

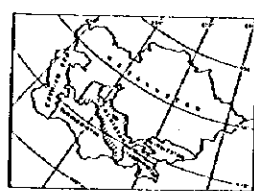
(after T.P. Radajeva, H.B. Khan: 1904)

№	И. РАДАJEBA И Б. ХАН
Год издания	1904
Издательство	ИЗДАТЕЛЬСТВО ПЕДАГОГИЧЕСКАЯ КАРТА
Место издания	Уфа
Страна	СССР

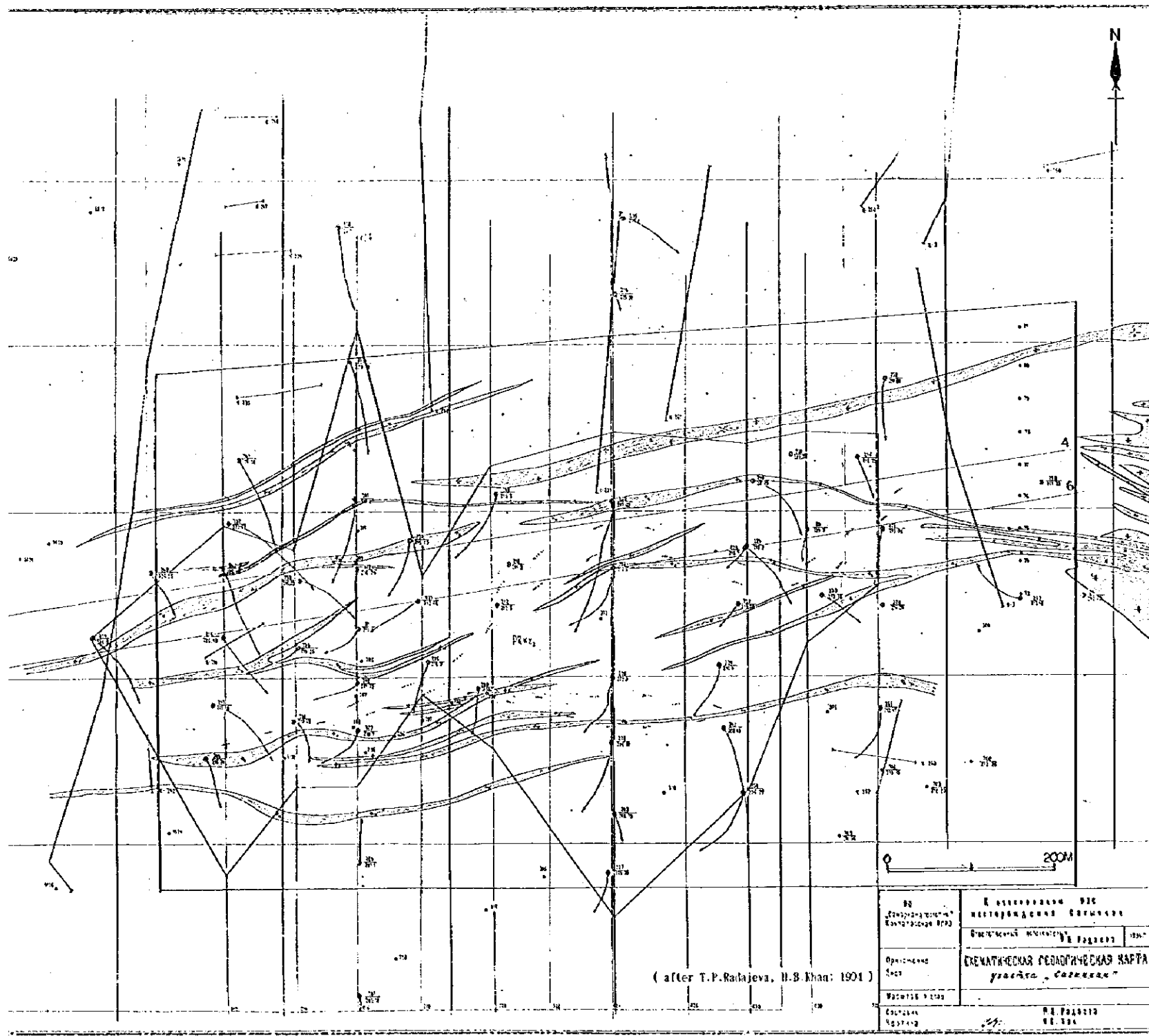
	Quaternary Deposits		Structural axis
	Cretaceous-Turonian stage (Green clay)		Ore bodies of the interval
	Eocene formation (Kyzylsaiensis, Limestone, Shales, Dolomites)		Mineralized zones with grade of 100-0.10
	Granodiorites		Projecting line
	Diorites, Granite diorites, Diorite porphyries		Trenches and stripings
	Tertiary granites		Trench profile
	Apfites		Drill holes (to core, 6-coreless, without for logging)
	Gabbro-diorites		Drill holes (to core, 6-coreless, without for logging)
	Shales		Projection of drill holes
	Proved geologic boundary		Boundary of reserves of category I
	Proved geologic boundary		Data for reserve calculation
	Fractures (approved, 6-inferred)		Boundary of reserves of category II
	Tectonic breccia		Boundary of reserves of category III
	Folding		Boundary of reserves of category IV
	Anticlinal axis		Boundary of reserves of category V
	Quartz schistose structure		

