

APPENDIX

SEMIQUANTITATIVE SPECTROGRAPHIC ANALYSES
OF MANGANESE ORES AND ROCKS

Tables 1 - 5

Minor and trace element content of manganese ores

All values in percentages

... = not determined

M = major constituent

m = minor constituent

SAMPLE NUMBER	LOCATION	Mn	Fe	Bo	Ag	Al	As	Au	B	Be	Bi	Ca	Cd	Co	Cu	Cr
BAC-8-67	Lake Mine (Cheverie) Hants County	M	.5	.1	.0005	.5	<.05	---	Tr	<.001	0	.1	<.01	.025	.1	.002
BHS-27-67	" "	30-32	2-4	2-4	---	10-12	---	---	---	Tr-.00006	Tr-.002	.8-1	---	---	.03-.1	---
BHS-28-67	" "	20-30	.5-1	2-4	Tr-.008	8-12	--	---	---	Tr-.0001	.0002-.004	1.2-1.8	---	---	.06-.11	---
BHS-33-67	" "	25-30	1-2	Tr-.01	Tr-.008	8-12	---	---	---	---	Tr-.002	.4-.6	---	---	Tr-.014	---
BAC-7-67	Goshen, Hants County	.015	m	M	Tr	.01	<.05	---	<.05	<.001	0.00	.01	<.01	<.001	.002	Tr
BAC-13-67	" "	M	M	M	.0005	.5	<.05	---	<.05	<.001	<.01	.25	<.01	.005	.0025	.0005
BAC-10-67	Sturgis Mine, Hants County	M	m	.2	.0001	2.5	<.1	---	<.01	0.00	0.00	.1	0.00	.1	.001	.001
BHS-127-67	" "	40	1.62	---	---	---	---	---	---	---	---	---	---	---	Tr-.006	---
BAC-2-67	Dresser Minerals Ltd. (Mine Dump) Hants County	M	.5	m	.0005	.25	<.05	---	Tr	<.001	0.00	.25	<.01	.025	.2	.002
BAC-11-67	" "	M	M	M	.0005	.25	<.1	---	<.01	<.01	0.00	M	<.01	.02	.05	.005
BAC-16-67	" "	M	.1	M	.0005	.4	<.05	---	Tr	<.001	0.00	.3	<.01	.025	.2	.001
BLS-111-68	" "	30-40	.2-.4	.2-.4	Tr-.006	6-8	---	---	Tr-.002	---	---	.4-.8	---	.04-.1	.08-.1	---
BLS-112-68	" "	35-40	.2-.4	.01-.06	Tr-.006	2-4	---	---	---	---	---	---	---	---	.08-.1	---
BLS-3-70	" "	20-25	15-20	---	Tr-.0001	10-12	---	---	.008-.001	---	---	2-3	---	---	.02-.04	---
BAC-3-67	Stephens, Hants Co.	.5	.5	.02	Tr	.25	<.1	---	<.05	<.001	0.00	M	<.01	.0005	.005	.001
BAC-6-67	" "	m	m	.05	.0001	.25	<.05	---	.1	<.001	0.00	M	<.01	.0005	.01	.001
BAC-14-67	" "	.4	.5	.07	Tr	.4	<.05	---	<.05	<.001	0.00	M	<.01	.0005	.005	.001
BAC-17-67	" "	m	.8	.15	.0005	.25	<.05	---	.2	<.001	0.00	M	<.01	.001	.02	.001
BAC-18-67	" "	.2	.3	.07	Tr	.25	<.05	---	.05	<.001	0.00	M	<.01	.0001	.0075	.001
BAC-1-67	Shaw & Churchill, Hants County	M	.5	m	.005	.25	<.1	---	Tr	<.001	0.00	.25	<.01	.025	.2	.005
BHS-69-67	Whale Creek, Hants County	6-10	4-6	2-4	.0006-.0008	10-20	---	---	---	---	---	20-25	---	---	.008-.02	---
BHS-95-67	Parker, Hants County	20-30	2-4	---	---	---	---	---	---	---	---	---	---	---	.08-.1	---
BAC-9-67	Tennycupe, Hants Co.	M	.1	m	.0005	.4	<.05	---	Tr	<.001	0.00	.5	<.01	.025	.2	.005
BHS-62-67	" "	15-20	2-3	2-4	.001-.008	4-6	---	---	Tr-.03	---	---	8-10	---	---	.03-.06	---
BHS-63-67	" "	2-5	1-1.5	2-3	Tr-.0004	6-8	---	---	---	---	Tr-.002	8-15	---	Tr-.001	.02-.06	---
BHS-64-67	" "	20-30	4-6	.2-.6	Tr-.008	6-8	---	---	Tr-.02	---	---	4-6	---	---	.03-.06	---
BHS-67-67	" "	20-30	8-10	.04-.1	Tr-.0006	8-12	---	---	Tr-.01	---	---	.6-1.2	---	---	.04-.06	---
BHS-68-67	" "	15-20	6-8	.1-.2	Tr-.0008	10-14	---	---	.01-.02	---	---	4-8	---	---	.02-.04	---
BAC-12-67	Scott Property, Hants County	M	m	.05	.0005	.5	<.05	---	.2	<.001	0.00	M	<.01	.001	.02	.001
BHS-81-67	MacDonald (Moose Brook) Hants County	30-40	1-2	.2-.8	Tr-.007	6-10	.1-.2	---	---	---	---	.6-.8	---	---	Tr-.03	---

Analyst Wade Gates, Nova Scotia Technical College, Halifax and
Ken MacLean, Nova Scotia Agricultural College, Truro (BAC Nos.)

