

It was difficult to predict the negative results for the sedimentary basin in the Area D-1 before starting this phase survey. The major reason for that is the different prediction for the type of the basin and sediments. The fact that the sediments deposited on the abrasion platform, not on a gently dipping flat floor has been revealed by this phase survey. An interpretation for this is that the sediments probably were gently deposited accordance with sinking of the abrasion platform, and the sediments previously in existence, which probably contained useful minerals, were washed out when the platform was near the water front.

Another possibility is that the granite situated to the east of the Area D-1 originally does not contain tin in any reason, as well as rare earths. However, the past two phase geochemical survey results reveal that the granite is petrologically just same as other granites in the surveyed area, and of high potential for tin. Only one different point is that the granite in the Area D-1 has been undergone silicification and pyritization, as seen in the northern end of the body along the Khlong La-Un. Many amounts of oolitic siderite grains in the overlaying layer of the sand and gravel layer also indicate some possibility of strong hydrothermal activity in the area in some time. It is possible that the hydrothermal activity leached the granite, and took out useful minerals from the granite.

It is necessary to conduct further detailed researches to solve this problem.

## Part III Conclusion and Recommendation

## Chapter 1 Conclusion

This phase survey was planned to examine potential for secondary ores in the A-1 and D-1 areas, which were selected based on the second phase survey results. Pit and Banka drill surveys have been performed in the Area A-1, and a Banka drill survey in the Area D-1. The conclusions of this phase survey are as follows.

### 1-1 Area A-1

(1) Potential for secondary ores in talus weathering residual deposits and stream sediments has been expected in the Area A-1. The survey results have revealed that potential for secondary ores in stream sediments was high in this area.

(2) The areas evaluated as of high potential for secondary ores in talus weathering residual deposits based on the second phase survey results have been surveyed, and the assay results show that the grades of ores are one fifties to one thousands less than those in the second phase results. The differences between those are due to the different sample treatment methods. Actual mining grades would be close to this phase results.

(3) Tin concentrated zones in secondary ores are in the lower parts, and rare earths concentrated zones tend to situate above the tin zones. It possibly shows that timing of supply for tin and rare earths in the sedimentary basin are different.

(4) Content of rare earths is correlate to that of tritium, zirconium, titanium, niobium, and tantalum. The sedimentary basins along the Khlong Nam Khao contain much tantalum and niobium.

(5) Five potential zones for secondary ores are located in the Area A-1. The total probable ore reserves of the three zones along Khlong Nam Khao are 639,000 m<sup>3</sup>, and the grades are as follows.

SnO <sub>2</sub>	; 500 g/m <sup>3</sup>
Ta <sub>2</sub> O <sub>5</sub>	; 10 g/m <sup>3</sup>
Nb <sub>2</sub> O <sub>5</sub>	; 36 g/m <sup>3</sup>
TR <sub>2</sub> O <sub>3</sub>	; 135 g/m <sup>3</sup>
ThO <sub>2</sub>	; 18 g/m <sup>3</sup>
Zr <sub>2</sub> O <sub>3</sub>	; 23 g/m <sup>3</sup>
TiO <sub>2</sub>	; 1025 g/m <sup>3</sup>

The total probable ore reserves of the two zones in the western side are 146,000 m<sup>3</sup>, and the grades are

as follows.

SnO <sub>2</sub>	; 1,000 g/m <sup>3</sup>
Ta <sub>2</sub> O <sub>5</sub>	; 15 g/m <sup>3</sup>
Nb <sub>2</sub> O <sub>5</sub>	; 24 g/m <sup>3</sup>
TR <sub>2</sub> O <sub>3</sub>	; 50 g/m <sup>3</sup>
ThO <sub>2</sub>	; 6 g/m <sup>3</sup>
Zr <sub>2</sub> O <sub>3</sub>	; 16 g/m <sup>3</sup>
TiO <sub>2</sub>	; 290 g/m <sup>3</sup>

### 1-2 Area D-1

(1) The Area D-1 is dominantly underlain by mangrove soil, however preferable sedimentary basins for secondary ores were expected underneath the mangrove soil in the area. The survey results reveal that no significant sand and gravel layer exists in the area, and fewer amounts of useful minerals are contained in the sediments.

(2) Major parts of the sediments, except some areas around ancient river systems, in the area have deposited under the quiet reductional environment, and contain little amounts of coarse heavy minerals.

## Chapter 2 Recommendation for Future Works

The secondary ores confirmed in the Area A-1 show significantly high contents of tin, accompanied by tantalum, niobium, rare earths, titanium, and zirconium. Even though the scale of the ore deposits is small, however, it is evaluated that the ores are of economical. The separation of drill holes was too large precisely to evaluate the ores. Therefore it is recommended that further detailed surveys are performed before the final decision for development. Furthermore, it should be reminded that the area is utilizing for agriculture, and economical compensation will be required for development of mining. Total economical tradeoff consideration is necessary.

Through the all programs, secondary ores containing not only tin but also rare earths have been the main target because of low tin market price. Speaking of tin, the old mining site in the watershed of the Khlong Kum, southern Kra Buri area, has the highest potential, and the upper stream area of the Khlong Lam Leang has high potential for primary ores. It is recommended further exploration activities to evaluate ore deposits in this area.

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## APPENDICES



Appendix 1 Microscopic observation of ore polished sections

Sample No.	Microscopic observation													Modal composition														
	Q	Fd	Il	Tm	Bi	Mv	Cs	Mz	Xn	Pc	Zr	Py	Sd	Q	Fd	Il	Tm	Bi	Mv	Cs	Mz	Xn	Pc	Zr	Py	Sd		
1	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	35.6	16.6	30.7	4.1	1.2	0.6	2.7	2.2	1.8	0.5	4.0				
2	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	0.1-0.7	0.1-0.8	0.1-1.2	0.1-0.8											
3	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	0.1-1.0	0.1-0.6	0.1-1.0	0.1-0.6											
4	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	0.1-1.0	0.1-0.6	0.1-1.0	0.1-0.6											
5	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	0.1-1.1	0.1-0.8	0.1-1.1	0.1-0.8											
6	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	0.1-0.9	0.1-0.7	0.1-0.9	0.1-0.7											
7	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	0.1-1.0	0.1-0.6	0.1-1.0	0.1-0.6											
8	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	0.1-1.0	0.1-1.0	0.1-1.0	0.1-1.0											
9	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	0.1-1.0	0.1-0.8	0.1-1.0	0.1-0.8											
10	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	0.1-1.0	0.1-1.0	0.1-1.0	0.1-1.0											
11	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	0.1-1.1	0.1-1.0	0.1-1.1	0.1-1.0											
12	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	0.1-1.0	0.1-0.6	0.1-1.0	0.1-0.6											
13	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	0.1-1.1	0.1-0.7	0.1-1.1	0.1-0.7											
14	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	0.1-1.2	0.1-0.9	0.1-1.2	0.1-0.9											
15	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	0.1-1.0	0.1-1.1	0.1-1.0	0.1-1.1											
16	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	0.1-1.2	0.1-0.7	0.1-1.2	0.1-0.7											
17	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	0.1-0.4	0.1-0.3	0.1-0.4	0.1-0.3											
18	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	0.1-0.8	0.1-1.1	0.1-0.8	0.1-1.1											
19	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	0.1-0.9	0.1-0.8	0.1-0.9	0.1-0.8											
20	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	0.1-0.7	0.1-0.6	0.1-0.7	0.1-0.6											
21	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3											
22	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	0.1-0.4	0.1-0.5	0.1-0.4	0.1-0.5											
23	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	0.1-0.3	0.1-0.4	0.1-0.3	0.1-0.4											
24	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3											
25	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	0.1-1.2	0.1-0.4	0.1-1.2	0.1-0.4											
26	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	0.1-0.4	0.1-0.3	0.1-0.4	0.1-0.3											
27	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	0.1-0.7	0.1-0.3	0.1-0.7	0.1-0.3											
28	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	0.1-0.6	0.1-0.7	0.1-0.6	0.1-0.7											
29	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	0.1-0.2	0.1-0.3	0.1-0.2	0.1-0.3											
30	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	0.1-0.2	0.1-0.4	0.1-0.2	0.1-0.4											

[Abbreviation]

Q: quartz, Fd: feildspar, Il: ilmenite, Tr: tourmaline, Bi: biotite, Mv: muscovite, Cs: cassiterite, Mz: monazite  
 Xn: xenotime, Pc: polycrase, Zr: zircon, Py: pyrite, Sd: siderite

⊙ : abundant, ○ : common, ◦ : rare, ∙ : tiny

Sample No.	Microscopic observation														grain size(mm)										Modal composition														
	Q	Fd	Il	Tm	Bi	Mv	Cs	Mz	Xn	Pc	Zr	Py	Sd	Q	Fd	Il	Tm	Bi	Mv	Cs	Mz	Xn	Pc	Zr	Py	Sd	Q	Fd	Il	Tm	Bi	Mv	Cs	Mz	Xn	Pc	Zr	Py	Sd
	○	○	○	○	○	○	○	○	○	○	○	○	○	0.1-0.2	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	52.8	37.9	3.1	2.1			0.6				3.4			
31	⊙	⊙	○	○	○	○	○	○	○	○	○	○	○	0.1-0.2	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	52.8	37.9	3.1	2.1			0.6				3.4			
32	⊙	⊙	○	○	○	○	○	○	○	○	○	○	○	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	51.7	38.0	3.3	2.3			0.9				3.7			
33	⊙	○	○	○	○	○	○	○	○	○	○	○	○	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3														
34	⊙	○	○	○	○	○	○	○	○	○	○	○	○	0.1-1.0	0.1-0.6	0.1-0.6	0.1-0.6	0.1-0.6	0.1-0.6	0.1-0.6	0.1-0.6	0.1-0.6	0.1-0.6	0.1-0.6	0.1-0.6	33.4	15.6	38.6	3.7	0.2	0.2	2.0	1.8	2.0	0.8	1.9			
35	⊙	○	○	○	○	○	○	○	○	○	○	○	○	0.1-1.1	0.1-0.8	0.1-0.8	0.1-0.8	0.1-0.8	0.1-0.8	0.1-0.8	0.1-0.8	0.1-0.8	0.1-0.8	0.1-0.8	0.1-0.8														
36	⊙	○	○	○	○	○	○	○	○	○	○	○	○	0.1-0.9	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7														
37	○	○	○	○	○	○	○	○	○	○	○	○	○	0.1-1.0	0.1-0.6	0.1-0.6	0.1-0.6	0.1-0.6	0.1-0.6	0.1-0.6	0.1-0.6	0.1-0.6	0.1-0.6	0.1-0.6	0.1-0.6														
38	⊙	○	○	○	○	○	○	○	○	○	○	○	○	0.1-1.0	0.1-1.0	0.1-1.0	0.1-1.0	0.1-1.0	0.1-1.0	0.1-1.0	0.1-1.0	0.1-1.0	0.1-1.0	0.1-1.0	0.1-1.0														
39	○	○	○	○	○	○	○	○	○	○	○	○	○	0.1-1.0	0.1-0.8	0.1-0.8	0.1-0.8	0.1-0.8	0.1-0.8	0.1-0.8	0.1-0.8	0.1-0.8	0.1-0.8	0.1-0.8	0.1-0.8														
40	⊙	○	○	○	○	○	○	○	○	○	○	○	○	0.1-1.0	0.1-1.0	0.1-1.0	0.1-1.0	0.1-1.0	0.1-1.0	0.1-1.0	0.1-1.0	0.1-1.0	0.1-1.0	0.1-1.0	0.1-1.0														
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[Abbreviation]

Q: quartz, Fd: feldspar, Il: ilmenite, Tr: tourmaline, Bi: biotite, Mv: muscovite, Cs: cassiterite, Mz: monazite  
 Xn: xenotime, Pc: polycrase, Zr: zircon, Py: pyrite, Sd: siderite

⊙ : abundant, ○ : common, ◦ : rare, · : tiny

Appendix 2 Results of X-ray diffraction test

Mineral name Sample No.	quartz	K feldspar	pyrite	siderite	cassiterite	monazite	xenotime	ilmenite	tourmaline
KBA-P08-5	⊙	○			○	·	○	○	○
KBA-P14-1	⊙	○			○	○		○	
KBD-03-4	○		·	⊙					
KBD-11-2	⊙	○	○						
KBD-16-2	⊙	○	○						

[abbreviation] ⊙ → abundant ○ → common  
 △ → rare · → tiny

### Appendix 3 Chemical analysis data

Unit	Sn	W	Ta	Nb	Ce	Eu	La	Nd	Sm	Tb	Th	U	Y	Gd	Dy	Pt	Yb	Lu	Zr	TiO2	Sc
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
51 KBA-P03-3	328	120	210	699	5100	0.7	2500	1700	430	83	2500	640	4000	556	500	300	336	61	6700	7.22	16
52 KBA-P03-4	1324	190	690	2395	4500	0.8	2100	1300	410	120	2200	1600	6100	6100	874	200	560	91.9	3900	23.87	36
53 KBA-P03-5	30900	570	940	2310	4200	1.2	2100	1400	390	160	2200	1600	4900	504	752	350	568	92.9	2600	23.47	36
54 KBA-P03-6	12920	220	770	2025	4700	1.2	2300	1400	450	200	2200	1300	6900	703	800	250	918	133	3000	25.81	36
55 KBA-P03-1	505	160	320	1861	2820	1.1	4100	2000	710	130	3900	960	7400	828	915	750	642	108	7800	10.43	23
56 KBA-P03-2	617	90	250	694	3600	0.5	1800	1200	350	84	1800	500	3000	375	430	170	331	50.9	3600	6.42	15
57 KBA-P03-3	2881	28	550	1579	11000	1.2	5600	4800	1800	310	5300	1800	9800	1190	1257	530	190	176	9600	15.22	34
58 KBA-P03-4	1452	272	678	1864	6500	1.5	3600	2600	640	240	3600	1800	7700	927	998	340	878	133	5100	17.23	32
59 KBA-P03-5	1578	240	880	2387	5500	1.4	3200	2300	610	250	3500	2200	8300	1018	1142	300	925	139	5000	23.6	34
60 KBA-P10-1	3400	92	290	705	1200	0.3	540	480	110	37	5500	120	1651	135	198	60	149	21.5	2500	5.36	15
61 KBA-P10-2	9100	190	620	1234	3600	0.3	1700	1300	340	80	1700	320	3700	364	461	200	360	50.8	7500	8.28	28
62 KBA-P10-3	2100	180	260	640	1100	0.2	530	390	110	35	540	120	1521	151	186	100	132	20.1	2600	4.97	13
63 KBA-P10-4	4300	140	530	1116	2300	0.4	1100	910	220	70	1100	210	3300	298	386	120	266	38.8	5600	7.61	21
64 KBA-P10-5	6200	140	540	947	1500	0.3	700	430	150	48	700	140	1810	187	233	80	212	26.9	2200	8.17	17
65 KBA-P10-6	2200	95	208	430	662	0.2	303	192	67	27	320	80	966	80.4	118	47	313	16.5	1154	4.03	18
66 KBA-P10-7	3100	78	180	354	659	0.2	442	295	83	24	420	76	871	81.5	109	40	93.7	13.7	2200	3.26	9.5
67 KBA-P10-8	11900	120	380	720	377	0.2	485	347	97	33	450	63	1381	113	161	40	126	17.7	3200	6.09	15
68 KBA-P10-9	6300	61	120	205	374	0.2	171	119	37	11	180	40	357	36.6	51.9	28	44.3	5.46	745	2.02	4.7
69 KBA-P10-10	11700	120	330	727	874	1.0	397	244	90	36	400	82	1536	135	182	40	137	19.7	2200	5.97	12
70 KBA-P11-1	442	360	660	1876	6700	0.6	3500	2500	690	330	3600	2400	11200	1099	1292	800	310	199	6800	15.35	38
71 KBA-P11-2	187	220	370	1268	3900	0.9	1900	1100	400	150	2000	1100	6100	565	768	190	654	96.9	3800	9.74	34
72 KBA-P11-3	379	420	490	1499	6600	0.8	3000	2100	580	180	3200	1520	8400	847	1063	230	853	138	5900	12.26	31
73 KBA-P11-4	253	350	440	1605	4700	0.6	2200	1400	490	160	2400	1700	7600	738	945	200	729	112	4600	12.39	26
74 KBA-P12-1	759	210	450	996	3200	0.2	1500	1000	300	80	1600	990	4000	424	579	160	383	63.5	3000	7.57	20
75 KBA-P12-2	278	130	130	305	342	0.2	424	253	95	25	430	290	922	72	114	40	185	15.6	512	2.05	7.8
76 KBA-P12-3	442	62	98	215	931	0.2	476	297	90	26	460	210	813	81.9	113	62	99.1	14.9	673	1.57	7.5
77 KBA-P12-4	248	50	130	308	873	0.2	426	251	89	31	440	300	1137	105	146	40	129	19.7	633	2.27	9.6
78 KBA-P13-1	712	82	150	355	622	0.2	327	225	57	14	310	83	453	49.6	60	40	46.9	6.93	977	2.66	9.9
79 KBA-P13-2	812	69	123	347	1029	0.2	484	351	92	20	490	98	843	93.7	110	40	75.5	10.6	1798	2.46	9.4
80 KBA-P13-3	681	33	62	131	449	0.2	217	176	41	9	210	45	193	22.4	29.2	55	32	4.6	425	0.83	5.4
81 KBA-P13-4	783	52	98	296	554	0.2	287	189	52	13	270	70	634	52	79.2	40	50.3	7.47	1210	2.92	7.1
82 KBA-P13-5	5000	140	480	903	2100	0.3	1000	700	200	62	1000	230	2800	395	344	220	258	36.6	4400	6.75	17
83 KBA-P13-6	4800	130	370	885	2100	0.3	1000	700	200	60	970	220	2700	249	323	100	255	36.1	4400	6.47	18
84 KBA-P14-1	1182	260	460	1472	4700	0.7	2200	1400	410	110	2200	1100	5900	719	768	650	532	88.1	3100	12.15	22
85 KBA-P14-2	1477	64	250	1350	2400	0.4	1100	790	210	56	1100	520	5300	494	636	220	262	42.1	3800	10.21	12
86 KBA-P14-3	1025	95	360	1040	3500	0.5	1600	1000	290	80	1500	770	3700	399	534	300	297	62.8	2300	8.9	19
87 KBA-P14-4	2200	190	500	1454	3900	0.8	1800	1400	350	95	1800	1000	5000	496	638	450	481	74.1	2600	10.84	22
88 KBA-P14-5	231	24	87	274	973	0.2	447	339	95	29	440	170	1060	106	148	40	103	15.8	808	2.32	6.2
89 KBA-P14-6	888	93	380	829	2200	0.3	1100	790	200	71	1100	500	3200	313	402	110	243	43.3	2200	6.17	14
90 KBA-B01-1	138	25	67	342	790	0.2	390	250	56	18	390	130	1095	87	136	44	83.7	15	777	2.3	
91 KBA-B01-2	224	31	86	492	980	0.2	460	300	68	33	460	180	1437	116	166	47	146	21.7	831	3.27	
92 KBA-B01-3	497	47	170	993	1200	0.2	500	380	90	31	590	360	2031	172	270	100	166	28.9	1029	5.81	
93 KBA-B01-4	6000	75	510	2075	2100	3.5	1200	710	160	76	1100	800	3532	335	508	130	334	50.5	1070	13	
94 KBA-B02-1	139	100	120	654	1600	0.3	760	480	110	33	770	350	2086	199	260	60	164	27.9	1136	2.96	
95 KBA-B02-2	135	53	110	520	1300	0.3	620	400	94	46	660	310	1993	158	248	58	191	28.6	1180	2.5	
96 KBA-B02-3	2200	120	490	1225	1900	3.6	1100	760	150	79	1100	1100	3310	324	445	91	355	48.3	1089	11.5	
97 KBA-B02-4	3720	87	370	1410	1300	2.6	630	460	38	46	720	610	2110	189	291	40	227	32.2	889	7.36	
98 KBA-B03-1	372	47	110	660	1700	0.3	840	530	120	32	830	380	1844	190	240	63	144	24.6	1343	2.82	
99 KBA-B03-2	10300	290	630	2880	3600	0.1	1800	1100	250	120	2200	2400	4511	432	742	160	585	102	1758	14	
100 KBA-B03-3	25020	230	900	2952	3900	0.1	1400	750	180	100	1700	2400	4000	453	605	140	450	90.4	1558	13.7	
101 KBA-B03-4	26000	180	790	2449	2100	4.6	1200	880	160	89	1100	1700	3058	310	449	120	400	58.8	786	11.7	
102 KBA-B04-1	1300	83	210	837	2300	4.0	1100	650	160	55	1100	420	2945	247	368	92	320	49.7	1648	4.4	
103 KBA-B04-2	1300	44	110	595	1300	2.2	620	420	93	29	630	240	1927	145	222	50	136	24.6	1213	3.08	
104 KBA-B04-3	6250	27	150	463	858	1.2	406	298	74	25	370	160	1021	81	116	42	95.2	15.5	606	2.35	

unit	Sn	U	Ta	Nb	Ce	Eu	La	Nd	Sm	Tb	Th	U	Y	Gd	Dy	Pr	Yb	Lu	Zr	TiO2	Sc
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
1 KBA-P01-1	92	37	80	574	4500	1.2	2400	1100	1100	52	2200	170	1125	302	260	300	175	28.5	3502	8.91	8.9
2 KBA-P01-2	103	36	72	539	3500	2.5	1800	1200	1200	51	1500	150	1636	238	215	200	176	25.6	1595	7.84	7.2
3 KBA-P01-3	417	<10	220	1157	5400	5	2300	2000	2000	92	2700	250	3200	430	434	402	336	51.9	3300	17.63	18
4 KBA-P01-4	44	30	50	319	2100	0.4	1000	870	870	26	930	83	1066	123	135	91	117	18.2	1142	4.27	7.4
5 KBA-P01-5	179	24	99	437	2100	0.3	1100	790	790	32	982	99	1110	147	153	100	152	23.7	1071	5.91	8.8
6 KBA-P01-6	347	21	130	422	1700	0.3	810	670	670	27	762	92	1071	125	137	99	136	22.3	903	6.95	9.5
7 KBA-P01-7	533	19	130	515	2000	2	950	820	820	35	932	120	1182	133	169	200	185	25.2	1651	5.72	9.3
8 KBA-P01-8	706	6	30	113	357	<0.2	174	127	127	4.9	163	21	241	30.4	27.1	32	23.1	3.5	396	1.06	3.5
9 KBA-P02-1	152	170	170	655	3900	3	1800	1300	1300	54	1702	430	2500	355	363	310	234	38.1	2500	5.59	13
10 KBA-P02-2	289	170	290	1228	5600	1.3	2800	1900	1900	120	2600	300	4500	581	621	490	449	66.2	3500	9.3	12
11 KBA-P02-3	192	220	210	978	4700	1	2300	1500	1500	110	2100	720	3400	494	476	250	476	54.8	3400	6.99	18
12 KBA-P02-4	82	70	162	554	2500	0.4	1200	1000	1000	47	1100	400	1545	196	221	100	196	29.4	918	3.29	11
13 KBA-P02-5	159	110	270	926	5700	1.3	2800	2100	2100	120	2600	850	3800	536	540	480	453	65.9	2900	6.68	17
14 KBA-P02-6	808	70	170	629	3700	0.6	1800	1700	1700	63	1700	590	2100	259	292	160	240	35.1	1589	3.51	12
15 KBA-P03-1	119	150	290	1044	2900	0.7	1300	730	730	86	1400	930	4900	465	653	170	426	71.8	2800	8.21	18
16 KBA-P03-2	151	370	310	1112	3700	0.8	1700	1100	1100	97	1800	1120	5600	491	714	190	473	76.4	4200	8.15	23
17 KBA-P03-3	74	95	210	823	2000	0.5	890	640	640	61	1000	750	2792	264	391	110	293	47.5	1762	4.75	15
18 KBA-P03-4	62	120	510	398	5700	0.9	3400	1500	1500	150	3200	2500	5400	722	818	230	815	118	1785	8.64	24
19 KBA-P03-5	67	61	120	316	2200	0.4	1100	980	980	63	1100	510	2000	211	289	110	255	39.1	1775	2.55	13
20 KBA-P04-1	180	75	390	1119	2700	0.5	1200	1100	1100	150	1300	810	4400	331	522	100	646	107	2100	11.77	24
21 KBA-P04-2	213	95	290	1067	3500	0.6	1600	900	900	110	1500	560	5900	611	822	150	590	97.1	4200	14.31	22
22 KBA-P04-3	92	46	210	719	1700	0.4	780	470	470	81	790	370	3100	249	354	90	392	58.3	1333	7.93	16
23 KBA-P04-4	141	24	110	380	1400	0.3	630	482	480	63	630	180	2800	227	352	78	294	44.7	1558	5.6	11
24 KBA-P04-5	84	82	150	562	1300	0.3	590	474	470	56	600	220	2800	213	306	90	273	48.6	1612	7.84	13
25 KBA-P04-6	103	32	130	469	1300	0.3	610	560	560	54	620	210	1974	186	274	100	237	34.6	1612	5.52	11
26 KBA-P04-7	86	16	140	594	1500	2.4	320	250	250	48	340	160	3700	262	443	70	339	52.2	2400	9.39	11
27 KBA-P04-8	64	15	86	295	770	<0.2	420	247	247	58	440	160	2500	193	318	60	252	39.5	1111	8.12	10
28 KBA-P04-9	110	28	170	597	1020	<0.2	420	247	247	58	440	160	2500	193	318	60	252	39.5	1111	8.12	10
29 KBA-P05-1	745	110	340	1183	3600	1	1700	1400	1400	160	1700	730	6100	628	815	250	690	105	4702	13.41	25
30 KBA-P05-2	1558	180	410	1511	4100	0.7	1800	1200	1200	140	1800	800	8700	727	1053	300	692	120	5200	16.82	25
31 KBA-P05-3	732	130	380	1257	4100	0.7	1800	1400	1400	140	1700	730	6500	619	901	250	719	114	3500	16.49	26
32 KBA-P05-4	695	84	350	1226	5020	0.8	2200	1400	1400	160	2200	700	8600	778	1040	320	798	129	6300	14.17	27
33 KBA-P05-5	524	14	330	1118	4700	1.2	2300	1700	1700	210	2200	690	7700	698	949	300	909	132	6520	13.75	28
34 KBA-P05-6	470	100	320	1166	4300	0.7	1900	1400	1400	130	1900	570	7300	639	865	260	673	108	5200	13.59	26
35 KBA-P05-7	544	88	300	992	4600	0.7	2100	1400	1400	140	2000	560	6600	657	863	240	701	115	4520	12.02	25
36 KBA-P05-8	319	110	250	857	2400	0.4	1100	820	820	99	1100	400	4800	358	559	102	436	66	2300	8.12	16
37 KBA-P06-1	192	110	190	702	3100	0.5	1500	1000	1000	66	1500	540	3100	395	469	70	291	49.7	2500	6.54	13
38 KBA-P06-2	502	110	190	648	4000	0.7	1800	1400	1400	70	1800	500	3500	403	455	400	312	51	4002	5.76	15
39 KBA-P06-3	444	190	170	559	5200	0.7	2500	1600	1600	87	2400	530	3800	517	560	290	364	62.8	6100	7.14	17
40 KBA-P06-4	433	230	670	2450	6100	1.3	3200	1900	1900	260	3400	2100	10400	1163	1356	350	1800	162	4700	28.61	31
41 KBA-P06-5	16700	340	800	2232	3800	1.1	2100	1100	1100	150	2200	2000	5400	559	778	130	603	93.7	2300	23.41	28
42 KBA-P06-6	12020	250	660	1971	4800	0.7	2300	1500	1500	120	2300	1500	5400	559	771	230	572	89.1	2600	19.77	31
43 KBA-P07-1	747	240	570	1320	4500	1.2	2300	1300	1300	170	2400	1500	5500	540	725	220	617	99.7	4400	8.39	28
44 KBA-P07-2	884	110	280	706	1700	0.4	820	580	580	56	890	570	2400	423	311	90	225	33.1	1688	4.24	14
45 KBA-P07-3	1045	270	410	966	3200	0.6	1400	1000	1000	79	1500	940	3900	421	536	240	370	59.1	2700	5.99	20
46 KBA-P07-4	2000	250	510	1241	2800	0.6	1300	1100	1100	300	1400	1200	3700	339	473	150	371	54.3	2400	6.71	2
47 KBA-P07-5	862	180	410	922	2600	0.6	3200	830	830	240	69	1300	3100	347	448	140	305	48.9	1797	6.66	18
48 KBA-P07-6	3800	480	990	2183	6900	1.2	3200	2200	2200	650	1800	2400	8900	1064	1166	350	761	126	6200	14.41	33
49 KBA-P08-1	492	160	330	976	5900	0.7	2900	1800	1800	120	2800	940	5200	680	734	300	524	86.8	4200	8.68	21
50 KBA-P08-2	1851	320	590	1734	8500	1.1	4900	2800	2800	720	3900	1500	8500	974	1068	400	788	128	7100	14.45	31

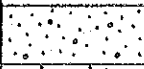
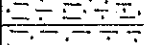
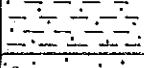

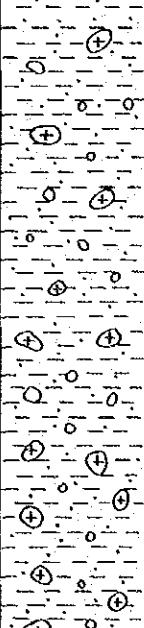

unit	Sn	W	Ta	Nb	Ce	Eu	La	Nd	Sm	Fb	Th	U	Y	Gd	Dy	Pr	Yb	Lu	Zr	TiO2	Sc
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
105 K9A-805-1	293	87	200	658	1300	<0.3	630	470	98	28	680	550	1513	151	195	70	124	22	792	1.76	
106 K9A-805-2	2300	240	930	2728	2300	<0.7	1200	990	218	110	1500	2800	381	381	503	120	401	62.1	944	6.38	
107 K9A-805-3	113000	160	770	1811	1700	3.4	1400	700	130	73	1000	1200	2694	267	192	77	255	33.1	1251	3.28	
108 K9A-805-4	116000	240	650	1430	930	2.9	310	250	73	37	540	570	1520	141	214	56	158	16.1	772	6	
109 K9A-806-1	1700	99	250	652	870	1.8	380	300	72	31	440	310	1094	98	411	50	114	17.2	1061	7.45	
110 K9A-806-2	1500	47	140	482	530	1.1	220	170	44	16	250	150	785	57	88	29	61.4	10.5	719	1.97	
111 K9A-806-3	4700	74	210	608	670	1.3	280	260	56	21	320	230	933	74	117	42	84.6	14.2	942	2.54	
112 K9A-806-4	4700	48	160	489	460	1.0	200	180	41	15	240	190	699	54	83	38	72	10.7	639	1.77	
113 K9A-807-1	16900	160	820	2425	2000	3.9	1100	760	160	64	1100	1500	3210	304	458	170	359	55.2	1104	10.8	
114 K9A-807-2	782	61	170	890	1400	<0.3	720	410	110	32	740	430	2852	184	280	64	149	27.3	1089	3.4	
115 K9A-807-3	16000	200	910	2565	2500	<0.6	1600	700	210	100	1400	1700	4871	444	613	150	384	61.2	1555	13.7	
116 K9A-808-1	286	190	160	768	1800	<0.2	890	530	130	38	930	480	2352	220	293	110	176	31.2	1176	3.24	
117 K9A-808-2	2420	150	590	2092	2000	0.5	170	630	178	90	1200	1500	3427	321	502	120	316	56.9	1197	10.2	
118 K9A-808-3	12000	130	520	1934	1900	3.3	1100	540	150	72	1000	1300	2982	329	417	120	273	43	1485	8.84	
119 K9A-809-1	453	73	140	735	2100	<0.3	1100	580	160	40	1100	480	2633	256	336	71	172	29.7	2058	3.41	
120 K9A-809-2	3200	160	370	1311	3800	5.9	2200	1500	290	180	1900	3950	450	520	280	404	62.4	2421	5.73		
121 K9A-809-3	35000	220	870	2450	2800	<0.7	1900	920	220	110	1600	1800	3963	392	545	130	417	61.2	1533	12.1	
122 K9A-809-4	47000	110	440	1294	1800	3.2	930	580	130	55	960	670	2274	209	282	75	232	30.5	1319	5.75	
123 K9A-810-1	1200	82	160	832	1700	3.3	870	580	130	41	890	490	2549	224	321	80	204	35.3	1394	3.51	
124 K9A-810-2	28000	140	540	1959	1900	3.5	990	630	150	74	1100	940	2849	236	406	76	261	44.8	1185	11.3	
125 K9A-810-3	8200	93	340	1347	2800	3.6	1600	780	220	91	1400	1000	4009	408	476	140	369	56.3	2198	5.87	
126 K9A-810-4	36000	91	440	1794	1700	2.7	920	560	130	63	960	540	2759	247	344	80	280	38	1607	9.67	
127 K9A-811-1	2600	230	500	1542	7800	8.3	3800	2600	530	180	4300	2200	6987	998	828	420	622	131	6066	6.62	
128 K9A-811-2	9000	240	520	1675	5700	6.2	3500	2300	440	140	2800	1800	5233	725	698	380	530	79.4	2882	7.43	
129 K9A-811-3	48000	220	800	2204	2900	4.1	1800	990	230	110	1700	1800	3927	418	568	140	402	60.3	1453	10.1	
130 K9A-812-1	2500	26	48	141	362	0.5	161	147	30	7.9	160	99	350	32	38.9	25	27.8	4.24	1088	0.65	
131 K9A-812-2	1800	16	35	90	168	<0.2	70.4	62	14	3.3	69	23	126	14	14.6	13	1.91	7.68	0.37		
132 K9A-812-3	164	7	3	14	74	0.5	24.3	25	4.4	1	25	6.4	29	2.2	3.3	3.0	0.65	752	0.09		
133 K9A-813-1	2200	64	150	397	674	<0.2	315	210	58	20	290	78	773	62	90.3	30	72.1	11.7	1239	2.29	
134 K9A-813-2	1400	64	140	409	470	0.7	207	179	40	16	210	54	653	51	73.7	26	57.3	9.12	740	2.55	
135 K9A-813-3	2000	51	120	321	411	0.6	182	162	35	15	180	45	574	42	63.6	32	51.6	7.98	642	1.93	
136 K9A-813-4	15000	67	310	450	596	0.7	277	229	52	15	240	51	552	50	62.1	23	51	6.81	578	1.29	
137 K9A-813-5	11000	210	1600	1824	1400	2.3	770	440	120	36	710	140	1469	179	190	80	142	11.1	1212	3.63	
138 K9A-814-1	2500	180	200	634	990	1.2	430	370	74	22	400	110	1066	88	127	40	84.3	13.6	1340	2.86	
139 K9A-814-2	3800	130	310	864	1300	<0.2	570	410	98	32	540	150	1511	124	185	120	120	18.8	2083	3.71	
140 K9A-814-3	3800	69	130	374	523	0.7	239	197	43	13	220	55	562	48	59.6	20	47	7.08	1021	1.72	
141 K9A-814-4	5000	40	85	252	241	0.4	102	97	21	6.3	98	23	275	25	32.2	20	23.1	3.1	419	1.28	
142 K9A-814-5	105000	280	410	497	539	1.7	271	170	52	13	220	51	426	46	53.8	420	46.5	4.11	458	1.29	
143 K9A-814-6	110000	280	400	544	730	1.4	320	250	56	15	260	57	543	59	67.1	31	55.5	4.4	729	1.52	
144 K9A-815-1	2000	63	180	322	453	0.7	223	152	40	12	200	56	525	47	63.3	34	46.9	6.01	768	1.86	
145 K9A-815-2	80000	250	710	1644	2300	3.4	1300	800	170	55	990	220	2822	270	255	140	199	23.2	2766	5.17	
146 K9A-815-3	23000	130	280	714	1100	1.7	500	380	87	24	460	98	1117	112	137	37	69.6	12.1	1524	2.35	
147 K9A-815-4	41000	150	290	802	1400	2.1	720	400	95	21	650	180	1127	137	148	50	77.4	9.98	2543	3.17	
148 K9D-01-1	78	59	300	65	34000	3	12000	7100	2000	11	9900	1100	13200	1847	1447	1700	650	303	6800	5.99	160
149 K9D-02-1	156	250	340	1531	7900	1.1	4100	2500	600	140	3300	350	5080	847	696	650	559	84.1	5300	18.13	37
150 K9D-02-2	122	73	140	125	2500	4.7	1200	1000	200	41	1000	120	3050	229	242	180	164	25.2	1700	8.41	17
151 K9D-02-3	905	410	890	201	6800	0.7	3200	2000	480	120	2800	340	5870	711	845	550	733	111	4700	32.68	44
152 K9D-02-4	2700	330	720	285	15000	21.9	8300	5400	1200	310	6500	870	9880	1594	1373	1200	320	196	6200	27.22	50
153 K9D-02-5	2900	240	620	297	21000	18.2	13000	5600	1300	280	19000	950	11200	2038	1343	1500	940	169	5700	19.91	28
154 K9D-03-1	<5	44	6	24	567	1.6	283	142	29	5.6	170	22	107	18	16.6	420	8.2	1.28	87	0.95	6.3
155 K9D-03-2	16	44	10	30	774	2.6	333	237	44	5.6	190	16	142	30.3	28.3	420	12	1.65	147	0.86	7.7
156 K9D-03-3	850	300	400	125	11000	1.5	5600	3700	790	190	4500	440	5600	1037	951	900	789	112	4450	19.48	43
157 K9D-03-4	2600	220	760	305	22000	2.7	13000	6500	1400	430	10000	1000	12500	2092	1333	2100	846	186	5830	13.2	36
158 K9D-04-1	31	10	13	70	251	0.6	122	90	18	2.8	96	11	112	21	18.8	420	10.2	1.6	226	0.82	3.5