THE MINERAL RESOURCES OF THE EASTERN REPUBLIC OF SAGHINKAN DE

SHEMATIC GEOLOGICAL MAP OF SAGHINKAN DE



JAPAN INTERNATIONAL METAL MINING FEBF
Prepared

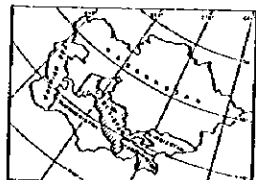
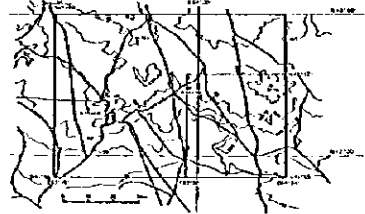


	Quaternary Deposits		Structural axis
	Cretaceous-Turonian stage (Greenish sandstones, Conglomerates)		Ore bodies, the intervals of work
	Eocene-Early Miocene (Limestones, Shales, Dolomites)		Mineralized zone with grade of $0.2 < 0.1\%$
	Granodiorites		Projecting line
	Biotite granite diorites		Trenches and stripings
	Biotite porphyries		Trench profile
	Serpentinites		Drill holes (surface, 0-level, in circles for mapping)
	Apolites		Drill holes (down, 0-level, in circles for mapping)
	Granodiorites		Projection of drill holes
	Sharns		Boundary of reserves of category C2
	Proterozoic boundary		Data for reserve calculation
	Precambrian boundary		Area of the ore body
	Fractures (approved, 0-inferred)		Reserves (known)
	Tectonic breccia		Reserves (inferred)
	Bedding		Boundary for resources of category C1
	Anticlinal axis		Boundary of reserves of category C2
	Quartz schistite stockwork		Boundary of reserves of category C1

Pl. II-1-5

THE MINERAL EXPLORATION IN THE EASTERN BUKANTAU AREA THE REPUBLIC OF UZBEKISTAN (PHASE I)

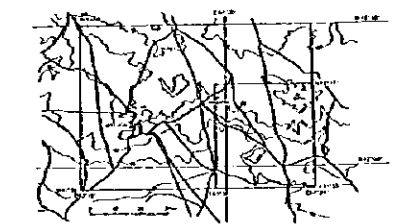
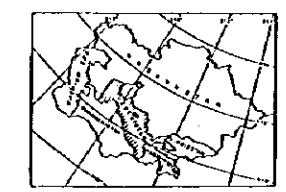
SCHEMATIC GEOLOGICAL MAP OF THE SAGHINKAN DEPOSITS

