.78	3.40	0.800	52.0	163.	250.	273.	37.2	44.0	85.0	44.8	9.4	3.05	9.3
	DIFFERENCE	15.4	0.0	0.	0.27	0.30	0.200	0.0	31.	100.	0.	3.0	5.9	14.1	15.2	3.5	0.52	1.3

	SAMPLE	Tb	Yb	Lu	Cu	Ni
03	73-060 a	1.16	5.60	0.81	0.0	0.0
03	73-060 b	1.23	5.50	0.81	0.0	0.0
03	75-036 a	-1.93	5.40	0.86	39.0	13.0
03	75-036 b	-1.88	5.60	0.85	0.0	0.0
03	75-036 c	1.16	5.60	0.78	0.0	0.0
03	75-036 d	1.27	5.60	0.80	0.0	0.0
	NO.POINTS	4	6	6	1	1
INDIAN	AVERAGE	1.21	5.55	0.82	39.0	13.0
	STD.DEV.	0.05	0.08	0.03	0.0	0.0
	MAXIMUM	1.27	5.60	0.86	39.0	13.0
	MINIMUM	1.16	5.40	0.78	39.0	13.0
	DIFFERENCE	0.11	0.20	0.08	0.0	0.0

MARTIN TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: MARTIN

NO. OF OXIDES-39 NO. OF DATA CARDS- 10 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
04	71-114 a	48.06	13.76	14.45	6.17	9.79	2.33	0.90	3.34	0.79	0.20	505.	626.	43.9	204.8	-.009	5.82	18.0
04	71-114 b	48.06	13.76	14.45	6.17	9.79	2.33	0.90	3.34	0.79	0.20	0.	0.	40.1	181.0	-.009	5.80	0.0
04	71-114 c	48.06	13.76	14.45	6.17	9.79	2.33	0.90	3.34	0.79	0.20	495.	0.	43.1	188.0	-.009	5.90	0.0
04	71-114 d	48.06	13.76	14.45	6.17	9.79	2.33	0.90	3.34	0.79	0.20	572.	0.	45.8	198.0	-.009	6.30	0.0
04	71-088 a	48.81	13.68	14.42	5.82	9.80	2.25	0.72	3.27	0.78	0.28	551.	515.	43.6	207.0	-.009	5.70	19.0
04	71-088 b	48.81	13.68	14.42	5.82	9.80	2.25	0.72	3.27	0.78	0.28	631.	0.	43.6	197.0	-.009	5.90	0.0
04	73-085 a	48.80	13.90	14.30	5.78	10.01	2.44	0.43	3.25	0.71	0.18	532.	511.	43.1	190.0	-.009	5.90	28.0
04	73-085 b	48.80	13.90	14.30	5.78	10.01	2.44	0.43	3.25	0.71	0.18	597.	0.	43.4	196.0	-.009	5.90	0.0
04	72-262 a	49.18	13.36	14.40	5.41	9.99	2.45	0.73	3.37	0.63	0.18	889.	795.	41.7	196.0	-.009	5.80	20.0
04	72-262 b	49.18	13.36	14.40	5.41	9.99	2.45	0.73	3.37	0.63	0.18	972.	0.	42.5	191.0	-.009	6.00	0.0
	NO.POINTS	10	10	10	10	10	10	10	10	10	10	9	4	10	10	0	10	4
MARTIN	AVERAGE	48.58	13.69	14.40	5.87	9.88	2.36	0.74	3.31	0.74	0.21	638.	612.	43.1	194.9	0.000	5.90	21.3
	STD.DEV.	0.47	0.19	0.06	0.30	0.11	0.08	0.18	0.05	0.07	0.04	172.	133.	1.5	7.8	0.000	0.16	4.6
	MAXIMUM	49.18	13.90	14.45	6.17	10.01	2.45	0.90	3.37	0.79	0.28	972.	795.	45.8	207.0	0.000	6.30	28.0

	MINIMUM	48.06	13.36	14.30	5.41	9.79	2.25	0.43	3.25	0.63	0.18	495.	511.	40.1	181.0	0.000	5.70	18.0
	DIFFERENCE	1.12	0.54	0.15	0.76	0.22	0.20	0.47	0.12	0.16	0.10	477.	284.	5.7	26.0	0.000	0.60	10.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
04	71-114 a	0.0	12.0	230.	1.56	2.11	0.000	49.0	-223.	354.	247.	39.3	-41.7	-84.6	-55.0	-10.8	-3.13	0.0
04	71-114 b	0.0	0.0	0.	1.45	2.20	0.000	0.0	154.	301.	0.	36.9	0.0	-75.0	-60.0	0.0	-2.93	0.0
04	71-114 c	24.0	0.0	0.	1.61	2.20	-.009	0.0	163.	330.	0.	39.0	38.0	74.0	44.0	8.8	2.83	8.3
04	71-114 d	27.0	0.0	0.	1.92	2.20	-.009	0.0	167.	230.	0.	41.3	38.0	78.0	47.0	10.1	3.02	9.8
04	71-088 a	18.0	9.0	231.	1.62	1.90	0.600	44.0	153.	280.	247.	39.4	36.0	72.0	44.0	8.5	2.73	8.5
04	71-088 b	20.0	0.0	0.	1.70	2.00	-.009	0.0	157.	230.	0.	39.3	36.0	72.0	50.0	9.5	2.79	9.5
04	73-085 a	0.0	10.0	238.	1.60	2.20	-.009	44.0	165.	260.	222.	38.9	36.0	73.0	57.0	8.5	2.77	9.5
04	73-085 b	23.0	0.0	0.	1.81	2.10	-.009	0.0	159.	250.	0.	39.1	37.0	73.0	47.0	9.6	2.89	9.3
04	72-262 a	14.0	9.0	242.	1.57	2.00	0.700	43.0	164.	440.	236.	39.6	36.0	73.0	43.0	8.6	2.74	8.3
04	72-262 b	18.0	0.0	0.	1.71	2.10	-.009	0.0	171.	360.	0.	39.7	37.0	74.0	46.0	9.2	2.82	9.1
	NO.POINTS	7	4	4	10	10	2	4	9	10	4	10	8	8	8	8	8	8
MARTIN	AVERAGE	20.6	10.0	235.	1.66	2.10	0.650	45.0	161.	304.	238.	39.3	36.8	73.6	47.3	9.1	2.82	9.0
	STD.DEV.	4.4	1.4	6.	0.13	0.11	0.071	2.7	6.	68.	12.	1.1	0.9	1.9	4.5	0.6	0.09	0.6
	MAXIMUM	27.0	12.0	242.	1.92	2.20	0.700	49.0	171.	440.	247.	41.3	38.0	78.0	57.0	10.1	3.02	9.8
	MINIMUM	14.0	9.0	230.	1.45	1.90	0.600	43.0	153.	230.	222.	36.9	36.0	72.0	43.0	8.5	2.73	8.3
	DIFFERENCE	13.0	3.0	12.	0.47	0.30	0.100	6.0	18.	210.	25.	4.4	2.0	6.0	14.0	1.6	0.29	1.5

	SAMPLE	Tb	Yb	Lu	Cu	Ni
04	71-114 a	-1.78	-4.38	-0.78	33.0	34.0
04	71-114 b	-1.71	-3.60	-0.67	0.0	0.0
04	71-114 c	1.07	5.10	0.73	0.0	0.0
04	71-114 d	1.25	5.00	0.74	0.0	0.0
04	71-088 a	1.02	5.10	0.72	0.0	0.0
04	71-088 b	1.10	4.90	0.77	0.0	0.0
04	73-085 a	1.04	5.00	0.70	0.0	0.0
04	73-085 b	1.18	5.00	0.77	0.0	0.0
04	72-262 a	1.09	5.00	0.71	0.0	0.0
04	72-262 b	1.13	5.00	0.74	0.0	0.0
	NO.POINTS	8	8	8	1	1
MARTIN	AVERAGE	1.11	5.01	0.74	33.0	34.0
	STD.DEV.	0.08	0.06	0.03	0.0	0.0
	MAXIMUM	1.25	5.10	0.77	33.0	34.0
	MINIMUM	1.02	4.90	0.70	33.0	34.0
	DIFFERENCE	0.23	0.20	0.07	0.0	0.0

5

BASIN TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: BASIN

NO. OF OXIDES-39 NO. OF DATA CARDS- 10 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
05	73-144 a	47.78	14.08	14.45	6.47	9.35	2.16	0.70	3.49	0.91	0.26	557.	0.	46.1	152.0	-.009	6.40	0.0
05	73-144 b	47.78	14.08	14.45	6.47	9.35	2.16	0.70	3.49	0.91	0.26	636.	0.	47.5	158.0	-.009	6.60	0.0
05	72-264 a	46.99	13.48	15.30	6.04	9.75	2.42	0.86	3.82	0.74	0.20	600.	597.	44.9	143.0	-.009	6.50	22.0
05	72-264 b	46.99	13.48	15.30	6.04	9.75	2.42	0.86	3.82	0.74	0.20	596.	0.	45.7	142.0	-.009	6.70	0.0
05	75-046 a	47.04	13.32	15.58	5.97	9.75	2.34	0.82	3.80	0.89	0.25	581.	620.	45.3	150.5	-.009	6.65	29.0
05	75-046 b	47.04	13.32	15.58	5.97	9.75	2.34	0.82	3.80	0.89	0.25	614.	0.	44.7	146.1	-.009	6.40	0.0
05	75-046 c	47.04	13.32	15.58	5.97	9.75	2.34	0.82	3.80	0.89	0.25	565.	0.	46.3	149.0	-.009	6.80	0.0
05	75-046 d	47.04	13.32	15.58	5.97	9.75	2.34	0.82	3.80	0.89	0.25	661.	0.	47.8	148.0	-.009	7.00	0.0
05	73-146 a	47.90	14.48	14.01	5.69	10.00	2.07	0.71	3.52	0.92	0.23	662.	591.	48.8	150.0	-.009	6.40	20.0
05	73-146 b	47.90	14.48	14.01	5.69	10.00	2.07	0.71	3.52	0.92	0.23	635.	0.	47.4	149.0	-.009	6.40	0.0
	NO.POINTS	10	10	10	10	10	10	10	10	10	10	10	3	10	10	0	10	3
BASIN	AVERAGE	47.35	13.74	14.98	6.03	9.72	2.27	0.78	3.69	0.87	0.24	611.	603.	46.5	148.8	0.000	6.59	23.7

	STD.DEV.	0.42	0.49	0.67	0.27	0.22	0.14	0.07	0.16	0.07	0.02	37.	15.	1.4	4.6	0.000	0.21	4.7
	MAXIMUM	47.90	14.48	15.58	6.47	10.00	2.42	0.86	3.82	0.92	0.26	662.	620.	48.8	158.0	0.000	7.00	29.0
	MINIMUM	46.99	13.32	14.01	5.69	9.35	2.07	0.70	3.49	0.74	0.20	557.	591.	44.7	142.0	0.000	6.40	20.0
	DIFFERENCE	0.91	1.16	1.57	0.78	0.65	0.35	0.16	0.33	0.18	0.06	105.	29.	4.1	16.0	0.000	0.60	9.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
05	73-144 a	0.0	0.0	0.	1.71	2.20	-.009	0.0	166.	370.	0.	37.8	42.0	82.0	58.0	9.9	3.24	8.1
05	73-144 b	0.0	0.0	0.	1.98	2.30	0.900	0.0	165.	260.	0.	37.9	42.0	83.0	50.0	10.5	3.24	9.9
05	72-264 a	18.0	11.0	226.	1.81	2.30	0.600	52.0	174.	290.	272.	38.7	42.0	83.0	50.0	9.7	3.19	9.9
05	72-264 b	18.0	0.0	0.	1.98	2.20	-.009	0.0	177.	260.	0.	38.7	42.0	82.0	54.0	10.6	3.19	9.3
05	75-046 a	0.0	8.0	220.	2.00	2.30	0.000	51.0	198.	267.	288.	40.9	46.4	92.8	55.6	13.0	3.52	0.0
05	75-046 b	0.0	0.0	0.	1.95	2.00	0.000	0.0	192.	245.	0.	40.3	46.0	89.0	52.0	12.7	3.55	0.0
05	75-046 c	23.0	0.0	0.	1.97	2.10	-.009	0.0	174.	390.	0.	39.7	42.0	87.0	57.0	9.5	3.30	9.8
05	75-046 d	18.0	0.0	0.	2.01	2.20	-.009	0.0	175.	220.	0.	40.3	44.0	90.0	57.0	10.8	3.39	10.6
05	73-146 a	22.0	11.0	236.	1.75	2.10	-.009	54.0	180.	290.	258.	38.4	41.0	85.0	52.0	9.8	3.26	10.2
05	73-146 b	20.0	0.0	0.	1.95	2.20	-.009	0.0	172.	340.	0.	37.4	42.0	82.0	51.0	10.2	3.21	9.4
	NO.POINTS	6	3	3	10	10	2	3	10	10	3	10	10	10	10	10	10	8
BASIN	AVERAGE	19.8	10.0	227.	1.91	2.19	0.750	52.3	177.	293.	273.	39.0	42.9	85.6	53.7	10.7	3.31	9.7
	STD.DEV.	2.2	1.7	8.	0.11	0.10	0.212	1.5	10.	56.	15.	1.2	1.9	3.9	3.1	1.2	0.13	0.8
	MAXIMUM	23.0	11.0	236.	2.01	2.30	0.900	54.0	198.	390.	288.	40.9	46.4	92.8	58.0	13.0	3.55	10.6
	MINIMUM	18.0	8.0	220.	1.71	2.00	0.600	51.0	165.	220.	258.	37.4	41.0	82.0	50.0	9.5	3.19	8.1
	DIFFERENCE	5.0	3.0	16.	0.30	0.30	0.300	3.0	33.	170.	30.	3.5	5.4	10.8	8.0	3.5	0.36	2.5

	SAMPLE	Tb	Yb	Lu	Cu	Ni
05	73-144 a	1.16	5.60	0.86	0.0	0.0
05	73-144 b	1.25	5.60	0.86	0.0	0.0
05	72-264 a	1.16	5.70	0.80	0.0	0.0
05	72-264 b	1.25	5.50	0.81	0.0	0.0
05	75-046 a	-2.00	5.40	0.85	46.0	42.0
05	75-046 b	-2.17	5.90	0.86	0.0	0.0
05	75-046 c	1.20	5.60	0.81	0.0	0.0
05	75-046 d	1.40	5.90	0.81	0.0	0.0
05	73-146 a	1.24	5.60	0.76	0.0	0.0
05	73-146 b	1.23	5.60	0.80	0.0	0.0
	NO.POINTS	8	10	10	1	1
BASIN	AVERAGE	1.24	5.64	0.82	46.0	42.0
	STD.DEV.	0.08	0.16	0.03	0.0	0.0
	MAXIMUM	1.40	5.90	0.86	46.0	42.0
	MINIMUM	1.16	5.40	0.76	46.0	42.0
	DIFFERENCE	0.24	0.50	0.10	0.0	0.0

16

BUFORD TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: BUFORD

NO. OF OXIDES-39 NO. OF DATA CARDS= 4 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
06	76-255 a	53.71	14.33	11.28	5.01	8.49	2.71	1.40	2.20	0.38	0.14	470.	496.	38.3	44.0	1.000	5.40	20.0
06	76-255 b	53.71	14.33	11.28	5.01	8.49	2.71	1.40	2.20	0.38	0.14	388.	378.	39.0	46.0	-.009	5.00	18.0
06	76-273 a	53.93	14.01	11.39	4.94	8.44	2.82	1.41	2.22	0.38	0.15	400.	458.	39.4	43.3	-.009	5.30	26.0
06	76-273 b	53.93	14.01	11.39	4.94	8.44	2.82	1.41	2.22	0.38	0.15	442.	0.	39.9	44.5	0.700	5.50	0.0
	NO.POINTS	4	4	4	4	4	4	4	4	4	4	4	3	4	4	2	4	3
BUFORD	AVERAGE	53.82	14.17	11.34	4.98	8.47	2.76	1.40	2.21	0.38	0.15	425.	444.	39.2	44.5	0.850	5.30	21.3
	STD.DEV.	0.13	0.18	0.06	0.04	0.03	0.06	0.01	0.01	0.00	0.01	38.	60.	0.7	1.1	0.212	0.22	4.8
	MAXIMUM	53.93	14.33	11.39	5.01	8.49	2.82	1.41	2.22	0.38	0.15	470.	496.	39.9	46.0	1.000	5.50	26.0
	MINIMUM	53.71	14.01	11.28	4.94	8.44	2.71	1.40	2.20	0.38	0.14	388.	378.	38.3	43.3	0.700	5.00	18.0
	DIFFERENCE	0.22	0.32	0.11	0.07	0.05	0.11	0.01	0.02	0.00	0.01	82.	118.	1.6	2.7	0.300	0.50	8.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
06	76-255 a	24.0	40.0	245.	1.50	7.00	1.600	45.0	114.	0.	226.	30.9	32.0	64.0	31.0	7.8	1.79	6.1
06	76-255 b	45.0	38.0	218.	1.45	6.90	1.800	35.0	143.	0.	190.	31.7	34.0	66.0	34.0	7.1	1.84	6.8
06	76-273 a	33.0	52.0	228.	1.55	7.30	1.600	52.0	124.	0.	233.	30.7	0.0	61.0	34.0	6.5	1.82	7.1
06	76-273 b	40.0	0.0	0.	1.60	7.20	1.800	0.0	136.	0.	0.	31.3	33.0	61.0	35.0	7.7	1.86	7.7
	NO.POINTS	4	3	3	4	4	4	3	4	0	3	4	3	4	4	4	4	4
BUFORD	AVERAGE	35.5	43.3	230.	1.52	7.10	1.700	44.0	129.	0.	216.	31.2	33.0	63.0	33.5	7.3	1.83	6.9
	STD.DEV.	9.1	7.6	14.	0.06	0.18	0.115	8.5	13.	0.	23.	0.4	1.0	2.4	1.7	0.6	0.03	0.7
	MAXIMUM	45.0	52.0	245.	1.60	7.30	1.800	52.0	143.	0.	233.	31.7	34.0	66.0	35.0	7.8	1.86	7.7
	MINIMUM	24.0	38.0	218.	1.45	6.90	1.600	35.0	114.	0.	190.	30.7	32.0	61.0	31.0	6.5	1.79	6.1
	DIFFERENCE	21.0	14.0	27.	0.15	0.40	0.200	17.0	29.	0.	43.	1.0	2.0	5.0	4.0	1.3	0.07	1.6

	SAMPLE	Tb	Yb	Lu	Cu	Ni
06	76-255 a	1.20	3.70	0.56	29.0	40.0
06	76-255 b	1.70	4.10	0.56	0.0	0.0
06	76-273 a	1.54	3.80	0.56	36.0	41.0
06	76-273 b	1.20	4.00	0.58	0.0	0.0
	NO.POINTS	4	4	4	2	2
BUFORD	AVERAGE	1.41	3.90	0.56	32.5	40.5
	STD.DEV.	0.25	0.18	0.01	4.9	0.7
	MAXIMUM	1.70	4.10	0.58	36.0	41.0
	MINIMUM	1.20	3.70	0.56	29.0	40.0
	DIFFERENCE	0.50	0.40	0.02	7.0	1.0

ELEPHANT TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: ELEPHANT

NO. OF OXIDES=39 NO. OF DATA CARDS= 6 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
08	71-007 a	50.88	13.08	15.13	4.50	8.48	2.25	1.12	3.68	0.57	0.25	436.	316.	46.7	18.0	0.789	5.97	24 0
08	71-007 b	50.88	13.08	15.13	4.50	8.48	2.25	1.12	3.68	0.57	0.25	423.	0.	44.9	17.6	0.600	5.80	0.0
08	71-107 a	51.02	13.54	14.49	4.04	8.36	2.63	1.31	3.64	0.62	0.20	508.	0.	44.3	21.0	-.009	6.70	0.0
08	71-107 b	51.02	13.54	14.49	4.04	8.36	2.63	1.31	3.64	0.62	0.20	493.	324.	45.3	18.8	0.800	7.10	25.0
08	71-017 a	51.66	13.17	14.70	3.98	8.17	2.45	1.33	3.47	0.62	0.25	506.	0.	44.1	18.5	-.009	6.40	0.0
08	71-017 b	51.66	13.17	14.70	3.98	8.17	2.45	1.33	3.47	0.62	0.25	541.	0.	44.8	17.1	0.600	6.50	0.0
	NO.POINTS	6	6	6	6	6	6	6	6	6	6	6	2	6	6	4	6	2
ELEPHANT	AVERAGE	51.19	13.26	14.77	4.17	8.34	2.44	1.25	3.60	0.60	0.23	485.	320.	45.0	18.5	0.697	6.41	24.5
	STD.DEV.	0.37	0.22	0.29	0.25	0.14	0.17	0.10	0.10	0.03	0.03	46.	6.	0.9	1.4	0.112	0.48	0.7
	MAXIMUM	51.66	13.54	15.13	4.50	8.48	2.63	1.33	3.68	0.62	0.25	541.	324.	46.7	21.0	0.800	7.10	25.0
	MINIMUM	50.88	13.08	14.49	3.98	8.17	2.25	1.12	3.47	0.57	0.20	423.	316.	44.1	17.1	0.600	5.80	24.0
	DIFFERENCE	0.78	0.46	0.64	0.52	0.31	0.38	0.21	0.21	0.05	0.05	118.	8.	2.6	3.9	0.200	1.30	1.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
08	71-007 a	0.0	19.0	219.	1.78	5.37	1.550	40.0	204.	250.	240.	33.3	32.2	61.4	35.9	8.5	2.27	8.3
08	71-007 b	30.0	0.0	0.	1.56	5.30	1.600	0.0	192.	260.	0.	32.0	30.0	56.0	32.0	9.4	2.18	7.2
08	71-107 a	22.0	0.0	210.	1.98	6.50	1.400	0.0	163.	0.	0.	31.8	34.0	74.0	35.0	9.6	2.47	8.2
08	71-107 b	31.0	29.0	210.	1.72	6.00	1.500	44.0	185.	370.	218.	32.3	36.0	74.0	41.0	9.3	2.74	10.2
08	71-017 a	27.0	0.0	0.	1.64	6.20	0.900	0.0	148.	200.	0.	30.2	34.0	78.0	33.0	9.6	2.45	9.9
08	71-017 b	28.0	0.0	0.	1.75	6.10	1.600	0.0	179.	500.	0.	30.7	36.0	69.0	35.0	9.9	2.53	8.4
	NO.POINTS	5	2	3	6	6	6	2	6	5	2	6	6	6	6	6	6	6
ELEPHANT	AVERAGE	27.6	24.0	213.	1.74	5.91	1.425	42.0	179.	316.	229.	31.7	33.7	68.7	35.3	9.4	2.44	8.7
	STD.DEV.	3.5	7.1	5.	0.14	0.48	0.268	2.8	20.	120.	16.	1.1	2.3	8.5	3.1	0.5	0.20	1.1

	MAXIMUM	31.0	29.0	219.	1.98	6.50	1.600	44.0	204.	500.	240.	33.3	36.0	78.0	41.0	9.9	2.74	10.2
	MINIMUM	22.0	19.0	210.	1.56	5.30	0.900	40.0	148.	200.	218.	30.2	30.0	56.0	32.0	8.5	2.18	7.2
	DIFFERENCE	9.0	10.0	9.	0.42	1.20	0.700	4.0	56.	300.	22.	3.1	6.0	22.0	9.0	1.4	0.56	3.0

	SAMPLE	Tb	Yb	Lu	Cu	Ni
08	71-007 a	1.53	4.30	-0.85	26.0	30.0
08	71-007 b	1.35	4.10	0.63	0.0	0.0
08	71-107 a	1.25	4.70	0.66	35.0	15.0
08	71-107 b	1.50	5.00	0.67	0.0	0.0
08	71-017 a	1.00	4.60	0.68	58.0	47.0
08	71-017 b	1.68	4.80	0.68	0.0	0.0
	NO.POINTS	6	6	5	3	3
ELEPHANT	AVERAGE	1.39	4.58	0.66	39.7	30.7
	STD.DEV.	0.24	0.33	0.02	16.5	16.0
	MAXIMUM	1.68	5.00	0.68	58.0	47.0
	MINIMUM	1.00	4.10	0.63	26.0	15.0
	DIFFERENCE	0.68	0.90	0.05	32.0	32.0

POMONA TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: POMONA

NO. OF OXIDES-39 NO. OF DATA CARDS- 4 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K20	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
25	71-106 a	51.74	15.00	10.31	7.45	10.46	2.21	0.67	1.61	0.22	0.16	0.	0.	44.9	110.0	-.009	3.40	0.0
25	71-106 b	51.74	15.00	10.31	7.45	10.46	2.21	0.67	1.61	0.22	0.16	220.	163.	44.9	112.0	-.009	3.10	12.0
25	72-143 a	52.13	15.04	10.56	6.91	10.30	2.24	0.63	1.63	0.26	0.19	260.	0.	42.2	103.0	0.900	3.20	0.0
25	72-143 b	52.13	15.04	10.56	6.91	10.30	2.24	0.63	1.63	0.26	0.19	250.	183.	41.9	111.0	-.009	3.20	14.0
	NO.POINTS	4	4	4	4	4	4	4	4	4	4	3	2	4	4	1	4	2
POMONA	AVERAGE	51.94	15.02	10.44	7.18	10.38	2.23	0.65	1.62	0.24	0.17	243.	173.	43.5	109.0	0.900	3.22	13.0
	STD.DEV.	0.23	0.02	0.14	0.31	0.09	0.02	0.02	0.01	0.02	0.02	21.	14.	1.7	4.1	0.000	0.13	1.4
	MAXIMUM	52.13	15.04	10.56	7.45	10.46	2.24	0.67	1.63	0.26	0.19	260.	183.	44.9	112.0	0.900	3.40	14.0
	MINIMUM	51.74	15.00	10.31	6.91	10.30	2.21	0.63	1.61	0.22	0.16	220.	163.	41.9	103.0	0.900	3.10	12.0
	DIFFERENCE	0.39	0.04	0.25	0.54	0.16	0.03	0.04	0.02	0.04	0.03	40.	20.	3.0	9.0	0.000	0.30	2.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
25	71-106 a	0.0	0.0	0.	0.87	2.50	0.800	0.0	108.	0.	0.	35.6	17.0	37.0	18.0	4.5	1.38	6.4
25	71-106 b	0.0	19.0	229.	0.76	2.30	0.700	30.0	135.	0.	134.	35.0	17.0	34.0	21.0	4.6	1.41	4.3
25	72-143 a	10.0	0.0	0.	0.84	2.70	0.800	0.0	107.	0.	0.	33.3	17.0	35.0	24.0	4.9	1.39	4.8
25	72-143 b	0.0	17.0	225.	0.80	2.70	0.000	23.0	122.	0.	139.	33.7	17.0	35.0	19.0	4.8	1.45	4.3
	NO.POINTS	1	2	2	4	4	3	2	4	0	2	4	4	4	4	4	4	4
POMONA	AVERAGE	10.0	18.0	227.	0.82	2.55	0.767	26.5	118.	0.	137.	34.4	17.0	35.3	20.5	4.7	1.41	5.0
	STD.DEV.	0.0	1.4	3.	0.05	0.19	0.058	4.9	13.	0.	4.	1.1	0.0	1.3	2.6	0.2	0.03	1.0
	MAXIMUM	10.0	19.0	229.	0.87	2.70	0.800	30.0	135.	0.	139.	35.6	17.0	37.0	24.0	4.9	1.45	6.4
	MINIMUM	10.0	17.0	225.	0.76	2.30	0.700	23.0	107.	0.	134.	33.3	17.0	34.0	18.0	4.5	1.38	4.3
	DIFFERENCE	0.0	2.0	4.	0.11	0.40	0.100	7.0	28.	0.	5.	2.3	0.0	3.0	6.0	0.4	0.07	2.1

	SAMPLE	Tb	Yb	Lu	Cu	Ni
25	71-106 a	0.86	2.80	0.39	79.0	51.0
25	71-106 b	0.50	2.70	0.39	62.0	48.0
25	72-143 a	0.60	2.70	0.39	48.0	55.0
25	72-143 b	0.74	2.70	0.39	0.0	0.0
	NO.POINTS	4	4	4	3	3
POMONA	AVERAGE	0.68	2.72	0.39	63.0	51.3
	STD.DEV.	0.16	0.05	0.00	15.5	3.5

MAXIMUM	0.86	2.80	0.39	79.0	55.0
MINIMUM	0.50	2.70	0.39	48.0	48.0
DIFFERENCE	0.36	0.10	0.00	31.0	7.0

VC WEIPE TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: VC WEIPE

NO. OF OXIDES=39 NO. OF DATA CARDS= 4 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
27	VC78277a	52.12	15.30	10.66	6.59	10.53	2.52	0.48	1.82	0.29	0.19	250.	0.	-57.2	56.5	-.009	3.24	0.0
27	VC78277b	52.12	15.30	10.66	6.59	10.53	2.52	0.48	1.82	0.29	0.19	280.	172.	-53.9	51.9	-.009	3.10	12.0
27	VC78302a	51.32	15.29	11.85	6.39	10.24	2.53	0.50	1.84	0.28	0.19	347.	357.	-56.0	49.8	-.009	3.26	13.0
27	VC78302b	51.32	15.29	11.85	6.39	10.24	2.53	0.50	1.84	0.28	0.19	0.	0.	-56.8	49.1	-.009	3.50	0.0
	NO.POINTS	4	4	4	4	4	4	4	4	4	4	3	2	0	4	0	4	2
VC WEIPE	AVERAGE	51.72	15.30	11.26	6.49	10.39	2.53	0.49	1.83	0.28	0.19	292.	265.	0.0	51.8	0.000	3.28	12.5
	STD.DEV.	0.46	0.01	0.69	0.12	0.17	0.01	0.01	0.01	0.01	0.00	50.	131.	0.0	3.3	0.000	0.17	0.7
	MAXIMUM	52.12	15.30	11.85	6.59	10.53	2.53	0.50	1.84	0.29	0.19	347.	357.	0.0	56.5	0.000	3.50	13.0
	MINIMUM	51.32	15.29	10.66	6.39	10.24	2.52	0.48	1.82	0.28	0.19	250.	172.	0.0	49.1	0.000	3.10	12.0
	DIFFERENCE	0.80	0.01	1.19	0.20	0.29	0.01	0.02	0.02	0.01	0.00	97.	185.	0.0	7.4	0.000	0.40	1.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
27	VC78277a	9.0	0.0	0.	0.83	2.40	0.439	0.0	102.	0.	0.	36.5	17.0	34.5	18.9	4.9	1.48	5.3
27	VC78277b	0.0	13.0	235.	0.83	2.50	0.000	27.0	100.	150.	139.	33.7	16.0	32.0	23.0	4.9	1.39	4.6
27	VC78302a	0.0	40.0	234.	0.79	2.57	0.499	28.0	100.	0.	141.	36.3	18.2	36.1	20.5	5.1	1.51	5.2
27	VC78302b	0.0	0.0	0.	0.79	2.40	0.000	0.0	106.	190.	0.	36.8	17.0	39.0	22.0	5.1	1.51	5.1
	NO.POINTS	1	2	2	4	4	2	2	4	2	2	4	4	4	4	4	4	4
VC WEIPE	AVERAGE	9.0	26.5	235.	0.81	2.47	0.469	27.5	102.	170.	140.	35.8	17.1	35.4	21.1	5.0	1.47	5.1
	STD.DEV.	0.0	19.1	1.	0.02	0.08	0.042	0.7	3.	28.	1.	1.4	0.9	2.9	1.8	0.1	0.06	0.3
	MAXIMUM	9.0	40.0	235.	0.83	2.57	0.499	28.0	106.	190.	141.	36.8	18.2	39.0	23.0	5.1	1.51	5.3
	MINIMUM	9.0	13.0	234.	0.79	2.40	0.439	27.0	100.	150.	139.	33.7	16.0	32.0	18.9	4.9	1.39	4.6
	DIFFERENCE	0.0	27.0	1.	0.04	0.17	0.060	1.0	6.	40.	2.	3.1	2.2	7.0	4.1	0.2	0.12	0.7

	SAMPLE	Tb	Yb	Lu	Cu	Ni
27	VC78277a	0.89	2.66	0.38	0.0	0.0
27	VC78277b	0.76	2.60	0.40	0.0	0.0
27	VC78302a	0.73	2.87	0.39	0.0	0.0
27	VC78302b	0.88	2.50	0.58	0.0	0.0
	NO.POINTS	4	4	4	0	0
VC WEIPE	AVERAGE	0.82	2.66	0.44	0.0	0.0
	STD.DEV.	0.08	0.16	0.10	0.0	0.0
	MAXIMUM	0.89	2.87	0.58	0.0	0.0
	MINIMUM	0.73	2.50	0.38	0.0	0.0
	DIFFERENCE	0.16	0.37	0.20	0.0	0.0

ESQUAT TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: ESQUAT

NO. OF OXIDES=39 NO. OF DATA CARDS= 6 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
28	73-019 a	54.02	13.50	12.88	4.09	7.15	2.56	1.84	3.07	0.47	0.20	580.	629.	42.8	9.3	1.400	5.90	22.0
28	73-019 b	54.02	13.50	12.88	4.09	7.15	2.56	1.84	3.07	0.47	0.20	591.	605.	42.1	7.5	0.900	5.50	23.0
28	73-151 a	54.02	14.12	12.63	3.99	7.26	2.56	1.64	2.86	0.45	0.20	564.	673.	40.0	19.9	0.800	5.50	23.0
28	73-151 b	54.02	14.12	12.63	3.99	7.26	2.56	1.64	2.86	0.45	0.20	610.	0.	39.4	15.4	0.900	5.40	0.0

