

803855
 Sulphurets

 * REPORT OF ANALYSIS *

DATE: 10 APRIL 89
 REPORT NO. 226-88
 SUBMITTED BY: KIRKHAM R.
 PROJECT NO. 6117059
 METHOD: ICP-MJ1, ICP-TR1, Ag & Pb by AA.
 FeO, H2O(t), CO2, C, S(t) and LOI by chemical methods.

ESTIMATE OF VALIDITY OF RESULTS

ELEMENT	+/-	(ABSOLUTE	+	RELATIVE)
SiO2	+/-	(0.4 %	+	2% OF CONC.)
TiO2		0.02	+	" "
Al2O3		0.2	+	" "
Fe2O3(t)		0.1	+	" "
MnO		0.01	+	" "
MgO		0.1	+	" "
CaO		0.1	+	" "
Na2O		0.1	+	" "
K2O		0.1	+	" "
FeO		0.2	+	5% OF CONC.
H2O(t)		0.1	+	5% OF CONC.
CO2		0.1	+	3% OF CONC.
C				
P2O5		0.02	+	1% OF CONC.
S(t)		0.04	+	5% OF CONC.
LOI				
Ba	+/-	(20 PPM	+	5% OF CONC.)
Be	+/-	(0.5 PPM	+	5% OF CONC.)
Co	+/-	(5 PPM	+	5% OF CONC.)
Cr	+/-	(10 PPM	+	5% OF CONC.)
Cu	+/-	(10 PPM	+	5% OF CONC.)
La	+/-	(10 PPM	+	5% OF CONC.)
Ni	+/-	(10 PPM	+	5% OF CONC.)
Pb	+/-	(20 PPM	+	10% OF CONC.)
Sr	+/-	(2 PPM	+	5% OF CONC.)
V	+/-	(5 PPM	+	5% OF CONC.)
Y	+/-	(5 PPM	+	5% OF CONC.)
Yb	+/-	(0.5 PPM	+	5% OF CONC.)
Zn	+/-	(5 PPM	+	5% OF CONC.)
Zr	+/-	(10 PPM	+	5% OF CONC.)

ANALYST(S)..... *STAFF*

VERIFIED *Jan B.*

REPORT OF ANALYSIS

NAME: KIRKHAM R.

PROJECT: 6117059

REQN. NO: 226-88

	KQ-88-60A	60B	60C	60D	60E	60F	61	62A
LAB. NO.	1	2	3	4	5	6	7	8
SAMPLE NO:	104B88 9628	104B88 9629	104B88 9630	104B88 9631	104B88 9632	104B88 9633	104B88 9634	104B88 9635
SiO2 % :	74.6	74.5	50.2	49.7	52.9	52.1	68.7	58.7
TiO2 % :	0.28	0.19	0.81	0.84	0.75	0.86	0.59	0.62
Al2O3 % :	12.0	10.5	15.8	15.8	17.3	16.4	13.2	16.1
FE2O3T % :	3.70	2.30	9.50	10.9	8.60	9.10	5.40	10.1
FE2O3 % :	0.3	1.7	1.8	4.5	2.4	3.7	1.1	
FeO % :	3.1	0.5	6.9	5.8	5.6	4.9	3.9	
MNO % :	0.07	0.02	0.23	0.22	0.18	0.18	0.10	0.09
MGO % :	1.75	5.26	3.92	4.49	3.98	3.98	2.31	1.46
CaO % :	0.94	0.0	6.23	9.10	3.69	5.96	0.44	0.50
NA2O % :	2.00	0.40	4.20	3.10	5.20	4.70	2.40	0.15
K2O % :	1.98	3.31	2.51	2.12	2.56	1.77	3.16	5.13
H2OT % :	2.0	3.1	3.3	2.9	3.3	2.9	2.5	
CO2T % :	0.8	0.1	3.9	1.6	2.3	2.5	1.2	0.1
P2O5 % :	0.04	0.02	0.35	0.31	0.36	0.34	0.31	0.36
S % :	0.01	0.03	0.10	0.00	0.15	0.00	0.03	6.68
BA ppm :	1800	2900	1500	1000	1600	1300	1300	2100
AG ppm :	0	0	0	0	0	0	0	0
BE ppm :	1.8	2.1	0.7	1.0	0.5	0.8	0.8	1.0
CO ppm :	4	4	25	30	23	25	13	29
CR ppm :	11	6	24	30	9	19	38	95
CU ppm :	11	6	94	37	100	89	50	2600
LA ppm :	26	26	8	8	10	9	9	8
NB ppm :	47	53	14	10	23	33	32	
NI ppm :	1	2	20	24	4	14	14	0
PB ppm :	17	19	5	12	6	7	150	28
RB ppm :	60	57	41	40	43	90	87	
SR ppm :	120	51	250	910	240	670	80	15
V ppm :	22	5	300	310	180	240	160	240
Y ppm :	36	40	53	51	75	51	34	10
YB ppm :	4.1	3.5	1.6	1.7	1.9	1.6	1.2	1.1
ZN ppm :	94	18	64	75	48	63	260	85
ZR ppm :	250	270	62	120	93	89	100	58
TOTALS	100.1	100.0	100.5	100.7	100.9	100.5	100.1	100.5

COMMENTS:

- * ALL ANALYSIS BY ICP, EXCEPT FeO, H2OT, CO2T, CO2, C, S AND LOI BY CHEMICAL METHODS.
- * FE2O3 IS CALCULATED USING $FE2O3 = FE2O3T(ICP) - 1.11134 * FeO(VOLUMETRIC)$.
- * ICP-MJ1 DATA ARE OBTAINED ON 0.5 G OF SAMPLE FUSED WITH LITHIUM METABORATE, DISSOLVED IN 5% HNO3 AND DILUTED TO 250 ML.
- * ICP-TR1 DATA ARE OBTAINED ON 1.0 G OF SAMPLE (ACID + FUSION OF RESIDUE) DISSOLVED IN 10% HCL AND DILUTED TO 100 ML.

ANALYTICAL CHEMISTRY SECTION

DATE: 10 APRIL 89

ICP-ES LABORATORY

LAB. NO. K&ES-6209

SAMPLE NO: 104888
963662C
10
104888
963762D
11
104888
9638—
12
104888
963962E
13
104888
9640—
14
104888
964163A
15
104888
964263B
16
104888
9643

	9636	9637	9638	9639	9640	9641	9642	9643
SiO2 % :	53.9	57.3	59.4	49.4	60.9	53.2	61.8	51.1
TiO2 % :	0.80	0.77	0.46	0.42	0.53	0.74	0.62	0.87
Al2O3 % :	17.8	17.2	18.6	3.50	16.9	14.6	18.9	14.6
Fe2O3T % :	9.70	8.10	6.30	8.40	8.63	7.10	5.90	12.7
Fe2O3 % :				3.6		1.4	3.0	
FeO % :				4.3		5.1	2.6	
MnO % :	0.22	0.07	0.03	0.16	0.01	0.12	0.05	0.96
MgO % :	4.94	4.29	2.59	15.5	0.89	4.70	1.66	7.14
CaO % :	0.20	0.29	0.24	21.2	0.21	4.73	0.32	1.36
Na2O % :	0.50	2.30	1.30	0.20	0.24	1.40	4.60	0.30
K2O % :	4.73	3.79	5.34	0.0	5.12	6.03	3.15	3.97