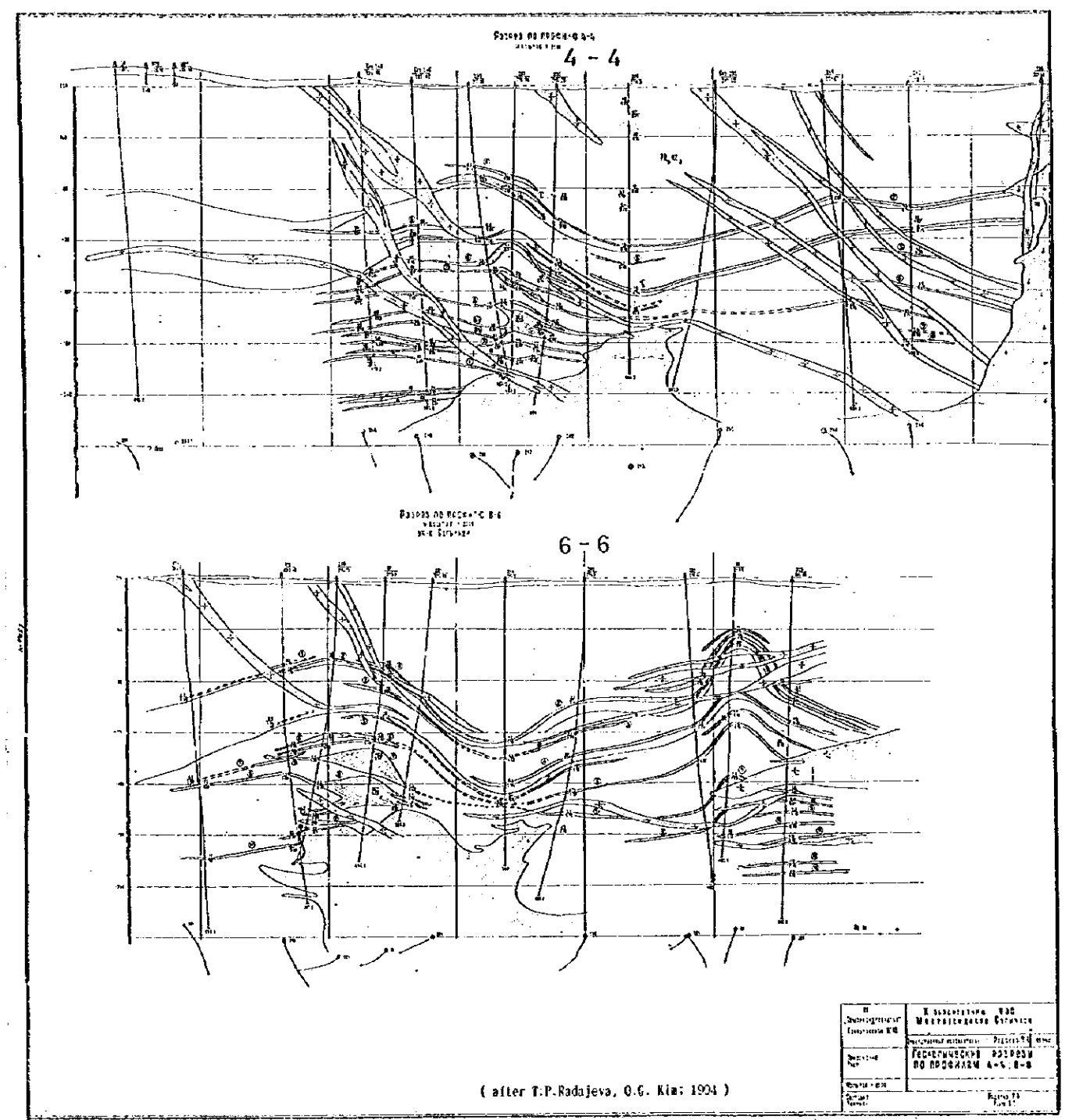
JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
FEBRUARY 1995
Prepared by MINDECO

THE MINERAL EXPLORATION
IN
THE EASTERN BUKANTAU AREA
THE REPUBLIC OF UZBEKISTAN
(PHASE I)