unit	Sm	W	Ta	Nb	Ce	Eu	La	Nd	Sm	Tb	Th	U	Y	Gd	Dy	Pr	Yb	Lu	Zr	TiO2	Sc
(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
159 K8D-04-2	201	20	34	136	846	<0.2	342	212	45	9.1	240	23	312	37.2	39.7	<20	27.7	4.38	852	14.51	3.7
160 K8D-04-3	32	15	22	123	367	0.8	176	136	26	4.8	140	16	202	26.9	25.4	<20	17.6	2.71	376	1.46	2.6
161 K8D-04-4	866	52	88	491	2800	7.3	1100	630	120	20	840	77	1012	175	146	150	87.2	14.8	7300	5.69	11
162 K8D-04-5	2100	54	120	283	1800	6.8	770	590	93	16	540	56	646	103	83.4	80	59	9.29	10800	3.77	11
163 K8D-04-6	3100	39	140	239	2500	7	1480	760	150	19	1200	76	543	143	110	87	42.8	6.67	6500	2.71	10
164 K8D-05-1	15	13	17	90	285	0.4	132	99	19	2.2	110	8.9	81	20.1	14.6	<20	9	1.23	211	1.4	2.6
165 K8D-05-2	67	18	29	119	311	1	157	99	21	4.3	110	13	123	16.5	17.2	<20	14.2	2.15	389	1.49	3.3
166 K8D-05-3	133	39	60	267	739	2.2	373	271	50	9.8	270	32	347	40.9	49	<20	37.4	5.7	1325	3.14	7.4
167 K8D-05-4	80	25	32	140	562	3.2	352	257	46	7.2	220	24	162	35.5	27.7	<20	17.8	3.1	952	1.89	13
168 K8D-05-5	753	56	78	314	1500	<0.2	720	590	91	20	550	59	739	103	109	81	78.7	12.7	2700	3.61	9.6
169 K8D-05-6	3980	53	110	320	1200	5.5	670	370	69	12	490	49	737	107	96.7	90	55.2	8.94	5300	3.09	9.1
170 K8D-06-1	96	4	5	29	141	0.6	64.9	50	8.5	1.3	47	5.5	61	5.6	8.5	<20	4.9	0.73	823	0.54	1.1
171 K8D-06-2	103	<4	5	24	128	<0.2	60.2	48	7.9	1.8	46	5	57	6.2	5.7	<20	4.5	0.66	873	0.48	1.3
172 K8D-06-3	772	19	30	89	840	5.9	410	310	46	7.1	250	28	10600	52.7	41.5	67	23.7	4.28	270	1.88	6.1
173 K8D-06-4	799	32	48	127	850	5.2	420	320	46	7.4	270	28	3200	56.8	42.5	34	24	4.31	287	2.82	7.2
174 K8D-06-5	528	22	63	187	2100	4.7	1300	590	110	15	1000	65	2900	143	125	100	54.2	8.69	819	2.25	5.5
175 K8D-07-1	55	7	7	88	150	0.4	70.8	58	10	2.2	54	5.3	72	15.4	8.2	<20	6.9	1.05	273	0.63	1.7
176 K8D-07-2	104	16	24	114	290	0.8	150	91	19	3	110	12	138	23.6	20.4	<20	13.2	2.2	555	1.41	3
177 K8D-07-3	48	10	11	62	153	0.8	71.2	62	11	1.9	52	9.9	72	7.5	11.9	<20	6.3	0.98	333	0.74	5.3
178 K8D-07-4	280	53	78	439	1300	3.9	610	450	79	15	470	39	717	90.7	96.1	74	54.3	8.52	2300	5.5	13
179 K8D-07-5	2300	64	120	462	1400	6	840	530	79	15	450	46	779	94.1	98.4	70	60.1	9.15	8700	5.6	11
180 K8D-07-6	5700	70	230	446	1200	5.6	580	430	70	15	380	41	721	84	86.1	90	61.6	8.9	7900	3.06	11
181 K8D-07-7	7100	61	190	368	1200	5.7	770	330	68	11	490	43	598	89.8	82	75	45	6.6	6400	2.78	9.5
182 K8D-08-1	56	<4	2	3	535	<0.2	274	192	43	10	230	39	508	51	60.9	23	43.2	6.89	440	0.28	1.7
183 K8D-08-2	57	<4	4	<2	1200	0.3	540	420	89	26	510	97	1180	134	183	43	114	19.1	1109	0.27	2.4
184 K8D-08-3	10	<4	1	18	1800	1.7	820	480	87	14	700	63	807	122	112	180	50.8	8.56	1286	0.48	5.2
185 K8D-08-4	21	5	7	52	427	0.6	222	152	29	3.9	180	15	122	22.8	17.3	<20	3	1.3	331	0.92	1.9
186 K8D-08-5	15	4	3	28	205	0.4	93	76	12	1.4	89	7.7	36	10.7	1.9	<20	3	0.43	193	0.62	1.1
187 K8D-08-6	34	8	35	202	6900	0.7	4900	2300	390	53	3500	290	1624	465	305	400	101	12.1	2700	5.13	6.6
188 K8D-08-7	390	7	46	264	5200	0.6	3500	1800	290	43	2500	200	1345	357	243	290	95.1	11.8	1712	6.32	8.1
189 K8D-08-8	29	7	29	146	4420	3.3	3020	1500	250	36	2200	160	973	288	181	190	63.9	7.42	2200	3.19	6.1
190 K8D-08-9	349	10	62	213	7800	0.9	4300	2400	390	60	4200	400	1919	522	350	640	119	20.7	2500	5.48	7.8
191 K8D-10-1	25	9	10	72	1100	1	570	330	68	7.1	470	32	257	57.8	47.4	70	15.4	2.27	576	1.67	2.2
192 K8D-10-2	10	10	12	99	1200	<0.2	570	430	62	9.6	510	42	305	67.4	50.7	60	23	3.63	438	2.19	2.7
193 K8D-10-3	17	<4	13	80	1800	<0.2	870	550	91	11	720	53	341	80.9	63.4	80	24.1	3.48	682	2.05	2.3
194 K8D-10-4	22	6	22	115	3800	0.5	2700	1300	220	35	2000	150	976	288	201	300	71.1	3.27	1202	3.12	5.6
195 K8D-10-5	19	19	19	193	3200	0.3	1900	980	170	21	1600	110	951	203	186	130	54	7.95	873	2.77	6.6
196 K8D-11-1	36	31	44	235	554	0.2	270	215	36	9	200	27	379	34.6	44.8	<20	35	5.23	375	2.88	4.1
197 K8D-11-2	31	25	37	173	551	1	247	206	42	16	190	37	727	61.3	83.6	34	63.4	11.2	300	1.89	3.4
198 K8D-11-3	95	48	71	404	770	1.7	350	240	60	23	260	48	1411	108	163	<20	118	19	639	3.71	5.4
199 K8D-11-4	32	27	48	206	900	<0.2	300	270	60	28	260	57	1701	195	201	<20	150	24.3	360	1.47	3.6
200 K8D-12-1	45	20	29	149	417	<0.2	196	148	32	10	150	23	601	46.6	68.1	<20	55.9	8.83	339	1.36	3.3
201 K8D-12-2	29	8	10	63	243	<0.2	99.5	91	17	4.2	83	10	223	16.7	27.9	<20	22	3.31	186	0.68	1.7
202 K8D-12-3	32	<4	10	88	219	0.3	93.8	85	14	1.7	82	6	70	8	9.4	<20	6.2	0.94	230	0.66	2.4
203 K8D-12-4	25	9	15	122	501	<0.2	255	196	34	4.7	160	11	146	30.4	23.4	<20	10.5	1.88	325	1.11	3.6
204 K8D-13-1	39	5	3	19	56	0.4	22.5	19	3.3	0.6	17	3.3	29	4.5	5.5	<20	2.8	0.42	383	0.31	1.7
205 K8D-13-2	65	<4	1	27	35	<0.2	12.3	9	1.9	<0.5	9	1.8	39	5.3	2.6	<20	1	0.17	233	0.09	1.1
206 K8D-13-3	83	6	7	98	77	0.5	31.7	25	5.2	1.4	23	5	84	10.6	8.9	<20	7.6	1.15	563	0.2	2.4
207 K8D-14-3	346	36	60	382	1300	1.8	6640	470	80	12	460	26	539	93	75	92	38	5.81	1156	3.49	8.4
208 K8D-14-1	19	<4	1	8	47	0.3	19.7	18	2.8	<0.5	14	1.7	7	5.5	2	<20	1	0.14	225	0.15	1.1
209 K8D-14-2	50	4	2	10	56	0.5	23.7	18	3.4	<0.5	15	2	12	5.1	1.5	<20	1.6	0.27	360	0.09	1.2
210 K8D-14-3	332	26	13	30	219	1.3	185	95	14	1.6	56	8.2	62	4.1	12.4	<20	6.2	0.95	2300	0.71	2.5
211 K8D-14-4	299	22	9	23	179	1.1	83.4	74	11	1.3	47	6.1	42	14	4.7	<20	4.1	0.61	1473	0.51	1.9
212 K8D-15-1	26	8	8	63	115	0.3	51.5	44	7.9	1.7	42	5.3	86	10.4	12.5	<20	7.2	1.09	224	0.69	2

unit	Sn	W	Ta	Nb	Ce	Eu	La	Nd	Sm	Tb	Th	U	Y	Gd	Dy	Pr	Yb	Lu	Zr	TiO2	Sc
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
213 K89-15-2	56	34	24	46	588	<0.2	287	224	32	3.9	240	16	62	5.6	9.2	29	11.3	1.75	138	0.71	5.2
214 K89-15-3	31	7	7	177	90	<0.2	39.9	33	6.3	1.3	33	4.5	136	31.3	24	<20	7.2	1.08	622	2.62	1.6
215 K89-16-1	43	4	2	10	47	0.4	21.8	18	3	<0.5	12	2.7	14	4	1.2	<20	1.7	0.25	430	0.28	1.2
216 K89-16-2	52	7	3	14	68	0.6	31.5	25	4.3	0.7	17	3.2	22	5.2	3	<20	2.4	0.37	735	0.36	1.6
217 K89-16-3	133	21	10	17	169	1.2	82.8	66	13	1.4	42	7.3	33	2	4.4	<20	5.7	9	1179	0.36	3
218 K89-16-4	486	22	7	31	181	1.2	96.3	72	12	1.4	47	6.9	83	18.4	14	<20	4.5	0.71	3400	0.68	1.7




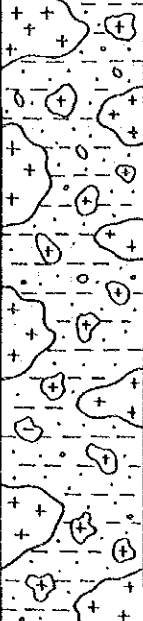
KBA - P01

Depth (m)	Column	Description	Sample No.	Depth (m)
0.2		<i>reddish brown coarse - grained granitic sand</i>	KBA-P01-1	0.6
0.3		<i>black humic silt with coarse - grained sand</i>		
0.6		<i>dark brown silt with fine - grained sand</i>		
1.5		<i>dark brown coarse - grained granitic sand with silt pebble size gravel containing 10 to 20%</i>	KBA-P01-2	1.0
			KBA-P01-3	1.5
			KBA-P01-4	2.0
3.8		<i>reddish brown to orange weathered granitic soil, sand and boulder weathered soft granitic boulder (10 to 30cm in diameter) containing 10 to 15% pebble to cobble gravel of granite, quartz vein, aplite is 20 to 30% matrix : orange silt with rich coarse - grained granitic sand</i>	KBA-P01-5	2.5
			KBA-P01-6	3.0
			KBA-P01-7	3.5
			KBA-P01-8	3.8
4.0		<i>white to gray weathered clayey meta - sediments</i>		4.0

At 3.80m in depth groundwater run out 5 liter/minute

Appendix 4 Column sketch of pit survey in Area A-1

KBA - P02

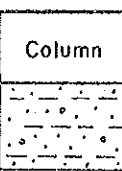


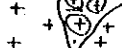
Depth (m)	Column	Description	Sample No.	Depth (m)
0.8		<i>brown silt rich coarse-grained sand with granite cobble</i>	KBA-P02-1	0.5
			KBA-P02-2	1.0
3.0		<i>granite boulder bed boulders : 60 to 100cm in diameter, the biggest one more than 1.5m matrix : red brown silt and granitic coarse-grained sand</i>	KBA-P02-3	1.5
			KBA-P02-4	2.0
			KBA-P02-5	2.5
			KBA-P02-6	3.0

KBA - P04

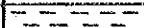
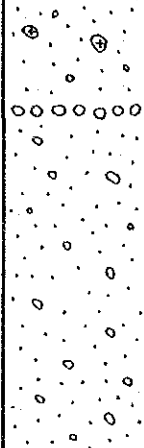
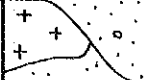


Depth (m)	Column	Description	Sample No.	Depth (m)
0.3		<i>dark brown sandy silt to sandy clay</i>	KBA-P04-1	
1.0		<i>dark reddish brown to brown sandy silt to sandy clay</i>		0.5
			KBA-P04-2	1.0
2.5		<i>reddish brown silt to fine sand with strong weathered granite pebble to cobble (less than 20% in volume) size of gravel is ranged from 5 to 50cm</i>	KBA-P04-3	1.5
			KBA-P04-4	2.0
			KBA-P04-5	2.5
3.8		<i>dark reddish brown to brown sandy silt with coarse-grained sand to granule size of granitic material</i>	KBA-P04-6	3.0
			KBA-P04-7	3.5
			KBA-P04-8	3.8
4.5		<i>reddish brown to bluish gray stiff sandy silt with abundant coarse quartz grain and granite material in granule size</i>	KBA-P04-9	4.5

At 3.8m groundwater exudes 5 to 10 litter/minute

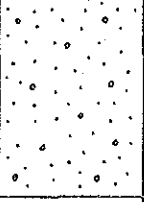

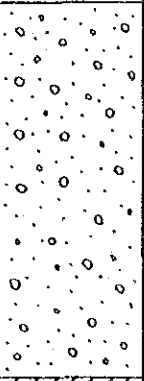
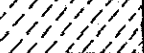
KBA - P03

Depth (m)	Column	Description	Sample No.	Depth (m)
0.3		<i>dark reddish brown to dark brown sandy silt and fine sand</i>	KBA-P03-1	0.3
1.6		<i>dark reddish brown clay to sandy clay with weathered granite in cobble to pebble size (5 to 30cm in diameter) which contained less than 30%</i>	KBA-P03-2	1.0
			KBA-P03-3	1.5
2.3		<i>granite boulder and gravel bed : weak to hard weathered granite boulders are contained less than 40% matrix : dark reddish brown sandy silt to sandy clay</i>	KBA-P03-4	2.0
			KBA-P03-5	2.3
2.5		<i>huge granite boulder</i>		2.5

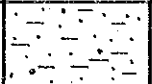

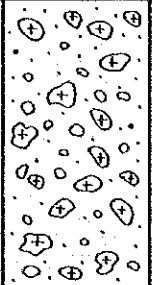
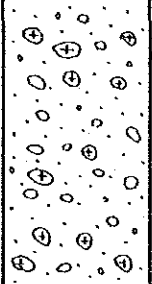
KBA - P05

Depth (m)	Column	Description	Sample No.	Depth (m)
0.1		<i>black fuming top soil</i>		0.1
1.7		<i>reddish brown to orange silty sand strong weathered granite pebbles 2 to 5 cm in diameter scattering at 0.50 m in depth weathered granite pebble bed existing</i>	KBA-P05-1	0.5
			KBA-P05-2	1.0
			KBA-P05-3	1.5
2.0		<i>two pieces of weathered granite boulder more than 1 m in size jutting out</i>	KBA-P05-4	2.0
		<i>gray to light gray medium to coarse-grained granitic sand, containing quartz feldspar and tourmaline grains, with hard weathered granite gravel</i>	KBA-P05-5	2.5
			KBA-P05-6	3.0
			KBA-P05-7	3.3
3.3		<i>below 3.40 m groundwater flows out slightly white to light brown sand &amp; gravel bed gravel: argillized granith and tourmaline quartz vein in 5 to 30 cm diameter matrix: coarse-grained sand with white clay (Kaolinite?)</i>		3.5
4.0			KBA-P05-8	4.0

KBA - P06

Depth (m)	Column	Description	Sample No.	Depth (m)
0.7		<i>reddish to light brown medium to coarse-grained sand composed quartz and feldspar</i>	KBA-P06-1	0.5
			KBA-P06-2	1.0
1.5		<i>gray to white clayey medium-grained sand composing quartz, feldspar and tourmaline</i>  <i>At 1.25m groundwater flows out about 20 liter/minute and below 1.5m 200 to 300 liter/minute</i>	KBA-P06-3	1.5
			KBA-P06-4	2.0
2.8		<i>white sand &amp; gravel bed</i> <i>gravel : pebble to cobble size composing granite, meta-sediments and quartz vein</i> <i>matrix : coarse-grained granitic sand with kaolinite</i>	KBA-P06-5	2.5
			KBA-P06-6	2.8
3.0		<i>white to light gray bed rock (argillized semi-schist)</i>		

KBA - P07





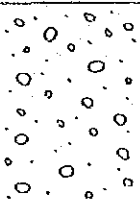
Depth (m)	Column	Description	Sample No.	Depth (m)
0.3		<i>light brown fine to medium-grained quartz rich sand with silt</i>	KBA-P07-1	0.3
1.0		<i>light brown boulder gravel bed gravel : subangular to angular non-weathered granite boulder in 3 to 70cm diameter (maximum size more than 1m) dominating more than 70% in volume matrix : light brown silt with coarse sand</i>	KBA-P07-2	1.0
2.0		<i>brown cobble to boulder gravel bed with silty sand weak to hard weathered granite gravel in 3 to 25cm diameter which slightly smaller than upper layer</i>	KBA-P07-3	1.5
			KBA-P07-4	2.0
3.0		<i>At 2.20m groundwater exudes less than 10 litter/minute light brown gravel and sand bed gravel is well rounded and smaller than upper layer all most of gravel are granite and 2 to 15cm in diameter matrix : medium to coarse - grained quartz-felspathic sand</i>	KBA-P07-5	2.5
			KBA-P07-6	3.0

KBA - P08

Depth (m)	Column	Description	Sample No.	Depth (m)
0.2		<i>dark brown fume silty sand</i>	KBA-P08-1	0.5
0.9		<i>reddish brown fine to medium-grained sand with silty and clay</i>		
1.5		<i>light brown silt with fine to medium sand</i>	KBA-P08-3	1.0
2.5		<i>white gravel bed commonly 1 to 15cm in size (maximum 20cm) well rounded gravel derived from quartz vein ⇒ aplite, granite, meta-sandstone and meta-slate</i>  <i>Below 2.3m groundwater rushes out about 500 liter/minute</i>	KBA-P08-4	2.0
3.0		<i>white coarse-grained sand bed composing almost quartz, feldspar and black minerals gravel is very rare in this bed</i>	KBA-P08-5	2.5
			KBA-P08-6	3.0



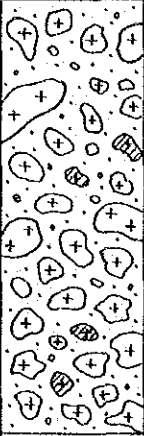
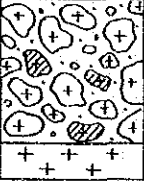
KBA - P09

Depth (m)	Column	Description	Sample No.	Depth (m)
0.2		<i>black fine-grained sand with humus</i>	KBA-P09-1	0.6
0.6		<i>reddish brown fine to medium-grained sand with silt</i>		
1.0		<i>light gray silt with fine-grained sand</i>	KBA-P09-2	1.0
1.8		<i>light gray silt and coarse-grained sand</i>	KBA-P09-3	1.5
		<i>Below 1.80m ground water and gravel flow out about 400 liter/minute</i>	KBA-P09-4	2.0
2.5		<i>gray to white gravel and sand bed gravel : granule to pebble size, well rounded, quartz vein, granite &gt; meta-sediments matrix : coarse-grained quartz rich sand</i>	KBA-P09-5	2.5

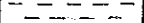

KBA - P10

Depth (m)	Column	Description	Sample No.	Depth (m)
0.1		<i>black silty top soil</i>		
		<i>dark reddish brown to reddish brown sandy silt to sand clay with coarse grained quartz sand</i>	KBA-P10-1	0.5
			KBA-P10-2	1.0
			KBA-P10-3	1.5
2.0			KBA-P10-4	2.0
		<i>reddish brown sandy silt to clay with strong weathered granite cobble less than 20% in volume</i>	KBA-P10-5	2.5
2.5				
		<i>brown to reddish brown very stiff sandy silt to silt with granite material in size of coarse-grained sand to granule</i>	KBA-P10-6	3.0
3.0				
		<i>light gray to yellowish brown medium- to fine-grained sand to clay with granule size of granite material (quartz, feldspar, tourmaline, etc)</i>	KBA-P10-7	3.5
			KBA-P10-8	4.0
			KBA-P10-9	4.5
5.0			KBA-P10-10	5.0
		<i>at 5.00m groundwater exudes from bottom of pit</i>		

KBA - P11

Depth (m)	Column	Description	Sample No.	Depth (m)
1.5		<i>dark brown to brown cobble to boulder gravel bed subrounded to subangular gravel in size of 3 to 40cm more than 75% in volume partly involving huge boulder more than 1.5m in diameter granite &gt; meta-sediments matrix : fine - to medium - grained sand derived from granite</i>	KBA-P11-1	0.5
			KBA-P11-2	1.0
			KBA-P11-3	1.5
2.0		<i>ditto gravels packed each other closer than upper layer huge granite boulder more than 2.5m in diameter covers at the bottom of 2m depth</i>	KBA-P11-4	2.0

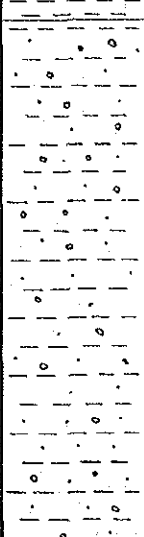

KBA - P12

Depth (m)	Column	Description	Sample No.	Depth (m)
0.1		<i>black top soil with humus</i>		
2.0		<i>dark brown cobble to boulder bed 3 to 60cm sized subangular granite gravel more than 70 to 80% in volume half of them turned into soften by strong weathering below 1m depth gravels packed closer than upper part matrix : silty clay and coarse-grained granitic sand</i>	KBA-P12-1	0.5
			KBA-P12-2	1.0
			KBA-P12-3	1.5
			KBA-P12-4	2.0






KBA - P13

Depth (m)	Column	Description	Sample No.	Depth (m)
0.2		<i>dark gray silt and fine-grained sand</i>		
			KBA-P13-1	0.5
			KBA-P13-2	1.0
1.2		← <i>At 1.10m groundwater flows out about 30 liter/minute</i>		
		<i>below 1.50m groundwater rushes out with gravel and sand about 400 liter/minute</i>	KBA-P13-3	1.5
2.0		<i>gray clay rich fine-grained sand with abundant of muscovite</i>	KBA-P13-4	2.0
			KBA-P13-5	2.5
2.5		<i>gray to white coarse-grained sand with cobble at sized granite and quartz gravel</i>		
3.0		<i>gray to white coarse-grained quartz rich sand with small amount of quartz and granite gravel</i>	KBA-P13-6	3.0

KBA - P14

Depth (m)	Column	Description	Sample No.	Depth (m)
0.1		<i>light brown top soil (sandy silt)</i>		
			KBA-P14-1	0.5
		<i>light brown to reddish brown sandy silt with coarse-grained granitic sand</i>	KBA-P14-2	1.0
			KBA-P14-3	1.5
			KBA-P14-4	2.0
2.0		<i>below 2.0m groundwater exudes less than 10litter/minute</i>		
			KBA-P14-5	2.5
		<i>grayish blue to light bluish gray partly reddish brown sandy silt with coarse-grained granitic sand some blocks of granitic gravel scattering between 2.00 to 2.40m these weathered granite gravels look like weathered bed rock in situ</i>	KBA-P14-6	3.0
3.0				

KBA-B01





Depth (m)	Column	Description	Sample No.	Volume of Sample (L)	Weight of Sample (g)	Sn (ppm)	W (ppm)	To (ppm)	Nb (ppm)	Cerium G (ppm)	Yttrium G (ppm)	Terbium G (ppm)	Total REE (ppm)	Th (ppm)	U (ppm)	Zr (ppm)	TiO <sub>2</sub> (%)
1.52		<i>brown soil with medium-grained sand</i>	KBA-801-1	11.1	55.6	138	25	67	342	1530.0	1339.7	105.1	2974.8	390.0	130.0	777.0	2.3
3.04		<i>brown clay with medium-grained sand</i>	KBA-801-2	8.9	37.1	224	31	86	482	1855.0	1815.6	149.1	3819.7	460.0	180.0	831.0	3.3
4.27		<i>brownish gray stiff clay with coarse-grained sand and rock fragments</i>	KBA-801-3	8.6	50.2	497	47	170	993	2276.0	2572.4	203.1	5051.5	590.0	360.0	1029.0	5.8
5.29		<i>gravel bed</i>	KBA-801-4	9.7	75.8	6000	75	510	2075	4300.0	4458.5	414.5	9173.0	1100.0	800.0	1070.0	13.0
		<i>gray shale</i>															

Appendix 5 Column sketch of drilling survey in Area A-1

KBA - B02

Depth (m)	Column	Description	Sample No.	Volume of Sample (L)	Weight of Sample (g)	Sn (ppm)	W (ppm)	Ta (ppm)	Nb (ppm)	Cerium G (ppm)	Yttrium G (ppm)	Terbium G (ppm)	Total REE (ppm)	Th (ppm)	U (ppm)	Zr (ppm)	TiO <sub>2</sub> (%)
1.52		<i>brown silt with medium-grained sand</i>	KBA-B02-1	10.9	40.2	199	100	120	654	3010.0	2543.7	232.2	5785.9	770.0	350.0	1136.0	3.0
2.74		<i>gray clay with medium-grained sand</i>	KBA-B02-2	9	40.6	135	53	110	520	2482.0	2466.1	204.2	5152.3	660.0	310.0	1180.0	2.5
4.27		<i>gravel bed</i>	KBA-B02-3	9.8	72.2	2200	120	490	2125	4001.0	4172.3	406.6	8579.9	1100.0	1100.0	1089.0	11.5
5.03		<i>greenish gray shale</i>	KBA-B02-4	5.9	60.2	3700	87	370	1410	2551.0	2668.0	237.6	5456.6	720.0	610.0	889.0	7.4

KBA - B03

Depth (m)	Column	Description	Sample No.	Volume of Sample (L)	Weight of Sample (g)	Sn (ppm)	W (ppm)	Ta (ppm)	Nb (ppm)	Cerium G (ppm)	Yttrium G (ppm)	Terbium G (ppm)	Total REE (ppm)	Th (ppm)	U (ppm)	Zr (ppm)	TiO <sub>2</sub> (%)
0.91		<i>brown soil with fine-grained sand</i>	KBA-B03-1	3.6	21.1	372	47	110	660	3253.0	2258.1	222.2	5733.3	830.0	390.0	1343.0	2.6
2.44		<i>gravel bed</i>	KBA-B03-2	17.8	193.4	10300	290	830	2808	7110.0	5876.0	613.1	13599.1	2200.0	2400.0	1758.0	14.0
3.96		<i>gray shale</i>	KBA-B03-3	20.4	134.4	25000	230	900	2952	5470.0	5153.4	554.0	11177.4	1700.0	2400.0	1558.0	13.7
5.18		<i>gray shale</i>	KBA-B03-4	15.2	78.4	26000	180	790	2449	4460.0	3981.8	403.6	8845.4	1100.0	1700.0	786.0	11.7



KBA - B04

Depth (m)	Column	Description	Sample No.	Volume of Sample (L)	Weight of Sample (g)	Sn (ppm)	W (ppm)	Ta (ppm)	Nb (ppm)	Cerium G (ppm)	Yttrium G (ppm)	Terbium G (ppm)	Total REE (ppm)	Th (ppm)	U (ppm)	Zr (ppm)	TiO <sub>2</sub> (%)
1.52	[diagram]	<i>brown soil with fine-grained sand</i>	KBA-B04-1	11.1	38.4	1900	83	210	837	4302.0	3691.3	316.0	8309.3	1100.0	420.0	1648.0	4.4
3.04	[diagram]	<i>gray stiff clay with medium-grained sand</i>	KBA-B04-2	16.4	37.5	1300	44	110	595	2483.0	2214.0	176.2	4874.1	630.0	240.0	1213.0	3.1
4.27	[diagram]	<i>brwnish gray stiff clay with coarse-grained sand &amp; rock fragment</i>	KBA-B04-3	6.1	39.5	6250	27	150	463	1678.0	1252.5	107.2	3037.7	370.0	160.0	606.0	2.4
5.18	[diagram]	<i>brownish gray shale</i>															

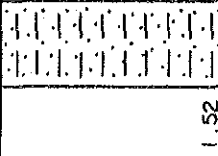
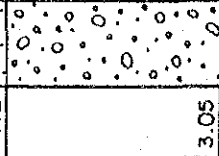
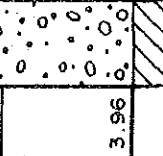
KBA - 805

Depth (m)	Column	Description	Sample No.	Volume of Sample (L)	Weight of Sample (g)	Sn (ppm)	W (ppm)	Ta (ppm)	Nb (ppm)	Cerium G (ppm)	Yttrium G (ppm)	Terbium G (ppm)	Total REE (ppm)	Th (ppm)	U (ppm)	Zr (ppm)	TiO <sub>2</sub> (%)
1.52		<i>brown soil with coarse-grained sand and rock fragment</i>	KBA-805-1	11.3	51.4	295	87	200	658	2568.0	1860.5	179.1	4607.0	680.0	550.0	792.0	1.8
3.05		<i>gravel bed</i>	KBA-805-2	7.3	71.2	2300	240	930	2728	5020.0	4936.1	491.7	10447.8	1500.0	2800.0	944.0	6.4
4.57			KBA-805-3	10.9	122.3	113000	160	770	1811	3607.0	3185.1	343.4	7135.5	1000.0	1200.0	1251.0	3.3
5.18			KBA-805-4	3	41.2	116000	240	660	1430	1619.0	1917.9	180.9	3717.8	540.0	570.0	772.0	6.0
5.79		<i>greenish gray shale</i>															

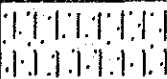


KBA-B06

Depth (m)	Column	Description	Sample No.	Volume of Sample (L)	Weight of Sample (g)	Sn (ppm)	W (ppm)	Ta (ppm)	Nb (ppm)	Cerium G (ppm)	Yttrium G (ppm)	Terbium G (ppm)	Total REE (ppm)	Th (ppm)	U (ppm)	Zr (ppm)	TiO <sub>2</sub> (%)
1.52		<i>brownish soil with coarse-grained sand and small amount of rock fragment</i>	KBA-B06-1	11	35.9	1700	99	260	652	1672.0	1642.2	130.8	3445.0	440.0	310.0	1061.0	7.5
3.05		<i>brownish gray stiff clay with fine-grained sand and lateritic soil</i>	KBA-B06-2	11.6	46.9	1500	47	140	482	993.0	869.7	74.1	1936.8	250.0	160.0	718.0	2.0
4.57		<i>brownish gray stiff clay with coarse-grained sand, rock fragment and lateritic soil</i>	KBA-B06-3	9.9	50.8	4700	74	210	608	1308.0	1154.3	96.3	2558.6	320.0	230.0	492.0	2.5
5.64		<i>brownish gray weathered shale</i>	KBA-B06-4	3.6	30.7	4700	48	160	489	939.0	869.4	70.0	1878.4	240.0	190.0	639.0	1.8

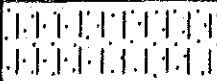
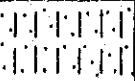

