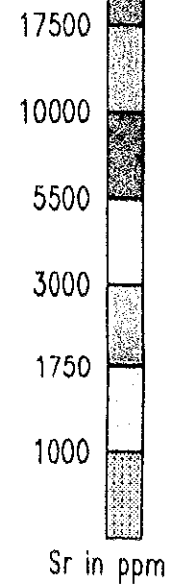
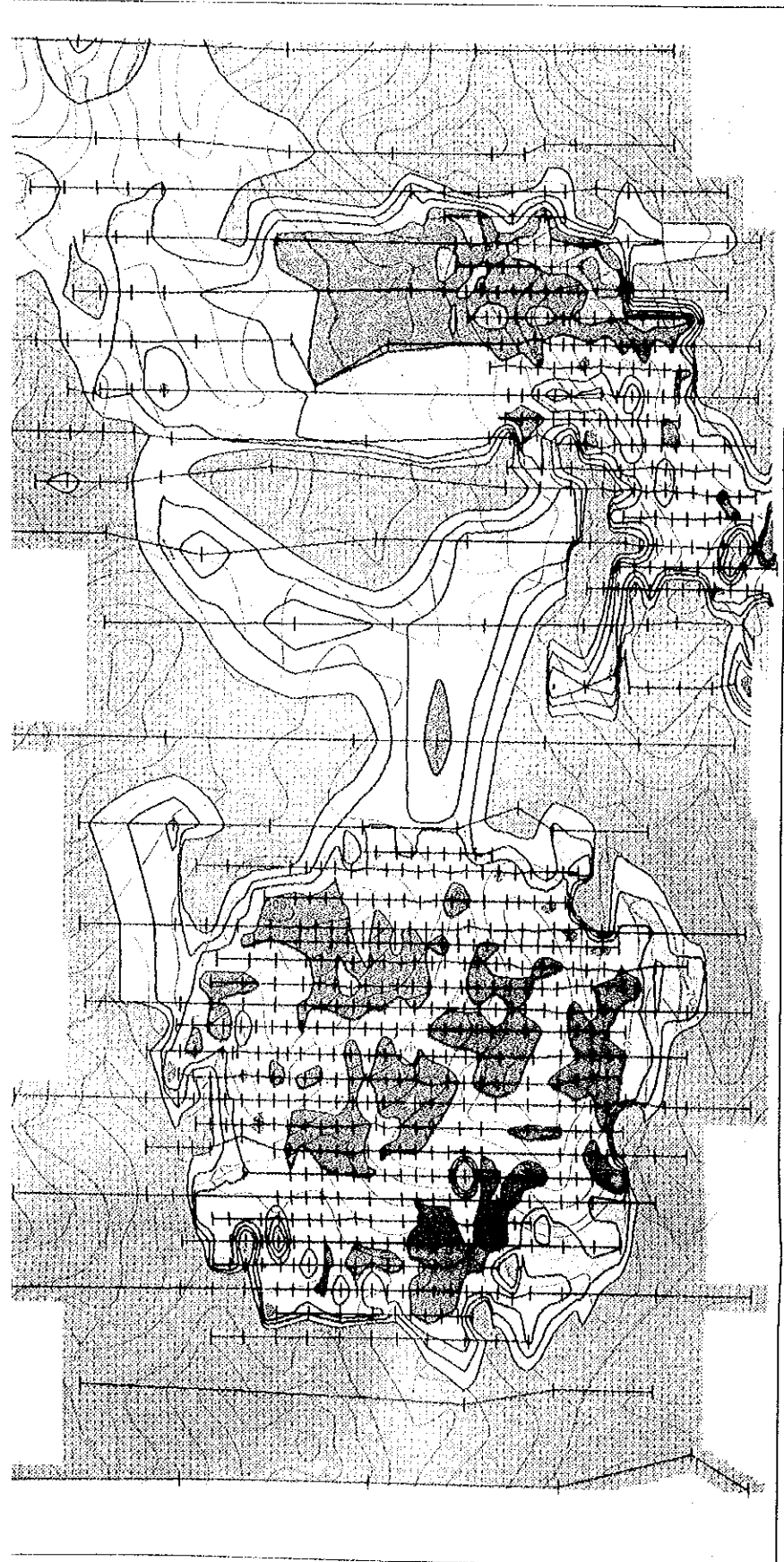
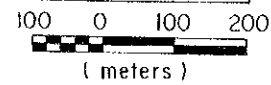


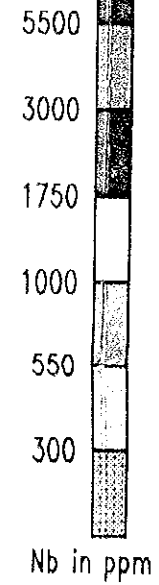
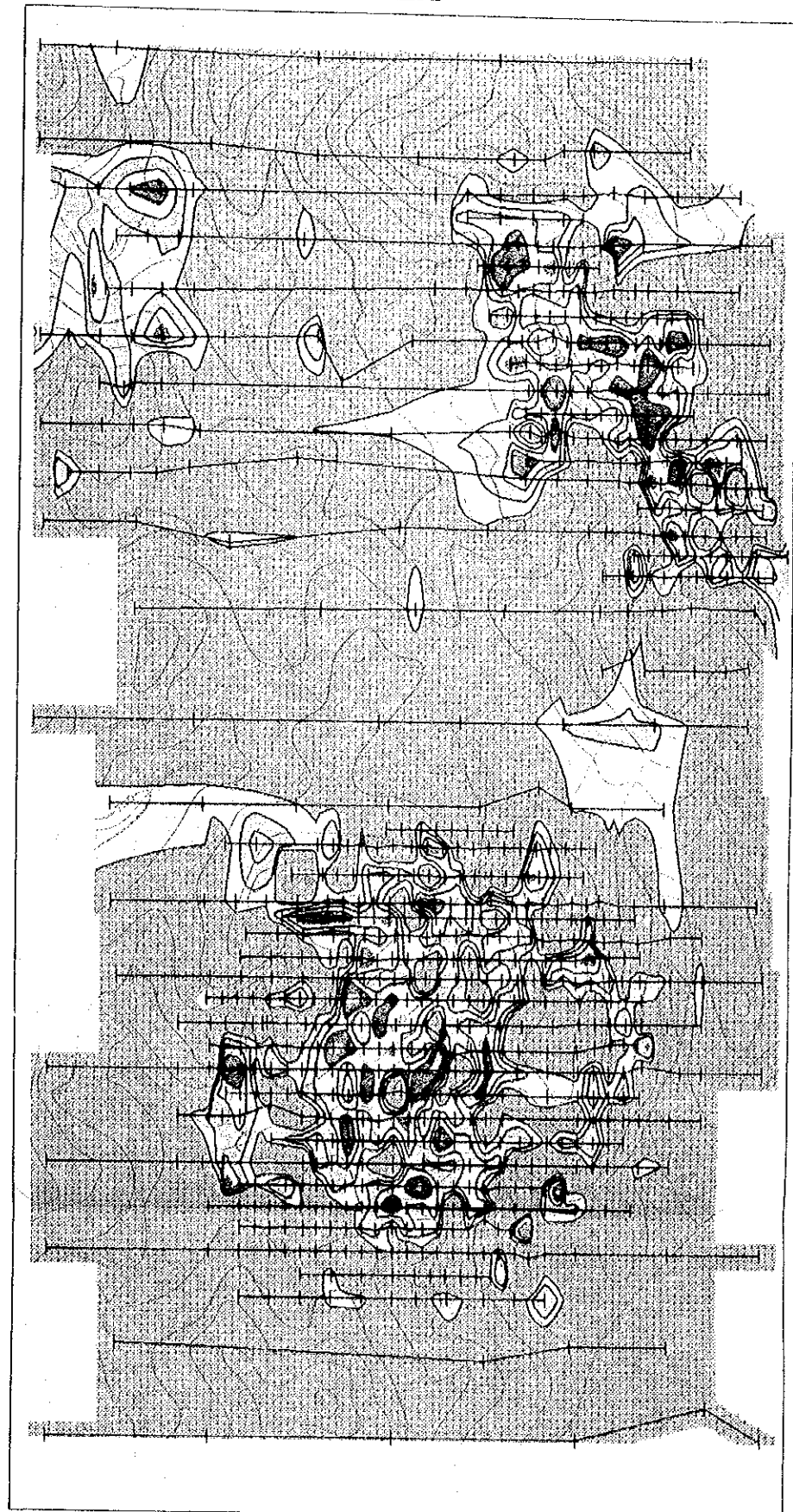
THE ORANGE AREA