GEOLOGICAL CROSS SECTIONS OF THE
SAGHINKAN DEPOSITS



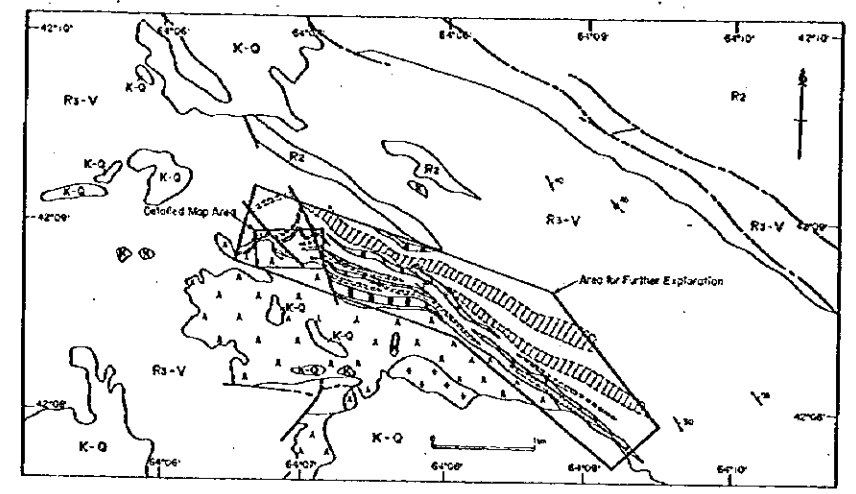
JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
FEBRUARY 1995
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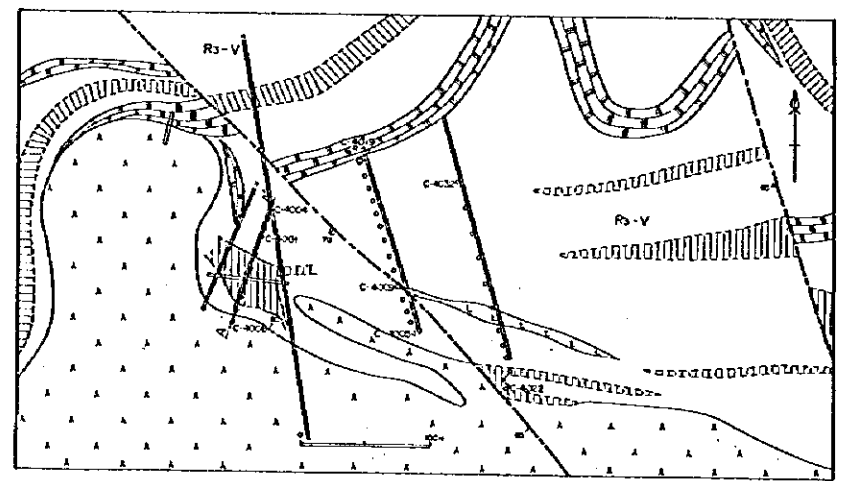
	Quaternary Deposits		Spectral axis
	Cretaceous Turanian stage: Greenclay Sandstones, Conglomerates		Ore bodies (see International Work)
	Eocene formation: Metavolcanics, Limestone, Shales, Dolomites		Normalized zones with grade of 0.25 to 0.10
	Gneiss		Projecting line
	Diorite: Sphalerite-diorites, Diorite porphyries		Trenches and stripings
	Gabbro		Trench profile
	Amphibolite		Drill holes (for core, B: coreless, A: coreless for mapping)
	Gneiss		Drill holes (for core, B: coreless, A: coreless for mapping)
	Shale		Projection of drill holes
	Proven geologic boundary		Boundary of reserves of category CE
	Discordant geologic boundary		Data for reserve calculation: S: area of the ore body, C: grade (%)
	Fractures (A: proved, B: inferred)		Ore reserves (A: proved, B: inferred, C: grade (%))
	Tectonic breccia		Boundary of reserves of category CE
	Bedding		Boundary of reserves of category CE
	Anticlinal axis		
	Quartz schistite stockwork		

(after T.P. Radajeva, O.G. Kim: 1994)