KBA - B07

Depth (m)	Column	Description	Sample No.	Volume of Sample (L)	Weight of Sample (g)	Sn (ppm)	W (ppm)	To (ppm)	Nb (ppm)	Cerium G (ppm)	Yttrium G (ppm)	Terbium G (ppm)	Total REE (ppm)	Th (ppm)	U (ppm)	Zr (ppm)	TiO <sub>2</sub> (%)
1.52		<i>brown soil with coarse-grained sand</i>	KBA-807-1	10.6	55.1	782	61	170	800	2704.0	2504.5	216.3	5424.8	740.0	430.0	1098.0	3.4
3.05		<i>gravel bed</i>	KBA-807-2	9.5	38.7	16900	160	820	2425	4130.0	4097.2	391.9	8619.1	1100.0	1500.0	1104.0	10.8
3.96		<i>gray weathered shale</i>	KBA-807-3	10.4	191.7	16000	200	910	2565	5160.0	5142.2	544.6	10846.8	1400.0	1700.0	1555.0	13.7

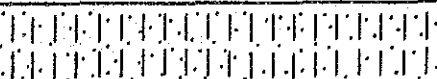
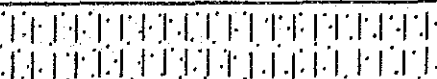
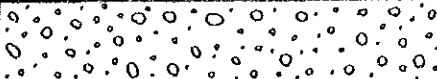
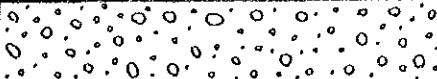

KBA - B08

Depth (m)	Column	Description	Sample No.	Volume of Sample (g)	Weight of Sample (g)	Sn (ppm)	W (ppm)	Ta (ppm)	Nb (ppm)	Cerium G (ppm)	Yttrium G (ppm)	Terbium G (ppm)	Total REE (ppm)	Th (ppm)	U (ppm)	Zr (ppm)	TiO <sub>2</sub> (%)
1.22		<i>brown soil with medium-grained sand</i>	KBA- B08-1	10.2	49.2	286	100	160	788	3460.0	2859.1	258.3	6577.4	930.0	480.0	1176.0	3.2
2.74		<i>gravel bed (dense)</i>	KBA-1 B08-2	17.3	86.7	2400	150	590	2092	4220.0	4316.9	415.5	8952.4	1200.0	1500.0	1197.0	10.2
3.05		<i>gray weathered shale</i>	KBA- B08-3	3.7	93.8	12000	130	520	1934	3810.0	3727.0	404.3	7941.3	1000.0	300.0	1485.0	8.8





KBA - B09

Depth (m)	Column	Description	Sample No.	Volume of Sample (L)	Weight of Sample (g)	Sn (ppm)	W (ppm)	Ta (ppm)	Nb (ppm)	Cerium G (ppm)	Yttrium G (ppm)	Terbium G (ppm)	Total REE (ppm)	Th (ppm)	U (ppm)	Zr (ppm)	TiO <sub>2</sub> (%)
1.52		<i>brown soil with medium-grained sand</i>	KBA-B09-1	8.9	37.1	453	73	140	735	4011.0	3177.0	296.3	7484.3	1100.0	400.0	2058.0	3.4
2.44																	
3.96		<i>gravel bed</i>	KBA-B09-3	12.2	79.5	35000	220	870	2450	5870.0	5002.2	502.7	11374.9	1600.0	1800.0	1533.0	12.1
4.42																	
		<i>brownish gray weathered shale</i>	KBA-B09-4	4.9	58.4	47000	110	440	1294	3515.0	2827.6	267.2	6609.8	960.0	670.0	1319.0	5.8

KBA - B10

Depth (m)	Column	Description	Sample No.	Volume of Sample (L)	Weight of Sample (g)	Sn (ppm)	W (ppm)	Ta (ppm)	Nb (ppm)	Cerium G (ppm)	Yttrium G (ppm)	Terbium G (ppm)	Total REE (ppm)	Th (ppm)	U (ppm)	Zr (ppm)	TiO <sub>2</sub> (%)
1.52		<i>brown soil with medium-grained sand</i>	KBA-B10-1	10.2	37.1	1200	82	160	832	3360.0	3116.4	268.3	6744.7	890.0	490.0	1304.0	3.5
3.05																	
4.57		<i>gravel bed</i>	KBA-B10-3	11	43.3	6200	93	340	1347	5540.0	4922.3	502.6	10964.0	1400.0	1000.0	2198.0	5.9
6.10																	
6.10		<i>weathered shale</i>	KBA-B10-4	9.1	46.2	36000	91	440	1784	3390.0	3433.0	312.7	7135.7	960.0	540.0	1607.0	9.6

KBA-B11







Depth (m)	Column	Description	Sample No.	Volume of Sample (L)	Weight of Sample (g)	Sn (ppm)	W (ppm)	Ta (ppm)	Nb (ppm)	Cerium G (ppm)	Yttrium G (ppm)	Terbium G (ppm)	Total REE (ppm)	Th (ppm)	U (ppm)	Zr (ppm)	TiO <sub>2</sub> (%)
1.22		<i>brown soil with fine-grained sand</i>	KBA-B11-1	10.1	64.8	2600	230	500	1542	15150.0	8565.0	1186.3	24921.3	4300.0	22200.0	6066.0	6.6
2.13		<i>medium-grained sand with brown soil</i>	KBA-B11-2	5.9	71.6	9000	240	520	1675	12310.0	6553.4	871.2	19734.6	2800.0	1800.0	2882.0	7.4
3.20		<i>gravel bed</i>	KBA-B11-3	16.9	256.2	46000	220	800	2204	6060.0	4971.3	532.1	11563.4	1700.0	1800.0	1453.0	10.1
		<i>weathered shale</i>															



KBA-B12

Depth (m)	Column	Description	Sample No.	Volume of Sample (L)	Weight of Sample (g)	Sn (ppm)	W (ppm)	Ta (ppm)	Nb (ppm)	Cerium G (ppm)	Yttrium G (ppm)	Terbium G (ppm)	Total REE (ppm)	Th (ppm)	U (ppm)	Zr (ppm)	TiO <sub>2</sub> (%)															
1.22		<i>brown stiff clay with lateritic soil and fine-grained sand</i>	KBA-B12-1	8.4	23.7	2500	26	48	141	725.0	423.4	40.4	1188.8	160.0	39.0	1088.0	0.7															
2.74																		<i>lateritic soil with coarse-grained sand</i>	KBA-B12-2	7.7	29.3	1300	16	35	90	158.6	17.4	500.4	69.0	23.0	788.0	0.4
4.27																																
5.79																																

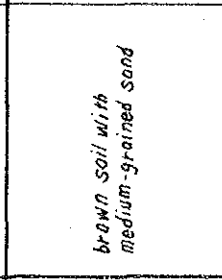
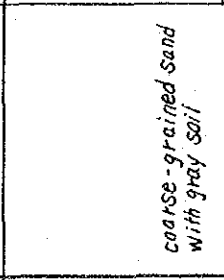
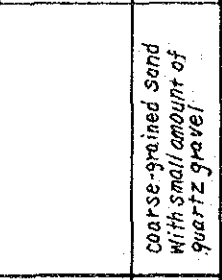
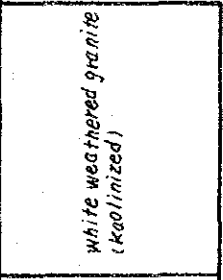
KBA - B13

Depth (m)	Column	Description	Sample No.	Volume of Sample (L)	Weight of Sample (g)	Sn (ppm)	W (ppm)	Ta (ppm)	Nb (ppm)	Cerium G (ppm)	Yttrium G (ppm)	Terbium G (ppm)	Total REE (ppm)	Th (ppm)	U (ppm)	Zr (ppm)	TiO <sub>2</sub> (%)
1.72		<i>brown soil with fine-grained sand</i>	KBA-B13-1	9.2	33.7	2200	64	150	397	1287.0	952.8	92.1	2321.9	290.0	78.0	1239.0	2.3
2.74		<i>grey clay with coarse-grained sand</i>	KBA-B13-2	10.8	37.9	1400	64	140	408	922.0	798.2	67.7	1787.9	210.0	54.0	740.0	2.6
4.26		<i>brown stiff clay with small amount of coarse-grained sand</i>	KBA-B13-3	15.5	47.2	2000	51	120	321	822.0	701.2	55.6	1578.8	180.0	45.0	642.0	1.9
5.79		<i>reddish brwn stiff clay</i>	KBA-B13-4	9.8	39.3	15000	67	310	450	1177.0	675.4	65.7	1918.1	240.0	51.0	578.0	1.3
6.71		<i>gravel bed with some of quartz</i>	KBA-B13-5	4.6	48.6	116000	210	1600	1824	2810.0	1819.0	211.3	4840.3	710.0	140.0	1212.0	3.6
		<i>brown weathered shale</i>															

KBA-B14

Depth (m)	Column	Description	Sample No.	Volume of Sample (L)	Weight of Sample (g)	Sn (ppm)	W (ppm)	Ta (ppm)	Nb (ppm)	Cerium G (ppm)	Yttrium G (ppm)	Terbium G (ppm)	Total REE (ppm)	Th (ppm)	U (ppm)	Zr (ppm)	TiO <sub>2</sub> (%)
1.22		medium-grained sand with brown soil	KBA-814-1	11.4	30	2500	100	200	634	1904.0	1297.7	111.2	3312.9	400.0	110.0	1340.0	2.9
2.74		coarse-grained sand with gray stiff clay	KBA-814-2	14.9	31.5	3800	130	310	884	2388.0	1842.8	156.1	4386.9	540.0	150.0	2083.0	3.7
4.27		grayish brown stiff clay with coarse-grained sand	KBA-814-3	10.3	17.9	3800	69	130	374	1022.0	680.0	61.7	1763.7	220.0	55.0	1021.0	1.7
5.79			KBA-814-4	8.7	21.9	5000	40	85	252	471.0	335.9	31.7	838.6	98.0	23.0	416.0	1.3
7.01		brownish gray stiff clay	KBA-814-5	6.3	34.7	105000	280	410	497	1042.0	535.0	60.7	1637.7	220.0	51.0	438.0	1.3
7.47		gravel bed containing quartz and rock fragment	KBA-814-6	5.2	77.9	110000	220	400	544	1367.0	677.4	75.4	2139.8	280.0	57.0	729.0	1.5
8.53		greenish gray weathered shale															

KBA - B15

Depth (m)	Column	Description	Sample No.	Volume of Sample (L)	Weight of Sample (g)	Sn (ppm)	W (ppm)	Ta (ppm)	Nb (ppm)	Cerium G (ppm)	Yttrium G (ppm)	Terbium G (ppm)	Total REE (ppm)	Th (ppm)	U (ppm)	Zr (ppm)	TiO <sub>2</sub> (%)	
1.52		<i>brown soil with medium-grained sand</i>	KBA-B15-1	10	33.7	2000	63	100	322	902.0	646.6	59.7	1608.3	200.0	56.0	780.0	1.9	
3.05		<i>coarse-grained sand with gray soil</i>	KBA-B15-2	10.7	63.3	60000	250	710	1644	4710.0	2708.8	328.4	7747.2	990.0	220.0	27660	5.2	
3.96		<i>coarse-grained sand with small amount of quartz gravel</i>	KBA-B15-3	4.9	33.5	29000	130	280	714	2104.0	1360.9	137.7	3602.6	460.0	98.0	1524.0	2.4	
4.57		<i>white weathered granite (kaolinized)</i>	KBA-B15-4	6.2	41.8	41000	150	290	802	2665.0	1368.4	160.1	4193.5	650.0	100.0	2543.0	3.2	
6.10																		

KBD - 01

Depth (m)	Column	Description	Sample No.	Volume of Sample (g)	Weight of Sample (g)	Sn (ppm)	W (ppm)	To (ppm)	Nb (ppm)	Cerium G (ppm)	Yttrium G (ppm)	Terbium G (ppm)	Total REE (ppm)	Th (ppm)	U (ppm)	Zr (ppm)	TiO <sub>2</sub> (%)	
1.22	.....	<i>brown soil with some of fine-grained sand</i>	KBD-01-1	34.0	3.5	78	59	300	65	56800	15960	1861	74621	9900	1100	6800	5.99	
	.....	<i>reddish brown clay with some of lateritic soil</i>																
	.....																	
	.....																	
	.....																	
	.....																	
	.....																	
	.....																	
	.....																	
5.48	.....	<i>medium-grained sand and lateritic soil</i>																
6.71	.....	<i>medium-grained sand with reddish brown soil</i>																
10.36	.....																	
10.67	++++	<i>kaolinized granite</i>																

Appendix 6 Column sketch of drilling survey in Area D-1

KBD - 02

Depth (m)	Column	Description	Sample No.	Volume of Sample (L)	Weight of Sample (g)	Sn (ppm)	W (ppm)	Ta (ppm)	Nb (ppm)	Cerium G (ppm)	Yttrium G (ppm)	Terbium G (ppm)	Total REE (ppm)	Th (ppm)	U (ppm)	Zr (ppm)	TiO <sub>2</sub> (%)
1.52		gray clay	KBD -02-1	17.2	12	156	250	340	1531	15750	6376.1	998.1	23114.2	3300	350	5300	19.13
3.04		brownish gray stiff clay with medium-grained sand															
5.79		brownish gray stiff clay	KBD -02-2	29.3	9	122	73	140	125	5080	3498.2	274.7	8852.9	1000	120	1700	8.41
7.31		gray clay with medium-grained sand and some of small gravel	KBD -02-3	26.1	7	905	410	890	201	13030	7603	831.7	21464.7	2800	340	4700	32.68
8.84		gray clay															
10.34		gray clay with medium-grained sand and some of small gravel	KBD -02-4	13.7	8	2700	330	720	285	31600	11519	1925.9	45044.9	6500	870	6200	27.22
14.02		gray clay	KBD -02-5	23.7	7	2900	240	620	297	42600	13680	2336.2	58616.2	10000	950	5700	19.91
14.33		white weathered granite	—														

KBD - 03

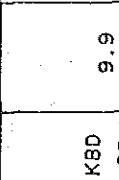
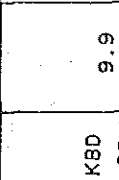
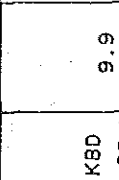
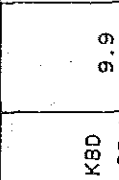
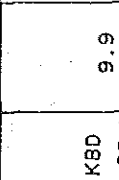
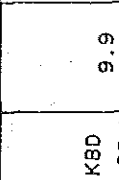
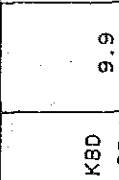
Depth (m)	Column	Description	Sample No.	Volume of Sample (L)	Weight of Sample (g)	Sn (ppm)	W (ppm)	Ta (ppm)	Nb (ppm)	Cerium G (ppm)	Yttrium G (ppm)	Terbium G (ppm)	Total REE (ppm)	Th (ppm)	U (ppm)	Zr (ppm)	TiO <sub>2</sub> (%)
1.52		brownish soil with some of fine-grained sand	KBD -03-1	15.3	40.5	-5	-4	6	24	1026	139.38	25.2	1190.58	170	22	87	0.96
4.57		gray soil with some of fine-grained sand	KBD -03-2	8.9	36.5	16	-4	10	30	1393	191.65	38.5	1623.15	190	16	147	0.86
5.79		brownish gray stiff clay with some of lateritic soil	KBD -03-3	11.3	6	850	300	400	125	21990	7395	1228.5	30613.5	4500	440	4450	19.48
7.31		gray soil with medium-grained sand															
8.84		gray soil with medium-grained sand and some of small quartz gravel															
10.34		medium-grained sand with some of gray soil	KBD -03-4	41.1	8.5	2600	220	760	305	45000	14901	2524.7	62425.7	10000	1000	5830	13.2
12.80		gravel bed with some of quartz															
12.95		Schistose meta-sediments															

KBD - 04

Depth (m)	Column	Description	Sample No.	Volume of Sample (L)	Weight of Sample (g)	Sn (ppm)	W (ppm)	To (ppm)	Nb (ppm)	Cerium G (ppm)	Yttrium G (ppm)	Terbium G (ppm)	Total REE (ppm)	Th (ppm)	U (ppm)	Zr (ppm)	TiO <sub>2</sub> (%)
3.05		<i>gray mud with some of fine-grained sand</i>	KBD -04-1	10.4	16	31	10	13	70	486	146.1	24.4	656.5	96	11	226	0.82
5.79																	
7.31		<i>gray clay with medium-grained sand</i>	KBD -04-3	5.2	40	32	15	22	123	712	250.31	32.5	994.81	140	16	376	1.46
10.34																	
11.88		<i>brownish gray stiff clay with lateritic soil</i>	KBD -04-4	19.7	44	866	52	88	401	4000	1271	202.3	5473.3	840	77	7300	5.69
12.95																	
		<i>medium-grained sand with grey clay</i>	KBD -04-5	6.8	28.3	2100	54	120	283	3133	808.69	125.8	4067.49	540	56	10600	3.77
		<i>gravel bed with some of quartz gravel</i>	KBD -04-6	10	43	3100	39	140	239	4917	712.47	169	5798.47	1200	76	6500	2.71
		<i>brown weathered granite</i>															



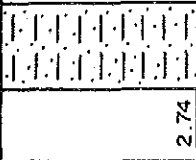
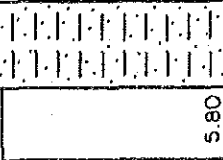
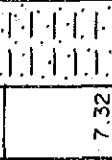
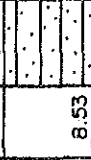




KBD - 05

Depth (m)	Column	Description	Sample No.	Volume of Sample (L)	Weight of Sample (g)	Sn (ppm)	W (ppm)	Ta (ppm)	Nb (ppm)	Cerium G (ppm)	Yttrium G (ppm)	Terbium G (ppm)	Total REE (ppm)	Th (ppm)	U (ppm)	Zr (ppm)	TiO <sub>2</sub> (%)
3.05		<i>brownish gray mud with small amount of fine-grained sand</i>	KBD-05-1	9.9	7	15	13	17	80	540	108.53	22.7	671.23	110	8.9	211	1.4
5.79			KBD-05-2	7.7	11	67	18	29	119	593	159.85	21.8	774.65	110	13	389	1.49
8.84		<i>brownish gray stiff clay with small amount of lateritic soil</i>	KBD-05-3	14.4	23	133	39	60	267	1438	446.5	52.9	1937.4	270	33	1325	3.14
10.36			KBD-05-4	6.1	21	80	25	32	140	1342	223.6	45.9	1611.5	220	24	852	1.89
11.89		<i>gray clay with medium grained sand</i>	KBD-05-5	5.9	40.5	753	56	78	314	2982	1008.9	123.1	4114	550	59	2700	3.61
12.50			KBD-05-6	5.1	30.2	3900	53	110	320	2399	906.94	124.5	3430.44	490	49	5300	3.09
		<i>brown weathered granite</i>															

KBD - 06

Depth (m)	Column	Description	Sample No.	Volume of Sample (L)	Weight of Sample (g)	Sn (ppm)	W (ppm)	To (ppm)	Nb (ppm)	Cerium G (ppm)	Yttrium G (ppm)	Terbium G (ppm)	Total REE (ppm)	Th (ppm)	U (ppm)	Zr (ppm)	TiO <sub>2</sub> (%)
2.74		gray mud with fine-grained sand	KBD -06-1	9.3	40	96	4	5	29	269.4	76.23	7.5	353.13	47	5.5	829	0.54
4.27			KBD -06-2	7.5	26.8	103	-4	5	24	250.1	69.16	7.9	327.16	46	5	873	0.48
7.32		brownish gray soil with fine-grained sand	KBD -06-3	18	49	772	19	30	89	1673	10675.58	65.7	12414.28	250	28	270	1.88
8.84			KBD -06-4	4.6	31	799	32	40	127	1670	8278.01	69.4	10017.41	270	28	287	2.62
10.06		brownish gray clay with coarse-grained sand and small amount of small quartz	KBD -06-5	18.9	68	528	22	63	187	4200	3093.39	162.7	7456.09	1000	65	819	2.25
	+	brown weathered granite															

KBD - 07

Depth (m)	Column	Description	Sample No.	Volume of Sample (g)	Weight of Sample (g)	Sn (ppm)	W (ppm)	To (ppm)	Nb (ppm)	Cerium G (ppm)	Yttrium G (ppm)	Terbium G (ppm)	Total REE (ppm)	Th (ppm)	U (ppm)	Zr (ppm)	TiO <sub>2</sub> (%)
2.74			KBD -07-1	6	6.5	55	7	7	88	303.8	90.45	18	412.25	54	5.3	273	0.63
5.80		<i>gray mud with fine-grained sand</i>	KBD -07-2	6.6	19.5	104	16	24	114	555	176.8	27.4	759.2	110	10	555	1.41
7.32			KBD -07-3	6.4	18.5	48	10	11	62	302.2	96.48	10.2	408.88	52	9.9	333	0.74
8.53		<i>gray clay with medium-grained sand</i>	KBD -07-4	8.1	17.5	280	53	78	489	2513	888.92	109.6	3511.52	470	39	2300	5.5
10.06			KBD -07-5	10.4	26	2300	64	120	462	2719	957.65	115.1	3791.75	450	46	8700	5.6
11.58		<i>coarse grained sand with gray soil</i>	KBD -07-6	10.3	38.5	5700	70	230	446	2350	888.6	104.6	3343.2	360	41	7900	3.06
13.11		<i>gravel bed (quartz)</i>	KBD -07-7	13.3	55	7100	61	190	388	2443	739.3	106.5	3288.8	490	43	6400	2.78
		<i>white weathered granite</i>															

KBD - 08

Depth (m)	Column	Description	Sample No.	Volume of Sample (L)	Weight of Sample (g)	Sn (ppm)	W (ppm)	To (ppm)	Nb (ppm)	Cerium G (ppm)	Yttrium G (ppm)	Terbium G (ppm)	Total REE (ppm)	Th (ppm)	U (ppm)	Zr (ppm)	TiO <sub>2</sub> (%)
2.74		<i>gray mud with fine-grained sand</i>	KBD -08-1	6	16.8	56	-4	2	3	1067	620.49	61.1	1748.59	230	39	440	0.28
5.79		<i>bramish gray clay with coarse-grained sand</i>	KBD -08-2	14.2	48	57	-4	4	-2	2292	1520.1	164.3	3976.4	510	97	1109	0.27
7.31			KBD -08-3	12.7	41	10	-4	-1	18	3367	984.56	137.7	4489.26	700	63	1386	0.48
8.23		<i>Schistose meta-sediment</i>	—														



KBD - 10

Depth (m)	Column	Description	Sample No.	Volume of Sample (L)	Weight of Sample (g)	Sn (ppm)	W (ppm)	Ta (ppm)	Nb (ppm)	Cerium G (ppm)	Yttrium G (ppm)	Terbium G (ppm)	Total REE (ppm)	Th (ppm)	U (ppm)	Zr (ppm)	TiO <sub>2</sub> (%)
2.74		gray very fine silty clay	KBD -10-1	12	46	25	9	10	72	2130	324.27	65.9	2520.17	470	32	576	1.67
5.79		gray sand clay with small gravel	KBD -10-2	9.7	120	10	10	12	99	2322	385.03	77.1	2784.13	510	42	438	2.19
7.32		brownish gray clay	KBD -10-3	10.4	115	17	-4	13	80	3191	434.28	92	3717.28	720	53	682	2.05
8.84		gray sandy clay with quartz fragment	KBD -10-4	12.1	205	22	6	22	115	8320	1262.97	323.5	9906.47	2000	150	1202	3.12
10.36		brownish gray stiff clay	KBD -10-5	7.6	64	19	19	19	103	6380	1205.55	230.3	7815.85	1600	110	873	2.77
		brownish gray shale															

KBD - 11

Depth (m)	Column	Description	Sample No.	Volume of Sample (g)	Weight of Sample (g)	Sn (ppm)	W (ppm)	Ta (ppm)	Nb (ppm)	Cerium G (ppm)	Yttrium G (ppm)	Terbium G (ppm)	Total REE (ppm)	Th (ppm)	U (ppm)	Zr (ppm)	TiO <sub>2</sub> (%)
2.74		gray clay with very fine-grained sand	KBD -11-1	6.4	41.5	26	31	44	235	1080	468.13	43.8	1591.93	200	27	375	2.08
			KBD -11-2	8.2	71	31	25	37	173	1080	894.6	78.3	2052.9	190	37	300	1.89
5.79		brownish gray clay with medium-grained sand	KBD -11-3	8.9	57	95	48	71	404	1425	1716.4	132.7	3274.1	280	48	639	3.71
			KBD -11-4	8.7	125	32	27	48	206	1535	2079.9	163.1	3778	260	57	360	1.47
8.84	+	brownish gray coarse sandy clay with quartz fragment															
	+	weathered granite															

KBD - 12

Depth (m)	Column	Description	Sample No.	Volume of Sample (g)	Weight of Sample (g)	Sn (ppm)	W (ppm)	Ta (ppm)	Nb (ppm)	Cerium G (ppm)	Yttrium G (ppm)	Terbium G (ppm)	Total REE (ppm)	Th (ppm)	U (ppm)	Zr (ppm)	TiO <sub>2</sub> (%)
2.74		gray mud with some of fine-grained sand	KBD -12-1	6.4	34.8	45	20	29	149	798	736.93	56.7	1591.63	150	23	339	1.36
5.49		gray mud with some of coarse-grained sand	KBD -12-2	5.9	105	29	8	10	63	455.5	282.91	21.1	759.51	83	10	186	0.68
8.53		gray clay with some of coarse-grained sand	KBD -12-3	11.4	41.2	32	-4	10	88	416.8	86.94	10	515.74	82	6	230	0.66
9.75	+ + +	brown weathered granite or residual soil	KBD -12-4	3.3	104	25	9	15	122	992	185.18	35.2	1212.38	160	11	325	1.11
	+ +	white weathered kaolinized granite															



KBD -13

Depth (m)	Column	Description	Sample No.	Volume of Sample (L)	Weight of Sample (g)	Sn (ppm)	W (ppm)	Ta (ppm)	Nb (ppm)	Cerium G (ppm)	Yttrium G (ppm)	Terbium G (ppm)	Total REE (ppm)	Th (ppm)	U (ppm)	Zr (ppm)	TiO <sub>2</sub> (%)	
2.74		gray clay with very fine-grained sand	KBD -13-1	7.2	21.5	39	5	3	19	105.8	39.42	5.5	150.72	17	3.3	383	0.31	
5.79		gray clay	KBD -13-2	8.2	6	65	-4	1	27	63.2	43.87	5.5	112.57	9	1.8	233	0.09	
7.32		gray clay with medium-grained sand	KBD -13-3	4.6	9	83	6	7	98	143.9	104.05	12.5	260.45	23	5	563	0.2	
9.75		brownish gray silty clay with calc-se-grained sand, iron Concretion strong	KBD -13-4	12.4	28	346	36	60	382	8588	666.21	106.8	9361.01	460	26	1156	3.49	
	+	brownish gray weathered granite																
	+																	

KBD - 14

Depth (m)	Column	Description	Sample No.	Volume of Sample (L)	Weight of Sample (g)	Sn (ppm)	W (ppm)	Ta (ppm)	Nb (ppm)	Cerium G (ppm)	Yttrium G (ppm)	Terbium G (ppm)	Total REE (ppm)	Th (ppm)	U (ppm)	Zr (ppm)	TiO <sub>2</sub> (%)
2.74		<i>gray mud with some of fine-grained sand</i>	KBD -14-1	6.1	25.5	19	-4	1	8	92.5	11.24	5.9	109.64	14	1.7	225	0.15
5.79			KBD -14-2	9.2	27	50	4	2	10	106.1	16.57	5.7	128.37	15	2	360	0.09
8.84		<i>gray mud with some of medium-to coarse-grained sand</i>	KBD -14-3	7.5	80	332	26	13	30	428	84.05	7	519.05	56	8.2	2300	0.71
9.75			KBD -14-4	3.1	62	299	22	9	23	352.4	53.31	16.4	422.11	47	6.1	1473	0.51
	+	granite															
	+																

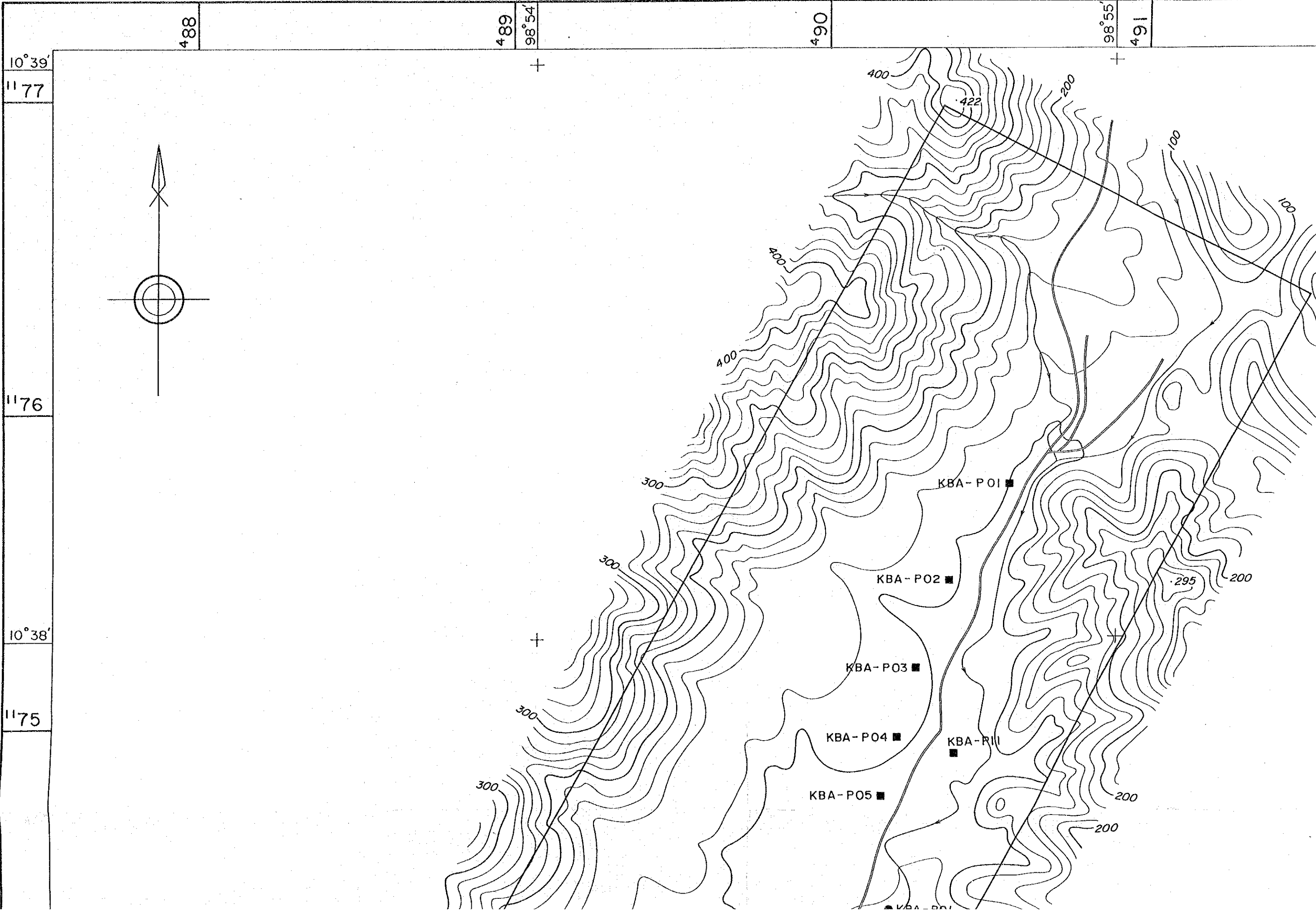
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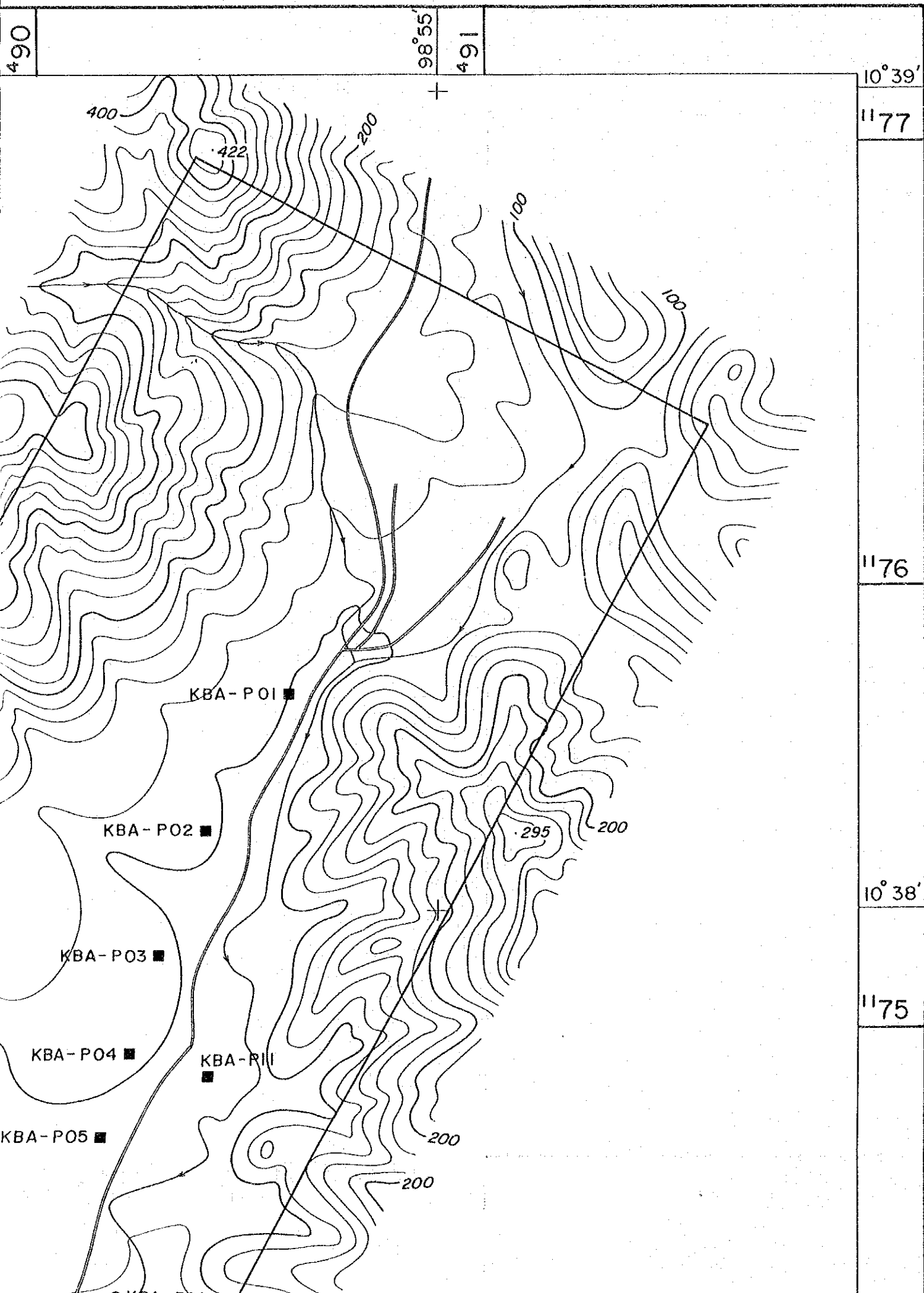
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2.74		<i>gray mud with some of fine-grained sand</i>	KBD -15-1	7.3	46	26	8	8	63	223.4	108.79	12.4	344.59	42	5.3	224	0.69
5.79			KBD -15-2	6.4	66	56	34	24	46	1170	90.45	9.6	1270.05	240	16	138	0.71
7.01		<i>brownish gray hard stiff clay with some of coarse-grained sand</i> <i>white weathered granite</i>	KBD -15-3	11.6	73	31	7	7	177	174.2	169.88	32.7	376.78	33	4.5	622	2.62