Ge	K	Li	Mg	Mo	Na	Ni	P	Pb	Sb	Si	Sn	Sr	Ti	Tl	V	W	Zn	Zr
.0005	.025	<.5	.07	.02	<.01	.03	---	.008	<.05	.75	.0005	.005	.025	0.00	.04	<.05	.2	<.01
---	.01-.04	---	.5-1	Tr-.018	.08-.1	Tr-.012	---	Tr-.02	---	3-6	---	Tr-.01	Tr-.008	---	.1-.008	Tr-.06	.04-.06	---
---	.04-.08	---	.8-1.6	.02-.03	.08-.01	.1-.12	---	.02-.03	.002	3-4	---	.008-.01	.02-.04	---	.008-.01	.008-.01	.02-.04	Tr-.0008
---	Tr-.06	---	.4-.6	.003	.08-.1	.01-.02	---	Tr-.1	---	2-4	---	---	.002-.004	---	Tr-.008	Tr-.008	Tr-.04	---
<.001	<.01	<.1	.001	<.001	<.05	.0001	---	<.001	<.05	.1	<.001	.2	.0005	<.01	<.01	<.01	<.05	<.01
<.01	.005	<.1	1.0	.008	<.05	.0025	---	.01	<.05	m	<.01	.05	.1	<.01	.005	<.1	<.05	<.05
<.001	.005	<.1	.05	Tr	0.00	.0075	---	.001	<.05	M	.005	.05	.15	<.1	.005	<.1	.0075	<.1
---	---	---	---	---	---	.06	---	.03-.048	---	---	---	---	---	---	---	Tr-.02	Tr-.006	---
.0005	.025	<.5	.05	.0075	<.01	.03	---	.008	<.05	.2	.0005	.005	.001	0.00	.0075	<.05	.1	<.01
<.001	.01	<.1	.5	.002	<.01	.002	---	.1	<.1	.5	.0025	.1	.01	<.01	<.01	<.1	.05	<.01
.0005	.025	<.5	.1	.005	<.01	.03	---	.008	<.05	.1	.0005	.0025	.001	0.00	.001	<.05	.2	.01
---	.04-.1	---	.2-.4	---	.1-.2	.08-.1	---	.06-.1	---	.6-1	Tr-.02	---	---	---	---	---	Tr-.08	---
---	---	---	.6-.8	---	Tr-.08	Tr-.06	---	.1-.2	---	.1-.2	.08-.1	---	Tr-.006	---	---	---	.1-.2	---
---	---	.06-.1	5-6	---	---	.01-.02	---	.08-1	---	8-9	.02-.06	---	.06-.08	---	.06-.1	---	.01-.02	---
<.001	<.01	<.1	.4	<.001	<.1	.0001	---	.005	<.05	m	Tr	.025	.03	<.005	.005	<.1	<.05	<.01
<.001	<.01	<.1	.4	<.001	<.1	.001	---	.01	<.05	M	Tr	.025	.03	<.005	.0075	<.05	<.05	<.01
<.001	<.01	<.1	.4	.001	<.1	.001	---	.0025	<.05	M	Tr	.025	.05	<.005	.005	<.05	<.05	<.01
<.001	<.01	<.1	.4	.005	<.1	.001	---	.005	<.05	M	Tr	.025	.05	<.005	.005	<.05	<.05	<.01
<.001	<.01	<.1	.4	<.001	<.1	.0001	---	.001	<.05	m	Tr	.025	.02	<.005	.0025	<.05	<.05	<.01
.0005	.05	<.5	.1	.01	<.01	.01	---	.008	<.05	.5	.0005	.02	.02	0.00	.015	<.05	.05	<.01
---	.08-.1	---	3-4	.008-.01	.1-.15	.008-.01	---	.1-.2	---	2-3	---	.08-.1	Tr-.1	---	Tr-.008	---	.02-.15	---
---	---	---	---	.01-.02	---	---	---	Tr-.02	---	---	---	---	---	---	---	.008-.01	.008-.01	---
.0005	.005	<.5	.07	.025	<.01	.005	---	.008	<.05	.25	.0005	.01	.008	0.00	.015	<.05	.07	<.01
---	---	---	10-14	---	---	Tr-.009	---	.06-.1	---	.6-.8	---	.1-.2	---	---	Tr-.008	---	Tr-.08	---
---	.08-.1	---	1.4-1.6	.02-.06	.1-.12	Tr-.003	---	.04-.08	Tr-.008	11-18	---	Tr-.01	.001-.002	---	---	---	.008-.01	---
---	---	---	4-6	---	---	.06-.08	---	.06-.01	---	2-4	.08-.1	---	Tr-.02	---	Tr-.008	---	Tr-.008	---
---	---	---	3-5	---	Tr-.1	.03-.06	---	.1-.2	---	10-12	---	.1-.2	Tr-.07	---	.04-.08	---	.1-.2	---
---	.06-.1	---	4-5	---	.1-.2	Tr-.03	---	.08-.1	---	20-25	---	---	.1-.2	---	.008-.01	---	.02-.15	---
<.001	<.01	<.1	.4	.005	<.1	.001	---	.001	<.05	m	.0005	.025	.03	<.005	.01	<.05	<.05	<.01
---	---	---	.8-1	.06-.1	Tr-.02	.08-.1	---	.02-.03	---	1-2	---	---	Tr-.004	---	.06-.08	---	.1-3	---