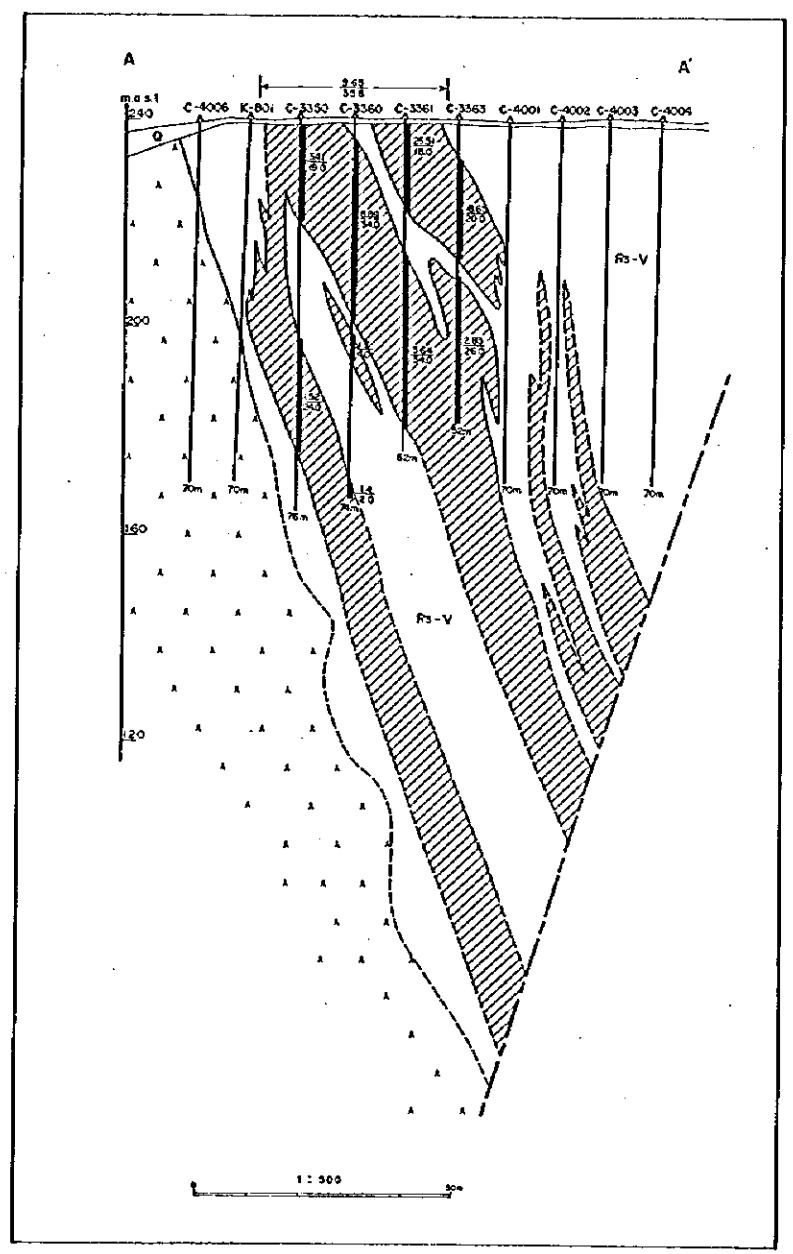
Исполнитель: Институт ГИИ	Исполнитель: ИИ
Составил: ИИ	Составил: ИИ
Проверил: ИИ	Проверил: ИИ
Дата: ИИ	Дата: ИИ



a: Index Map of Bulutkan Prospect



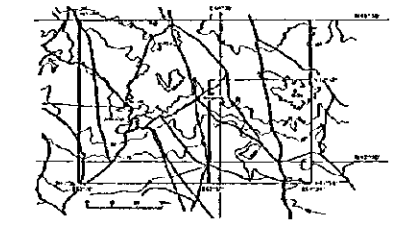
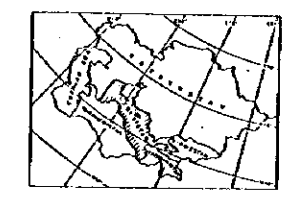
b: Detail Map of Bulutkan Prospect



c: Cross Section of A - A'