KBD - 16

Depth (m)	Column	Description	Sample No.	Volume of Sample (g)	Weight of Sample (g)	Sn (ppm)	W (ppm)	Ta (ppm)	Nb (ppm)	Cerium G (ppm)	Yttrium G (ppm)	Terbium G (ppm)	Total REE (ppm)	Th (ppm)	U (ppm)	Zr (ppm)	TiO <sub>2</sub> (%)
2.74		<i>gray mud with some of fine-grained sand</i>	KBD -16-1	7.2	101	43	4	2	10	94.8	18.35	4.5	117.65	12	2.7	430	0.28
5.79			KBD -16-2	6.3	88	52	7	3	14	133.8	29.37	6.5	169.67	17	3.2	735	0.36
8.84		<i>gray mud with some of fine-grained sand and shell</i>	KBD -16-3	5.9	108	133	21	10	17	335.8	55.1	4.6	395.5	42	7.3	1179	0.36
13.41			KBD -16-4	13.2	57	406	22	7	31	366.3	103.91	21	491.21	47	6.9	3400	0.68
	+	<i>brown granite</i>															



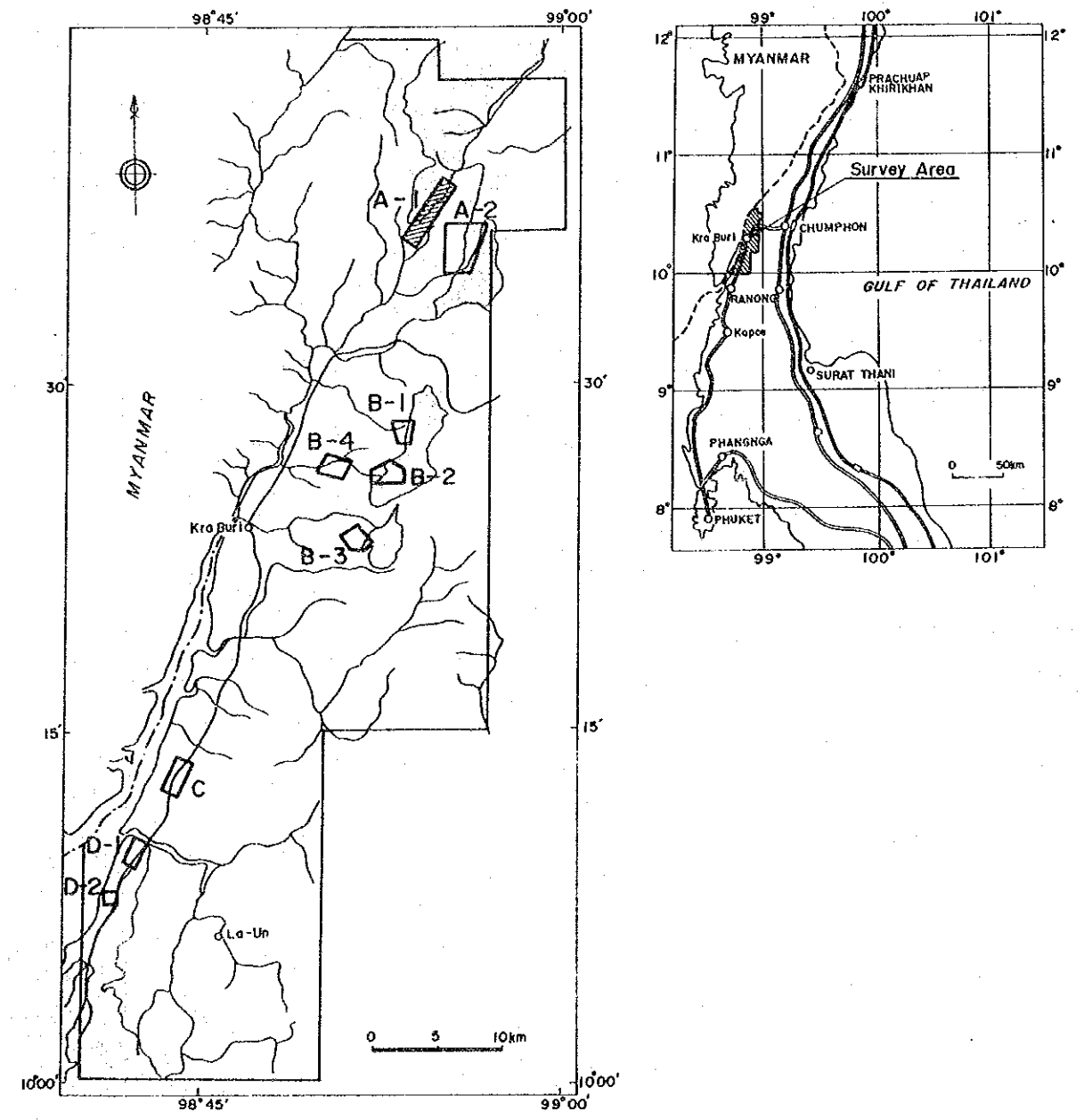




PL - 1

MINERAL EXPLORATION  
OF  
THE KRA BURI AREA, THAILAND  
PHASE III  
LOCALITY MAP OF PIT, DRILLING SURVEY IN AREA A-1

Scale 1 : 10,000



JAPAN INTERNATIONAL COOPERATION AGENCY  
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Nov. 1993

10°38'

1175

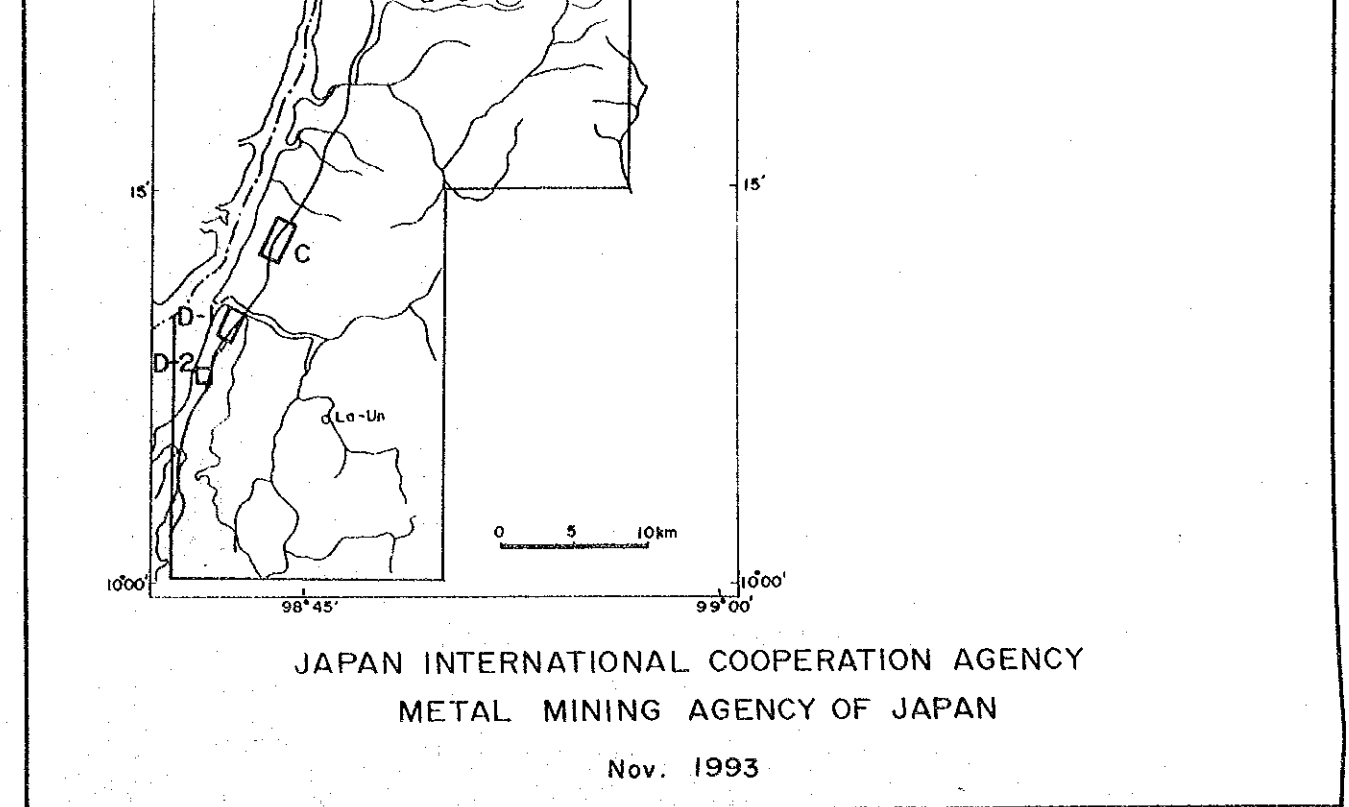
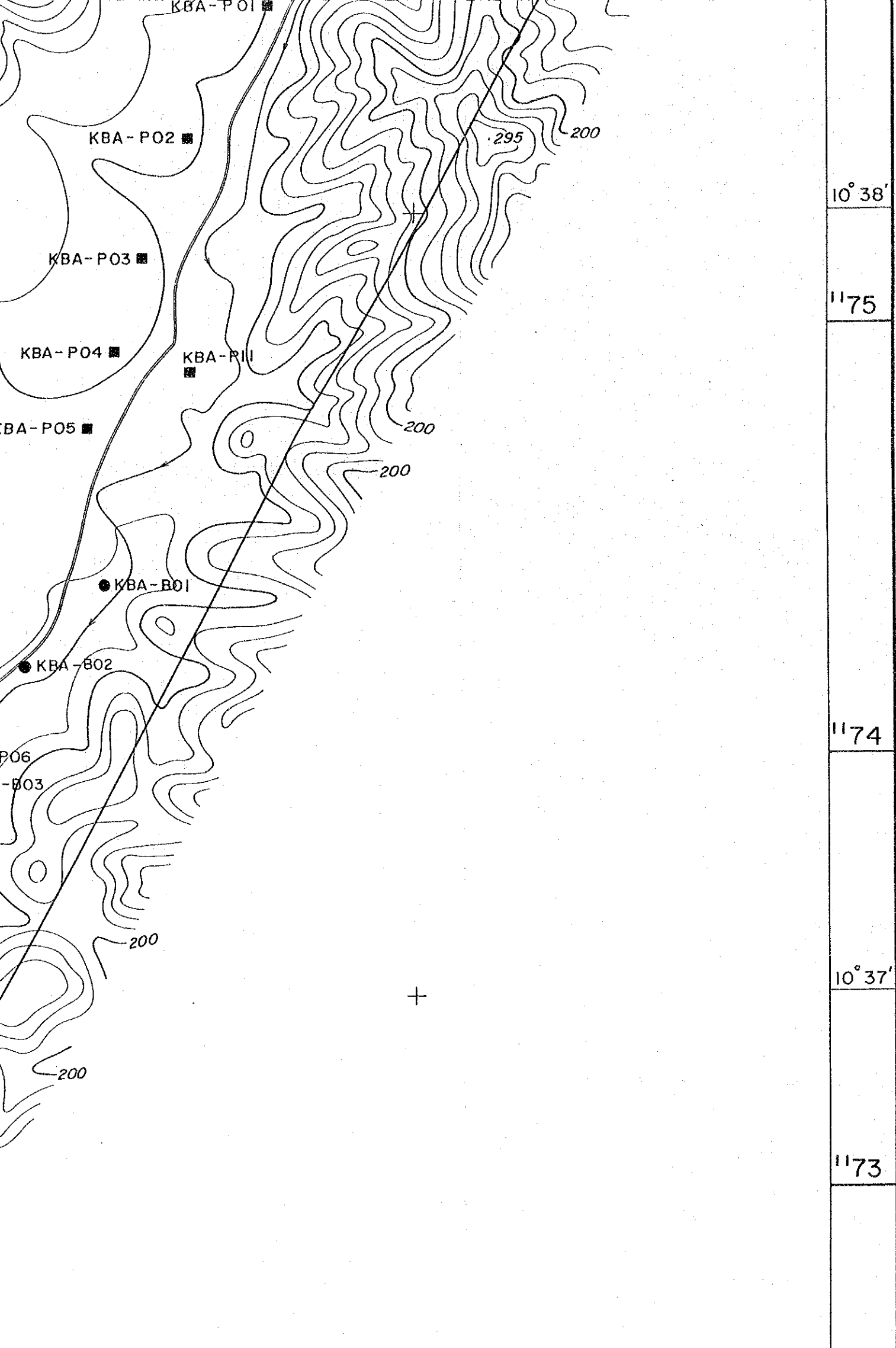
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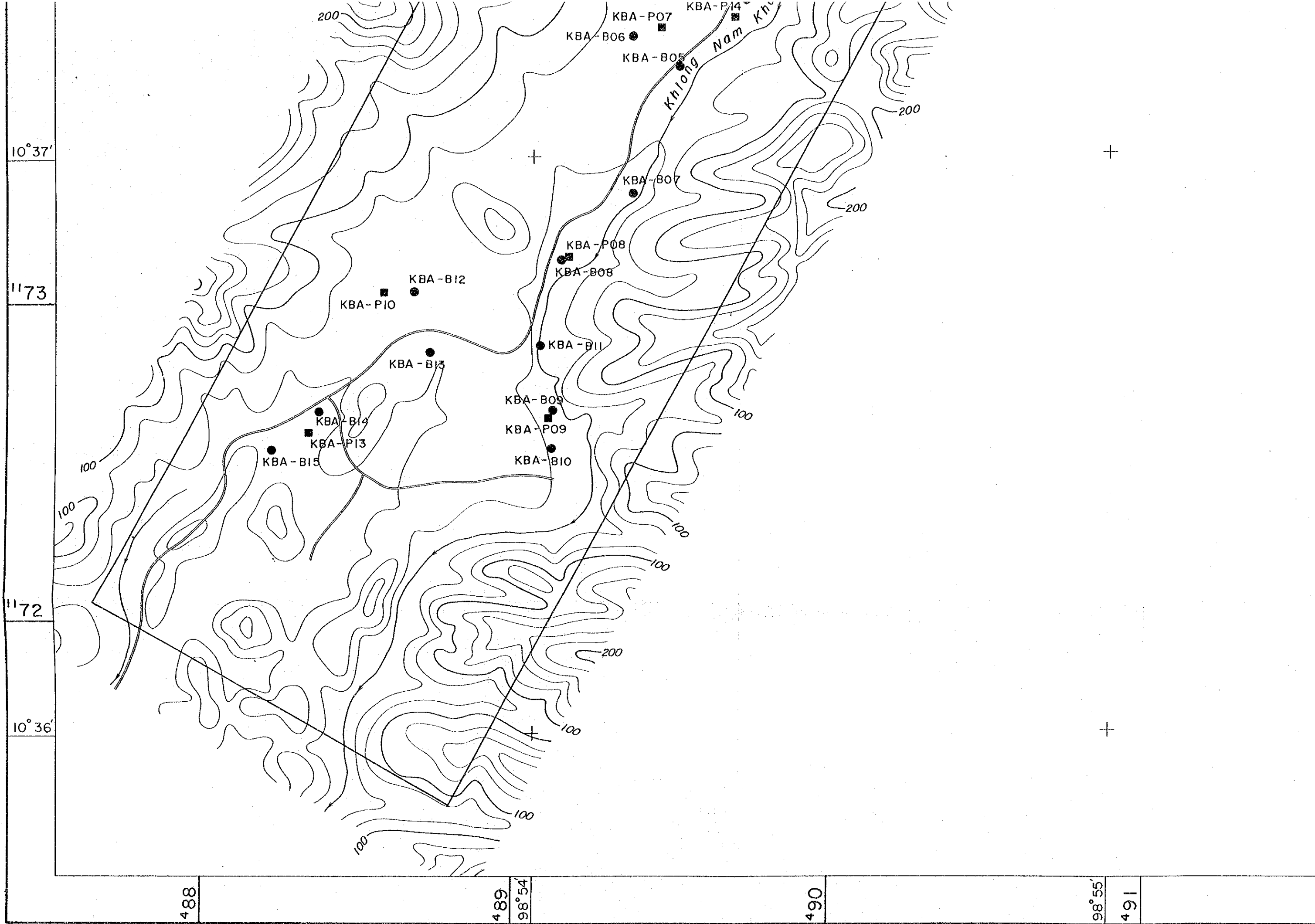
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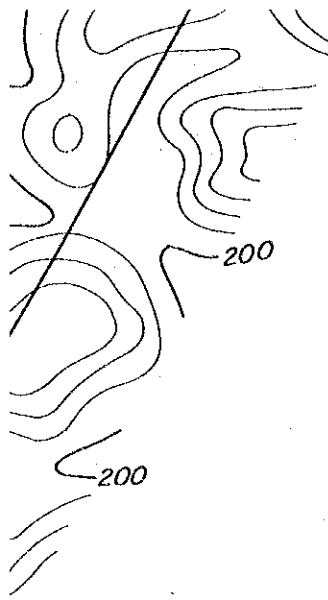
1173











+

+

10° 37'

1173

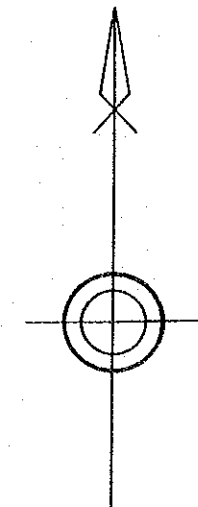
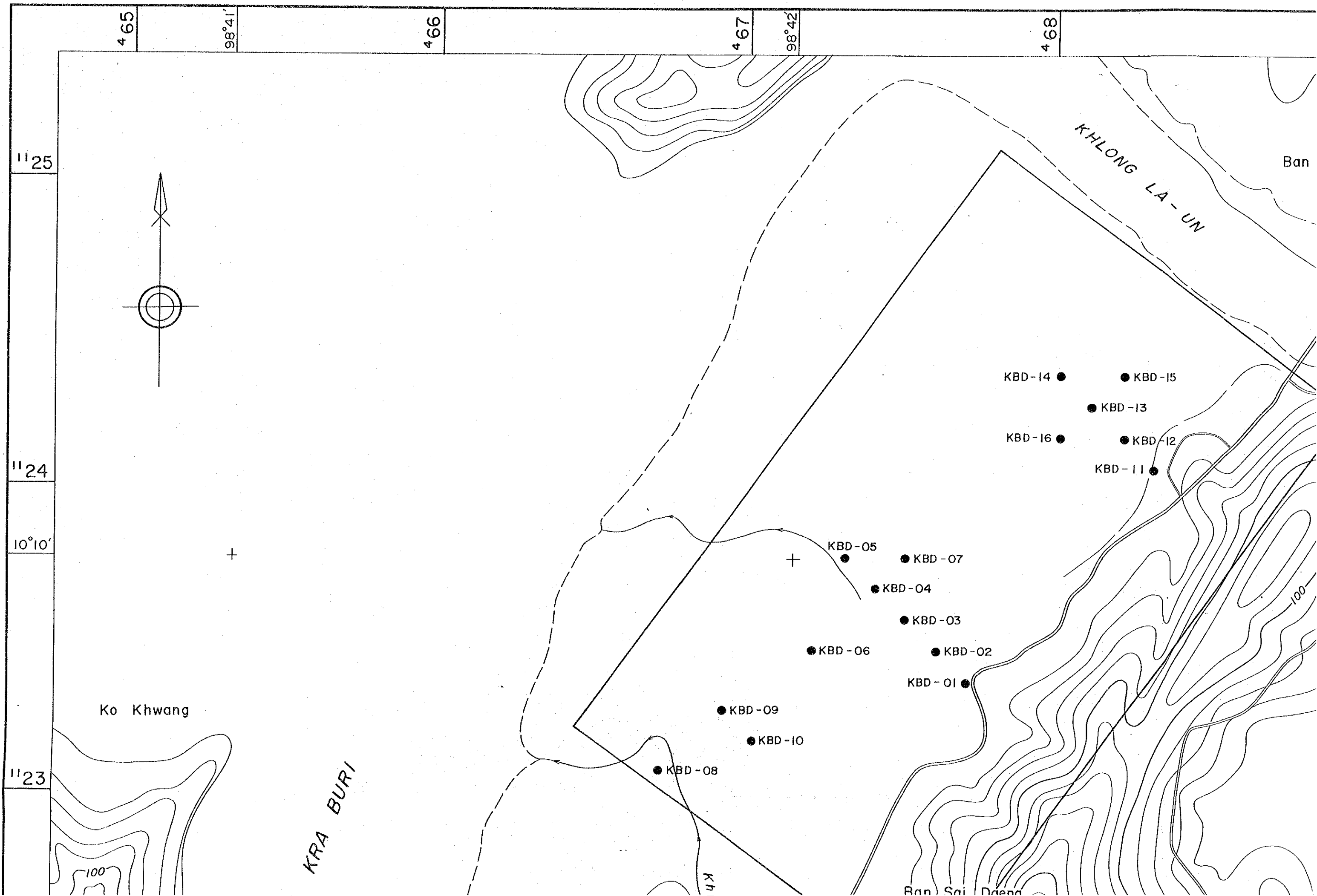
1172

10° 36'

490

98° 55'

491



465

98°41'

466

467

98°42'

468

1125

1124

10°10'

1123

Ko Khwang

KRA BURI

KHLONG LA-UN

Ban

KBD-14 ●

● KBD-15

● KBD-13

KBD-16 ●

● KBD-12

KBD-11 ●

KBD-05 ●

● KBD-07

● KBD-04

● KBD-03

● KBD-06

● KBD-02

KBD-01 ●

● KBD-09

● KBD-10

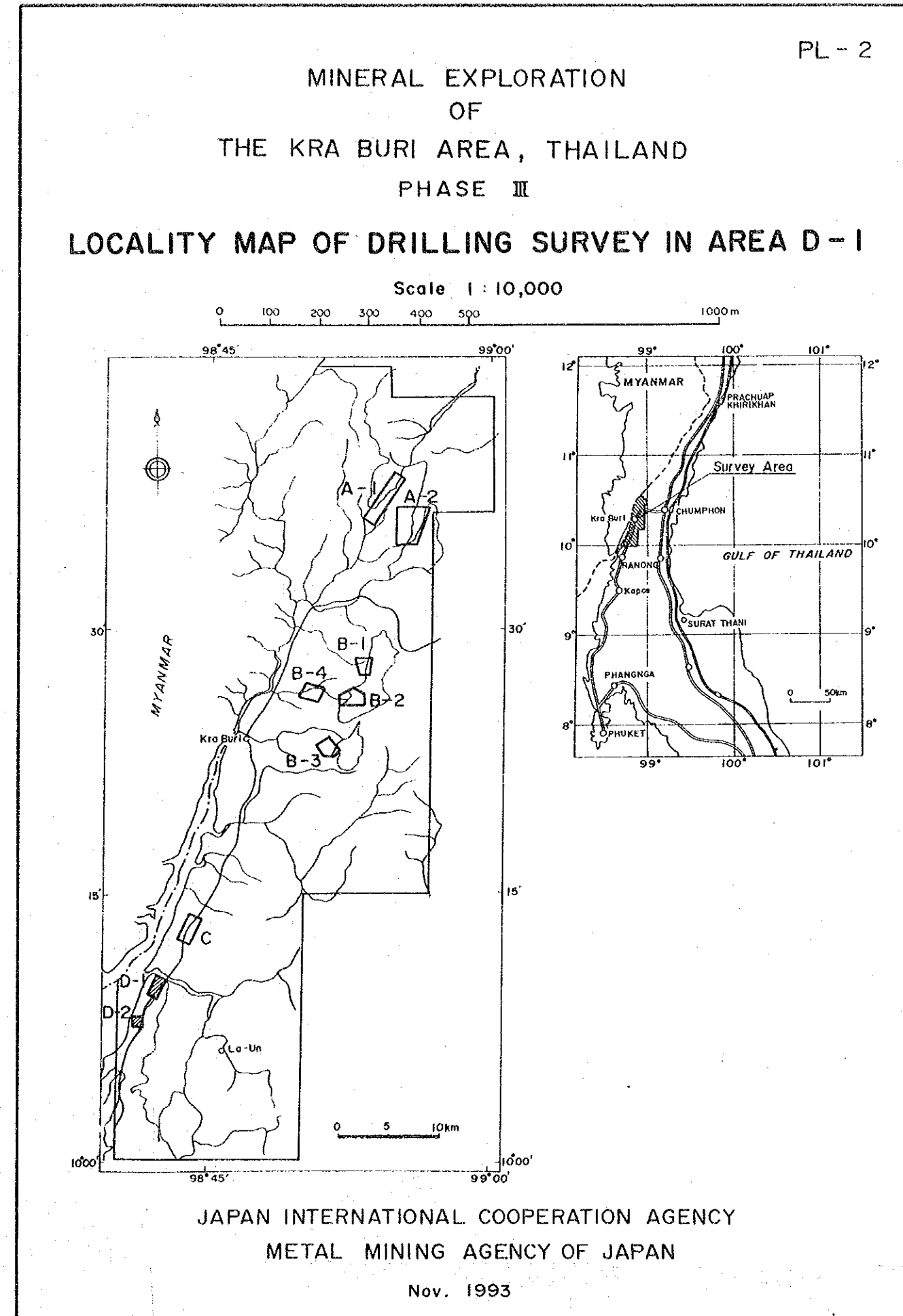
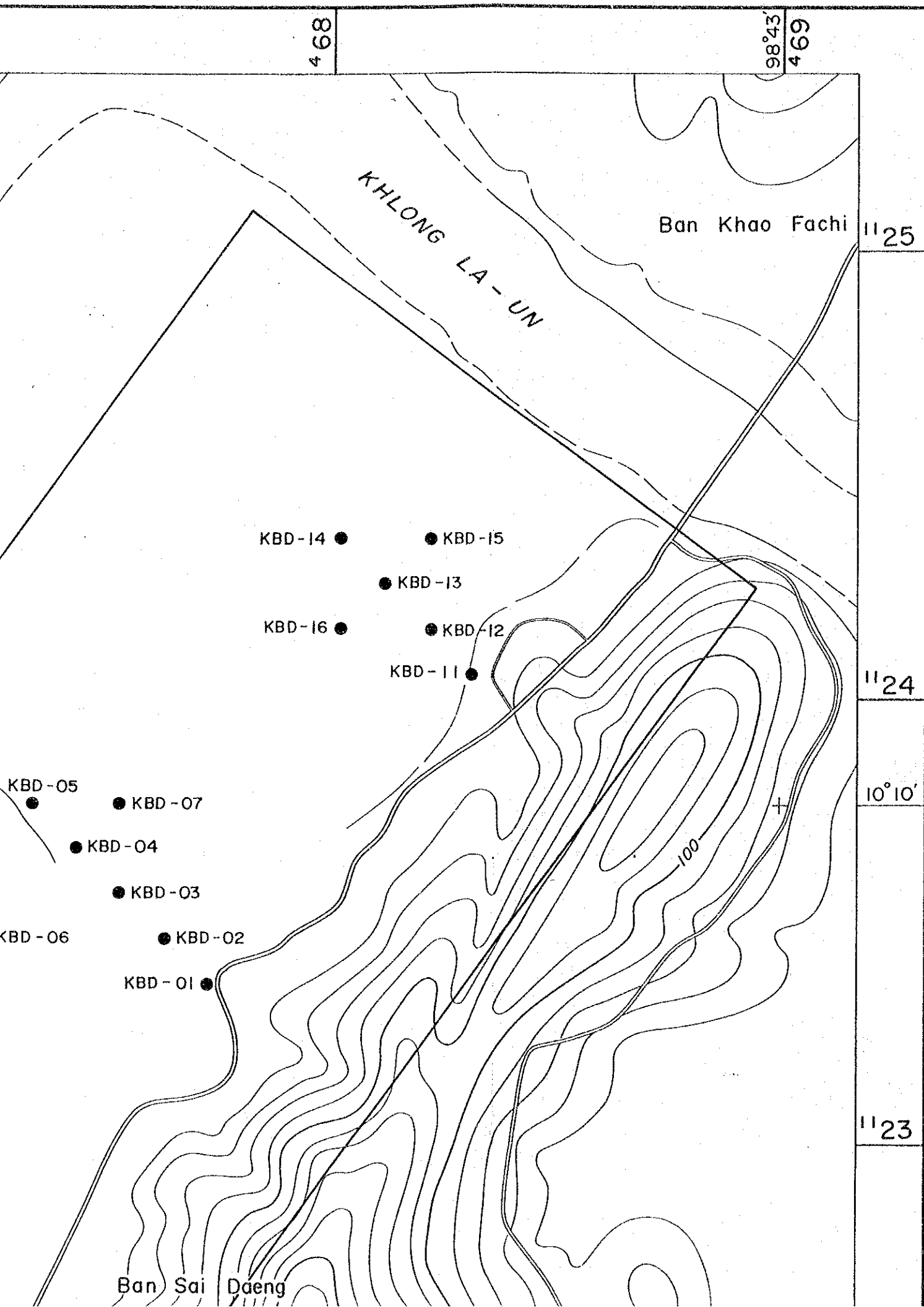
● KBD-08

100

100

Khi

Ban Sai Daeng



1124

10°10'

1123

1122

10°09'

465

98°41'

466

467

98°42'

468

Ko Khwang

MAE NAM KRA BURI

Khlong Sai Daeng

Ban Sai Daeng

Rong Rian Ban Sai Daeng

KBD-05

KBD-07

KBD-04

KBD-03

KBD-06

KBD-02

KBD-01

KBD-09

KBD-10

KBD-08

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KBD-16

KBD-12

KBD-11

KBD-14

KBD-15

100

100

200

265

100

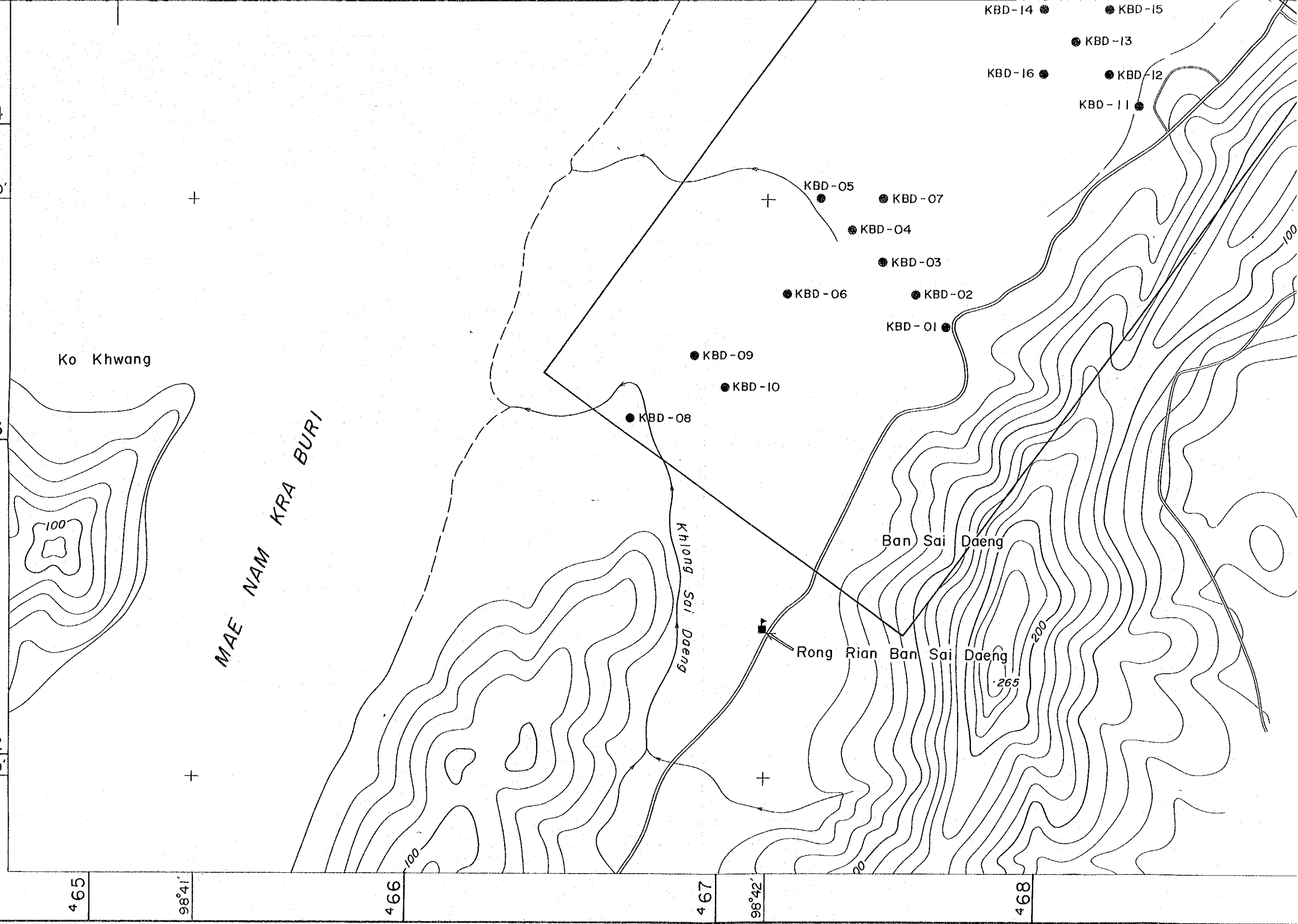
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+