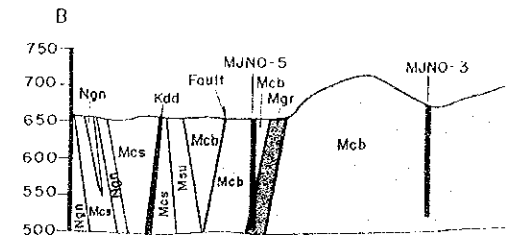
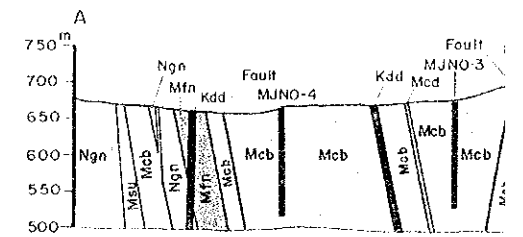
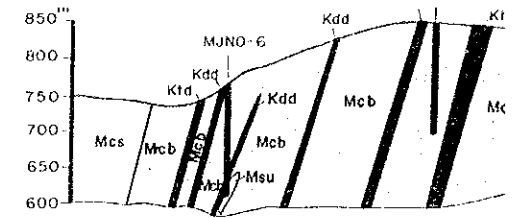
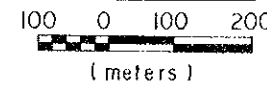
Survey line & Sampling site



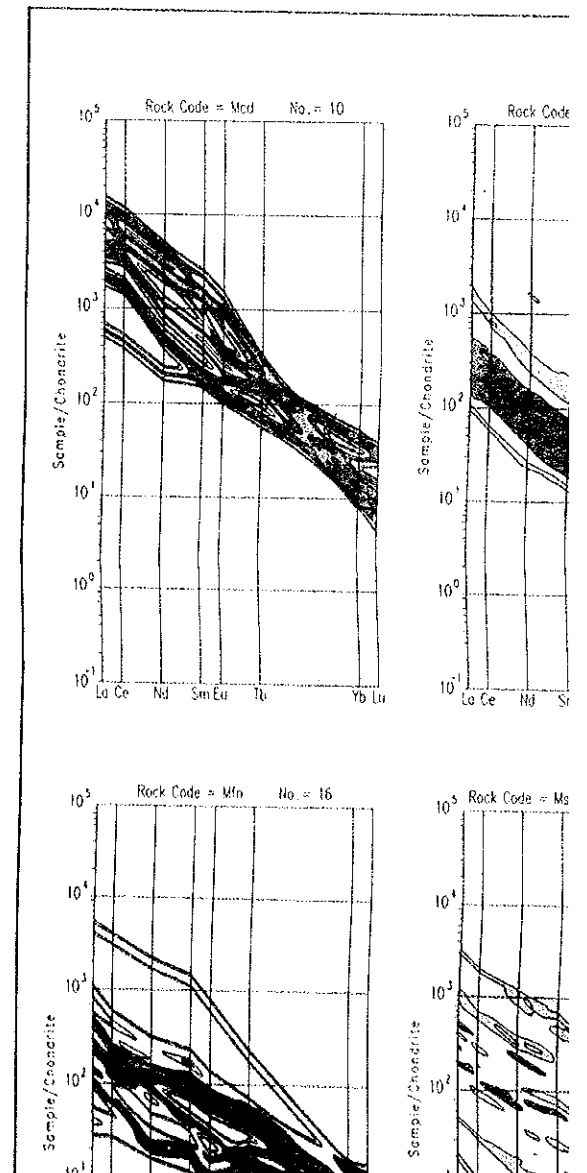
THE ORANGE AREA



Survey line & Sampling site

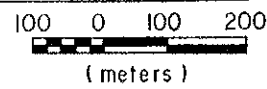


RARE EARTH ELEI

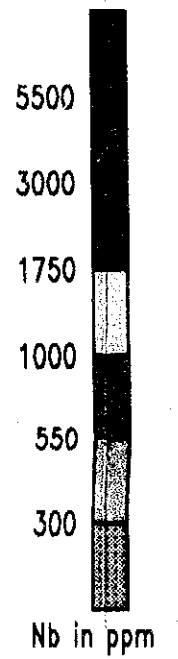


GEOCHEMICAL DISTRIBUTION ALONG DRILLING CORES OF THE ORANGE AREA

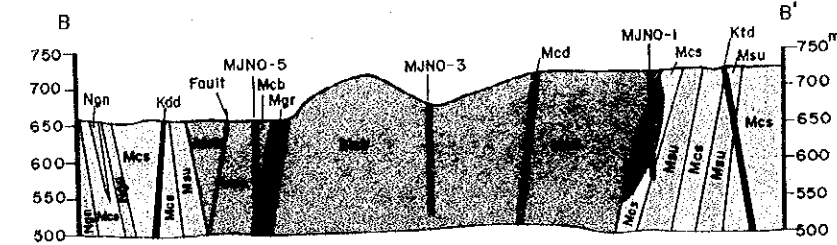
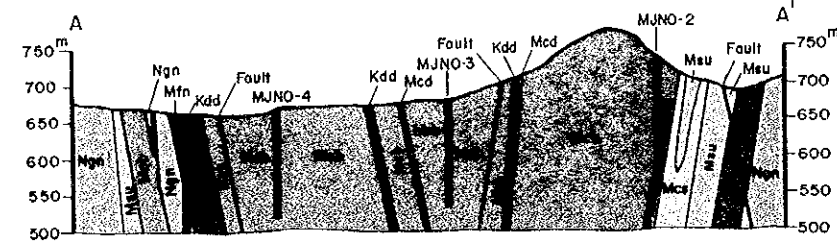
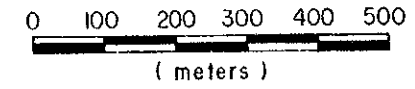
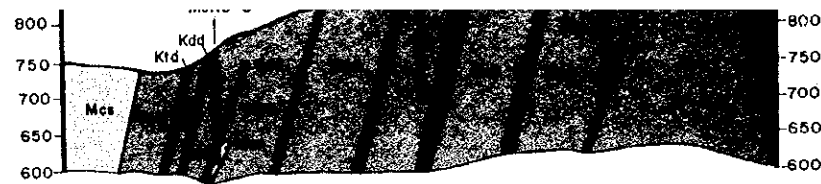
REA



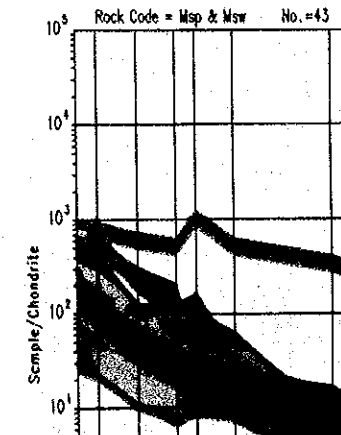
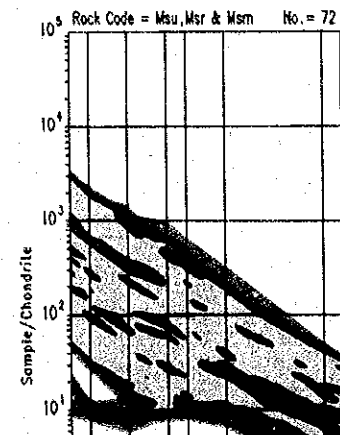
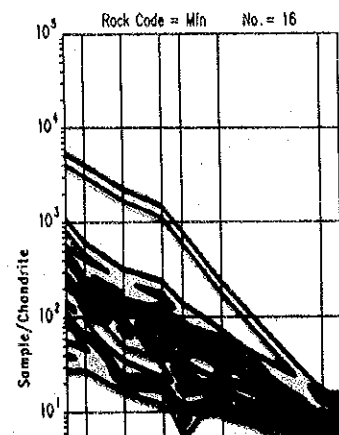
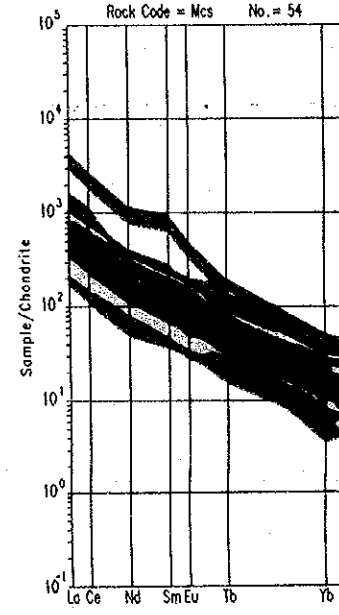
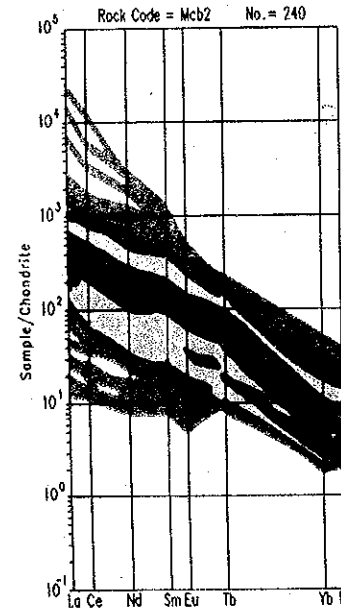
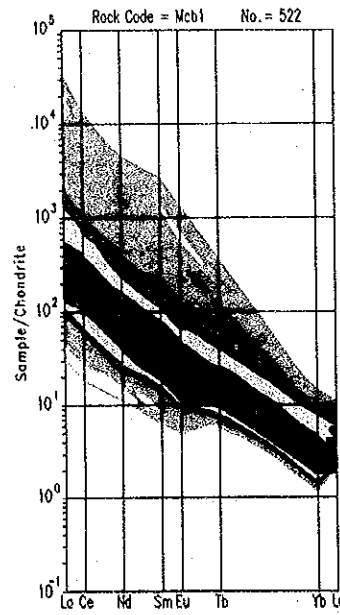
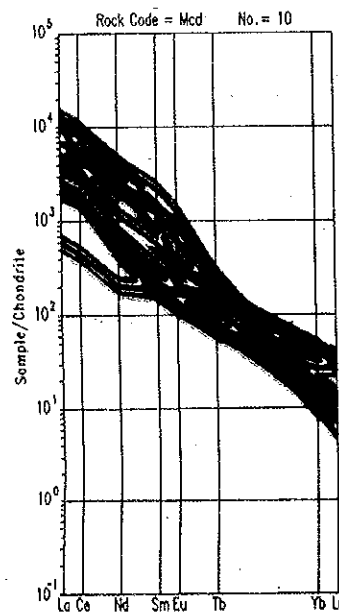
NGE AREA