H2OT % :				0.8		3.4	2.8	
CO2T % :	0.1	0.1	0.0	0.3	0.1	3.8	0.3	0.2
P2O5 % :	0.41	0.21	0.34	0.00	0.29	0.36	0.23	0.49
S % :	1.93	3.84	2.63	0.00	6.24	0.18	0.00	3.22

BA ppm :	1500	1500	1400	60	1700	2900	830	2600
AG ppm :	0	0	0	0	0	0	0	0
BE ppm :	0.8	0.9	1.0	0.3	1.0	1.7	1.3	1.1
CD ppm :	16	22	19	40	19	26	10	31
CR ppm :	60	84	19	530	22	330	11	85
CU ppm :	76	140	700	11	480	110	580	180
LA ppm :	9	10	13	2	10	15	15	9
NB ppm :	4	20	28	0		23	39	26
NI ppm :	0	0	0	82	0	110	5	0
PB ppm :	26	23	10	6	23	20	14	38
RB ppm :	120	93	110	21		98	84	110
SR ppm :	35	66	66	47	15	890	260	100
V ppm :	300	260	240	200	250	270	100	350
Y ppm :	27	55	33	16	8	44	51	43
YB ppm :	0.9	1.4	0.9	0.5	1.0	1.7	2.0	1.3
ZN ppm :	210	130	57	20	47	77	76	3700
ZR ppm :	81	85	56	37	48	150	140	61
TOTALS	95.5	98.5	97.5	99.5	100.3	100.3	100.3	97.6

COMMENTS:

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- * ICP-MJ1 DATA ARE OBTAINED ON 0.5 G OF SAMPLE FUSED WITH LITHIUM METABORATE, DISSOLVED IN 5% HNO3 AND DILUTED TO 250 ML.
- * ICP-TR1 DATA ARE OBTAINED ON 1.0 G OF SAMPLE (ACID + FUSION OF RESIDUE) DISSOLVED IN 10% HCL AND DILUTED TO 100 ML.

	9644	9645	9646	9647	9648	9649	9650	9651
SiO2 % :	51.0	54.7	51.2	53.4	57.8	39.5	48.0	52.2
TiO2 % :	0.62	0.43	0.84	0.77	0.62	0.53	0.77	0.54
Al2O3 % :	16.0	15.7	14.0	14.5	17.4	12.1	16.6	15.4
Fe2O3T % :	8.00	6.90	9.30	7.00	5.60	6.50	11.7	9.20
Fe2O3 % :	2.4	1.3	1.6	1.2			1.7	1.4
FeO % :	5.0	5.0	6.9	5.2			9.0	7.0
MnO % :	0.58	0.15	0.17	0.12	0.08	0.12	0.20	0.29
MgO % :	4.55	3.12	3.02	4.61	2.26	1.47	4.04	5.26
CaO % :	5.60	4.47	6.54	4.55	4.92	2.81	5.91	4.82
Na2O % :	2.40	1.00	2.40	1.40	3.60	0.68	1.80	3.20
K2O % :	3.96	5.71	4.14	6.10	4.65	5.48	3.12	2.76

H2OT % :	3.5	3.3	2.9	3.2			4.6	3.7
CO2T % :	3.7	5.0	5.2	3.7	0.0	0.4	3.8	2.9
P2O5 % :	0.50	0.42	0.65	0.36	0.31	0.50	0.41	0.35
S % :	0.81	0.05	0.46	0.22	1.72	10.3	0.10	0.24

BA ppm :	2200	2900	4600	3000	3100	2500	1300	2100
AG ppm :	0	0	0	0	0	0	0	0
BE ppm :	1.0	0.9	2.4	1.6	1.6	0.8	0.9	0.8
CO ppm :	28	15	26	26	14	73	36	26
CR ppm :	62	51	17	320	14	13	39	89
CU ppm :	110	210	110	100	170	160	130	54
LA ppm :	10	14	18	14	15	5	7	8
NB ppm :	26	38	31	35	31		23	23
NI ppm :	19	32	0	96	0	0	19	19
PB ppm :	44	15	21	24	12	15000	34	7
RB ppm :	98	120	80	100	98		100	50
SR ppm :	360	280	840	910	720	230	190	320
V ppm :	260	170	290	260	170	140	310	280
Y ppm :	47	46	43	40	56	6	35	46
YB ppm :	1.4	1.3	1.5	1.5	1.9	0.5	1.2	1.4
ZN ppm :	110	120	220	81	70	205000	290	160
ZR ppm :	62	79	140	150	150	92	64	54
TOTALS	101.0	100.8	100.7	99.9	99.4	102.7	100.3	100.4

COMMENTS:

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- * ICP-TR1 DATA ARE OBTAINED ON 1.0 G OF SAMPLE (ACID + FUSION OF RESIDUE) DISSOLVED IN 10% HCL AND DILUTED TO 100 ML.

ANALYTICAL CHEMISTRY SECTION

ICP-ES LABORATORY

DATE: 10 APRIL 89

		67A* KQ-88-67B*		67C*		68A		68B		69A		70A	
LAB. NO.		25	26	27	28	29	30	31	32				
SAMPLE NO:		104B88	104B88	104B88	104B88	104B88	104B88	104B88	104B88	104B88	104B88	104B88	104B88
		9652	9653	9654	9655	9656	9657	9658	9659				
SiO2	% :	54.6	54.3	46.8	61.4	46.9	50.0	56.2	49.9				
TiO2	% :	0.68	0.65	1.03	0.33	0.83	0.67	0.57	0.43				
Al2O3	% :	17.9	15.9	17.4	17.2	15.6	14.1	15.2	3.60				
Fe2O3T	% :	5.30	7.00	12.4	3.70	9.80	8.70	5.00	8.40				
Fe2O3	% :	0.0			0.8		1.5		3.6				
FeO	% :	5.1			2.6		6.5		4.3				
MnO	% :	0.11	0.19	0.28	0.08	0.25	0.22	0.08	0.16				
MgO	% :	2.65	3.51	4.95	2.38	4.19	4.98	2.23	15.7				
CaO	% :	3.36	6.66	6.93	2.79	7.59	7.66	5.51	21.2				
Na2O	% :	2.10	2.90	2.80	4.70	3.20	3.40	3.20	0.20				
K2O	% :	8.74	5.82	3.15	5.18	3.12	3.02	5.86	0.0				
H2OT	% :	2.0			1.4		2.9		0.7				
CO2T	% :	0.7	0.3	0.4	0.7	4.6	4.5	3.8	0.3				
P2O5	% :	0.51	0.38	0.48	0.31	0.50	0.57	0.31	0.00				
S	% :	0.97	1.83	3.05	0.11	2.06	0.14	1.12	0.00				
BA	ppm :	3100	1800	850	2900	1200	1700	2300	70				
AG	ppm :	0	0	0	0	0	0	0	0				
BE	ppm :	0.9	1.3	1.3	1.1	1.2	1.3	0.9	0.3				
CO	ppm :	20	17	34	11	30	26	16	41				
CR	ppm :	130	79	40	15	14	160	83	550				
CU	ppm :	570	320	290	190	310	67	160	7				
LA	ppm :	12	11	13	10	13	11	12	1				
NB	ppm :	38	9	26	29	20	26	18	0				
NI	ppm :	0	0	13	2	0	53	2	82				
PB	ppm :	3	10	9	3	9	14	5	3				
RB	ppm :	160	140	130	95	74	58	120	4				
SR	ppm :	470	550	510	440	540	740	360	57				
V	ppm :	200	240	340	140	290	260	140	200				
Y	ppm :	48	43	65	23	52	60	49	16				
YB	ppm :	1.5	1.4	1.7	1.1	1.6	1.4	1.5	0.4				
ZN	ppm :	68	36	50	25	50	120	46	21				
ZR	ppm :	98	84	86	73	87	85	120	45				
TOTALS		99.5	99.8	99.9	100.4	98.9	100.5	99.4	100.2				