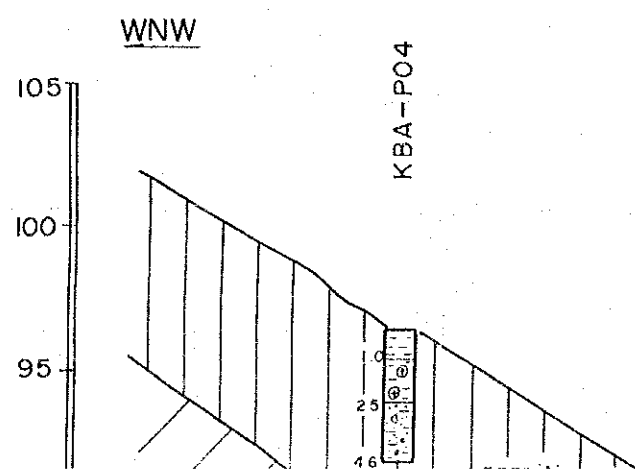
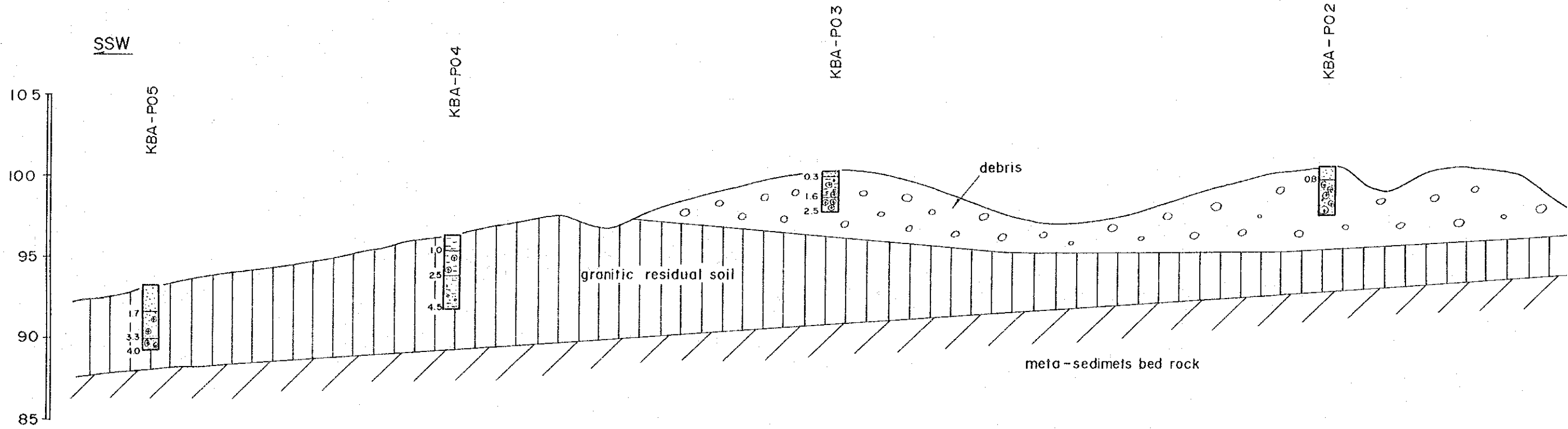
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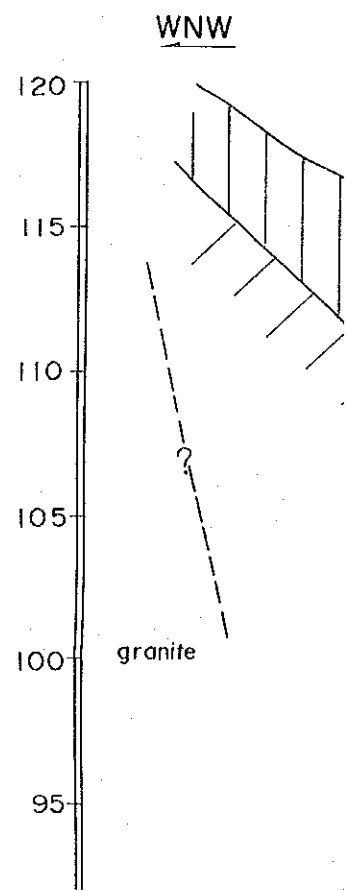
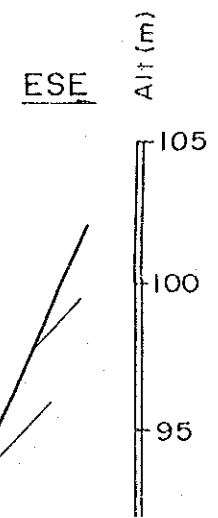




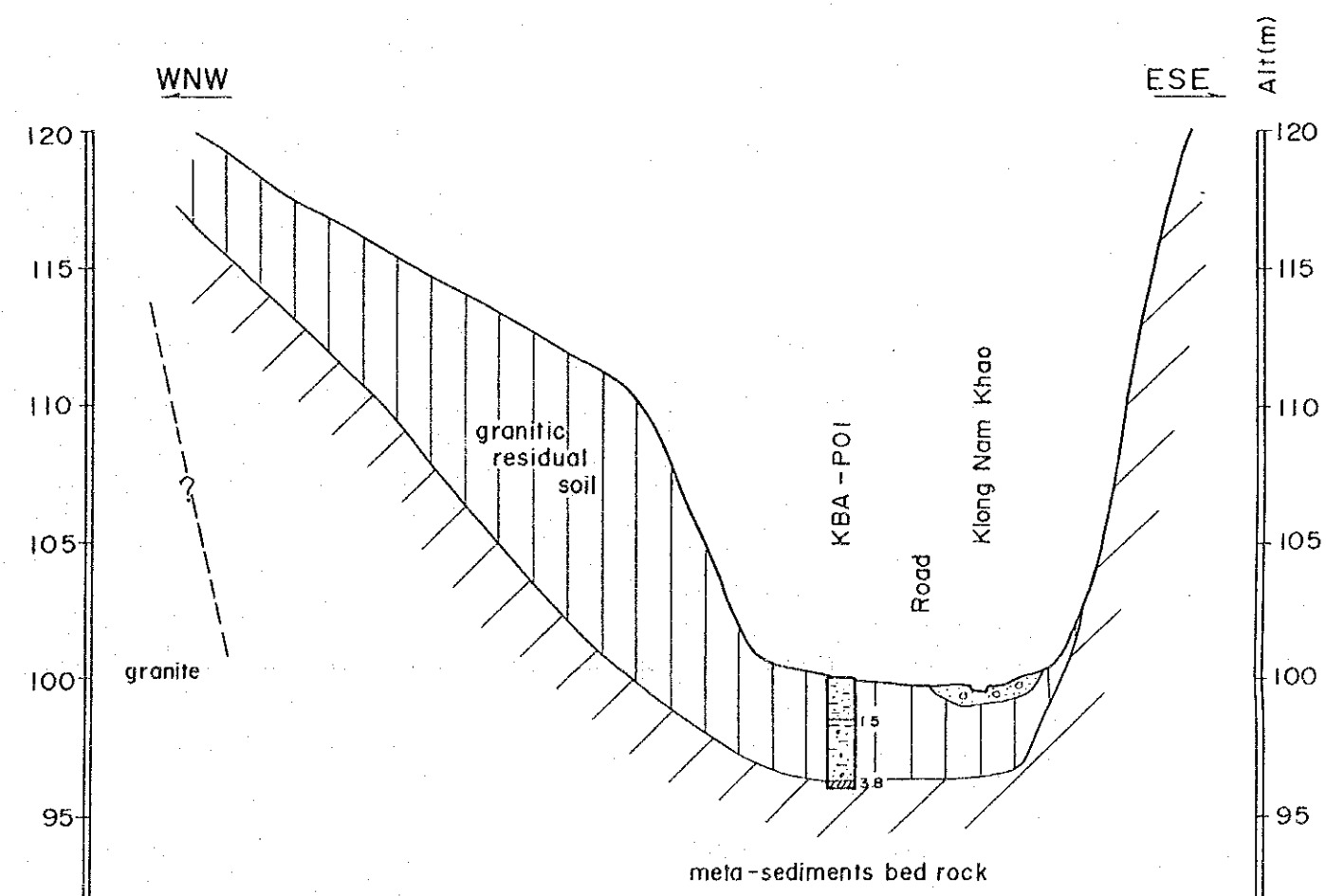
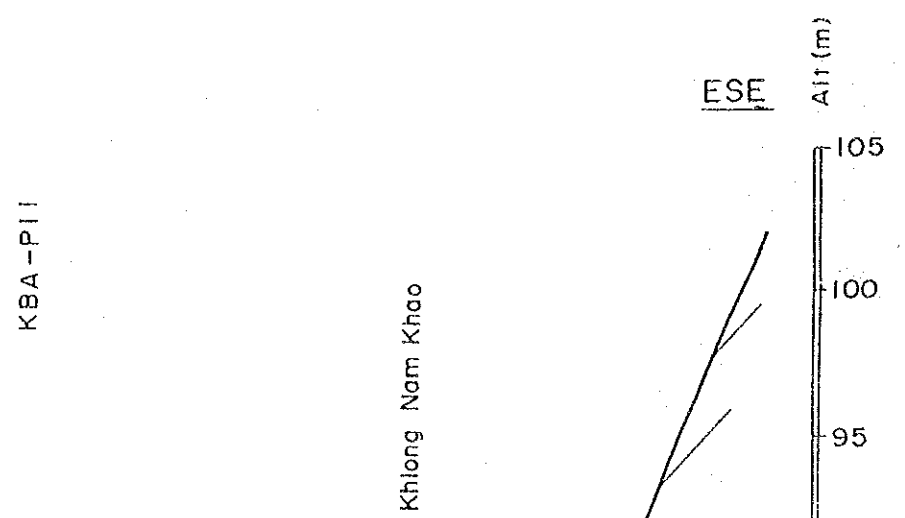
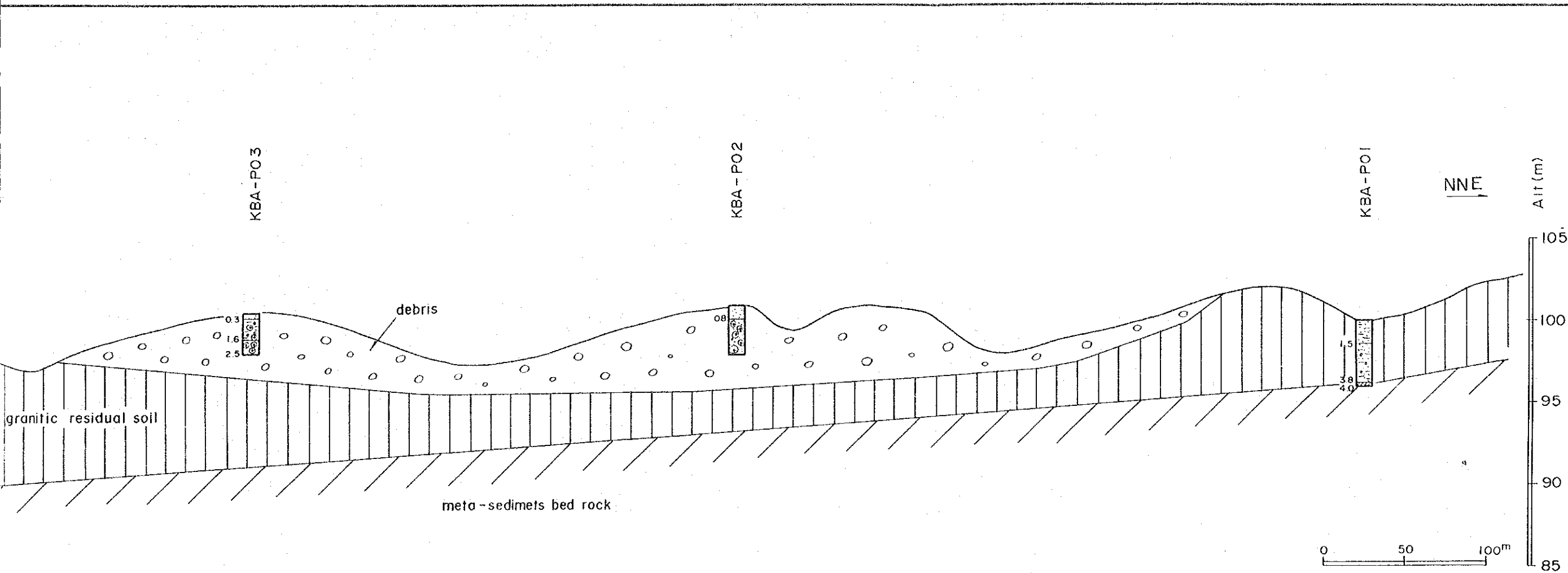
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KBA-PII

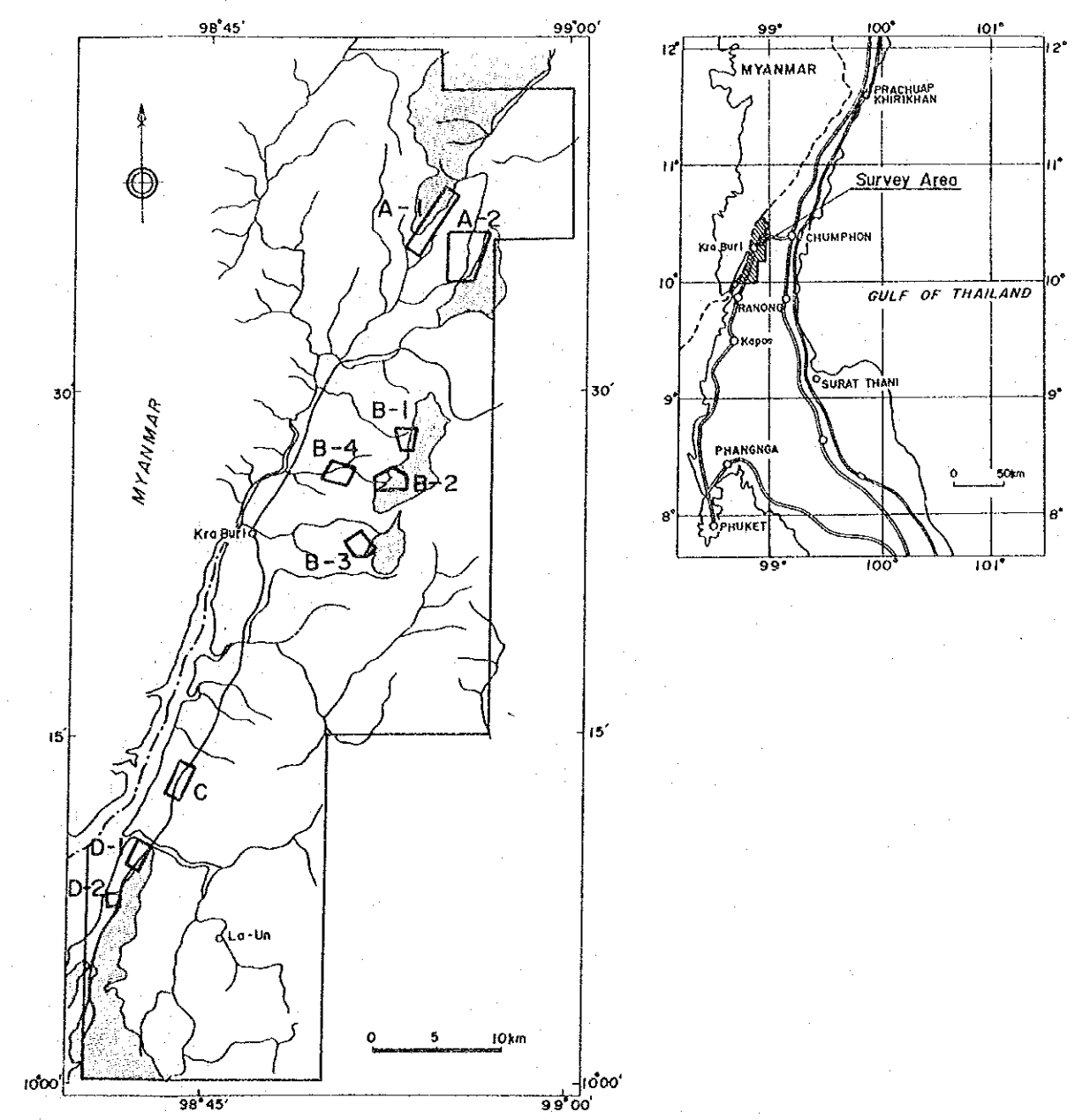
Khlong Nam Khao



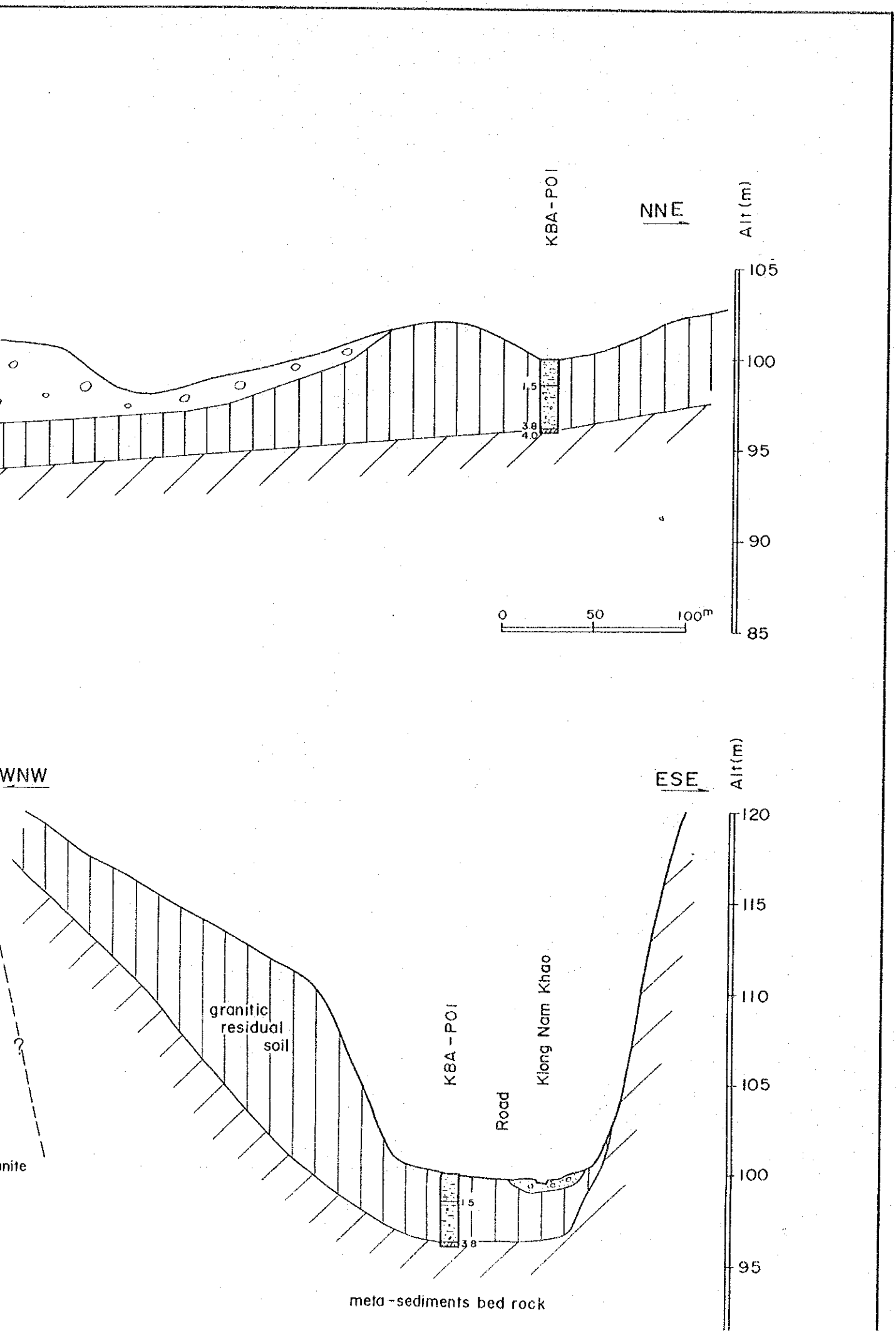


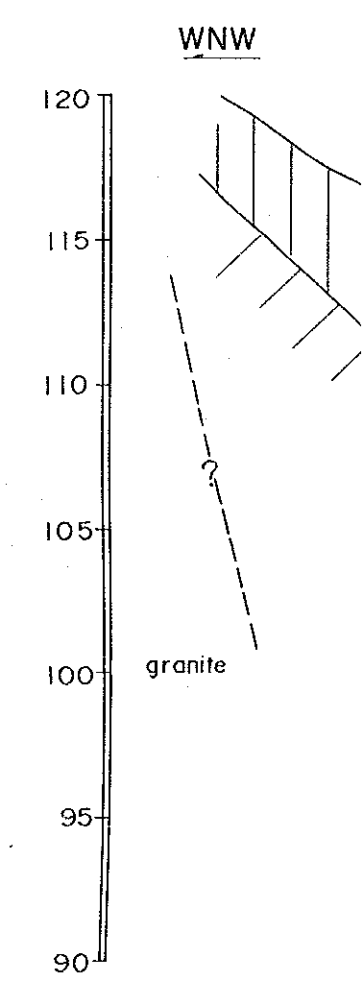
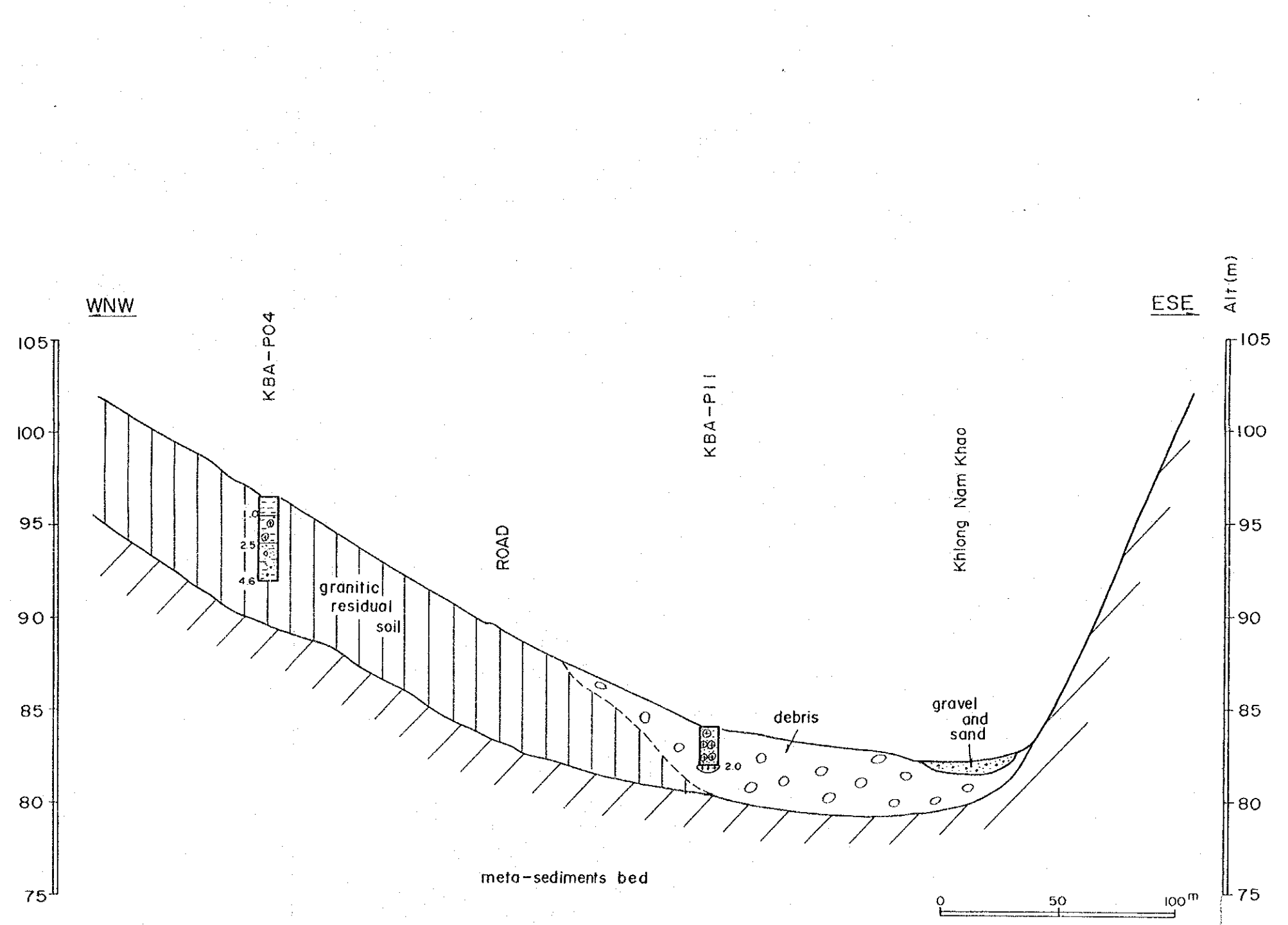
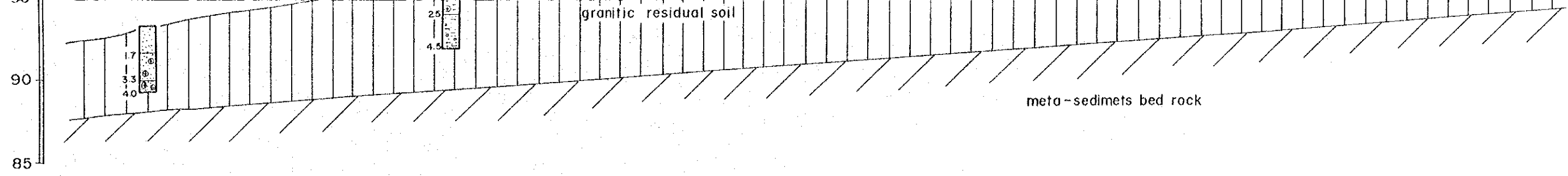


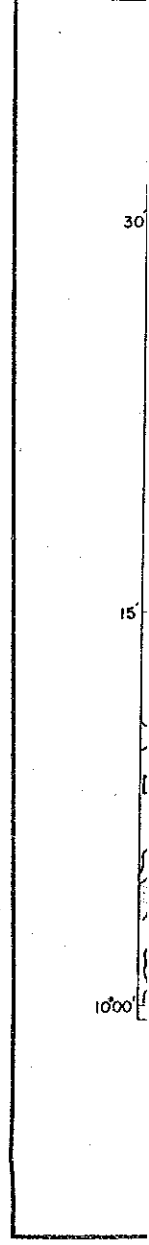
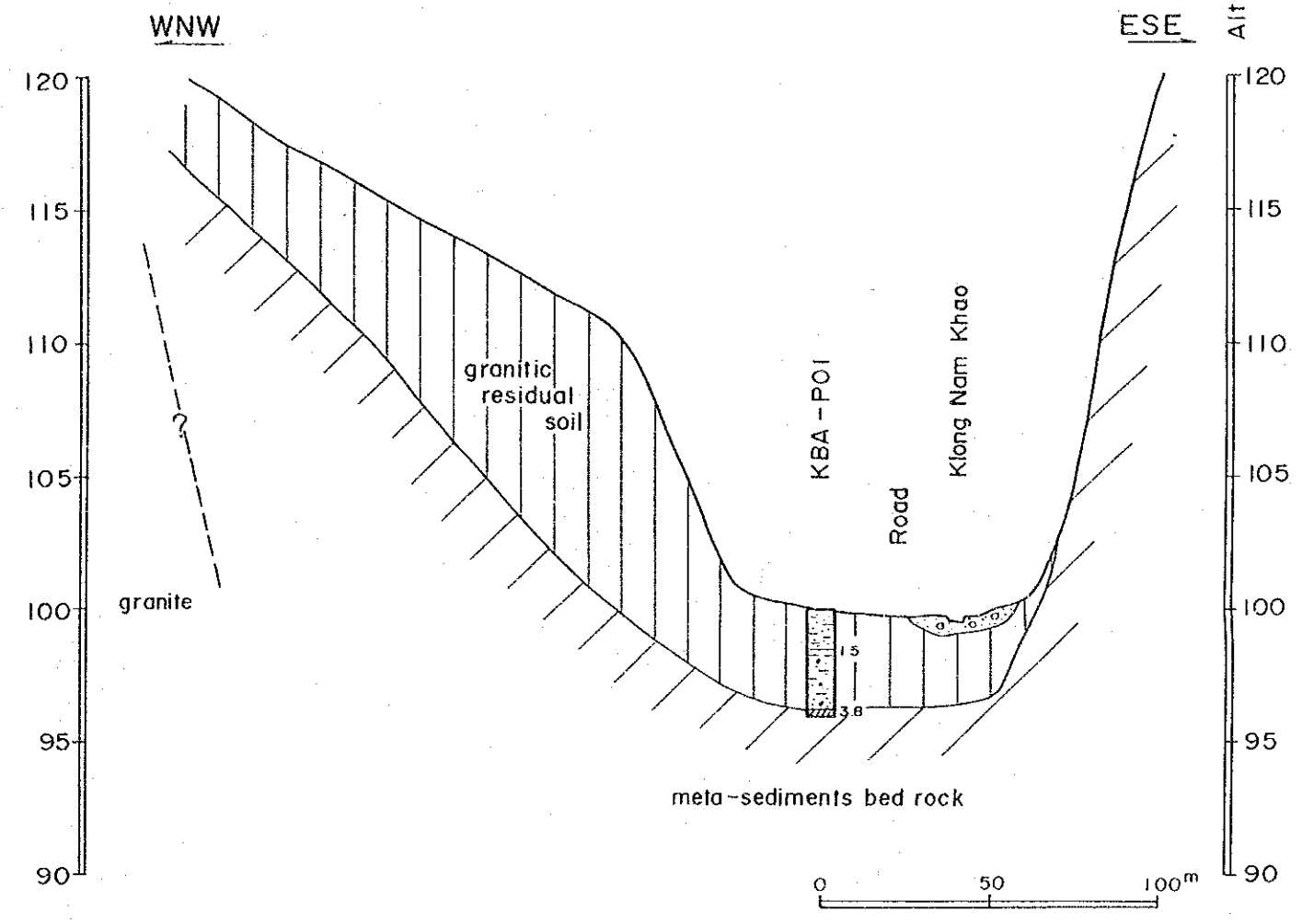
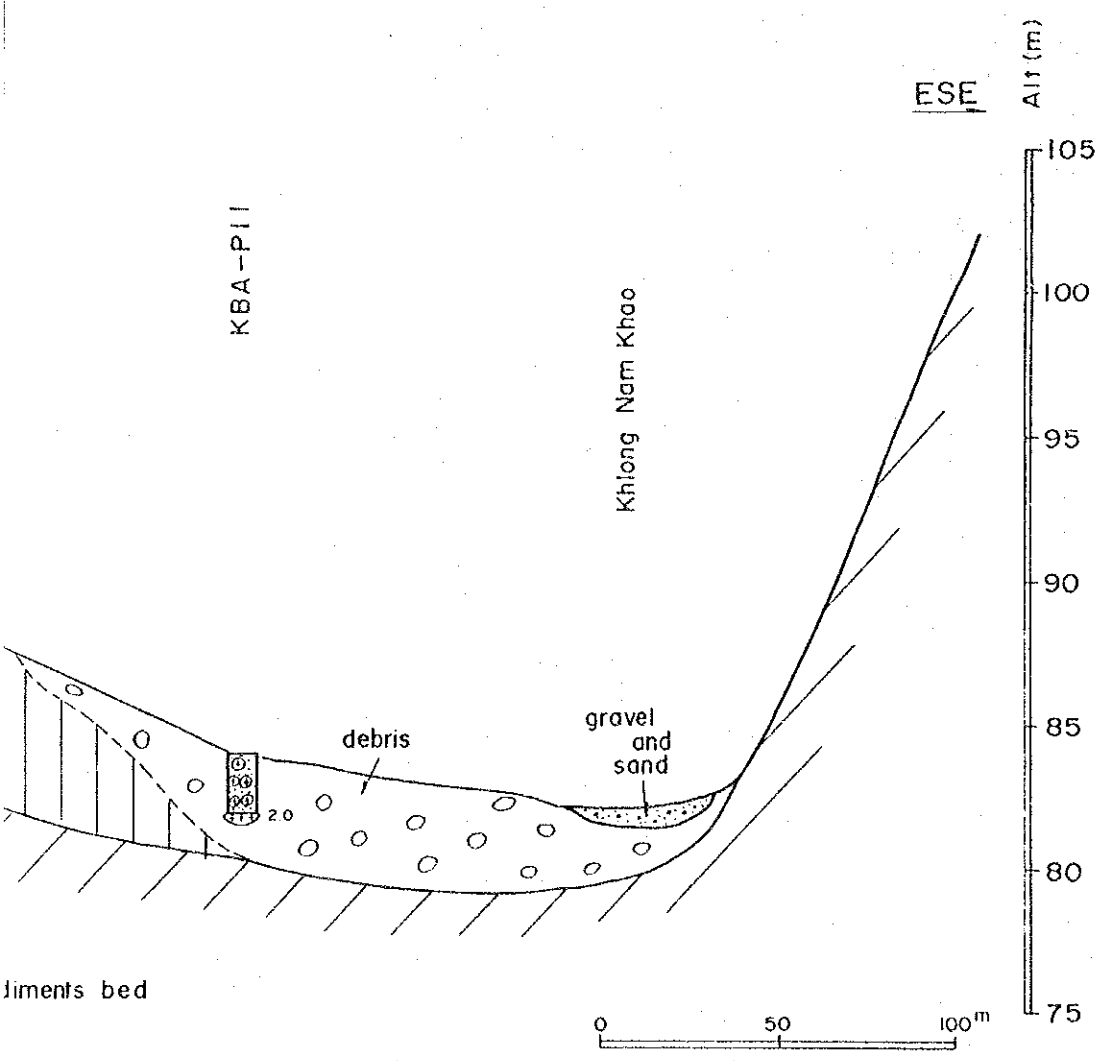
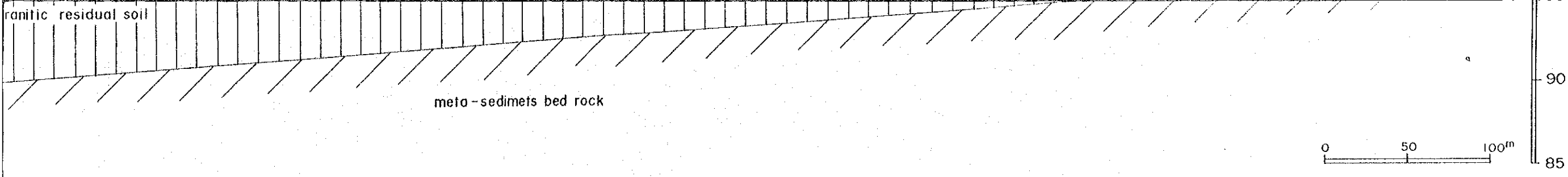
MINERAL EXPLORATION  
OF  
THE KRA BURI AREA, THAILAND  
PHASE III  
GEOLOGIC PROFILE IN AREA A-1(1)