28	71-090 a	54.37	13.83	12.36	3.82	7.73	2.58	1.65	2.79	0.40	0.25	567.	0.	39.4	27.7	0.800	5.30	0.0
28	71-090 b	54.37	13.83	12.36	3.82	7.73	2.58	1.65	2.79	0.40	0.25	641.	402.	40.3	33.8	1.100	5.80	19.0
	NO.POINTS	6	6	6	6	6	6	6	6	6	6	6	4	6	6	6	6	4
ESQUAT	AVERAGE	54.14	13.82	12.62	3.97	7.38	2.57	1.71	2.91	0.44	0.22	592.	577.	40.7	18.9	0.983	5.57	21.8
	STD.DEV.	0.18	0.28	0.23	0.12	0.28	0.01	0.10	0.13	0.03	0.03	29.	120.	1.4	10.3	0.232	0.23	1.9
	MAXIMUM	54.37	14.12	12.88	4.09	7.73	2.58	1.84	3.07	0.47	0.25	641.	673.	42.8	33.8	1.400	5.90	23.0
	MINIMUM	54.02	13.50	12.36	3.82	7.15	2.56	1.64	2.79	0.40	0.20	564.	402.	39.4	7.5	0.800	5.30	19.0
	DIFFERENCE	0.35	0.62	0.52	0.27	0.58	0.02	0.20	0.28	0.07	0.05	77.	271.	3.4	26.3	0.600	0.60	4.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
28	73-019 a	33.0	56.0	267.	1.64	9.30	2.300	38.0	134.	0.	235.	29.4	41.0	84.0	38.0	8.4	2.24	8.4
28	73-019 b	53.0	58.0	260.	1.75	9.10	2.200	50.0	150.	150.	226.	29.0	39.0	74.0	34.0	8.8	2.29	8.1
28	73-151 a	44.0	49.0	257.	1.69	8.60	1.900	41.0	123.	0.	226.	26.5	38.0	70.0	40.0	8.5	2.19	8.0
28	73-151 b	53.0	0.0	0.	1.55	8.30	2.100	0.0	136.	0.	0.	26.6	37.0	72.0	34.0	8.3	2.13	8.1
28	71-090 a	43.0	0.0	0.	1.52	8.30	2.000	0.0	116.	350.	0.	26.8	36.0	69.0	37.0	8.1	2.06	7.0
28	71-090 b	58.0	43.0	242.	1.64	8.40	2.000	36.0	146.	220.	215.	27.7	38.0	74.0	37.0	8.4	2.16	8.2
	NO.POINTS	6	4	4	6	6	6	4	6	3	4	6	6	6	6	6	6	6
ESQUAT	AVERAGE	47.3	51.5	257.	1.63	8.67	2.083	41.3	134.	240.	226.	27.7	38.2	73.8	36.7	8.4	2.18	8.0
	STD.DEV.	9.1	6.9	11.	0.09	0.43	0.147	6.2	13.	101.	8.	1.3	1.7	5.4	2.3	0.2	0.08	0.5
	MAXIMUM	58.0	58.0	267.	1.75	9.30	2.300	50.0	150.	350.	235.	29.4	41.0	84.0	40.0	8.8	2.29	8.4
	MINIMUM	33.0	43.0	242.	1.52	8.30	1.900	36.0	116.	150.	215.	26.5	36.0	69.0	34.0	8.1	2.06	7.0
	DIFFERENCE	25.0	15.0	25.	0.23	1.00	0.400	14.0	34.	200.	20.	2.9	5.0	15.0	6.0	0.7	0.23	1.4

	SAMPLE	Tb	Yb	Lu	Cu	Ni
28	73-019 a	1.43	3.90	0.54	42.0	7.0
28	73-019 b	1.58	3.60	0.52	0.0	0.0
28	73-151 a	1.39	3.60	0.50	27.0	25.0
28	73-151 b	-0.92	3.60	0.51	0.0	0.0
28	71-090 a	1.37	3.60	0.49	0.0	0.0
28	71-090 b	1.70	3.60	0.52	0.0	0.0
	NO.POINTS	5	6	6	2	2
ESQUAT	AVERAGE	1.49	3.65	0.51	34.5	16.0
	STD.DEV.	0.14	0.12	0.02	10.6	12.7
	MAXIMUM	1.70	3.90	0.54	42.0	25.0
	MINIMUM	1.37	3.60	0.49	27.0	7.0
	DIFFERENCE	0.33	0.30	0.05	15.0	18.0

20

RBESQUAT TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: RBESQUAT

NO. OF OXIDES-39 NO. OF DATA CARDS= 4 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
29	RB78012a	53.21	14.27	13.62	3.88	7.48	2.53	1.62	3.13	0.40	0.19	588.	0.	-46.9	8.2	0.889	5.84	0.0
29	RB78012b	53.21	14.27	13.62	3.88	7.48	2.53	1.62	3.13	0.40	0.19	650.	0.	-44.7	7.4	0.900	5.90	0.0
29	RB78009a	53.81	14.43	13.03	3.52	7.57	2.55	1.68	3.17	0.43	0.19	606.	658.	-50.4	5.8	0.889	5.69	23.0
29	RB78009b	53.81	14.43	13.03	3.52	7.57	2.55	1.68	3.17	0.43	0.19	600.	0.	-50.9	7.0	0.900	5.80	0.0
	NO.POINTS	4	4	4	4	4	4	4	4	4	4	4	1	0	4	4	4	1
RBESQUAT	AVERAGE	53.51	14.35	13.32	3.70	7.53	2.54	1.65	3.15	0.41	0.19	611.	658.	0.0	7.1	0.895	5.81	23.0
	STD.DEV.	0.35	0.09	0.34	0.21	0.05	0.01	0.03	0.02	0.02	0.00	27.	0.	0.0	1.0	0.006	0.09	0.0
	MAXIMUM	53.81	14.43	13.62	3.88	7.57	2.55	1.68	3.17	0.43	0.19	650.	658.	0.0	8.2	0.900	5.90	23.0
	MINIMUM	53.21	14.27	13.03	3.52	7.48	2.53	1.62	3.13	0.40	0.19	588.	658.	0.0	5.8	0.889	5.69	23.0
	DIFFERENCE	0.60	0.16	0.59	0.36	0.09	0.02	0.06	0.04	0.03	0.00	62.	0.	0.0	2.4	0.011	0.21	0.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd

29	RB78012a	25.9	0.0	0.	1.63	8.70	1.700	0.0	123.	269.	0.	29.0	38.8	76.6	38.0	7.9	2.25	8.4
29	RB78012b	42.0	0.0	0.	1.63	9.00	1.700	0.0	124.	240.	0.	27.8	38.0	75.0	40.0	8.4	2.26	8.5
29	RB78009a	34.0	50.0	269.	1.70	8.80	1.620	38.0	128.	259.	223.	27.6	37.6	73.9	39.0	8.1	2.18	7.5
29	RB78009b	26.0	0.0	0.	1.70	9.20	1.400	0.0	131.	230.	0.	29.0	40.0	73.0	37.0	8.6	2.26	8.3
	NO.POINTS	4	1	1	4	4	4	1	4	4	1	4	4	4	4	4	4	4
RBESQUAT	AVERAGE	32.0	50.0	269.	1.67	8.93	1.605	38.0	127.	250.	223.	28.4	38.6	74.6	38.5	8.3	2.24	8.2
	STD.DEV.	7.7	0.0	0.	0.04	0.22	0.142	0.0	4.	18.	0.	0.8	1.1	1.5	1.3	0.3	0.04	0.5
	MAXIMUM	42.0	50.0	269.	1.70	9.20	1.700	38.0	131.	269.	223.	29.0	40.0	76.6	40.0	8.6	2.26	8.5
	MINIMUM	25.9	50.0	269.	1.63	8.70	1.400	38.0	123.	230.	223.	27.6	37.6	73.0	37.0	7.9	2.18	7.5
	DIFFERENCE	16.1	0.0	0.	0.07	0.50	0.300	0.0	8.	39.	0.	1.4	2.4	3.6	3.0	0.7	0.08	1.0

	SAMPLE	Tb	Yb	Lu	Cu	Ni
29	RB78012a	1.04	3.68	0.47	0.0	0.0
29	RB78012b	0.91	3.40	0.57	0.0	0.0
29	RB78009a	1.00	3.65	0.51	0.0	0.0
29	RB78009b	0.97	3.60	0.58	0.0	0.0
	NO.POINTS	4	4	4	0	0
RBESQUAT	AVERAGE	0.98	3.58	0.53	0.0	0.0
	STD.DEV.	0.05	0.13	0.05	0.0	0.0
	MAXIMUM	1.04	3.68	0.58	0.0	0.0
	MINIMUM	0.91	3.40	0.47	0.0	0.0
	DIFFERENCE	0.13	0.28	0.11	0.0	0.0

FS IC TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: FS IC

NO. OF OXIDES-39 NO. OF DATA CARDS- 4 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
30	73-017 a	52.61	13.79	13.73	4.29	7.33	2.55	1.63	3.06	0.60	0.22	678.	0.	46.1	22.7	0.830	5.50	0.0
30	73-017 b	52.61	13.79	13.73	4.29	7.33	2.55	1.63	3.06	0.60	0.22	571.	408.	45.8	21.0	0.800	5.10	24.0
30	73-349 a	52.32	13.17	14.07	4.11	7.87	2.76	1.59	3.26	0.43	0.19	563.	553.	46.5	21.0	-.009	5.50	24.0
30	73-349 b	52.32	13.17	14.07	4.11	7.87	2.76	1.59	3.26	0.43	0.19	555.	0.	46.1	20.7	0.700	5.40	0.0
	NO.POINTS	4	4	4	4	4	4	4	4	4	4	4	2	4	4	3	4	2
FS IC	AVERAGE	52.47	13.48	13.90	4.20	7.60	2.65	1.61	3.16	0.52	0.20	592.	481.	46.1	21.4	0.777	5.38	24.0
	STD.DEV.	0.17	0.36	0.20	0.10	0.31	0.12	0.02	0.12	0.10	0.02	58.	103.	0.3	0.9	0.068	0.19	0.0
	MAXIMUM	52.61	13.79	14.07	4.29	7.87	2.76	1.63	3.26	0.60	0.22	678.	553.	46.5	22.7	0.830	5.50	24.0
	MINIMUM	52.32	13.17	13.73	4.11	7.33	2.55	1.59	3.06	0.43	0.19	555.	408.	45.8	20.7	0.700	5.10	24.0
	DIFFERENCE	0.29	0.62	0.34	0.18	0.54	0.21	0.04	0.20	0.17	0.03	123.	145.	0.7	2.0	0.130	0.40	0.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
30	73-017 a	23.0	0.0	0.	2.00	7.20	2.200	0.0	167.	0.	0.	29.3	36.0	69.0	33.0	8.6	2.14	9.4
30	73-017 b	45.0	47.0	236.	1.67	7.20	1.300	34.0	191.	250.	219.	29.4	35.0	68.0	32.0	7.9	2.15	7.5
30	73-349 a	27.0	46.0	254.	1.72	7.50	2.000	37.0	145.	0.	219.	29.1	36.0	72.0	36.0	8.9	2.16	8.3
30	73-349 b	46.0	0.0	0.	1.77	7.00	1.700	0.0	152.	0.	0.	29.4	36.0	68.0	36.0	7.8	2.14	7.7
	NO.POINTS	4	2	2	4	4	4	2	4	1	2	4	4	4	4	4	4	4
FS IC	AVERAGE	35.3	46.5	245.	1.79	7.22	1.800	35.5	164.	250.	219.	29.3	35.8	69.3	34.3	8.3	2.15	8.2
	STD.DEV.	12.0	0.7	13.	0.15	0.21	0.392	2.1	20.	0.	0.	0.1	0.5	1.9	2.1	0.5	0.01	0.9
	MAXIMUM	46.0	47.0	254.	2.00	7.50	2.200	37.0	191.	250.	219.	29.4	36.0	72.0	36.0	8.9	2.16	9.4
	MINIMUM	23.0	46.0	236.	1.67	7.00	1.300	34.0	145.	250.	219.	29.1	35.0	68.0	32.0	7.8	2.14	7.5
	DIFFERENCE	23.0	1.0	18.	0.33	0.50	0.900	3.0	46.	0.	0.	0.3	1.0	4.0	4.0	1.1	0.02	1.9

	SAMPLE	Tb	Yb	Lu	Cu	Ni
30	73-017 a	1.52	3.80	0.54	0.0	0.0

30	73-017 b	-0.93	3.60	0.53	0.0	0.0
30	73-349 a	1.33	3.80	0.52	28.0	16.0
30	73-349 b	1.41	3.80	0.51	0.0	0.0
	NO.POINTS	3	4	4	1	1
FS IC	AVERAGE	1.42	3.75	0.53	28.0	16.0
	STD.DEV.	0.10	0.10	0.01	0.0	0.0
	MAXIMUM	1.52	3.80	0.54	28.0	16.0
	MINIMUM	1.33	3.60	0.51	28.0	16.0
	DIFFERENCE	0.19	0.20	0.03	0.0	0.0

SLIP TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: SLIP

NO. OF OXIDES-39 NO. OF DATA CARDS- 2 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
33	76-239 a	52.00	14.29	11.69	5.47	9.60	2.64	0.91	2.43	0.53	0.15	413.	0.	44.4	37.1	-.009	4.40	0.0
33	76-239 b	52.00	14.29	11.69	5.47	9.60	2.64	0.91	2.43	0.53	0.15	433.	308.	43.1	39.5	-.009	4.40	18.0
	NO.POINTS	2	2	2	2	2	2	2	2	2	2	2	1	2	2	0	2	1
SLIP	AVERAGE	52.00	14.29	11.69	5.47	9.60	2.64	0.91	2.43	0.53	0.15	423.	308.	43.8	38.3	0.000	4.40	18.0
	STD.DEV.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.	0.	0.9	1.7	0.000	0.00	0.0
	MAXIMUM	52.00	14.29	11.69	5.47	9.60	2.64	0.91	2.43	0.53	0.15	433.	308.	44.4	39.5	0.000	4.40	18.0
	MINIMUM	52.00	14.29	11.69	5.47	9.60	2.64	0.91	2.43	0.53	0.15	413.	308.	43.1	37.1	0.000	4.40	18.0
	DIFFERENCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.	0.	1.3	2.4	0.000	0.00	0 0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
33	76-239 a	10.0	0.0	0.	1.25	4.90	1.100	0.0	130.	0.	0.	33.4	28.0	58.0	30.0	7.0	1.88	7.1
33	76-239 b	28.0	25.0	244.	1.23	4.50	1.100	28.0	139.	0.	180.	33.3	28.0	57.0	32.0	6.9	2.00	7.8
	NO.POINTS	2	1	1	2	2	2	1	2	0	1	2	2	2	2	2	2	2
SLIP	AVERAGE	19.0	25.0	244.	1.24	4.70	1.100	28.0	135.	0.	180.	33.4	28.0	57.5	31.0	7.0	1.94	7.5
	STD.DEV.	12.7	0.0	0.	0.01	0.28	0.000	0.0	6.	0.	0.	0.1	0.0	0.7	1.4	0.1	0.08	0.5
	MAXIMUM	28.0	25.0	244.	1.25	4.90	1.100	28.0	139.	0.	180.	33.4	28.0	58.0	32.0	7.0	2.00	7.8
	MINIMUM	10.0	25.0	244.	1.23	4.50	1.100	28.0	130.	0.	180.	33.3	28.0	57.0	30.0	6.9	1.88	7.1
	DIFFERENCE	18.0	0.0	0.	0.02	0.40	0.000	0.0	9.	0.	0.	0.1	0.0	1.0	2.0	0.1	0.12	0.7

	SAMPLE	Tb	Yb	Lu	Cu	Ni
33	76-239 a	0.86	3.50	0.48	0.0	0.0
33	76-239 b	1.38	3.30	0.48	0.0	0.0
	NO.POINTS	2	2	2	0	0
SLIP	AVERAGE	1.12	3.40	0.48	0.0	0.0
	STD.DEV.	0.37	0.14	0.00	0.0	0.0
	MAXIMUM	1.38	3.50	0.48	0.0	0.0
	MINIMUM	0.86	3.30	0.48	0.0	0.0
	DIFFERENCE	0.52	0.20	0.00	0.0	0.0

LEW ORCH TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: LEW ORCH

NO. OF OXIDES-39 NO. OF DATA CARDS- 4 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
34	75-116 a	49.22	15.36	11.36	7.73	10.52	2.24	0.35	2.24	0.52	0.14	365.	368.	42.8	265.0	-.009	3.50	18.0
34	75-116 b	49.22	15.36	11.36	7.73	10.52	2.24	0.35	2.24	0.52	0.14	385.	0.	44.1	286.0	-.009	3.50	0.0

	DIFFERENCE	0.37	0.99	0.14	0.0	0.0											

NEW TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: NEW

NO. OF OXIDES=39 NO. OF DATA CARDS= 2 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
36	76-252 a	49.22	15.64	10.85	7.97	11.00	2.19	0.40	1.89	0.47	0.15	0.	329.	44.7	303.0	-.009	3.00	18.0
36	76-252 b	49.22	15.64	10.85	7.97	11.00	2.19	0.40	1.89	0.47	0.15	320.	0.	45.2	298.0	-.009	3.10	0.0
	NO.POINTS	2	2	2	2	2	2	2	2	2	2	1	1	2	2	0	2	1
NEW	AVERAGE	49.22	15.64	10.85	7.97	11.00	2.19	0.40	1.89	0.47	0.15	320.	329.	45.0	300.5	0.000	3.05	18.0
	STD.DEV.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.	0.	0.4	3.5	0.000	0.07	0.0
	MAXIMUM	49.22	15.64	10.85	7.97	11.00	2.19	0.40	1.89	0.47	0.15	320.	329.	45.2	303.0	0.000	3.10	18.0
	MINIMUM	49.22	15.64	10.85	7.97	11.00	2.19	0.40	1.89	0.47	0.15	320.	329.	44.7	298.0	0.000	3.00	18.0
	DIFFERENCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.	0.	0.5	5.0	0.000	0.10	0.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
36	76-252 a	0.0	13.0	252.	1.00	1.40	0.000	35.0	104.	0.	141.	34.7	0.0	41.0	25.0	5.0	1.63	3.5
36	76-252 b	0.0	0.0	0.	0.91	1.40	0.000	0.0	127.	0.	0.	34.4	20.0	41.0	23.0	5.6	1.58	4.9
	NO.POINTS	0	1	1	2	2	0	1	2	0	1	2	1	2	2	2	2	2
NEW	AVERAGE	0.0	13.0	252.	0.96	1.40	0.000	35.0	116.	0.	141.	34.6	20.0	41.0	24.0	5.3	1.61	4.2
	STD.DEV.	0.0	0.0	0.	0.06	0.00	0.000	0.0	16.	0.	0.	0.2	0.0	0.0	1.4	0.4	0.04	1.0
	MAXIMUM	0.0	13.0	252.	1.00	1.40	0.000	35.0	127.	0.	141.	34.7	20.0	41.0	25.0	5.6	1.63	4.9
	MINIMUM	0.0	13.0	252.	0.91	1.40	0.000	35.0	104.	0.	141.	34.4	20.0	41.0	23.0	5.0	1.58	3.5
	DIFFERENCE	0.0	0.0	0.	0.09	0.00	0.000	0.0	23.	0.	0.	0.3	0.0	0.0	2.0	0.6	0.05	1.4

	SAMPLE	Tb	Yb	Lu	Cu	Ni
36	76-252 a	0.78	2.30	0.42	67.0	140.0
36	76-252 b	0.94	2.70	0.38	0.0	0.0
	NO.POINTS	2	2	2	1	1
NEW	AVERAGE	0.86	2.50	0.40	67.0	140.0
	STD.DEV.	0.11	0.28	0.03	0.0	0.0
	MAXIMUM	0.94	2.70	0.42	67.0	140.0
	MINIMUM	0.78	2.30	0.38	67.0	140.0
	DIFFERENCE	0.16	0.40	0.04	0.0	0.0

SW NEW TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: SW NEW

NO. OF OXIDES=39 NO. OF DATA CARDS= 2 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
36	76-271 a	50.11	15.95	10.42	7.41	11.50	2.51	0.29	1.93	0.47	0.18	338.	328.	-51.8	305.0	-.009	3.10	15.0
36	76-271 b	50.11	15.95	10.42	7.41	11.50	2.51	0.29	1.93	0.47	0.18	345.	343.	-53.9	310.0	-.009	3.00	18.0
	NO.POINTS	2	2	2	2	2	2	2	2	2	2	2	2	0	2	0	2	2
SW NEW	AVERAGE	50.11	15.95	10.42	7.41	11.50	2.51	0.29	1.93	0.47	0.18	342.	336.	0.0	307.5	0.000	3.05	16.5
	STD.DEV.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.	11.	0.0	3.5	0.000	0.07	2.1
	MAXIMUM	50.11	15.95	10.42	7.41	11.50	2.51	0.29	1.93	0.47	0.18	345.	343.	0.0	310.0	0.000	3.10	18.0
	MINIMUM	50.11	15.95	10.42	7.41	11.50	2.51	0.29	1.93	0.47	0.18	338.	328.	0.0	305.0	0.000	3.00	15.0
	DIFFERENCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.	15.	0.0	5.0	0.000	0.10	3.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd

SPRAGUE	AVERAGE	0.0	6.0	253.	1.64	3.00	1.450	47.0	162.	360.	274.	37.4	42.5	87.0	48.0	10.3	2.69	9.5
	STD.DEV.	0.0	0.0	0.	0.07	0.00	0.212	0.0	21.	71.	0.	1.0	0.7	1.4	5.7	0.0	0.05	0.7
	MAXIMUM	0.0	6.0	253.	1.69	3.00	1.600	47.0	176.	410.	274.	38.1	43.0	88.0	52.0	10.3	2.72	10.0
	MINIMUM	0.0	6.0	253.	1.59	3.00	1.300	47.0	147.	310.	274.	36.7	42.0	86.0	44.0	10.3	2.65	9.0
	DIFFERENCE	0.0	0.0	0.	0.10	0.00	0.300	0.0	29.	100.	0.	1.4	1.0	2.0	8.0	0.0	0.07	1.0

	SAMPLE	Tb	Yb	Lu	Cu	Ni
35	76-235 a	1.66	4.90	0.70	46.0	70.0
35	76-235 b	1.60	4.70	0.68	0.0	0.0
	NO.POINTS	2	2	2	1	1
SPRAGUE	AVERAGE	1.63	4.80	0.69	46.0	70.0
	STD.DEV.	0.04	0.14	0.01	0.0	0.0
	MAXIMUM	1.66	4.90	0.70	46.0	70.0
	MINIMUM	1.60	4.70	0.68	46.0	70.0
	DIFFERENCE	0.06	0.20	0.02	0.0	0.0

SW SPRAG TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: SW SPRAG

NO. OF OXIDES=39 NO. OF DATA CARDS= 4 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K20	TIO2	P205	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
35	78-077 a	49.58	14.78	12.26	7.26	10.53	2.61	0.44	2.48	0.61	0.21	391.	0.	-50.6	242.0	-.009	4.26	0.0
35	78-077 b	49.58	14.78	12.26	7.26	10.53	2.61	0.44	2.48	0.61	0.21	370.	350.	-53.3	242.0	-.009	4.40	20.0
35	78-075 a	49.72	14.29	14.55	5.51	9.30	2.64	0.78	2.98	0.66	0.23	532.	0.	-51.1	60.3	-.009	6.17	0.0
35	78-075 b	49.72	14.29	14.55	5.51	9.30	2.64	0.78	2.98	0.66	0.23	730.	621.	-50.3	57.5	-.009	6.10	26.0
	NO.POINTS	4	4	4	4	4	4	4	4	4	4	4	2	0	4	0	4	2
SW SPRAG	AVERAGE	49.65	14.53	13.41	6.39	9.91	2.63	0.61	2.73	0.64	0.22	506.	486.	0.0	150.5	0.000	5.23	23.0
	STD.DEV.	0.08	0.28	1.32	1.01	0.71	0.02	0.20	0.29	0.03	0.01	166.	192.	0.0	105.7	0.000	1.04	4.2
	MAXIMUM	49.72	14.78	14.55	7.26	10.53	2.64	0.78	2.98	0.66	0.23	730.	621.	0.0	242.0	0.000	6.17	26.0
	MINIMUM	49.58	14.29	12.26	5.51	9.30	2.61	0.44	2.48	0.61	0.21	370.	350.	0.0	57.5	0.000	4.26	20.0
	DIFFERENCE	0.14	0.49	2.29	1.75	1.23	0.03	0.34	0.50	0.05	0.02	360.	271.	0.0	184.5	0.000	1.91	6.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
35	78-077 a	0.0	0.0	0.	1.25	1.98	0.609	0.0	116.	169.	0.	38.8	0.0	65.9	38.0	8.5	2.27	8.1
35	78-077 b	0.0	0.0	222.	1.25	1.80	0.000	41.0	123.	260.	194.	40.2	24.0	65.0	37.0	8.0	2.27	7.3
35	78-075 a	4.0	0.0	0.	1.73	2.79	0.000	0.0	138.	329.	0.	38.3	41.1	81.8	47.4	10.3	2.62	8.8
35	78-075 b	31.0	0.0	235.	1.73	2.80	0.000	52.0	135.	260.	262.	36.6	39.0	83.0	47.0	10.1	2.59	8.6
	NO.POINTS	2	0	2	4	4	1	2	4	4	2	4	3	4	4	4	4	4
SW SPRAG	AVERAGE	17.5	0.0	229.	1.49	2.34	0.609	46.5	128.	255.	228.	38.5	34.7	73.9	42.4	9.2	2.44	8.2
	STD.DEV.	19.1	0.0	9.	0.28	0.53	0.000	7.8	10.	66.	48.	1.5	9.3	9.8	5.6	1.1	0.19	0.7
	MAXIMUM	31.0	0.0	235.	1.73	2.80	0.609	52.0	138.	329.	262.	40.2	41.1	83.0	47.4	10.3	2.62	8.8
	MINIMUM	4.0	0.0	222.	1.25	1.80	0.609	41.0	116.	169.	194.	36.6	24.0	65.0	37.0	8.0	2.27	7.3
	DIFFERENCE	27.0	0.0	13.	0.48	1.00	0.000	11.0	22.	160.	68.	3.6	17.1	18.0	10.4	2.3	0.35	1.5

	SAMPLE	Tb	Yb	Lu	Cu	Ni
35	78-077 a	1.20	4.08	0.00	57.0	85.0
35	78-077 b	1.14	3.70	0.76	0.0	0.0
35	78-075 a	1.51	4.69	0.68	0.0	0.0
35	78-075 b	1.43	4.20	0.82	0.0	0.0
	NO.POINTS	4	4	3	1	1
SW SPRAG	AVERAGE	1.32	4.17	0.75	57.0	85.0
	STD.DEV.	0.18	0.41	0.07	0.0	0.0
	MAXIMUM	1.51	4.69	0.82	57.0	85.0
	MINIMUM	1.14	3.70	0.68	57.0	85.0

34	71-036 a	50.03	15.08	12.23	6.45	9.63	2.39	0.57	2.60	0.58	0.28	455.	0.	44.4	257.0	-.009	4.20	0.0
34	71-036 b	50.03	15.08	12.23	6.45	9.63	2.39	0.57	2.60	0.58	0.28	435.	334.	44.0	260.0	-.009	4.40	18.0
	NO.POINTS	4	4	4	4	4	4	4	4	4	4	4	2	4	4	0	4	2
LEW ORCH	AVERAGE	49.63	15.22	11.80	7.09	10.08	2.32	0.46	2.42	0.55	0.21	410.	351.	43.8	267.0	0.000	3.90	18.0
	STD.DEV.	0.47	0.16	0.50	0.74	0.51	0.09	0.13	0.21	0.03	0.08	42.	24.	0.7	13.1	0.000	0.47	0.0
	MAXIMUM	50.03	15.36	12.23	7.73	10.52	2.39	0.57	2.60	0.58	0.28	455.	368.	44.4	286.0	0.000	4.40	18.0
	MINIMUM	49.22	15.08	11.36	6.45	9.63	2.24	0.35	2.24	0.52	0.14	365.	334.	42.8	257.0	0.000	3.50	18.0
	DIFFERENCE	0.81	0.28	0.87	1.28	0.89	0.15	0.22	0.36	0.06	0.14	90.	34.	1.6	29.0	0.000	0.90	0.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
34	75-116 a	0.0	0.0	250.	0.98	1.40	-.009	32.0	116.	210.	159.	34.6	25.0	47.0	26.0	4.9	1.82	6.9
34	75-116 b	0.0	0.0	0.	1.02	1.60	1.300	0.0	117.	200.	0.	35.2	26.0	51.0	26.0	5.6	1.91	5.5
34	71-036 a	0.0	0.0	0.	1.41	1.60	0.000	0.0	131.	0.	0.	39.7	30.0	63.0	34.0	8.4	2.16	7.1
34	71-036 b	0.0	0.0	233.	1.50	1.50	0.600	37.0	159.	200.	184.	39.5	30.0	63.0	31.0	8.1	2.24	7.9
	NO.POINTS	0	0	2	4	4	2	2	4	3	2	4	4	4	4	4	4	4
LEW ORCH	AVERAGE	0.0	0.0	242.	1.23	1.52	0.950	34.5	131.	203.	172.	37.3	27.8	56.0	29.3	6.8	2.03	6.8
	STD.DEV.	0.0	0.0	12.	0.27	0.10	0.495	3.5	20.	6.	18.	2.7	2.6	8.2	3.9	1.8	0.20	1.0
	MAXIMUM	0.0	0.0	250.	1.50	1.60	1.300	37.0	159.	210.	184.	39.7	30.0	63.0	34.0	8.4	2.24	7.9
	MINIMUM	0.0	0.0	233.	0.98	1.40	0.600	32.0	116.	200.	159.	34.6	25.0	47.0	26.0	4.9	1.82	5.5
	DIFFERENCE	0.0	0.0	17.	0.52	0.20	0.700	5.0	43.	10.	25.	5.1	5.0	16.0	8.0	3.5	0.42	2.4

	SAMPLE	Tb	Yb	Lu	Cu	Ni
34	75-116 a	0.98	3.40	0.52	65.0	84.0
34	75-116 b	1.02	3.30	0.48	0.0	0.0
34	71-036 a	1.25	3.60	0.57	54.0	85.0
34	71-036 b	1.20	3.80	0.55	0.0	0.0
	NO.POINTS	4	4	4	2	2
LEW ORCH	AVERAGE	1.11	3.53	0.53	59.5	84.5
	STD.DEV.	0.13	0.22	0.04	7.8	0.7
	MAXIMUM	1.25	3.80	0.57	65.0	85.0
	MINIMUM	0.98	3.30	0.48	54.0	84.0
	DIFFERENCE	0.27	0.50	0.09	11.0	1.0

SPRAGUE TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: SPRAGUE

NO. OF OXIDES=39 NO. OF DATA CARDS= 2 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
35	76-235 a	50.76	13.72	12.60	5.07	9.83	2.64	0.87	3.17	0.79	0.18	809.	0.	47.2	47.7	-.009	6.40	0.0
35	76-235 b	50.76	13.72	12.60	5.07	9.83	2.64	0.87	3.17	0.79	0.18	725.	598.	45.1	49.5	-.009	6.30	28.0
	NO.POINTS	2	2	2	2	2	2	2	2	2	2	2	1	2	2	0	2	1
SPRAGUE	AVERAGE	50.76	13.72	12.60	5.07	9.83	2.64	0.87	3.17	0.79	0.18	767.	598.	46.2	48.6	0.000	6.35	28.0
	STD.DEV.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.	0.	1.5	1.3	0.000	0.07	0.0
	MAXIMUM	50.76	13.72	12.60	5.07	9.83	2.64	0.87	3.17	0.79	0.18	809.	598.	47.2	49.5	0.000	6.40	28.0
	MINIMUM	50.76	13.72	12.60	5.07	9.83	2.64	0.87	3.17	0.79	0.18	725.	598.	45.1	47.7	0.000	6.30	28.0
	DIFFERENCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	84.	0.	2.1	1.8	0.000	0.10	0.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
35	76-235 a	0.0	0.0	0.	1.59	3.00	1.600	0.0	147.	310.	0.	38.1	43.0	88.0	52.0	10.3	2.72	10.0
35	76-235 b	0.0	6.0	253.	1.69	3.00	1.300	47.0	176.	410.	274.	36.7	42.0	86.0	44.0	10.3	2.65	9.0
	NO.POINTS	0	1	1	2	2	2	1	2	2	1	2	2	2	2	2	2	2

39	78-460 a	52.37	16.05	9.56	7.56	10.18	2.43	0.65	1.47	0.28	0.20	313.	0.	-55.7	228.0	0.370	3.16	0 0
39	78-460 b	52.37	16.05	9.56	7.56	10.18	2.43	0.65	1.47	0.28	0.20	390.	262.	-59.1	216.0	0.300	3.30	13.0
	NO.POINTS	2	2	2	2	2	2	2	2	2	2	2	1	0	2	2	2	1
SW HUNTZ	AVERAGE	52.37	16.05	9.56	7.56	10.18	2.43	0.65	1.47	0.28	0.20	352.	262.	0.0	222.0	0.335	3.23	13.0
	STD.DEV.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	54.	0.	0.0	8.5	0.049	0.10	0.0
	MAXIMUM	52.37	16.05	9.56	7.56	10.18	2.43	0.65	1.47	0.28	0.20	390.	262.	0.0	228.0	0.370	3.30	13.0
	MINIMUM	52.37	16.05	9.56	7.56	10.18	2.43	0.65	1.47	0.28	0.20	313.	262.	0.0	216.0	0.300	3.16	13.0
	DIFFERENCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77.	0.	0.0	12.0	0.070	0.14	0.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
39	78-460 a	19.9	0.0	0.	0.80	2.55	0.609	0.0	84.	150.	0.	29.2	17.4	38.3	19.9	4.4	1.31	4.5
39	78-460 b	24.0	17.0	240.	0.80	2.70	0.000	24.0	89.	130.	141.	29.2	18.0	34.0	19.0	4.5	1.28	4.3
	NO.POINTS	2	1	1	2	2	1	1	2	2	1	2	2	2	2	2	2	2
SW HUNTZ	AVERAGE	22.0	17.0	240.	0.80	2.63	0.609	24.0	87.	140.	141.	29.2	17.7	36.2	19.5	4.5	1.29	4.4
	STD.DEV.	2.9	0.0	0.	0.00	0.11	0.000	0.0	4.	14.	0.	0.0	0.4	3.0	0.6	0.1	0.02	0.1
	MAXIMUM	24.0	17.0	240.	0.80	2.70	0.609	24.0	89.	150.	141.	29.2	18.0	38.3	19.9	4.5	1.31	4.5
	MINIMUM	19.9	17.0	240.	0.80	2.55	0.609	24.0	84.	130.	141.	29.2	17.4	34.0	19.0	4.4	1.28	4.3
	DIFFERENCE	4.1	0.0	0.	0.00	0.15	0.000	0.0	5.	20.	0.	0.0	0.6	4.3	0.9	0.1	0.03	0.2

	SAMPLE	Tb	Yb	Lu	Cu	Ni
39	78-460 a	0.71	2.49	0.48	96.0	170.0
39	78-460 b	0.74	2.10	0.49	0.0	0.0
	NO.POINTS	2	2	2	1	1
SW HUNTZ	AVERAGE	0.73	2.30	0.49	96.0	170.0
	STD.DEV.	0.02	0.28	0.01	0.0	0.0
	MAXIMUM	0.74	2.49	0.49	96.0	170.0
	MINIMUM	0.71	2.10	0.48	96.0	170.0
	DIFFERENCE	0.03	0.39	0.01	0.0	0.0