TABLE 2. Minor and trace element content of manganese ores

All values in percentages
 ... = not determined

M = major constituent
 m = minor constituent

SAMPLE NUMBER	LOCATION	Mn	Fe	Ba	Ag	Al	As	Au	B	Be	Bi	Co	Cd	Ca	Cu	Cr
BHS-73-67	Minasville School, Hants County	20-30	6 - 10	.2-.4	.001-.006	10 - 12	---	---	---	---	---	1 - 2	---	---	.08-.1	---
BHS-75-67	" "	.1-.2	3 - 5	.2-.6	---	8 - 12	Tr -.015	---	---	---	---	10-15	---	---	.0008-.01	---
BAC-19-67	Hibernia, Hants Co.	m	.5	.05	Tr	.25	<.06	---	.05	<.001	0.00	M	<.01	.0001	.01	.001
BAC-15-67	Black Rock, Colchester County	m	M	.01	Tr	.5	<.05	---	<.05	<.001	<.01	3	<.01	.001	.0025	.0005
BCS-9-69	" "	16-20	2 - 3	12-15	Tr -.0001	6 - 8	---	---	Tr -.0005	---	---	2 - 6	---	.004 -.006	.03-.06	---
BCS-10-69	" "	20-25	1 - 2	2 - 4	.0004-.0006	8 - 10	---	---	Tr -.001	---	---	4 - 6	---	Tr -.004	.08-.1	---
BCS-21-69	" "	.8-1.2	8 - 10	25-30	.0001-.0008	8 - 10	---	---	.02-.04	---	---	2 - 3	---	---	.02-.04	---
BCS-23-69	" "	1 - 2	3 - 4	15-20	.00005-.0001	10 - 12	---	---	.005 -.01	---	---	6 - 8	---	---	.012 -.009	---
BAC-20-67	East Mountain, Colchester County	M	.4	.4	.0005	.4	<.05	---	Tr	<.001	0	.5	<.01	.025	.5	.008
BCS-16-68	" "	40-50	6 - 8	.2-.4	.0002 .001	2 - 4	---	Tr -.0004	---	---	---	.5-1	---	---	.1-.2	---
BL S-108-68	" "	30-40	.6-.8	.1-.2	Tr -.006	2 - 3	---	---	Tr -.002	.003 -.006	---	.4-.6	---	.04-.08	.1 -.2	---
BAC-5-67	Manganese Mines, Colchester County	M	1	.2	Tr	.25	<.1	---	.005	<.01	0.00	.1	<.01	.05	.2	.01
BCS-7-68	" "	40-50	6-10	---	.0008 -.001	6 - 8	---	---	---	---	---	---	---	---	.08-.1	---
BLS-114-68	" "	30 - 40	.8 - 1	Tr-.01	Tr-.015	8 - 10	.01-.03	---	---	Tr -.0018	---	---	---	.08-.1	.02-.04	---
BCuS-68-68	Kinnear Quarry, Cumberland County	30 - 40	.5 - .6	.08-.1	Tr -.0001	6 - 8	---	---	---	---	---	8 - 10	---	---	.08-.1	---
BCuS-72-68	" "	20 - 25	2 - 4	---	Tr -.0002	12-16	---	---	---	---	---	10 - 15	---	---	.02-.04	---
BBS-130-69	McCuish Brook, Cape Breton County	30-40	.6-1	.1 - .2	Tr -.0001	6 - 8	---	---	.008 -.03	---	---	2 - 3	---	---	.08-.1	---
BBS-135-69	" "	30 - 40	1 - 2	.1-.2	Tr -.0001	4 - 6	---	---	---	---	---	.6 - .8	.02-.04	---	.06-.1	---
BBS-138-69	" "	30-40	1-1.5	6 - 10	Tr -.0001	8 - 10	---	---	Tr -.002	---	---	.8-1.2	---	---	.02-.06	---
BBS-140-69	" "	40-45	.8-1	.4 -.6	.0001-.0002	4 - 6	---	---	.006 -.008	Tr -.00009	---	.08-.1	---	---	.06-.08	---
BBS-141-69	" "	40 - 45	1 - 2	4 - 5	---	4 - 6	---	---	---	---	---	.3-.4	---	---	.06-.08	---
BBS-142-69	" "	45 - 50	.6 - 1	---	Tr -.0001	.8-1	---	---	---	---	---	.1-.2	---	---	.03-.06	---
BBS-144-69	" "	40 - 50	.8 - 1	.28 - 3	.001 -.002	3 - 5	---	---	Tr -.006	Tr -.00006	---	.2 - .3	---	---	.08 - .1	---
BBS-146-69	" "	40 - 45	1 - 2	.4 -.6	Tr -.0001	4 - 6	---	---	.006 -.01	Tr -.0006	---	.4-.6	---	---	.02-.03	---
BBS-147-69	" "	30 - 40	.8 - 1	2 - 3	Tr -.001	7 - 10	---	---	.003 -.01	Tr -.0006	---	.6-.8	---	---	.08-.1	---
BBS-149-69	" "	20 - 25	2 - 3	---	---	2 - 4	---	---	Tr -.002	---	---	6 - 10	---	---	.008 -.01	---
BBS-150-69	" "	15 - 20	4 - 6	---	---	6 - 8	---	---	.004 -.006	---	---	10 - 12	---	---	.008 -.01	---
BBS-152-69	" "	30 - 40	1 - 1.5	.1 - .2	Tr -.0001	6 - 8	---	---	.008 -.01	---	---	.8 - 1	---	---	.03-.06	---
BBS-154-69	" "	30 - 40	.9 - 1	---	Tr -.0001	4 - 6	---	---	.005 -.01	---	---	.2-.4	---	---	.02-.04	---

Analyst Wade Gates, Nova Scotia Technical College, Halifax and
 Ken MacLean, Nova Scotia Agricultural College, Truro (BAC Nos.)

Ge	K	Li	Mg	Mo	Na	Ni	P	Pb	Sb	Si	Sn	Sr	Ti	Tl	V	W	Zn	Zr
---	---	---	6 - 9	---	---	.1 - .2	---	.06 - .1	---	6 - 10	---	.1 - .2	.1 - .2	---	.1 - .2	---	.008 - .01	---
---	.08 - .1	---	8 - 10	.01 - .03	.1 - .2	.01 - .006	---	.02 - .04	Tr-.01	14 - 18	---	Tr-.01	.04 - .06	---	---	---	Tr-.01	---
<.001	<.01	<.1	.4	<.001	<.1	.0001	---	.005	<.05	M	Tr	.025	.03	<.005	.0025	<.05	<.05	<.01
<.01	.0025	<.1	.3	.001	<.05	.0005	---	.005	<.05	M	<.01	.01	.1	<.01	.01	<.1	<.05	<.05
---	Tr-.06	---	3 - 4	---	---	.03 - .008	---	.02 - .04	---	2 - 4	---	---	Tr-.001	---	.08 - .1	---	.06 - .08	---
---	---	---	2 - 3	.009 - .012	---	.004 - .006	---	.08 - .1	---	1 - 2	.008 - .012	---	Tr-.001	---	Tr-.08	---	.1 - .2	---
---	.1 - .2	---	.6 - .8	---	---	.008 - .01	.1 - .2	.006 - .008	---	8 - 10	---	4 - 6	.04 - .06	---	---	---	.004 - .006	---
---	---	---	1 - 2	---	---	.003 - .006	---	---	---	5 - 8	---	5 - 7	.04 - .06	---	.002 - .004	---	.008 - .01	---
.0005	.025	<.5	.25	.01	<.01	.03	---	.008	<.05	.3	.0005	.005	.0025	0.00	.025	<.05	<.05	<.01
---	---	---	.5 - 1	.008 - .01	---	.08 - .1	---	.02 - .04	---	5 - 8	---	---	Tr-.02	---	.08 - .1	---	.04 - .08	---
---	---	---	.8 - 1	---	---	.06 - .1	---	.1 - .2	---	.5 - 1	.1 - .2	---	---	---	.04 - .08	---	Tr-.006	---
<.01	<.01	<.1	.1	.005	.02	.01	---	.01	<.1	M	.0005	<.01	.2	<.001	.05	<.1	.05	<.01
---	---	---	---	---	---	.02 - .03	---	---	---	---	---	---	---	.08 - .1	---	---	.008 - .01	<.01
---	---	---	1 - 2	---	---	.08 - .12	---	.04 - .08	---	.6 - .8	.04 - .08	Tr-.01	---	---	Tr-.05	---	---	---
---	---	---	6 - 8	---	---	.02 - .04	---	.04 - .06	---	1 - 2	---	Tr-.1	---	---	---	---	.008 - .08	---
---	Tr-.1	---	6 - 8	---	.08 - .1	---	---	.02 - .04	---	6 - 10	---	.1 - .15	.04 - .06	---	---	---	Tr-.008	---
---	---	---	.4 - .6	---	---	.08 - .1	---	.1 - .2	---	.6 - .8	.08 - .1	---	.01 - .02	---	.02 - .04	.03 - .1	.006 - .01	---
---	---	---	.4 - .6	---	---	.1 - .15	.1 - .2	.1 - .2	---	.8 - .9	.1 - .2	---	.02 - .04	---	.06 - .08	.08 - .1	.02 - .04	---
---	---	---	.3 - .6	---	---	.06 - .1	---	.1 - .2	---	.8 - 1	.06 - .1	.1 - .2	.06 - .1	---	.02 - .04	.015 - .03	.03 - .08	---
---	---	---	.4 - .6	---	---	.08 - .1	---	.08 - .1	---	1 - 2	.08 - .1	.1 - .2	.02 - .04	---	---	.03 - .06	.01 - .02	---
---	---	---	.2 - .4	---	Tr-.08	.1 - .2	---	.06 - .1	---	.8 - 1	.06 - .1	.1 - .2	.03 - .06	---	---	.03 - .06	.06 - .08	---
---	---	---	.2 - .3	---	---	.06 - .08	---	.08 - .1	---	.8 - 1	.08 - .1	---	.002 - .004	---	---	.03 - .06	.03 - .06	---
---	---	---	.2 - .4	---	---	.06 - .1	---	.08 - .1	---	.1 - .5	.06 - .1	---	.09 - .1	---	---	.03 - .06	.06 - .08	---
---	---	---	.4 - .6	---	---	.04 - .06	---	.06 - .1	---	1 - 2	.1 - .2	.1 - .2	Tr-.006	---	.04 - .06	.01 - .03	Tr-.03	---
---	---	---	.2 - .3	---	---	.1 - .15	---	.1 - .2	---	1 - 2	.1 - .2	---	.02 - .04	---	.06 - .08	.03 - .06	Tr-.015	---
---	---	---	10 - 12	---	---	.02 - .06	---	.02 - .04	---	2 - 4	.01 - .02	---	Tr-.002	---	---	---	Tr-.006	---
---	---	---	12 - 16	---	---	.02 - .03	---	.02 - .04	---	3 - 5	.02 - .03	---	---	---	---	---	.004 - .06	---
---	---	---	.8 - 1	---	---	.08 - .1	---	.06 - .08	---	.4 - 6	.08 - .1	---	.02 - .04	---	.06 - .08	Tr-.03	.08 - .1	---
---	---	---	.4 - .6	---	---	.08 - .2	---	.08 - .1	---	4 - 6	.1 - .2	---	.02 - .03	---	.04 - .08	.03 - .15	.04 - .08	---