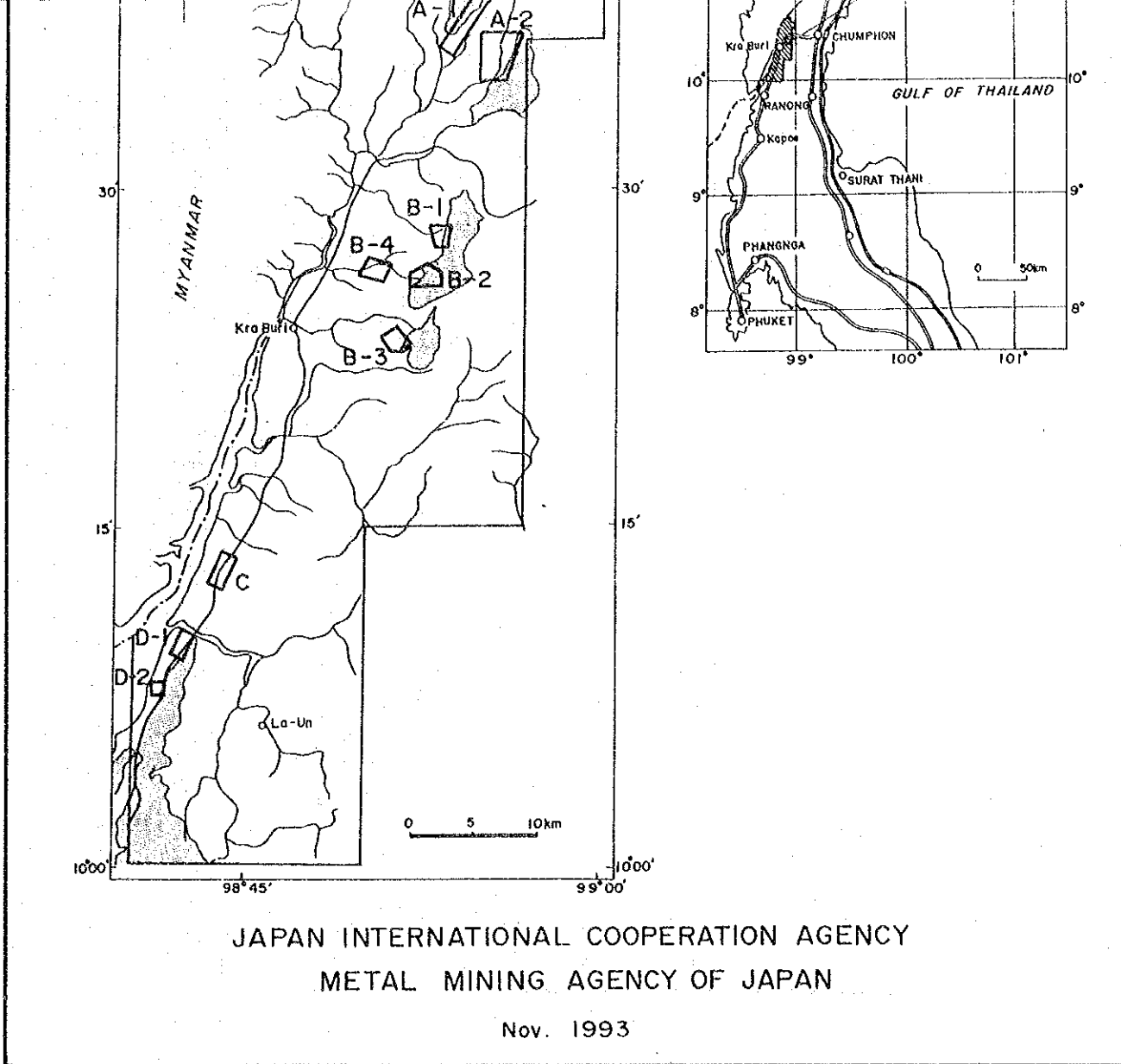
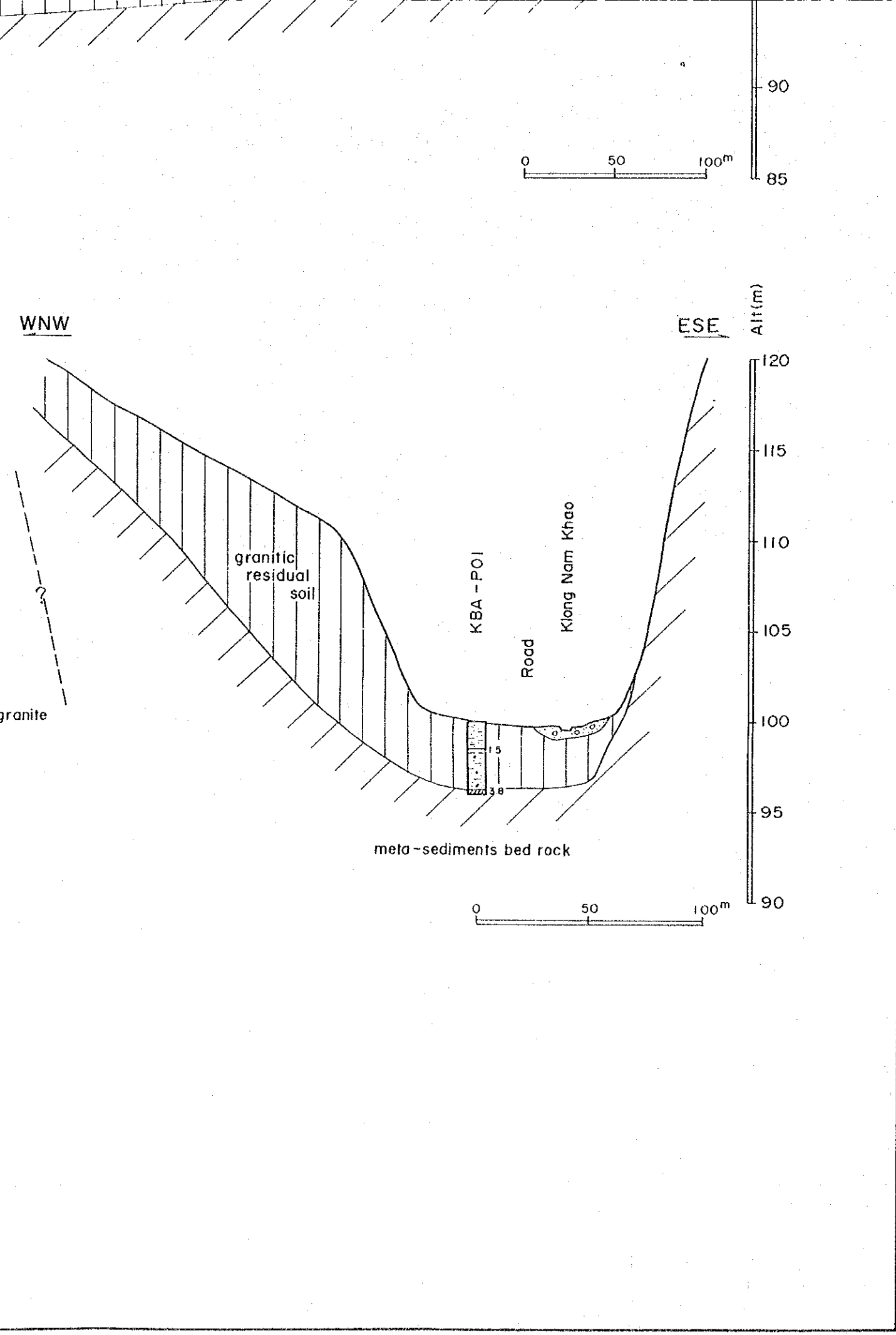


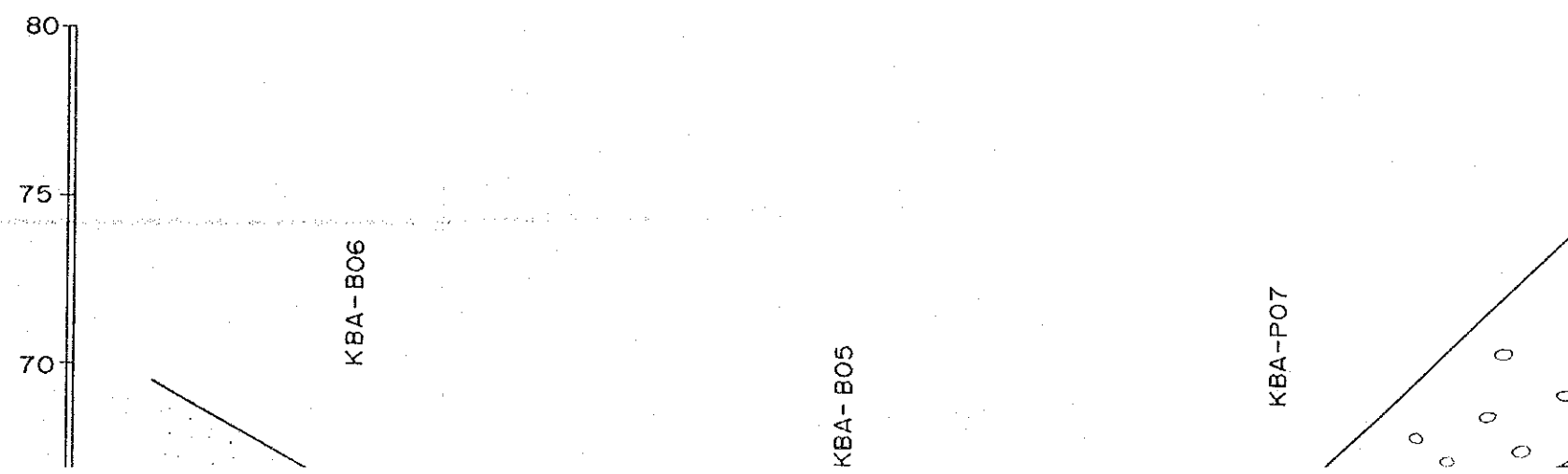
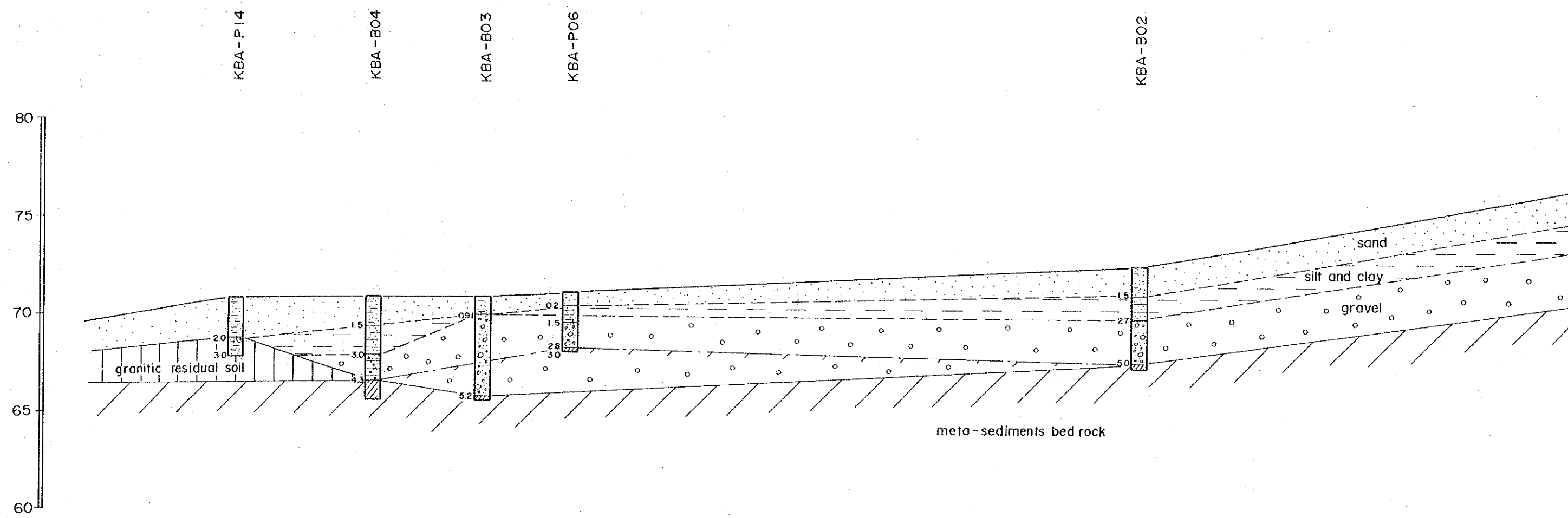
JAPAN INTERNATIONAL COOPERATION AGENCY  
METAL MINING AGENCY OF JAPAN  
Nov. 1993



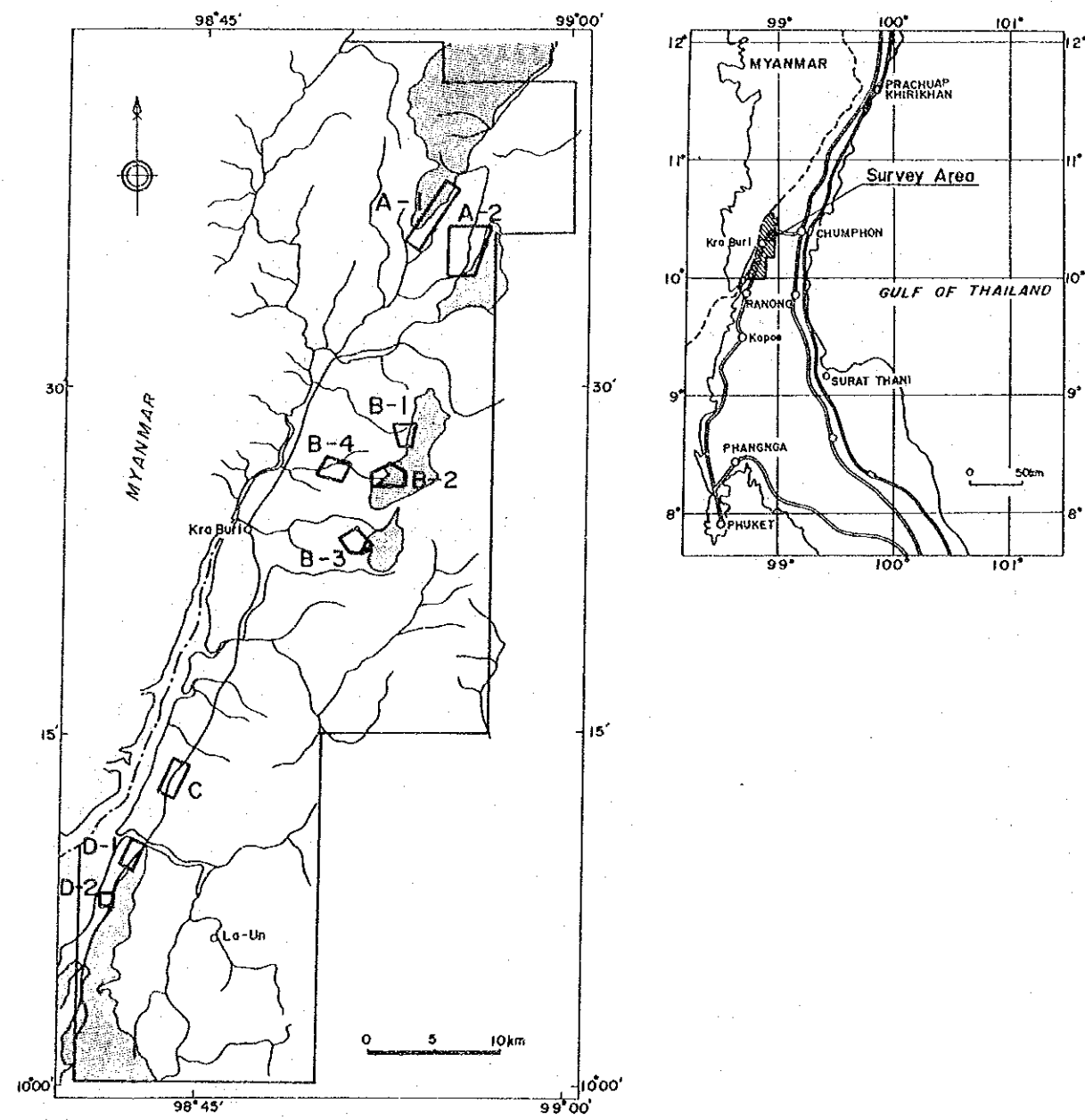






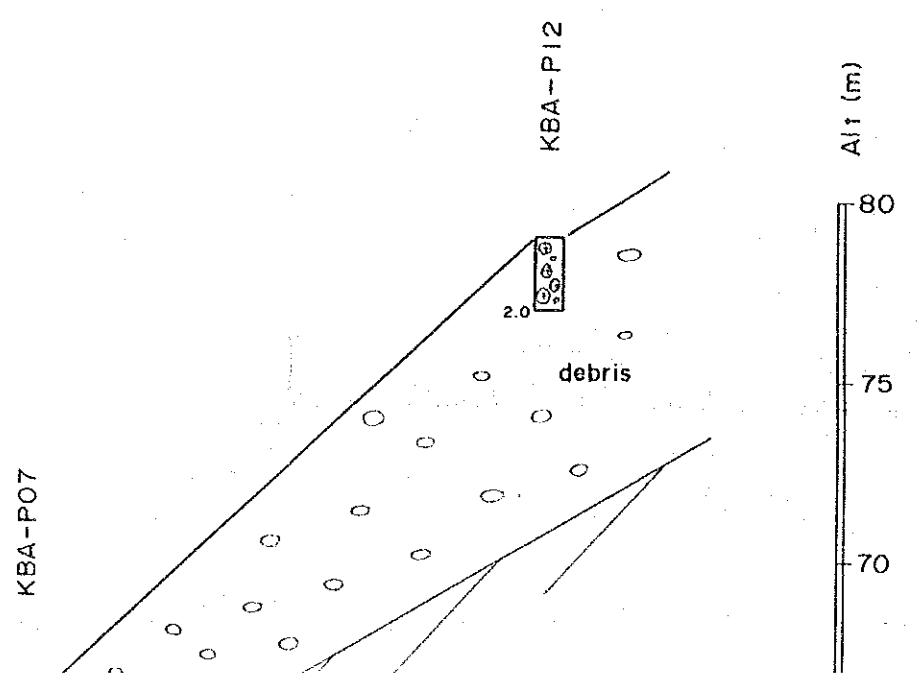
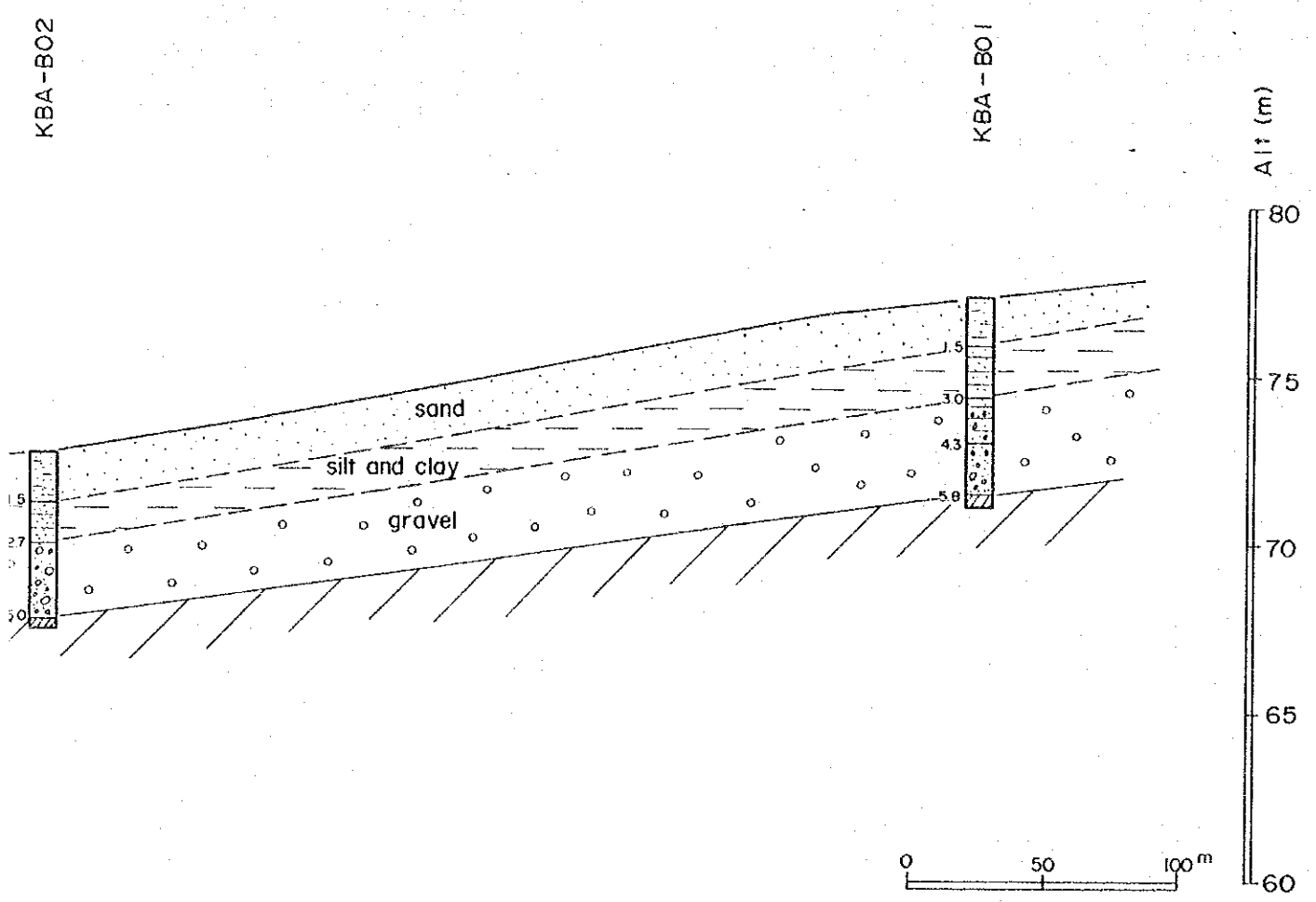


# MINERAL EXPLORATION OF THE KRA BURI AREA, THAILAND PHASE III GEOLOGIC PROFILE IN AREA A-1 (2)



JAPAN INTERNATIONAL COOPERATION AGENCY  
METAL MINING AGENCY OF JAPAN

Nov. 1993



KBA-B02

KBA-B01

Alt (m)

0 50 100m

KBA-B05

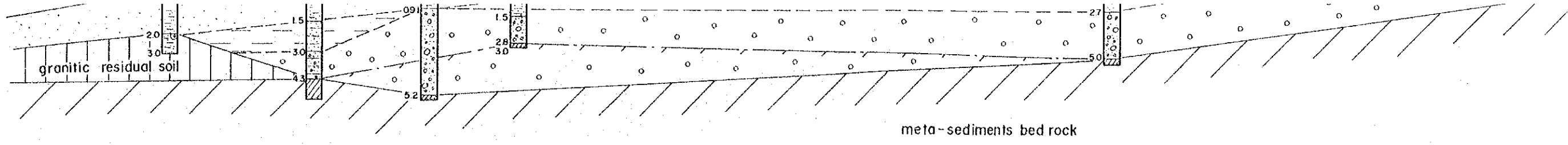
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KBA-P12

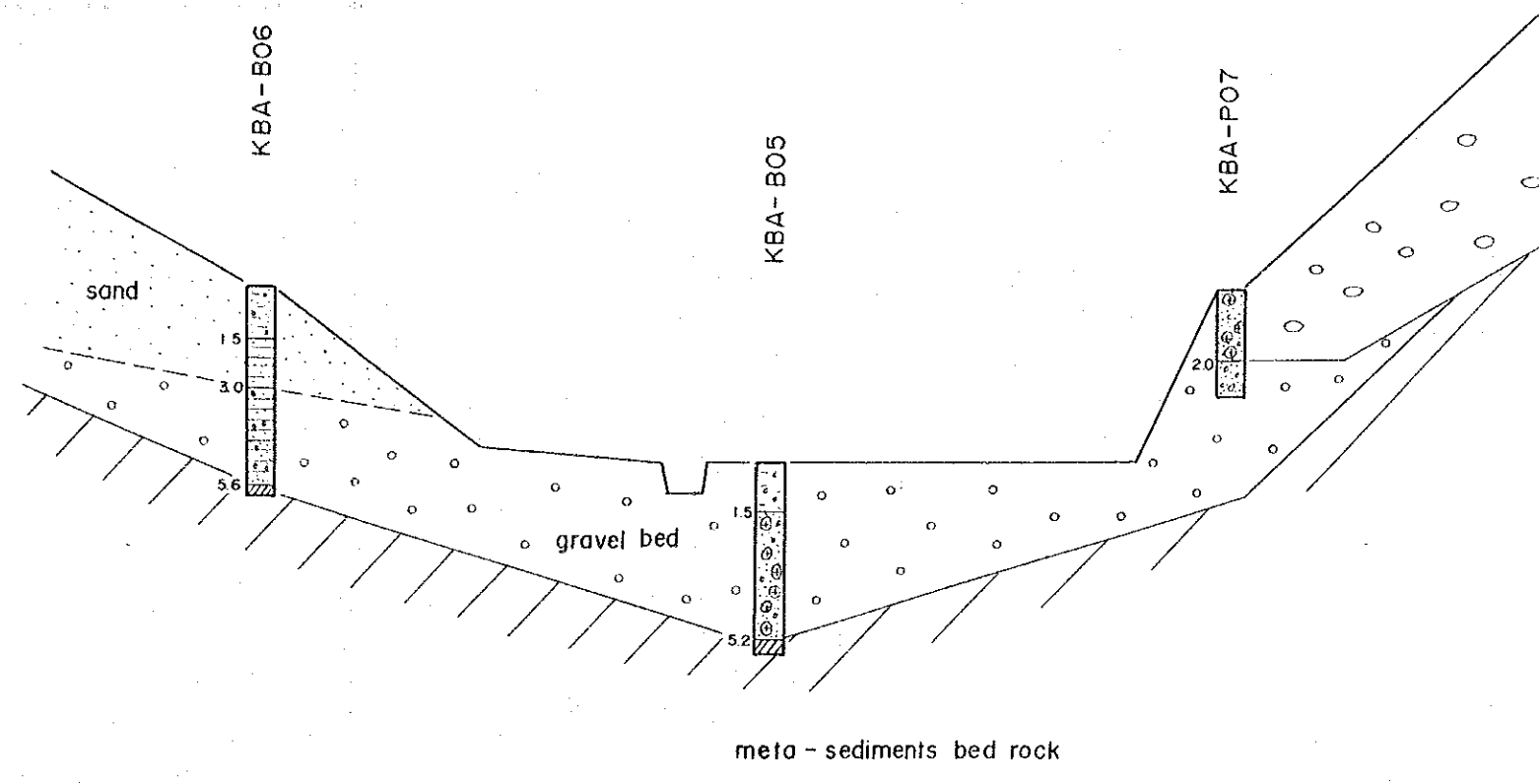
Alt (m)

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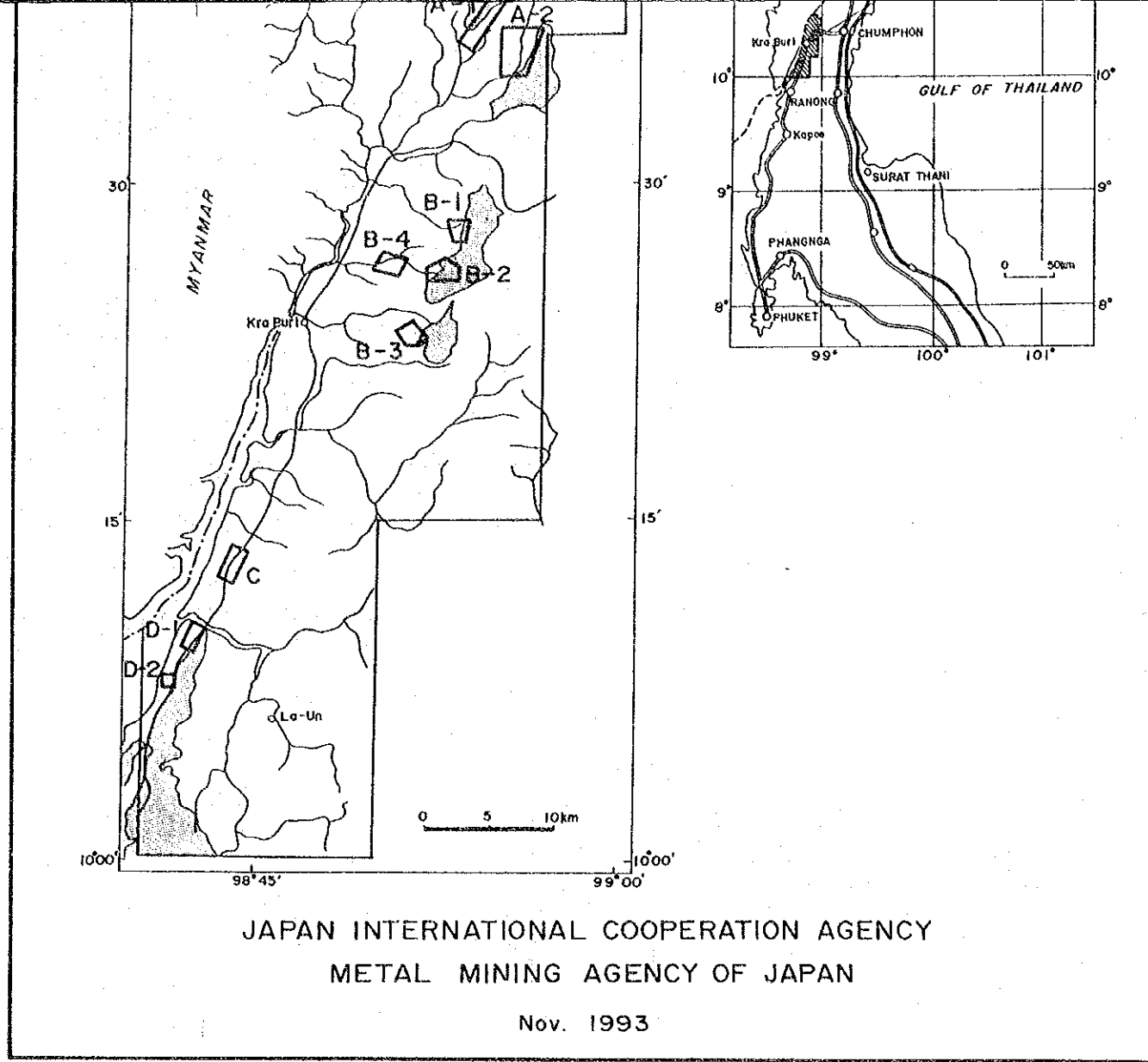
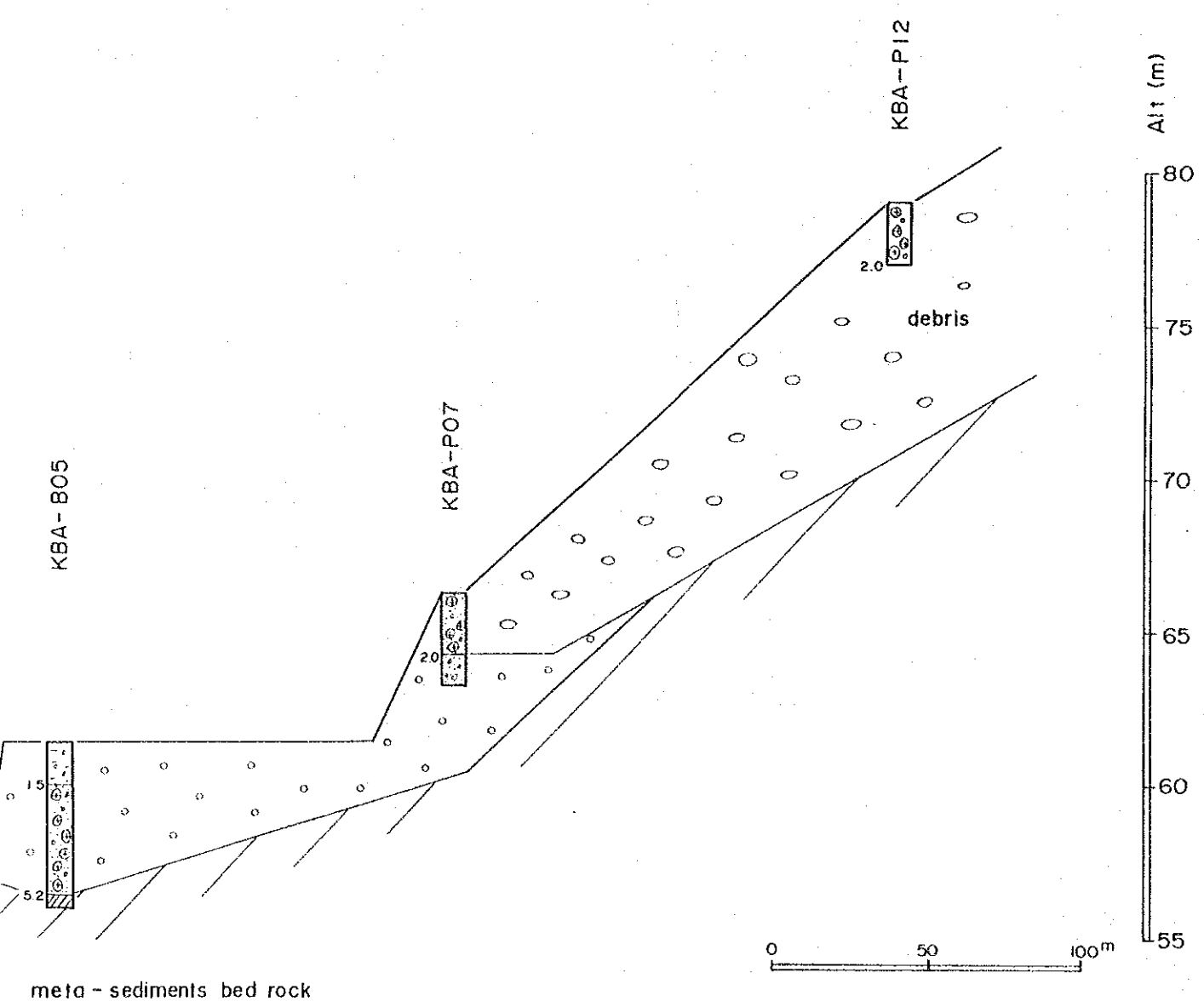
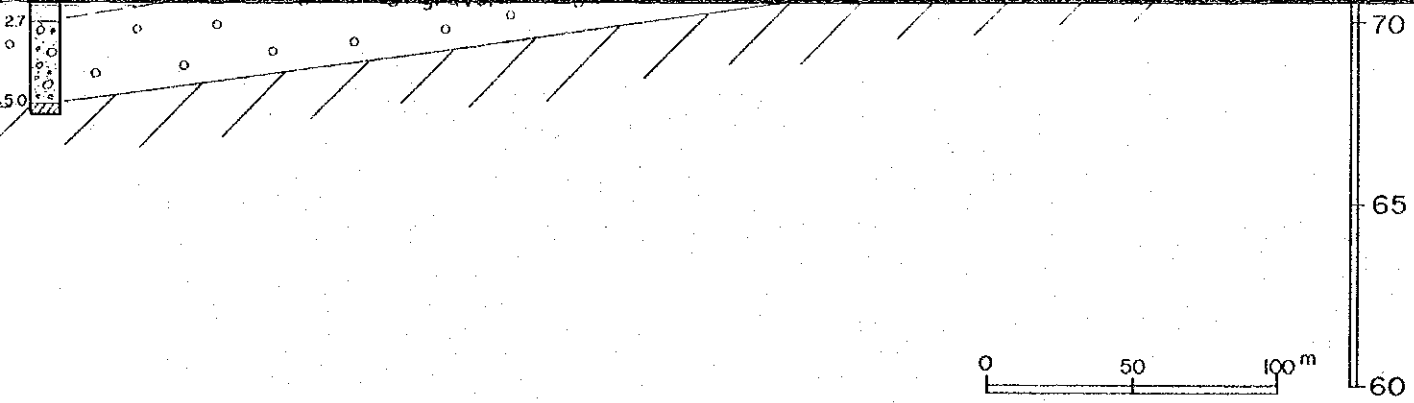
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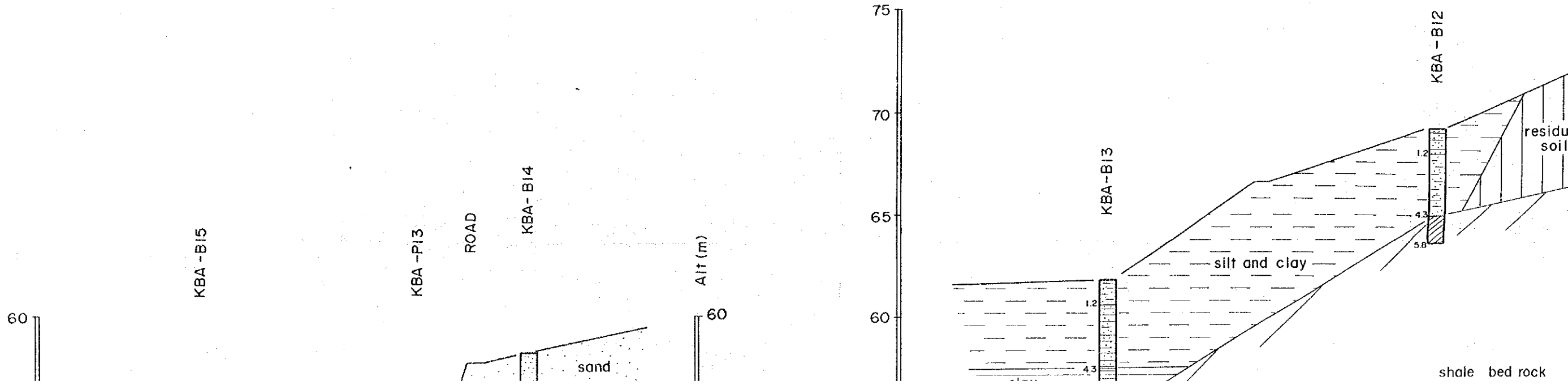
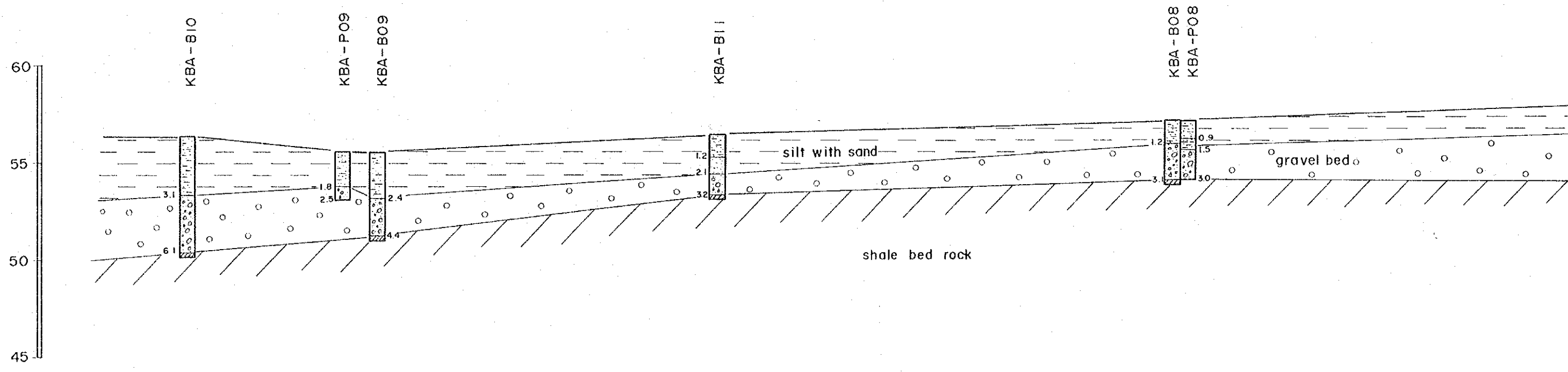