HUNTZ TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: HUNTZ

NO. OF OXIDES-39 NO. OF DATA CARDS- 2 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
39	HUNTZ a	52.50	15.39	10.37	6.52	9.38	2.34	1.22	1.63	0.34	0.20	449.	0.	45.1	180.0	-.009	4.40	0.0
39	HUNTZ b	52.50	15.39	10.37	6.52	9.38	2.34	1.22	1.63	0.34	0.20	370.	0.	40.3	164.0	0.500	4.00	0.0
	NO.POINTS	2	2	2	2	2	2	2	2	2	2	2	0	2	2	1	2	0
HUNTZ	AVERAGE	52.50	15.39	10.37	6.52	9.38	2.34	1.22	1.63	0.34	0.20	410.	0.	42.7	172.0	0.500	4.20	0.0
	STD.DEV.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	56.	0.	3.4	11.3	0.000	0.28	0.0
	MAXIMUM	52.50	15.39	10.37	6.52	9.38	2.34	1.22	1.63	0.34	0.20	449.	0.	45.1	180.0	0.500	4.40	0.0
	MINIMUM	52.50	15.39	10.37	6.52	9.38	2.34	1.22	1.63	0.34	0.20	370.	0.	40.3	164.0	0.500	4.00	0.0
	DIFFERENCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	79.	0.	4.8	16.0	0.000	0.40	0.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
39	HUNTZ a	33.0	0.0	0.	0.81	4.40	0.500	0.0	103.	200.	0.	29.7	28.0	54.0	29.0	6.2	1.63	5.9
39	HUNTZ b	20.0	0.0	0.	0.63	3.40	0.000	0.0	102.	190.	0.	27.6	26.0	50.0	26.0	5.6	1.48	5.3
	NO.POINTS	2	0	0	2	2	1	0	2	2	0	2	2	2	2	2	2	2
HUNTZ	AVERAGE	26.5	0.0	0.	0.72	3.90	0.500	0.0	103.	195.	0.	28.7	27.0	52.0	27.5	5.9	1.56	5.6
	STD.DEV.	9.2	0.0	0.	0.13	0.71	0.000	0.0	1.	7.	0.	1.5	1.4	2.8	2.1	0.4	0.11	0.4
	MAXIMUM	33.0	0.0	0.	0.81	4.40	0.500	0.0	103.	200.	0.	29.7	28.0	54.0	29.0	6.2	1.63	5.9
	MINIMUM	20.0	0.0	0.	0.63	3.40	0.500	0.0	102.	190.	0.	27.6	26.0	50.0	26.0	5.6	1.48	5.3

37	72-031 b	-1.40	2.30	0.34	0.0	0.0
37	75-001 a	0.64	2.30	0.34	103.0	200.0
37	75-001 b	0.79	2.20	0.30	0.0	0.0
37	71-015 a	0.66	2.50	0.37	122.0	190.0
37	71-015 b	0.93	2.50	0.37	0.0	0.0
	NO.POINTS	5	6	6	3	3
ASOTIN	AVERAGE	0.74	2.37	0.35	111.7	203.3
	STD.DEV.	0.12	0.12	0.03	9.6	15.3
	MAXIMUM	0.93	2.50	0.37	122.0	220.0
	MINIMUM	0.64	2.20	0.30	103.0	190.0
	DIFFERENCE	0.29	0.30	0.07	19.0	30.0

VC ASOT TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: VC ASOT

NO. OF OXIDES-39 NO. OF DATA CARDS- 2 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K20	TIO2	P205	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
37	RB79073a	51.11	16.54	9.83	7.88	10.78	1.99	0.46	1.48	0.24	0.20	270.	0.	-48.4	270.0	-.009	2.90	0.0
37	RB79073b	51.11	16.54	9.83	7.88	10.78	1.99	0.46	1.48	0.24	0.20	284.	278.	-48.8	275.0	-.009	2.90	12.0
	NO.POINTS	2	2	2	2	2	2	2	2	2	2	2	1	0	2	0	2	1
VC ASOT	AVERAGE	51.11	16.54	9.83	7.88	10.78	1.99	0.46	1.48	0.24	0.20	277.	278.	0.0	272.5	0.000	2.90	12.0
	STD.DEV.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.	0.	0.0	3.5	0.000	0.00	0.0
	MAXIMUM	51.11	16.54	9.83	7.88	10.78	1.99	0.46	1.48	0.24	0.20	284.	278.	0.0	275.0	0.000	2.90	12.0
	MINIMUM	51.11	16.54	9.83	7.88	10.78	1.99	0.46	1.48	0.24	0.20	270.	278.	0.0	270.0	0.000	2.90	12.0
	DIFFERENCE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.	0.	0.0	5.0	0.000	0.00	0.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
37	RB79073a	20.0	0.0	0.	0.62	2.10	0.700	0.0	105.	71.	0.	30.9	15.0	30.0	-28.0	3.9	1.24	3.7
37	RB79073b	15.0	10.0	249.	0.62	2.20	0.700	25.0	100.	180.	120.	30.9	15.0	31.0	19.0	4.1	1.33	5.2
	NO.POINTS	2	1	1	2	2	2	1	2	2	1	2	2	2	1	2	2	2
VC ASOT	AVERAGE	17.5	10.0	249.	0.62	2.15	0.700	25.0	103.	126.	120.	30.9	15.0	30.5	19.0	4.0	1.29	4.4
	STD.DEV.	3.5	0.0	0.	0.00	0.07	0.000	0.0	4.	77.	0.	0.0	0.0	0.7	0.0	0.1	0.06	1.1
	MAXIMUM	20.0	10.0	249.	0.62	2.20	0.700	25.0	105.	180.	120.	30.9	15.0	31.0	19.0	4.1	1.33	5.2
	MINIMUM	15.0	10.0	249.	0.62	2.10	0.700	25.0	100.	71.	120.	30.9	15.0	30.0	19.0	3.9	1.24	3.7
	DIFFERENCE	5.0	0.0	0.	0.00	0.10	0.000	0.0	5.	109.	0.	0.0	0.0	1.0	0.0	0.2	0.09	1.5

	SAMPLE	Tb	Yb	Lu	Cu	Ni
37	RB79073a	0.76	2.40	0.35	100.0	140.0
37	RB79073b	0.83	2.50	0.34	0.0	0.0
	NO.POINTS	2	2	2	1	1
VC ASOT	AVERAGE	0.80	2.45	0.34	100.0	140.0
	STD.DEV.	0.05	0.07	0.01	0.0	0.0
	MAXIMUM	0.83	2.50	0.35	100.0	140.0
	MINIMUM	0.76	2.40	0.34	100.0	140.0
	DIFFERENCE	0.07	0.10	0.01	0.0	0.0

SW HUNTZ TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: SW HUNTZ

NO. OF OXIDES-39 NO. OF DATA CARDS- 2 DATA SORTED ON: MGO

SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K20	TIO2	P205	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX

36	76-271 a	0.0	0.0	258.	0.88	1.30	0.000	29.0	109.	140.	134.	35.1	21.0	41.0	27.0	5.0	1.63	6.6
36	76-271 b	13.4	9.0	260.	0.88	1.40	1.000	37.0	113.	180.	134.	36.3	20.0	42.0	27.0	5.1	1.78	6.2
	NO.POINTS	1	1	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2
SW NEW	AVERAGE	13.4	9.0	259.	0.88	1.35	1.000	33.0	111.	160.	134.	35.7	20.5	41.5	27.0	5.1	1.71	6.4
	STD.DEV.	0.0	0.0	1.	0.00	0.07	0.000	5.7	3.	28.	0.	0.8	0.7	0.7	0.0	0.1	0.11	0 3
	MAXIMUM	13.4	9.0	260.	0.88	1.40	1.000	37.0	113.	180.	134.	36.3	21.0	42.0	27.0	5.1	1.78	6.6
	MINIMUM	13.4	9.0	258.	0.88	1.30	1.000	29.0	109.	140.	134.	35.1	20.0	41.0	27.0	5.0	1.63	6.2
	DIFFERENCE	0.0	0.0	2.	0.00	0.10	0.000	8.0	4.	40.	0.	1.2	1.0	1.0	0.0	0.1	0.15	0.4

	SAMPLE	Tb	Yb	Lu	Cu	Ni
36	76-271 a	0.89	2.90	0.41	0.0	0.0
36	76-271 b	0.96	2.80	0.43	89.0	140.0
	NO.POINTS	2	2	2	1	1
SW NEW	AVERAGE	0.93	2.85	0.42	89.0	140.0
	STD.DEV.	0.05	0.07	0.01	0.0	0.0
	MAXIMUM	0.96	2.90	0.43	89.0	140.0
	MINIMUM	0.89	2.80	0.41	89.0	140.0
	DIFFERENCE	0.07	0.10	0.02	0.0	0.0

ASOTIN TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: ASOTIN

NO. OF OXIDES=39 NO. OF DATA CARDS= 6 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
37	72-031 a	50.94	16.30	9.65	8.40	10.54	2.15	0.10	1.43	0.17	0.11	260.	0.	49.2	292.0	-.009	2.90	0.0
37	72-031 b	50.94	16.30	9.65	8.40	10.54	2.15	0.10	1.43	0.17	0.11	210.	134.	48.2	285.0	-.009	2.70	11.0
37	75-001 a	50.29	15.69	9.64	8.35	11.14	2.41	0.43	1.51	0.20	0.12	428.	429.	46.0	288.0	-.009	2.60	17.0
37	75-001 b	50.29	15.69	9.64	8.35	11.14	2.41	0.43	1.51	0.20	0.12	391.	0.	45.4	291.0	-.009	2.60	0.0
37	71-015 a	51.05	16.08	9.28	7.94	10.63	2.31	0.65	1.51	0.21	0.18	300.	0.	47.1	278.0	-.009	3.00	0.0
37	71-015 b	51.05	16.08	9.28	7.94	10.63	2.31	0.65	1.51	0.21	0.18	230.	185.	45.6	268.0	-.009	2.90	11.0
	NO.POINTS	6	6	6	6	6	6	6	6	6	6	6	3	6	6	0	6	3
ASOTIN	AVERAGE	50.76	16.02	9.52	8.23	10.77	2.29	0.39	1.48	0.19	0.14	303.	249.	46.9	283.7	0.000	2.78	13.0
	STD.DEV.	0.37	0.28	0.19	0.23	0.29	0.12	0.25	0.04	0.02	0.03	89.	158.	1.5	9.2	0.000	0.17	3.5
	MAXIMUM	51.05	16.30	9.65	8.40	11.14	2.41	0.65	1.51	0.21	0.18	428.	429.	49.2	292.0	0.000	3.00	17.0
	MINIMUM	50.29	15.69	9.28	7.94	10.54	2.15	0.10	1.43	0.17	0.11	210.	134.	45.4	268.0	0.000	2.60	11.0
	DIFFERENCE	0.76	0.61	0.37	0.46	0.60	0.26	0.55	0.08	0.04	0.07	218.	295.	3.8	24.0	0.000	0.40	6.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
37	72-031 a	10.0	0.0	0.	0.00	2.00	0.000	0.0	98.	0.	0.	31.2	15.0	30.0	19.0	4.2	1.26	4.9
37	72-031 b	0.0	11.0	250.	0.63	1.80	0.000	24.0	118.	0.	114.	31.2	15.0	29.0	18.0	4.3	1.26	4.8
37	75-001 a	0.0	18.0	256.	0.72	2.00	0.000	33.0	85.	0.	120.	30.5	16.0	32.0	16.0	4.0	1.24	4.7
37	75-001 b	0.0	0.0	0.	0.79	2.10	0.000	0.0	108.	0.	0.	30.6	16.0	31.0	18.0	4.2	1.21	3.8
37	71-015 a	0.0	0.0	0.	0.50	2.20	0.000	0.0	108.	0.	0.	30.9	16.0	35.0	20.0	4.7	1.38	5.8
37	71-015 b	0.0	0.0	250.	0.63	2.20	0.000	23.0	122.	0.	129.	30.4	16.0	32.0	17.0	4.5	1.31	4.4
	NO.POINTS	1	2	3	5	6	0	3	6	0	3	6	6	6	6	6	6	6
ASOTIN	AVERAGE	10.0	14.5	252.	0.65	2.05	0.000	26.7	107.	0.	121.	30.8	15.7	31.5	18.0	4.3	1.28	4.7
	STD.DEV.	0.0	4.9	3.	0.11	0.15	0.000	5.5	14.	0.	8.	0.4	0.5	2.1	1.4	0.2	0.06	0.7
	MAXIMUM	10.0	18.0	256.	0.79	2.20	0.000	33.0	122.	0.	129.	31.2	16.0	35.0	20.0	4.7	1.38	5.8
	MINIMUM	10.0	11.0	250.	0.50	1.80	0.000	23.0	85.	0.	114.	30.4	15.0	29.0	16.0	4.0	1.21	3.8
	DIFFERENCE	0.0	7.0	6.	0.29	0.40	0.000	10.0	37.	0.	15.	0.8	1.0	6.0	4.0	0.7	0.17	2.0

	SAMPLE	Tb	Yb	Lu	Cu	Ni
37	72-031 a	0.66	2.40	0.36	110.0	220.0

WILBUR TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: WILBUR

NO. OF OXIDES=39 NO. OF DATA CARDS= 6 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
41	72-213 a	54.04	14.32	11.14	4.57	8.62	2.64	1.73	1.93	0.52	0.25	913.	0.	49.7	40.1	0.900	5.70	0.0
41	72-213 b	54.04	14.32	11.14	4.57	8.62	2.64	1.73	1.93	0.52	0.25	851.	749.	50.7	40.3	0.700	5.90	17.0
41	71-084 a	54.41	14.47	11.39	4.48	8.15	2.65	1.73	1.83	0.54	0.21	858.	0.	38.2	32.7	-.009	5.90	0.0
41	71-084 b	54.41	14.47	11.59	4.48	8.15	2.65	1.73	1.83	0.54	0.21	795.	644.	38.4	35.0	0.700	6.00	15.0
41	71-039 a	54.25	14.60	10.94	4.46	8.44	2.64	1.83	1.93	0.48	0.22	894.	878.	38.4	36.4	0.800	6.00	18.0
41	71-039 b	54.25	14.60	10.94	4.46	8.44	2.64	1.83	1.93	0.48	0.22	942.	0.	39.5	34.8	0.900	5.90	0.0
	NO.POINTS	6	6	6	6	6	6	6	6	6	6	6	3	6	6	5	6	3
WILBUR	AVERAGE	54.23	14.46	11.16	4.50	8.40	2.64	1.76	1.90	0.51	0.23	876.	757.	42.5	36.6	0.800	5.90	16.7
	STD.DEV.	0.17	0.13	0.20	0.05	0.21	0.01	0.05	0.05	0.03	0.02	52.	117.	6.0	3.1	0.100	0.11	1.5
	MAXIMUM	54.41	14.60	11.39	4.57	8.62	2.65	1.83	1.93	0.54	0.25	942.	878.	50.7	40.3	0.900	6.00	18.0
	MINIMUM	54.04	14.32	10.94	4.46	8.15	2.64	1.73	1.83	0.48	0.21	795.	644.	38.2	32.7	0.700	5.70	15.0
	DIFFERENCE	0.37	0.28	0.45	0.11	0.47	0.01	0.10	0.10	0.06	0.04	147.	234.	12.5	7.6	0.200	0.30	3.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
41	72-213 a	31.0	0.0	0.	0.91	6.80	1.500	0.0	121.	0.	0.	26.7	43.0	79.0	40.0	7.8	1.88	6.8
41	72-213 b	48.0	42.0	261.	1.10	6.20	1.300	37.0	148.	320.	246.	26.9	43.0	80.0	39.0	8.5	1.89	7.3
41	71-084 a	29.0	0.0	0.	1.30	7.00	1.200	0.0	120.	270.	0.	26.4	44.0	81.0	37.0	7.9	1.98	6.1
41	71-084 b	33.0	49.0	266.	0.90	6.20	0.500	47.0	135.	360.	245.	26.8	44.0	85.0	39.0	8.3	1.95	8.1
41	71-039 a	43.0	39.0	303.	1.12	6.80	0.900	41.0	133.	230.	257.	26.2	44.0	77.0	39.0	7.1	1.87	7.7
41	71-039 b	45.0	0.0	0.	1.02	6.90	1.200	0.0	127.	230.	0.	26.8	44.0	81.0	43.0	7.2	2.00	9.7
	NO.POINTS	6	3	3	6	6	6	3	6	5	3	6	6	6	6	6	6	6
WILBUR	AVERAGE	38.2	43.3	277.	1.06	6.65	1.100	41.7	131.	282.	249.	26.6	43.7	80.5	39.5	7.8	1.93	7.6
	STD.DEV.	8.1	5.1	23.	0.15	0.36	0.352	5.0	10.	57.	7.	0.3	0.5	2.7	2.0	0.6	0.06	1.2
	MAXIMUM	48.0	49.0	303.	1.30	7.00	1.500	47.0	148.	360.	257.	26.9	44.0	85.0	43.0	8.5	2.00	9.7
	MINIMUM	29.0	39.0	261.	0.90	6.20	0.500	37.0	120.	230.	245.	26.2	43.0	77.0	37.0	7.1	1.87	6.1
	DIFFERENCE	19.0	10.0	42.	0.40	0.80	1.000	10.0	28.	130.	12.	0.7	1.0	8.0	6.0	1.4	0.13	3.6

	SAMPLE	Tb	Yb	Lu	Cu	Ni
41	72-213 a	1.43	4.20	0.63	0.0	0.0
41	72-213 b	1.58	4.20	0.62	0.0	0.0
41	71-084 a	1.45	4.20	0.62	22.0	57.0
41	71-084 b	0.98	4.40	0.63	0.0	0.0
41	71-039 a	1.17	4.20	0.61	28.0	37.0
41	71-039 b	1.28	4.20	0.65	0.0	0.0
	NO.POINTS	6	6	6	2	2
WILBUR	AVERAGE	1.31	4.23	0.63	25.0	47.0
	STD.DEV.	0.22	0.08	0.01	4.2	14.1
	MAXIMUM	1.58	4.40	0.65	28.0	57.0
	MINIMUM	0.98	4.20	0.61	22.0	37.0
	DIFFERENCE	0.60	0.20	0.04	6.0	20.0

UMATILLA TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: UMATILLA

NO. OF OXIDES=39 NO. OF DATA CARDS= 6 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
43	71-125 a	53.86	13.82	12.53	2.85	6.05	3.66	2.54	2.85	0.87	0.19	3060.	0.	28.2	4.3	-.009	10.40	0.0
43	71-125 b	53.86	13.82	12.53	2.85	6.05	3.66	2.54	2.85	0.87	0.19	3030.	2690.	28.5	0.0	-.009	10.40	24.0

MAXIMUM	1.46	4.90	0.69	57.0	130.0
MINIMUM	0.76	2.88	0.45	48.0	56.0
DIFFERENCE	0.70	2.02	0.24	9.0	74.0

VC LAP TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: VC LAP

NO. OF OXIDES=39 NO. OF DATA CARDS= 8 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
40	RB78024a	53.19	15.61	9.96	6.08	9.39	2.49	1.41	1.73	0.43	0.20	741.	580.	-51.2	118.0	0.600	4.90	21.0
40	RB78024b	53.19	15.61	9.96	6.08	9.39	2.49	1.41	1.73	0.43	0.20	708.	629.	-52.2	122.0	0.600	4.90	17.0
40	VC78081a	52.91	15.95	10.63	5.88	9.36	2.14	1.26	1.70	0.40	0.16	621.	639.	-48.2	117.0	0.599	4.79	20.0
40	VC78081b	52.91	15.95	10.63	5.88	9.36	2.14	1.26	1.70	0.40	0.16	593.	0.	-46.2	116.0	0.500	4.60	0.0
40	VC78081c	52.91	15.95	10.63	5.88	9.36	2.14	1.26	1.70	0.40	0.16	631.	0.	-46.3	123.0	0.600	4.80	0.0
40	VC78081d	52.91	15.95	10.63	5.88	9.36	2.14	1.26	1.70	0.40	0.16	677.	0.	-46.9	123.0	0.800	4.80	0.0
40	VC78267a	53.29	15.88	10.64	5.51	8.94	2.56	1.35	1.72	0.40	0.16	666.	0.	-48.4	102.0	0.599	5.11	0.0
40	VC78267b	53.29	15.88	10.64	5.51	8.94	2.56	1.35	1.72	0.40	0.16	680.	543.	-49.5	102.0	0.700	5.20	15.0
	NO.POINTS	8	8	8	8	8	8	8	8	8	8	8	4	0	8	8	8	4
VC LAP	AVERAGE	53.08	15.85	10.47	5.84	9.26	2.33	1.32	1.71	0.41	0.17	665.	598.	0.0	115.4	0.625	4.89	18.3
	STD.DEV.	0.18	0.15	0.31	0.22	0.20	0.21	0.07	0.01	0.01	0.02	48.	45.	0.0	8.7	0.089	0.19	2.8
	MAXIMUM	53.29	15.95	10.64	6.08	9.39	2.56	1.41	1.73	0.43	0.20	741.	639.	0.0	123.0	0.800	5.20	21.0
	MINIMUM	52.91	15.61	9.96	5.51	8.94	2.14	1.26	1.70	0.40	0.16	593.	543.	0.0	102.0	0.500	4.60	15.0
	DIFFERENCE	0.38	0.34	0.68	0.57	0.45	0.42	0.15	0.03	0.03	0.04	148.	96.	0.0	21.0	0.300	0.60	6.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
40	RB78024a	37.0	41.0	294.	1.01	5.10	1.100	64.0	118.	210.	230.	28.4	35.0	63.0	36.0	6.3	1.71	6.4
40	RB78024b	31.0	34.0	279.	1.01	5.40	1.200	38.0	112.	250.	217.	28.5	35.0	68.0	35.0	6.8	1.83	7.8
40	VC78081a	29.9	31.0	268.	0.86	4.85	1.010	35.0	134.	250.	200.	27.4	28.7	58.1	31.5	6.5	1.63	5.9
40	VC78081b	29.0	0.0	0.	0.86	4.80	1.000	0.0	128.	270.	0.	27.0	32.0	56.0	33.0	6.6	1.60	5.4
40	VC78081c	33.0	0.0	0.	0.86	5.10	1.000	0.0	116.	210.	0.	27.7	33.0	61.0	40.0	6.0	1.67	5.6
40	VC78081d	34.0	0.0	0.	0.86	4.90	1.000	0.0	110.	150.	0.	27.7	34.0	63.0	32.0	6.1	1.74	9.6
40	VC78267a	22.9	0.0	0.	0.92	5.45	1.260	0.0	109.	250.	0.	27.6	34.9	64.8	30.9	7.1	1.73	6.8
40	VC78267b	35.0	31.0	254.	0.92	5.40	1.100	35.0	109.	250.	217.	27.9	34.0	63.0	32.0	7.3	1.75	7.2
	NO.POINTS	8	4	4	8	8	8	4	8	8	4	8	8	8	8	8	8	8
VC LAP	AVERAGE	31.5	34.3	274.	0.91	5.13	1.084	43.0	117.	230.	216.	27.8	33.3	62.1	33.8	6.6	1.71	6.8
	STD.DEV.	4.4	4.7	17.	0.07	0.26	0.101	14.1	9.	39.	12.	0.5	2.1	3.8	3.1	0.5	0.07	1.4
	MAXIMUM	37.0	41.0	294.	1.01	5.45	1.260	64.0	134.	270.	230.	28.5	35.0	68.0	40.0	7.3	1.83	9.6
	MINIMUM	22.9	31.0	254.	0.86	4.80	1.000	35.0	109.	150.	200.	27.0	28.7	56.0	30.9	6.0	1.60	5.4
	DIFFERENCE	14.1	10.0	40.	0.15	0.65	0.260	29.0	25.	120.	30.	1.5	6.3	12.0	9.1	1.3	0.23	4.2

	SAMPLE	Tb	Yb	Lu	Cu	Ni
40	RB78024a	1.09	3.80	0.53	72.0	81.0
40	RB78024b	1.05	3.70	0.55	0.0	0.0
40	VC78081a	1.00	3.48	0.64	26.0	27.0
40	VC78081b	0.91	3.50	0.48	0.0	0.0
40	VC78081c	0.99	3.40	0.51	0.0	0.0
40	VC78081d	1.00	3.60	0.51	0.0	0.0
40	VC78267a	0.86	3.70	0.53	0.0	0.0
40	VC78267b	0.99	3.50	0.72	0.0	0.0
	NO.POINTS	8	8	8	2	2
VC LAP	AVERAGE	0.99	3.59	0.56	49.0	54.0
	STD.DEV.	0.07	0.14	0.08	32.5	38.2
	MAXIMUM	1.09	3.80	0.72	72.0	81.0
	MINIMUM	0.86	3.40	0.48	26.0	27.0
	DIFFERENCE	0.23	0.40	0.24	46.0	54.0

	DIFFERENCE	13.0	0.0	0.	0.18	1.00	0.000	0.0	1.	10.	0.	2.1	2.0	4.0	3.0	0.6	0.15	0.6	

	SAMPLE	Tb	Yb	Lu	Cu	Ni
39	HUNTZ a	0.89	3.20	0.48	0.0	0.0
39	HUNTZ b	0.74	2.50	0.62	0.0	0.0
	NO.POINTS	2	2	2	0	0
HUNTZ	AVERAGE	0.81	2.85	0.55	0.0	0.0
	STD.DEV.	0.11	0.49	0.10	0.0	0.0
	MAXIMUM	0.89	3.20	0.62	0.0	0.0
	MINIMUM	0.74	2.50	0.48	0.0	0.0
	DIFFERENCE	0.15	0.70	0.14	0.0	0.0

EAGLE TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: EAGLE

NO. OF OXIDES=39 NO. OF DATA CARDS= 6 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
40	76-085 a	52.46	15.88	9.70	6.66	9.81	2.36	0.79	1.64	0.35	0.12	509.	506.	39.5	169.0	-.009	3.90	14.0
40	76-085 b	52.46	15.88	9.70	6.66	9.81	2.36	0.79	1.64	0.35	0.12	519.	0.	42.2	194.0	-.009	4.20	0.0
40	76-094 a	53.30	14.97	10.66	5.76	8.87	2.43	1.42	1.72	0.47	0.14	474.	0.	44.2	18.4	0.800	6.40	0.0
40	76-094 b	53.30	14.97	10.66	5.76	8.87	2.43	1.42	1.72	0.47	0.14	533.	0.	44.0	18.9	0.700	6.40	0.0
40	73-168 a	52.83	15.21	11.21	5.55	8.80	2.57	1.23	1.75	0.42	0.12	667.	679.	37.6	92.0	0.700	4.90	18.0
40	73-168 b	52.83	15.21	11.21	5.55	8.80	2.57	1.23	1.75	0.42	0.12	718.	0.	39.9	96.4	0.600	5.00	0.0
	NO.POINTS	6	6	6	6	6	6	6	6	6	6	6	2	6	6	4	6	2
EAGLE	AVERAGE	52.86	15.35	10.52	5.99	9.16	2.45	1.15	1.70	0.41	0.13	570.	593.	41.2	98.1	0.700	5.13	16.0
	STD.DEV.	0.38	0.42	0.68	0.53	0.50	0.10	0.29	0.05	0.05	0.01	98.	122.	2.7	73.3	0.082	1.07	2.8
	MAXIMUM	53.30	15.88	11.21	6.66	9.81	2.57	1.42	1.75	0.47	0.14	718.	679.	44.2	194.0	0.800	6.40	18.0
	MINIMUM	52.46	14.97	9.70	5.55	8.80	2.36	0.79	1.64	0.35	0.12	474.	506.	37.6	18.4	0.600	3.90	14.0
	DIFFERENCE	0.84	0.91	1.51	1.11	1.01	0.21	0.63	0.11	0.12	0.02	244.	173.	6.6	175.6	0.200	2.50	4.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
40	76-085 a	0.0	16.0	272.	0.68	3.22	0.000	36.0	95.	169.	177.	27.7	25.4	46.3	27.0	5.5	1.51	5.9
40	76-085 b	0.0	0.0	0.	0.73	4.10	0.000	0.0	104.	140.	0.	29.6	25.0	57.0	27.0	5.6	1.61	5.8
40	76-094 a	40.0	0.0	0.	1.83	5.90	1.400	0.0	159.	280.	0.	31.6	34.0	66.0	36.0	7.6	2.40	9.0
40	76-094 b	37.0	0.0	0.	1.96	6.00	1.500	0.0	152.	290.	0.	31.4	34.0	67.0	36.0	7.8	2.53	10.1
40	73-168 a	39.0	32.0	320.	0.86	5.40	0.900	38.0	120.	287.	151.	26.2	35.0	62.0	30.0	5.9	1.68	6.3
40	73-168 b	39.0	0.0	0.	1.01	5.60	0.900	0.0	124.	240.	0.	27.3	36.0	69.0	38.0	6.4	1.79	6.3
	NO.POINTS	4	2	2	6	6	4	2	6	6	2	6	6	6	6	6	6	6
EAGLE	AVERAGE	38.8	24.0	296.	1.18	5.04	1.175	37.0	126.	234.	164.	29.0	31.6	61.2	32.3	6.5	1.92	7.2
	STD.DEV.	1.3	11.3	34.	0.57	1.12	0.320	1.4	25.	65.	18.	2.2	5.0	8.5	4.9	1.0	0.43	1.8
	MAXIMUM	40.0	32.0	320.	1.96	6.00	1.500	38.0	159.	290.	177.	31.6	36.0	69.0	38.0	7.8	2.53	10.1
	MINIMUM	37.0	16.0	272.	0.68	3.22	0.900	36.0	95.	140.	151.	26.2	25.0	46.3	27.0	5.5	1.51	5.8
	DIFFERENCE	3.0	16.0	48.	1.28	2.78	0.600	2.0	64.	150.	26.	5.4	11.0	22.7	11.0	2.3	1.02	4.3

	SAMPLE	Tb	Yb	Lu	Cu	Ni
40	76-085 a	0.76	2.88	0.48	57.0	130.0
40	76-085 b	0.81	3.20	0.45	0.0	0.0
40	76-094 a	1.46	4.90	0.66	0.0	0.0
40	76-094 b	1.37	4.70	0.69	0.0	0.0
40	73-168 a	0.96	3.80	0.52	48.0	56.0
40	73-168 b	0.90	3.60	0.55	0.0	0.0
	NO.POINTS	6	6	6	2	2
EAGLE	AVERAGE	1.04	3.85	0.56	52.5	93.0
	STD.DEV.	0.30	0.81	0.10	6.4	52.3

43	B77171 a	54.96	14.10	11.95	2.80	6.38	3.16	2.65	2.72	0.87	0.22	3430.	3420.	27.7	0.5	0.800	9.90	20.0
43	B77171 b	54.96	14.10	11.95	2.80	6.38	3.16	2.65	2.72	0.87	0.22	3560.	0.	28.3	4.6	0.900	9.90	0.0
43	72-175 a	54.72	14.61	12.22	2.57	6.12	3.29	2.47	2.78	0.73	0.16	3440.	3441.	28.4	0.0	-.009	10.50	20.0
43	72-175 b	54.72	14.61	12.22	2.57	6.12	3.29	2.47	2.78	0.73	0.16	3360.	0.	27.5	4.9	0.500	10.20	0.0
	NO.POINTS	6	6	6	6	6	6	6	6	6	6	6	3	6	4	3	6	3
UMATILLA	AVERAGE	54.51	14.18	12.23	2.74	6.18	3.37	2.55	2.78	0.82	0.19	3313.	3184.	28.1	3.6	0.733	10.22	21.3
	STD.DEV.	0.52	0.36	0.26	0.13	0.16	0.23	0.08	0.06	0.07	0.03	218.	428.	0.4	2.1	0.208	0.26	2.3
	MAXIMUM	54.96	14.61	12.53	2.85	6.38	3.66	2.65	2.85	0.87	0.22	3560.	3441.	28.5	4.9	0.900	10.50	24.0
	MINIMUM	53.86	13.82	11.95	2.57	6.05	3.16	2.47	2.72	0.73	0.16	3030.	2690.	27.5	0.5	0.500	9.90	20.0
	DIFFERENCE	1.10	0.79	0.58	0.28	0.33	0.50	0.18	0.13	0.14	0.06	530.	751.	1.0	4.4	0.400	0.60	4.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
43	71-125 a	-28.0	0.0	0.	1.60	7.10	1.300	0.0	137.	460.	0.	26.8	45.0	88.0	42.0	10.1	3.86	10.0
43	71-125 b	52.0	42.0	252.	1.42	6.80	1.300	56.0	141.	420.	470.	26.7	45.0	88.0	50.0	9.9	3.84	9.5
43	B77171 a	54.0	50.0	294.	1.45	7.50	1.600	47.0	133.	490.	489.	25.3	47.0	84.0	63.0	8.5	3.72	9.7
43	B77171 b	53.0	0.0	0.	1.49	7.40	1.800	0.0	127.	489.	0.	25.9	48.0	90.0	46.0	8.9	4.12	12.0
43	72-175 a	34.0	37.0	282.	1.52	7.70	1.500	46.0	129.	-960.	487.	26.7	48.0	91.0	44.0	10.8	4.16	9.2
43	72-175 b	42.0	0.0	0.	1.43	7.00	1.100	0.0	143.	740.	0.	25.9	47.0	88.0	50.0	10.7	4.00	10.7
	NO.POINTS	5	3	3	6	6	6	3	6	5	3	6	6	6	6	6	6	6
UMATILLA	AVERAGE	47.0	43.0	276.	1.49	7.25	1.433	49.7	135.	520.	482.	26.2	46.7	88.2	49.2	9.8	3.95	10.2
	STD.DEV.	8.7	6.6	22.	0.07	0.34	0.250	5.5	6.	126.	10.	0.6	1.4	2.4	7.5	0.9	0.17	1.0
	MAXIMUM	54.0	50.0	294.	1.60	7.70	1.800	56.0	143.	740.	489.	26.8	48.0	91.0	63.0	10.8	4.16	12.0
	MINIMUM	34.0	37.0	252.	1.42	6.80	1.100	46.0	127.	420.	470.	25.3	45.0	84.0	42.0	8.5	3.72	9.2
	DIFFERENCE	20.0	13.0	42.	0.18	0.90	0.700	10.0	16.	320.	19.	1.5	3.0	7.0	21.0	2.3	0.44	2.8

	SAMPLE	Tb	Yb	Lu	Cu	Ni
43	71-125 a	1.72	4.50	0.65	23.0	5.0
43	71-125 b	2.08	4.30	0.64	0.0	0.0
43	B77171 a	1.27	4.40	0.63	0.0	1.0
43	B77171 b	1.53	4.70	0.71	0.0	0.0
43	72-175 a	1.83	4.70	0.69	15.0	2.0
43	72-175 b	-2.21	4.50	0.66	0.0	0.0
	NO.POINTS	5	6	6	2	3
UMATILLA	AVERAGE	1.69	4.52	0.66	19.0	2.7
	STD.DEV.	0.31	0.16	0.03	5.7	2.1
	MAXIMUM	2.08	4.70	0.71	23.0	5.0
	MINIMUM	1.27	4.30	0.63	15.0	1.0
	DIFFERENCE	0.81	0.40	0.08	8.0	4.0

UM FRAC TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: UM FRAC

NO. OF OXIDES-39 NO. OF DATA CARDS- 5 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
43	71-073 a	59.61	15.98	5.42	1.43	6.22	3.79	3.38	2.93	0.85	0.09	4350.	0.	15.4	0.0	0.749	11.70	0.0
43	71-073 b	59.61	15.98	5.42	1.43	6.22	3.79	3.38	2.93	0.85	0.09	4540.	4161.	14.9	0.0	0.800	12.10	25.0
43	76-218 a	58.74	17.05	6.04	0.04	4.72	4.31	3.59	3.49	1.44	0.04	4560.	0.	11.4	3.0	0.700	13.30	0.0
43	76-218 b	58.74	17.05	6.04	0.04	4.72	4.31	3.59	3.49	1.44	0.04	4240.	0.	10.7	2.8	0.600	12.50	0.0
43	76-218 c	58.74	17.05	6.04	0.04	4.72	4.31	3.59	3.49	1.44	0.04	4360.	0.	11.0	3.8	0.600	12.80	0.0
	NO.POINTS	5	5	5	5	5	5	5	5	5	5	5	1	5	3	5	5	1
UM FRAC	AVERAGE	59.09	16.62	5.79	0.60	5.32	4.10	3.51	3.27	1.20	0.06	4410.	4161.	12.7	3.2	0.690	12.48	25.0
	STD.DEV.	0.48	0.59	0.34	0.76	0.82	0.28	0.12	0.31	0.32	0.03	136.	0.	2.3	0.5	0.089	0.62	0.0
	MAXIMUM	59.61	17.05	6.04	1.43	6.22	4.31	3.59	3.49	1.44	0.09	4560.	4161.	15.4	3.8	0.800	13.30	25.0
	MINIMUM	58.74	15.98	5.42	0.04	4.72	3.79	3.38	2.93	0.85	0.04	4240.	4161.	10.7	2.8	0.600	11.70	25.0

		Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
	DIFFERENCE	0.87	1.07	0.62	1.39	1.50	0.52	0.21	0.56	0.59	0.05	320.	0.	4.7	1.0	0.200	1.60	0.0
	SAMPLE																	
43	71-073 a	53.8	0.0	0.	1.54	8.64	1.590	0.0	183.	591.	0.	29.5	51.8	108.0	56.7	11.9	4.74	11.4
43	71-073 b	57.0	56.0	346.	1.64	8.30	1.900	54.0	181.	520.	546.	29.1	54.0	112.0	58.0	13.0	4.73	11.5
43	76-218 a	58.0	0.0	0.	1.59	9.40	1.600	0.0	209.	752.	0.	31.1	61.0	124.0	61.0	13.0	5.61	13.0
43	76-218 b	64.0	0.0	0.	1.50	9.00	1.600	0.0	207.	660.	0.	29.9	60.0	117.0	57.0	12.5	5.28	11.7
43	76-218 c	66.0	0.0	0.	1.65	9.10	2.000	0.0	215.	630.	0.	29.8	58.0	111.0	54.0	12.7	5.39	12.2
	NO.POINTS	5	1	1	5	5	5	1	5	5	1	5	5	5	5	5	5	5
UM FRAC	AVERAGE	59.8	56.0	346.	1.58	8.89	1.738	54.0	199.	631.	546.	29.9	57.0	114.4	57.3	12.6	5.15	12.0
	STD.DEV.	5.1	0.0	0.	0.06	0.43	0.197	0.0	16.	86.	0.	0.7	3.9	6.3	2.5	0.5	0.40	0.7
	MAXIMUM	66.0	56.0	346.	1.65	9.40	2.000	54.0	215.	752.	546.	31.1	61.0	124.0	61.0	13.0	5.61	13.0
	MINIMUM	53.8	56.0	346.	1.50	8.30	1.590	54.0	181.	520.	546.	29.1	51.8	108.0	54.0	11.9	4.73	11.4
	DIFFERENCE	12.2	0.0	0.	0.15	1.10	0.410	0.0	34.	232.	0.	2.0	9.2	16.0	7.0	1.1	0.88	1.6

		Tb	Yb	Lu	Cu	Ni
	SAMPLE					
43	71-073 a	1.81	4.94	0.85	5.0	0.0
43	71-073 b	1.93	5.10	0.74	0.0	0.0
43	76-218 a	1.77	4.10	0.61	0.0	0.0
43	76-218 b	1.70	3.90	0.57	0.0	0.0
43	76-218 c	1.51	3.90	0.55	0.0	0.0
	NO.POINTS	5	5	5	1	0
UM FRAC	AVERAGE	1.74	4.39	0.66	5.0	0.0
	STD.DEV.	0.16	0.59	0.13	0.0	0.0
	MAXIMUM	1.93	5.10	0.85	5.0	0.0
	MINIMUM	1.51	3.90	0.55	5.0	0.0
	DIFFERENCE	0.42	1.20	0.30	0.0	0.0

PH UMTIL TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: PH UMTIL

NO. OF OXIDES-39 NO. OF DATA CARDS- 4 DATA SORTED ON: MGO

		SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
	SAMPLE																	
44	PH78135a	54.89	14.77	12.40	2.88	6.02	3.07	2.58	2.62	0.98	0.22	3650.	0.	-35.1	1.0	0.700	10.00	0.0
44	PH78135b	54.89	14.77	12.40	2.88	6.02	3.07	2.58	2.62	0.98	0.22	3830.	0.	-36.5	2.0	0.700	10.30	0.0
44	PH78068a	56.22	15.30	11.13	2.10	5.99	3.24	2.62	2.79	0.95	0.15	3380.	3478.	-22.7	2.0	0.600	10.80	20.0
44	PH78068b	56.22	15.30	11.13	2.10	5.99	3.24	2.62	2.79	0.95	0.15	3480.	0.	-23.3	1.7	0.500	11.10	0.0
	NO.POINTS	4	4	4	4	4	4	4	4	4	4	4	1	0	4	4	4	1
PH UMTIL	AVERAGE	55.56	15.04	11.77	2.49	6.01	3.15	2.60	2.70	0.97	0.19	3585.	3478.	0.0	1.7	0.625	10.55	20.0
	STD.DEV.	0.77	0.31	0.73	0.45	0.02	0.10	0.02	0.10	0.02	0.04	198.	0.	0.0	0.5	0.096	0.49	0.0
	MAXIMUM	56.22	15.30	12.40	2.88	6.02	3.24	2.62	2.79	0.98	0.22	3830.	3478.	0.0	2.0	0.700	11.10	20.0
	MINIMUM	54.89	14.77	11.13	2.10	5.99	3.07	2.58	2.62	0.95	0.15	3380.	3478.	0.0	1.0	0.500	10.00	20.0
	DIFFERENCE	1.33	0.53	1.27	0.78	0.03	0.17	0.04	0.17	0.03	0.07	450.	0.	0.0	1.0	0.200	1.10	0.0

		Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
	SAMPLE																	
44	PH78135a	57.0	0.0	0.	1.64	7.40	1.500	0.0	133.	468.	0.	24.9	49.0	90.0	48.0	9.3	4.04	10.3
44	PH78135b	58.0	0.0	0.	1.64	7.60	1.400	0.0	138.	0.	0.	26.5	50.0	92.0	51.0	9.7	4.26	0.0
44	PH78068a	56.0	44.0	285.	1.60	7.30	1.500	49.0	135.	540.	517.	25.5	48.0	85.0	55.0	9.7	3.93	10.8
44	PH78068b	54.0	0.0	0.	1.60	7.50	1.300	0.0	133.	621.	0.	26.2	48.0	90.0	48.0	9.1	4.24	11.0
	NO.POINTS	4	1	1	4	4	4	1	4	3	1	4	4	4	4	4	4	3
PH UMTIL	AVERAGE	56.3	44.0	285.	1.62	7.45	1.425	49.0	135.	543.	517.	25.8	48.8	89.3	50.5	9.5	4.12	10.7
	STD.DEV.	1.7	0.0	0.	0.02	0.13	0.096	0.0	2.	77.	0.	0.7	1.0	3.0	3.3	0.3	0.16	0.4
	MAXIMUM	58.0	44.0	285.	1.64	7.60	1.500	49.0	138.	621.	517.	26.5	50.0	92.0	55.0	9.7	4.26	11.0

MINIMUM	54.0	44.0	285.	1.60	7.30	1.300	49.0	133.	468.	517.	24.9	48.0	85.0	48.0	9.1	3.93	10.3
DIFFERENCE	4.0	0.0	0.	0.04	0.30	0.200	0.0	5.	153.	0.	1.6	2.0	7.0	7.0	0.6	0.33	0.7

	SAMPLE	Tb	Yb	Lu	Cu	Ni
44	PH78135a	1.61	4.60	0.68	0.0	0.0
44	PH78135b	1.42	4.60	0.66	0.0	0.0
44	PH78068a	1.43	4.50	0.65	26.0	75.0
44	PH78068b	1.51	4.50	0.66	0.0	0.0
	NO.POINTS	4	4	4	1	1
PH UMTIL	AVERAGE	1.49	4.55	0.66	26.0	75.0
	STD.DEV.	0.09	0.06	0.01	0.0	0.0
	MAXIMUM	1.61	4.60	0.68	26.0	75.0
	MINIMUM	1.42	4.50	0.65	26.0	75.0
	DIFFERENCE	0.19	0.10	0.03	0.0	0.0

PHSOPHER TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: PHSOPHER

NO. OF OXIDES-39 NO. OF DATA CARDS- 4 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
45	PH78298a	53.86	14.54	12.54	3.36	6.67	2.86	2.49	3.04	0.83	0.21	2780.	0.	-40.4	0.7	0.400	9.40	0.0
45	PH78298	53.86	14.54	12.54	3.36	6.67	2.86	2.49	3.04	0.83	0.21	2850.	3023.	-42.9	2.1	0.700	9.90	16.0
45	PH78235a	55.12	15.61	10.97	2.42	6.59	3.26	2.32	3.07	0.90	0.24	3470.	3538.	-30.3	1.9	0.800	10.00	19.0
45	PH78235b	55.12	15.61	10.97	2.42	6.59	3.26	2.32	3.07	0.90	0.24	3510.	0.	-30.0	1.0	0.700	10.00	0.0
	NO.POINTS	4	4	4	4	4	4	4	4	4	4	4	2	0	4	4	4	2
PHSOPHER	AVERAGE	54.49	15.07	11.76	2.89	6.63	3.06	2.40	3.06	0.86	0.22	3153.	3281.	0.0	1.4	0.650	9.82	17.5
	STD.DEV.	0.73	0.62	0.91	0.54	0.05	0.23	0.10	0.02	0.04	0.02	391.	364.	0.0	0.7	0.173	0.29	2.1
	MAXIMUM	55.12	15.61	12.54	3.36	6.67	3.26	2.49	3.07	0.90	0.24	3510.	3538.	0.0	2.1	0.800	10.00	19.0
	MINIMUM	53.86	14.54	10.97	2.42	6.59	2.86	2.32	3.04	0.83	0.21	2780.	3023.	0.0	0.7	0.400	9.40	16.0
	DIFFERENCE	1.26	1.07	1.57	0.94	0.08	0.40	0.17	0.03	0.07	0.03	730.	515.	0.0	1.4	0.400	0.60	3.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
45	PH78298a	40.0	0.0	0.	1.41	6.80	1.000	0.0	131.	443.	0.	27.3	43.0	85.0	39.0	7.9	3.69	10.4
45	PH78298	41.0	35.0	338.	1.41	6.60	1.000	40.0	142.	482.	438.	28.0	44.0	82.0	41.0	8.5	3.60	7.0
45	PH78235a	44.0	35.0	338.	1.46	7.40	1.000	46.0	145.	531.	486.	27.2	46.0	88.0	49.0	8.9	3.65	9.5
45	PH78235b	44.0	0.0	0.	1.46	7.20	1.100	0.0	137.	518.	0.	26.9	47.0	87.0	44.0	8.8	3.79	9.9
	NO.POINTS	4	2	2	4	4	4	2	4	4	2	4	4	4	4	4	4	4
PHSOPHER	AVERAGE	42.3	35.0	338.	1.43	7.00	1.025	43.0	139.	494.	462.	27.4	45.0	85.5	43.3	8.5	3.68	9.2
	STD.DEV.	2.1	0.0	0.	0.03	0.37	0.050	4.2	6.	40.	34.	0.5	1.8	2.6	4.3	0.4	0.08	1.5
	MAXIMUM	44.0	35.0	338.	1.46	7.40	1.100	46.0	145.	531.	486.	28.0	47.0	88.0	49.0	8.9	3.79	10.4
	MINIMUM	40.0	35.0	338.	1.41	6.60	1.000	40.0	131.	443.	438.	26.9	43.0	82.0	39.0	7.9	3.60	7.0
	DIFFERENCE	4.0	0.0	0.	0.05	0.80	0.100	6.0	14.	88.	48.	1.1	4.0	6.0	10.0	1.0	0.19	3.4

	SAMPLE	Tb	Yb	Lu	Cu	Ni
45	PH78298a	1.28	4.10	0.62	0.0	0.0
45	PH78298	1.37	4.30	0.65	15.0	5.0
45	PH78235a	1.26	4.40	0.65	0.0	0.0
45	PH78235b	1.23	4.30	0.66	0.0	0.0
	NO.POINTS	4	4	4	1	1
PHSOPHER	AVERAGE	1.28	4.28	0.65	15.0	5.0
	STD.DEV.	0.06	0.13	0.02	0.0	0.0
	MAXIMUM	1.37	4.40	0.66	15.0	5.0
	MINIMUM	1.23	4.10	0.62	15.0	5.0
	DIFFERENCE	0.14	0.30	0.04	0.0	0.0

Table 3. Analyses used to compute the average chemical composition of dikes assigned to geochemical units defined for the Yakima Basalt Subgroup, Columbia River Basalt Group

ELEPHANT CHEMISTRY:DIKES

NO. OF OXIDES=39 NO. OF DATA CARDS= 1 DATA SORTED ON: MGO

SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
WT-0057	51.25	13.22	14.75	4.07	8.10	2 64	1.22	3.76	0.49	0.20	447.	480.	41.3	18.3	0.500	6.10	10 0

SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
WT-0057	35.0	15.0	382.	1.71	5.40	1.200	29.0	137.	190.	125.	28.9	31.0	60.0	34.0	8.3	2.41	8.8

SAMPLE	Tb	Yb	Lu	Cu	Ni
WT-0057	1.22	4.30	0.63	25.0	14.0

PHSOPHER CHEMISTRY:DIKES

NO. OF OXIDES=39 NO. OF DATA CARDS= 1 DATA SORTED ON: MGO

SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
WT-1055	54.68	13.07	13.34	3.03	5.66	3 24	2.51	2.72	1.02	0.17	3510.	3460.	25.3	4.1	.599	9.80	5 0

SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
WT-1055	42.0	44.0	291.	1.40	6.70	1.200	48.0	134.	519.	484.	25.0	45.0	86.0	47.0	10.2	4 24	10.5

SAMPLE	Tb	Yb	Lu	Cu	Ni
WT-1055	1.39	4.20	0.63	2.0	1.0

LOLO INC CHEMISTRY:DIKES

NO. OF OXIDES=39 NO. OF DATA CARDS= 2 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
	WT-0989	51.09	13.52	13.58	5.37	8.60	2.68	0.71	3.20	0.82	0.18	497.	527.	36.7	93.0	1 700	4.00	19.0
	WT-0151	50.41	13.61	13.96	5.15	8.34	2.78	0.96	3.30	0.84	0.18	422.	453.	35 5	90 0	0.700	3.80	16 0
	NO.POINTS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
LOLO INC	AVERAGE	50.75	13.57	13.77	5.26	8.47	2.73	0.83	3.25	0.83	0.18	460.	490.	36.1	91.5	1.200	3.90	17.5
	STD.DEV.	0.48	0.06	0.27	0.16	0.18	0.07	0.18	0.07	0.01	0.00	53.	52.	0.8	2.1	0.707	0.14	2.1
	MAXIMUM	51.09	13.61	13.96	5.37	8.60	2.78	0.96	3.30	0.84	0.18	497.	527.	36.7	93.0	1.700	4.00	19.0
	MINIMUM	50.41	13.52	13.58	5.15	8.34	2.68	0.71	3.20	0.82	0.18	422.	453.	35.5	90.0	0.700	3.80	16.0
	DIFFERENCE	0.68	0.09	0.38	0.22	0.26	0.10	0.25	0.10	0.02	0.00	75.	74.	1.2	3.0	1.000	0.20	3.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
	WT-0989	30.0	36.0	333.	0.97	3.00	0.800	40.0	133.	150.	181.	33.2	24.0	49.0	30.0	7.6	2.33	7.2
	WT-0151	27.0	26.0	326.	1.00	3.00	0.700	41.0	129.	150.	179.	32.1	24.0	49.0	31.0	7.6	2.35	5.8
	NO.POINTS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
LOLO INC	AVERAGE	28.5	31.0	330.	0.99	3.00	0.750	40.5	131.	150.	180.	32.7	24.0	49.0	30.5	7.6	2.34	6.5
	STD.DEV.	2.1	7.1	5.	0.02	0.00	0.071	0.7	3.	0.	1.	0.8	0.0	0.0	0.7	0.0	0.01	1.0
	MAXIMUM	30.0	36.0	333.	1.00	3.00	0.800	41.0	133.	150.	181.	33.2	24.0	49.0	31.0	7.6	2.35	7.2
	MINIMUM	27.0	26.0	326.	0.97	3.00	0.700	40.0	129.	150.	179.	32.1	24.0	49.0	30.0	7.6	2.33	5.8

	DIFFERENCE	3.0	10.0	7.	0.03	0.00	0.100	1 0	4.	0	2.	1.1	0.0	0.0	1.0	0 0	0 02	1 4												

	SAMPLE	Tb	Yb	Lu	Cu	Ni
	WT-0989	1.11	3.70	0.54	44.0	48.0
	WT-0151	1.06	3.60	0.54	43.0	40.0
	NO.POINTS	2	2	2	2	2
LOLO INC	AVERAGE	1.09	3.65	0.54	43.5	44.0
	STD.DEV.	0.04	0.07	0.00	0.7	5.7
	MAXIMUM	1.11	3.70	0.54	44.0	48.0
	MINIMUM	1.06	3.60	0.54	43.0	40.0
	DIFFERENCE	0.05	0.10	0.00	1.0	8.0

ROSALIA CHEMISTRY:DIKES

NO. OF OXIDES=39 NO. OF DATA CARDS= 1 DATA SORTED ON: MGO

SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
WT-0870	50.23	12.76	15.35	4.53	8.19	2.47	1.13	3.71	0.84	0.19	531.	544.	36.5	18.5	0.000	5.00	19 0

SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
WT-0870	19.0	20.0	345.	1.16	3.60	0.800	45.0	154.	210.	216.	36.7	28.0	55.0	33.0	7.5	2.45	7 8

SAMPLE	Tb	Yb	Lu	Cu	Ni
WT-0870	1.17	4.40	0.63	30.0	14.0

36

ROZA CHEMISTRY:DIKES

NO. OF OXIDES-39 NO. OF DATA CARDS= 1 DATA SORTED ON: MGO

SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
WT-R14	51.07	13.46	14.05	4.59	8.33	2.75	1.43	3.26	0.60	0.23	560.	559.	39.1	33.6	0.800	4.90	19.0

SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
WT-R14	38.0	39.0	322.	1.11	4.20	1.100	40.0	140.	200.	200.	37.4	27.0	56.0	33.0	8.4	2.42	8.2

SAMPLE	Tb	Yb	Lu	Cu	Ni
WT-R14	1.21	4.10	0.60	32.0	19.0

FS INC CHEMISTRY:DIKES

NO. OF OXIDES-39 NO. OF DATA CARDS- 4 DATA SORTED ON: MGO

SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
78-408	51.45	13.84	13.76	4.55	8.12	2.89	1.34	2.89	0.62	0.24	543.	557.	37.0	46.9	0.800	4.40	16.0
78-408	51.45	13.84	13.76	4.55	8.12	2.89	1.34	2.89	0.62	0.24	528.	0.	39.4	47.4	1.000	4.60	0.0
78-411	51.41	13.13	14.62	4.52	8.11	2.57	1.33	2.98	0.62	0.26	548.	490.	38.8	44.7	1.000	4.40	14.0
78-411	51.41	13.13	14.62	4.52	8.11	2.57	1.33	2.98	0.62	0.26	528.	0.	39.4	47.4	1.000	4.60	0.0
NO.POINTS	4	4	4	4	4	4	4	4	4	4	4	2	4	4	4	4	2
FS INC AVERAGE	51.43	13.49	14.19	4.54	8.11	2.73	1.34	2.94	0.62	0.25	537.	524.	38.7	46.6	0.950	4.50	15.0
STD.DEV.	0.02	0.41	0.50	0.02	0.01	0.18	0.01	0.05	0.00	0.01	10.	47.	1.1	1.3	0.100	0.12	1.4
MAXIMUM	51.45	13.84	14.62	4.55	8.12	2.89	1.34	2.98	0.62	0.26	548.	557.	39.4	47.4	1.000	4.60	16.0

MINIMUM	51.41	13.13	13.76	4.52	8.11	2.57	1.33	2.89	0.62	0.24	528.	490.	37.0	44.7	0.800	4 40	14 0
DIFFERENCE	0.04	0.71	0.86	0.03	0.01	0.32	0.01	0.09	0.00	0.02	20.	67.	2.4	2.7	0.200	0.20	2 0

SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
78-408	39.0	39.0	320.	0.92	4.00	0.800	37.0	138.	180.	185.	33.7	24.0	48.0	25.0	5.0	1.99	7.3
78-408	39.0	0.0	0.	0.89	4.20	1.000	0.0	148.	130.	0.	35.9	24.0	50.0	30.0	5.5	2.02	8.3
78-411	48.0	40.0	316.	1.06	4.10	0.900	36.0	149.	140.	184.	35.9	25.0	49.0	26.0	5.9	2.05	7.5
78-411	39.0	0.0	0.	0.89	4.20	1.000	0.0	148.	130.	0.	35.9	24.0	50.0	30.0	5.8	2.02	8.3
NO.POINTS	4	2	2	4	4	4	2	4	4	2	4	4	4	4	4	4	4
FS INC AVERAGE	41.3	39.5	318.	0.94	4.13	0.925	36.5	146.	145.	185.	35.4	24.3	49.3	27.8	5.6	2.02	7.9
STD.DEV.	4.5	0.7	3.	0.08	0.10	0.096	0.7	5.	24.	1.	1.1	0.5	1.0	2.6	0.4	0.02	0.5
MAXIMUM	48.0	40.0	320.	1.06	4.20	1.000	37.0	149.	180.	185.	35.9	25.0	50.0	30.0	5.9	2.05	8.3
MINIMUM	39.0	39.0	316.	0.89	4.00	0.800	36.0	138.	130.	184.	33.7	24.0	48.0	25.0	5.0	1.99	7.3
DIFFERENCE	9.0	1.0	4.	0.17	0.20	0.200	1.0	11.	50.	1.	2.2	1.0	2.0	5.0	0.9	0.06	1.0

SAMPLE	Tb	Yb	Lu	Cu	Ni
78-408	0.99	3.60	0.51	31.0	11.0
78-408	1.17	3.70	0.54	0.0	0.0
78-411	1.06	3.90	0.56	28.0	9.0
78-411	1.17	3.70	0.54	0.0	0.0
NO.POINTS	4	4	4	2	2
FS INC AVERAGE	1.10	3.73	0.54	29.5	10.0
STD.DEV.	0.09	0.13	0.02	2.1	1.4
MAXIMUM	1.17	3.90	0.56	31.0	11.0
MINIMUM	0.99	3.60	0.51	28.0	9.0
DIFFERENCE	0.18	0.30	0.05	3.0	2.0

SHUMAKER CHEMISTRY:DIKES

NO. OF OXIDES=39 NO. OF DATA CARDS= 1 DATA SORTED ON: MGO

SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
71-012	54.43	13.06	13.42	2.91	6.65	3.51	2.01	2.47	0.83	0.28	1070.	1050.	23.9	4.4	0.600	6.50	20 0

SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
71-012	51.0	53.0	342.	1.43	5.70	1.500	59.0	165.	270.	263.	36.0	38.0	79.0	47.0	10.8	3.58	12.7

SAMPLE	Tb	Yb	Lu	Cu	Ni
71-012	1.72	5.80	0.86	17.0	1.0

DODGE CHEMISTRY:DIKES

NO. OF OXIDES=39 NO. OF DATA CARDS= 1 DATA SORTED ON: MGO

SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
76-246	51.94	14.56	10.70	6.42	10.16	3.16	0.61	1.53	0.36	0.16	357.	345.	36.1	161.0	-.699	3.00	10.0

SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
76-246	13.0	14.0	377.	0.47	1.10	-.599	28.0	110.	90.	124.	46.0	14.0	30.0	21.0	4.9	1.40	6.4

SAMPLE	Tb	Yb	Lu	Cu	Ni
76-246	0.73	3.10	0.48	110.0	41.0

ROBIN CHEMISTRY:DIKES

NO. OF OXIDES=39 NO. OF DATA CARDS= 4 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K20	TIO2	P205	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
	78-463	49.88	16.63	10.44	8.60	10.87	2.24	0.12	0.85	0.16	0.20	151.	151.	0.0	158.0	0.000	1.60	9.0
	78-350	48.98	16.53	10.33	8.57	11.19	2.45	0.33	0.98	0.19	0.17	138.	151.	45.9	147.0	0.000	1.50	9.0
*	WT-2837	50.82	16.54	10.45	7.20	9.92	2.64	0.51	1.22	0.25	0.15	300.	0.	40.4	148.0	0.000	2.40	0.0
*	WT-2837	50.82	16.54	10.45	7.20	9.92	2.64	0.51	1.22	0.25	0.15	270.	0	41.5	146.0	0.000	2.20	0.0
	NO.POINTS	2	2	2	2	2	2	2	2	2	2	2	2	1	2	0	2	2
ROBIN	AVERAGE	49.43	16.58	10.39	8.59	11.03	2.35	0.23	0.92	0.17	0.19	145.	151.	45.9	152.5	0.000	1.55	9.0
	STD.DEV.	0.64	0.07	0.08	0.02	0.23	0.15	0.15	0.09	0.02	0.02	9.	0.	0.0	7.8	0.000	0.07	0.0
	MAXIMUM	49.88	16.63	10.44	8.60	11.19	2.45	0.33	0.98	0.19	0.20	151.	151.	45.9	158.0	0.000	1.60	9.0
	MINIMUM	48.98	16.53	10.33	8.57	10.87	2.24	0.12	0.85	0.16	0.17	138.	151.	45.9	147.0	0.000	1.50	9.0
	DIFFERENCE	0.90	0.10	0.11	0.03	0.32	0.21	0.21	0.13	0.03	0.03	13.	0.	0.0	11.0	0.000	0.10	0.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
	78-463	0.0	7.0	336.	0.00	0.50	0.000	22.0	97.	0.	77.	37.2	7.0	16.0	11.0	2.9	0.97	1.5
	78-350	4.0	5.0	328.	0.29	0.50	0.000	21.0	81.	0.	70.	35.8	7.0	14.0	10.0	2.8	0.91	3.0
*	WT-2837	0.0	0.0	0.	0.56	1.20	0.000	0.0	116.	50.	0.	38.9	11.0	24.0	10.0	2.9	1.13	4.2
*	WT-2837	17.0	0.0	0.	0.36	1.10	0.500	0.0	108.	160.	0.	38.9	11.0	25.0	13.0	2.8	1.13	5 6
	NO.POINTS	1	2	2	1	2	0	2	2	0	2	2	2	2	2	2	2	2
ROBIN	AVERAGE	4.0	6.0	332.	0.29	0.50	0.000	21.5	89.	0.	74.	36.5	7.0	15.0	10.5	2.9	0.94	2.3
	STD.DEV.	0.0	1.4	6.	0.00	0.00	0.000	0.7	11.	0.	5.	1.0	0.0	1.4	0.7	0.1	0.04	1 1
	MAXIMUM	4.0	7.0	336.	0.29	0.50	0.000	22.0	97.	0.	77.	37.2	7.0	16.0	11.0	2.9	0.97	3 0
	MINIMUM	4.0	5.0	328.	0.29	0.50	0.000	21.0	81.	0.	70.	35.8	7.0	14.0	10.0	2.8	0.91	1.5
	DIFFERENCE	0.0	2.0	8.	0.00	0.00	0.000	1.0	16.	0.	7.	1.4	0.0	2.0	1.0	0.1	0.06	1 5

	SAMPLE	Tb	Yb	Lu	Cu	Ni
	78-463	0.59	2.50	0.36	94.0	93.0
	78-350	0.51	2.20	0.34	90.0	93.0
*	WT-2837	0.59	3.00	0.40	0.0	0.0
*	WT-2837	0.71	2.80	0.40	0.0	0.0
	NO.POINTS	2	2	2	2	2
ROBIN	AVERAGE	0.55	2.35	0.35	92.0	93.0
	STD.DEV.	0.06	0.21	0.01	2.8	0.0
	MAXIMUM	0.59	2.50	0.36	94.0	93.0
	MINIMUM	0.51	2.20	0.34	90.0	93.0
	DIFFERENCE	0.08	0.30	0.02	4.0	0.0

CT1 GRANDE RONDE DIKE: CHEMICAL TYPE 1

NO. OF OXIDES=39 NO. OF DATA CARDS= 1 DATA SORTED ON: MGO

SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K20	TIO2	P205	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
WT-041	54.29	14.49	11.15	4.90	8.53	2.86	1.22	1.73	0.35	0.19	487.	498.	38.1	44.1	0.900	3.50	12.0

SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
WT-041	32.0	32.0	346.	0.65	3.20	0.800	31.0	120.	120.	151.	33.6	18.0	36.0	21.0	49.0	1.48	55.0

SAMPLE	Tb	Yb	Lu	Cu	Ni
WT-041	0.81	3.00	0.44	50.0	21.0

CT3 GRANDE RONDE DIKE: CHEMICAL TYPE 3

NO. OF OXIDES=39 NO. OF DATA CARDS= 2 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K20	TIO2	P205	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
	75-115	52.58	14.59	11.53	5.77	9.40	2.84	0.88	1.72	0.30	0.16	379.	405.	41.7	111.0	0.600	2.90	13.0
	WT-091	53.85	14.28	11.40	5.20	8.82	2.65	1.33	1.73	0.34	0.18	423.	449.	35.7	56.2	0.700	3.50	12.0
	NO.POINTS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
CT3	AVERAGE	53.22	14.44	11.47	5.49	9.11	2.75	1.11	1.73	0.32	0.17	401.	427.	38.7	83.6	0.650	3.20	12.5
	STD.DEV.	0.90	0.22	0.09	0.40	0.41	0.13	0.32	0.01	0.03	0.01	31.	31.	4.2	38.7	0.071	0.42	0.7
	MAXIMUM	53.85	14.59	11.53	5.77	9.40	2.84	1.33	1.73	0.34	0.18	423.	449.	41.7	111.0	0.700	3.50	13.0
	MINIMUM	52.58	14.28	11.40	5.20	8.82	2.65	0.88	1.72	0.30	0.16	379.	405.	35.7	56.2	0.600	2.90	12.0
	DIFFERENCE	1.27	0.31	0.13	0.57	0.58	0.19	0.45	0.01	0.04	0.02	44.	44.	6.0	54.8	0.100	0.60	1.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
	75-115	23.0	24.0	374.	0.63	2.00	0.700	29.0	108.	140.	134.	38.6	15.0	31.0	21.0	4.4	1.50	4.6
	WT-091	32.0	31.0	311.	0.71	3.10	0.900	30.0	101.	200.	152.	33.9	17.0	35.0	23.0	4.7	1.50	4.9
	NO.POINTS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
CT3	AVERAGE	27.5	27.5	343.	0.67	2.55	0.800	29.5	105.	170.	143.	36.3	16.0	33.0	22.0	4.6	1.50	4 8
	STD.DEV.	6.4	4.9	45.	0.06	0.78	0.141	0.7	5.	42.	13.	3.3	1.4	2.8	1.4	0.2	0.00	0 2
	MAXIMUM	32.0	31.0	374.	0.71	3.10	0.900	30.0	108.	200.	152.	38.6	17.0	35.0	23.0	4.7	1.50	4.9
	MINIMUM	23.0	24.0	311.	0.63	2.00	0.700	29.0	101.	140.	134.	33.9	15.0	31.0	21.0	4.4	1.50	4 6
	DIFFERENCE	9.0	7.0	63.	0.08	1.10	0.200	1.0	7.	60.	18.	4.7	2.0	4.0	2.0	0.3	0.00	0.3

	SAMPLE	Tb	Yb	Lu	Cu	Ni
	75-115	0.70	2.90	0.45	55.0	25.0
	WT-091	0.72	2.80	0.44	55.0	22.0
	NO.POINTS	2	2	2	2	2
CT3	AVERAGE	0.71	2.85	0.44	55.0	23.5
	STD.DEV.	0.01	0.07	0.01	0.0	2.1
	MAXIMUM	0.72	2.90	0.45	55.0	25.0
	MINIMUM	0.70	2.80	0.44	55.0	22.0
	DIFFERENCE	0.02	0.10	0.01	0.0	3.0

CT4 GRANDE RONDE DIKE: CHEMICAL TYPE 4

NO. OF OXIDES=39 NO. OF DATA CARDS= 2 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K20	TIO2	P205	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
	WT-087	54.85	14.17	11.44	4.59	8.03	3.06	1.02	1.94	0.35	0.18	508.	512.	33.7	36.5	0.900	4.00	13.0
	WT-8693	54.23	14.24	11.34	4.54	8.15	3.23	1.41	1.92	0.30	0.15	540.	537.	36.9	16.7	0.900	4.60	12.0
	NO.POINTS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
CT4	AVERAGE	54.54	14.20	11.39	4.57	8.09	3.14	1.22	1.93	0.33	0.17	524.	525.	35.3	26.6	0.900	4.30	12.5
	STD.DEV.	0.44	0.05	0.07	0.04	0.08	0.12	0.28	0.01	0.04	0.02	23.	18.	2.3	14.0	0.000	0.42	0.7
	MAXIMUM	54.85	14.24	11.44	4.59	8.15	3.23	1.41	1.94	0.35	0.18	540.	537.	36.9	36.5	0.900	4.60	13.0
	MINIMUM	54.23	14.17	11.34	4.54	8.03	3.06	1.02	1.92	0.30	0.15	508.	512.	33.7	16.7	0.900	4.00	12.0
	DIFFERENCE	0.62	0.07	0.10	0.05	0.12	0.17	0.39	0.02	0.05	0.03	32.	25.	3.2	19.8	0.000	0.60	1.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd

	WT-087	39.0	37.0	312.	0.78	4.10	1.100	32.0	113.	0.	168.	33.8	20.0	38.0	21.0	5.3	1.57	6 5
	WT-2693	43.0	44.0	346.	0.93	4.30	1.300	32.0	123.	230.	176.	32.1	21.0	41.0	24.0	6.0	1.79	7.4
	NO.POINTS	2	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2
CT4	AVERAGE	41.0	40.5	329.	0.86	4.20	1.200	32.0	118.	230.	172.	33.0	20.5	39.5	22.5	5.7	1.68	7.0
	STD.DEV.	2.8	4.9	24.	0.11	0.14	0.141	0.0	7.	0.	6.	1.2	0.7	2.1	2.1	0.5	0.16	0.6
	MAXIMUM	43.0	44.0	346.	0.93	4.30	1.300	32.0	123.	230.	176.	33.8	21.0	41.0	24.0	6.0	1.79	7.4
	MINIMUM	39.0	37.0	312.	0.78	4.10	1.100	32.0	113.	230.	168.	32.1	20.0	38.0	21.0	5.3	1.57	6.5
	DIFFERENCE	4.0	7.0	34.	0.15	0.20	0.200	0.0	10.	0.	8.	1.7	1.0	3.0	3.0	0.7	0.22	0.9