TABLE 3 Minor and trace element content of manganese ores

All values in percentages

... = not determined

M = major constituent

m = minor constituent

SAMPLE NUMBER	LOCATION	Mn	Fe	Ba	Ag	Al	As	Au	B	Be	Bi	Ca	Cd	Co	Cu	Cr
BKS-91-68	Nicholsville, Kings Co.	10 - 15	8 - 12	---	Tr - .0002	10 - 12	---	---	.02-.04	---	---	2 - 4	---	---	.02-.04	---
BKS-92-68	" "	15 - 20	15 - 20	---	Tr - .0001	12 - 18	---	---	Tr-.005	---	---	1 - 2	---	---	Tr-.012	---
BKS-93-68	" "	20 - 25	6 - 12	Tr-.02	---	6 - 8	---	---	Tr-.008	---	---	.4 - .6	---	---	.08-.1	---
BKS-94-68	" "	20 - 25	15 - 20	---	Tr-.001	10 - 12	---	---	.005 - .008	---	---	.2 - .5	---	---	Tr-.015	---
BKS-96-68	" "	20 - 25	4 - 8	.8 - 1	.006 - .008	6 - 8	---	---	.008 - .01	---	---	.8 - 1	---	.002 - .003	.04-.3	---
BKS-97-68	" "	15 - 20	6 - 12	---	.0008 - .001	6 - 10	---	---	Tr-.02	---	---	1 - 2	---	---	.02-.03	---
BKS-98-68	" "	20 - 30	15 - 20	.1 - .2	Tr - .0008	8 - 12	---	---	---	---	---	1 - 2	---	.01-.02	.02-.08	---
BKS-99-68	" "	20 - 25	8 - 12	.1 - .2	.001 - .008	8 - 10	---	---	Tr-.02	---	---	2 - 3	---	---	.08-.1	---
BKS-100-68	" "	30 - 40	10 - 15	2 - 3	Tr-.008	12 - 16	---	Tr - .0004	---	---	---	.4 - .8	---	Tr-.004	.02-.04	---
BKS-101-68	" "	15 - 20	10 - 15	.4 - .8	Tr - .0001	15 - 20	---	---	---	---	---	2 - 3	---	---	Tr-.006	---
BKS-102-68	" "	20 - 30	8 - 10	.2 - .4	.006 - .008	8 - 10	---	---	---	---	---	2 - 4	---	---	.06-.08	---
BLS-113-68	" "	30 - 40	4.8- 6	---	.004 - .006	8 - 10	---	---	Tr-.008	---	---	---	---	.004 - .008	.02-.04	---
BK-33-70	" "	.1 - .2	20 - 25	.2 - .4	Tr-.006	15 - 20	---	---	.008 - .01	---	---	.3 - .5	---	---	.02-.06	---
BK-40-70	" "	.3 - .5	15 - 20	.2 - .4	---	10 - 15	---	---	Tr-.003	---	---	10 - 14	---	---	.008 - .01	---
BK-55-70	Factorydale, Kings Co.	1	8	.08	---	7	---	---	---	---	---	3	---	---	.02	.02
BH-85-70	Lake Charlotte, Halifax County	15	4	.2	.0001	7	---	---	.03	---	---	3	---	---	.04	.03
BH-86-70	" "	15	7	2	.0001	10	---	---	.01	---	---	1	---	---	.03	.04
BH-88-70	" "	1	3	.3	---	12	---	---	.04	---	---	3	---	---	.01	.006
BG-61-70	Rocky Lake, Guysborough County	10	6	.5	.0001	10	---	---	---	---	---	2	---	---	.01	.08
BG-62-70	" "	10	6	---	---	10	---	---	---	---	---	2	---	---	.004	.03
BG-69-70	" "	10	6	.5	---	7	---	---	---	---	---	.5	---	---	.03	.03
BC-76-70	Sonora, Guysborough County	20	7	.06	.0001	8	---	---	.02	---	---	.7	---	.02	.02	.02
BG-79-70	" "	15	8	.8	.0001	10	---	---	.02	---	---	---	---	---	.01	.03
BG-80-70	" "	10	9	---	---	8	---	---	.03	---	---	.5	---	---	.07	.05
BKS-44-70	Inglisville, Annapolis County	.08- .1	10 - 12	.1 - .2	Tr - .0001	18 - 20	---	---	---	---	---	3 - 5	---	---	.04-.06	.1 - .2
BKS-45-70	East Inglisville, Annapolis County	.4 - .8	10 - 15	.4 - .6	Tr - .0001	15 - 20	---	---	---	---	---	5 - 8	---	---	.08 - .1	.1 - .2
BK-48-70	" "	.8 - 1	10 - 14	1 - 2	---	12 - 14	---	---	.006 .008	---	---	5 - 8	---	---	.01-.03	.06-.08
BKS-49 - 70	" "	.4 - .6	10 - 15	.06- .1	Tr - .0001	15 - 20	---	---	---	---	---	2 - 4	---	.008 - .01	.2 - .3	.1 - .2
BCS-21-70	Boularderie Island, Victoria County	20 - 25	15 - 20	---	Tr-.001	12 - 14	---	---	Tr-.003	---	---	.4 - .6	---	---	.008 - .01	---