THE MINERAL EXPLORATION
IN
THE EASTERN BUKANTAU AREA
THE REPUBLIC OF UZBEKISTAN
(PHASE I)

SCHEMATIC GEOLOGICAL MAP AND CROSS
SECTION OF THE BULUTKAN ORE SHOWING



JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
FEBRUARY 1995
Prepared by MINDECO

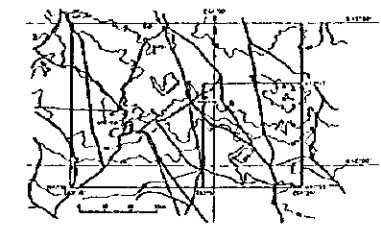
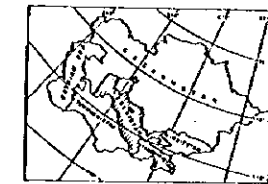
LEGEND

	Cretaceous or Quaternary alluvium
	R1-V formation, sandstone, shale, quartz siltstone
	R2 formation, quartzite
	Karakala formation, white, calcareous
	serpentinite
	granodiorite
	granite
	gold ore zone
	Au grading/sample interval
	fault
	bedding
	bench
	drill hole core drilling
	cross section line

(after V.F. Chechulin: 1994)

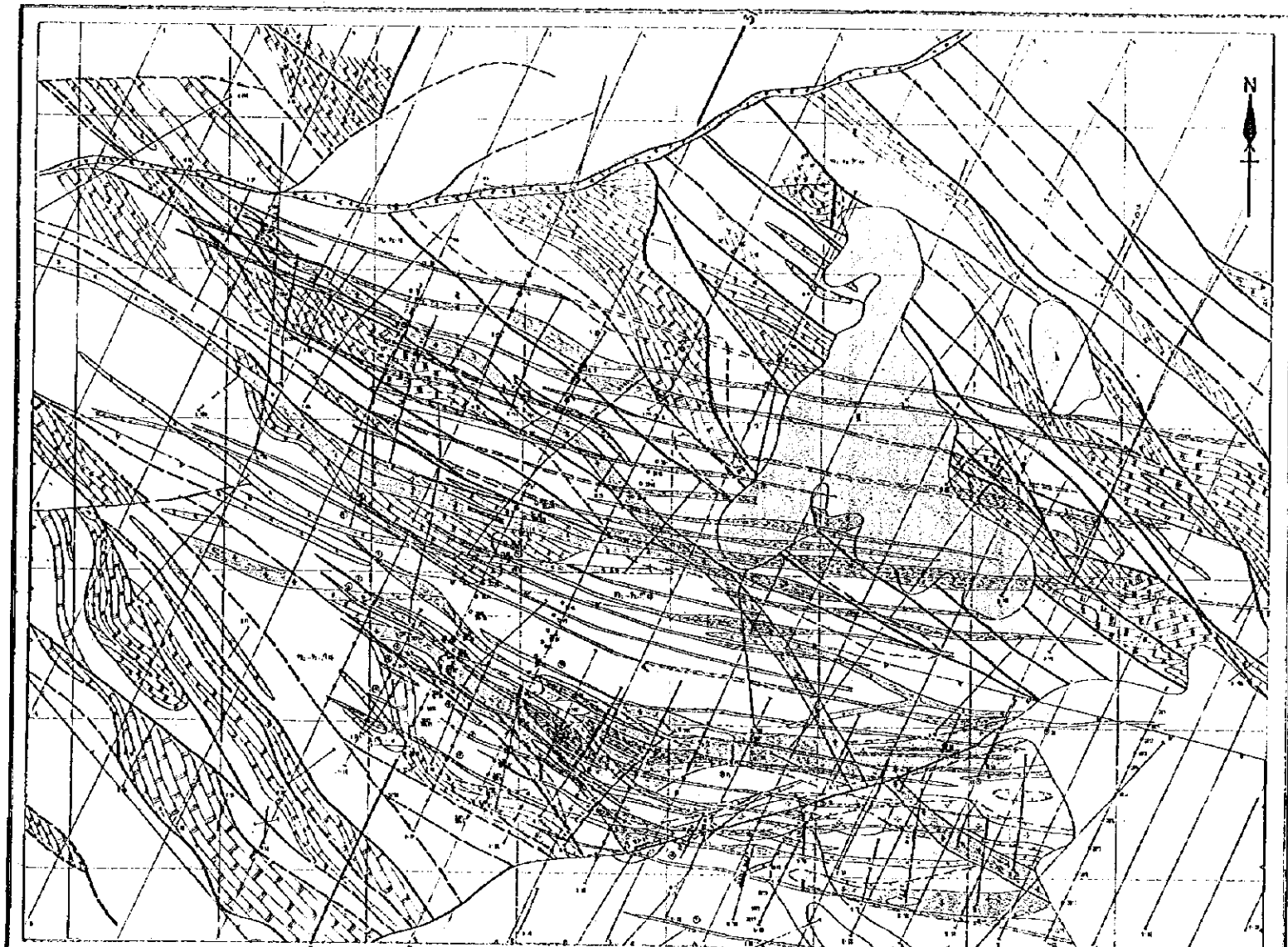
THE MINERAL EXPLORATION
IN
THE EASTERN BUKANTAU AREA
THE REPUBLIC OF UZBEKISTAN
(PHASE I)