COMMENTS:

- * ALL ANALYSIS BY ICP, EXCEPT FeO, H2OT, CO2T, CO2, C, S AND LOI BY CHEMICAL METHODS.
- * FE2O3 IS CALCULATED USING $FE2O3 = FE2O3T(ICP) - 1.11134 * FeO(VOLUMETRIC)$.
- * ICP-MJ1 DATA ARE OBTAINED ON 0.5 G OF SAMPLE FUSED WITH LITHIUM METABORATE, DISSOLVED IN 5% HNO3 AND DILUTED TO 250 ML.
- * ICP-TR1 DATA ARE OBTAINED ON 1.0 G OF SAMPLE (ACID + FUSION OF RESIDUE) DISSOLVED IN 10% HCL AND DILUTED TO 100 ML.

ANALYTICAL CHEMISTRY SECTION
ICP-ES LABORATORY

DATE: 10 APRIL 89

LAB. NO.	70B	34	KQ8870C	70D	70E	70F	70G	70H
SAMPLE NO:	104B88	104B88	104B88	104B88	104B88	104B88	104B88	104B88
	9660	9661	9662	9663	9664	9665	9666	9667
SiO2 % :	51.3	52.5	56.8	52.5	57.1	53.7	52.1	54.7
TiO2 % :	0.70	0.85	0.94	0.70	0.41	0.66	0.71	0.73
Al2O3 % :	16.9	15.8	15.6	13.5	17.8	13.4	13.6	14.1
FE2O3T % :	6.30	8.50	8.40	9.60	4.50	9.60	10.4	7.30
FE2O3 % :			2.4					0.6
FEO % :			5.4					6.0
MNO % :	0.12	0.08	0.12	0.08	0.07	0.10	0.14	0.15
MGO % :	2.14	2.87	4.51	2.91	2.63	2.53	4.18	5.19
CAO % :	6.06	5.37	5.59	5.12	3.84	4.36	4.51	5.48
NA2O % :	2.30	2.20	4.10	0.40	2.50	0.50	1.30	2.40
K2O % :	4.50	7.27	2.09	9.02	7.85	8.24	6.65	5.66

H2OT % :			2.4					2.2
CO2T % :	4.0	1.1	0.2	2.5	1.2	2.4	1.8	1.7
P2O5 % :	0.34	0.35	0.18	0.41	0.38	0.38	0.42	0.43
S % :	4.92	2.75	0.03	2.61	1.00	3.35	3.38	0.44

BA ppm :	1300	3100	710	4200	3500	3100	3100	2700
AG ppm :	0	0	0	0	0	16	0	0
BE ppm :	1.4	1.9	1.5	1.1	1.2	0.7	1.4	2.2
CO ppm :	14	29	29	22	14	27	34	17
CR ppm :	12	120	79	160	14	170	190	190
CU ppm :	9	360	29	530	120	7100	390	95
LA ppm :	16	9	19	17	13	49	35	18
NB ppm :	29	27	31	13	22	28	11	21
NI ppm :	0	0	45	0	0	0	2	54
PB ppm :	11	11	6	7	11	5	8	6
RB ppm :	140	150	59	150	180	160	130	110
SR ppm :	280	410	410	630	550	430	360	480
V ppm :	120	260	110	250	160	240	270	280
Y ppm :	68	57	34	42	33	41	47	53
YB ppm :	2.2	2.0	1.1	1.4	1.4	1.7	1.7	1.8
ZN ppm :	17	50	79	34	32	290	45	46
ZR ppm :	120	100	160	95	77	90	90	97
TOTALS	99.8	100.1	100.5	100.0	99.7	100.4	99.7	100.2

COMMENTS:

- * ALL ANALYSIS BY ICP, EXCEPT FEO, H2OT, CO2T, CO2, C, S AND LOI BY CHEMICAL METHODS.
- * FE2O3 IS CALCULATED USING $FE2O3 = FE2O3T(ICP) - 1.11134 * FEO(VOLUMETRIC)$.
- * ICP-MJ1 DATA ARE OBTAINED ON 0.5 G OF SAMPLE FUSED WITH LITHIUM METABORATE, DISSOLVED IN 5% HNO3 AND DILUTED TO 250 ML.
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	71A 41 104888 9668	KQ88-71B 42 104888 9669	71C 43 104888 9670	71D 44 104888 9671	71E 45 104888 9672	71F 46 104888 9673	36A 47 104888 9542	36B 48 104888 9543
SiO2 % :	52.5	56.4	57.1	56.3	64.3	49.7	59.8	79.2
TiO2 % :	0.85	0.51	0.55	0.40	0.65	0.42	0.54	0.04
Al2O3 % :	15.5	17.9	14.4	17.2	16.4	3.50	17.2	1.10
Fe2O3T % :	8.50	4.70	4.40	5.50	4.40	8.50	4.90	0.80
Fe2O3 % :				1.2	2.3	3.7	1.2	0.0
FED % :				3.9	1.9	4.3	3.3	0.7
MNO % :	0.09	0.04	0.07	0.15	0.05	0.16	0.17	0.25
MGO % :	2.88	1.40	2.01	2.33	1.96	15.6	1.96	0.15
CAO % :	5.38	5.56	7.04	4.91	3.48	21.2	3.73	9.50
NA2O % :	2.30	4.30	1.80	5.00	1.10	0.10	2.50	0.00
K2O % :	7.25	2.96	6.62	3.12	5.12	0.0	3.92	0.30

H2OT % :				2.1	2.5	0.7	2.8	0.2
CO2T % :	1.0	3.7	4.7	2.5	1.3	0.2	2.6	7.6
P2O5 % :	0.35	0.23	0.30	0.39	0.35	0.00	0.19	0.01
S % :	2.78	1.70	1.13	0.38	0.94	0.00	0.03	0.32

BA ppm :	3100	670	2900	3200	1700	30	2200	120
AG ppm :	0	0	0	0	0	0	0	110
BE ppm :	2.0	2.9	0.8	1.1	1.3	0.3	1.2	0.3
CO ppm :	33	17	20	14	13	48	13	3
CR ppm :	140	38	59	19	51	600	15	5
CU ppm :	350	120	120	82	83	11	21	110
LA ppm :	12	6	9	13	15	3	17	3
NB ppm :	23	27	27	17	43	9	33	19
NI ppm :	0	20	0	7	6	92	10	6
PB ppm :	12	9	10	3	5	4	5	230
RB ppm :	150	98	160	79	160	18	140	39
SR ppm :	410	370	420	620	290	61	200	110
V ppm :	260	230	120	190	160	210	99	9
Y ppm :	58	46	51	40	62	18	54	34
YB ppm :	2.0	1.7	1.5	1.2	1.6	0.5	1.9	0.6
ZN ppm :	52	36	18	77	22	170	43	230
ZR ppm :	100	160	110	94	110	29	140	51
TOTALS	99.8	99.6	100.5	100.3	102.6	99.7	100.3	99.5