Ge	K	Li	Mg	Mo	No	Ni	P	Pb	Sb	Si	Sn	Sr	Ti	Ti	V	W	Zn	Zr
---	---	---	2-3	---	---	.008-.1	---	.04-.08	---	16-20	---	---	.08-.1	---	.004-.008	---	Tr-.008	---
---	Tr-.06	---	2-3	---	Tr-.04	Tr-.003	---	.02-.06	---	8-12	---	---	Tr-.02	---	---	---	Tr-.006	---
---	---	---	1-2	---	Tr-.0008	.04-.06	---	.06-.1	---	8-10	---	---	.08-.1	---	.008-.01	---	.1-.2	---
---	.06-.12	---	4-6	---	Tr-.08	Tr-.06	---	Tr-.006	---	10-15	---	---	.01-.02	---	---	---	Tr-.008	---
---	---	---	2-3	.08-.1	---	.1-.2	---	.08-.1	---	4-6	.04-.08	---	.03-.06	---	.03-.06	---	Tr-.004	---
---	---	---	2-3	---	---	.04-.08	---	.006-.08	---	6-8	---	---	.08-.1	---	.01-.03	---	.01-.02	---
---	Tr-.1	---	2-3	---	Tr-.1	.06-.1	---	.08-.1	---	10-12	---	---	.06-.08	---	Tr-.08	---	Tr-.1	---
---	---	---	2-3	---	---	.08-.1	---	.06-.08	---	6-8	Tr-.06	---	.04-.06	---	.04-.08	---	.02-.04	---
---	Tr-.03	---	4-5	---	---	.06-.1	---	.05-.1	---	10-12	---	---	Tr-.04	---	Tr-.0008	---	.08-.1	---
---	Tr-.1	Tr-.06	8-10	---	---	.08-.1	---	Tr-.006	---	15-20	---	---	.2-.3	---	.06-.08	---	.1-.2	---
---	---	---	2-3	---	---	.06-.08	---	.1-.2	---	6-8	---	---	.06-.08	---	Tr-.008	---	.04-.1	---
---	Tr-.06	---	2-4	.06-.08	---	.06-.1	---	.08-.1	---	5-7	.06-.08	---	Tr-.03	---	Tr-.08	---	---	---
---	---	---	2-3	---	4-5	.03-.06	---	.04-.06	---	15-18	---	.04-.06	.06-.08	---	---	---	.04-.06	---
---	.1-.2	.2-.8	8-10	---	3-4	.06-.08	---	.03-.06	---	15-20	---	.06-.1	.08-.1	---	---	---	.06-.08	---
---	.06	---	8	---	5	.006	---	.01	---	15	---	---	.2	---	.02	---	.02	---
---	---	.06	4	---	---	.04	---	.03	---	12	.03	---	.2	---	.04	---	.08	---
---	---	.07	7	---	---	.04	---	.04	---	12	.02	.02	.1	---	.02	---	.08	---
---	.1	---	.8	---	3	.003	---	.02	---	30	---	.03	.1	---	.004	---	.06	---
---	---	---	6	---	---	.08	---	.08	---	15	.08	---	.2	---	---	---	.03	---
---	---	---	4	---	---	.03	---	.05	---	15	.08	---	.3	---	---	---	.03	---
---	---	.08	5	---	---	.08	---	.03	---	.15	.02	---	.08	---	---	---	.08	---
---	---	---	.5	---	---	.05	---	.03	---	---	---	---	.2	---	---	---	.02	---
---	---	.06	5	---	---	.03	---	.04	---	15	.03	---	---	---	---	---	.08	---
---	---	---	3	---	---	.08	---	.02	---	20	---	---	.06	---	---	---	.03	---
---	.3-.4	.1-.2	10-12	---	2-3	.08-.1	---	.04-.06	---	15-20	---	Tr-.01	.8-.1	---	.1-.2	---	.008-.01	---
---	.4-.6	---	10-15	---	3-5	.1-.2	---	.01-.02	---	15-20	---	.04-.1	.6-.8	---	.1-.2	---	.06-.1	---
---	.1-.2	.1-.2	10-15	---	1-2	.06-.08	---	.06-.08	---	14-18	.04-.06	.01-.02	.6-.8	---	.1-.2	---	.03-.06	---
---	.3-.5	.1-.2	12-15	---	2-4	.4-.6	---	.1-.2	---	10-15	.2-.3	Tr-.01	.2-.4	---	.04-.06	---	.01-.03	---
---	.2-.4	.06-.1	1-2	---	.08-1	Tr-.0009	---	Tr-.02	---	15-20	.006-.01	---	.08-.1	---	---	---	.006-.01	---