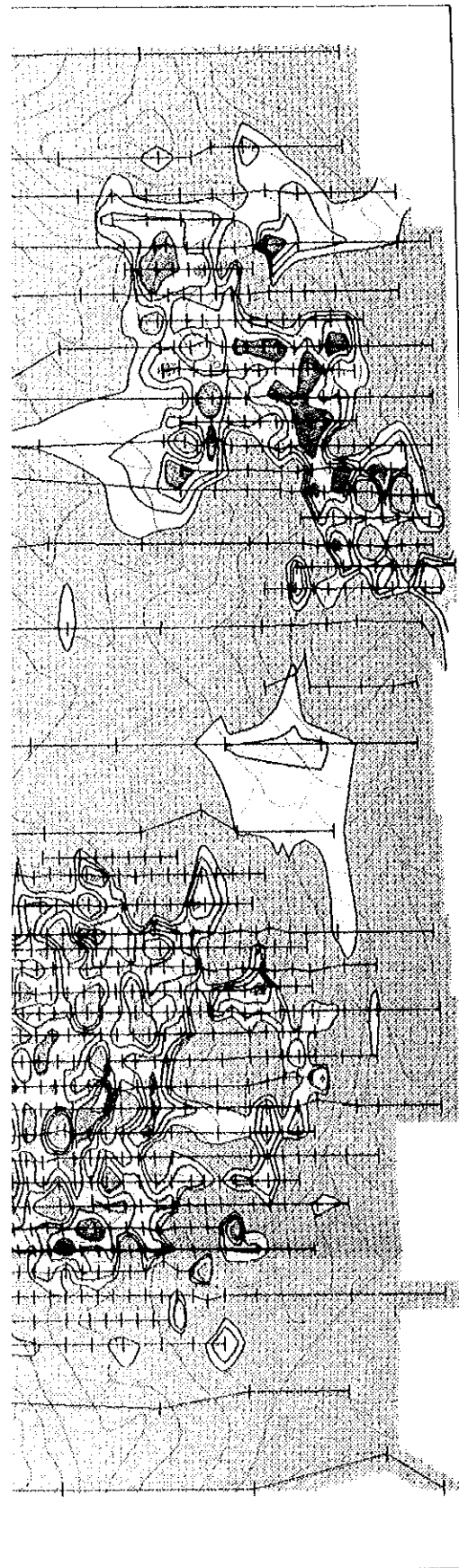
Survey line & Sampling site



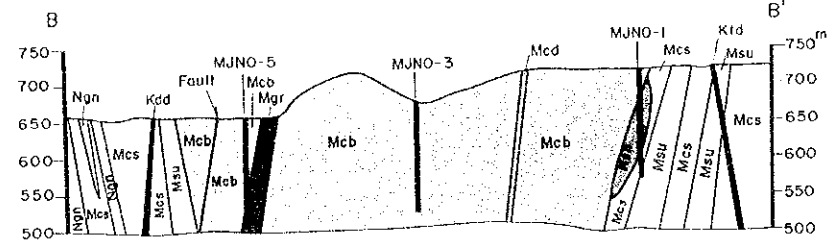
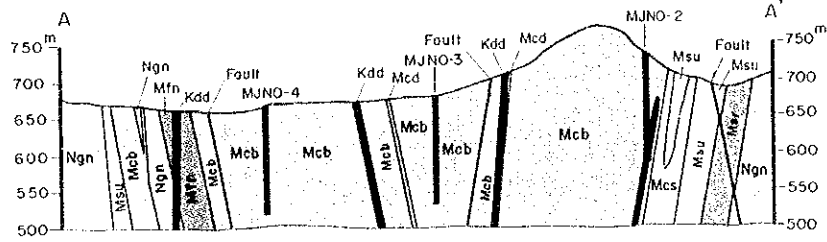
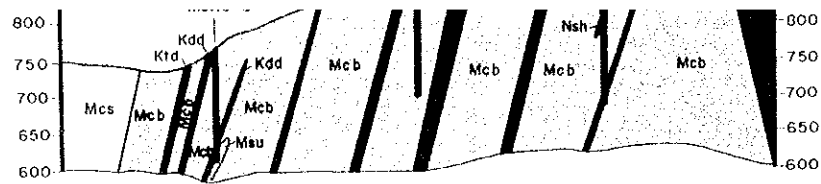
RARE EARTH ELEMENTS PATTERNS OF THE ORANGE AREA



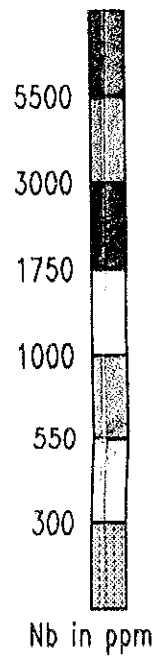
REA



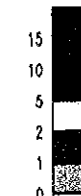
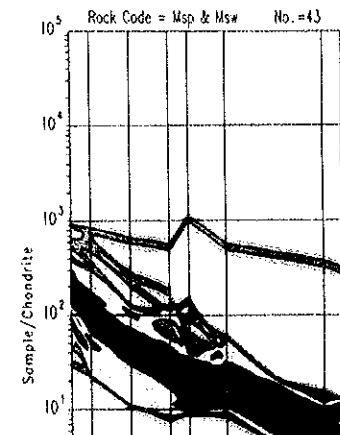
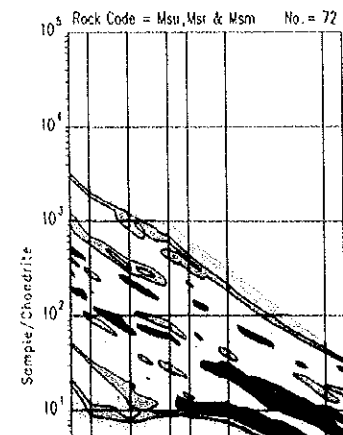
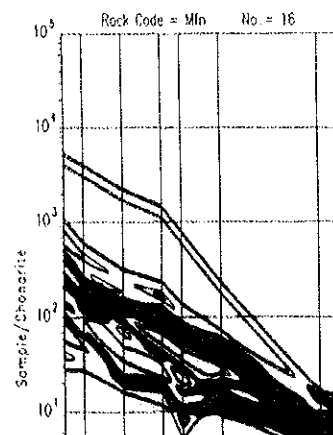
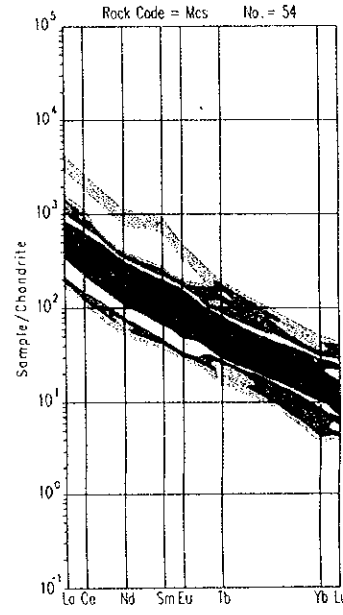
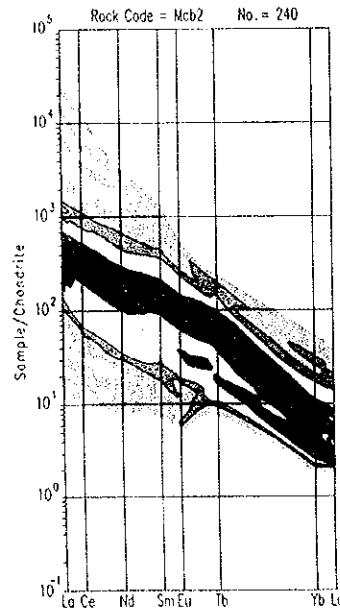
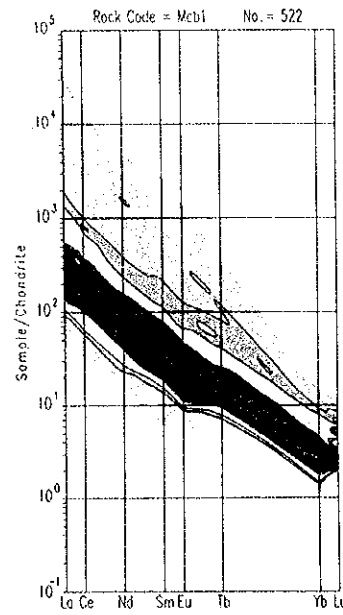
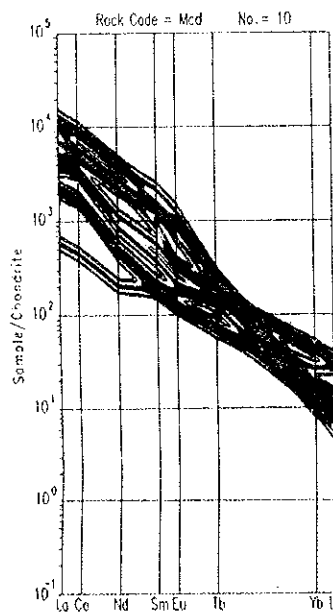
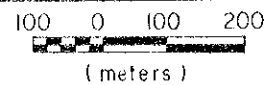
ORANGE AREA