COMMENTS:

- * ALL ANALYSIS BY ICP, EXCEPT FED, H2OT, CO2T, CO2, C, S AND LOI BY CHEMICAL METHODS.
- * FE2O3 IS CALCULATED USING $FE2O3 = FE2O3T(ICP) - 1.11134 * FED(VOLUMETRIC)$.
- * ICP-MJ1 DATA ARE OBTAINED ON 0.5 G OF SAMPLE FUSED WITH LITHIUM METABORATE, DISSOLVED IN 5% HNO3 AND DILUTED TO 250 ML.
- * ICP-TR1 DATA ARE OBTAINED ON 1.0 G OF SAMPLE (ACID + FUSION OF RESIDUE) DISSOLVED IN 10% HCL AND DILUTED TO 100 ML.

ANALYTICAL CHEMISTRY SECTION

ICP-ES LABORATORY

LAB. NO. 49

SAMPLE NO: 104B88

DATE: 10 APRIL 89

	36C 49 104B88 9544	36D 50 104B88 9545	36E 51 104B88 9546	36F 52 104B88 9547	36G 53 104B88 9548	36H 54 104B88 9549	36I 55 104B88 9550	K088-36J 56 104B88 9551
SiO2 % :	66.2	64.0	88.0	88.9	78.8	68.6	71.7	72.0
TiO2 % :	0.51	0.56	0.15	0.18	0.35	0.51	0.42	0.44
Al2O3 % :	16.9	17.9	5.50	5.20	11.6	17.5	14.2	14.8
FE2O3T % :	4.00	5.40	2.30	2.20	2.70	3.50	4.10	3.60
FE2O3 % :		1.0						
FeO % :		4.0						
MNO % :	0.02	0.06	0.01	0.01	0.01	0.01	0.03	0.04
MGO % :	0.74	1.95	0.40	0.27	0.58	0.84	0.69	0.68
CAO % :	0.25	0.17	0.01	0.05	0.05	0.19	0.57	0.76
NA2O % :	0.10	1.90	0.00	0.10	0.10	0.80	0.60	0.50
K2O % :	8.16	4.86	1.62	1.99	4.32	5.50	4.14	4.24
H2OT % :		3.0						
CO2T % :	0.1	0.0	0.0	0.1	0.1	0.1	0.3	0.4
P2O5 % :	0.19	0.19	0.05	0.07	0.14	0.19	0.16	0.17
S % :	2.42	0.69	1.52	1.25	1.06	1.71	2.04	1.78
BA ppm :	3000	2500	470	630	1700	2300	1300	1500
AB ppm :	11	0	2	2	1	1	3	5
BE ppm :	1.1	1.2	0.6	0.4	1.0	0.9	1.2	1.4
CO ppm :	7	8	4	3	5	5	8	9
CR ppm :	10	13	7	6	11	8	10	7
CU ppm :	17	18	10	8	8	16	27	24
LA ppm :	14	12	3	5	8	14	14	14
NB ppm :	11	35	4	7	12	29	14	27
NI ppm :	0	0	1	0	0	0	0	0
PB ppm :	14	6	52	11	7	7	20	18
RB ppm :	250	190	72	71	140	210	160	150
SR ppm :	43	100	0	19	30	67	73	82
V ppm :	72	110	35	34	75	71	61	63
Y ppm :	60	38	17	16	43	66	52	59
YB ppm :	2.1	1.5	0.2	0.4	0.9	2.2	2.0	2.0
ZN ppm :	29	49	85	0	14	11	75	18
ZR ppm :	140	130	41	46	83	150	110	120
TOTALS	100.0	100.5	99.6	100.4	100.0	99.7	99.1	99.6

COMMENTS:

- * ALL ANALYSIS BY ICP, EXCEPT FeO, H2OT, CO2T, CO2, C, S AND LOI BY CHEMICAL METHODS.
- * FE2O3 IS CALCULATED USING $FE2O3 = FE2O3T(ICP) - 1.11134 * FE0(VOLUMETRIC)$.
- * ICP-MJ1 DATA ARE OBTAINED ON 0.5 G OF SAMPLE FUSED WITH LITHIUM METABORATE, DISSOLVED IN 5% HNO3 AND DILUTED TO 250 ML.
- * ICP-TR1 DATA ARE OBTAINED ON 1.0 G OF SAMPLE (ACID + FUSION OF RESIDUE) DISSOLVED IN 10% HCL AND DILUTED TO 100 ML.

ANALYTICAL CHEMISTRY SECTION

DATE: 10 APRIL 89

ICP-ES LABORATORY

LAB. NO.	36K	36L	37	38A	38B	38C	39A	KQ-88-
SAMPLE NO:	104B88	104B88	104B88	104B88	104B88	104B88	104B88	104B88
	9552	9553	9554	9555	9556	9557	9558	9559
SiO2 % :	70.4	81.2	52.3	66.7	69.6	59.6	75.7	49.8
TiO2 % :	0.44	0.31	2.09	0.59	0.49	0.56	0.29	0.41
Al2O3 % :	15.4	10.1	16.3	18.1	15.8	17.2	12.6	3.60
FE2O3T % :	4.00	2.50	10.3	3.90	3.30	5.50	3.00	8.40
FE2O3 % :			3.0			0.9		3.4
FED % :			6.6			4.1		4.5
MNO % :	0.01	0.02	0.15	0.08	0.02	0.13	0.03	0.16
MGO % :	0.79	0.72	3.66	1.54	0.74	2.05	0.70	15.6
CAO % :	0.13	0.07	5.20	0.12	0.37	2.88	0.76	21.3
NA2O % :	1.00	0.00	4.90	0.10	0.10	2.90	0.10	0.20
K2O % :	4.40	3.71	2.57	5.21	6.56	4.80	3.97	0.0

H2OT % :			2.2			2.6		0.7
CO2T % :	0.1	0.1	0.7	0.1	0.1	2.1	0.2	0.3
P2O5 % :	0.15	0.12	0.72	0.23	0.18	0.20	0.13	0.00
S % :	2.08	1.04	0.92	1.99	1.53	0.12	2.15	0.00

BA ppm :	1300	910	1500	1700	1900	2400	1000	70
AG ppm :	7	10	0	0	5	0	2	0
BE ppm :	1.1	0.8	2.2	1.5	1.2	1.1	1.1	0.3
CD ppm :	7	5	29	13	11	13	7	42
CR ppm :	9	9	42	16	10	16	36	560
CU ppm :	25	13	35	20	24	22	11	11
LA ppm :	14	10	48	14	15	16	7	2
NB ppm :	20	16	28	18	12	20	7	0
NI ppm :	0	6	32	0	0	5	10	86
PB ppm :	19	21	15	43	13	15	15	4
RB ppm :	170	150	51	200	230	180	140	19
SR ppm :	59	29	760	12	69	200	42	46
V ppm :	68	72	120	110	93	110	80	210
Y ppm :	61	49	29	52	48	38	15	7
YB ppm :	1.9	1.2	0.8	1.7	1.6	1.5	0.3	0.5
ZN ppm :	21	4	140	66	100	70	10	24
ZR ppm :	130	68	340	130	110	130	68	57
TOTALS	99.1	100.0	101.6	98.9	99.1	100.5	99.8	100.1