TABLE 4 Minor and trace element content of manganese ores

All values in percentages
 ... = not determined

M = major constituent
 m = minor constituent

SAMPLE NUMBER	LOCATION	Mn	Fe	Ba	Ag	Al	As	Au	B	Be	Bi	Ca	Cd	Co	Cu	Cr
BLS-111-69	Dean and Chapter Mine New Ross, Lun. Co.	30 - 40	6 - 8	.1 - .2	Tr - .0001	4 - 5	---	---	.001 - .002	.0002 .0004	---	.4 - .5	---	---	.008 - .01	---
BLS-114-69	" "	30 - 40	2 - 4	.6 - 1	.0004 - .0008	3 - 4	---	---	.006 - .01	Tr - .0003	---	.6 - .8	---	---	.01 - .02	---
BLS-118-69	" "	38 - 40	1 - 2	.1 - .2	Tr-.004	4 - 6	---	---	.003 .006	Tr - .0006	---	1 - 2	---	---	.01 - .02	---
BLS-27-68	Riddle Mine, New Ross Lunenburg County	30 - 35	1 - 3	.4 - .8	.008 - .01	8 - 12	---	---	.006 - .01	.002 - .003	---	1 - 3	---	---	.04 - .08	---
BLS-28-68	" "	25 - 30	12 - 14	1 - 2	.006 - .01	6 - 8	---	---	Tr-.006	Tr - .0002	---	1 - 2	---	---	.04 - .08	---
BLS-29-68	" "	30 - 35	1 - 2	.2 - .3	Tr-.002	4 - 6	---	Tr - .0008	.006 - .01	Tr - .0006	---	.6 - .8	---	---	.08 - .1	---
BLS-105-68	" "	20 - 30	1 - 2	.1 - .2	.006 - .008	8 - 10	---	---	.002 - .004	.004 - .006	---	2 - 4	---	Tr-.02	.06 - .08	---
BLS-106-68	" "	30 - 40	1 - 2	.1 - .2	Tr-.001	4 - 8	---	---	Tr-.005	Tr - .0018	---	.2 - .3	---	Tr-.004	.08 - .1	---
BLS-107-68	" "	20 - 30	3 - 4	---	Tr-.003	4 - 6	---	---	Tr-.03	Tr-.002	---	.2 - .4	---	.01 - .02	.08 - .1	---
BLS-30-68	Cain Mine, New Ross, Lunenburg County	30 - 40	1 - 2	.8 - 1.4	.006 - .01	6 - 8	---	---	---	.002 - .004	---	.004 - .006	---	---	Tr - .1	---
BLS-31-68	" "	25 - 30	2 - 3	.6 - .8	Tr-.006	8 - 12	---	---	---	---	---	Tr - .0006	---	---	.04 - .08	---
BLS-32-68	" "	2 - 4	15 - 18	---	Tr-.008	6 - 8	---	---	.006 - .01	---	---	.002 - .004	---	---	.006 - .01	---
BLS-33-68	" "	20 - 25	.6 - .9	.4 - .8	.0008 - .001	2 - 4	---	---	---	---	---	Tr - .0006	---	---	.008 - .01	---
BLS-34-68	" "	15 - 20	.6 - .8	---	.0008 - .04	3 - 4	---	---	---	---	---	---	---	---	Tr-.006	---
BPS-28-69	Bridgeville, Pictou Co.	15 - 20	15 - 20	2 - 3	.0008 .0012	6 - 8	---	---	.02 - .03	---	---	.2 - .3	---	.006 - .008	.06 - .1	---
BPS-32-69	" "	1 - 3	5 - 7	30 - 40	Tr - .0001	.4 - .8	---	---	Tr - .0005	---	---	.1 - .2	---	---	.006 - .008	---
BPS-37-69	" "	3 - 4	6 - 8	30 - 50	.0001 - .0002	.6 - .8	---	---	---	---	---	1 - 2	---	---	.008 - .01	---
BPS-41-69	" "	20 - 30	8 - 10	4 - 6	.006 - .008	8 - 10	---	---	.008 - .01	---	---	.2 - .4	---	---	.1 - .2	---
BPS-42-69	" "	20 - 30	10 - 12	2 - 4	.006 - .008	8 - 10	---	---	Tr-.01	---	---	.2 - .3	---	---	---	---
BPS-43-69	" "	.8 - 1	2 - 3	40 - 50	---	.4 - .6	---	---	---	---	---	.1 - .2	---	---	Tr - .006	---
BPS-46-69	" "	35 - 40	1 - 2	2 - 4	.0008 - .001	3 - 4	---	---	---	---	---	.6 - .8	---	.05 - .1	.04 - .08	---
BPS-47-69	" "	25 - 35	6 - 8	2 - 3	.0001 - .0002	6 - 8	---	---	Tr-.006	---	---	.8 - 1.2	---	---	.02 - .04	---
BPS-48-69	" "	30 - 40	3 - 4	.8 - 1.4	.0008 - .001	4 - 5	---	---	Tr-.005	---	---	.5 - .8	---	---	.008 - .01	---
BPS-52-69	" "	4 - 6	10 - 12	20 - 30	.003 - .004	8 - 10	---	---	.005 - .008	---	---	.8 - 1	---	---	.001 - .006	---
BPS-55-69	" "	30 - 35	15 - 20	.6 - .8	.0001 - .0003	4 - 6	---	---	.006 - .008	---	---	.2 - .4	---	---	.01 - .03	---
BPS-57-69	" "	25 - 30	10 - 12	.2 - .4	.0008 - .001	5 - 7	---	---	.006 - .008	---	---	.04 - .06	---	---	.02 - .03	---
BPS-58-69	" "	3 - 6	30 - 40	---	Tr - .0001	2 - 4	---	Tr - .0004	.01 - .03	---	---	.1 - .2	---	---	.008 - .015	.007 - .014
BPS-60-69	" "	25 - 30	6 - 8	.6 - 1	.0001 - .0003	4 - 6	---	---	---	---	---	1 - 1.5	---	---	.04 - .05	---
BKS-90-68	Nicholsville, Kings	20 - 30	6 - 10	.1 - .2	Tr-.008	10 - 12	---	---	.01 - .02	---	---	1 - 2	---	---	.04 - .1	---