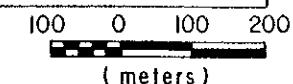
RARE EARTH ELEMENTS PATTERNS OF THE ORANGE AREA



Niobium in ppm



Rock codes are same as in the geological map of the Kalkfeld area.



Survey line & Sampling site

GEOCHEMICAL STATISTICS OF THE KALKFELD AREA

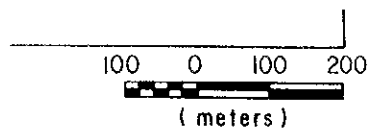
Rock Code	Nos.	La	Ce	Nd	Sm	Eu	Tb	Yb	Lu	Sc	Y	U	Th	Nb	Ta	Zr	Mn	Sr	P	Fe	TR203
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm
Maximum contents																					
Io	3	899	1540	1200	300.0	70.2	29.3	6.0	0.9	4.8	76	3	2260	9	32	19	40300	14400	559	37.82	5372
Be	23	3502	5042	1834	330.0	90.0	24.0	11.0	0.8	9.1	326	17	2290	1840	28	64	29900	10900	37800	32.50	13600
Vb	36	926	1200	478	64.9	12.6	7.5	7.0	0.8	14.9	70	79	430	498	29	176	16600	8490	9790	30.40	3003
Gp	17	259	374	111	18.0	6.6	3.0	6.5	0.7	7.2	70	19	282	226	3	124	12000	1840	3490	7.69	988
Gb	4	116	187	59	7.9	2.3	1.3	4.7	0.4	3.2	11	6	45	102	< 2	95	1730	334	870	3.74	490
Ma	84	3090	4150	604	94.0	26.0	10.0	10.0	0.8	4.1	149	11	352	223	7	72	16100	5540	16300	8.55	9781
Minimum contents																					
Io	3	133	137	91	20.0	3.1	3.6	4.2	0.8	< 0.5	14	2	123	< 2	< 2	< 3	36300	442	408	31.92	537
Be	23	20	21	12	2.7	1.6	0.8	0.6	< 0.1	< 0.5	4	< 1	32	< 2	< 2	< 3	1870	879	248	4.90	96
Vb	36	16	36	11	2.0	0.6	0.7	0.8	< 0.1	< 0.5	4	< 1	16	< 2	< 2	< 3	1610	286	144	1.00	95
Gp	17	10	22	8	1.8	< 0.5	0.3	0.4	< 0.1	0.6	6	< 1	8	< 2	< 2	17	87	57	210	0.44	58
Gb	4	57	100	28	2.9	< 0.5	0.6	0.6	< 0.1	1.3	7	< 1	20	6	< 2	71	208	99	410	1.06	247
Ma	84	1	1	5	0.5	0.3	< 0.1	0.3	< 0.1	0.3	1	< 1	1	2	< 2	3	45	583	180	0.03	16
Arithmetic average																					
Io	3	556	809	641	153.3	30.3	16.4	5.3	0.8	2.4	41.0	2.3	885.7	6.0	12.0	8.3	37867	5263	477	34.85	2930
Be	23	672	1069	368	64.2	18.2	5.8	2.4	0.3	4.1	47.0	3.6	356.0	145.1	8.9	14.8	13684	2352	4672	10.86	2782
Vb	36	324	490	182	23.7	6.3	3.0	2.7	0.3	5.0	20.6	7.1	146.9	125.1	5.3	55.1	6828	1852	2455	7.56	1283
Gp	17	74	127	43	6.6	2.0	1.3	2.4	0.3	3.0	18.5	4.2	55.2	57.4	2.1	56.8	1377	373	983	2.87	336
Gb	4	73	123	37	4.8	1.1	0.9	1.7	0.2	2.2	9.3	3.5	28.3	37.5	2.0	81.8	941	240	628	2.08	311
Ma	84	102	148	40	6.8	2.0	1.2	2.0	0.2	1.2	19.4	2.0	34.6	23.8	2.1	9.5	1385	1819	1010	1.08	388
Geometric average																					
Io	3	424	541	410	94.4	15.6	11.9	5.2	0.8	1.6	32.7	2.3	423.9	5.0	5.0	5.6	37827	1820	473	34.76	2025
Be	23	415	653	222	34.5	10.3	3.8	1.9	0.3	3.3	25.2	2.4	212.2	36.3	6.2	7.9	11253	1961	1742	9.71	1735
Vb	36	266	417	139	19.9	5.5	2.6	2.1	0.3	3.7	17.1	3.3	117.6	74.6	3.8	36.4	6061	1468	1613	6.73	1095
Gp	17	53	97	35	5.3	1.5	1.0	1.6	0.2	2.7	12.6	3.0	36.6	35.8	2.0	48.6	489	266	759	2.02	260
Gb	4	70	119	35	4.5	0.9	0.9	1.1	0.1	2.0	9.1	2.8	26.7	21.4	2.0	81.3	621	216	599	1.80	296
Ma	84	13	22	13	2.4	0.9	0.7	1.5	0.2	0.9	11.3	1.5	8.3	7.3	2.0	6.0	510	1637	606	0.49	86

Rock codes are same as in the geological map of the Kalkfeld area.

