GEOLOGICAL SURVEY OF CANADA
ECONOMIC GEOLOGY AND MINERALOGY DIVISION
ANALYTICAL CHEMISTRY SECTION
ICP - EMISSION SPECTROMETRY LABORATORY

803857
Sulphurets

R.V. KIRKHAM

503 - 597

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* REPORT OF ANALYSIS *
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DATE: 15 JAN. 88
REPORT NO. 150-87
SUBMITTED BY: BALLANTYNE B.
PROJECT NO. 790003
METHOD: DISSOLUTION F-HCl-10 ; ICP-TR1 , Ag & Pb BY AA.

ESTIMATE OF VALIDITY OF RESULTS

ELEMENT	+/-	(ABSOLUTE	+	RELATIVE)
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.)
V	+/-	(5 PPM	+	5% OF CONC.)
Yb	+/-	(0.5 PPM	+	5% OF CONC.)
Zn	+/-	(5 PPM	+	5% OF CONC.)

Ni, Cr, Cu,
Zn, Pb, Ag
Mo, Sn, W,

REPORT OF ANALYSIS

NAME: BALLANTYNE B. PROJECT: 790003 REQN. NO: 150-87

		H.B.Mtn. KQ-87-11B	12	13A	13B	13C	—	13D	
LAB. NO.		1	2	3	4	5	6	7	8
SAMPLE NO:		93L 8795 01	93L 8795 02	1048 879 503	1048 879 504	1048 879 505	1048 879 506	1048 879 507	1048 879 508
BE	ppm :	0.9	9.6	1.2	1.3	0.5	0.9	6.0	1.2
CO	ppm :	7	9	18	29	15	10	39	10
CR	ppm :	9	47	19	26	24	38	390	17
CU	ppm :	15	10	16	26	19	31	71	18
LA	ppm :	16	70	25	22	19	13	32	12
NI	ppm :	0	19	18	0	25	0	330	9
V	ppm :	120	170	110	140	48	90	130	[illegible]
YB	ppm :	1.1	4.9	2.1	2.4	2.7	0.9	3.9	1.8
ZN	ppm :	29	1	100	74	27	140	130	82

COMMENTS:
* ICP-TRI 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.	13E 9	13F 10	13G 11	KQ-87-13H 12	14A 13	14B 14	15 15	— 16
SAMPLE NO:	104B 879 509	104B 879 510	104B 879 512	104B 879 513	104B 879 514	104B 879 515	104B 879 516	104B 879 517
BE ppm :	1.1	1.1	1.3	0.9	1.0	1.1	1.8	6.0
CO ppm :	13	19	19	6	14	18	36	41
CR ppm :	17	21	18	8	17	24	160	390
CU ppm :	23	130	35	15	19	50	40	68
LA ppm :	12	16	18	14	17	14	66	35
NI ppm :	0	0	10	0	10	0	56	32
V ppm :	110	130	160	120	81	86	190	130
YB ppm :	1.8	1.1	1.6	1.1	1.7	1.3	1.8	3.8
ZN ppm :	80	81	100	32	160	110	140	150

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

ICP-ES LABORATORY

KQ-87-18

LAB. NO.	16A	16B	17	—	19A	19B	19C
SAMPLE NO:	1048 879 518	1048 879 519	1048 879 520	1048 879 521	1048 879 522	1048 879 523	1048 879 524	1048 879 525
BE ppm :	1.4	1.3	1.5	1.2	1.2	1.1	1.3	1.3
CO ppm :	14	15	14	16	13	15	13	15
CR ppm :	16	20	13	21	13	12	10	13
CU ppm :	9	26	9	25	6	6	9	20
LA ppm :	22	19	32	11	16	17	16	16
NI ppm :	0	8	0	5	5	0	6	0
V ppm :	110	110	90	110	92	93	94	140
YB ppm :	2.0	1.9	1.8	1.2	1.4	1.3	1.5	2.1
ZN ppm :	59	91	72	53	72	67	79	80

COMMENTS:

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

ICP-ES LABORATORY

KQ-87-21A

LAB. NO.	20A 25	26	21 27	28	22 29	22A 30	23 31	23A 32
SAMPLE NO:	1048 879 526	1048 879 527	1048 879 528	1048 879 529	1048 879 530	1048 879 532	1048 879 533	1048 879 534
BE ppm :	1.3	6.3	1.5	1.2	1.2	1.6	1.2	1.2
CO ppm :	12	41	17	15	15	13	16	10
CR ppm :	15	400	14	22	22	17	19	12
CU ppm :	13	72	23	26	34	28	430	8
LA ppm :	15	33	11	11	10	18	15	36
NI ppm :	0	330	0	0	0	1	15	10
P ppm :	99	140	230	110	130	110	140	97
VB ppm :	1.5	4.0	1.5	1.2	1.5	1.9	1.3	1.2
ZN ppm :	58	160	180	53	59	57	110	120

COMMENTS:

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

ICP-ES LABORATORY

KQ-87-25A 25B 25C 24A 24B 26A

LAB: NO.	33	34	35	36	37	38	39	40
SAMPLE NO:	104B 879 535	104B 879 536	104B 879 537	104B 879 538	104B 879 539	104B 879 540	104B 879 541	104B 879 542
BE ppm :	0.5	0.8	6.0	1.1	0.5	0.6	1.5	0.6
CO ppm :	11	14	40	33	26	37	14	35
CR ppm :	15	58	370	31	57	100	17	58
CU ppm :	11	29	66	83	71	61	21	93
LA ppm :	8	12	32	12	11	8	20	11
NI ppm :	28	25	320	23	18	35	0	35
V ppm :	37	130	130	250	210	280	100	220
YB ppm :	0.3	0.8	3.7	0.9	0.7	0.7	1.7	0.8
ZN ppm :	23	54	150	110	90	75	58	94

COMMENTS:

* ICP-TRI 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.	26B 41	26C 42	27 43	KQ-8728 44	— 45	28A 46	29 47	29A 48	
SAMPLE NO:	1048 879 543	1048 879 544	1048 879 545	1048 879 54?	1048 879 547	1048 879 548	1048 879 549	1048 879 550	
BE	ppm :	0.7	0.8	1.0	0.8	6.0	0.8	1.3	1.5
CO	ppm :	26	17	29	15	41	20	15	14
CR	ppm :	62	40	22	77	380	45	22	15
CU	ppm :	94	92	88	35	70	120	23	26
LA	ppm :	12	12	13	15	34	14	18	17
NI	ppm :	28	0	7	26	320	35	6	5
V	ppm :	220	160	250	170	130	99	95	97
YB	ppm :	0.9	5.2	1.5	1.2	4.0	1.1	1.5	1.8
ZN	ppm :	71	20000	90	68	150	100	59	58

COMMENTS:
* 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.	30 49	32 50	33 51	KQ-87-33A 52	33B 53	— 54	34A 55	34B 56
SAMPLE NO:	1048 879 552	1048 879 553	1048 879 554	1048 879 555	1048 879 556	1048 879 557	1048 879 558	1048 879 559
BE ppm :	1.0	1.0	1.2	0.6	1.5	6.1	0.9	0.9
CO ppm :	19	16	19	16	14	42	13	14
CR ppm :	20	19	21	30	18	390	46	83
CU ppm :	36	31	29	39	21	70	28	23
LA ppm :	16	14	16	16	20	34	13	8
NI ppm :	9	14	8	3	5	340	21	32
V ppm :	120	110	120	91	100	140	110	66
YB ppm :	1.9	1.6	1.7	1.2	1.9	4.1	0.9	0.7
ZN ppm :	77	60	73	57	55	150	56	34

COMMENTS:

* 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.	35 57	— 58	36A 59	KQ-87-36B 60	37 61	38 62	39 63	— 64
SAMPLE NO:	1048 879 560	1048 879 561	1048 879 562	1048 879 563	1048 879 564	1048 879 565	1048 879 566	1048 879 567
BE ppm :	1.4	1.3	1.0	0.2	0.8	0.9	1.3	5.9
CO ppm :	16	16	26	13	35	13	15	40
CR ppm :	18	13	36	19	82	38	15	360
CU ppm :	29	10	150	230	180	29	18	66
LA ppm :	17	18	11	17	12	11	19	34
NI ppm :	9	0	30	27	20	21	8	310
V ppm :	110	110	230	25	280	66	100	130
YB ppm :	2.4	1.9	1.1	2.2	1.2	0.8	1.7	3.8
ZN ppm :	77	75	76	28000	73	120	85	190