Analyst Wade Gates, Nova Scotia Technical College, Halifax

Ge	K	Li	Mg	Mo	Na	Ni	P	Pb	Sb	Si	Sn	Sr	Ti	Tl	V	W	Zn	Zr
---	---	.08-.1	1-2	---	---	.06-.08	.1-.3	.06-.1	---	1-2	.06-.1	---	---	---	---	Tr-.06	.003-.006	---
---	---	---	.6-.8	---	---	.08-.1	---	.1-.2	---	1-2	.08-.1	---	Tr-.02	---	---	.008-.01	Tr-.006	---
---	---	---	.8-1	---	---	.08-.1	---	.08-.1	---	.6-.8	.1-.15	---	.02-.06	---	Tr-.004	---	Tr-.006	---
---	---	---	2-4	---	---	.08-.1	---	.1-.2	---	.4-.8	.06-.1	---	---	---	.008-.01	---	.04-.1	---
---	---	---	2-3	---	---	.06-.1	---	.1-.3	---	2-4	.06-.1	.02-.04	---	---	Tr-.008	---	Tr-.006	---
---	---	---	2-4	---	---	.06-.1	---	.05-.1	---	2-6	---	---	Tr-.001	---	---	---	.08-.1	---
---	---	---	2-4	Tr-.006	---	Tr-.08	---	.04-.1	---	1-2	.03-.04	---	---	---	---	---	.06-.1	1-2
---	---	---	1-2	---	---	.06-.08	---	.2-.9	---	.2-.4	.1-.2	.04-.06	---	---	Tr-.04	---	.02-.03	Tr-.08
---	---	---	1-2	---	---	.02-.03	---	.1-.2	---	8-12	---	Tr-.01	---	---	.1-.2	---	.02-.03	---
---	---	---	2-3	---	---	.04-.1	.2-.4	.2-.4	---	1-2	.02-.08	---	---	---	.008-.01	---	.08-.1	---
---	---	---	2-3	---	---	.04-.06	---	.06-.1	---	1-2	---	.06-.1	---	---	---	---	.008-.01	---
---	---	---	.2-.4	---	---	Tr-.006	.4-.8	.06-.1	---	8-12	---	---	.06-.1	---	.04-.08	---	Tr-.008	---
---	---	---	5-1	---	---	.008-.01	.2-.4	.06-.08	---	.4-.8	---	---	---	---	.04-.08	---	.04-.06	---
---	---	---	1-2	---	---	---	---	.07-.1	---	---	---	---	Tr-.002	---	---	---	Tr-.06	---
---	Tr-.12	.5-1	---	.02-.03	---	.06-.08	---	---	.08-.1	10-12	.008-.012	---	.08-.09	---	---	---	.02-.03	---
---	---	---	.4-.6	---	---	.006-.008	.06-.1	Tr-.006	---	3-4	---	4-5	---	---	---	---	Tr-.003	---
---	---	.08-.1	1-.5	---	---	---	---	.008-.01	---	2-4	---	6-10	---	---	---	---	.004-.006	---
---	---	---	1-2	---	Tr-.08	Tr-.06	.2-.4	.06-.08	---	4-6	.04-.08	---	.06-.1	---	Tr-.008	Tr-.008	.06-.08	---
---	.08-.1	---	.8-1	---	Tr-.08	.05-.1	Tr-.1	.04-.08	---	8-10	.03-.08	---	.08-.1	---	.01-.03	Tr-.015	.06-.1	---
---	---	---	.1-.2	---	---	Tr-.003	---	.006-.012	---	.1-.3	---	6-8	Tr-.001	---	---	---	Tr-.006	---
---	Tr-.06	---	1-2	---	---	.04-.1	---	.08-.1	---	.8-1	.06-.1	.1-.2	---	---	---	Tr-.015	Tr-.015	---
---	---	---	2-3	---	---	.06-.08	---	.06-.1	---	4-6	.06-.1	Tr-.02	---	---	---	---	.01-.02	---
---	---	---	1-2	---	---	.05-.08	.1-.2	.06-.11	---	.6-.8	.04-.08	---	.001-.002	---	---	Tr-.015	---	---
---	---	---	5-6	---	---	---	---	.006-.012	---	6-8	---	.6-.8	.06-.08	---	---	---	.03-.05	---
---	.06-.1	---	.6-.8	---	---	.08-.1	.1-.2	.06-.08	---	8-12	.06-.1	---	---	---	---	Tr-.008	.01-.08	---
---	.08-.1	---	1-1.5	---	---	.03-.06	---	.02-.04	---	6-8	---	---	.002-.006	---	---	---	.006-.01	---
---	---	---	.2-.3	---	---	.06-.08	.2-.4	.006-.012	---	6-8	---	---	---	---	---	---	.008-.01	---
---	---	---	1-2	---	---	.02-.04	---	.01-.02	---	4-6	.08-.1	---	---	---	---	---	Tr-.008	---
---	---	---	3-5	---	Tr-.08	.06-.1	---	.1-.8	---	6-8	.08-.1	---	.1-.2	---	.08-.1	---	.06-.1	---

Minor and trace element content of manganese ores

All values in percentages

... = not determined

M = major constituent

m = minor constituent

SAMPLE NUMBER	LOCATION	Mn	Fe	Ba	Ag	Al	As	Au	B	Be	Bi	Ca	Cd	Co	Cu	Cr
BBS-171-69	McCuish Brook, Cape Breton County	20 - 30	1 - 1.5	.6 - 1	Tr - .0001	8 - 10	---	---	---	---	---	.2 - .4	Tr-.02	---	.06-.08	.04-.06
BBS-176-69	" "	30 - 40	2 - 3	.6 - 1	Tr - .0001	8 - 10	---	---	2 - 4	---	---	1 - 2	---	---	.04-.06	---
BBS-180-69	Salmon River Road, Cape Breton County	4 - 8	1 - 2	---	Tr - .0001	2 - 3	---	---	.006 - .01	---	---	20 - 30	---	---	.006 - .01	---
BBS-183-69	" "	8 - 10	---	---	.0001 - .0002	4 - 6	---	---	Tr - .0006	---	---	15 - 20	---	---	.006 - .008	---
BBS-189-69	Brook East of Big Glen, Cape Breton County	6 - 8	8 - 10	6 - 9	---	.6 - .8	---	---	---	---	---	20 - 30	---	---	.006 - .008	---
BBS-190-69	" "	8 - 10	10 - 15	.06 - .1	---	2 - 3	---	---	---	---	---	20 - 25	---	---	.01 - .008	---
BBS-194-69	" "	1 - 2	6 - 8	.06 - 1	---	12 - 15	---	---	.02-.03	---	---	15 - 18	---	---	.004 - .006	---
BLS-23-68	Dean and Chapter Mine New Ross, Lun. Co.	.3 - .4	6 - 8	.1 - .2	---	20 - 25	---	---	---	---	---	4 - 8	---	---	Tr-.002	---
BLS-24-68	" "	20 - 25	8 - 10	.1 - .3	.0006 - .001	4 - 6	---	---	Tr-.002	Tr - .0012	---	.8 - 1	---	---	.06-.08	---
BLS-25-68	" "	30 - 40	1 - 2	4 - 6	Tr-.001	4 - 6	---	---	---	Tr - .0012	---	.6 - 1	---	---	.08 - .1	---
BLS-65-69	" "	30 - 35	3 - 5	---	.0001 - .0002	6 - 8	---	---	.01-.02	.001 - .006	---	.8 - 1	---	---	.02-.04	---
BLS-67-69	" "	30 - 40	1 - 2	1 - 2	.0006 .0008	4 - 6	---	---	.001 - .006	.002 - .004	---	.4 - .8	---	---	.02-.04	---
BLS-69-69	" "	25 - 35	2 - 3	2 - 3	.0002 - .0004	2 - 3	---	---	---	.001 - .003	---	.3 - .5	---	---	.02-.03	---
BLS-72-69	" "	30 - 40	2 - 3	.4-.6	.0004 .0008	7 - 9	---	---	---	.002 - .003	---	.8 - 1	---	---	.02-.04	---
BLS-74-69	" "	30 - 40	3 - 5	8 - 10	Tr - .0001	3 - 5	---	---	.007 - .01	.003 - .007	---	.4 - .8	---	---	.01-.02	---
BLS-76-69	" "	40 - 50	2 - 3	.4 - .8	.0008 .001	8 - 10	---	---	.005 - .007	.001 - .002	---	.4 - .6	---	---	.01-.02	---
BLS-78-69	" "	40 - 50	2 - 3	.5 - .8	.004 - .008	6 - 8	---	---	.006 - .01	.001 - .018	---	.6 - .8	---	---	.02-.04	---
BLS-79-69	" "	30 - 40	1 - 2	.4-.6	.001 - .008	2 - 4	---	---	---	.002 - .004	---	.6 - .8	---	---	.008 - .2	---
BLS-81-69	" "	30 - 40	1 - 2	.1 - .2	.0008 - .002	2 - 3	---	---	---	.0003 .0004	---	.6 - 1	Tr - .0008	---	.006 - .01	---
BLS-83-69	" "	30 - 40	1.5-3	3 - 5	Tr - .0001	6 - 8	---	---	Tr - .0005	Tr - .0006	---	.3 - .6	---	---	.008 .01	---
BLS-84-69	" "	30 - 40	1 - 2	.2 - .3	Tr - .0001	4 - 6	---	---	.004 - .006	Tr - .0008	---	1 - 2	---	---	.06-.08	---
BLS-87-69	" "	30 - 35	2 - 3	1 - 2	Tr - .0001	4 - 6	---	---	Tr - .006	.0008 - .001	---	3 - 5	---	---	.006 - .01	---
BLS-89-69	" "	40 - 50	4 - 5	.4 - .6	Tr - .0001	2 - 3	---	---	Tr - .006	Tr - .004	---	.6 - 1	---	---	.008 - .01	---
BLS-93-69	" "	30 - 40	1 - 2	.1 - .2	.0001 - .002	6 - 8	---	---	Tr - .003	.006 - .008	---	.2 - .3	---	---	.03-.06	---
BLS-95-69	" "	30 - 40	1 - 2	.1 - .6	.0001 - .0002	4 - 6	---	---	.0008 - .001	Tr - .0006	---	.1 - .3	---	---	.06-.1	---
BLS-103-69	" "	20 - 30	.4 - .8	4 - 8	.0002 .001	6 - 8	---	---	---	.0003 .0006	---	1 - 1.5	---	---	.008 - .01	---
BLS-106-69	" "	20 - 30	2 - 3	.6 - .8	Tr - .001	6 - 8	---	---	.002 - .004	Tr - .0001	---	2 - 3	---	---	.008 - .02	---
BLS-108-69	" "	.06-.08	6 - 8	---	---	.3 - .4	---	---	---	---	---	60 - 80	---	---	.003 - .006	---
BLS-110-69	" "	30 - 40	.6 - 1	---	Tr - .0001	4 - 6	---	---	.004 - .008	.001 - .008	---	.1 - .3	---	---	.06 - .1	---