CDMMMENTS:

- * ALL ANALYSIS BY ICP, EXCEPT FE0, H2OT, CO2T, CO2, C, S AND LOI BY CHEMICAL METHODS.
- * FE2O3 IS CALCULATED USING $FE2O3 = FE2O3T(ICP) - 1.11134 * FED(VOLUMETRIC)$.
- * ICP-MJ1 DATA ARE OBTAINED ON 0.5 G OF SAMPLE FUSED WITH LITHIUM METABORATE, DISSOLVED IN 5% HNO3 AND DILUTED TO 250 ML.
- * ICP-TR1 DATA ARE OBTAINED ON 1.0 G OF SAMPLE (ACID + FUSION OF RESIDUE) DISSOLVED IN 10% HCL AND DILUTED TO 100 ML.

ANALYTICAL CHEMISTRY SECTION
ICP-ES LABORATORY

DATE: 10 APRIL 89

LAB. NO.	39B	39C	40A	40B	40C	41A	72	
SAMPLE NO:	104B88 9560	104B88 9561	104B88 9562	104B88 9563	104B88 9564	104B88 9565	104B88 9566	104B88 9567
SiO2 % :	70.6	93.6	86.0	72.0	96.3	77.3	89.7	92.9
TiO2 % :	0.67	0.09	0.13	0.24	0.59	0.42	0.13	0.08
Al2O3 % :	15.1	3.10	3.20	14.0	1.20	12.1	5.10	3.20
FE2O3T % :	5.10	1.80	5.70	2.00	0.30	3.70	1.70	1.80
FE2O3 % :	0.0		0.0	0.0	0.0		0.0	
FeO % :	4.6		9.2	2.3	0.3		2.0	
MNO % :	0.08	0.00	0.00	0.16	0.02	0.01	0.01	0.00
MGO % :	1.18	0.22	0.17	0.81	0.10	0.64	0.34	0.22
CAO % :	0.48	0.0	0.0	1.38	0.43	0.0	0.0	0.0
NA2O % :	1.00	0.10	0.20	0.50	0.00	0.10	0.20	0.00
K2O % :	3.41	0.90	0.88	5.24	0.19	3.68	1.62	0.89

H2OT % :	2.7		0.7	1.9	0.2		0.9	
CO2T % :	0.0	0.0	0.1	1.1	0.6	0.1	0.0	0.0
P2O5 % :	0.37	0.05	0.13	0.09	0.01	0.13	0.04	0.05
S % :	0.93	1.38	4.48	0.81	0.03	2.02	0.69	1.27

BA ppm :	1400	570	270	1400	130	1500	650	540
AG ppm :	0	200	60	2	0	1	3	200
BE ppm :	1.6	0.3	0.3	0.8	0.5	0.8	0.4	0.2
CO ppm :	16	4	9	7	0	5	1	3
CR ppm :	24	6	10	20	3	8	3	4
CU ppm :	70	490	670	22	3	2	1	470
LA ppm :	22	1	20	7	3	14	7	0
NB ppm :	31	1	9	15	26	30	14	19
NI ppm :	0	5	4	5	0	0	0	1
PB ppm :	29	56	3800	63	39	23	32	56
RB ppm :	110	44	0	180	44	140	72	40
SR ppm :	70	5	32	100	51	3	19	10
V ppm :	160	37	50	46	8	86	56	35
Y ppm :	53	2	52	28	14	26	38	15
YB ppm :	1.5	0.2	0.2	0.5	0.4	0.6	0.5	0.1
ZN ppm :	47	280	4900	52	29	24	32	240
ZR ppm :	100	22	37	90	120	87	26	53
TOTALS	101.3	101.4	101.7	100.2	100.0	100.4	100.3	100.6

COMMENTS:

- * ALL ANALYSIS BY ICP, EXCEPT FeO, H2OT, CO2T, CO2, C, S AND LOI BY CHEMICAL METHODS.
- * FE2O3 IS CALCULATED USING $FE2O3 = FE2O3T(ICP) - 1.11134 * FeO(VOLUMETRIC)$.
- * ICP-MJ1 DATA ARE OBTAINED ON 0.5 G OF SAMPLE FUSED WITH LITHIUM METABORATE, DISSOLVED IN 5% HNO3 AND DILUTED TO 250 ML.
- * ICP-TR1 DATA ARE OBTAINED ON 1.0 G OF SAMPLE (ACID + FUSION OF RESIDUE) DISSOLVED IN 10% HCL AND DILUTED TO 100 ML.

	42	43A	43B	43C	44A	44B	44C	
SiO2 % :	69.4	55.5	51.1	48.9	49.5	49.8	49.3	54.1
TiO2 % :	0.28	0.55	1.50	1.24	0.61	0.92	0.54	0.76
Al2O3 % :	16.0	12.6	15.6	16.9	15.6	14.9	13.3	16.5
Fe2O3T % :	2.90	6.80	10.1	10.5	7.70	8.80	6.40	7.60
Fe2O3 % :	0.7	1.0	4.1	4.7	1.5	1.4	0.5	1.7
FeO % :	2.0	5.2	5.4	5.2	5.6	6.7	5.3	5.3
MnO % :	0.05	0.14	0.19	0.18	0.17	0.25	0.22	0.42
MgO % :	1.13	4.14	3.93	4.82	4.09	3.40	4.47	3.16
CaO % :	1.23	6.58	5.34	7.24	7.65	6.93	9.49	3.11
Na2O % :	1.30	3.50	5.10	4.80	3.70	2.00	2.20	0.90
K2O % :	3.98	1.93	2.73	1.60	3.27	5.25	4.11	9.60

H2OT % :	2.5	2.9	2.4	3.0	3.0	3.2	3.1	2.7
CO2T % :	0.9	5.2	1.6	1.1	5.0	5.0	7.0	0.7
P2O5 % :	0.10	0.36	0.77	0.59	0.49	0.53	0.35	0.43
S % :	0.02	0.11	0.10	0.07	0.21	0.20	0.12	0.42

BA ppm :	1100	900	1500	980	1400	2400	1600	3300
AG ppm :	8	0	0	0	0	0	0	0
BE ppm :	1.2	0.7	1.4	1.6	1.1	1.3	1.2	2.2
CO ppm :	7	20	25	30	28	25	27	18
CR ppm :	27	180	15	53	92	64	270	50
CU ppm :	21	64	23	54	110	66	57	110
LA ppm :	6	7	30	30	10	13	10	21
NB ppm :	24	33	48	33	24	20	22	30
NI ppm :	9	66	11	30	45	26	120	21
PB ppm :	6	12	14	8	14	26	25	53
RB ppm :	150	47	55	81	64	97	74	150
SR ppm :	70	660	780	890	710	850	730	770
V ppm :	48	180	240	240	240	330	170	260
Y ppm :	25	43	70	75	36	62	40	52
YB ppm :	0.5	1.0	2.2	2.3	1.2	2.1	1.1	1.7
ZN ppm :	170	58	90	95	76	160	75	130
ZR ppm :	90	81	210	200	89	160	110	170
TOTALS	99.7	100.0	100.2	100.6	100.7	100.9	100.3	100.3