	SAMPLE	Tb	Yb	Lu	Cu	Ni
	WT-087	0.90	3.20	0.46	38.0	15.0
	WT-2693	0.99	3.30	0.48	33.0	9.0
	NO.POINTS	2	2	2	2	2
CT4	AVERAGE	0.94	3.25	0.47	35.5	12.0
	STD.DEV.	0.06	0.07	0.01	3.5	4.2
	MAXIMUM	0.99	3.30	0.48	38.0	15.0
	MINIMUM	0.90	3.20	0.46	33.0	9.0
	DIFFERENCE	0.09	0.10	0.02	5.0	6.0

LH2 GRANDE RONDE DIKE: CHEMICAL TYPE LH2

NO. OF OXIDES=39 NO. OF DATA CARDS= 2 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K20	TIO2	P205	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
	75-114	54.51	14.84	9.35	6.26	9.53	2.73	0.89	1.21	0.28	0.16	384.	422.	32.5	91.6	0.000	2.80	10.0
	75-154	54.45	14.81	9.60	6.03	9.24	2.86	1.02	1.33	0.30	0.15	396.	443.	31.6	80.9	0.400	2 60	12.0
	NO.POINTS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2
LH2	AVERAGE	54.48	14.83	9.48	6.15	9.39	2.80	0.95	1.27	0.29	0.16	390.	433.	32.0	86.3	0.400	2.70	11 0
	STD.DEV.	0.04	0.02	0.18	0.16	0.21	0.09	0.09	0.08	0.01	0.01	8.	15.	0.6	7.6	0.000	0.14	1.4
	MAXIMUM	54.51	14.84	9.60	6.26	9.53	2.86	1.02	1.33	0.30	0.16	396.	443.	32.5	91.6	0.400	2.80	12.0
	MINIMUM	54.45	14.81	9.35	6.03	9.24	2.73	0.89	1.21	0.28	0.15	384.	422.	31.6	80.9	0.400	2.60	10 0
	DIFFERENCE	0.06	0.03	0.25	0.23	0.29	0.13	0.13	0.12	0.02	0.01	12.	21.	0.9	10.7	0.000	0.20	2.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
	75-114	18.0	21.0	395.	0.41	1.60	0.500	25.0	89.	110.	124.	36.8	14.0	29.0	16.0	4.1	1.18	3.1
	75-154	23.0	26.0	389.	0.42	1.90	0.400	26.0	91.	140.	128.	35.9	15.0	31.0	19.0	4.1	1.25	4.8
	NO.POINTS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
LH2	AVERAGE	20.5	23.5	392.	0.41	1.75	0.450	25.5	90.	125.	126.	36.4	14.5	30.0	17.5	4.1	1.22	4.0
	STD.DEV.	3.5	3.5	4.	0.01	0.21	0.071	0.7	1.	21.	3.	0.6	0.7	1.4	2.1	0.0	0.05	1.2
	MAXIMUM	23.0	26.0	395.	0.42	1.90	0.500	26.0	91.	140.	128.	36.8	15.0	31.0	19.0	4.1	1.25	4.8
	MINIMUM	18.0	21.0	389.	0.41	1.60	0.400	25.0	89.	110.	124.	35.9	14.0	29.0	16.0	4.1	1.18	3.1
	DIFFERENCE	5.0	5.0	6.	0.01	0.30	0.100	1.0	2.	30.	4.	0.9	1.0	2.0	3.0	0.0	0.07	1.7

	SAMPLE	Tb	Yb	Lu	Cu	Ni
	75-114	0.52	2.40	0.36	68.0	25.0
	75-154	0.67	2.40	0.37	66.0	22.0
	NO.POINTS	2	2	2	2	2
LH2	AVERAGE	0.60	2.40	0.37	67.0	23.5
	STD.DEV.	0.11	0.00	0.01	1.4	2.1
	MAXIMUM	0.67	2.40	0.37	68.0	25.0
	MINIMUM	0.52	2.40	0.36	66.0	22.0
	DIFFERENCE	0.15	0.00	0.01	2.0	3.0

MG6 GRANDE RONDE DIKE: CHEMICAL TYPE MG6

NO. OF OXIDES=39 NO. OF DATA CARDS= 4 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
	WT-2811	52.24	14.15	12.23	5.86	9.04	2.73	1.11	1.82	0.35	0.17	482.	462.	40.5	92.3	0.800	3.40	12.0
	76-249	52.83	14.48	11.26	5.81	9.27	2.86	0.98	1.84	0.37	0.15	452.	432.	39.2	117.0	0.600	3.30	12.0
	WT-47 A	52.59	14.44	11.52	5.80	9.43	2.64	1.02	1.73	0.36	0.18	359.	409.	36.6	114.0	0.600	2.80	12.0
	WT-47 B	52.59	14.44	11.52	5.80	9.43	2.64	1.02	1.73	0.36	0.18	382.	0.	38.6	125.0	0.700	3.20	0.0
	NO.POINTS	4	4	4	4	4	4	4	4	4	4	4	3	4	4	4	4	3
MG6	AVERAGE	52.56	14.38	11.63	5.82	9.29	2.72	1.03	1.78	0.36	0.17	419.	434.	38.7	112.1	0.675	3.18	12.0
	STD.DEV.	0.24	0.15	0.42	0.03	0.18	0.10	0.06	0.06	0.01	0.01	58.	27.	1.6	14.0	0.096	0.26	0.0
	MAXIMUM	52.83	14.48	12.23	5.86	9.43	2.86	1.11	1.84	0.37	0.18	482.	462.	40.5	125.0	0.800	3.40	12.0
	MINIMUM	52.24	14.15	11.26	5.80	9.04	2.64	0.98	1.73	0.35	0.15	359.	409.	36.6	92.3	0.600	2.80	12.0
	DIFFERENCE	0.59	0.33	0.97	0.06	0.39	0.22	0.13	0.11	0.02	0.03	123.	53.	3.9	32.7	0.200	0.60	0.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
	WT-2811	27.0	26.0	395.	0.79	2.50	0.700	29.0	127.	0.	145.	38.7	18.0	35.0	21.0	4.9	1.60	4.7
	76-249	24.0	25.0	393.	0.70	2.20	0.700	30.0	111.	160.	139.	40.2	17.0	35.0	21.0	4.9	1.62	4.4
	WT-47 A	35.0	42.0	369.	0.56	2.10	0.600	29.0	102.	160.	135.	36.4	15.0	30.0	19.0	39.0	1.41	4.4
	WT-47 B	41.0	0.0	0.	0.65	2.20	0.600	0.0	114.	160.	0.	39.7	16.0	31.0	17.0	4.9	1.43	4.2
	NO.POINTS	4	3	3	4	4	4	3	4	3	3	4	4	4	4	4	4	4
MG6	AVERAGE	31.8	31.0	386.	0.68	2.25	0.650	29.3	114.	160.	140.	38.8	16.5	32.8	19.5	13.4	1.51	4.4
	STD.DEV.	7.7	9.5	14.	0.10	0.17	0.058	0.6	10.	0.	5.	1.7	1.3	2.6	1.9	17.1	0.11	0.2
	MAXIMUM	41.0	42.0	395.	0.79	2.50	0.700	30.0	127.	160.	145.	40.2	18.0	35.0	21.0	39.0	1.62	4.7
	MINIMUM	24.0	25.0	369.	0.56	2.10	0.600	29.0	102.	160.	135.	36.4	15.0	30.0	17.0	4.9	1.41	4 2
	DIFFERENCE	17.0	17.0	26.	0.23	0.40	0.100	1.0	25.	0.	10.	3.8	3.0	5.0	4.0	34.1	0.21	0.5

	SAMPLE	Tb	Yb	Lu	Cu	Ni
	WT-2811	0.71	3.10	0.45	66.0	19.0
	76-249	0.77	3.20	0.47	47.0	21.0
	WT-47 A	0.66	2.70	0.39	51.0	21.0
	WT-47 B	0.66	3.00	0.44	0.0	0.0
	NO.POINTS	4	4	4	3	3
MG6	AVERAGE	0.70	3.00	0.44	54.7	20.3
	STD.DEV.	0.05	0.22	0.03	10.0	1.2
	MAXIMUM	0.77	3.20	0.47	66.0	21.0
	MINIMUM	0.66	2.70	0.39	47.0	19.0
	DIFFERENCE	0.11	0.50	0.08	19.0	2.0

Table 4. Uncorrected glass analyses used to compute the average chemical composition of naturally quenched glasses associated with the Grande Ronde Basalt.

1A GLASS GRANDE RONDE UNIT 1A

NO. OF OXIDES=10 NO. OF DATA CARDS= 8 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO
	78-252 G	54.59	14.12	11.83	4.24	8.35	2.81	1.33	2.02	0.35	0.00
*	77-180GL	54.68	13.61	12.64	4.20	8.41	2.25	1.19	2.11	0.31	0.00
	78-251 G	54.71	13.88	11.70	4.19	8.27	3.00	1.30	2.06	0.32	0.00
	78-216 G	54.82	14.12	11.87	4.04	8.10	2.84	1.40	2.02	0.37	0.00
*	77-007GL	55.92	13.87	12.45	4.00	7.96	2.78	1.24	2.02	0.33	0.00
*	77-010GL	55.77	13.68	12.38	3.94	7.93	2.41	1.23	1.99	0.33	0.00
*	77-024GL	56.92	13.52	11.92	3.94	7.94	2.52	1.44	2.05	0.35	0.00
B	77-081GL	55.47	13.52	12.28	3.89	8.03	2.83	1.33	2.05	0.30	0.00
	NO.POINTS	4	4	4	4	4	4	4	4	4	0
1A	AVERAGE	54.90	13.91	11.92	4.09	8.19	2.87	1.34	2.04	0.34	0.00
	STD.DEV.	0.39	0.28	0.25	0.16	0.15	0.09	0.04	0.02	0.03	0.00
	MAXIMUM	55.47	14.12	12.28	4.24	8.35	3.00	1.40	2.06	0.37	0.00
	MINIMUM	54.59	13.52	11.70	3.89	8.03	2.81	1.30	2.02	0.30	0.00
	DIFFERENCE	0.88	0.60	0.58	0.35	0.32	0.19	0.10	0.04	0.07	0.00

3A GLASS GRANDE RONDE UNIT 3A

NO. OF OXIDES=10 NO. OF DATA CARDS= 17 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO
	78-250 G	54.16	14.13	11.79	4.91	9.15	2.51	0.98	1.98	0.29	0.00
*	77-005GL	54.37	13.80	12.03	4.62	8.81	2.96	0.94	1.92	0.27	0.00
K	76-105GL	55.26	14.02	11.60	4.59	8.92	2.97	0.92	1.91	0.21	0.00
*	77-033GL	53.98	13.53	11.53	4.54	8.88	3.02	0.95	1.86	0.24	0.00
K	77-080GL	54.31	13.54	12.21	4.52	8.81	2.53	1.07	2.01	0.26	0.00
K	77-079GL	54.79	13.62	12.28	4.50	8.79	2.56	1.03	1.94	0.25	0.00
*	77-023GL	55.08	13.45	12.11	4.46	8.53	2.72	1.16	1.98	0.27	0.00
*	77-006GL	54.73	13.89	12.12	4.44	8.62	2.43	1.01	1.98	0.29	0.00
*	77-009GL	54.79	13.97	12.35	4.41	8.71	2.49	1.01	1.97	0.28	0.00
K	77-093GL	54.30	13.44	12.27	4.36	8.75	2.84	1.06	2.02	0.25	0.00
*	77-031GL	55.40	13.42	12.05	4.28	8.07	3.02	1.25	2.02	0.30	0.00
*	77-022GL	55.21	13.48	12.31	4.27	8.34	2.53	1.20	2.05	0.29	0.00
K	77-179GL	54.17	13.63	12.37	4.26	8.58	2.77	1.13	2.08	0.29	0.00
*	77-032GL	55.69	13.40	12.20	4.20	8.33	2.95	1.22	1.97	0.30	0.00
K	77-138GL	55.03	13.28	12.82	4.04	8.65	2.50	0.97	2.16	0.28	0.00
*	78-221 G	54.45	13.59	12.59	4.01	8.02	2.55	1.27	2.28	0.43	0.00
J	77-178GL	54.08	13.40	13.03	4.00	8.16	2.80	1.12	2.21	0.33	0.00
	NO.POINTS	8	8	8	8	8	8	8	8	8	0
3A	AVERAGE	54.51	13.63	12.30	4.40	8.73	2.68	1.04	2.04	0.27	0.00
	STD.DEV.	0.45	0.30	0.47	0.30	0.29	0.18	0.07	0.10	0.04	0.00
	MAXIMUM	55.26	14.13	13.03	4.91	9.15	2.97	1.13	2.21	0.33	0.00
	MINIMUM	54.08	13.28	11.60	4.00	8.16	2.50	0.92	1.91	0.21	0.00
	DIFFERENCE	1.18	0.85	1.43	0.91	0.99	0.47	0.21	0.30	0.12	0.00

4A GLASS GRANDE RONDE UNIT 4A

NO. OF OXIDES=10 NO. OF DATA CARDS= 21 DATA SORTED ON: MGO

SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO

		78-248 G	53.95	14.17	11.93	4.55	8.72	3.04	1.10	2.04	0.31	0.00
		78-279 G	54.78	13.96	12.43	4.51	8.70	2.50	1.16	2.15	0.28	0.00
		78-064 G	54.64	13.69	12.16	4.50	8.56	2.91	1.14	2.07	0.36	0.00
		78-213 G	53.76	13.70	12.00	4.47	8.54	3.04	1.18	2.07	0.34	0.00
		78-065 G	54.97	13.70	12.28	4.45	8.53	2.77	1.18	2.20	0.33	0.00
		78-214 G	53.92	13.55	12.30	4.37	8.34	2.48	1.23	2.13	0.37	0.00
		78-061 G	53.86	13.60	12.76	4.34	8.52	2.79	1.06	2.31	0.31	0.00
	J	76-104GL	55.05	13.21	12.29	4.28	8.51	3.01	0.99	1.98	0.29	0.00
		78-097 G	53.95	13.67	12.20	4.27	8.41	3.03	1.18	2.08	0.38	0.00
		78-212 G	54.85	13.58	12.50	4.23	8.46	2.73	1.14	2.16	0.29	0.00
		78-246 G	54.32	13.64	12.72	4.19	8.15	3.10	1.16	2.23	0.33	0.00
	*	77-030GL	55.66	13.35	12.86	4.11	8.20	3.01	1.20	2.12	0.27	0.00
	J	77-177GL	54.08	13.44	12.92	4.10	8.25	2.94	1.11	2.17	0.29	0.00
	B	77-121GL	54.98	13.39	12.90	4.09	8.36	2.54	1.26	2.17	0.31	0.00
	J	77-089GL	54.25	13.36	13.06	4.05	8.34	2.87	1.10	2.15	0.27	0.00
	M	77-077GL	54.87	13.03	13.59	3.87	8.11	2.32	1.08	2.30	0.30	0.00
		78-063 G	54.70	13.38	13.03	3.79	7.90	2.73	1.36	2.32	0.47	0.00
		78-088BG	54.16	13.14	13.05	3.71	7.80	2.63	1.34	2.54	0.42	0.00
	M	77-004GL	54.36	13.27	13.39	3.53	7.70	2.69	1.29	2.35	0.45	0.00
		78-062 G	53.86	12.72	14.17	3.22	7.34	2.28	1.46	2.94	0.55	0.00
		78-088 G	53.78	12.50	14.00	3.00	7.16	2.31	1.57	2.87	0.53	0.00
		NO.POINTS	20	20	20	20	20	20	20	20	20	0
4A		AVERAGE	54.35	13.44	12.78	4.08	8.22	2.74	1.20	2.26	0.36	0.00
		STD.DEV.	0.46	0.39	0.64	0.44	0.43	0.26	0.14	0.25	0.08	0.00
		MAXIMUM	55.05	14.17	14.17	4.55	8.72	3.10	1.57	2.94	0.55	0.00
		MINIMUM	53.76	12.50	11.93	3.00	7.16	2.28	0.99	1.98	0.27	0.00
		DIFFERENCE	1.29	1.67	2.24	1.55	1.56	0.82	0.58	0.96	0.28	0.00

34

GRB GRANDE RONDE UNCLASSIFIED GLASS

NO. OF OXIDES-10 NO. OF DATA CARDS- 2 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO
	78-089 G	55.57	12.97	13.41	2.82	6.75	2.68	1.85	2.66	0.43	0.00
	78-090 G	55.22	13.01	13.35	2.74	6.62	2.93	1.84	2.84	0.41	0.00
	NO.POINTS	2	2	2	2	2	2	2	2	2	0
GRB	AVERAGE	55.40	12.99	13.38	2.78	6.68	2.81	1.85	2.75	0.42	0.00
	STD.DEV.	0.25	0.03	0.04	0.06	0.09	0.18	0.01	0.13	0.01	0.00
	MAXIMUM	55.57	13.01	13.41	2.82	6.75	2.93	1.85	2.84	0.43	0.00
	MINIMUM	55.22	12.97	13.35	2.74	6.62	2.68	1.84	2.66	0.41	0.00
	DIFFERENCE	0.35	0.04	0.06	0.08	0.13	0.25	0.01	0.18	0.02	0.00

5A GLASS GRANDE RONDE UNIT 5A

NO. OF OXIDES-10 NO. OF DATA CARDS- 26 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO
D	77-001GL	54.80	13.44	12.58	3.90	7.94	3.21	1.17	2.15	0.31	0.00
X	77-020GL	56.19	12.73	12.98	3.37	7.34	3.18	1.49	2.20	0.30	0.00
*	77-021GL	55.18	12.64	13.01	3.35	7.16	1.71	1.91	2.32	0.40	0.00
	78-060 G	56.37	13.62	12.15	3.30	7.20	2.82	1.70	2.18	0.35	0.00
	78-244 G	55.84	13.79	11.94	3.26	7.00	3.02	1.71	2.09	0.34	0.00
C	77-070GL	57.14	13.16	12.39	3.23	6.93	2.88	1.47	2.13	0.36	0.00
*	78-268 G	56.93	13.81	12.14	3.23	7.14	2.66	1.83	2.09	0.30	0.00
X	77-029GL	56.92	12.92	13.30	3.23	7.13	2.85	1.63	2.23	0.30	0.00
	78-276 G	56.65	13.91	11.90	3.20	7.00	2.92	1.80	2.11	0.32	0.00
*	76-011GL	56.95	13.90	12.39	3.19	7.05	3.09	1.61	2.08	0.35	0.00
X	77-076GL	55.53	12.74	13.56	3.19	7.06	2.69	1.35	2.41	0.36	0.00

	C	77-075GL	57.05	13.42	12.61	3.16	6.87	2.71	1.41	2.17	0.32	0.00
	*	77-003GL	56.23	13.51	12.30	3.16	6.92	3.04	1.51	1.99	0.29	0.00
	C	77-118GL	57.32	13.45	12.37	3.16	6.96	2.63	1.82	2.09	0.32	0.00
		78-211 G	54.30	13.30	12.90	3.14	7.19	2.51	1.83	2.26	0.38	0.00
	*	77-018GL	54.88	13.33	12.21	3.11	6.92	2.44	1.60	1.98	0.26	0.00
	X	77-045GL	56.21	12.87	13.13	3.10	7.33	2.84	1.37	2.23	0.29	0.00
	C	77-027GL	57.55	13.27	12.16	3.10	6.77	2.97	1.90	2.07	0.32	0.00
	C	77-074GL	57.14	13.18	12.45	3.09	6.82	2.79	1.45	2.10	0.32	0.00
	*	77-019GL	55.90	13.40	12.23	3.09	6.88	2.04	1.65	1.94	0.29	0.00
	C	76-101GL	56.53	13.29	12.36	3.08	6.92	2.96	1.45	2.06	0.27	0.00
		78-222 G	56.34	13.60	12.01	3.08	6.93	3.18	1.70	2.17	0.37	0.00
	*	77-062GL	56.68	13.25	12.20	3.05	6.38	2.95	2.29	2.19	0.35	0.00
	C	77-176GL	56.48	13.37	12.41	3.04	6.94	3.14	1.67	2.09	0.28	0.00
	C	76-099GL	56.67	13.05	12.36	3.04	6.79	3.21	1.62	2.16	0.34	0.00
		77-087GL	56.08	13.07	12.47	2.91	6.77	2.84	1.77	2.17	0.29	0.00
		NO.POINTS	19	19	19	19	19	19	19	19	19	0
5A		AVERAGE	56.37	13.27	12.53	3.19	7.05	2.91	1.60	2.16	0.32	0.00
		STD.DEV.	0.83	0.33	0.46	0.20	0.28	0.21	0.20	0.08	0.03	0.00
		MAXIMUM	57.55	13.91	13.56	3.90	7.94	3.21	1.90	2.41	0.38	0.00
		MINIMUM	54.30	12.73	11.90	2.91	6.77	2.51	1.17	2.06	0.27	0.00
		DIFFERENCE	3.25	1.18	1.66	0.99	1.17	0.70	0.73	0.35	0.11	0.00

3C GLASS GRANDE RONDE UNIT 3C

NO. OF OXIDES-10 NO. OF DATA CARDS- 6 DATA SORTED ON: MGO

		SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO
		78-266 G	54.86	13.66	12.95	4.03	8.05	2.88	1.40	2.31	0.32	0.00
		78-274 G	54.47	13.66	12.65	4.00	7.73	3.00	1.40	2.23	0.35	0.00
		78-243 G	54.48	13.16	12.58	3.98	7.99	2.44	1.34	2.24	0.39	0.00
		78-242 G	54.14	13.63	12.86	3.96	7.85	3.16	1.34	2.25	0.35	0.00
		78-273 G	54.47	13.52	12.83	3.92	8.00	3.10	1.34	2.25	0.33	0.00
	D	77-073GL	54.73	13.15	12.93	3.88	7.98	3.10	1.11	2.28	0.33	0.00
		NO.POINTS	6	6	6	6	6	6	6	6	6	0
3C		AVERAGE	54.53	13.46	12.80	3.96	7.93	2.95	1.32	2.26	0.35	0.00
		STD.DEV.	0.25	0.24	0.15	0.05	0.12	0.27	0.11	0.03	0.03	0.00
		MAXIMUM	54.86	13.66	12.95	4.03	8.05	3.16	1.40	2.31	0.39	0.00
		MINIMUM	54.14	13.15	12.58	3.88	7.73	2.44	1.11	2.23	0.32	0.00
		DIFFERENCE	0.72	0.51	0.37	0.15	0.32	0.72	0.29	0.08	0.07	0.00

5C GLASS GRANDE RONDE UNIT 5C

NO. OF OXIDES-10 NO. OF DATA CARDS- 2 DATA SORTED ON: MGO

		SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO
	V	77-072GL	56.77	12.93	12.29	2.85	6.49	3.04	1.58	2.17	0.34	0.00
	V	77-136GL	57.49	13.17	12.09	2.78	6.83	3.01	1.62	2.24	0.31	0.00
		NO.POINTS	2	2	2	2	2	2	2	2	2	0
5C		AVERAGE	57.13	13.05	12.19	2.82	6.66	3.03	1.60	2.21	0.33	0.00
		STD.DEV.	0.51	0.17	0.14	0.05	0.24	0.02	0.03	0.05	0.02	0.00
		MAXIMUM	57.49	13.17	12.29	2.85	6.83	3.04	1.62	2.24	0.34	0.00
		MINIMUM	56.77	12.93	12.09	2.78	6.49	3.01	1.58	2.17	0.31	0.00
		DIFFERENCE	0.72	0.24	0.20	0.07	0.34	0.03	0.04	0.07	0.03	0.00

5D GLASS GRANDE RONDE UNIT 5D

NO. OF OXIDES-10 NO. OF DATA CARDS- 22 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO
	78-239 G	55.67	13.74	11.87	3.79	7.61	3.11	1.54	2.08	0.31	0.00
*	78-240 G	53.84	13.20	12.93	3.76	7.78	3.04	1.38	2.29	0.40	0.00
*	78-057 G	55.78	13.79	11.76	3.61	7.47	3.14	1.61	2.06	0.34	0.00
	78-271 G	55.66	13.81	12.01	3.56	7.32	3.20	1.65	2.16	0.31	0.00
	78-223 G	55.84	13.60	11.82	3.42	7.20	3.09	1.64	2.15	0.35	0.00
*	78-241 G	56.14	13.85	12.08	3.38	7.08	2.93	1.72	2.10	0.33	0.00
H	76-012GL	56.35	13.24	13.03	3.13	6.98	3.25	1.66	2.32	0.37	0.00
H	76-003GL	55.88	13.02	12.77	3.10	7.03	3.25	1.62	2.40	0.35	0.00
H	76-093GL	56.56	12.76	13.39	3.06	6.93	3.24	1.61	2.43	0.36	0.20
H	76-094GL	56.03	13.08	13.10	2.93	6.74	3.20	1.59	2.41	0.35	0.00
H	77-068GL	55.65	12.74	13.12	2.93	7.07	2.58	1.59	2.42	0.36	0.00
2	76-014GL	55.41	12.39	13.06	2.92	6.83	2.95	1.60	2.31	0.33	0.00
H	76-013GL	56.00	12.83	13.30	2.91	6.82	3.21	1.68	2.41	0.35	0.00
H	76-010GL	55.29	12.69	13.27	2.91	6.67	3.10	1.56	2.37	0.33	0.00
H	76-001GL	56.25	12.80	13.05	2.90	6.68	3.19	1.65	2.40	0.31	0.00
H	77-071GL	56.20	12.46	13.33	2.87	6.64	2.95	1.54	2.55	0.36	0.00
H	77-069GL	55.60	12.62	13.31	2.86	6.69	2.91	1.50	2.57	0.46	0.00
H	76-004GL	55.90	13.19	13.26	2.85	6.89	3.03	1.78	2.35	0.35	0.00
	77-064GL	56.03	12.69	13.19	2.78	6.51	3.15	2.03	2.64	0.41	0.00
H	76-009GL	55.75	12.61	13.28	2.74	6.78	3.31	1.71	2.49	0.36	0.00
H	76-005GL	56.95	12.37	13.54	2.71	6.71	3.16	1.60	2.46	0.30	0.20
*	78-264 G	54.90	13.01	12.24	2.59	6.43	2.38	2.06	2.52	0.47	0.00
	NO.POINTS	18	18	18	18	18	18	18	18	18	2
5D	AVERAGE	55.95	12.92	12.98	3.02	6.89	3.10	1.64	2.38	0.35	0.20
	STD.DEV.	0.41	0.44	0.53	0.29	0.27	0.17	0.12	0.15	0.04	0.00
	MAXIMUM	56.95	13.81	13.54	3.79	7.61	3.31	2.03	2.64	0.46	0.20
	MINIMUM	55.29	12.37	11.82	2.71	6.51	2.58	1.50	2.08	0.30	0.20
	DIFFERENCE	1.66	1.44	1.72	1.08	1.10	0.73	0.53	0.56	0.16	0.00

5H

2D GLASS GRANDE RONDE UNIT 2D

NO. OF OXIDES-10 NO. OF DATA CARDS- 6 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO
	78-259 G	54.76	13.07	12.73	2.97	6.98	3.21	1.82	2.65	0.42	0.00
	78-224 G	54.47	12.91	12.61	2.95	6.78	3.01	1.86	2.68	0.43	0.00
	78-261 G	54.40	12.56	12.96	2.69	6.64	2.65	2.03	2.81	0.42	0.00
L	77-059GL	56.20	12.50	13.28	2.68	6.56	2.68	2.15	2.81	0.40	0.00
*	76-030GL	55.27	12.16	12.88	2.62	6.23	2.42	1.77	2.69	0.37	0.20
	78-262 G	55.27	12.93	12.46	2.50	6.36	2.06	2.08	2.68	0.49	0.00
	NO.POINTS	5	5	5	5	5	5	5	5	5	0
2D	AVERAGE	55.02	12.79	12.81	2.76	6.66	2.72	1.99	2.73	0.43	0.00
	STD.DEV.	0.74	0.25	0.32	0.20	0.23	0.44	0.14	0.08	0.03	0.00
	MAXIMUM	56.20	13.07	13.28	2.97	6.98	3.21	2.15	2.81	0.49	0.00
	MINIMUM	54.40	12.50	12.46	2.50	6.36	2.06	1.82	2.65	0.40	0.00
	DIFFERENCE	1.80	0.57	0.82	0.47	0.62	1.15	0.33	0.16	0.09	0.00

GRB GRANDE RONDE UNCLASSIFIED GLASS

NO. OF OXIDES-10 NO. OF DATA CARDS- 1 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO
N	77-127GL	54.72	12.57	13.76	3.09	7.18	2.66	1.72	2.68	0.50	0.00

Table 5. Uncorrected glass analyses used to compute the average chemical composition of naturally quenched glasses from geochemical units assigned to the Wanapum Basalt.

GL PV PRIEST RAPIDS MEMBER PALOUSE VENT

NO. OF OXIDES= 9 NO. OF DATA CARDS= 3 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5
	78-045	49.73	12.85	14.91	4.66	9.20	2.66	1.14	3.82	0.66
	78-046	49.85	12.86	14.99	4.58	9.27	2.55	1.18	3.83	0.87
	78-044	49.51	12.36	15.72	4.09	8.73	2.39	1.34	4.18	0.74
	NO.POINTS	3	3	3	3	3	3	3	3	3
GL PV	AVERAGE	49.70	12.69	15.21	4.44	9.07	2.53	1.22	3.94	0.76
	STD.DEV.	0.17	0.29	0.45	0.31	0.29	0.14	0.11	0.21	0.11
	MAXIMUM	49.85	12.86	15.72	4.66	9.27	2.66	1.34	4.18	0.87
	MINIMUM	49.51	12.36	14.91	4.09	8.73	2.39	1.14	3.82	0.66
	DIFFERENCE	0.34	0.50	0.81	0.57	0.54	0.27	0.20	0.36	0.21

GL LOLO PRIEST RAPIDS MEMBER LOLO INC

NO. OF OXIDES= 9 NO. OF DATA CARDS= 12 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5
	78-358	49.70	13.10	14.42	4.74	9.23	2.71	1.22	3.72	0.94
	71-045	49.31	12.50	14.74	4.54	9.24	2.50	1.12	3.57	0.83
	72-227	50.18	12.19	15.06	4.42	9.17	2.60	1.06	3.74	0.77
	74-308	49.62	12.02	15.31	4.29	9.13	2.48	1.24	3.86	0.70
	74-301	49.97	12.13	15.09	4.29	9.06	2.48	1.21	3.79	0.68
	74-313	49.68	12.16	15.40	4.28	9.07	2.58	1.24	3.90	0.76
*	77-214	48.94	12.13	14.46	4.22	9.26	1.74	1.22	3.60	0.70
	74-322	50.05	12.20	15.26	4.20	9.20	2.50	1.16	3.85	0.69
	75-124	50.14	12.20	15.00	4.16	8.96	2.49	1.23	3.87	0.91
	75-140	50.25	11.72	15.54	4.07	8.91	2.58	1.14	3.98	0.76
	75-111	50.02	11.81	15.64	4.02	8.90	2.19	1.24	4.01	0.76
	75-118	49.51	11.44	16.05	3.93	8.67	2.50	1.14	4.34	0.84
	NO.POINTS	11	11	11	11	11	11	11	11	11
GL LOLO	AVERAGE	49.86	12.13	15.23	4.27	9.05	2.51	1.18	3.88	0.79
	STD.DEV.	0.31	0.43	0.44	0.23	0.18	0.13	0.06	0.20	0.09
	MAXIMUM	50.25	13.10	16.05	4.74	9.24	2.71	1.24	4.34	0.94
	MINIMUM	49.31	11.44	14.42	3.93	8.67	2.19	1.06	3.57	0.68
	DIFFERENCE	0.94	1.66	1.63	0.81	0.57	0.52	0.18	0.77	0.26

GL ROSAL PRIEST RAPIDS MEMBER ROSALIA

NO. OF OXIDES= 9 NO. OF DATA CARDS= 22 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5
*	75-004	50.31	12.42	15.69	4.13	8.68	2.64	1.34	4.15	0.62
	78-107	50.34	12.07	15.64	4.13	8.51	2.20	1.27	4.14	0.80
	78-081	50.25	12.24	16.00	4.05	8.60	2.44	1.35	4.05	0.83
	78-085	50.80	12.32	15.96	4.05	8.73	2.65	1.37	4.25	0.80
	78-070	50.16	12.22	15.63	3.98	8.50	2.70	1.31	4.14	0.78
	79-004	50.73	11.99	15.78	3.98	8.66	2.51	1.38	4.20	0.70
	79-004	50.77	12.00	15.79	3.98	8.64	2.43	1.40	4.18	0.74
*	78-082	49.96	12.29	15.94	3.94	8.63	1.32	2.34	4.10	0.84
	78-018	50.15	12.21	15.96	3.93	8.70	2.77	1.32	4.25	0.65
	78-078	50.16	12.11	15.72	3.92	8.59	2.54	1.31	4.18	0.81

	79-004	50.36	11.88	15.87	3.92	8.54	2.63	1 36	4 20	0.75
	78-092	50.73	12.09	15.91	3.88	8.59	2.47	1.36	4.23	0.84
	78-048	50.13	12.21	15.91	3.88	8.54	2.69	1.33	4.06	0.88
	78-019	49.82	12.12	15.68	3.86	8.40	2.82	1.38	4.22	0.67
*	78-083	50.42	12.16	16.38	3.84	8.66	1.35	2.32	4.06	0.84
	78 009	50.53	12.22	15.88	3.77	8.66	2.59	1.33	4.13	0.66
	79-004	50.32	11.98	15.60	3.77	8.78	2.57	1.36	4.11	0.78
	78-015	50.53	12.18	16.28	3.68	8.53	2.57	1.40	4.24	0.68
	78-051	50.29	12.29	16.24	3.65	8.59	2.43	1.34	4.18	0.84
	72-309	50.27	11.81	16.24	3.58	8.45	2.65	1.32	4.19	0.82
	76-059	51.82	11.97	16.40	3.58	8.22	2.36	1.32	4.18	0.94
	76-058	50.26	11.54	15.83	3.50	8.44	2.46	1.53	4.27	0.80
	NO.POINTS	19	19	19	19	19	19	19	19	19
GL ROSAL	AVERAGE	50.44	12.08	15.91	3.85	8.56	2.55	1.35	4.18	0.78
	STD.DEV.	0.42	0.19	0.23	0.18	0.13	0.15	0.05	0.06	0.08
	MAXIMUM	51.82	12.32	16.40	4.13	8.78	2.82	1.53	4.27	0.94
	MINIMUM	49.82	11.54	15.60	3.50	8.22	2.20	1.27	4.05	0.65
	DIFFERENCE	2.00	0.78	0.80	0.63	0.56	0.62	0.26	0.22	0.29