COMMENTS:

* ICP-TRI 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: 13 JAN. 88

ICP-ES LABORATORY

LAB. NO.	39A 65	40 66	41 67	41A 68	KQ87-42A 69	42B 70	42C 71	42D 72
SAMPLE NO:	1048 879 568	1048 879 569	1048 879 570	1048 879 572	1048 879 573	1048 879 574	1048 879 575	1048 879 576
BE ppm :	1.3	1.4	1.4	1.3	0.9	1.6	0.6	0.6
CO ppm :	13	17	17	17	7	14	9	8
CR ppm :	13	37	14	15	28	39	19	38
CU ppm :	18	17	31	10	130	66	64	33
LA ppm :	20	17	22	20	6	18	7	7
NI ppm :	1	13	1	0	9	0	0	0
V ppm :	91	110	120	110	75	150	45	34
YB ppm :	1.6	1.7	2.1	2.0	0.5	1.7	0.2	0.5
ZN ppm :	61	78	78	77	210	44	33	81

COMMENTS:

* 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

43 44A KQ-87-44B — 44C 44D 45A

LAB. NO.	73	74	75	76	77	78	79	80
SAMPLE NO:	104B 879 577	104B 879 578	104B 879 579	104B 879 580	104B 879 581	104B 879 582	104B 879 583	104B 879 584
BE ppm :	6.1	1.1	0.7	1.7	1.1	1.2	1.2	1.3
CO ppm :	41	13	14	20	18	19	19	12
CR ppm :	380	12	41	15	14	18	17	15
CU ppm :	67	13	69	26	22	110	39	35
LA ppm :	34	16	11	18	21	20	18	20
NI ppm :	320	7	16	0	4	0	0	0
V ppm :	130	99	86	230	79	160	140	140
YB ppm :	3.8	1.7	1.2	2.8	1.5	2.5	2.1	1.9
ZN ppm :	150	57	70	100	80	190	780	82

COMMENTS:

* ICP-TRI 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: 13 JAN. 88

KQ-87-47A 47B 47C 47D 47E

LAB. NO.	45B81	46 82	~ 83	84	85	86	87	88
SAMPLE NO:	1048 879 585	1048 879 586	1048 879 587	1048 879 588	1048 879 589	1048 879 590	1048 879 592	1048 879 593
BE ppm :	1.3	0.7	6.0	1.6	0.9	0.6	1.1	0.3
CO ppm :	8	19	38	11	11	14	17	17
CR ppm :	38	40	340	100	46	36	46	23
CU ppm :	34	1700	65	29	11	110	30	750
LA ppm :	12	17	31	38	7	39	14	6
NI ppm :	0	38	300	0	0	31	29	22
V ppm :	74	36	120	110	71	20	110	59
YB ppm :	0.9	1.3	3.7	1.5	0.6	2.0	1.2	0.5
ZN ppm :	21	20000	150	75	78	61	140	48

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

Standard

normal

As — 20 ppm × 10 = 200 ppm

× 2 = 2000 ppm

KQ-87-49B

LAB. NO.	47E 89	49A 90	91	92	93	94	95	96
SAMPLE NO:	1048 879 594	1048 879 595	104B 879 596	1048 879 597	150-87-9 3 #12	150-87-9 4 #36	150-87-9 5 #43	150-87-9 6 #75
BE ppm :	0.9	1.4	1.1	5.9	0.9	0.9	0.9	0.7
CO ppm :	29	16	17	41	7	29	26	14
CR ppm :	22	12	13	390	8	21	18	38
CU ppm :	100	8	17	69	13	85	84	73
LA ppm :	15	21	21	33	15	10	11	10
NI ppm :	0	6	1	330	0	21	7	4
V ppm :	320	120	86	130	120	240	260	88
YB ppm :	2.1	1.8	1.5	4.1	1.2	0.9	1.3	1.3
ZN ppm :	64	68	77	150	36	96	83	68

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

ACME LABORATORY
LAB. NO. 97
SAMPLE NO: 150-87-9
7 #91

BE	ppm :	1.0
CO	ppm :	16
CR	ppm :	12
CU	ppm :	16
LA	ppm :	19
NI	ppm :	0
V	ppm :	86
YB	ppm :	1.4
ZN	ppm :	80

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