Analyst Wade Gates, Nova Scotia Technical College, Halifax

Ge	K	Li	Mg	Mo	Na	Ni	P	Pb	Sb	Si	Sn	Sr	Ti	Tl	V	W	Zn	Zr
---	---	---	.2-.3	---	---	.2-.3	---	.1-.2	---	2-3	.1-.2	---	.02-.04	---	---	.08-.1	.008-.01	---
---	---	---	2-3	---	---	.1-.2	.2-.3	.1-.2	---	2-3	1-2	---	.02-.04	---	.05-.08	.03-.06	.08-.1	---
---	---	---	10-15	---	---	.008-.01	---	.6-.8	---	3-4	---	---	---	---	---	---	---	---
---	---	---	10-15	---	---	.02-.03	---	.8-1	---	10-12	---	---	.002-.004	---	---	---	.006-.01	---
---	---	---	10-14	---	---	.004-.006	---	.6-.8	---	2-3	---	---	---	---	---	---	.003-.006	---
---	---	---	10-15	---	---	.04-.06	---	.8-1	---	3-4	.02-.03	---	---	---	---	---	.006-.01	---
---	---	---	5-8	---	---	.003-.006	---	.1-.2	---	20-25	---	---	.1-.2	---	---	---	.1-.2	---
---	.2-.6	---	10-15	---	---	.01-.02	---	.08-.1	---	18-24	---	.2-.4	.2-.4	---	---	---	Tr-.06	---
---	---	---	2-3	---	---	.02-.06	Tr-.1	.1-.2	---	5-9	---	Tr-.02	---	---	Tr-.004	---	Tr-.06	---
---	---	---	1-2	---	---	---	---	.2-.3	---	1-2	---	.06-.1	---	---	Tr-.008	30-40	.06-.08	---
---	---	---	2-3	---	---	.06-.08	---	.08-.1	.08-.1	6-8	.07-.1	---	---	---	---	---	.015-.02	---
---	---	---	2-3	---	---	.06-.08	---	.06-.1	.2-.4	.6-1	---	.1-.2	---	---	---	Tr-.006	.008-.01	---
---	---	---	1-3	---	---	.07-.09	---	.1-.2	---	.4-.6	.06-.1	---	---	---	.008-.016	.03-.06	Tr-.006	---
---	---	---	2-3	---	---	.1-.2	---	.01-.08	---	1-2	.008-.012	---	.003-.006	---	---	.04-.08	.006-.01	---
---	---	---	1-1.5	---	---	Tr-.009	---	.1-.2	---	.8-1.2	.02-.04	.02-.04	Tr-.001	---	---	Tr-.015	.007-.01	---
---	---	---	1-2	---	---	.06-.1	---	.1-.2	---	.6-.8	---	---	---	---	---	.02-.04	.008-.01	---
---	---	---	.6-.8	---	---	.09-.13	---	.1-.3	---	1-2	.1-.15	---	---	---	Tr-.008	.02-.04	.009-.01	---
---	---	---	1-1.5	---	---	.06-.08	---	.1-.2	---	.4-.6	.06-.08	---	Tr-.001	---	---	Tr-.006	Tr-.008	---
---	---	---	.2-.9	---	---	.08-.1	---	.08-.1	---	.4-.6	.06-.1	---	---	---	---	Tr-.015	.008-.01	---
---	---	---	1-2	---	---	.06-.1	.1-.2	.08-.1	---	2-3	.08-.1	.1-.2	---	---	---	.01-.02	---	---
---	---	---	.8-1	---	---	.06-.08	.1-.2	.1-.2	---	3-4	.06-.1	---	---	---	---	Tr-.008	.006-.01	---
---	---	---	1-2	---	---	.06-.08	---	.06-.1	---	1-3	.01-.04	.2-.4	Tr-.004	---	---	.01-.03	Tr-.003	---
---	---	---	.1-.3	---	---	.08-.1	---	.06-.1	---	1-2	.06-.08	---	---	---	---	---	.006-.01	---
---	---	---	.4-.6	---	---	.06-.1	---	.08-.1	---	.4-.6	.04-.06	---	.01-.02	---	---	.008-.01	Tr-.006	---
---	---	---	.8-1.2	---	---	.08-.1	.2-.3	.06-.1	---	1-2	---	Tr-.01	.003-.006	---	---	.02-.03	.008-.01	---
---	---	---	.8-1	---	---	.06-.08	Tr-.1	.1-.15	---	.2-.4	.08-.1	.2-.4	Tr-.008	---	---	.01-.03	.006-.008	---
---	---	---	2-3	---	---	.08-.1	.2-.3	.06-.1	---	2-3	.08-.1	---	.002-.004	---	---	Tr-.01	.06-.1	---
---	---	---	1-2	---	---	.012-.018	---	.04-.07	---	.4-.6	---	---	---	---	---	---	---	---
---	---	---	.2-.4	---	---	.1-.15	.1-.2	.03-.06	---	.6-1	.1-.2	---	---	---	---	.02-.03	Tr-.006	---