GEOCHEMICAL STATISTICS OF THE KALKFELD AREA

Rock code	Nos.	La	Ce	Nd	Sm	Eu	Tb	Yb	Lu
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Maximum contents									
Mcd	10	4735	9218	2905	484.4	109.0	15.3	11.0	1.3
Mfn	16	1681	3263	1330	282.9	57.5	11.5	3.5	0.3
Mcb1	521	1338	12082	3192	563.6	107.5	21.0	3.7	0.3
Mcb2	241	8590	11633	2041	271.3	41.5	12.4	12.1	1.3
Msu & Msr	72	1131	1882	870	185.1	46.9	15.8	10.5	1.3
Mcs	54	1338	2121	663	175.2	34.6	9.3	10.4	1.3
Msp & Msw	43	293	749	428	117.6	87.9	30.3	84.5	11.0
Nsh	22	4105	4485	1222	271.8	80.3	37.3	36.5	4.3
Ngn	70	275	526	173	45.0	14.0	7.2	8.4	1.0
Minimum contents									
Mcd	10	215	426	143	39.2	10.3	3.8	2.3	0.3
Mfn	16	12	30	13	3.0	< 0.5	0.6	0.9	< 0.3
Mcb1	521	12	18	8	1.6	< 0.5	0.4	0.3	< 0.3
Mcb2	241	5	12	6	2.0	< 0.5	0.5	0.5	< 0.3
Msu & Msr	72	4	9	5	2.1	0.9	0.5	0.4	< 0.3
Mcs	54	79	126	42	10.0	2.9	1.1	1.1	0.3
Msp & Msw	43	11	23	8	1.8	0.9	0.5	0.5	< 0.3
Nsh	22	31	46	13	1.6	0.8	0.5	0.4	< 0.3
Ngn	70	6	8	6	2.1	< 0.5	0.4	0.6	< 0.3
Arithmetic average									
Mcd	10	2153	4186	1304	193.7	43.85	9.82	4.92	0.5
Mfn	16	203	359	149	31.9	7.18	2.33	1.89	0.2
Mcb1	521	430	575	154	24.6	4.86	1.56	0.87	0.1
Mcb2	241	243	401	160	32.6	7.85	3.21	1.98	0.2
Msu & Msr	72	246	417	155	31.4	7.84	3.11	2.76	0.3
Mcs	54	227	393	132	28.1	7.96	3.27	4.06	0.5
Msp & Msw	43	82	143	50	10.7	4.20	1.87	3.24	0.4
Nsh	22	470	660	233	44.8	13.23	5.86	7.25	0.9
Ngn	70	62	110	38	7.9	1.96	1.38	2.12	0.5
Geometric average									
Mcd	10	1569	3151	888	136.6	31.52	8.97	4.20	0.3
Mfn	16	92	153	61	13.3	3.18	1.64	1.74	0.2
Mcb1	521	157	250	72	11.8	2.59	1.14	0.79	0.1
Mcb2	241	143	250	107	22.8	5.59	2.52	1.60	0.2
Msu & Msr	72	121	200	75	15.6	4.14	1.97	1.90	0.2
Mcs	54	201	346	119	24.6	7.16	3.01	3.79	0.3
Msp & Msw	43	64	101	34	6.9	1.95	1.18	1.28	0.2
Nsh	22	155	257	95	18.2	5.50	2.89	3.66	0.3
Ngn	70	52	86	30	6.4	1.51	1.18	1.79	0.2

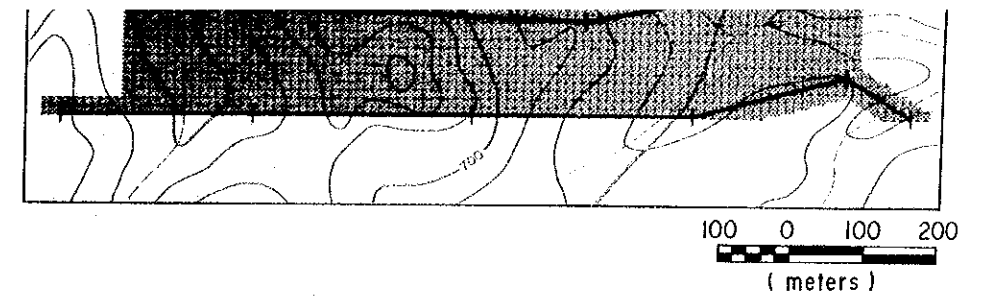
Beforsite (Mcb) is subdivided into the Central beforsite (Mcb1) and the Northern beforsite (Mcb2).



Survey line & Sampling site



Survey line & Sampling site

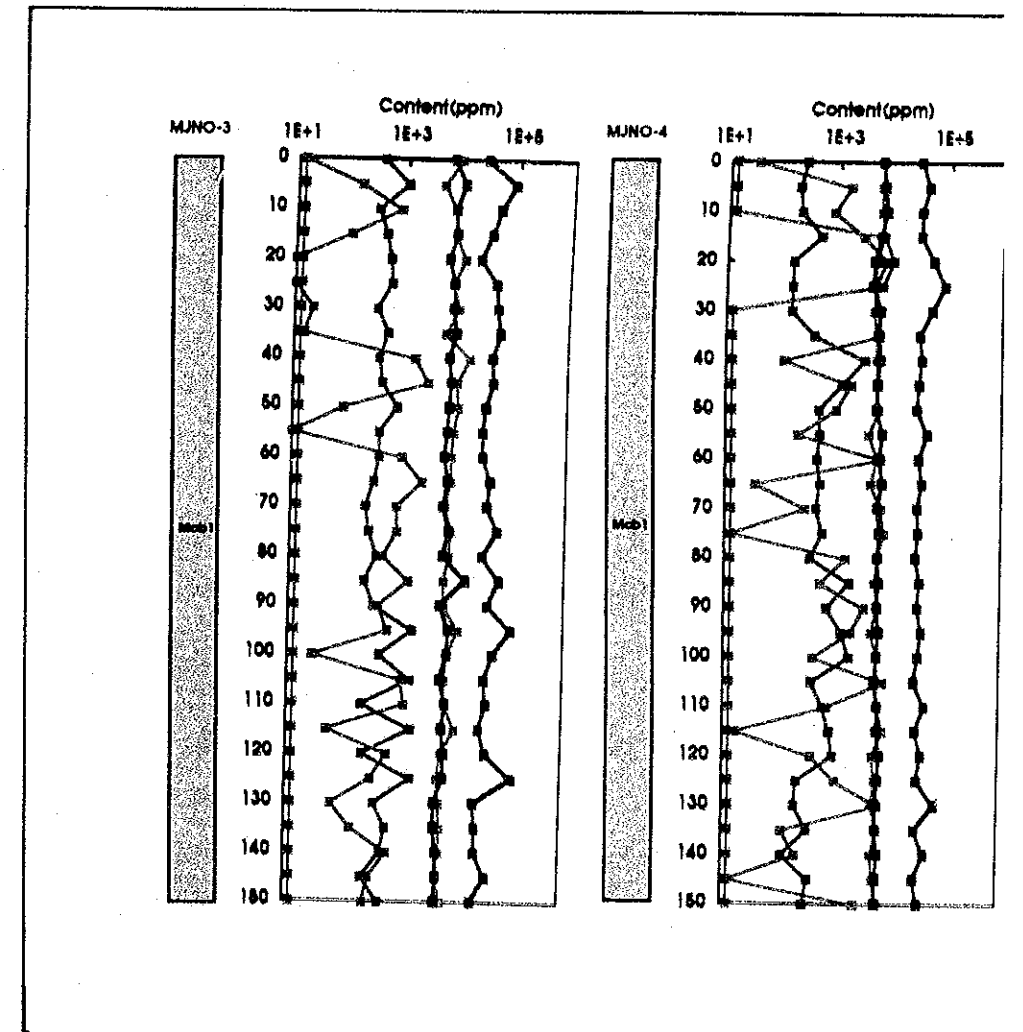


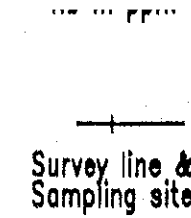
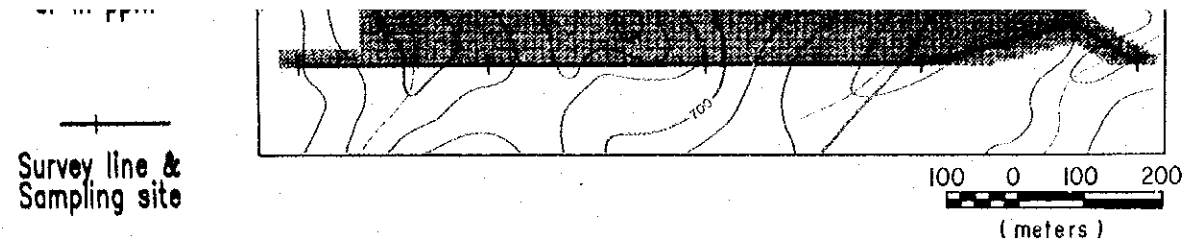
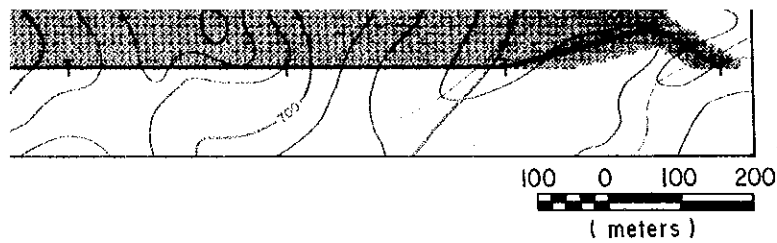
GEOCHEMICAL STATISTICS OF THE ORANGE AREA