COMMENTS:
 * ALL ANALYSIS BY ICP, EXCEPT FeO, H2OT, CO2T, CO2, C, S AND LOI BY CHEMICAL METHODS.
 * FE2O3 IS CALCULATED USING $FE2O3 = FE2O3T(ICP) - 1.11134 * FE0(VOLUMETRIC)$.
 * ICP-MJ1 DATA ARE OBTAINED ON 0.5 G OF SAMPLE FUSED WITH LITHIUM METABORATE, DISSOLVED IN 5% HNO3 AND DILUTED TO 250 ML.
 * ICP-TR1 DATA ARE OBTAINED ON 1.0 G OF SAMPLE (ACID + FUSION OF RESIDUE) DISSOLVED IN 10% HCL AND DILUTED TO 100 ML.

ANALYTICAL CHEMISTRY SECTION
ICP-ES LABORATORY

DATE: 10 APRIL 89

LAB. NO.	81	82	83	84	85	86	87	88
SAMPLE NO:	104B88	104B88	104B88	104B88	104B88	104B88	104B88	104B88
	9576	9577	9578	9579	9580	9581	9582	9583
SiO2 % :	49.2	48.5	57.3	49.4	59.9	72.8	61.9	69.2
TiO2 % :	0.72	0.75	0.37	0.41	0.25	0.41	0.39	0.41
Al2O3 % :	16.5	14.2	17.6	3.50	16.5	15.6	16.5	14.4
Fe2O3T % :	9.70	10.1	5.10	8.30	4.70	1.00	5.50	4.40
Fe2O3 % :	2.1	2.3	2.4	3.5	0.6	0.0	2.9	
FeO % :	6.8	7.0	2.4	4.3	3.7	1.6	2.3	
MnO % :	0.20	0.19	0.11	0.15	0.13	0.01	0.06	0.01
MgO % :	4.68	6.28	1.26	15.5	1.88	0.85	1.40	1.06
CaO % :	4.91	7.72	3.86	21.2	2.99	0.02	0.68	0.0
Na2O % :	4.00	3.00	4.50	0.20	0.60	2.10	2.80	0.10
K2O % :	3.31	2.56	5.63	0.01	8.25	4.06	7.32	5.81

H2OT % :	3.8	3.7	1.5	0.8	2.3	1.8	1.8	
CO2T % :	3.2	3.0	2.5	0.3	2.3	0.1	0.2	0.0
P2O5 % :	0.53	0.66	0.28	0.00	0.20	0.07	0.33	0.04
S % :	0.07	0.21	0.02	0.00	0.26	0.62	0.23	3.62

BA ppm :	1300	1100	3900	80	3500	1900	3900	13000
AB ppm :	0	0	0	0	0	0	0	0
BE ppm :	1.7	1.4	1.4	0.3	1.7	1.3	1.1	1.9
CO ppm :	30	29	11	41	8	13	10	28
CR ppm :	200	150	11	550	8	7	10	9
CU ppm :	160	72	140	8	610	99	3500	65
LA ppm :	9	11	16	1	13	25	13	5
NB ppm :	34	21	25	0	36	30	45	19
NI ppm :	120	65	4	85	2	0	0	0
PB ppm :	14	10	8	2	10	21	10	20
RB ppm :	77	57	110	19	200	130	140	160
SR ppm :	750	1000	660	62	280	75	250	210
V ppm :	260	310	150	210	150	92	190	220
Y ppm :	43	53	46	12	20	44	42	34
YB ppm :	1.1	1.5	1.1	0.4	0.6	1.4	0.9	0.7
ZN ppm :	66	78	21	21	53	14	36	47
ZR ppm :	120	140	98	39	86	67	110	64
TOTALS	100.4	100.4	100.3	99.4	100.3	99.5	99.7	100.4

COMMENTS:

- * ALL ANALYSIS BY ICP, EXCEPT FeO, H2OT, CO2T, CO2, C, S AND LOI BY CHEMICAL METHODS.
- * FE2O3 IS CALCULATED USING $FE2O3 = FE2O3T(ICP) - 1.11134 * FeO(VOLUMETRIC)$.
- * ICP-MJ1 DATA ARE OBTAINED ON 0.5 G OF SAMPLE FUSED WITH LITHIUM METABORATE, DISSOLVED IN 5% HNO3 AND DILUTED TO 250 ML.
- * ICP-TR1 DATA ARE OBTAINED ON 1.0 G OF SAMPLE (ACID + FUSION OF RESIDUE) DISSOLVED IN 10% HCL AND DILUTED TO 100 ML.

ANALYTICAL CHEMISTRY SECTION
ICP-ES LABORATORY

DATE: 10 APRIL 89

LAB. NO.	46B	46C	46D	46E	47A	47B	47C	KG 88-47D
SAMPLE NO:	104B88 9584	104B88 9585	104B88 9586	104B88 9587	104B88 9588	104B88 9589	104B88 9590	104B88 9591
SiO2 % :	66.7	73.8	56.2	61.7	39.6	56.4	57.7	55.8
TiO2 % :	0.49	0.41	0.45	0.41	0.25	0.53	0.44	0.42
AL2O3 % :	18.1	15.6	20.9	17.1	10.7	17.8	19.7	17.3
FE2O3T % :	2.30	1.10	5.10	5.00	3.60	7.46	4.80	6.20
FE2O3 % :		0.0						
FeO % :		2.2						
MNO % :	0.02	0.01	0.01	0.02	0.03	0.03	0.05	0.03
MGO % :	1.74	0.84	1.21	0.66	0.70	1.63	1.57	1.34
CAO % :	0.0	0.02	0.31	0.11	24.2	1.14	0.47	0.46
NA2O % :	0.10	2.00	5.10	0.20	0.10	0.26	3.00	0.60
K2O % :	6.54	4.08	5.12	10.7	8.05	10.1	8.61	10.9

H2OT % :		2.0						
CO2T % :	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.0
P2O5 % :	0.02	0.06	0.26	0.19	0.31	0.77	0.33	0.37
S % :	1.32	0.67	3.65	3.30	2.62	5.34	1.23	4.81

BA ppm :	4400	2200	1600	4900	9300	4500	5700	14000
AG ppm :	0	0	2	6	10	1	0	0
BE ppm :	1.7	1.4	2.2	1.3	0.5	2.9	1.3	2.0
CD ppm :	23	15	16	9	10	21	9	16
CR ppm :	7	7	10	14	6	14	10	11
CU ppm :	500	100	5000	520	1300	1500	210	500
LA ppm :	8	23	6	5	170	17	8	5
NB ppm :	51	24	50	42	33		20	23
NI ppm :	0	0	0	0	0	0	0	0
PB ppm :	120	23	10	140	780	26	1	17
RB ppm :	230	130	210	230	150		240	290
SR ppm :	120	75	270	250	470	190	330	840
V ppm :	310	94	300	170	120	300	140	200
Y ppm :	27	41	20	32	46	13	31	13
YB ppm :	0.6	1.4	0.9	0.8	2.0	1.3	1.1	0.8
ZN ppm :	12	21	130	17	28	45	22	22
ZR ppm :	85	73	100	100	69	78	81	120
TOTALS	98.0	100.7	99.2	100.1	91.6	102.2	98.7	99.8