GL ROZA ROZA MEMBER

NO. OF OXIDES- 9 NO. OF DATA CARDS= 24 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K20	TIO2	P205
	75-161	50.60	13.12	14.74	4.34	8.53	2.71	1.28	3.35	0.67
*	71-023	50.87	12.42	14.59	4.24	8.16	1.83	1.17	3.37	0.57
*	76-056	53.62	12.67	15.42	4.24	7.36	0.29	0.54	3.58	0.58
	71-023	51.00	12.92	14.79	4.22	8.38	2.72	1.13	3.53	0.58
	72-020	48.58	11.85	15.39	4.20	8.15	2.29	1.09	3.26	0.67
*	71-023	51.00	12.32	14.55	4.14	8.25	1.87	1.11	3.44	0.59
*	71-024	50.80	12.54	14.49	4.14	8.64	1.90	1.66	3.30	0.59
	77-211	50.78	13.00	14.55	4.13	8.66	2.46	1.27	3.51	0.66
*	71-023	51.23	12.37	14.23	4.10	8.01	1.57	1.12	3.30	0.57
	75-159	51.76	13.22	14.50	4.09	8.49	2.61	1.14	3.55	0.58
	71-023	51.22	13.30	14.44	4.09	8.42	2.61	1.11	3.31	0.57
	71-023	51.30	13.20	14.57	4.08	8.45	2.53	1.11	3.39	0.60
	71-023	50.76	13.24	14.62	4.08	8.46	2.69	1.24	3.35	0.61
*	71-024	50.98	11.73	15.13	3.98	8.39	1.45	1.39	3.72	0.63
	79-003	51.09	11.94	15.46	3.89	8.36	2.64	1.53	4.01	0.72
	75-156	50.59	12.71	14.51	3.88	8.38	2.53	1.46	3.32	0.66
	78-086	51.14	12.30	15.45	3.84	8.47	2.69	1.42	3.97	0.72
	75-155	50.81	12.74	15.29	3.84	8.34	2.74	1.17	3.50	0.70
	75-153	51.25	12.67	14.53	3.71	8.03	2.54	1.20	3.33	0.76
*	71-024	51.12	11.51	15.57	3.63	8.28	1.36	1.33	3.68	0.61
	71-129	50.94	12.26	15.42	3.55	8.41	2.76	1.36	3.73	0.75
	78-072	51.51	12.20	15.29	3.49	7.97	2.68	1.47	3.94	0.77
	77-210	51.60	12.99	14.82	3.33	8.25	2.66	1.47	3.70	0.77
	72-023	53.05	12.40	14.59	3.22	8.26	2.44	1.55	3.72	0.88
	NO.POINTS	17	17	17	17	17	17	17	17	17
GL ROZA	AVERAGE	51.06	12.71	14.88	3.88	8.35	2.61	1.29	3.56	0.69
	STD.DEV.	0.86	0.47	0.40	0.33	0.18	0.13	0.16	0.25	0.08
	MAXIMUM	53.05	13.30	15.46	4.34	8.66	2.76	1.55	4.01	0.88
	MINIMUM	48.58	11.85	14.44	3.22	7.97	2.29	1.09	3.26	0.57
	DIFFERENCE	4.47	1.45	1.02	1.12	0.69	0.47	0.46	0.75	0.31

GLFS 1D FSP GLASS UNIT 1D

NO. OF OXIDES- 9 NO. OF DATA CARDS- 2 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K20	TIO2	P205
	76-014	53.10	12.38	15.19	2.96	7.56	2.33	1.66	3.42	0.74
	76-010	53.20	11.90	15.59	2.86	7.49	1.89	1.49	3.78	0.57
	NO.POINTS	2	2	2	2	2	2	2	2	2
GLFS 1D	AVERAGE	53.15	12.14	15.39	2.91	7.53	2.11	1.58	3.60	0.66
	STD.DEV.	0.07	0.34	0.28	0.07	0.05	0.31	0.12	0.25	0.12
	MAXIMUM	53.20	12.38	15.59	2.96	7.56	2.33	1.66	3.78	0.74
	MINIMUM	53.10	11.90	15.19	2.86	7.49	1.89	1.49	3.42	0.57
	DIFFERENCE	0.10	0.48	0.40	0.10	0.07	0.44	0.17	0.36	0.17

GLFS 3A FSP GLASS UNIT 3A

NO. OF OXIDES= 9 NO. OF DATA CARDS= 1 DATA SORTED ON: MGO

SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K20	TIO2	P205
72-021	53.37	11.97	15.42	3.40	8.11	1.65	1.23	3.86	0.56

GLFS 7 FSP GLASS UNIT 7, VOTAW DIKE

NO. OF OXIDES= 9 NO. OF DATA CARDS= 1 DATA SORTED ON: MGO

SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K20	TIO2	P205
73-027	51.82	12.32	15.69	3.43	8.12	2.57	1.42	3.71	0.74

GL FS10 BASAL FSP FLOW

NO. OF OXIDES= 9 NO. OF DATA CARDS= 2 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K20	TIO2	P205
	72-294	52.44	12.21	15.21	3.48	8.20	2.67	1.34	3.41	0.54
	74-205	52.46	12.01	15.66	3.37	7.95	2.20	1.48	3.55	0.57
	NO.POINTS	2	2	2	2	2	2	2	2	2
GL FS10	AVERAGE	52.45	12.11	15.44	3.42	8.07	2.44	1.41	3.48	0.56
	STD.DEV.	0.01	0.14	0.32	0.08	0.18	0.33	0.10	0.10	0.02
	MAXIMUM	52.46	12.21	15.66	3.48	8.20	2.67	1.48	3.55	0.57
	MINIMUM	52.44	12.01	15.21	3.37	7.95	2.20	1.34	3.41	0.54
	DIFFERENCE	0.02	0.20	0.45	0.11	0.25	0.47	0.14	0.14	0.03

GL FRSP FRENCHMAN SPRINGS MEMBER UNCLASSIFIED FLOWS

NO. OF OXIDES= 9 NO. OF DATA CARDS= 12 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K20	TIO2	P205
	78-408	50.87	13.60	13.84	4.06	8.18	3.02	1.42	3.06	0.64
	77-263	52.56	12.31	14.82	3.73	8.15	2.06	1.32	3.41	0.59
	77-242	52.32	12.91	14.90	3.60	8.24	2.85	1.39	3.28	0.58
	76-011	52.36	12.24	14.70	3.59	8.22	2.65	1.48	3.42	0.59
	76-037	51.91	12.45	14.91	3.57	8.19	2.66	1.23	3.46	0.50
	77-203	51.96	12.66	15.23	3.46	8.04	2.37	1.44	3.73	0.59
	76-013	52.60	12.24	15.52	3.38	7.95	2.59	1.36	3.59	0.72
	73-240	51.88	12.13	14.98	3.33	7.78	2.89	1.48	3.35	0.58
*	76-024	51.74	11.85	15.24	3.22	7.95	1.85	1.40	3.59	0.56
	76-001	53.13	11.92	15.82	3.12	7.79	2.30	1.68	3.87	0.65
	76-052	52.26	11.49	15.62	3.11	7.62	2.58	1.38	3.79	0.56
*	76-008	52.49	11.58	15.49	2.52	6.91	1.86	1.76	3.43	0.69
	NO.POINTS	10	10	10	10	10	10	10	10	10

GL FRSP	AVERAGE	52.19	12.40	15.03	3.50	8.02	2.60	1.42	3.50	0.60
	STD.DEV.	0.60	0.57	0.56	0.28	0.22	0.29	0.12	0.25	0.06
	MAXIMUM	53.13	13.60	15.82	4.06	8.24	3.02	1.68	3.87	0.72
	MINIMUM	50.87	11.49	13.84	3.11	7.62	2.06	1.23	3.06	0.50
	DIFFERENCE	2.26	2.11	1.98	0.95	0.62	0.96	0.45	0.81	0.22

GL FSSDD FRENCHMAN SPRINGS MEMBER SHALLOW-DIPPING DIKES

NO. OF OXIDES= 9 NO. OF DATA CARDS= 40 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K20	TIO2	P205
*	77-266	53.00	12.40	15.25	3.93	8.04	1.88	1.26	3.45	0.64
	77-233B	52.04	12.26	15.22	3.92	8.14	2.51	1.30	3.40	0.58
	77-340	52.26	12.13	15.27	3.91	8.05	2.02	1.24	3.36	0.61
*	77-339	53.70	12.61	15.51	3.82	8.32	1.87	0.29	3.40	0.61
	77-233A	52.79	12.44	15.38	3.80	8.12	2.63	1.27	3.42	0.60
	77-338	52.49	12.36	15.31	3.79	8.15	2.63	1.11	3.34	0.62
	77-225B	52.45	12.36	15.53	3.76	7.70	2.31	1.38	3.51	0.61
	77-245A	52.36	12.40	15.02	3.67	7.80	2.68	1.44	3.49	0.66
*	77-259	51.92	12.01	15.07	3.64	7.96	1.79	1.76	3.42	0.60
	77-269	52.20	12.91	14.58	3.64	7.97	2.79	1.24	3.24	0.59
	77-246	54.98	11.94	15.33	3.63	7.74	2.52	1.14	3.41	0.58
	77-245B	52.06	12.12	15.15	3.61	7.86	2.11	1.16	3.42	0.58
	77-265	52.92	12.49	15.20	3.61	7.75	2.13	1.42	3.32	0.67
	77-257	52.35	12.58	15.16	3.60	8.11	2.85	1.33	3.28	0.57
	77-243A	51.96	12.16	15.32	3.58	7.83	2.36	1.50	3.40	0.61
	77-235	52.75	12.28	15.51	3.57	7.84	2.38	1.30	3.49	0.58
	77-238B	52.10	11.92	15.29	3.57	7.46	2.08	1.88	3.39	0.68
*	77-225A	51.77	13.07	14.69	3.55	7.87	2.83	1.49	3.49	0.56
	77-313	52.28	12.55	15.16	3.54	7.73	2.73	1.10	3.34	0.63
*	77-260A	52.61	11.99	14.95	3.53	7.36	1.56	2.29	3.29	0.67
	77-238A	52.34	12.14	15.24	3.53	7.64	2.64	1.52	3.43	0.66
	77-312B	52.76	12.21	15.43	3.51	7.81	2.06	1.17	3.52	0.61
*	77-260B	52.54	12.11	15.05	3.50	7.72	1.77	2.26	3.17	0.64
	77-249A	52.52	12.11	15.39	3.50	7.69	2.78	1.14	3.45	0.59
	77-230B	51.85	12.42	15.10	3.50	7.85	2.69	1.36	3.49	0.59
	77-249B	52.56	12.18	15.46	3.49	7.83	2.37	1.20	3.48	0.61
	77-243B	51.83	12.55	15.38	3.48	7.83	3.02	1.53	3.37	0.59
	77-234	51.94	12.23	15.12	3.48	7.70	2.76	1.38	3.52	0.58
	77-230A	52.38	12.41	15.33	3.47	7.99	2.29	1.41	3.50	0.61
	77-244A	52.37	12.34	15.22	3.46	7.68	2.94	1.56	3.44	0.62
	77-312A	52.64	12.44	15.50	3.40	7.75	2.87	1.18	3.50	0.62
	77-311	52.27	12.49	15.07	3.39	7.76	2.67	1.14	3.49	0.62
	77-237	51.97	11.77	15.01	3.36	7.33	2.24	1.58	3.19	0.72
	77-250A	52.64	11.90	15.15	3.33	7.57	2.21	1.45	3.26	0.69
*	77-244B	50.27	11.61	14.49	3.29	7.40	0.84	1.73	3.29	0.59
	77-232A	52.98	12.22	15.22	3.29	7.59	2.61	1.52	3.35	0.68
*	77-232B	53.16	12.62	15.24	3.27	7.79	2.60	1.79	3.40	0.70
	77-250B	52.23	11.60	15.01	3.23	7.35	2.32	1.59	3.23	0.64
	77-251B	52.96	11.93	15.38	3.17	7.47	2.52	1.26	3.33	0.65
	77-231	52.58	12.23	14.98	3.15	7.66	2.85	1.59	3.29	0.67
	NO.POINTS	32	32	32	32	32	32	32	32	32

GL FSSDD	AVERAGE	52.46	12.25	15.23	3.53	7.77	2.52	1.36	3.40	0.62
	STD.DEV.	0.56	0.27	0.19	0.19	0.21	0.28	0.18	0.09	0.04
	MAXIMUM	54.98	12.91	15.53	3.92	8.15	3.02	1.88	3.52	0.72
	MINIMUM	51.83	11.60	14.58	3.15	7.33	2.02	1.10	3.19	0.57
	DIFFERENCE	3.15	1.31	0.95	0.77	0.82	1.00	0.78	0.33	0.15

GL DODGE ECKLER MOUNTAIN MEMBER DODGE FLOWS

NO. OF OXIDES= 9 NO. OF DATA CARDS= 9 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5
	79-115	51.02	13.94	12.33	5.78	10.02	3.05	0.62	1.65	0.29
	76-257	52.96	14.20	12.35	5.49	9.73	2.64	0.71	1.70	0.27
	76-207	52.39	14.29	11.82	5.38	9.88	3.12	0.72	1.60	0.34
	78-364	51.90	14.24	12.30	5.37	9.83	3.26	0.80	1.82	0.51
	79-125	51.86	13.89	11.72	5.37	9.72	3.08	0.81	1.78	0.36
	78-363	52.50	14.26	12.48	5.35	9.72	3.23	0.82	1.82	0.51
*	76-211	53.16	13.64	13.61	5.13	9.99	2.48	0.67	1.84	0.36
	76-246	53.72	13.54	12.79	4.85	9.45	2.94	0.78	1.87	0.48
	75-227	52.50	13.78	13.04	4.72	9.32	2.95	0.83	1.78	0.35
	NO.POINTS	8	8	8	8	8	8	8	8	8
GL DODGE	AVERAGE	52.36	14.02	12.35	5.29	9.71	3.03	0.76	1.75	0.39
	STD.DEV.	0.80	0.27	0.44	0.34	0.23	0.20	0.07	0.09	0.10
	MAXIMUM	53.72	14.29	13.04	5.78	10.02	3.26	0.83	1.87	0.51
	MINIMUM	51.02	13.54	11.72	4.72	9.32	2.64	0.62	1.60	0.27
	DIFFERENCE	2.70	0.75	1.32	1.06	0.70	0.62	0.21	0.27	0.24

GL ROBIN ECKLER MOUNTAIN MEMBER ROBINETTE MOUNTAIN DIKE

NO. OF OXIDES= 9 NO. OF DATA CARDS= 5 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5
	78-463	49.12	15.65	10.72	7.72	11.16	2.27	0.32	1.11	0.19
	78-463	49.90	15.89	10.82	7.72	11.49	2.46	0.35	1.12	0.19
	78-463	49.79	16.34	10.84	7.72	11.37	2.24	0.34	1.12	0.18
	78-463	49.22	15.73	10.76	7.68	11.27	2.38	0.34	1.10	0.21
	78-463	49.61	16.37	10.79	7.56	11.45	2.64	0.30	1.15	0.24
	NO.POINTS	5	5	5	5	5	5	5	5	5
GL ROBIN	AVERAGE	49.53	16.00	10.79	7.68	11.35	2.40	0.33	1.12	0.20
	STD.DEV.	0.34	0.34	0.05	0.07	0.13	0.16	0.02	0.02	0.02
	MAXIMUM	49.90	16.37	10.84	7.72	11.49	2.64	0.35	1.15	0.24
	MINIMUM	49.12	15.65	10.72	7.56	11.16	2.24	0.30	1.10	0.18
	DIFFERENCE	0.78	0.72	0.12	0.16	0.33	0.40	0.05	0.05	0.06

Table 6. Uncorrected analyses used to compute the average chemical composition of naturally quenched glass from geochemical units assigned to the Saddle Mountains Basalt.

GL LM LOWER MONUMENTAL MEMBER -

NO. OF OXIDES= 9 NO. OF DATA CARDS= 1 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5
	75-122	52.41	11.77	16.18	3.40	8.27	2.21	1.37	3 93	0.60

GL GOOSE ICE HARBOR MEMBER GOOSE ISLAND FLOW

NO. OF OXIDES= 9 NO. OF DATA CARDS= 8 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5
	76-034	48.48	11.38	18.09	3.98	9.00	2.40	1.15	3.77	1.98
	76-031	47.93	11.45	17.49	3.94	8.87	2.49	1.38	3.87	1.60
	76-029	47.86	11.14	18.06	3.84	8.88	2.26	1.13	4.01	1.90
	76-030B	48.17	10.91	18.35	3.68	9.03	2.15	1.37	4.14	1.71
	76-032	47.65	10.50	18.80	3.67	9.00	2.42	1.38	4.27	1.74
	76-030A	47.98	10.81	18.36	3.67	8.94	2.19	1.42	4.20	1.75
	76-033	48.16	10.73	18.46	3.64	9.09	2.44	1.30	4.19	1.66
	76-035	47.18	10.34	18.30	3.58	8.92	2.00	1.49	4.10	1.71
	NO.POINTS	8	8	8	8	8	8	8	8	8
GL GOOSE	AVERAGE	47.93	10.91	18.24	3.75	8.97	2.29	1.33	4.07	1.76
	STD.DEV.	0.39	0.40	0.38	0.15	0.08	0.17	0.13	0.17	0.12
	MAXIMUM	48.48	11.45	18.80	3.98	9.09	2.49	1.49	4.27	1.98
	MINIMUM	47.18	10.34	17.49	3.58	8.87	2.00	1.13	3.77	1.60
	DIFFERENCE	1.30	1.11	1.31	0.40	0.22	0.49	0.36	0.50	0.38

GLINDIAN ICE HARBOR MEMBER INDIAN MEMORIAL FLOW

NO. OF OXIDES= 9 NO. OF DATA CARDS= 3 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5
*	73-095	50.04	11.63	16.81	3.85	8.90	0.88	1.05	4.52	0.92
	76-005	48.43	11.39	16.03	3.84	8.84	2.31	1.28	4.50	0.86
	76-003	49.47	11.40	16.74	3.74	8.83	1.60	1.46	4.49	0.92
	NO.POINTS	2	2	2	2	2	2	2	2	2
GLINDIAN	AVERAGE	48.95	11.40	16.39	3.79	8.84	1.96	1.37	4.49	0.89
	STD.DEV.	0.74	0.01	0.50	0.07	0.01	0.50	0.13	0.01	0.04
	MAXIMUM	49.47	11.40	16.74	3.84	8.84	2.31	1.46	4.50	0.92
	MINIMUM	48.43	11.39	16.03	3.74	8.83	1.60	1.28	4.49	0.86
	DIFFERENCE	1.04	0.01	0.71	0.10	0.01	0.71	0.18	0.01	0.06

GLMARTIN ICE HARBOR MEMBER MARTINDALE FLOW

NO. OF OXIDES= 9 NO. OF DATA CARDS= 4 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5
	76-007	48.28	12.89	15.29	5.31	10.14	2.37	0.79	3.90	0.76
	71-110A	47.72	12.38	16.13	5.25	10.21	2.18	0.82	3.79	0.78
	71-110B	47.70	12.32	15.89	5.20	9.83	2.34	0.79	3.62	0.72
*	73-085	51.35	12.22	14.99	4.10	8.69	2 85	1.27	3.50	0.69
	NO.POINTS	3	3	3	3	3	3	3	3	3

GLMARTIN	AVERAGE	47.90	12.53	15.77	5.25	10.06	2.30	0.80	3.77	0 75
	STD.DEV.	0.33	0.31	0.43	0.06	0.20	0.10	0.02	0 14	0.03
	MAXIMUM	48.28	12.89	16.13	5.31	10.21	2.37	0.82	3.90	0.78
	MINIMUM	47.70	12.32	15.29	5.20	9.83	2.18	0.79	3.62	0.72
	DIFFERENCE	0.58	0.57	0.84	0.11	0.38	0.19	0.03	0.28	0.06

GL BASIN ICE HARBOR MEMBER BASIN CITY FLOW

NO. OF OXIDES= 9 NO. OF DATA CARDS= 3 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K20	TIO2	P205
	73-162	46.53	11.94	16.97	4.71	9.93	2.29	0.81	4 28	0 85
	73-147	47.61	11.58	17.33	4.67	9.96	2.04	0.89	4.69	0.97
	72-259	47.78	11.02	17.59	4.40	9.73	2.18	0.89	4.83	1.16
	NO.POINTS	3	3	3	3	3	3	3	3	3
GL BASIN	AVERAGE	47.31	11.51	17.30	4.59	9.87	2.17	0.86	4.60	0.99
	STD.DEV.	0.68	0.46	0.31	0.17	0.13	0.13	0.05	0.29	0.16
	MAXIMUM	47.78	11.94	17.59	4.71	9.96	2.29	0.89	4.83	1.16
	MINIMUM	46.53	11.02	16.97	4.40	9.73	2.04	0.81	4.28	0.85
	DIFFERENCE	1.25	0.92	0.62	0.31	0.23	0.25	0.08	0.55	0.31

GLBUFORD BUFORD MEMBER

NO. OF OXIDES= 9 NO. OF DATA CARDS= 1 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K20	TIO2	P205
	76-212	55.02	12.44	13.68	3.10	7.55	1.76	1.84	2.72	0.37

52

GL EM ELEPHANT MOUNTAIN MEMBER

NO. OF OXIDES= 9 NO. OF DATA CARDS= 14 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K20	TIO2	P205
*	79-133	51.00	12.34	15.21	4.07	8.25	2.40	1.22	3.79	0.51
*	79-136	51.13	12.25	15.30	3.87	8.35	2.60	1.19	3.84	0.56
	74-325	52.13	12.21	16.23	3.70	8.46	2.47	1.36	4.02	0.52
	71-017	52.25	11.88	16.16	3.69	8.47	2.36	1.35	4.12	0.51
	73-107	51.14	11.81	15.84	3.68	8.36	2.28	1.28	3.84	0.51
	74-303	51.39	11.70	16.11	3.67	8.40	2.24	1.26	4.03	0.49
	76-077	51.21	11.95	15.69	3.66	8.28	2.32	1.35	4.06	0.53
	73-037	51.20	11.74	15.89	3.62	8.45	2.14	1.13	4.00	0.56
	76-078	51.17	11.70	16.03	3.52	8.22	2.30	1.28	4.05	0.54
	76-080	51.81	11.42	16.11	3.49	8.12	2.14	1.24	4.20	0.50
	76-090	51.38	11.73	16.31	3.40	7.98	2.14	1.52	4.02	0.57
	73-020	51.60	12.07	15.96	3.39	8.13	2.47	1.39	3.75	0.54
*	76-075	53.23	12.28	16.99	3.28	7.98	2.22	1.44	3.72	0.73
	76-081	51.78	11.23	16.49	3.26	7.94	1.97	1.45	3.88	0.56
	NO.POINTS	11	11	11	11	11	11	11	11	11
GL EM	AVERAGE	51.55	11.77	16.07	3.55	8.26	2.26	1.33	4.00	0.53
	STD.DEV.	0.39	0.27	0.23	0.15	0.19	0.15	0.11	0.13	0.03
	MAXIMUM	52.25	12.21	16.49	3.70	8.47	2.47	1.52	4.20	0.57
	MINIMUM	51.14	11.23	15.69	3.26	7.94	1.97	1.13	3.75	0.49
	DIFFERENCE	1.11	0.98	0.80	0.44	0.53	0.50	0.39	0.45	0.08

GLPOMONA POMONA MEMBER

NO. OF OXIDES= 9 NO. OF DATA CARDS= 7 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5
	71-115	52.64	13.76	11.48	5.84	10.61	2.43	0.66	1 90	0.22
	73-057	52.73	13.96	11.37	5.70	10.37	2.53	0.79	1.99	0.23
	76-086	52.91	13.95	11.55	5.68	10.42	2.49	0.68	2.04	0.30
	76-089	52.64	13.45	11.64	5.63	10.49	2.50	0.61	1.97	0.23
	76-079	52.90	13.68	12.02	5.34	9.96	2.35	0.78	2.12	0.25
	76-050	52.87	13.39	12.40	5.07	9.89	2.58	0.70	2.32	0.25
	76-071	52.93	13.61	12.57	4.79	9.88	2.26	0.72	2.26	0.25
	NO.POINTS	7	7	7	7	7	7	7	7	7
GLPOMONA	AVERAGE	52.80	13.69	11.86	5.44	10.23	2.45	0.71	2.09	0.25
	STD.DEV.	0.13	0.22	0.47	0.39	0.31	0.11	0.06	0.16	0.03
	MAXIMUM	52.93	13.96	12.57	5.84	10.61	2.58	0 79	2.32	0.30
	MINIMUM	52.64	13.39	11.37	4.79	9.88	2.26	0.61	1 90	0.22
	DIFFERENCE	0.29	0.57	1.20	1.05	0.73	0 32	0.18	0.42	0.08

GL WEIPE WEIPPE FLOW

NO. OF OXIDES= 9 NO. OF DATA CARDS= 1 DATA SORTED ON: MGO

SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5
VC79-325	51.58	13.37	12.52	5.64	10.19	2.59	0.57	2.11	0.23

GLESQUAT ESQUATZEL MEMBER

NO. OF OXIDES= 9 NO. OF DATA CARDS= 1 DATA SORTED ON: MGO

SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5
73-019	54.96	12.74	14.04	3.07	7.08	2.72	1.92	3.24	0.37

GLSPRAGE WEISSENFELS RIDGE MEMBER SPRAGUE LAKE FLOW

NO. OF OXIDES= 9 NO. OF DATA CARDS= 3 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5
	78-076	49.06	12.76	14.80	5.19	10.27	2.36	0.73	3.49	0.76
	72-219A	50.09	11.65	16.45	4.22	9.12	2.35	1.07	4.15	0.73
	72-219B	49.52	11.49	16.66	3.93	8.86	2.49	1.08	4.07	0.75
	NO.POINTS	3	3	3	3	3	3	3	3	3
GLSPRAGE	AVERAGE	49.56	11.97	15.97	4.45	9.42	2.40	0.96	3.90	0.75
	STD.DEV.	0.52	0.69	1.02	0.66	0.75	0.08	0.20	0.36	0.02
	MAXIMUM	50.09	12.76	16.86	5.19	10.27	2.49	1.08	4.15	0.76
	MINIMUM	49.06	11.49	14.80	3.93	8.86	2.35	0.73	3.49	0.73
	DIFFERENCE	1.03	1.27	1.86	1.26	1.41	0.14	0.35	0.66	0.03

GL NEW WEISSENFELS RIDGE MEMBER NEW FLOW OFF MAIN ROAD

NO. OF OXIDES= 9 NO. OF DATA CARDS= 6 DATA SORTED ON: MGO

SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5
76-252	50.07	15.04	11.75	7.23	11.92	2.26	0.42	2.09	0.43
76-267	49.84	14.62	11.16	7.07	11.43	2.33	0.47	1.94	0.38
76-253	49.04	14.85	11.36	7.05	11.62	2.35	0.41	2.00	0.41
76-222	49.30	14.85	11.38	6.94	11.49	2.35	0.43	2.05	0.47
76-227	49.78	15.20	11.07	6.82	11.26	2.49	0.47	2.08	0.51
76-225	49.49	13.98	11.02	6.48	11.29	2.02	1.95	2.00	0.46

	NO.POINTS	5	5	5	5	5	5	5	5	5
GL NEW	AVERAGE	49.61	14.91	11.34	7.02	11.54	2.36	0.44	2 03	0.44
	STD.DEV.	0.42	0.22	0.26	0.15	0.25	0.08	0.03	0.06	0.05
	MAXIMUM	50.07	15.20	11.75	7.23	11.92	2.49	0.47	2.09	0.51
	MINIMUM	49.04	14.62	11.07	6.82	11.26	2.26	0.41	1.94	0.38
	DIFFERENCE	1.03	0.58	0.68	0.41	0.66	0.23	0.06	0.15	0.13

GL ANA WEISSENFELS RIDGE MEMBER ANATONE FLOW OF PRICE

NO. OF OXIDES- 9 NO. OF DATA CARDS- 1 DATA SORTED ON: MGO

SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5
76-224	48.11	11.73	14.96	3.89	8.91	0.79	1.71	3.28	0.79

GL LO WEISSENFELS RIDGE MEMBER LEWISTON ORCHARDS FLOW

NO. OF OXIDES- 9 NO. OF DATA CARDS- 4 DATA SORTED ON: MGO

SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5
74-316	50.65	13.33	13.81	4.86	9.17	2.55	0.97	2.84	0.49
74-307	49.96	13.36	13.83	4.70	8.99	2.82	0.96	2.94	0.49
74-315	51.17	13.14	14.42	4.52	9.30	2.45	0.99	3.15	0.57
* 76-261	49.89	12.69	12.90	4.40	9.05	0.54	2.20	2.69	0.45
NO.POINTS	3	3	3	3	3	3	3	3	3
GL LO AVERAGE	50.59	13.28	14.02	4.69	9.15	2.61	0.97	2.98	0.52
STD.DEV.	0.61	0.12	0.35	0.17	0.16	0.19	0.02	0.16	0.05
MAXIMUM	51.17	13.36	14.42	4.86	9.30	2.82	0.99	3.15	0.57
MINIMUM	49.96	13.14	13.81	4.52	8.99	2.45	0.96	2.84	0.49
DIFFERENCE	1.21	0.22	0.61	0.34	0.31	0.37	0.03	0.31	0.08

54

GLASOTIN ASOTIN MEMBER

NO. OF OXIDES- 9 NO. OF DATA CARDS- 4 DATA SORTED ON: MGO

SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5
76-234	52.02	14.59	11.09	6.00	11.21	2.45	0.60	1.88	0.26
74-311	52.13	14.38	11.45	5.66	10.45	2.49	0.94	1.90	0.24
75-165	54.86	13.97	11.72	4.62	9.26	2.52	1.21	2.21	0.37
75-137	54.46	13.18	12.18	3.62	7.90	2.68	1.65	2.12	0.51
NO.POINTS	4	4	4	4	4	4	4	4	4
GLASOTIN AVERAGE	53.37	14.03	11.61	4.97	9.70	2.54	1.10	2.03	0.34
STD.DEV.	1.50	0.62	0.46	1.08	1.45	0.10	0.44	0.16	0.12
MAXIMUM	54.86	14.59	12.18	6.00	11.21	2.68	1.65	2.21	0.51
MINIMUM	52.02	13.18	11.09	3.62	7.90	2.45	0.60	1.88	0.24
DIFFERENCE	2.84	1.41	1.09	2.38	3.31	0.23	1.05	0.33	0.27

GL LAP LAPWAI FLOWS

NO. OF OXIDES- 9 NO. OF DATA CARDS- 1 DATA SORTED ON: MGO

SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5
VC78-417	54.42	13.41	12.14	4.05	8.24	2.68	1.76	2.33	0.48

GLWILBUR WILBUR CREEK MEMBER

NO. OF OXIDES= 9 NO. OF DATA CARDS= 5 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5
	76-065	55.13	14.13	12.10	4.26	8.72	2.55	1.52	2.14	0.50
*	76-057	54.43	14.23	11.31	3.99	8.54	2.68	1.55	2.07	0.39
	71-084	55.61	13.21	12.24	3.27	7.43	2.59	2.04	2.41	0.52
	76-054	54.88	13.46	12.32	3.03	7.22	2.47	1.87	2.45	0.48
	75-119	55.05	12.76	12.16	2.60	6.63	1.96	2.07	2.64	0.62
	NO.POINTS	4	4	4	4	4	4	4	4	4
GLWILBUR	AVERAGE	55.17	13.39	12.21	3.29	7.50	2.39	1.88	2.41	0.53
	STD.DEV.	0.31	0.57	0.10	0.70	0.88	0.29	0.25	0.21	0.06
	MAXIMUM	55.61	14.13	12.32	4.26	8.72	2.59	2.07	2.64	0.62
	MINIMUM	54.88	12.76	12.10	2.60	6.63	1.96	1.52	2.14	0.48
	DIFFERENCE	0.73	1.37	0.22	1.66	2.09	0.63	0.55	0.50	0.14

GL UM UMATILLA MEMBER

NO. OF OXIDES= 9 NO. OF DATA CARDS= 5 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5
	76-215	53.85	13.09	12.94	2.93	6.25	2.48	2.55	2.69	0.70
	76-226	53.65	13.11	11.47	2.42	6.21	2.22	3.91	2.42	1.04
	76-231	55.05	13.19	11.29	2.20	5.72	2.07	2.74	2.22	1.08
	76-027	55.45	12.81	12.50	2.18	6.03	1.81	2.59	2.55	1.03
	76-041	56.97	12.64	12.63	1.96	5.42	2.68	3.05	2.68	1.13
	NO.POINTS	5	5	5	5	5	5	5	5	5
GL UM	AVERAGE	54.99	12.97	12.17	2.34	5.93	2.25	2.97	2.51	1.00
	STD.DEV.	1.34	0.23	0.74	0.37	0.35	0.34	0.56	0.20	0.17
	MAXIMUM	56.97	13.19	12.94	2.93	6.25	2.68	3.91	2.69	1.13
	MINIMUM	53.65	12.64	11.29	1.96	5.42	1.81	2.55	2.22	0.70
	DIFFERENCE	3.32	0.55	1.65	0.97	0.83	0.87	1.36	0.47	0.43

Table 7. Analyses used to calculate the average chemical composition of additional flows from the Columbia River Plateau.