Rock code	Nos.	La	Ce	Nd	Sm	Eu	Tb	Yb	Lu	Sc	Y	U	Th	Nb	Ta	Zr	Mn	Sr	P	Fe	TR203
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm
Maximum contents																					
Mcd	10	4735	9218	2905	484.4	109.0	15.3	11.0	1.3	19.6	119	26	716	848	73	113	37700	13300	5370	8.61	21657
Mfn	16	1681	3263	1330	282.9	57.5	11.5	3.5	0.5	12.3	61	21	310	539	38	1110	7464	4774	8116	8.42	8373
Mcb1	521	1338	12082	3192	563.6	107.5	21.0	3.7	0.4	39.1	130	75	666	7391	113	1130	76444	20880	25660	18.8	32716
Mcb2	241	8590	11633	2041	271.3	41.5	12.4	12.1	1.4	26.5	240	53	330	52200	26	273	15468	22060	45520	9.7	27224
Msu & Msr	72	1131	1882	870	185.1	46.9	15.8	10.5	1.2	66.2	190	210	156	5389	137	1620	8678	13214	77380	11.8	4953
Mcs	54	1338	2121	663	175.2	34.6	9.3	10.4	1.4	7.0	134	268	90	8770	67	857	10154	15640	22120	6.64	5500
Msp & Msw	43	293	749	428	117.6	87.9	30.3	84.5	11.0	10.0	1280	286	332	3170	16	700	2530	3540	87400	4.76	2763
Nsh	22	4105	4485	1222	271.8	80.3	37.3	36.5	4.3	66.1	710	42	657	1617	87	631	10974	6270	67040	12.5	12428
Ngn	70	275	526	173	45.0	14.0	7.2	8.4	1.0	66.4	190	31	141	952	31	907	10921	4462	18240	18.30	1345
Minimum contents																					
Mcd	10	215	426	143	39.2	10.3	3.8	2.3	< 0.5		40	< 1	< 1	5	< 2	< 3	5880	1130	149	1.44	1109
Mfn	16	12	30	13	3.0	< 0.5	0.6	0.9	< 0.1	< 0.5	4	< 1	5	45	< 2	< 3	121	6	< 100	1.30	88
Mcb1	521	12	18	8	1.6	< 0.5	0.4	0.3	< 0.1	< 0.5	< 1	< 1	< 1	2	< 2	< 3	100	788	< 100	0.40	58
Mcb2	241	5	12	6	2.0	< 0.5	0.5	0.5	< 0.1	< 0.5	6	< 1	< 1	2	< 2	< 3	1005	269	< 100	1.21	50
Msu & Msr	72	4	9	5	2.1	0.9	0.5	0.4	< 0.1	< 0.5	< 1	< 1	< 1	4	< 2	< 3	246	123	< 100	1.06	37
Mcs	54	79	126	42	10.0	2.9	1.1	1.1	0.2	< 0.5	17	< 1	< 1	2	< 2	< 3	783	1640	< 100	0.22	341
Msp & Msw	43	11	23	8	1.8	0.9	0.5	0.5	< 0.1	< 0.5	3	< 1	< 4	2	< 2	4	47	139	228	0.07	66
Nsh	22	31	46	13	1.6	0.8	0.5	0.4	< 0.1	< 0.5	4	< 1	< 1	22	< 2	< 3	191	57	134	0.53	121
Ngn	70	6	8	6	2.1	< 0.5	0.4	0.6	< 0.1	< 0.5	2	< 1	< 1	2	< 2	< 3	171	6	< 100	0.32	38
Arithmetic average																					
Mcd	10	2153	4186	1304	193.7	43.85	9.82	4.92	0.59	6.86	72.8	10.50	233.2	240	11.70	19.6	12958	7869	2088	5.74	9872
Mfn	16	203	359	149	31.9	7.18	2.33	1.89	0.27	4.55	24.1	8.25	37.3	293	11.63	241.2	2468	1420	2668	4.62	966
Mcb1	521	430	575	154	24.6	4.86	1.56	0.87	0.12	5.16	11.8	4.83	31.3	926	4.58	17.5	7009	5609	1287	4.53	1479
Mcb2	241	243	401	160	32.6	7.85	3.21	1.98	0.24	3.20	35.6	2.98	17.7	1548	3.34	8.2	6918	6265	9977	3.69	1092
Msu & Msr	72	246	417	155	31.4	7.84	3.11	2.76	0.35	3.17	40.0	27.31	29.4	772	23.39	293.8	2101	2182	8483	4.08	1110
Mcs	54	227	393	132	28.1	7.96	3.27	4.06	0.52	1.22	61.2	20.07	12.0	608	8.59	105.5	2334	4931	5007	1.73	1030
Msp & Msw	43	82	143	50	10.7	4.20	1.87	3.24	0.44	1.10	47.1	37.09	23.1	547	5.12	158.9	1125	1399	3561	2.47	392
Nsh	22	470	660	233	44.8	13.23	5.86	7.25	0.90	11.99	126.2	11.95	72.8	282	10.50	117.8	3058	1641	8975	5.50	1850
Ngn	70	62	110	38	7.9	1.96	1.38	2.12	0.31	9.28	23.9	5.20	20.7	93	3.37	156.9	1136	354	1087	3.15	296
Geometric average																					
Mcd	10	1569	3151	888	136.6	31.52	8.97	4.20	0.49	4.61	68.6	5.02	85.5	93	5.40	7.7	10195	5950	1101	5.18	7351
Mfn	16	92	153	61	13.3	3.18	1.64	1.74	0.24	2.62	18.5	5.52	17.3	233	7.27	81.4	1696	705	1337	4.13	439
Mcb1	521	157	250	72	11.8	2.59	1.14	0.79	0.11	4.61	9.5	2.90	14.2	320	2.87	4.5	6420	5348	235	4.21	634
Mcb2	241	143	250	107	22.8	5.59	2.52	1.60	0.19	1.97	27.7	1.63	7.1	668	2.44	4.1	6557	5231	4946	3.44	708
Msu & Msr	72	121	200	75	15.6	4.14	1.97	1.90	0.25	1.32	21.3	11.20	17.8	404	13.86	135.0	1516	1302	2323	3.54	560
Mcs	54	201	346	119	24.6	7.16	3.01	3.79	0.47	0.83	57.1	5.69	6.3	164	3.95	22.5	1824	4445	2506	1.32	920
Msp & Msw	43	64	101	34	6.9	1.95	1.18	1.28	0.19	0.78	15.2	16.85	13.8	280	4.05	81.4	972	1107	1253	2.03	281
Nsh	22	155	257	95	18.2	5.50	2.89	3.66	0.45	5.37	51.6	5.76	19.5	124	4.81	58.0	1539	715	2574	4.18	719
Ngn	70	52	86	30	6.4	1.51	1.18	1.79	0.26	5.94	16.0	3.24	14.0	46	2.47	89.5	813	231	572	2.27	242

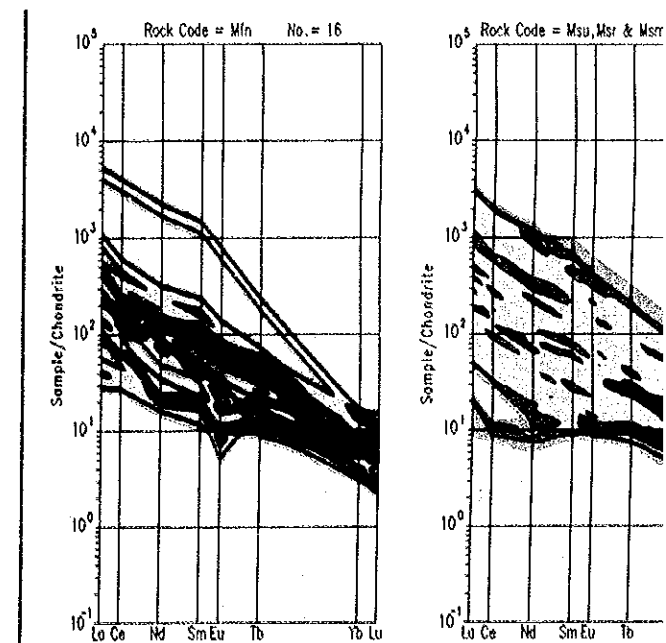
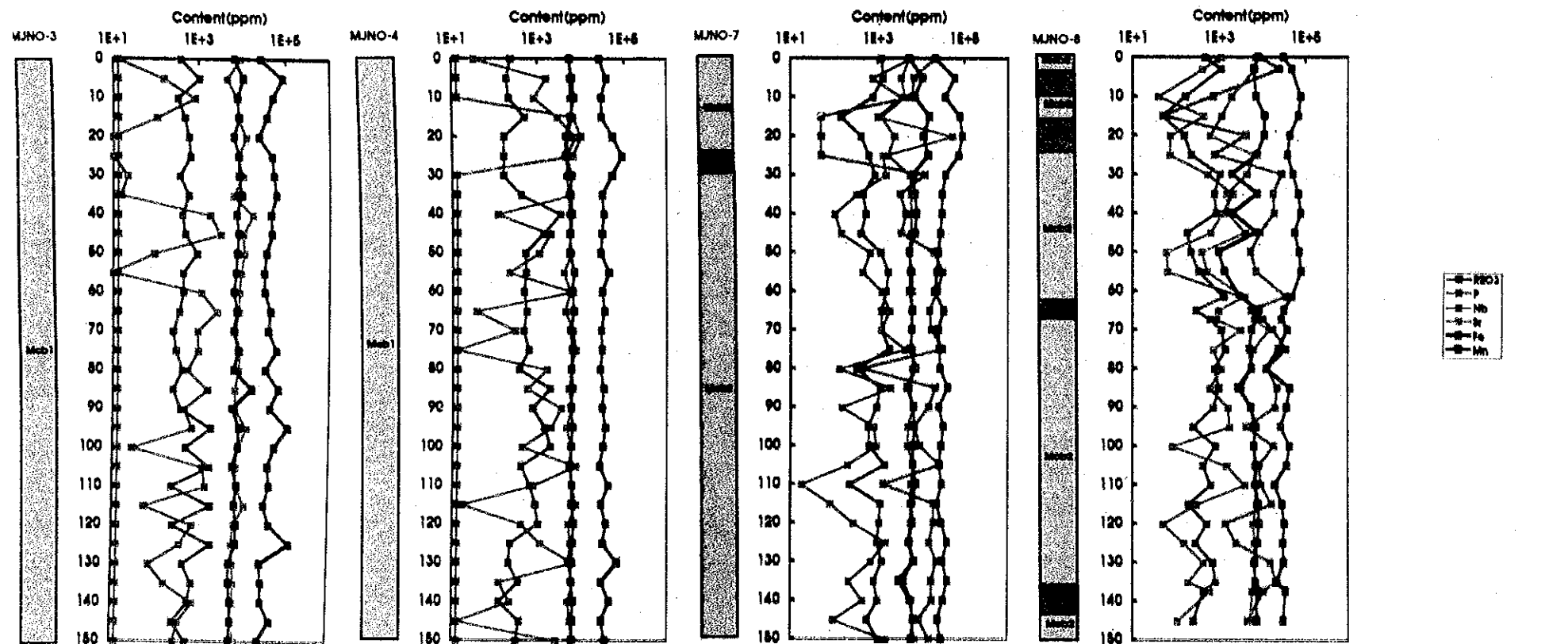
Beforsite (Mcb) is subdivided into the Central beforsite (Mcb1) and the Northeast beforsite (Mcb2). Other rock codes are same as Fig.II-2-2