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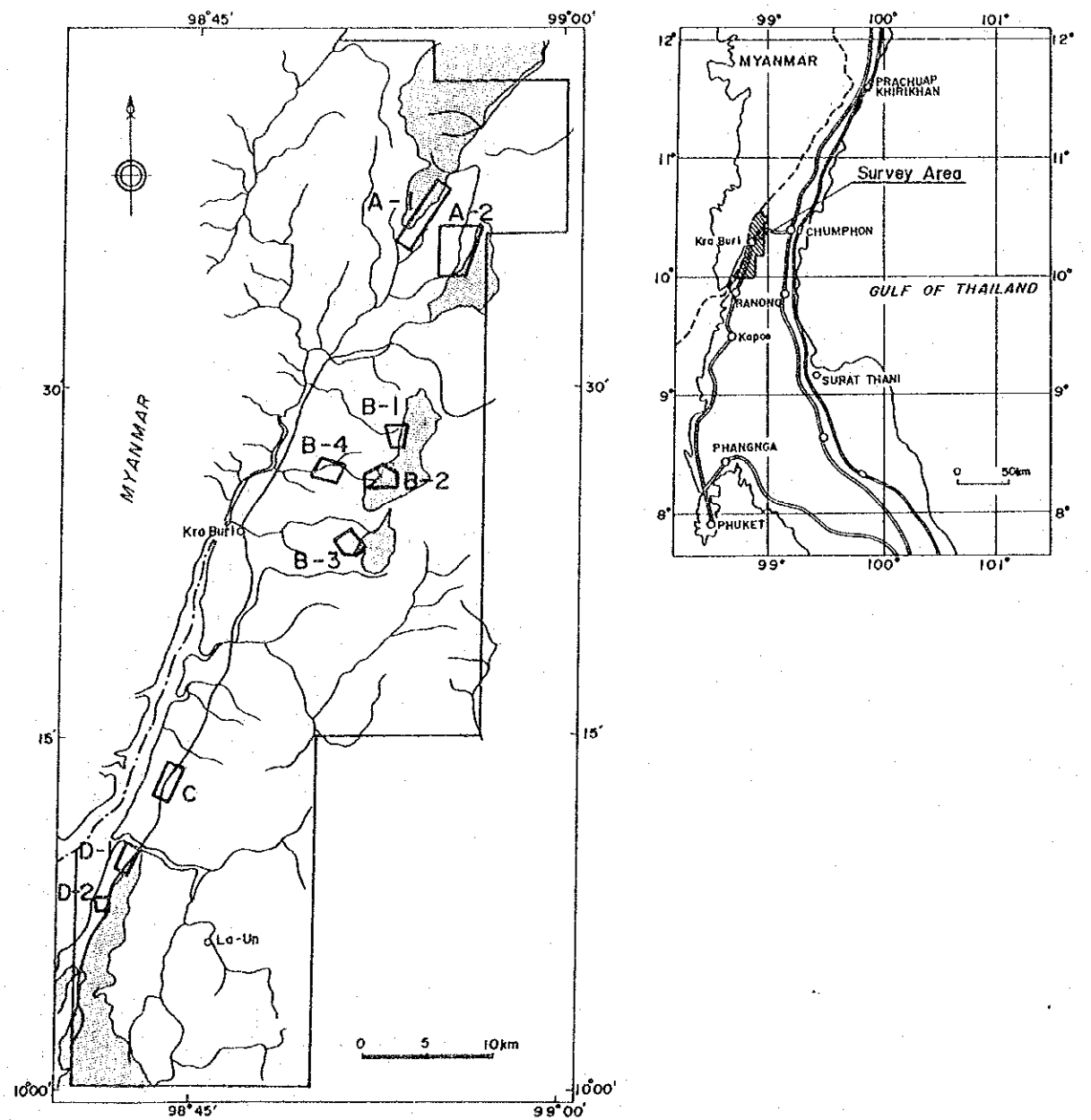
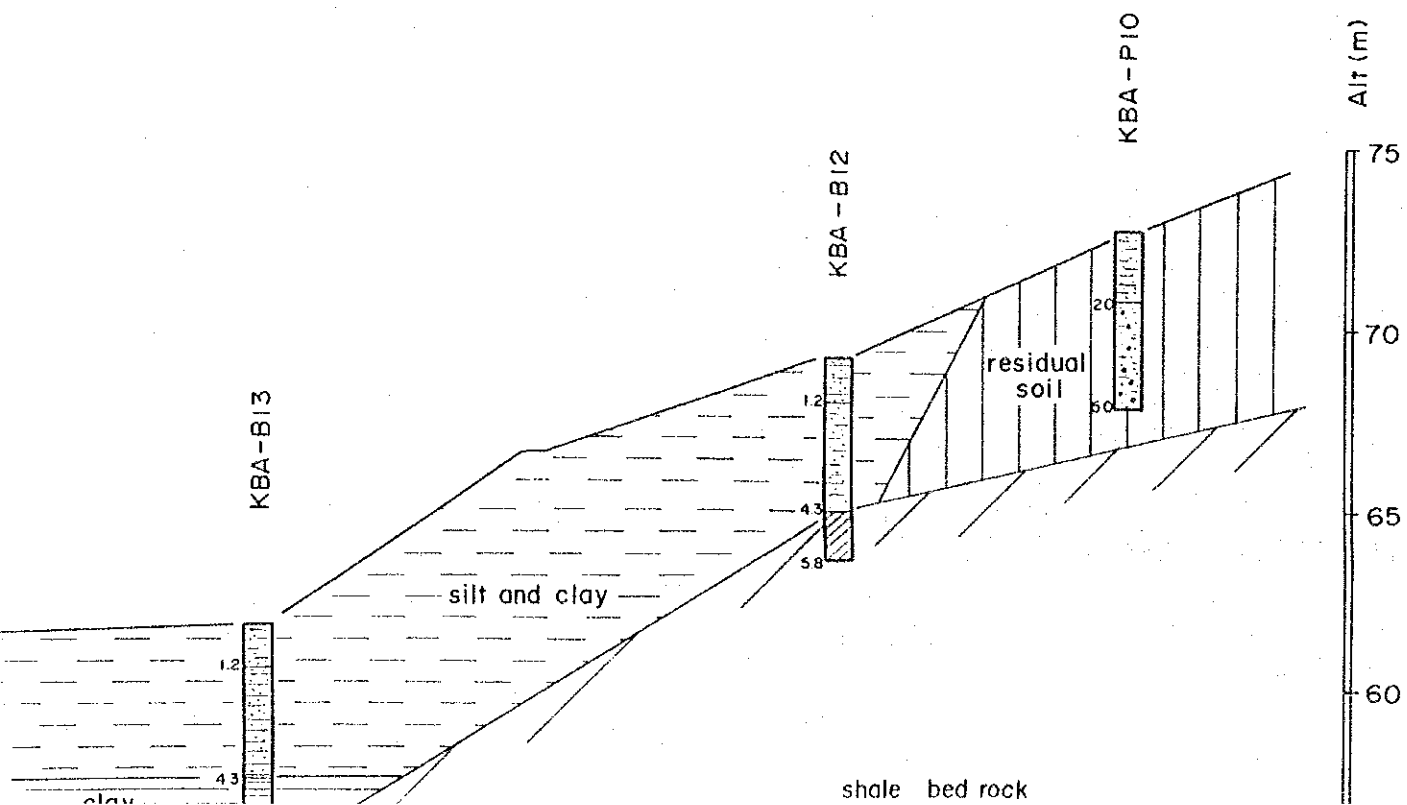
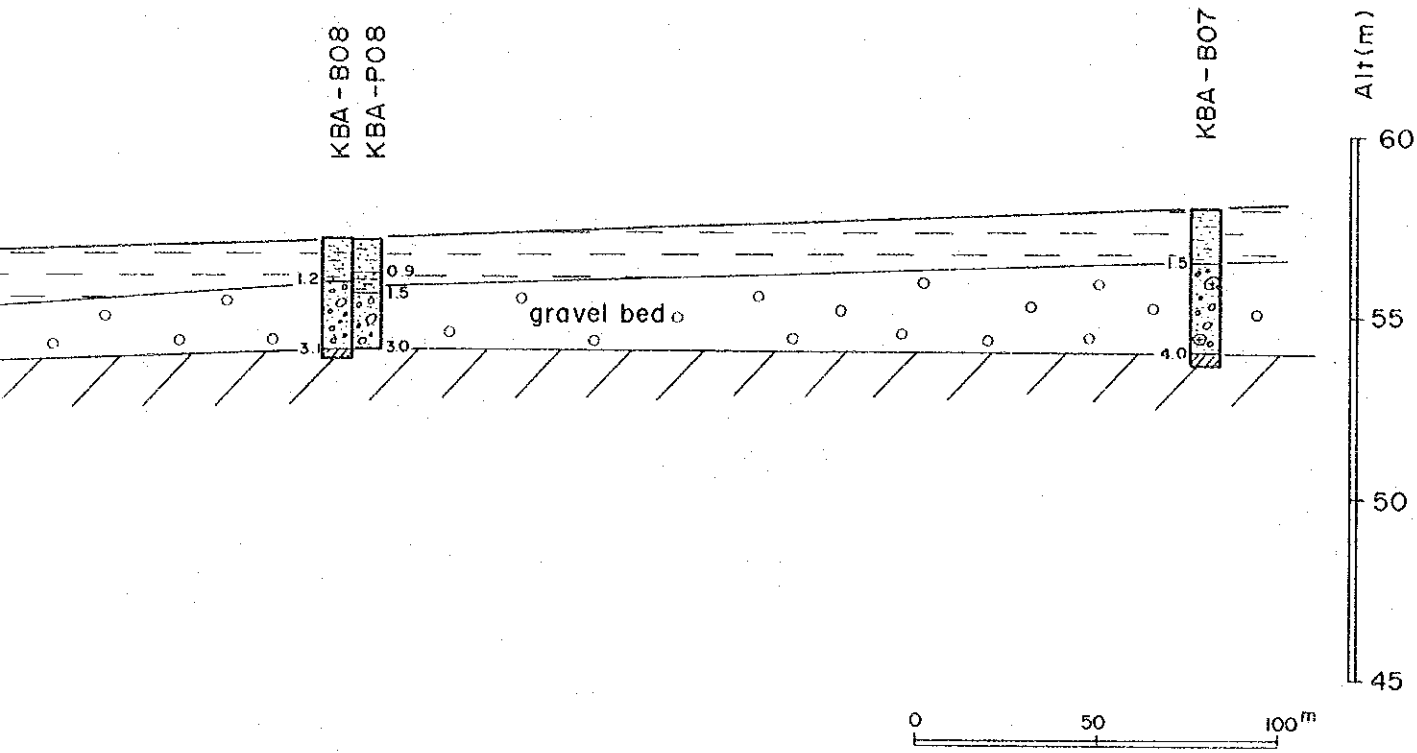




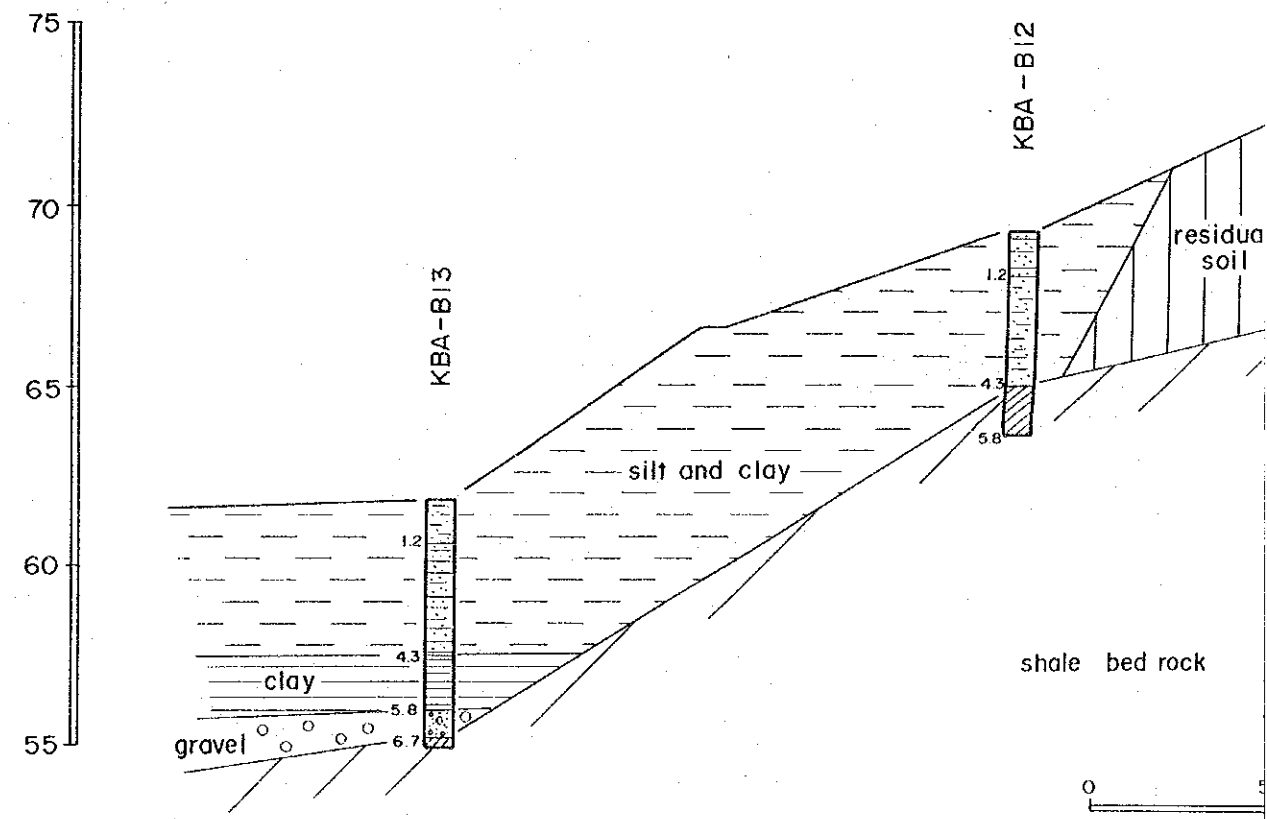
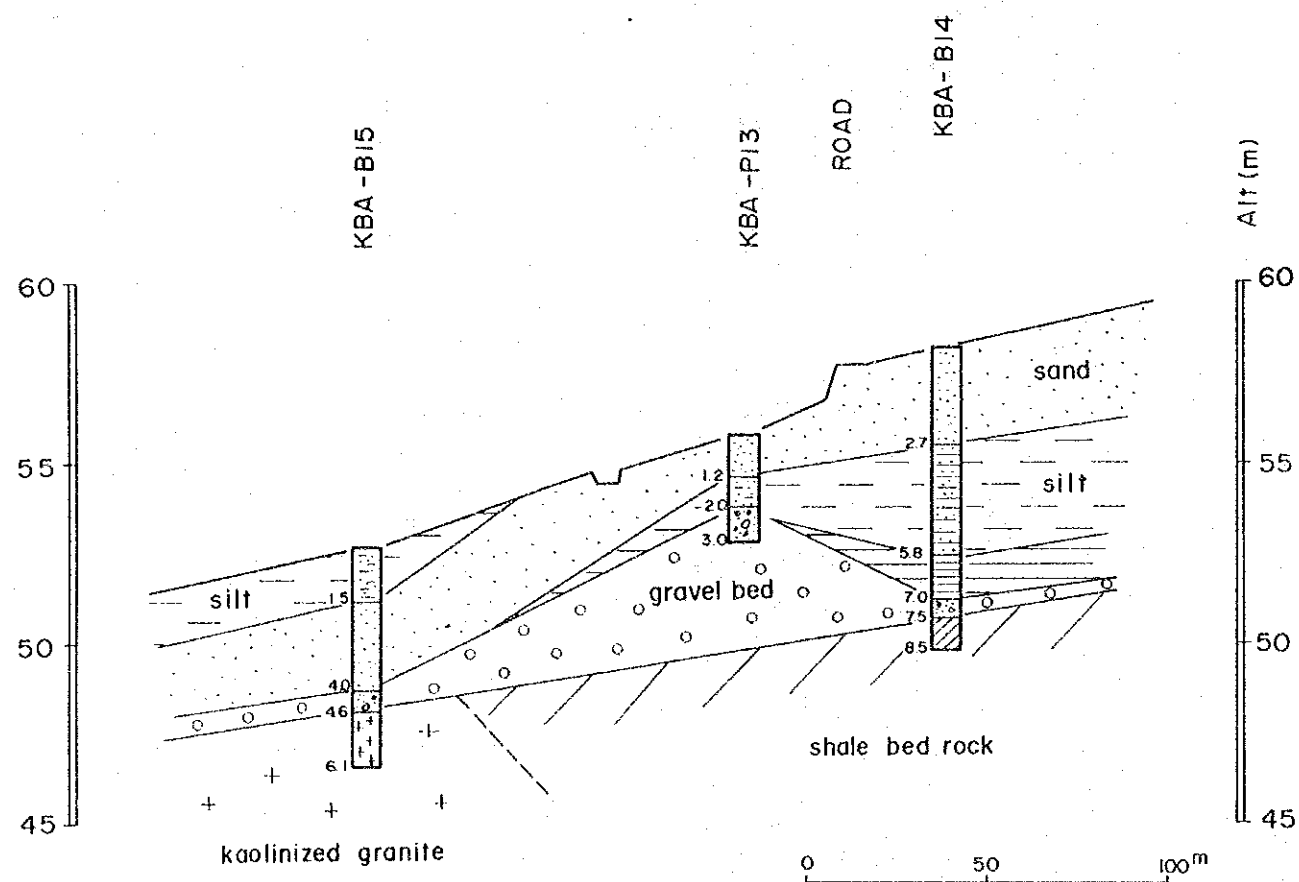
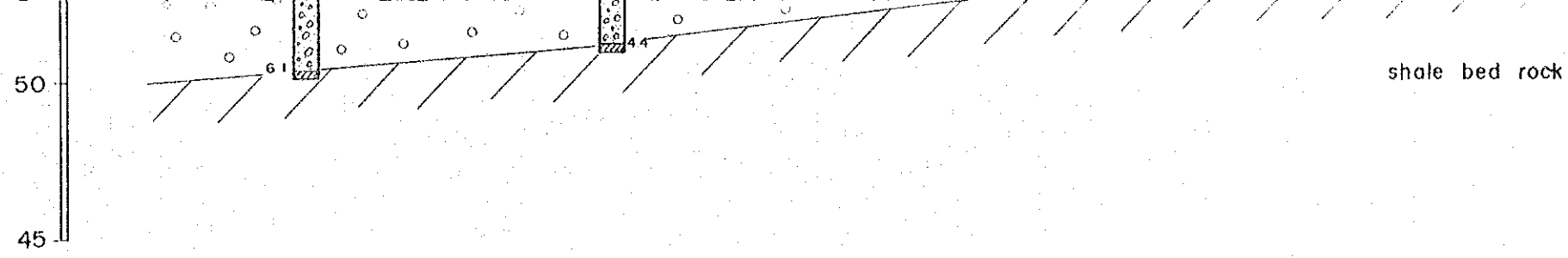


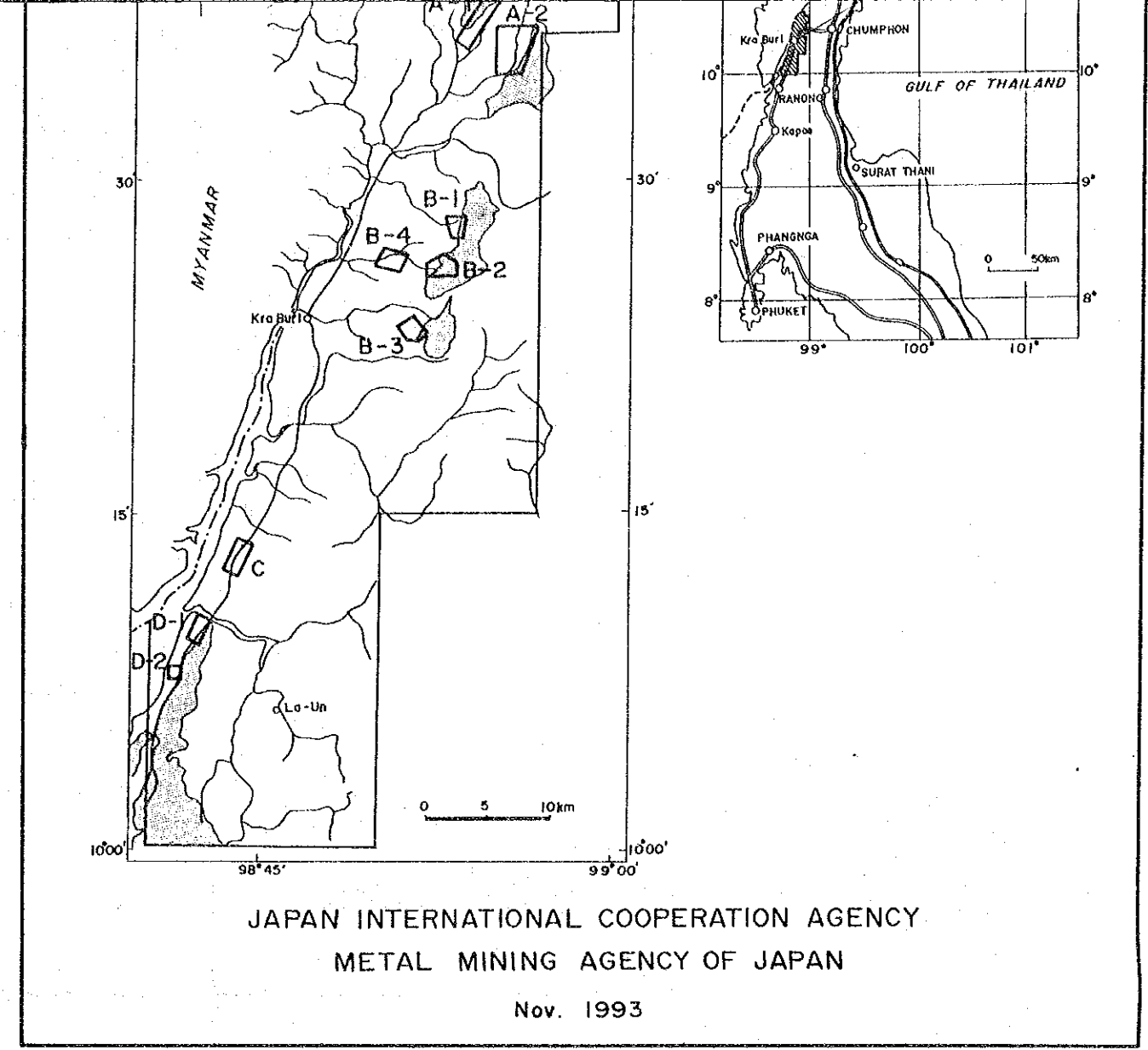
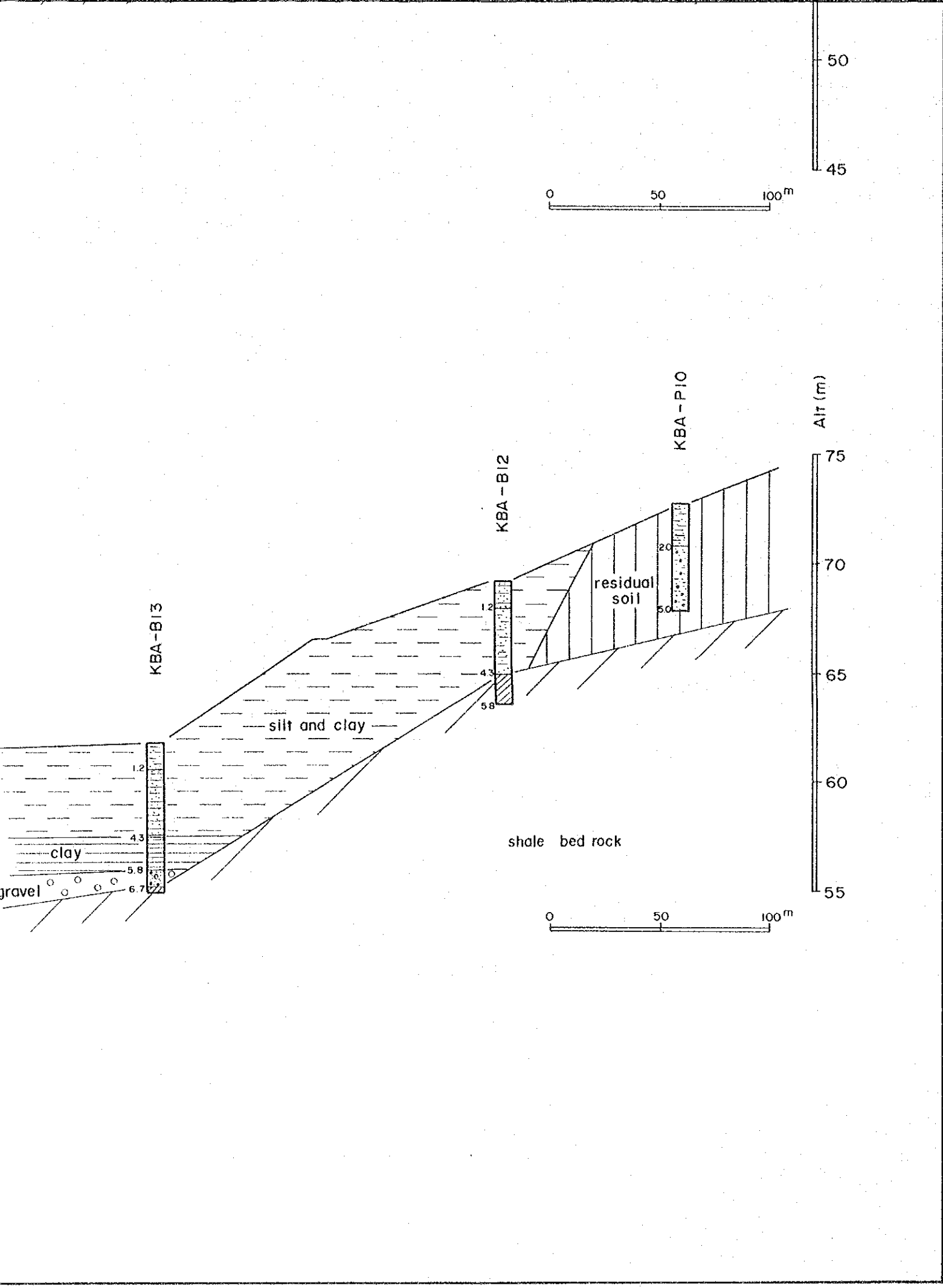


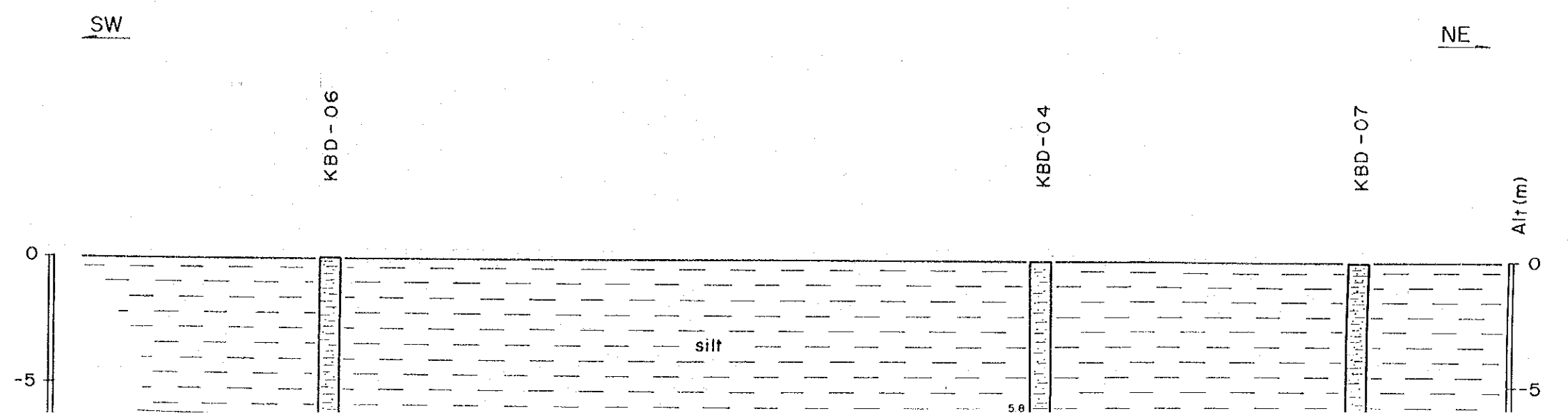
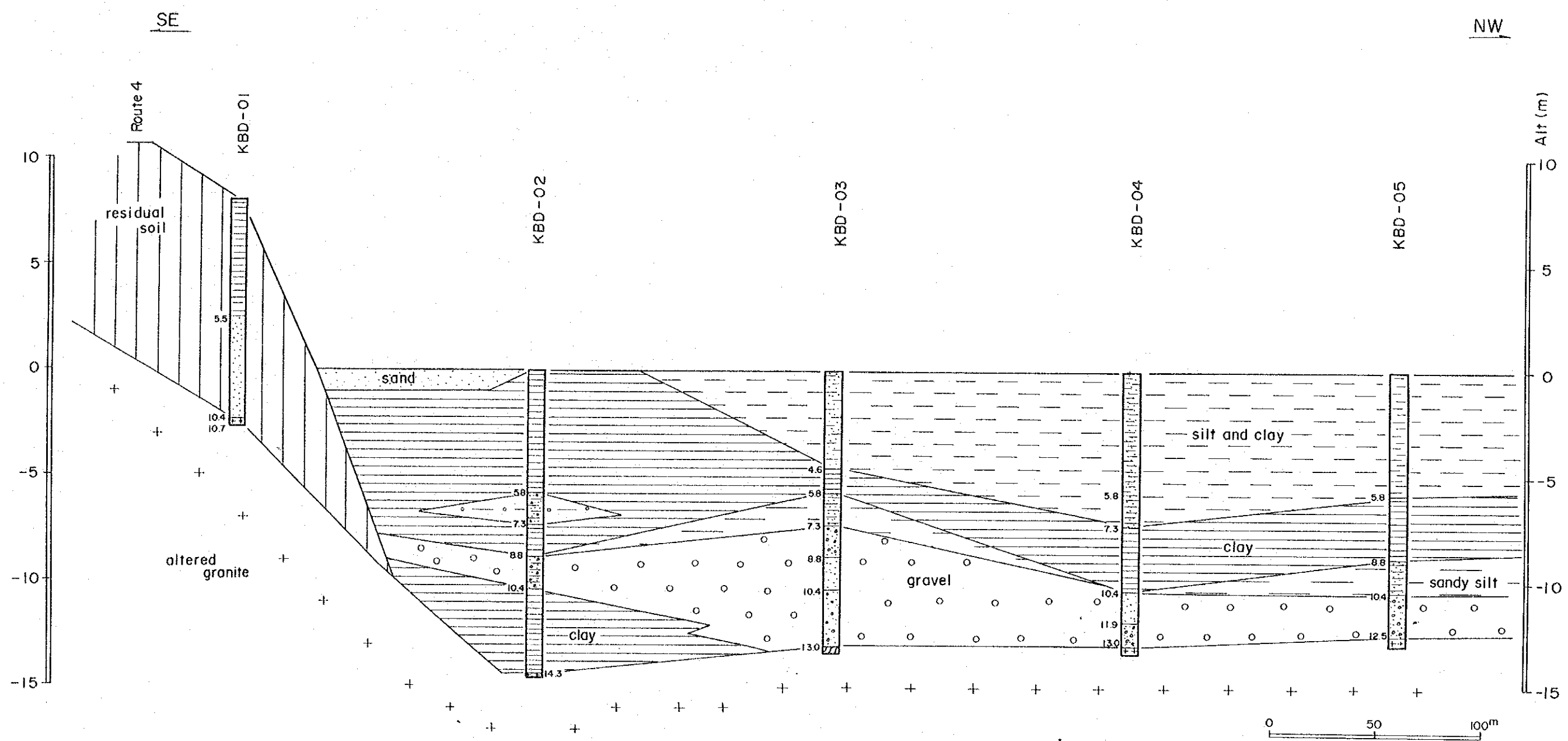
MINERAL EXPLORATION  
OF  
THE KRA BURI AREA, THAILAND  
PHASE III  
GEOLOGIC PROFILE IN AREA A-1(3)