GEOLOGICAL MAP OF THE TURBAY ORE DEPOSITS
























JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
FEBRUARY 1995

Prepared by MNDECO

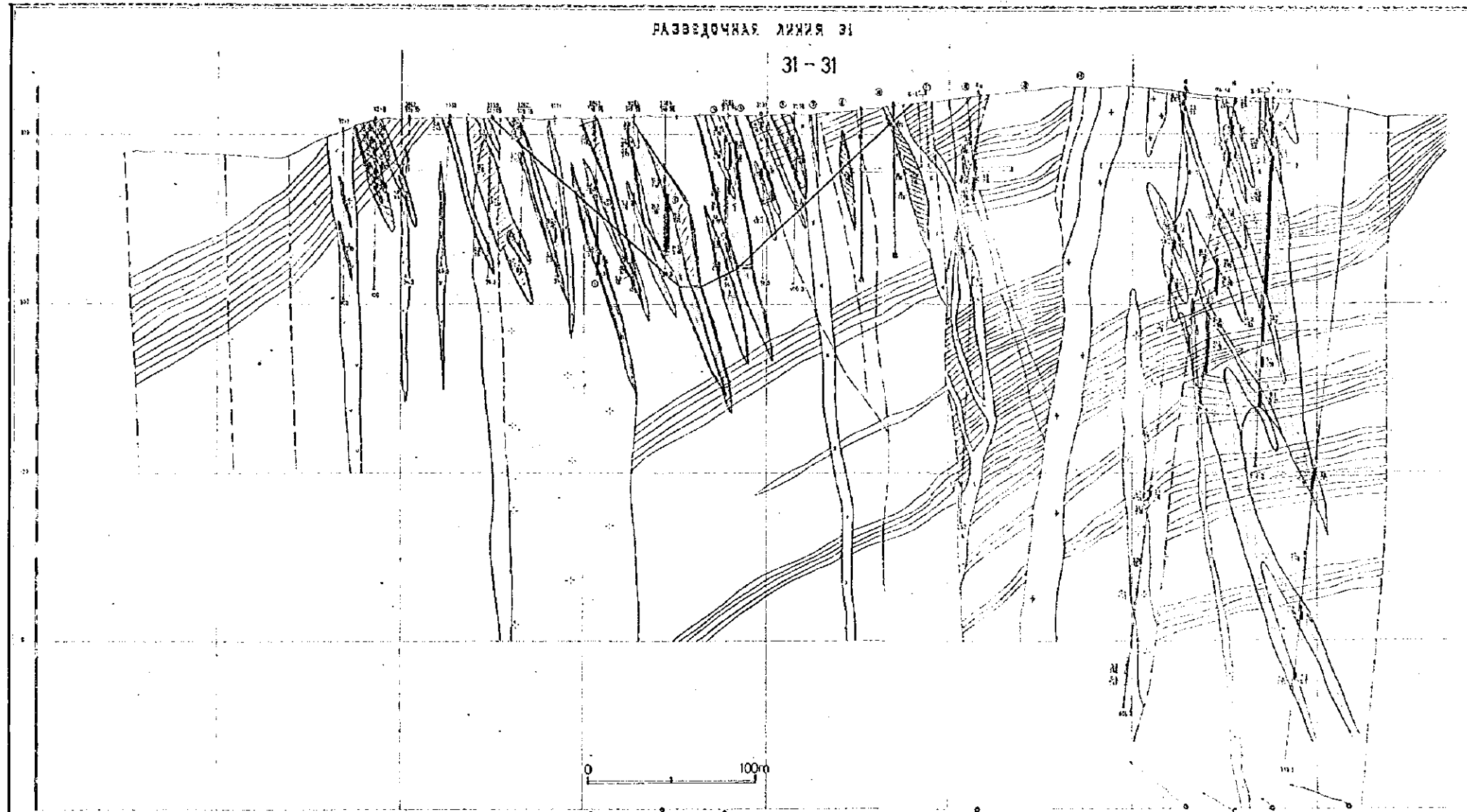


LEGEND

- | | | | | | |
|---|---|---|--|---|---|
|  | Cretaceous conglomerates, siltstones, clay shales, etc. (as the plan, ϕ as the cross section) |  | Early Permian granite-granodiorite intrusives |  | Thrusts, striplings |
|  | Devonian formation (Pz. Pz. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100) |  | Granodiorite porphyries, admettites porphyries, granite porphyries |  | Run core drill holes (a on the plan, ϕ on the cross section) |
|  | Devonian quartzite, mica schists, etc. (as the plan, ϕ as the cross section) |  | Fine grained porphyritic hornblende biotite granodiorites, admettites granites |  | Core drill holes |
|  | Microquartzites, siliceous rock, etc. (as the plan, ϕ as the cross section) |  | Silicification zones with quartz stockworks |  | Exploration shafts (a: sided, ϕ : projected) |