GEOCHEMICAL DISTRIBUTION ALOI





GEOCHEMICAL DISTRIBUTION ALONG DRILLING CORES OF THE ORANGE AREA



Beforsite (Mcb) is subdivided into the Ce rock codes are same as in the geological

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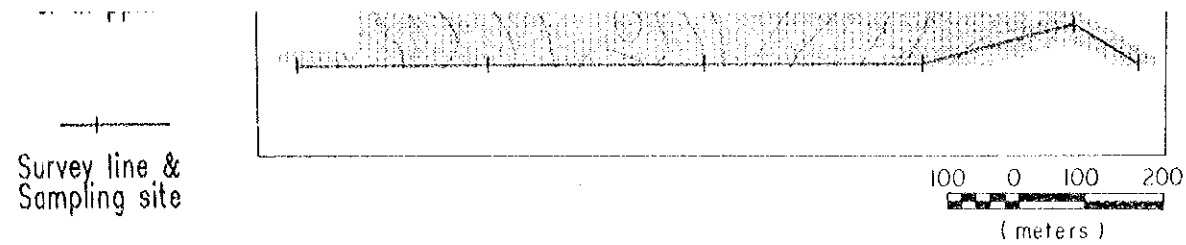
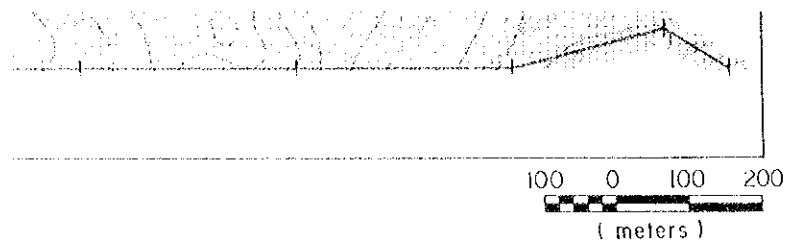
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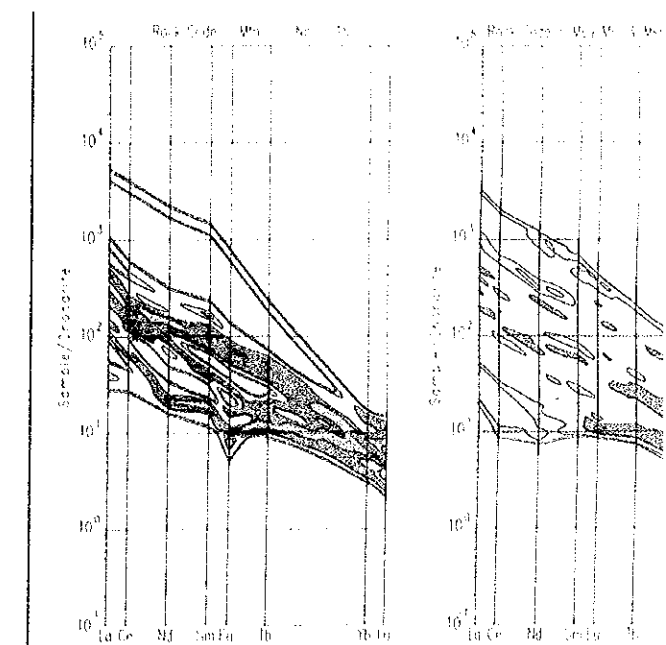
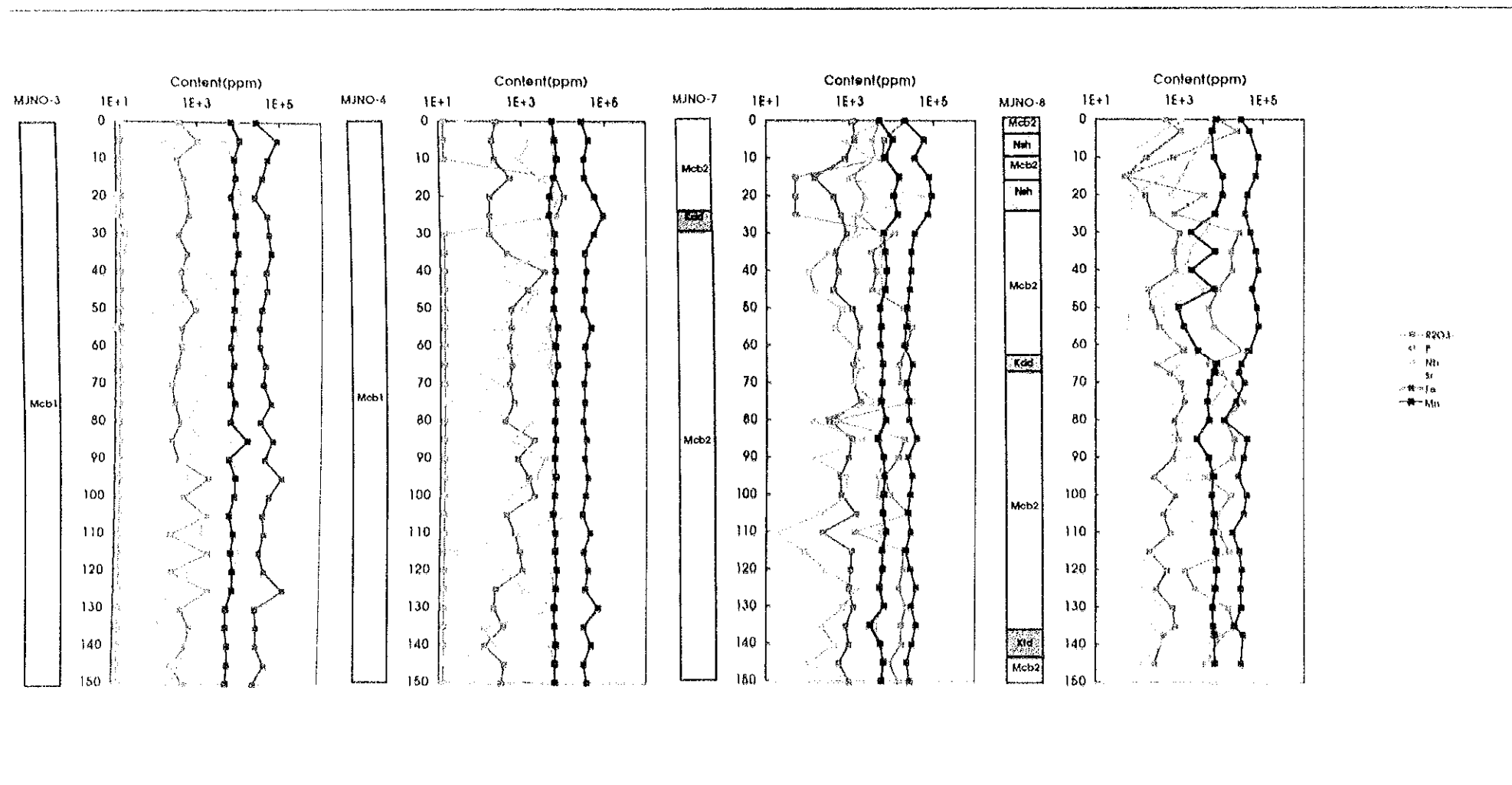
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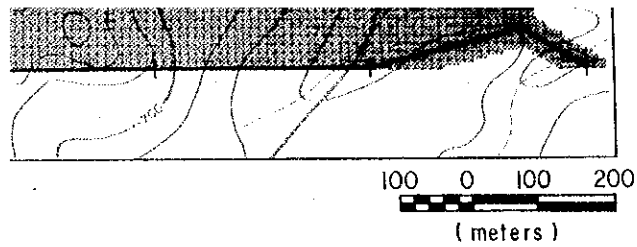
GEOCHEMICAL DISTRIBUTION ALONG DRILLING CORES OF THE ORANGE AREA