COMMENTS:

- * ALL ANALYSIS BY ICP, EXCEPT FeO, H2OT, CO2T, CO2, C, S AND LOI BY CHEMICAL METHODS.
- * FE2O3 IS CALCULATED USING $FE2O3 = FE2O3T(ICP) - 1.11134 * FeO(VOLUMETRIC)$.
- * ICP-MJ1 DATA ARE OBTAINED ON 0.5 G OF SAMPLE FUSED WITH LITHIUM METABORATE, DISSOLVED IN 5% HNO3 AND DILUTED TO 250 ML.
- * ICP-TR1 DATA ARE OBTAINED ON 1.0 G OF SAMPLE (ACID + FUSION OF RESIDUE) DISSOLVED IN 10% HCL AND DILUTED TO 100 ML.

ANALYTICAL CHEMISTRY SECTION

DATE: 10 APRIL 89

ICP-ES LABORATORY 48A 48B

LAB. NO.	97	98	99	100	101	102	103	104
SAMPLE NO:	104B88	104B88	104B88	104B88	104B88	104B88	226-88	226-88
	9592	9593	9594	9595	9596	9597	-103 #8	-104 #22
SiO2 % :	72.4	72.3	59.7	68.8	58.9	56.7	58.6	39.6
TiO2 % :	0.29	0.22	0.09	0.40	0.43	0.46	0.61	0.53
Al2O3 % :	14.2	13.8	2.71	14.6	16.4	16.8	16.1	12.2
Fe2O3T % :	3.00	2.90	10.6	4.90	5.00	4.90	10.0	6.47
Fe2O3 % :						1.3		
FeO % :						3.2		
MnO % :	0.01	0.03	0.02	0.01	0.16	0.15	0.09	0.12
MgO % :	0.36	0.72	0.26	0.35	2.38	2.49	1.44	1.46
CaO % :	0.08	0.41	0.16	0.39	3.12	5.62	0.49	2.81
Na2O % :	5.70	2.40	0.16	6.60	5.10	4.90	0.14	0.69
K2O % :	2.91	4.61	1.01	1.75	4.21	3.39	5.11	5.41

H2OT % :						1.9		
CO2T % :	0.0	0.2	0.1	0.1	2.1	2.2	0.0	0.4
P2O5 % :	0.06	0.10	0.28	0.10	0.32	0.33	0.43	0.41
S % :	2.02	2.00	13.6	3.62	1.77	0.36	6.59	10.2

BA ppm :	680	1900	38000	2400	4500	3800	2100	2500
AG ppm :	0	0	43	0	0	0	0	13
BE ppm :	0.7	1.3	0.3	0.8	1.1	1.1	1.1	0.9
CO ppm :	5	7	9	7	15	9	31	74
CR ppm :	29	23	14	47	21	23	100	16
CU ppm :	13	23	2000	14	22	35	2700	160
LA ppm :	9	5	1	9	12	18	9	5
NB ppm :	12	7		25	33	26		
NI ppm :	0	0	0	0	0	0	0	0
PB ppm :	4	150	2000	10	6	9	21	15000
RB ppm :	74	130		59	91	64		
SR ppm :	120	88	280	220	310	530	16	220
V ppm :	92	62	46	68	160	190	250	140
Y ppm :	17	21	2	34	26	37	11	6
YB ppm :	0.4	0.5	0.1	0.9	0.8	1.4	1.1	0.4
ZN ppm :	10	180	105000	120	49	62	97	162000
ZR ppm :	83	85	13	110	75	87	62	90
TOTALS	101.1	100.0	103.3	101.9	100.4	100.3	100.1	98.3

COMMENTS:

- * ALL ANALYSIS BY ICP, EXCEPT FeO, H2OT, CO2T, CO2, C, S AND LOI BY CHEMICAL METHODS.
- * FE2O3 IS CALCULATED USING $FE2O3 = FE2O3T(ICP) - 1.11134 * FeO(VOLUMETRIC)$.
- * ICP-MJ1 DATA ARE OBTAINED ON 0.5 G OF SAMPLE FUSED WITH LITHIUM METABORATE, DISSOLVED IN 5% HNO3 AND DILUTED TO 250 ML.
- * ICP-TR1 DATA ARE OBTAINED ON 1.0 G OF SAMPLE (ACID + FUSION OF RESIDUE) DISSOLVED IN 10% HCL AND DILUTED TO 100 ML.

ANALYTICAL CHEMISTRY SECTION
ICP-ES LABORATORY

DATE: 10 APRIL 89

LAB. NO.	105	106	107
SAMPLE NO:	226-88	226-88	226-88
	-105#55	-106#73	-107#86
SI02 % :	71.5	69.8	72.7
TI02 % :	0.41	0.28	0.40
AL2O3 % :	14.2	16.2	15.5
FE2O3T % :	4.20	2.90	1.10
FE2O3 % :		0.9	0.0
FE0 % :		1.8	1.8
MNO % :	0.03	0.05	0.01
MGO % :	0.72	1.15	0.85
CAO % :	0.57	1.23	0.02
NA2O % :	0.60	1.30	2.10
K2O % :	4.14	3.98	4.04

H2OT % :		2.6	1.8
CO2T % :	0.3	0.9	0.1
P2O5 % :	0.15	0.10	0.06
S % :	1.83	0.01	0.59

BA ppm :	1300	1200	1900
AG ppm :	1	0	0
BE ppm :	1.2	1.3	1.4
CO ppm :	8	9	13
CR ppm :	9	30	8
CU ppm :	24	25	100
LA ppm :	13	9	26
NB ppm :	14	11	29
NI ppm :	0	19	0
PB ppm :	29	13	30
RB ppm :	160	150	130
SR ppm :	73	71	73
V ppm :	61	55	96
Y ppm :	66	13	38
YB ppm :	2.0	0.6	1.4
ZN ppm :	78	36	19
ZR ppm :	120	89	74
TOTALS	98.8	100.5	99.3

COMMENTS:

- * ALL ANALYSIS BY ICP, EXCEPT FE0, H2OT, CO2T, CO2, C, S AND LOI BY CHEMICAL METHODS.
- * FE2O3 IS CALCULATED USING $FE2O3 = FE2O3T(ICP) - 1.11134 * FE0(VOLUMETRIC)$.
- * ICP-MJ1 DATA ARE OBTAINED ON 0.5 G OF SAMPLE FUSED WITH LITHIUM METABORATE, DISSOLVED IN 5% HNO3 AND DILUTED TO 250 ML.
- * ICP-TR1 DATA ARE OBTAINED ON 1.0 G OF SAMPLE (ACID + FUSION OF RESIDUE) DISSOLVED IN 10% HCL AND DILUTED TO 100 ML.