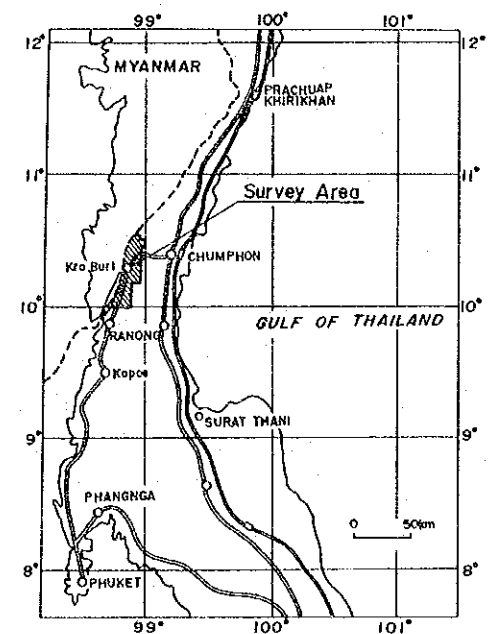
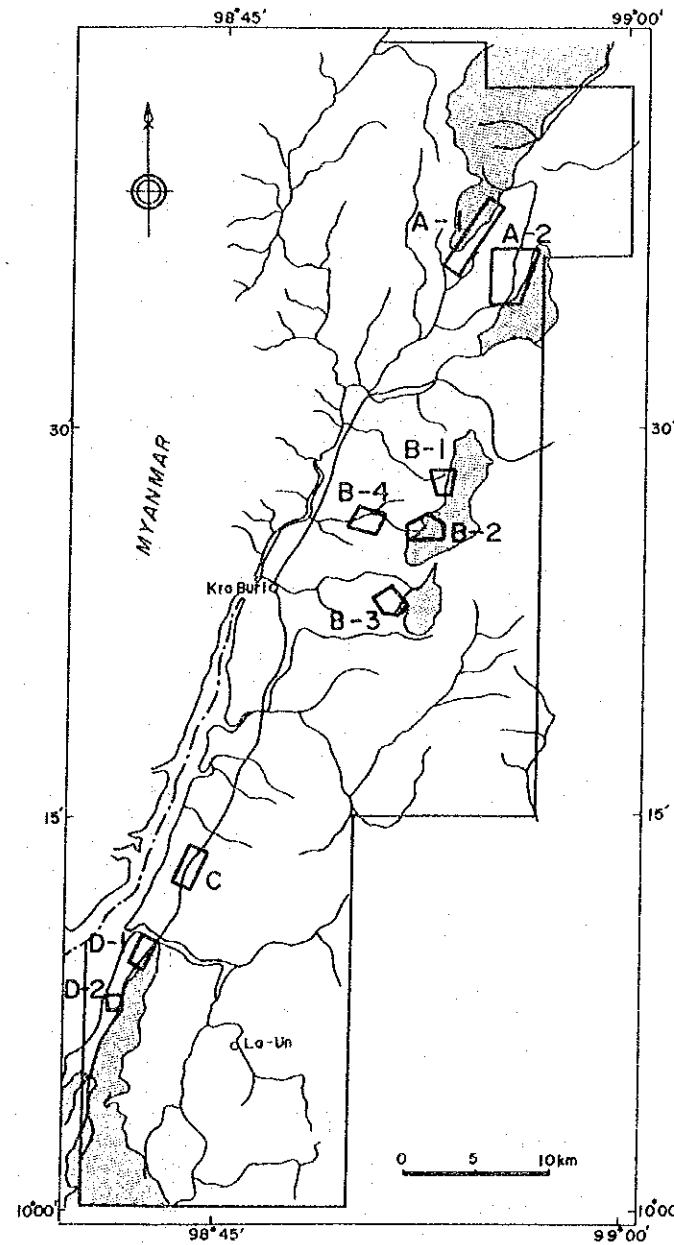
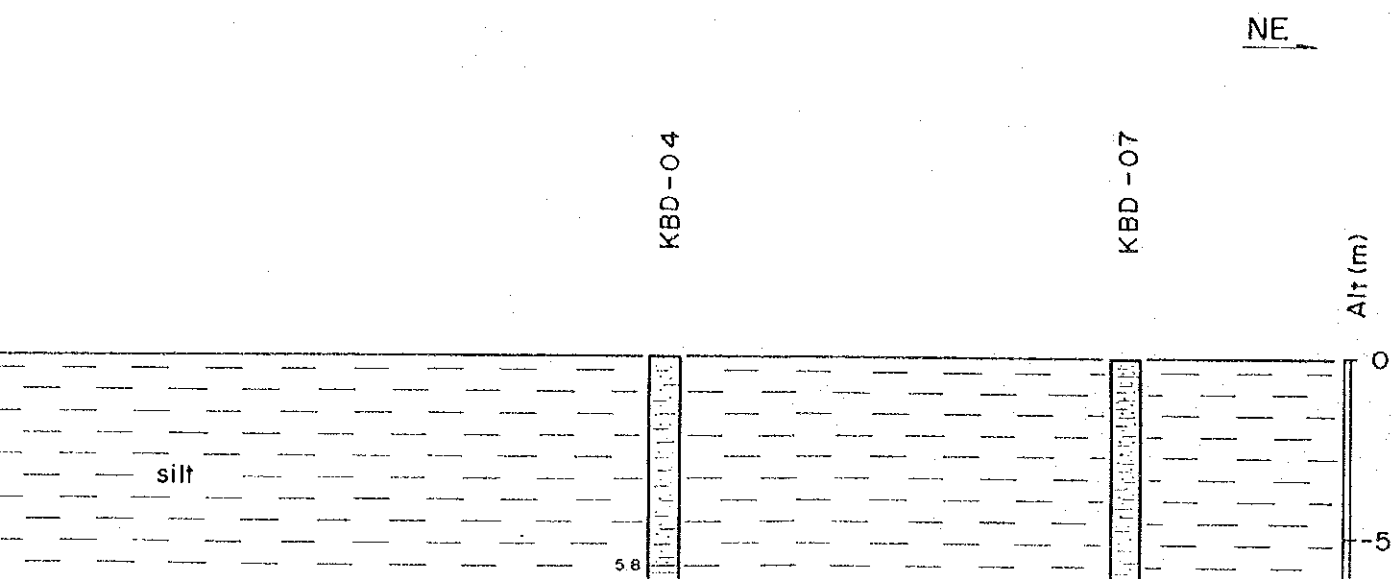
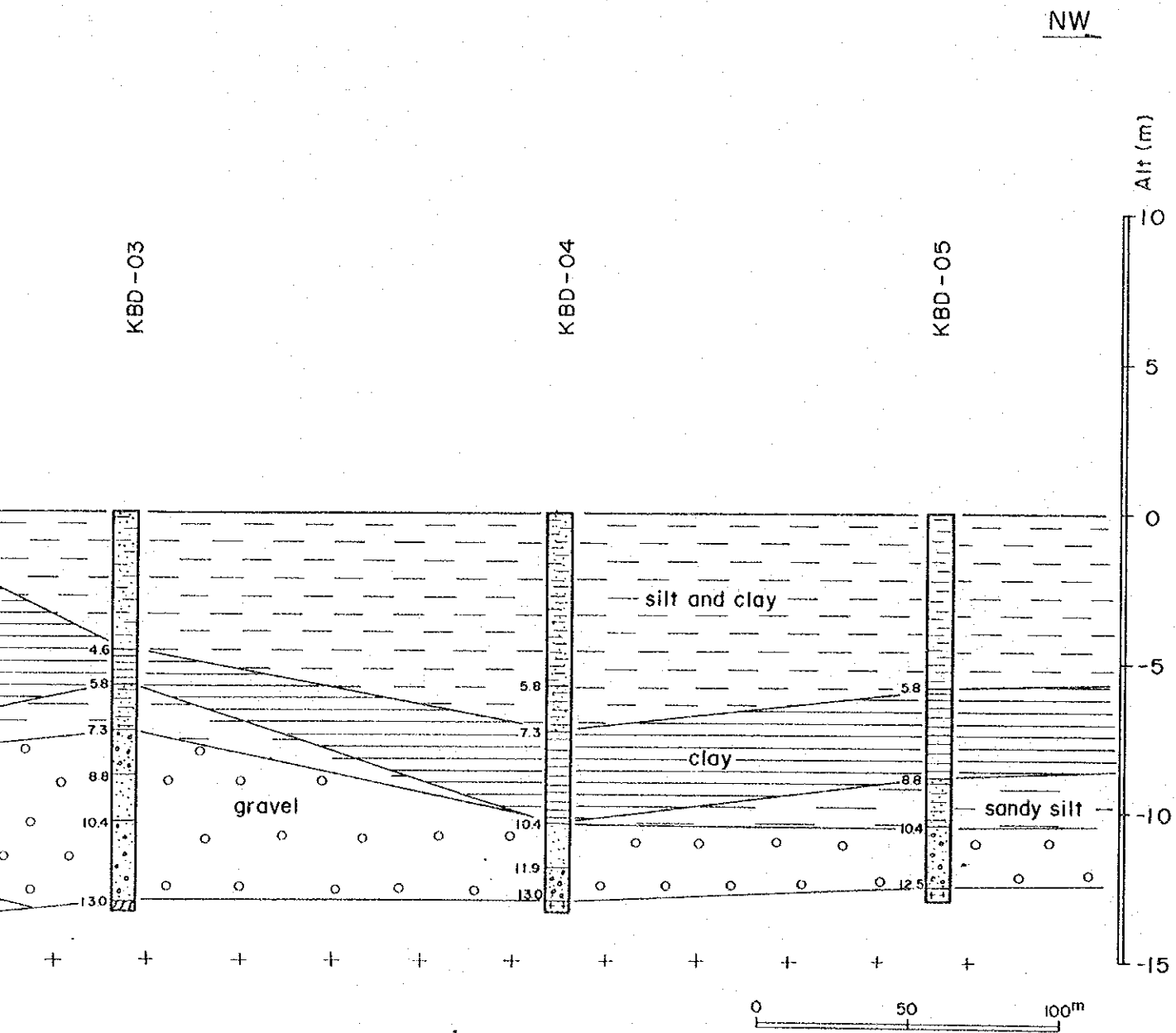
JAPAN INTERNATIONAL COOPERATION AGENCY  
METAL MINING AGENCY OF JAPAN  
Nov. 1993





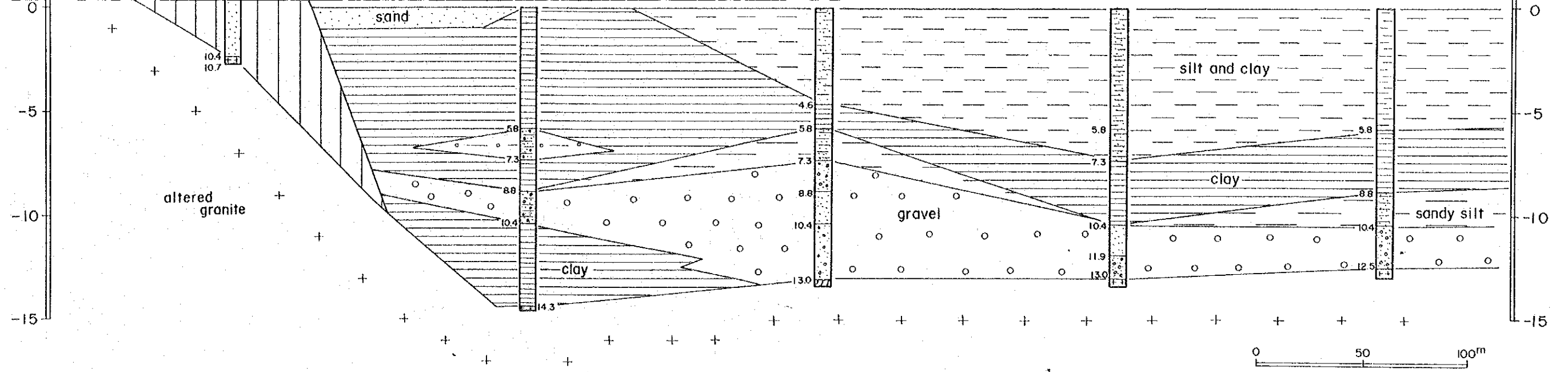


MINERAL EXPLORATION  
OF  
THE KRA BURI AREA, THAILAND  
PHASE III  
GEOLOGIC PROFILE IN AREA D-1 (I)



JAPAN INTERNATIONAL COOPERATION AGENCY  
METAL MINING AGENCY OF JAPAN

Nov. 1993



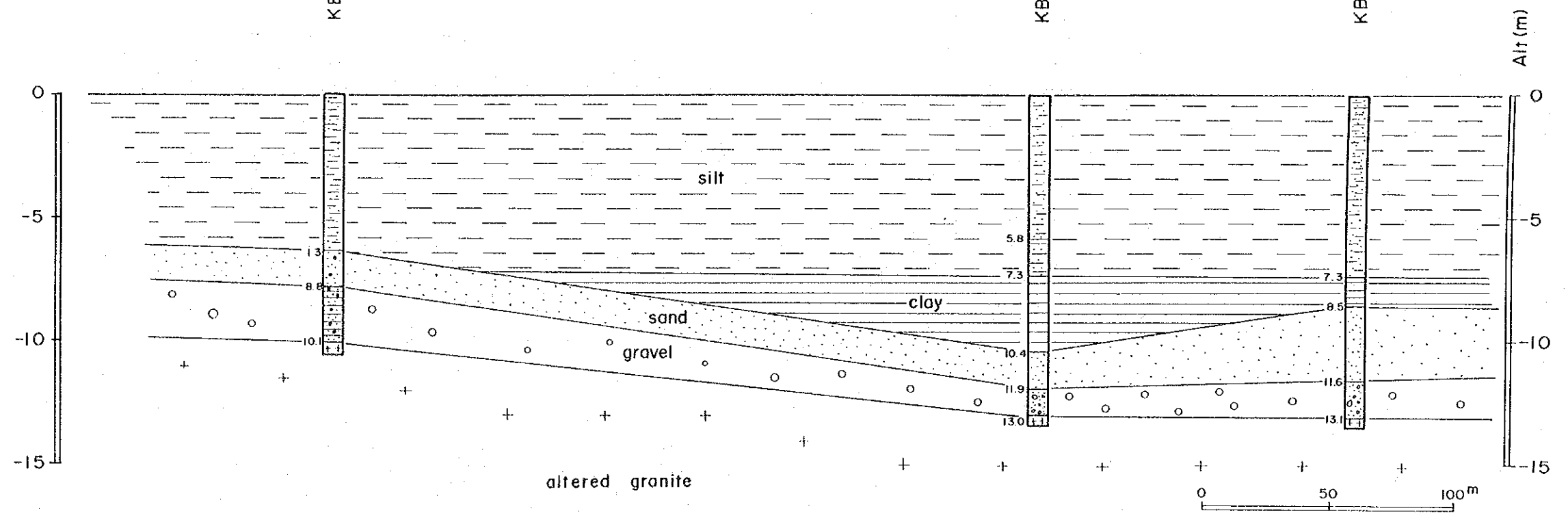
SW

NE

KBD-06

KBD-04

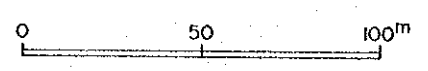
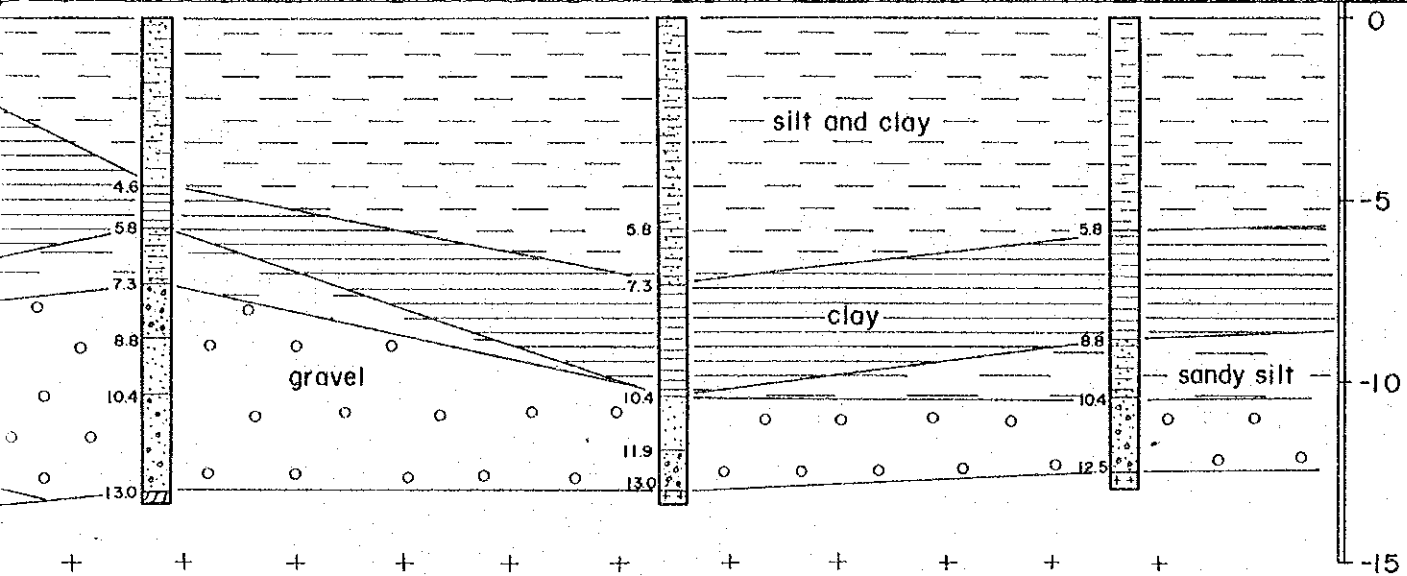
KBD-07



Alt (m)

altered granite



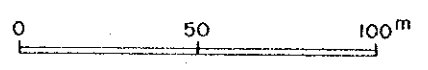
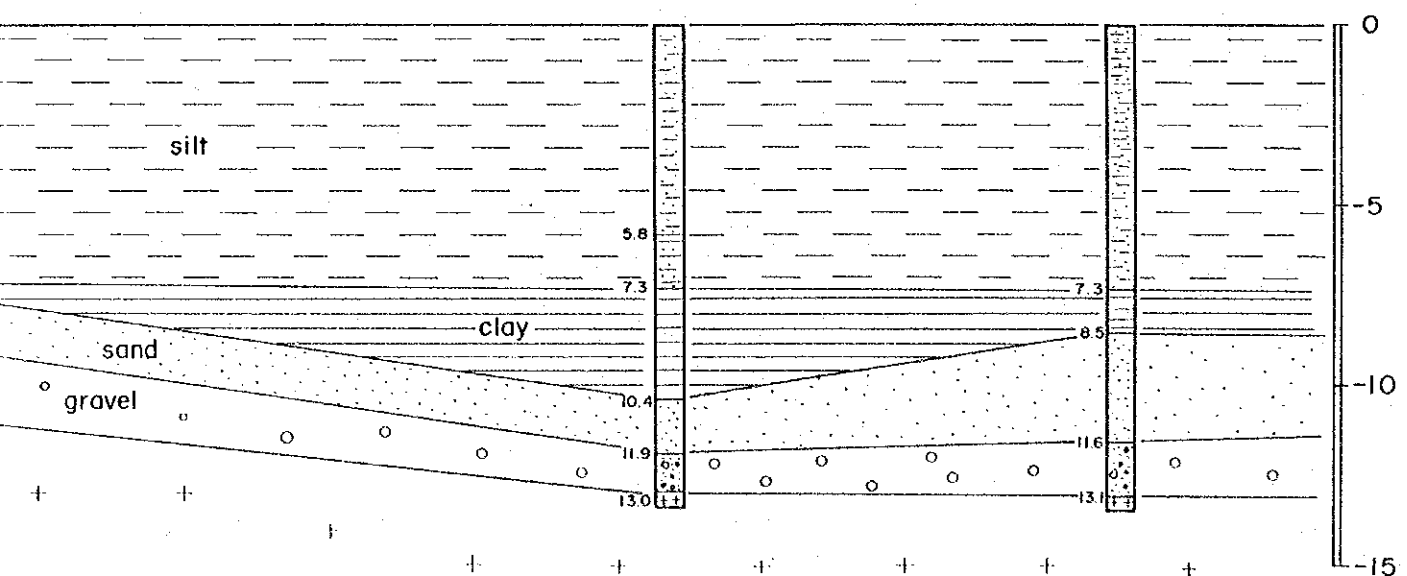


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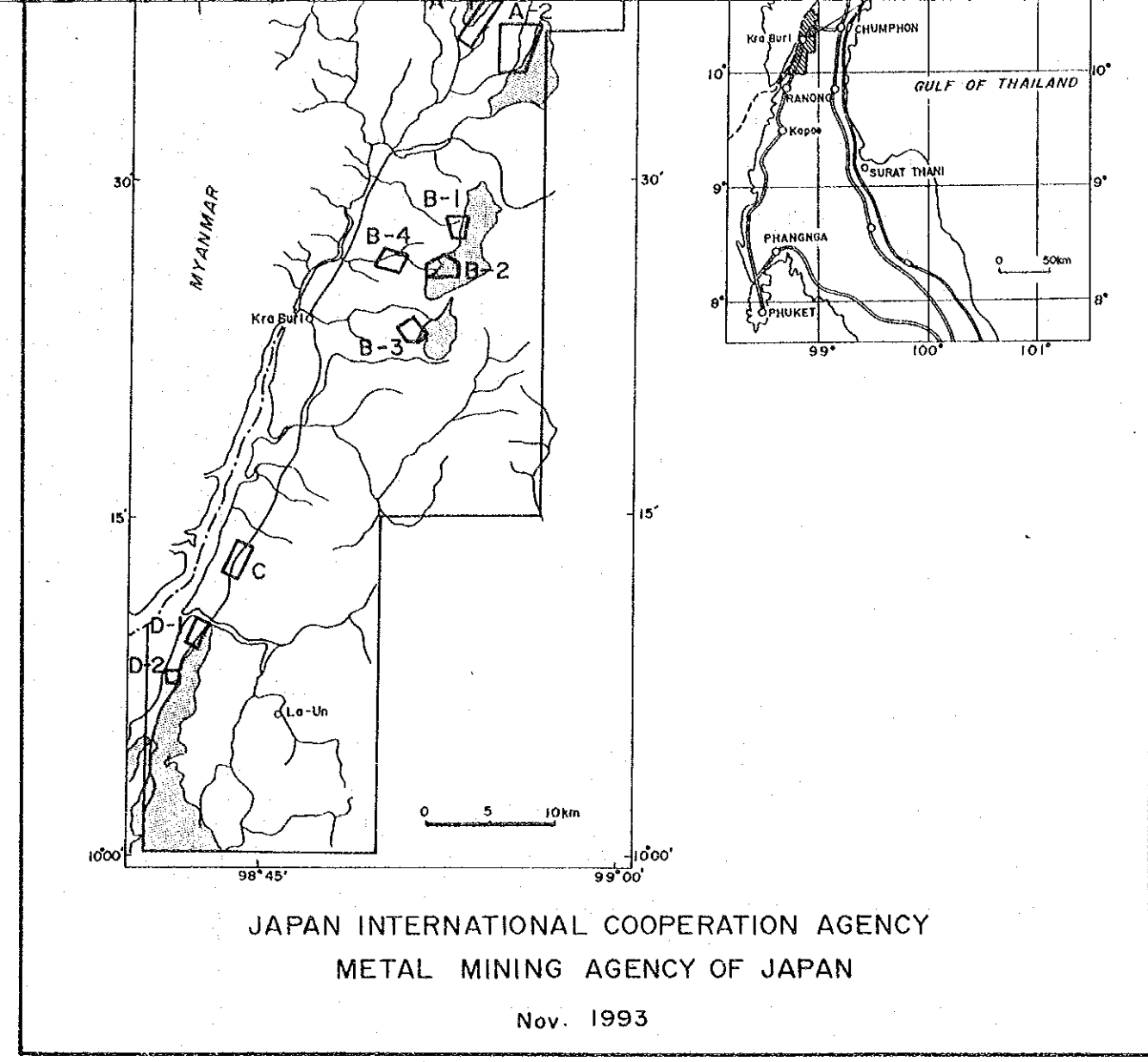
KBD-04

KBD-07

Alt (m)

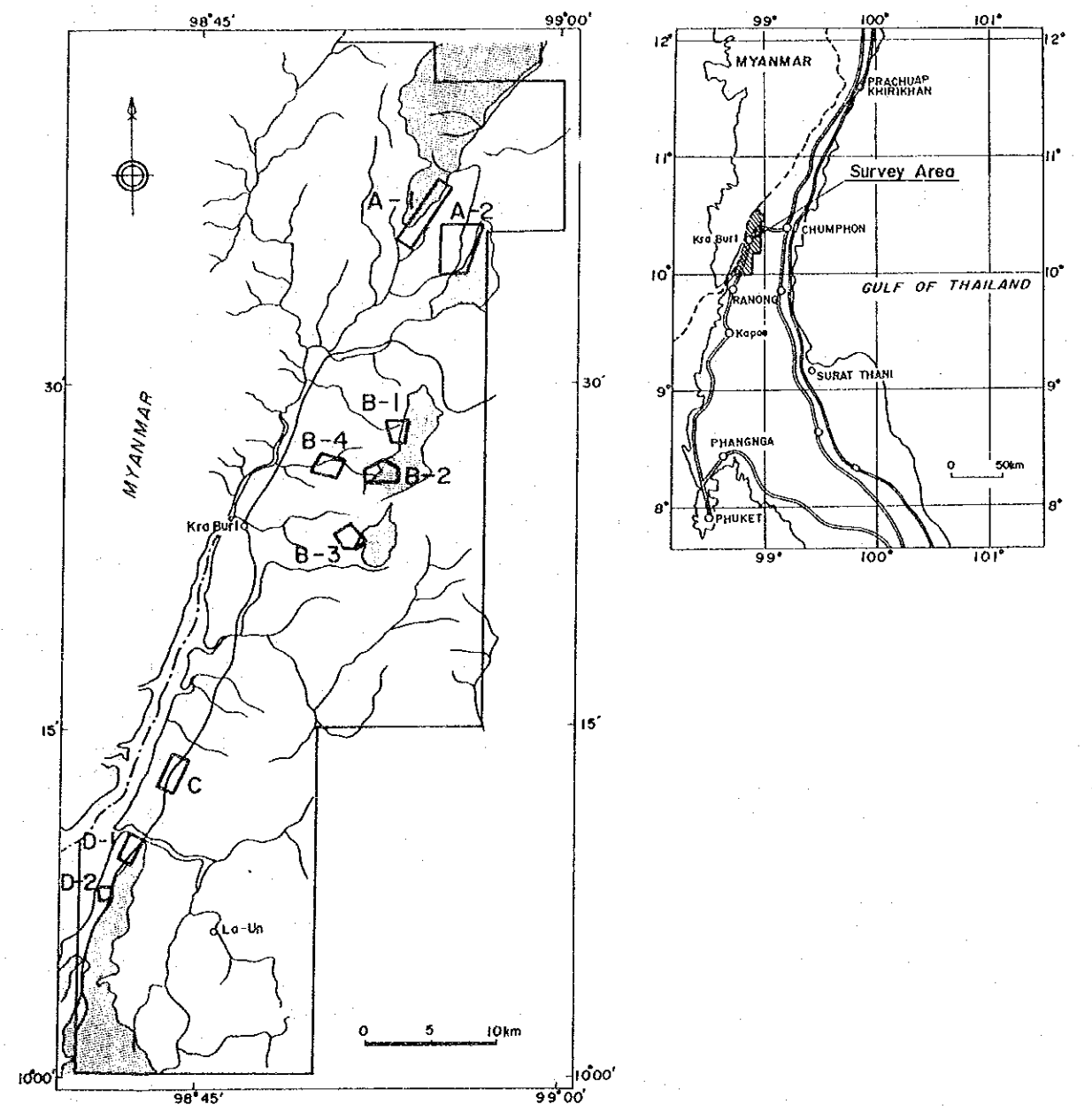
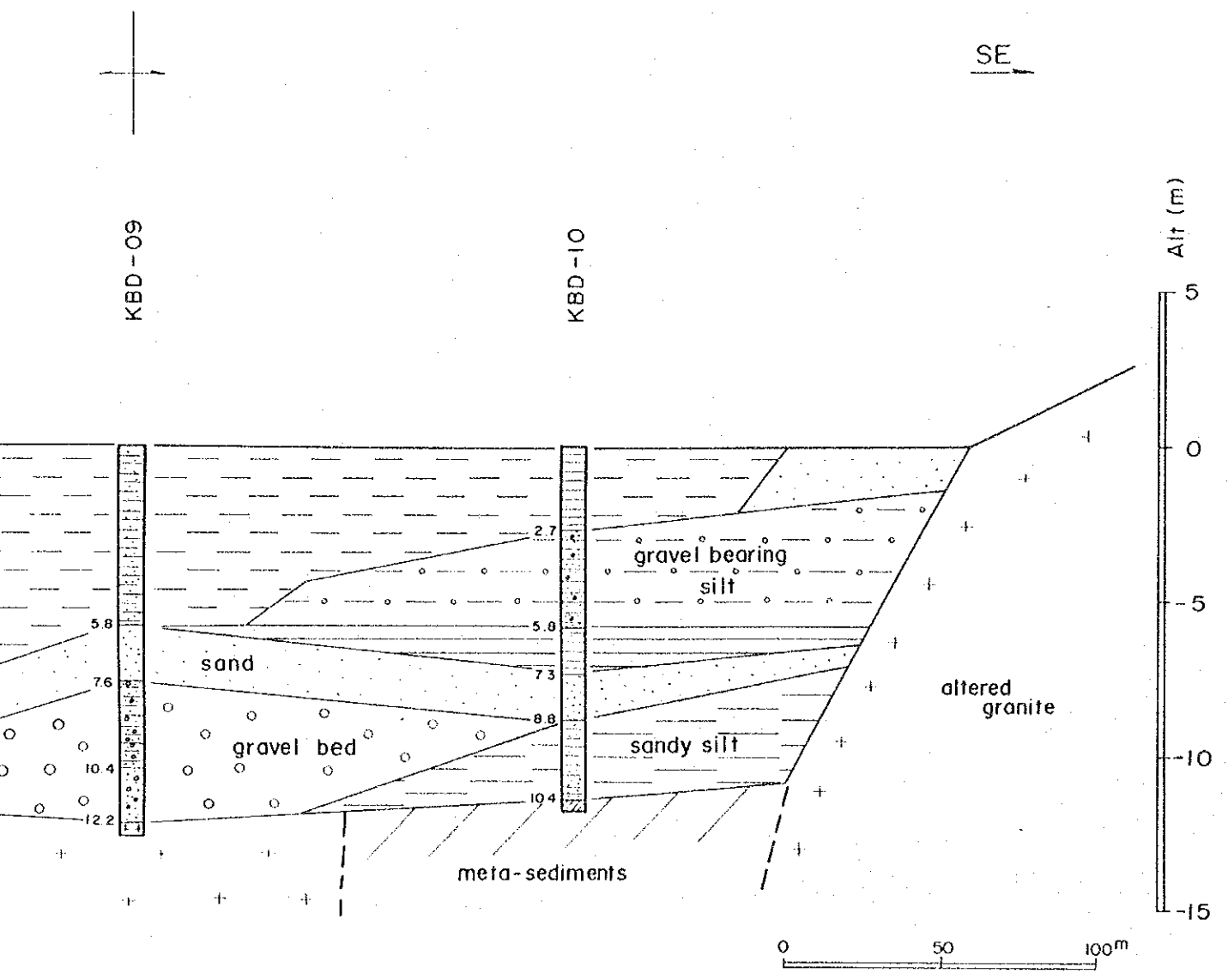


red granite





MINERAL EXPLORATION  
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THE KRA BURI AREA, THAILAND  
PHASE III  
GEOLOGIC PROFILE IN AREA D-1(2)



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Nov. 1993