Beforsite (Mcb) is subdivided into the C rock codes are same as in the geological

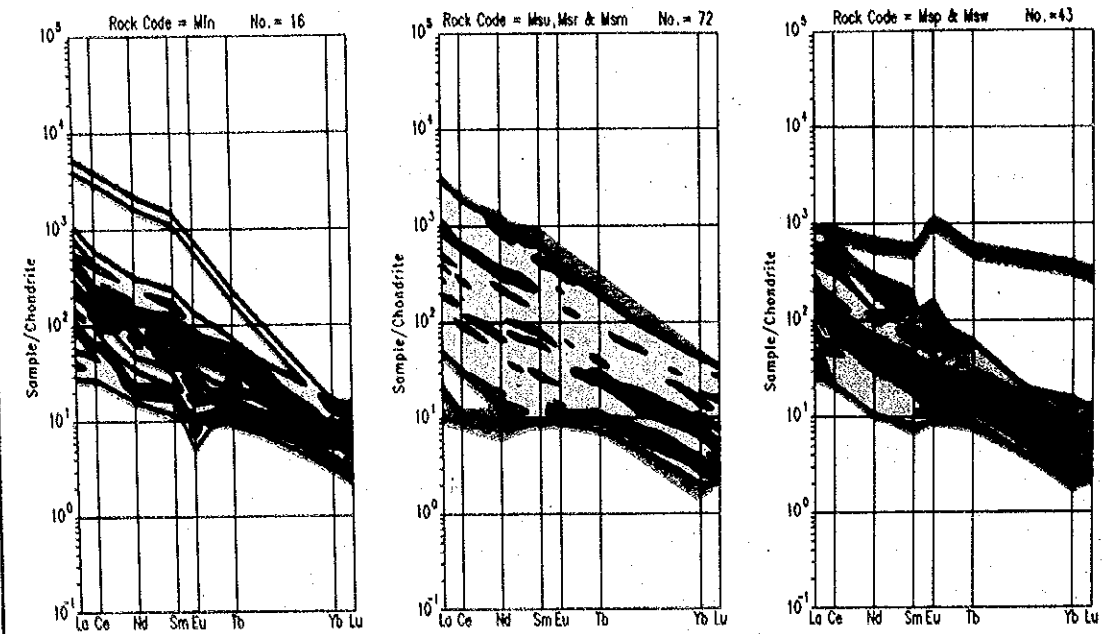
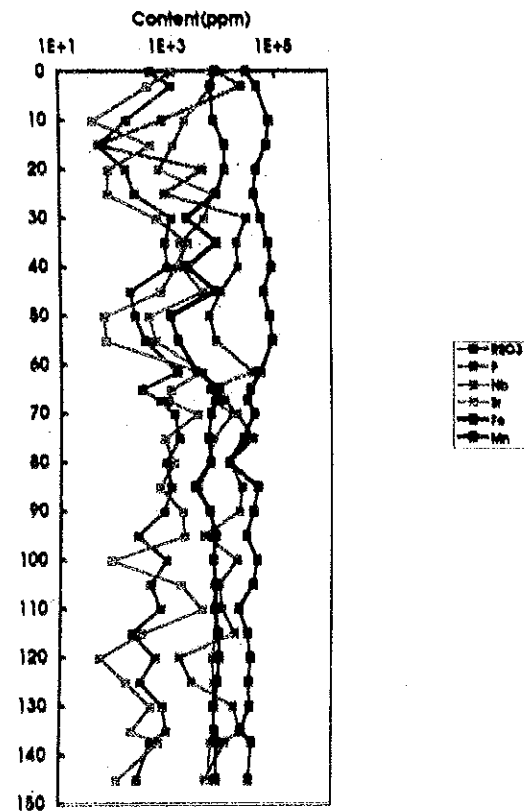
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Survey line & Sampling site

ORANGE AREA



Beforsite (Mcb) is subdivided into the Central beforsite (Mcb1) and Northeast beforsite (Mcb2). Other rock codes are same as in the geological map of the Orange area.

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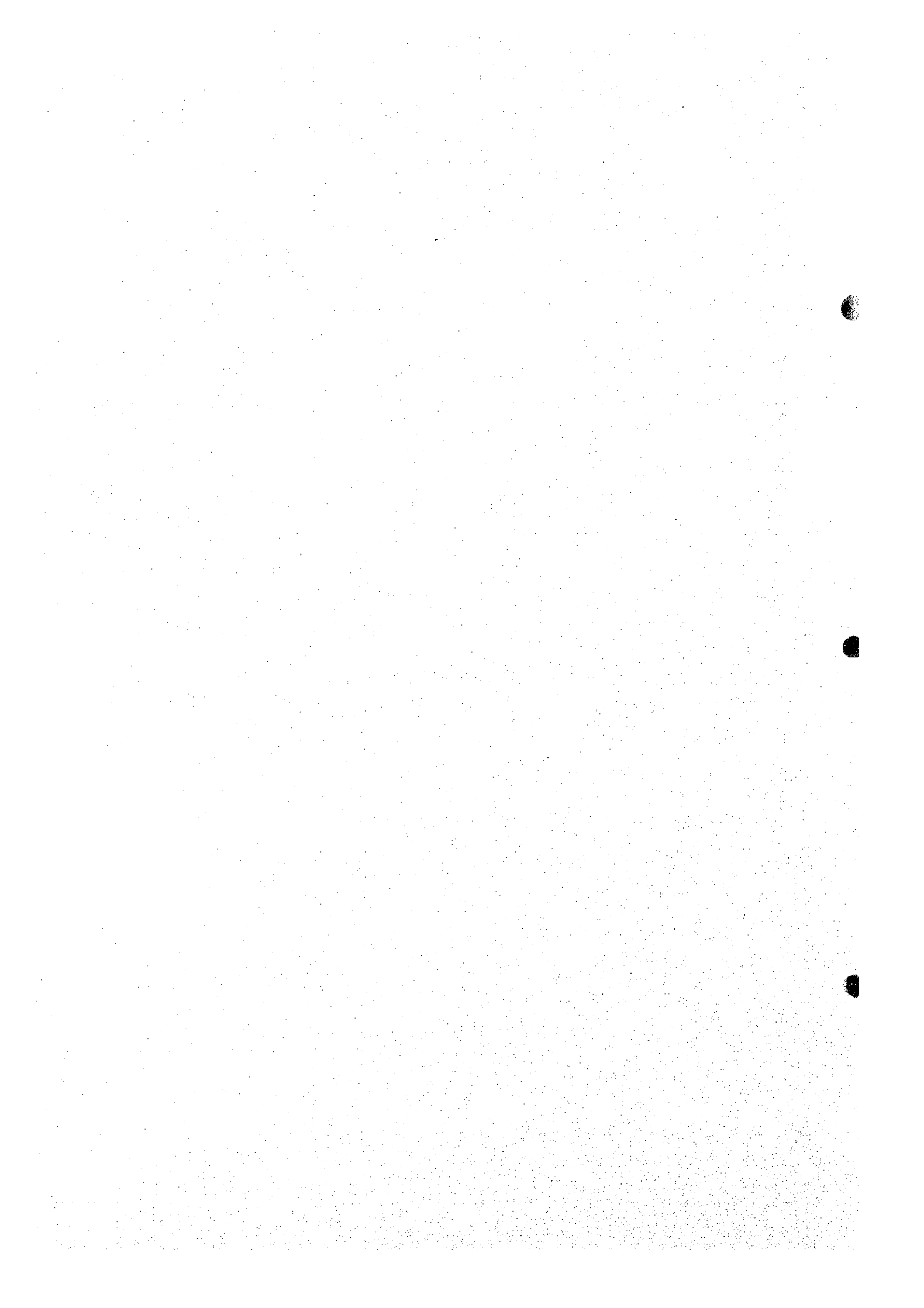
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