FILE NAME : KIRKHAM.R.
ROCKS
226-88

ELEMENT REPORT OF COMPLETED ANALYSIS

DATE : 19 Apr 1989
PAGE : 1
SET : 1 OF 1

FILE NUMBER : 22688

SAMPLE NAME	E - M - A	E - M - A	E - M - A
	F	CL	S-TOTAL
	DIONEX1	DIONEX1	DIONEX1
	PYROHYDROL	PYROHYDROL	PYROHYDROL
	PPM	PPM	PPM
	50	100	50
KQ-88-60A 104B8889628	532.	129.	112.
60B 104B8889629	704.	126.	234.
60C 104B8889630	560.	124.	975.
60D 104B8889631	449.	131.	< 50.
60E 104B8889632	442.	130.	1402.
60F 104B8889633	395.	126.	< 50.
61 104B8889634	455.	130.	281.
62A 104B8889635	1216.	< 100.	70406.
62B 104B8889636	873.	< 100.	19410.
62C 104B8889637	490.	< 100.	37993.
62D 104B8889638	770.	< 100.	24172.
- 104B8889639	< 50.	127.	53.
62E 104B8889640	631.	< 100.	62834.
- 104B8889641	714.	162.	1997.
63A 104B8889642	510.	122.	115.
63B 104B8889643	1320.	107.	29013.
63C 104B8889644	825.	152.	8211.
64A 104B8889645	737.	133.	707.
64B 104B8889646	1042.	115.	4512.
64C 104B8889647	709.	129.	2056.
66 104B8889648	787.	254.	16265.
67 104B8889649	818.	< 100.	247704.
KQ-88-66A 104B8889650	542.	122.	1222.
66B 104B8889651	577.	126.	2640.
67A 104B8889652	987.	118.	9690.
67B 104B8889653	627.	< 100.	17843.
67C 104B8889654	974.	< 100.	27999.
68A 104B8889655	727.	136.	1065.
68B 104B8889656	700.	< 100.	19493.
69A 104B8889657	775.	164.	1425.
70A 104B8889658	673.	127.	10770.
- 104B8889659	< 50.	123.	< 50.
70B 104B8889660	547.	130.	26218.
- 104B8889661	517.	116.	25209.
70C 104B8889662	486.	274.	322.
70D 104B8889663	838.	208.	23622.
70E 104B8889664	698.	110.	9413.
KQ-88-70F 104B8889665	616.	104.	30622.
70G 104B8889666	925.	102.	31527.
70H 104B8889667	1274.	210.	4765.

FILE NAME : KIRKHAM.R.
ROCKS
226-88

ELEMENT REPORT OF COMPLETED ANALYSIS

DATE : 19 Apr 1989

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FILE NUMBER : 22688

SET : 1 OF 1

SAMPLE NAME	E - M - A	E - M - A	E - M - A
	F	CL	S-TOTAL
	DIONEX1	DIONEX1	DIONEX1
	PYROHYDROL	PYROHYDROL	PYROHYDROL
	PPM	PPM	PPM
	50	100	50
KQ-88 71A 104B889668	537.	106.	24956.
71B 104B889669	497.	< 100.	16148.
71C 104B889670	580.	< 100.	10585.
71D 104B889671	618.	< 100.	3640.
71E 104B889672	589.	< 100.	7771.
71F 104B889673	< 50.	130.	57.
36A 104B889542	490.	< 100.	326.
36B 104B889543	< 50.	125.	3058.
36C 104B889544	549.	< 100.	22271.
36D 104B889545	638.	< 100.	7377.
36E 104B889546	257.	< 100.	14233.
36F 104B889547	172.	< 100.	11810.
36G 104B889548	507.	< 100.	12007.
36H 104B889549	586.	< 100.	16256.
36I 104B889550	519.	< 100.	19026.
36J 104B889551	546.	< 100.	16709.
36K 104B889552	507.	< 100.	18324.
36L 104B889553	347.	< 100.	11095.
37 104B889554	1099.	133.	1197.
38A 104B889555	512.	< 100.	18305.
38B 104B889556	615.	< 100.	14580.
KQ-88 38C 104B889557	447.	123.	1267.
39A 104B889558	648.	< 100.	19646.
- 104B889559	< 50.	126.	< 50.
39B 104B889560	803.	< 100.	8933.
- 104B889561	163.	< 100.	12651.
39C 104B889562	171.	< 100.	43180.
40A 104B889563	437.	< 100.	8268.
40B 104B889564	< 50.	126.	239.
40C 104B889565	443.	< 100.	19689.
41A 104B889566	300.	118.	7590.
41B 104B889567	166.	< 100.	13431.
42 104B889568	389.	129.	205.
43A 104B889569	581.	121.	1199.
43B 104B889570	826.	136.	787.
43C 104B889571	968.	228.	1033.
44A 104B889572	838.	127.	2276.
KQ-88 44B 104B889573	707.	135.	2379.
44C 104B889574	681.	127.	1303.
44D 104B889575	756.	129.	4372.

FILE NAME : KIRKHAM.R.
ROCKS
226-88

ELEMENT REPORT OF COMPLETED ANALYSIS

FILE NUMBER : 22688

DATE : 19 Apr 1989
PAGE : 3
SET : 1 OF 1

SAMPLE NAME	E - M - A	E - M - A	E - M - A
	F DIONEX1 PYROHYDROL PPM 50	CL DIONEX1 PYROHYDROL PPM 100	S-TOTAL DIONEX1 PYROHYDROL PPM 50
KQ-88-44E104B8889576	1026.	124.	749.
44F104B8889577	987.	127.	2069.
45A104B8889578	876.	133.	217.
104B8889579	< 50.	126.	< 50.
45B104B8889580	1492.	137.	2582.
104B8889581	1858.	121.	6382.
45C104B8889582	1364.	136.	2293.
46A104B8889583	1883.	< 100.	33124.
46B104B8889584	3177.	< 100.	13700.
46C104B8889585	1699.	< 112.	36728.
46D104B8889586	2366.	< 100.	35429.
46E104B8889587	991.	< 100.	32522.
47A104B8889588	19672.	< 429.	21832.
47B104B8889589	4907.	< 100.	53658.
47C104B8889590	1985.	< 100.	13561.
47D104B8889591	2498.	< 100.	47772.
48A104B8889592	243.	< 100.	20848.
48B104B8889593	52.	135.	21895.
48C104B8889594	319.	< 100.	142122.
48D104B8889595	508.	< 100.	36658.
48E104B8889596	782.	< 100.	18752.
KQ-88-49 104B8889597	732.	< 133.	24312.
49A104B8889600	543.	122.	1238.
66B104B8889651	577.	126.	2640.
67A104B8889652	987.	118.	9699.
67B104B8889653	527.	< 100.	17943.
67C104B8889654	974.	< 100.	27999.
68A104B8889655	727.	136.	1065.
68B104B8889656	700.	< 100.	19493.
69A104B8889657	775.	164.	1425.
70A104B8889658	673.	127.	10770.
104B8889659	50.	123.	< 50.
70B104B8889660	547.	110.	26218.
104B8889661	517.	118.	25209.
71A104B8889662	455.	174.	329.
72A104B8889663	838.	208.	23622.
73A104B8889664	599.	130.	9419.
74A104B8889665	515.	192.	30632.
75A104B8889666	935.	107.	31527.
76A104B8889667	1274.	210.	3768.