WT NEPH TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: WT NEPH

NO. OF OXIDES-39 NO. OF DATA CARDS= 4 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K20	TIO2	P205	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
12	WT78016a	42.24	14.79	16.56	8.32	9.32	4.26	0.68	3.30	0.95	0.22	291.	0.	-58.1	79.6	-.009	1.75	0.0
12	WT78016b	42.24	14.79	16.56	8.32	9.32	4.26	0.68	3.30	0.95	0.22	280.	195.	-54.2	80.8	-.009	1.70	6.0
12	WT78006a	45.18	15.73	14.60	7.62	8.67	4.38	0.74	2.81	0.73	0.22	280.	0.	-49.8	88.0	-.009	1.65	0.0
12	WT78006b	45.18	15.73	14.60	7.62	8.67	4.38	0.74	2.81	0.73	0.22	323.	200.	-51.2	91.8	-.009	1.80	6.0
	NO.POINTS	4	4	4	4	4	4	4	4	4	4	4	2	0	4	0	4	2
WT NEPH	AVERAGE	43.71	15.26	15.58	7.97	8.99	4.32	0.71	3.06	0.84	0.22	294.	198.	0.0	85.1	0.000	1.73	6.0
	STD.DEV.	1.70	0.54	1.13	0.40	0.38	0.07	0.03	0.28	0.13	0.00	20.	4.	0.0	5.8	0.000	0.06	0.0
	MAXIMUM	45.18	15.73	16.56	8.32	9.32	4.38	0.74	3.30	0.95	0.22	323.	200.	0.0	91.8	0.000	1.80	6.0
	MINIMUM	42.24	14.79	14.60	7.62	8.67	4.26	0.68	2.81	0.73	0.22	280.	195.	0.0	79.6	0.000	1.65	6.0
	DIFFERENCE	2.94	0.94	1.96	0.70	0.65	0.12	0.06	0.49	0.22	0.00	43.	5.	0.0	12.2	0.000	0.15	0.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
12	WT78016a	0.0	0.0	0.	0.44	0.00	0.000	0.0	139.	0.	0.	27.0	19.0	50.8	42.5	7.5	2.27	4 6
12	WT78016b	0.0	0.0	1024.	0.44	0.00	0.000	12.0	142.	0.	68.	25.9	18.0	48.0	31.0	7.9	2.27	4 5
12	WT78006a	0.0	0.0	0.	0.45	0.00	0.000	0.0	120.	0.	0.	24.7	14.7	39.2	29.1	6.0	1.89	4 0
12	WT78006b	0.0	0.0	935.	0.45	0.00	0.000	15.0	130.	0.	66.	25.4	15.0	39.0	27.0	6.0	2.00	4 7
	NO.POINTS	0	0	2	4	0	0	2	4	0	2	4	4	4	4	4	4	4
WT NEPH	AVERAGE	0.0	0.0	980.	0.45	0.00	0.000	13.5	133.	0.	67.	25.8	16.7	44.3	32.4	6.8	2.11	4.5
	STD.DEV.	0.0	0.0	63.	0.01	0.00	0.000	2.1	10.	0.	1.	1.0	2.2	6.1	6.9	1.0	0.19	0.3
	MAXIMUM	0.0	0.0	1024.	0.45	0.00	0.000	15.0	142.	0.	68.	27.0	19.0	50.8	42.5	7.9	2.27	4 7
	MINIMUM	0.0	0.0	935.	0.44	0.00	0.000	12.0	120.	0.	66.	24.7	14.7	39.0	27.0	6.0	1.89	4.0
	DIFFERENCE	0.0	0.0	89.	0.01	0.00	0.000	3.0	22.	0.	2.	2.3	4.3	11.8	15.5	1.9	0.38	0 7

	SAMPLE	Tb	Yb	Lu	Cu	Ni
12	WT78016a	0.90	0.96	0.14	0.0	0.0
12	WT78016b	0.89	1.20	0.14	0.0	0.0
12	WT78006a	0.81	1.12	0.14	0.0	0.0
12	WT78006b	0.73	1.20	0.15	0.0	0.0
	NO.POINTS	4	4	4	0	0
WT NEPH	AVERAGE	0.83	1.12	0.14	0.0	0.0
	STD.DEV.	0.08	0.11	0.01	0.0	0.0
	MAXIMUM	0.90	1.20	0.15	0.0	0.0
	MINIMUM	0.73	0.96	0.14	0.0	0.0
	DIFFERENCE	0.17	0.24	0.01	0.0	0.0

WT ANDES TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: WT ANDES

NO. OF OXIDES-39 NO. OF DATA CARDS= 4 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K20	TIO2	P205	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
13	WT78005a	55.70	17.86	7.57	4.14	7.53	4.56	1.36	1.28	0.55	0.14	596.	0.	-33.5	63.0	0.399	2.66	0.0
13	WT78005b	55.70	17.86	7.57	4.14	7.53	4.56	1.36	1.28	0.55	0.14	627.	535.	-32.9	62.8	0.300	2.60	0.0
13	WT78024a	62.92	18.16	4.36	2.10	5.08	4.70	2.19	0.66	0.43	0.11	1110.	0.	-16.7	29.9	0.480	3.52	0.0
13	WT78024b	62.92	18.16	4.36	2.10	5.08	4.70	2.19	0.66	0.43	0.11	1060.	1106.	-16.4	31.3	0.500	3.40	0.0
	NO.POINTS	4	4	4	4	4	4	4	4	4	4	4	2	0	4	4	4	0
WT ANDES	AVERAGE	59.31	18.01	5.97	3.12	6.31	4.63	1.78	0.97	0.49	0.13	848.	821.	0.0	46.8	0.420	3.05	0.0

	STD.DEV.	4.17	0.17	1.85	1.18	1.41	0.08	0.48	0.36	0.07	0.02	274.	404.	0.0	18.7	0.091	0.48	0 0
	MAXIMUM	62.92	18.16	7.57	4.14	7.53	4.70	2.19	1.28	0.55	0.14	1110.	1106.	0.0	63.0	0.500	3.52	0.0
	MINIMUM	55.70	17.86	4.36	2.10	5.08	4.56	1.36	0.66	0.43	0.11	596.	535.	0.0	29.9	0.300	2.60	0.0
	DIFFERENCE	7.22	0.30	3.21	2.04	2.45	0.14	0.83	0.62	0.12	0.03	514.	571.	0.0	33.1	0.200	0.92	0.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
13	WT78005a	0.0	0.0	0.	0.52	1.60	0.740	0.0	100.	119.	0.	16.9	26.2	47.1	28.9	5.7	1.70	4.9
13	WT78005b	0.0	9.0	1155.	0.52	1.50	0.000	18.0	100.	130.	97.	16.8	26.0	45.0	30.0	5.1	1.66	4.4
13	WT78024a	11.9	0.0	0.	0.61	2.08	0.751	0.0	71.	177.	0.	10.2	34.6	56.4	26.4	4.9	1.35	4.2
13	WT78024b	20.0	16.0	868.	0.61	1.80	0.000	23.0	72.	140.	152.	10.2	35.0	56.0	28.0	5.3	1.37	4.3
	NO.POINTS	2	2	2	4	4	2	2	4	4	2	4	4	4	4	4	4	4
WT ANDES	AVERAGE	15.9	12.5	1012.	0.56	1.75	0.746	20.5	86.	142.	125.	13.5	30.5	51.1	28.3	5.3	1.52	4.5
	STD.DEV.	5.7	4.9	203.	0.05	0.26	0.008	3.5	16.	25.	39.	3.8	5.0	5.9	1.5	0.3	0.19	0.3
	MAXIMUM	20.0	16.0	1155.	0.61	2.08	0.751	23.0	100.	177.	152.	16.9	35.0	56.4	30.0	5.7	1.70	4.9
	MINIMUM	11.9	9.0	868.	0.52	1.50	0.740	18.0	71.	119.	97.	10.2	26.0	45.0	26.4	4.9	1.35	4.2
	DIFFERENCE	8.1	7.0	287.	0.09	0.58	0.011	5.0	29.	58.	55.	6.7	9.0	11.4	3.6	0.8	0.35	0.7

	SAMPLE	Tb	Yb	Lu	Cu	Ni
13	WT78005a	0.68	1.84	0.24	0.0	0.0
13	WT78005b	0.68	1.80	0.27	0.0	0.0
13	WT78024a	0.51	1.70	0.23	0.0	0.0
13	WT78024b	0.53	1.70	0.24	0.0	0.0
	NO.POINTS	4	4	4	0	0
WT ANDES	AVERAGE	0.60	1.76	0.25	0.0	0.0
	STD.DEV.	0.09	0.07	0.02	0.0	0.0
	MAXIMUM	0.68	1.84	0.27	0.0	0.0
	MINIMUM	0.51	1.70	0.23	0.0	0.0
	DIFFERENCE	0.17	0.14	0.04	0.0	0.0

57

WT JONES TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: WT JONES

NO. OF OXIDES-39 NO. OF DATA CARDS- 4 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
14	WT79017a	62.84	19.29	3.35	2.46	6.53	4.39	1.07	0.45	0.25	0.11	595.	0.	-26.0	24.8	0.800	2.10	0 0
14	WT79017b	62.84	19.29	3.35	2.46	6.53	4.39	1.07	0.45	0.25	0.11	595.	0.	-25.5	23.6	0.800	2.00	0.0
14	WT79016a	62.94	19.34	3.37	2.39	6.59	4.19	1.10	0.45	0.25	0.11	588.	0.	-30.7	23.8	0.800	2.10	0.0
14	WT79016b	62.94	19.34	3.37	2.39	6.59	4.19	1.10	0.45	0.25	0.11	588.	0.	-31.2	24.0	0.900	2.00	0.0
	NO.POINTS	4	4	4	4	4	4	4	4	4	4	4	0	0	4	4	4	0
WT JONES	AVERAGE	62.89	19.32	3.36	2.43	6.56	4.29	1.09	0.45	0.25	0.11	592.	0.	0.0	24.0	0.825	2.05	0.0
	STD.DEV.	0.06	0.03	0.01	0.04	0.03	0.12	0.02	0.00	0.00	0.00	4.	0.	0.0	0.5	0.050	0.06	0.0
	MAXIMUM	62.94	19.34	3.37	2.46	6.59	4.39	1.10	0.45	0.25	0.11	595.	0.	0.0	24.8	0.900	2.10	0.0
	MINIMUM	62.84	19.29	3.35	2.39	6.53	4.19	1.07	0.45	0.25	0.11	588.	0.	0.0	23.6	0.800	2.00	0.0
	DIFFERENCE	0.10	0.05	0.02	0.07	0.06	0.20	0.03	0.00	0.00	0.00	7.	0.	0.0	1.2	0.100	0.10	0.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
14	WT79017a	21.0	0.0	0.	0.43	2.10	0.700	0.0	66.	120.	0.	8.6	14.0	27.0	7.0	2.3	0.75	2.2
14	WT79017b	16.0	0.0	0.	0.43	2.00	0.400	0.0	63.	160.	0.	8.3	14.0	25.0	12.0	2.1	0.73	2.2
14	WT79016a	15.0	0.0	0.	0.49	2.00	0.900	0.0	67.	72.	0.	8.7	15.0	25.0	17.0	2.3	0.75	2.5
14	WT79016b	18.0	0.0	0.	0.49	2.10	0.900	0.0	65.	0.	0.	8.6	15.0	26.0	14.0	2.4	0.78	1.8
	NO.POINTS	4	0	0	4	4	4	0	4	3	0	4	4	4	4	4	4	4
WT JONES	AVERAGE	17.5	0.0	0.	0.46	2.05	0.725	0.0	65.	117.	0.	8.6	14.5	25.8	12.5	2.3	0.75	2.2
	STD.DEV.	2.6	0.0	0.	0.03	0.06	0.236	0.0	2.	44.	0.	0.2	0.6	1.0	4.2	0.1	0.02	0.3

MAXIMUM	21.0	0.0	0.	0.49	2.10	0.900	0.0	67.	160.	0.	8.7	15.0	27.0	17.0	2.4	0.78	2.5
MINIMUM	15.0	0.0	0.	0.43	2.00	0.400	0.0	63.	72.	0.	8.3	14.0	25.0	7.0	2.1	0.73	1 8
DIFFERENCE	6.0	0.0	0.	0.06	0.10	0.500	0.0	4.	88.	0.	0.4	1.0	2.0	10.0	0.3	0.05	0.7

	SAMPLE	Tb	Yb	Lu	Cu	Ni
14	WT79017a	0.30	0.90	0.11	0.0	0.0
14	WT79017b	0.23	0.90	0.12	0.0	0.0
14	WT79016a	0.29	0.90	0.10	0.0	0.0
14	WT79016b	0.31	0.90	0.14	0.0	0.0
	NO.POINTS	4	4	4	0	0
WT JONES	AVERAGE	0.28	0.90	0.12	0.0	0.0
	STD.DEV.	0.04	0.00	0.02	0.0	0.0
	MAXIMUM	0.31	0.90	0.14	0.0	0.0
	MINIMUM	0.23	0.90	0.10	0.0	0.0
	DIFFERENCE	0.08	0.00	0.04	0.0	0.0

WT SUGMT TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: WT SUGMT

NO. OF OXIDES=39 NO. OF DATA CARDS= 6 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
15	WT79019a	50.04	15.52	8.90	5.17	9.95	4.41	2.79	2.28	1.42	0.15	1630.	0.	-32.3	43.3	0.700	4.90	0.0
15	WT79019b	50.04	15.52	8.90	5.17	9.95	4.41	2.79	2.28	1.42	0.15	1630.	0.	-31.6	42.7	0.600	4.50	0.0
15	WT79026a	54.19	17.74	7.63	3.64	8.12	4.28	2.30	1.72	0.87	0.14	1080.	0.	-28.4	35.1	0.600	3.90	0.0
15	WT79026b	54.19	17.74	7.63	3.64	8.12	4.28	2.30	1.72	0.87	0.14	1090.	0.	-26.3	34.4	0.400	3.60	0.0
15	78-399 a	56.80	18.01	7.45	2.52	7.09	4.31	2.08	1.56	0.87	0.20	1000.	0.	-19.7	20.7	0.700	3.60	0.0
15	78-399 b	56.80	18.01	7.45	2.52	7.09	4.31	2.08	1.56	0.87	0.20	976.	0.	-19.9	22.0	0.600	3.70	0.0
	NO.POINTS	6	6	6	6	6	6	6	6	6	6	6	0	0	6	6	6	0
WT SUGMT	AVERAGE	53.68	17.09	7.99	3.78	8.39	4.33	2.39	1.85	1.05	0.16	1234.	0.	0.0	33.0	0.600	4.03	0.0
	STD.DEV.	3.05	1.22	0.71	1.19	1.30	0.06	0.33	0.34	0.28	0.03	310.	0.	0.0	9.8	0.110	0.54	0.0
	MAXIMUM	56.80	18.01	8.90	5.17	9.95	4.41	2.79	2.28	1.42	0.20	1630.	0.	0.0	43.3	0.700	4.90	0.0
	MINIMUM	50.04	15.52	7.45	2.52	7.09	4.28	2.08	1.56	0.87	0.14	976.	0.	0.0	20.7	0.400	3.60	0.0
	DIFFERENCE	6.76	2.49	1.45	2.65	2.86	0.13	0.71	0.72	0.55	0.06	654.	0.	0.0	22.6	0.300	1.30	0.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
15	WT79019a	25.0	0.0	0.	0.75	3.30	1.300	0.0	128.	160.	0.	17.0	71.0	163.0	89.0	12.1	3.26	8.6
15	WT79019b	33.0	0.0	0.	0.75	3.40	0.800	0.0	125.	210.	0.	16.4	71.0	155.0	79.0	11.5	3.22	8.1
15	WT79026a	13.0	0.0	0.	0.49	3.10	0.400	0.0	131.	190.	0.	17.2	45.0	99.0	52.0	7.8	2.19	6.0
15	WT79026b	16.0	0.0	0.	0.49	2.80	0.800	0.0	111.	160.	0.	15.9	45.0	91.0	57.0	7.4	2.06	4.6
15	78-399 a	20.0	0.0	0.	0.56	2.90	1.000	0.0	116.	120.	0.	15.1	41.0	86.0	44.0	6.8	2.02	6.1
15	78-399 b	18.0	0.0	0.	0.56	2.90	0.700	0.0	115.	140.	0.	15.0	41.0	83.0	52.0	7.1	2.04	5.0
	NO.POINTS	6	0	0	6	6	6	0	6	6	0	6	6	6	6	6	6	6
WT SUGMT	AVERAGE	20.8	0.0	0.	0.60	3.07	0.833	0.0	121.	163.	0.	16.1	52.3	112.8	62.2	8.8	2.47	6.4
	STD.DEV.	7.2	0.0	0.	0.12	0.24	0.301	0.0	8.	33.	0.	0.9	14.6	36.3	17.7	2.4	0.60	1.6
	MAXIMUM	33.0	0.0	0.	0.75	3.40	1.300	0.0	131.	210.	0.	17.2	71.0	163.0	89.0	12.1	3.26	8.6
	MINIMUM	13.0	0.0	0.	0.49	2.80	0.400	0.0	111.	120.	0.	15.0	41.0	83.0	44.0	6.8	2.02	4.6
	DIFFERENCE	20.0	0.0	0.	0.26	0.60	0.900	0.0	20.	90.	0.	2.2	30.0	80.0	45.0	5.3	1.24	4.0

	SAMPLE	Tb	Yb	Lu	Cu	Ni
15	WT79019a	0.89	1.50	0.21	0.0	0.0
15	WT79019b	0.84	1.40	0.17	0.0	0.0
15	WT79026a	0.73	1.20	0.19	0.0	0.0
15	WT79026b	0.58	1.20	0.17	0.0	0.0
15	78-399 a	0.52	1.30	0.18	0.0	0.0
15	78-399 b	0.65	1.30	0.17	0.0	0.0

	NO.POINTS	6	6	6	0	0
WT SUGMT	AVERAGE	0.70	1.32	0.18	0.0	0.0
	STD.DEV.	0.15	0.12	0.02	0.0	0.0
	MAXIMUM	0.89	1.50	0.21	0.0	0.0
	MINIMUM	0.52	1.20	0.17	0.0	0.0
	DIFFERENCE	0.37	0.30	0.04	0.0	0.0

WT SPRMT TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: WT SPRMT

NO. OF OXIDES=39 NO. OF DATA CARDS= 10 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
16	WT79020a	51.23	16.32	8.27	5.15	9.93	3.60	2.59	2.05	1.29	0.15	1490.	0.	-29.5	72.8	.009	3.29	0.0
16	WT79020b	51.23	16.32	8.27	5.15	9.93	3.60	2.59	2.05	1.29	0.15	1480.	0.	-29.9	69.4	-.009	3.40	0.0
16	WT79020c	51.23	16.32	8.27	5.15	9.93	3.60	2.59	2.05	1.29	0.15	1630.	0.	-29.5	67.5	.009	3.30	0.0
16	WT79023a	51.74	16.26	7.98	4.96	9.80	3.87	2.62	1.98	1.27	0.15	1300.	0.	-27.3	72.1	0.300	3.40	0.0
16	WT79023b	51.74	16.26	7.98	4.96	9.80	3.87	2.62	1.98	1.27	0.15	1320.	0.	-27.5	70.9	0.300	3.40	0.0
16	WT79022a	51.02	15.98	10.08	4.90	8.82	4.56	1.95	2.11	1.04	0.15	719.	0.	-35.3	52.3	0.400	2.80	0.0
16	WT79022b	51.02	15.98	10.08	4.90	8.82	4.56	1.95	2.11	1.04	0.15	750.	0.	-36.6	55.3	0.300	2.90	0.0
16	WT79004c	50.73	15.86	10.28	4.86	8.71	4.92	1.99	2.14	1.03	0.14	689.	711.	-36.0	46.4	-.009	2.90	20.0
16	WT79004a	50.73	15.86	10.28	4.86	8.71	4.92	1.99	2.14	1.03	0.14	750.	0.	-36.1	46.9	-.009	2.78	0.0
16	WT79004b	50.73	15.86	10.28	4.86	8.71	4.92	1.99	2.14	1.03	0.14	756.	0.	-37.5	46.5	0.500	2.90	0.0
	NO.POINTS	10	10	10	10	10	10	10	10	10	10	10	1	0	10	5	10	1
WT SPRMT	AVERAGE	51.14	16.10	9.18	4.97	9.32	4.24	2.29	2.08	1.16	0.15	1088.	711.	0.0	60.0	0.360	3.11	20.0
	STD.DEV.	0.38	0.21	1.09	0.13	0.60	0.59	0.33	0.06	0.13	0.00	386.	0.	0.0	11.5	0.089	0.27	0.0
	MAXIMUM	51.74	16.32	10.28	5.15	9.93	4.92	2.62	2.14	1.29	0.15	1630.	711.	0.0	72.8	0.500	3.40	20.0
	MINIMUM	50.73	15.86	7.98	4.86	8.71	3.60	1.95	1.98	1.03	0.14	689.	711.	0.0	46.4	0.300	2.78	20.0
	DIFFERENCE	1.01	0.46	2.30	0.29	1.22	1.32	0.67	0.16	0.26	0.01	941.	0.	0.0	26.4	0.200	0.62	0.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
16	WT79020a	0.0	0.0	0.	0.57	2.00	0.589	0.0	128.	109.	0.	16.2	57.1	125.0	65.8	10.2	2.59	6.6
16	WT79020b	17.0	0.0	0.	0.57	2.00	0.400	0.0	133.	80.	0.	16.2	56.0	129.0	73.0	10.8	2.64	6 3
16	WT79020c	10.0	0.0	0.	0.57	2.20	0.900	0.0	132.	140.	0.	16.0	56.0	120.0	75.0	11.3	2.58	6.6
16	WT79023a	20.0	0.0	0.	0.51	2.20	-.009	0.0	138.	170.	0.	16.1	52.0	119.0	62.0	8.2	2.55	6.8
16	WT79023b	0.0	0.0	0.	0.51	2.00	0.600	0.0	125.	160.	0.	16.0	51.0	117.0	66.0	8.9	2.49	6.0
16	WT79022a	10.0	0.0	0.	0.47	1.70	-.009	0.0	156.	130.	0.	15.5	38.0	84.0	46.0	6.2	1.99	5.1
16	WT79022b	8.0	0.0	0.	0.47	1.60	-.009	0.0	139.	130.	0.	15.6	39.0	87.0	44.0	7.3	2.11	5.3
16	WT79004c	0.0	36.0	2443.	0.50	1.50	0.600	0.0	144.	140.	122.	15.7	38.0	88.0	47.0	8.1	2.10	4.8
16	WT79004a	0.0	0.0	0.	0.50	1.49	0.740	0.0	136.	86.	0.	15.7	40.0	89.9	50.8	8.3	2.13	5.3
16	WT79004b	0.0	0.0	0.	0.50	1.60	0.600	0.0	144.	200.	0.	15.9	40.0	91.0	46.0	8.5	2.12	5.2
	NO.POINTS	5	1	1	10	10	7	0	10	10	1	10	10	10	10	10	10	10
WT SPRMT	AVERAGE	13.0	36.0	2443.	0.52	1.83	0.633	0.0	138.	135.	122.	15.9	46.7	105.0	57.6	8.8	2.33	5.8
	STD.DEV.	5.2	0.0	0.	0.04	0.28	0.154	0.0	9.	37.	0.	0.3	8.4	18.3	12.1	1.6	0.26	0.7
	MAXIMUM	20.0	36.0	2443.	0.57	2.20	0.900	0.0	156.	200.	122.	16.2	57.1	129.0	75.0	11.3	2.64	6.8
	MINIMUM	8.0	36.0	2443.	0.47	1.49	0.400	0.0	125.	80.	122.	15.5	38.0	84.0	44.0	6.2	1.99	4.8
	DIFFERENCE	12.0	0.0	0.	0.10	0.71	0.500	0.0	31.	120.	0.	0.7	19.1	45.0	31.0	5.1	0.65	2.0

	SAMPLE	Tb	Yb	Lu	Cu	Ni
16	WT79020a	0.80	1.11	0.23	0.0	0.0
16	WT79020b	0.61	1.20	0.15	0.0	0.0
16	WT79020c	0.77	1.20	0.16	0.0	0.0
16	WT79023a	0.66	1.10	0.16	0.0	0.0
16	WT79023b	0.72	1.20	0.18	0.0	0.0
16	WT79022a	0.61	1.00	0.17	0.0	0.0
16	WT79022b	0.60	1.10	0.15	0.0	0.0
16	WT79004c	0.59	1.00	0.14	0.0	0.0
16	WT79004a	0.75	1.05	0.18	0.0	0.0

16	WT79004b	0.70	1.00	0.21	0.0	0.0
	NO.POINTS	10	10	10	0	0
WT SPRMT	AVERAGE	0.68	1.10	0.17	0.0	0.0
	STD.DEV.	0.08	0.08	0.03	0.0	0.0
	MAXIMUM	0.80	1.20	0.23	0.0	0.0
	MINIMUM	0.59	1.00	0.14	0.0	0.0
	DIFFERENCE	0.21	0.20	0.09	0.0	0.0

WT WBRMT TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: WT WBRMT

NO. OF OXIDES-39 NO. OF DATA CARDS- 4 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
17	WT79028a	54.11	17.93	7.50	4.53	8.24	4.52	1.54	1.42	0.74	0.14	657.	0.	-27.5	99.4	0.419	2.61	0.0
17	WT79028b	54.11	17.93	7.50	4.53	8.24	4.52	1.54	1.42	0.74	0.14	658.	0.	-27.5	98.2	0.600	2.70	0.0
17	WT79027a	53.01	16.97	7.76	4.33	9.14	4.80	1.86	1.70	0.91	0.16	914.	0.	-29.5	111.0	0.699	3.40	0.0
17	WT79027b	53.01	16.97	7.76	4.33	9.14	4.80	1.86	1.70	0.91	0.16	876.	0.	-29.3	109.0	0.600	3.30	0.0
	NO.POINTS	4	4	4	4	4	4	4	4	4	4	4	0	0	4	4	4	0
WT WBRMT	AVERAGE	53.56	17.45	7.63	4.43	8.69	4.66	1.70	1.56	0.83	0.15	776.	0.	0.0	104.4	0.580	3.00	0.0
	STD.DEV.	0.64	0.55	0.15	0.12	0.52	0.16	0.18	0.16	0.10	0.01	138.	0.	0.0	6.5	0.117	0.41	0.0
	MAXIMUM	54.11	17.93	7.76	4.53	9.14	4.80	1.86	1.70	0.91	0.16	914.	0.	0.0	111.0	0.699	3.40	0.0
	MINIMUM	53.01	16.97	7.50	4.33	8.24	4.52	1.54	1.42	0.74	0.14	657.	0.	0.0	98.2	0.419	2.61	0.0
	DIFFERENCE	1.10	0.96	0.26	0.20	0.90	0.28	0.32	0.28	0.17	0.02	257.	0.	0.0	12.8	0.280	0.79	0.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
17	WT79028a	0.0	0.0	0.	0.36	2.37	0.480	0.0	102.	0.	0.	16.0	32.1	66.4	39.0	5.5	1.57	4.4
17	WT79028b	0.0	0.0	0.	0.36	2.30	0.400	0.0	100.	310.	0.	16.3	32.0	65.0	38.0	5.7	1.61	4.4
17	WT79027a	18.0	0.0	0.	0.53	2.84	0.929	0.0	113.	159.	0.	17.2	44.6	96.3	44.9	8.6	2.11	5.9
17	WT79027b	10.0	0.0	0.	0.53	2.80	0.800	0.0	123.	50.	0.	16.9	43.0	94.0	51.0	8.1	2 13	6.5
	NO.POINTS	2	0	0	4	4	4	0	4	3	0	4	4	4	4	4	4	4
WT WBRMT	AVERAGE	14.0	0.0	0.	0.44	2.58	0.652	0.0	110.	173.	0.	16.6	37.9	80.4	43.2	7.0	1.86	5.3
	STD.DEV.	5.7	0.0	0.	0.10	0.28	0.253	0.0	11.	131.	0.	0.5	6.8	17.0	6.0	1.6	0.31	1.1
	MAXIMUM	18.0	0.0	0.	0.53	2.84	0.929	0.0	123.	310.	0.	17.2	44.6	96.3	51.0	8.6	2.13	6.5
	MINIMUM	10.0	0.0	0.	0.36	2.30	0.400	0.0	100.	50.	0.	16.0	32.0	65.0	38.0	5.5	1.57	4.4
	DIFFERENCE	8.0	0.0	0.	0.17	0.54	0.529	0.0	23.	260.	0.	1.2	12.6	31.3	13.0	3.1	0.56	2.1

	SAMPLE	Tb	Yb	Lu	Cu	Ni
17	WT79028a	0.45	1.15	0.24	0.0	0.0
17	WT79028b	0.54	1.10	0.16	0.0	0.0
17	WT79027a	0.67	1.33	0.21	0.0	0.0
17	WT79027b	0.67	1.30	0.16	0.0	0.0
	NO.POINTS	4	4	4	0	0
WT WBRMT	AVERAGE	0.58	1.22	0.19	0.0	0.0
	STD.DEV.	0.11	0.11	0.04	0.0	0.0
	MAXIMUM	0.67	1.33	0.24	0.0	0.0
	MINIMUM	0.45	1.10	0.16	0.0	0.0
	DIFFERENCE	0.22	0.23	0.08	0.0	0.0

PH EDEN TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: PH EDEN

NO. OF OXIDES-39 NO. OF DATA CARDS- 4 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K20	TIO2	P205	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
18	PH78274a	52.12	14.52	13.70	3.81	7.22	2.36	2.34	2.75	1.38	0.23	1870.	0.	-42.7	34.3	1.000	11.40	0.0
18	PH78274b	52.12	14.52	13.70	3.81	7.22	2.36	2.34	2.75	1.38	0.23	1750.	0.	-41.5	33.0	0.700	10.90	0.0
18	PH78192a	52.01	14.03	14.21	3.22	7.65	2.79	2.14	2.75	1.40	0.26	1830.	0.	-36.4	36.4	0.819	10.70	0.0
18	PH78192b	52.01	14.03	14.21	3.22	7.65	2.79	2.14	2.75	1.40	0.26	1700.	1774.	-33.4	35.5	0.700	10.21	34.0
	NO.POINTS	4	4	4	4	4	4	4	4	4	4	4	1	0	4	4	4	1
PH EDEN	AVERAGE	52.06	14.28	13.95	3.52	7.43	2.58	2.24	2.75	1.39	0.25	1788.	1774.	0.0	34.8	0.805	10.80	34.0
	STD.DEV.	0.06	0.28	0.29	0.34	0.25	0.25	0.12	0.00	0.01	0.02	77.	0.	0.0	1.5	0.142	0.49	0.0
	MAXIMUM	52.12	14.52	14.21	3.81	7.65	2.79	2.34	2.75	1.40	0.26	1870.	1774.	0.0	36.4	1.000	11.40	34.0
	MINIMUM	52.01	14.03	13.70	3.22	7.22	2.36	2.14	2.75	1.38	0.23	1700.	1774.	0.0	33.0	0.700	10.21	34.0
	DIFFERENCE	0.11	0.49	0.51	0.59	0.43	0.43	0.20	0.00	0.02	0.03	170.	0.	0.0	3.4	0.300	1.19	0.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
18	PH78274a	57.0	0.0	0.	2.55	8.10	1.800	0.0	160.	567.	0.	28.3	61.0	121.0	67.0	13.3	4.57	15.4
18	PH78274b	51.0	0.0	0.	2.55	7.70	1.500	0.0	159.	475.	0.	27.2	59.0	115.0	66.0	12.3	4.48	14.8
18	PH78192a	53.0	0.0	0.	2.19	7.91	1.700	0.0	148.	506.	0.	27.5	58.8	119.0	62.0	14.0	4.42	13.0
18	PH78192b	50.0	49.0	238.	2.19	7.20	0.000	59.0	142.	400.	480.	25.2	56.0	112.0	59.0	15.1	4.20	13.0
	NO.POINTS	4	1	1	4	4	3	1	4	4	1	4	4	4	4	4	4	4
PH EDEN	AVERAGE	52.8	49.0	238.	2.37	7.73	1.667	59.0	152.	487.	480.	27.1	58.7	116.8	63.5	13.7	4.42	14.1
	STD.DEV.	3.1	0.0	0.	0.21	0.39	0.153	0.0	9.	69.	0.	1.3	2.1	4.0	3.7	1.2	0.16	1.2
	MAXIMUM	57.0	49.0	238.	2.55	8.10	1.800	59.0	160.	567.	480.	28.3	61.0	121.0	67.0	15.1	4.57	15.4
	MINIMUM	50.0	49.0	238.	2.19	7.20	1.500	59.0	142.	400.	480.	25.2	56.0	112.0	59.0	12.3	4.20	13.0
	DIFFERENCE	7.0	0.0	0.	0.36	0.90	0.300	0.0	18.	167.	0.	3.1	5.0	9.0	8.0	2.8	0.37	2 4

	SAMPLE	Tb	Yb	Lu	Cu	Ni
18	PH78274a	2.18	6.00	0.85	0.0	0.0
18	PH78274b	1.92	5.70	0.80	0.0	0.0
18	PH78192a	2.19	5.67	0.83	0.0	0.0
18	PH78192b	2.01	5.80	0.82	0.0	0.0
	NO.POINTS	4	4	4	0	0
PH EDEN	AVERAGE	2.08	5.79	0.82	0.0	0.0
	STD.DEV.	0.13	0.15	0.02	0.0	0.0
	MAXIMUM	2.19	6.00	0.85	0.0	0.0
	MINIMUM	1.92	5.67	0.80	0.0	0.0
	DIFFERENCE	0.27	0.33	0.05	0.0	0.0

WT OBHTI **TRACE ELEMENT** AVERAGES FOR CHEMICAL TYPE: WT OBHTI

NO. OF OXIDES-39 NO. OF DATA CARDS- 10 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K20	TIO2	P205	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
19	WT78011a	50.23	17.09	9.24	11.12	9.18	2.32	0.11	0.96	0.28	0.20	91.	0.	47.4	466.0	-.009	1.40	0.0
19	WT78011b	50.23	17.09	9.24	11.12	9.18	2.32	0.11	0.96	0.28	0.20	0.	0.	45.6	490.0	-.009	1.30	0.0
19	WT78012a	50.46	16.87	9.64	9.83	9.06	2.12	0.77	1.31	0.40	0.16	354.	0.	-46.1	428.0	-.009	1.90	0.0
19	WT78012b	50.46	16.87	9.64	9.83	9.06	2.12	0.77	1.31	0.40	0.16	396.	0.	-44.4	420.0	-.009	2.00	0.0
19	WT78027a	51.42	16.77	9.48	9.03	9.56	2.50	0.15	1.20	0.35	0.16	273.	0.	-42.8	379.0	0.200	2.20	0.0
19	WT78027b	51.42	16.77	9.48	9.03	9.56	2.50	0.15	1.20	0.35	0.16	310.	0.	-42.3	374.0	-.009	2.00	0.0
19	WT78043a	50.21	16.66	10.42	7.94	9.93	2.46	0.54	1.72	0.48	0.18	348.	0.	-60.2	376.0	-.009	2.50	0.0
19	WT78043b	50.21	16.66	10.42	7.94	9.93	2.46	0.54	1.72	0.48	0.18	323.	0.	-58.7	367.0	-.009	2.20	0.0
19	WT78029a	51.68	16.43	10.55	6.40	8.96	2.97	0.78	2.01	0.58	0.18	486.	0.	-45.6	170.0	-.009	3.29	0.0
19	WT78029b	51.68	16.43	10.55	6.40	8.96	2.97	0.78	2.01	0.58	0.18	427.	428.	-41.4	165.0	-.009	3.00	14.0
	NO.POINTS	10	10	10	10	10	10	10	10	10	10	9	1	2	10	1	10	1
WT OBHTI	AVERAGE	50.80	16.76	9.87	8.86	9.34	2.47	0.47	1.44	0.42	0.18	334.	428.	46.5	363.5	0.200	2.18	14.0

	STD.DEV.	0.66	0.23	0.55	1.70	0.38	0.30	0.31	0.40	0.11	0.02	112.	0.	1.3	111.2	0.000	0.63	0 0
	MAXIMUM	51.68	17.09	10.55	11.12	9.93	2.97	0.78	2.01	0.58	0.20	486.	428.	47.4	490.0	0.200	3.29	14.0
	MINIMUM	50.21	16.43	9.24	6.40	8.96	2.12	0.11	0.96	0.28	0.16	91.	428.	45.6	165.0	0.200	1.30	14.0
	DIFFERENCE	1.47	0.66	1.31	4.72	0.97	0.85	0.67	1.05	0.30	0.04	395.	0.	1.8	325.0	0.000	1.99	0.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
19	WT78011a	0.0	0.0	0.	0.37	0.00	0.000	0.0	81.	0.	0.	28.1	7.2	16.6	10.5	2.8	0.89	2.8
19	WT78011b	0.0	0.0	0.	0.41	0.40	0.000	0.0	77.	0.	0.	29.1	8.0	15.0	8.0	2.5	0.85	1.9
19	WT78012a	22.0	0.0	0.	0.40	0.80	-.009	0.0	99.	68.	0.	27.7	12.0	25.0	13.0	3.3	1.17	3.8
19	WT78012b	22.0	0.0	0.	0.40	0.70	-.009	0.0	87.	81.	0.	26.4	12.0	26.0	15.0	3.3	1.13	3.6
19	WT78027a	0.0	0.0	0.	0.50	0.90	-.009	0.0	86.	140.	0.	26.8	12.0	24.0	16.0	3.1	1.09	3.5
19	WT78027b	9.0	0.0	0.	0.50	0.90	0.400	0.0	82.	0.	0.	26.3	12.0	25.0	18.0	3.3	1.10	4.1
19	WT78043a	16.0	0.0	0.	0.52	1.00	-.009	0.0	117.	100.	0.	31.7	13.0	28.0	18.0	3.8	1.32	2.9
19	WT78043b	20.0	0.0	0.	0.52	0.60	0.400	0.0	98.	0.	0.	30.5	14.0	27.0	22.0	3.9	1.33	3.4
19	WT78029a	5.0	0.0	0.	0.72	1.32	0.300	0.0	109.	0.	0.	28.3	21.5	45.8	27.9	6.3	1.92	5.5
19	WT78029b	0.0	10.0	479.	0.72	1.00	0.000	27.0	112.	100.	136.	26.3	20.0	40.0	24.0	5.6	1.78	5.1
	NO.POINTS	6	1	1	10	9	3	1	10	5	1	10	10	10	10	10	10	10
WT OBHTI	AVERAGE	15.7	10.0	479.	0.51	0.85	0.367	27.0	95.	98.	136.	28.1	13.2	27.2	17.2	3.8	1.26	3.7
	STD.DEV.	7.2	0.0	0.	0.13	0.26	0.058	0.0	14.	27.	0.	1.9	4.5	9.4	6.1	1.2	0.35	1.1
	MAXIMUM	22.0	10.0	479.	0.72	1.32	0.400	27.0	117.	140.	136.	31.7	21.5	45.8	27.9	6.3	1.92	5.5
	MINIMUM	5.0	10.0	479.	0.37	0.40	0.300	27.0	77.	68.	136.	26.3	7.2	15.0	8.0	2.5	0.85	1.9
	DIFFERENCE	17.0	0.0	0.	0.35	0.92	0.100	0.0	40.	72.	0.	5.4	14.3	30.8	19.9	3.8	1.07	3.6

	SAMPLE	Tb	Yb	Lu	Cu	Ni
19	WT78011a	0.62	1.95	0.29	0.0	0.0
19	WT78011b	0.50	2.10	0.32	0.0	0.0
19	WT78012a	0.62	1.90	0.27	0.0	0.0
19	WT78012b	0.56	1.80	0.27	0.0	0.0
19	WT78027a	0.65	2.10	0.30	0.0	0.0
19	WT78027b	0.57	2.10	0.28	0.0	0.0
19	WT78043a	0.73	2.40	0.34	0.0	0.0
19	WT78043b	0.74	2.20	0.36	0.0	0.0
19	WT78029a	1.01	2.88	0.43	0.0	0.0
19	WT78029b	0.92	2.80	0.44	0.0	0.0
	NO.POINTS	10	10	10	0	0
WT OBHTI	AVERAGE	0.69	2.22	0.33	0.0	0.0
	STD.DEV.	0.16	0.37	0.06	0.0	0.0
	MAXIMUM	1.01	2.88	0.44	0.0	0.0
	MINIMUM	0.50	1.80	0.27	0.0	0.0
	DIFFERENCE	0.51	1.08	0.17	0.0	0.0

92

WT OBLTI TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: WT OBLTI

NO. OF OXIDES=39 NO. OF DATA CARDS= 6 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
20	WT78047a	50.32	17.23	10.12	8.93	10.38	1.96	0.35	0.86	0.18	0.18	200.	0.	-46.6	138.0	-.009	1.60	0.0
20	WT78047b	50.32	17.23	10.12	8.93	10.38	1.96	0.35	0.86	0.18	0.18	280.	0.	-44.5	135.0	-.009	1.50	0.0
20	WT78053a	50.44	17.20	9.20	8.61	10.86	2.46	0.31	1.06	0.27	0.16	246.	0.	-51.6	581.0	-.009	1.80	0.0
20	WT78053b	50.44	17.20	9.20	8.61	10.86	2.46	0.31	1.06	0.27	0.16	237.	0.	-50.7	583.0	-.009	1.80	0.0
20	WT78080a	51.31	17.81	8.78	6.78	11.11	2.66	0.44	1.14	0.40	0.16	344.	0.	-44.0	244.0	-.009	1.81	0.0
20	WT78080b	51.31	17.81	8.78	6.78	11.11	2.66	0.44	1.14	0.40	0.16	322.	245.	-40.6	239.0	-.009	1.70	0.0
	NO.POINTS	6	6	6	6	6	6	6	6	6	6	6	1	0	6	0	6	0
WT OBLTI	AVERAGE	50.69	17.41	9.37	8.11	10.78	2.36	0.37	1.02	0.28	0.17	272.	245.	0.0	320.0	0.000	1.70	0.0
	STD.DEV.	0.48	0.31	0.61	1.04	0.33	0.32	0.06	0.13	0.10	0.01	54.	0.	0.0	208.3	0.000	0.13	0.0
	MAXIMUM	51.31	17.81	10.12	8.93	11.11	2.66	0.44	1.14	0.40	0.18	344.	245.	0.0	583.0	0.000	1.81	0.0

	MINIMUM	50.32	17.20	8.78	6.78	10.38	1.96	0.31	0.86	0.18	0.16	200.	245.	0.0	135.0	0.000	1.50	0.0
	DIFFERENCE	0.99	0.61	1.34	2.15	0.73	0.70	0.13	0 28	0 22	0.02	144.	0.	0.0	448.0	0.000	0.31	0 0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
20	WT78047a	23.9	0.0	0.	0.45	0.00	0.000	0.0	87.	0.	0.	35.1	7.0	13.7	10.0	2.7	0.89	2.7
20	WT78047b	0.0	0.0	0.	0.45	0.60	0.000	0.0	88.	0.	0.	33.6	6.0	14.0	9.0	2.4	0.84	2.1
20	WT78053a	0.0	0.0	0.	0.35	0.70	-.009	0.0	94.	0.	0.	31.1	9.0	19.0	16.0	2.6	0.93	2.2
20	WT78053b	0.0	0.0	0.	0.35	0.80	-.009	0.0	90.	81.	0.	30.4	9.0	20.0	14.0	2.9	0.96	2.9
20	WT78020a	0.0	0.0	0.	0.32	0.44	0.000	0.0	89.	0.	0.	34.0	10.1	22.9	13.9	3.7	1.07	3.8
20	WT78020b	0.0	8.0	467.	0.32	0.50	0.000	21.0	79.	0.	81.	31.6	9.0	21.0	12.0	3.1	1.00	2.7
	NO.POINTS	1	1	1	6	5	0	1	6	1	1	6	6	6	6	6	6	6
WT OBLTI	AVERAGE	23.9	8.0	467.	0.37	0.61	0.000	21.0	88.	81.	81.	32.6	8.4	18.4	12.5	2.9	0.95	2.7
	STD.DEV.	0.0	0.0	0.	0.06	0.15	0.000	0.0	5.	0.	0.	1.9	1.5	3.8	2.7	0.5	0.08	0.6
	MAXIMUM	23.9	8.0	467.	0.45	0.80	0.000	21.0	94.	81.	81.	35.1	10.1	22.9	16.0	3.7	1.07	3.8
	MINIMUM	23.9	8.0	467.	0.32	0.44	0.000	21.0	79.	81.	81.	30.4	6.0	13.7	9.0	2.4	0.84	2.1
	DIFFERENCE	0.0	0.0	0.	0.13	0.36	0.000	0.0	15.	0.	0.	4.7	4.1	9.2	7.0	1.3	0.23	1.7

	SAMPLE	Tb	Yb	Lu	Cu	Ni
20	WT78047a	0.65	2.08	0.33	0.0	0.0
20	WT78047b	0.54	1.80	0.40	0.0	0.0
20	WT78053a	0.57	2.10	0.28	0.0	0.0
20	WT78053b	0.51	2.00	0.32	0.0	0.0
20	WT78020a	0.56	2.11	0.31	0.0	0.0
20	WT78020b	0.57	2.10	0.32	0.0	0.0
	NO.POINTS	6	6	6	0	0
WT OBLTI	AVERAGE	0.57	2.03	0.33	0.0	0.0
	STD.DEV.	0.05	0.12	0.04	0.0	0.0
	MAXIMUM	0.65	2.11	0.40	0.0	0.0
	MINIMUM	0.51	1.80	0.28	0.0	0.0
	DIFFERENCE	0.14	0.31	0.12	0.0	0.0

VC CRAIG TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: VC CRAIG

NO. OF OXIDES-39 NO. OF DATA CARDS= 4 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL203	FEO	MGO	CAO	NA20	K2O	TIO2	P205	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
21	VC78371a	52.89	14.69	13.48	3.99	6.98	2.96	1.78	2.94	0.53	0.18	704.	0.	-40.0	8.0	0.659	6.11	0.0
21	VC78371b	52.89	14.69	13.48	3.99	6.98	2.96	1.78	2.94	0.53	0.18	730.	0.	-40.2	7.5	0.700	6.10	0.0
21	VC79136a	52.64	14.76	14.15	3.67	7.26	2.50	1.70	2.97	0.53	0.19	735.	0.	-42.3	7.4	-.009	6.30	0.0
21	VC79136b	52.64	14.76	14.15	3.67	7.26	2.50	1.70	2.97	0.53	0.19	690.	0.	-41.0	6.6	-.009	5.80	0.0
	NO.POINTS	4	4	4	4	4	4	4	4	4	4	4	0	0	4	2	4	0
VC CRAIG	AVERAGE	52.76	14.73	13.82	3.83	7.12	2.73	1.74	2.96	0.53	0.19	715.	0.	0.0	7.4	0.679	6.08	0.0
	STD.DEV.	0.14	0.04	0.39	0.18	0.16	0.27	0.05	0.02	0.00	0.01	21.	0.	0.0	0.6	0.029	0.21	0.0
	MAXIMUM	52.89	14.76	14.15	3.99	7.26	2.96	1.78	2.97	0.53	0.19	735.	0.	0.0	8.0	0.700	6.30	0.0
	MINIMUM	52.64	14.69	13.48	3.67	6.98	2.50	1.70	2.94	0.53	0.18	690.	0.	0.0	6.6	0.659	5.80	0.0
	DIFFERENCE	0.25	0.07	0.67	0.32	0.28	0.46	0.08	0.03	0.00	0.01	45.	0.	0.0	1.4	0.041	0.50	0.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
21	VC78371a	52.9	0.0	0.	1.68	7.30	1.440	0.0	148.	169.	0.	25.9	43.6	80.2	45.8	8.8	2.41	9.3
21	VC78371b	42.0	0.0	0.	1.68	6.90	1.500	0.0	150.	320.	0.	25.7	42.0	79.0	44.0	9.0	2.41	8.3
21	VC79136a	29.9	0.0	0.	1.65	7.20	1.550	0.0	145.	239.	0.	26.7	43.8	83.8	45.8	8.8	2.45	9.2
21	VC79136b	42.0	0.0	0.	1.65	7.20	1.400	0.0	151.	0.	0.	26.0	42.0	83.0	44.0	8.6	2.37	0.0
	NO.POINTS	4	0	0	4	4	4	0	4	3	0	4	4	4	4	4	4	3

VC CRAIG	AVERAGE	41.7	0.0	0.	1.66	7.15	1.473	0.0	149.	243.	0.	26.1	42.8	81.5	44.9	8.8	2.41	8.9
	STD.DEV.	9.4	0.0	0.	0.02	0.17	0.066	0.0	3.	76.	0.	0.4	1.0	2.3	1.0	0.2	0.03	0.6
	MAXIMUM	52.9	0.0	0.	1.68	7.30	1.550	0.0	151.	320.	0.	26.7	43.8	83.8	45.8	9.0	2.45	9.3
	MINIMUM	29.9	0.0	0.	1.65	6.90	1.400	0.0	145.	169.	0.	25.7	42.0	79.0	44.0	8.6	2.37	8.3
	DIFFERENCE	23.0	0.0	0.	0.03	0.40	0.150	0.0	6.	151.	0.	1.0	1.8	4.8	1.8	0.4	0.08	1.0

	SAMPLE	Tb	Yb	Lu	Cu	Ni
21	VC78371a	1.27	4.02	0.85	0.0	0.0
21	VC78371b	1.54	4.10	0.57	0.0	0.0
21	VC79136a	1.14	4.03	0.68	0.0	0.0
21	VC79136b	1.05	3.80	0.57	0.0	0.0
	NO.POINTS	4	4	4	0	0
VC CRAIG	AVERAGE	1.25	3.99	0.67	0.0	0.0
	STD.DEV.	0.21	0.13	0.13	0.0	0.0
	MAXIMUM	1.54	4.10	0.85	0.0	0.0
	MINIMUM	1.05	3.80	0.57	0.0	0.0
	DIFFERENCE	0.49	0.30	0.28	0.0	0.0

VC SWAMP TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: VC SWAMP

NO. OF OXIDES-39 NO. OF DATA CARDS- 4 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
22	VC79319a	51.89	15.16	12.76	4.92	8.50	2.74	1.12	2.73	0.40	0.22	610.	0.	-50.6	36.5	0.630	5.49	0.0
22	VC79319b	51.89	15.16	12.76	4.92	8.50	2.74	1.12	2.73	0.40	0.22	606.	0.	-50.7	37.8	-.009	5.50	0.0
22	VC79317a	51.58	14.66	13.10	4.86	8.56	3.17	1.17	2.72	0.38	0.21	498.	0.	-48.3	38.5	0.699	5.43	0.0
22	VC79317b	51.58	14.66	13.10	4.86	8.56	3.17	1.17	2.72	0.38	0.21	483.	0.	-46.8	39.7	-.009	5.20	0.0
	NO.POINTS	4	4	4	4	4	4	4	4	4	4	4	0	0	4	2	4	0
VC SWAMP	AVERAGE	51.74	14.91	12.93	4.89	8.53	2.95	1.14	2.73	0.39	0.22	549.	0.	0.0	38.1	0.664	5.41	0.0
	STD.DEV.	0.18	0.29	0.20	0.03	0.03	0.25	0.03	0.01	0.01	0.01	68.	0.	0.0	1.3	0.049	0.14	0.0
	MAXIMUM	51.89	15.16	13.10	4.92	8.56	3.17	1.17	2.73	0.40	0.22	610.	0.	0.0	39.7	0.699	5.50	0.0
	MINIMUM	51.58	14.66	12.76	4.86	8.50	2.74	1.12	2.72	0.38	0.21	483.	0.	0.0	36.5	0.630	5.20	0.0
	DIFFERENCE	0.31	0.50	0.34	0.06	0.06	0.43	0.05	0.01	0.02	0.01	127.	0.	0.0	3.2	0.069	0.30	0.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
22	VC79319a	27.9	0.0	0.	1.54	3.13	1.070	0.0	159.	439.	0.	34.4	35.3	60.1	34.0	8.1	2.30	8.8
22	VC79319b	13.0	0.0	0.	1.54	3.10	0.700	0.0	159.	430.	0.	33.7	34.0	55.0	37.0	8.2	2.32	7.1
22	VC79317a	27.0	0.0	0.	1.51	3.25	1.160	0.0	167.	419.	0.	34.4	30.9	56.3	33.1	7.5	2.21	8.4
22	VC79317b	27.0	0.0	0.	1.51	3.10	1.200	0.0	153.	390.	0.	32.6	29.0	54.0	34.0	7.5	2.14	7.5
	NO.POINTS	4	0	0	4	4	4	0	4	4	0	4	4	4	4	4	4	4
VC SWAMP	AVERAGE	23.7	0.0	0.	1.52	3.15	1.033	0.0	160.	420.	0.	33.8	32.3	56.4	34.5	7.8	2.24	8.0
	STD.DEV.	7.2	0.0	0.	0.02	0.07	0.228	0.0	6.	21.	0.	0.9	2.9	2.7	1.7	0.4	0.08	0.8
	MAXIMUM	27.9	0.0	0.	1.54	3.25	1.200	0.0	167.	439.	0.	34.4	35.3	60.1	37.0	8.2	2.32	8.8
	MINIMUM	13.0	0.0	0.	1.51	3.10	0.700	0.0	153.	390.	0.	32.6	29.0	54.0	33.1	7.5	2.14	7.1
	DIFFERENCE	14.9	0.0	0.	0.03	0.15	0.500	0.0	14.	49.	0.	1.8	6.3	6.1	3.9	0.7	0.18	1.7

	SAMPLE	Tb	Yb	Lu	Cu	Ni
22	VC79319a	1.42	4.41	0.87	0.0	0.0
22	VC79319b	1.43	4.00	0.58	0.0	0.0
22	VC79317a	1.32	4.28	0.94	0.0	0.0
22	VC79317b	1.28	3.90	0.57	0.0	0.0
	NO.POINTS	4	4	4	0	0
VC SWAMP	AVERAGE	1.36	4.15	0.74	0.0	0.0
	STD.DEV.	0.07	0.24	0.19	0.0	0.0

MAXIMUM	1.43	4.41	0.94	0.0	0.0
MINIMUM	1.28	3.90	0.57	0.0	0.0
DIFFERENCE	0.15	0.51	0.37	0.0	0.0

VC IFLAT TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: VC IFLAT

NO. OF OXIDES-39 NO. OF DATA CARDS- 4 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
23	VC79257a	51.87	15.83	11.81	5.60	9.52	3.14	0.74	1.44	0.37	0.22	355.	0.	-43.4	80.6	-.009	2.55	0.0
23	VC79257b	51.87	15.83	11.81	5.60	9.52	3.14	0.74	1.44	0.37	0.22	388.	0.	-43.4	87.5	-.009	2.50	0.0
23	VC79282a	52.24	16.18	11.27	5.12	9.60	3.10	0.81	1.47	0.37	0.30	479.	0.	-49.0	78.9	-.009	2.63	0.0
23	VC79282b	52.24	16.18	11.27	5.12	9.60	3.10	0.81	1.47	0.37	0.30	434.	0.	-48.4	81.8	-.009	2.70	0.0
	NO.POINTS	4	4	4	4	4	4	4	4	4	4	4	0	0	4	0	4	0
VC IFLAT	AVERAGE	52.06	16.01	11.54	5.36	9.56	3.12	0.77	1.46	0.37	0.26	414.	0.	0.0	82.2	0.000	2.60	0.0
	STD.DEV.	0.21	0.20	0.31	0.28	0.05	0.02	0.04	0.02	0.00	0.05	54.	0.	0.0	3.7	0.000	0.09	0.0
	MAXIMUM	52.24	16.18	11.81	5.60	9.60	3.14	0.81	1.47	0.37	0.30	479.	0.	0.0	87.5	0.000	2.70	0.0
	MINIMUM	51.87	15.83	11.27	5.12	9.52	3.10	0.74	1.44	0.37	0.22	355.	0.	0.0	78.9	0.000	2.50	0.0
	DIFFERENCE	0.37	0.35	0.54	0.48	0.08	0.04	0.07	0.03	0.00	0.08	124.	0.	0.0	8.6	0.000	0.20	0.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
23	VC79257a	0.0	0.0	0.	0.64	1.00	0.619	0.0	155.	0.	0.	38.8	13.5	26.6	18.9	4.4	1.31	4.7
23	VC79257b	0.0	0.0	0.	0.64	1.00	0.000	0.0	151.	0.	0.	39.1	13.0	27.0	19.3	4.4	1.32	4.3
23	VC79282a	0.0	0.0	0.	0.40	1.09	0.459	0.0	164.	0.	0.	39.9	13.6	27.0	22.9	4.7	1.34	5.0
23	VC79282b	0.0	0.0	0.	0.40	1.10	0.400	0.0	152.	160.	0.	40.0	13.0	26.0	17.0	4.4	1.29	4.8
	NO.POINTS	0	0	0	4	4	3	0	4	1	0	4	4	4	4	4	4	4
VC IFLAT	AVERAGE	0.0	0.0	0.	0.52	1.05	0.493	0.0	156.	160.	0.	39.5	13.3	26.7	19.5	4.5	1.32	4.7
	STD.DEV.	0.0	0.0	0.	0.14	0.06	0.113	0.0	6.	0.	0.	0.6	0.3	0.5	2.5	0.1	0.02	0.3
	MAXIMUM	0.0	0.0	0.	0.64	1.10	0.619	0.0	164.	160.	0.	40.0	13.6	27.0	22.9	4.7	1.34	5.0
	MINIMUM	0.0	0.0	0.	0.40	1.00	0.400	0.0	151.	160.	0.	38.8	13.0	26.0	17.0	4.4	1.29	4.3
	DIFFERENCE	0.0	0.0	0.	0.24	0.10	0.219	0.0	13.	0.	0.	1.2	0.6	1.0	5.9	0.3	0.05	0.7

	SAMPLE	Tb	Yb	Lu	Cu	Ni
23	VC79257a	0.86	3.28	0.95	0.0	0.0
23	VC79257b	0.84	3.30	0.52	0.0	0.0
23	VC79282a	0.92	3.38	0.70	0.0	0.0
23	VC79282b	0.74	3.40	0.51	0.0	0.0
	NO.POINTS	4	4	4	0	0
VC IFLAT	AVERAGE	0.84	3.34	0.67	0.0	0.0
	STD.DEV.	0.07	0.06	0.21	0.0	0.0
	MAXIMUM	0.92	3.40	0.95	0.0	0.0
	MINIMUM	0.74	3.28	0.51	0.0	0.0
	DIFFERENCE	0.18	0.12	0.44	0.0	0.0

VC GRNGE TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: VC GRNGE

NO. OF OXIDES-39 NO. OF DATA CARDS- 4 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
24	VC79385a	53.63	16.18	8.51	6.71	10.53	2.56	0.67	1.36	0.21	0.16	347.	0.	-42.6	134.0	-.009	3.27	0.0
24	VC79385b	53.63	16.18	8.51	6.71	10.53	2.56	0.67	1.36	0.21	0.16	315.	0.	-41.0	132.0	-.009	3.10	0.0
24	VC79190a	53.13	16.23	9.05	6.53	10.61	2.53	0.68	1.36	0.21	0.18	292.	0.	-47.4	133.0	-.009	3.27	0.0
24	VC79190b	53.13	16.23	9.05	6.53	10.61	2.53	0.68	1.36	0.21	0.18	291.	0.	-44.7	133.0	-.009	3.20	0.0

	NO.POINTS	4	4	4	4	4	4	4	4	4	4	4	0	0	4	0	4	0
VC GRNGE	AVERAGE	53.38	16.20	8.78	6.62	10.57	2.55	0.68	1.36	0.21	0.17	311.	0.	0.0	133.0	0.000	3.21	0.0
	STD.DEV.	0.29	0.03	0.31	0.10	0.05	0.02	0.01	0.00	0.00	0.01	26.	0.	0.0	0.8	0.000	0.08	0.0
	MAXIMUM	53.63	16.23	9.05	6.71	10.61	2.56	0.68	1.36	0.21	0.18	347.	0.	0.0	134.0	0.000	3.27	0.0
	MINIMUM	53.13	16.18	8.51	6.53	10.53	2.53	0.67	1.36	0.21	0.16	291.	0.	0.0	132.0	0.000	3.10	0.0
	DIFFERENCE	0.50	0.05	0.54	0.18	0.08	0.03	0.01	0.00	0.00	0.02	56.	0.	0.0	2.0	0.000	0.17	0.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
24	VC79385a	0.0	0.0	0.	0.95	2.86	0.989	0.0	127.	139.	0.	33.4	21.1	37.3	20.9	5.1	1.29	4.5
24	VC79385b	0.0	0.0	0.	0.95	2.80	0.900	0.0	121.	160.	0.	32.4	20.0	37.0	20.0	4.5	1.29	5.1
24	VC79190a	0.0	0.0	0.	0.99	2.84	0.809	0.0	127.	119.	0.	33.4	19.5	35.5	18.0	4.7	1.21	4.7
24	VC79190b	24.0	0.0	0.	0.99	2.90	0.600	0.0	118.	170.	0.	32.7	19.0	37.0	18.0	4.4	1.19	4.5
	NO.POINTS	1	0	0	4	4	4	0	4	4	0	4	4	4	4	4	4	4
VC GRNGE	AVERAGE	24.0	0.0	0.	0.97	2.85	0.825	0.0	123.	147.	0.	33.0	19.9	36.7	19.2	4.7	1.25	4.7
	STD.DEV.	0.0	0.0	0.	0.02	0.04	0.167	0.0	5.	23.	0.	0.5	0.9	0.8	1.5	0.3	0.05	0.3
	MAXIMUM	24.0	0.0	0.	0.99	2.90	0.989	0.0	127.	170.	0.	33.4	21.1	37.3	20.9	5.1	1.29	5.1
	MINIMUM	24.0	0.0	0.	0.95	2.80	0.600	0.0	118.	119.	0.	32.4	19.0	35.5	18.0	4.4	1.19	4.5
	DIFFERENCE	0.0	0.0	0.	0.04	0.10	0.389	0.0	9.	51.	0.	1.0	2.1	1.8	2.9	0.7	0.10	0.6

	SAMPLE	Tb	Yb	Lu	Cu	Ni
24	VC79385a	0.75	2.49	0.58	0.0	0.0
24	VC79385b	0.71	2.60	0.38	0.0	0.0
24	VC79190a	0.70	2.59	0.50	0.0	0.0
24	VC79190b	0.71	2.30	0.37	0.0	0.0
	NO.POINTS	4	4	4	0	0
VC GRNGE	AVERAGE	0.72	2.50	0.46	0.0	0.0
	STD.DEV.	0.02	0.14	0.10	0.0	0.0
	MAXIMUM	0.75	2.60	0.58	0.0	0.0
	MINIMUM	0.70	2.30	0.37	0.0	0.0
	DIFFERENCE	0.05	0.30	0.21	0.0	0.0

69

VC FEARY TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: VC FEARY

NO. OF OXIDES-39 NO. OF DATA CARDS= 4 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
31	VC79349a	51.42	14.32	14.18	4.19	7.71	3.09	1.63	3.23	0.40	0.19	564.	0.	-52.5	20.7	0.919	5.30	0.0
31	VC79349b	51.42	14.32	14.18	4.19	7.71	3.09	1.63	3.23	0.40	0.19	584.	0.	-54.3	21.2	1.000	5.50	0.0
31	VC79347a	51.97	14.50	14.06	3.97	7.60	2.90	1.56	3.27	0.40	0.17	534.	0.	-42.0	19.9	0.559	5.43	0.0
31	VC79347b	51.97	14.50	14.06	3.97	7.60	2.90	1.56	3.27	0.40	0.17	516.	521.	-42.3	21.1	-.009	5.30	24.0
	NO.POINTS	4	4	4	4	4	4	4	4	4	4	4	1	0	4	3	4	1
VC FEARY	AVERAGE	51.69	14.41	14.12	4.08	7.66	3.00	1.60	3.25	0.40	0.18	550.	521.	0.0	20.7	0.826	5.38	24.0
	STD.DEV.	0.32	0.10	0.07	0.13	0.06	0.11	0.04	0.02	0.00	0.01	30.	0.	0.0	0.6	0.235	0.10	0.0
	MAXIMUM	51.97	14.50	14.18	4.19	7.71	3.09	1.63	3.27	0.40	0.19	584.	521.	0.0	21.2	1.000	5.50	24.0
	MINIMUM	51.42	14.32	14.06	3.97	7.60	2.90	1.56	3.23	0.40	0.17	516.	521.	0.0	19.9	0.559	5.30	24.0
	DIFFERENCE	0.55	0.18	0.12	0.22	0.11	0.19	0.07	0.04	0.00	0.02	68.	0.	0.0	1.3	0.441	0.20	0.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
31	VC79349a	46.9	0.0	0.	1.67	7.23	1.960	0.0	152.	159.	0.	28.9	36.4	66.7	37.5	7.5	2.11	8.0
31	VC79349b	34.0	0.0	0.	1.67	7.40	1.800	0.0	152.	250.	0.	29.5	36.0	66.0	37.0	7.8	2.14	9.0
31	VC79347a	45.9	0.0	0.	1.73	6.98	1.590	0.0	152.	180.	0.	29.0	36.0	62.1	36.3	7.3	2.11	8.3
31	VC79347b	41.0	45.0	245.	1.73	6.80	1.700	45.0	150.	360.	190.	29.0	35.0	62.0	34.0	7.4	2.09	7.7

	NO.POINTS	4	1	1	4	4	4	1	4	4	1	4	4	4	4	4	4	4
VC FEARY	AVERAGE	42.0	45.0	245.	1.70	7.10	1.763	45.0	152.	237.	190.	29.1	35.9	64.2	36.2	7.5	2.11	8.3
	STD.DEV.	5.9	0.0	0.	0.03	0.27	0.157	0.0	1.	91.	0.	0.3	0.6	2.5	1.5	0.2	0.02	0.6
	MAXIMUM	46.9	45.0	245.	1.73	7.40	1.960	45.0	152.	360.	190.	29.5	36.4	66.7	37.5	7.8	2.14	9.0
	MINIMUM	34.0	45.0	245.	1.67	6.80	1.590	45.0	150.	159.	190.	28.9	35.0	62.0	34.0	7.3	2.09	7.7
	DIFFERENCE	12.9	0.0	0.	0.06	0.60	0.370	0.0	2.	201.	0.	0.6	1.4	4.7	3.5	0.5	0.05	1.3

	SAMPLE	Tb	Yb	Lu	Cu	Ni
31	VC79349a	1.11	3.84	0.89	0.0	0.0
31	VC79349b	1.13	3.70	0.53	0.0	0.0
31	VC79347a	1.01	3.79	0.69	0.0	0.0
31	VC79347b	1.09	3.60	0.53	0.0	0.0
	NO.POINTS	4	4	4	0	0
VC FEARY	AVERAGE	1.09	3.73	0.66	0.0	0.0
	STD.DEV.	0.05	0.11	0.17	0.0	0.0
	MAXIMUM	1.13	3.84	0.89	0.0	0.0
	MINIMUM	1.01	3.60	0.53	0.0	0.0
	DIFFERENCE	0.12	0.24	0.36	0.0	0.0

VC POT TRACE ELEMENT AVERAGES FOR CHEMICAL TYPE: VC POT

NO. OF OXIDES=39 NO. OF DATA CARDS= 6 DATA SORTED ON: MGO

	SAMPLE	SIO2	AL2O3	FEO	MGO	CAO	NA2O	K2O	TIO2	P2O5	MNO	Ba	BaX	Co	Cr	Cs	Hf	NbX
32	78-047 a	48.11	17.03	13.07	5.38	7.53	3.32	1.70	3.71	0.73	0.21	389.	0.	-43.5	8.3	-.009	6.99	0.0
32	78-047 b	48.11	17.03	13.07	5.38	7.53	3.32	1.70	3.71	0.73	0.21	380.	0.	-43.6	6.0	-.009	7.10	0.0
32	VC79003a	48.41	16.97	12.88	4.97	7.49	3.36	1.65	3.93	0.73	0.17	338.	360.	43.4	9.9	-.009	6.72	42.0
32	VC79003b	48.41	16.97	12.88	4.97	7.49	3.36	1.65	3.93	0.73	0.17	370.	0.	42.3	9.5	-.009	6.70	0.0
32	VC78131a	48.70	16.46	12.93	4.78	7.33	3.88	1.73	3.89	0.69	0.16	345.	0.	-53.3	10.8	0.370	6.91	0.0
32	VC78131b	48.70	16.46	12.93	4.78	7.33	3.88	1.73	3.89	0.69	0.16	380.	0.	-50.9	8.6	-.009	6.60	0.0
	NO.POINTS	6	6	6	6	6	6	6	6	6	6	6	1	2	6	1	6	1
VC POT	AVERAGE	48.41	16.82	12.96	5.04	7.45	3.52	1.69	3.84	0.72	0.18	367.	360.	42.9	8.9	0.370	6.84	42.0
	STD.DEV.	0.26	0.28	0.09	0.27	0.09	0.28	0.04	0.10	0.02	0.02	21.	0.	0.8	1.7	0.000	0.19	0.0
	MAXIMUM	48.70	17.03	13.07	5.38	7.53	3.88	1.73	3.93	0.73	0.21	389.	360.	43.4	10.8	0.370	7.10	42.0
	MINIMUM	48.11	16.46	12.88	4.78	7.33	3.32	1.65	3.71	0.69	0.16	338.	360.	42.3	6.0	0.370	6.60	42.0
	DIFFERENCE	0.59	0.57	0.19	0.60	0.20	0.56	0.08	0.22	0.04	0.05	51.	0.	1.1	4.8	0.000	0.50	0.0

	SAMPLE	Rb	RbX	SrX	Ta	Th	U	YX	Zn	Zr	ZrX	Sc	La	Ce	Nd	Sm	Eu	Gd
32	78-047 a	28.9	0.0	0.	3.48	3.06	1.700	0.0	114.	289.	0.	18.2	38.1	79.1	43.0	9.2	2.81	7.9
32	78-047 b	29.0	0.0	0.	3.48	3.20	1.200	0.0	120.	290.	0.	18.2	38.0	79.0	41.0	9.0	2.68	7.7
32	VC79003a	23.9	26.0	540.	3.78	3.16	1.220	27.0	131.	259.	298.	19.2	37.1	75.3	39.8	8.7	2.64	7.1
32	VC79003b	37.0	0.0	0.	3.74	3.10	1.100	0.0	131.	240.	0.	18.9	36.0	70.0	40.0	9.0	2.60	7.8
32	VC78131a	29.9	0.0	0.	3.58	3.08	1.050	0.0	141.	239.	0.	20.2	37.9	74.3	43.8	8.9	2.72	8.2
32	VC78131b	30.0	0.0	0.	3.58	3.20	1.000	0.0	139.	370.	0.	19.8	37.0	71.0	40.0	10.3	2.68	8.1
	NO.POINTS	6	1	1	6	6	6	1	6	6	1	6	6	6	6	6	6	6
VC POT	AVERAGE	29.8	26.0	540.	3.61	3.13	1.212	27.0	129.	281.	298.	19.1	37.4	74.8	41.3	9.2	2.69	7.8
	STD.DEV.	4.2	0.0	0.	0.13	0.06	0.254	0.0	11.	49.	0.	0.8	0.8	3.8	1.7	0.6	0.07	0.4
	MAXIMUM	37.0	26.0	540.	3.78	3.20	1.700	27.0	141.	370.	298.	20.2	38.1	79.1	43.8	10.3	2.81	8.2
	MINIMUM	23.9	26.0	540.	3.48	3.06	1.000	27.0	114.	239.	298.	18.2	36.0	70.0	39.8	8.7	2.60	7.1
	DIFFERENCE	13.1	0.0	0.	0.30	0.14	0.700	0.0	27.	131.	0.	2.0	2.1	9.1	4.0	1.6	0.21	1.1

	SAMPLE	Tb	Yb	Lu	Cu	Ni
32	78-047 a	1.04	2.41	0.31	0.0	0.0
32	78-047 b	1.07	2.20	0.37	0.0	0.0
32	VC79003a	1.31	2.18	0.45	0.0	0.0

	32 VC79003b	1.15	2.20	0.30	0.0	0.0
	32 VC78131a	1.43	2.42	0.57	0.0	0.0
	32 VC78131b	1.13	2.30	0.31	0.0	0.0
	NO.POINTS	6	6	6	0	0
VC POT	AVERAGE	1.19	2.29	0.38	0.0	0.0
	STD.DEV.	0.15	0.11	0.11	0.0	0.0
	MAXIMUM	1.43	2.42	0.57	0.0	0.0
	MINIMUM	1.04	2.18	0.30	0.0	0.0
	DIFFERENCE	0.39	0.24	0.27	0.0	0.0

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