|  | Quartzite like siliceous rocks (as the plan, ϕ as the cross section) |  | Dark veins |  | Ore intercepts (a: sided, ϕ : projected) |
|  | Granite porphyries |  | Faults (a: proved, ϕ : inferred) |  | Prospective evaluation areas |
|  | Granodiorite porphyries |  | Thrusts |  | Ore bodies and their outlines (Reserve category a: C.P., ϕ : P.) |

(after A.A. Rubanov, 1991)

Scale	1:50,000
Projection	UTM
Zone	48N
Datum	WGS 84
Units	Meters
Author	MNDECO
Year	1995



LEGEND

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(after V.A. Denejkin, R.A. Tallov; 1988)

№	12
Наименование участка	УЗБЕКИСТАН РЕСПУБЛИКАСИ
Инвентарный №	ГЕОПРОМОНОВСКИЙ РАЗРЕЗ 31
Дата	1995 г.
Масштаб	1:50000
Составитель	И.А. Денежкин, Р.А. Таллов

PL II-1-9

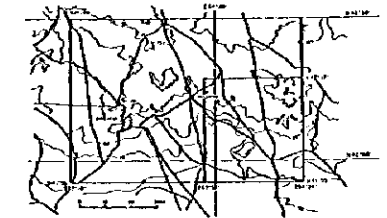
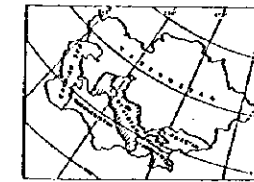
THE MINERAL EXPLORATION
IN
THE EASTERN BUKANTAU AREA
THE REPUBLIC OF UZBEKISTAN
(PHASE I)

GEOLOGICAL CROSS SECTION OF THE
TURBAY DEPOSITS

JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
FEBRUARY 1995
Prepared by MINDECO

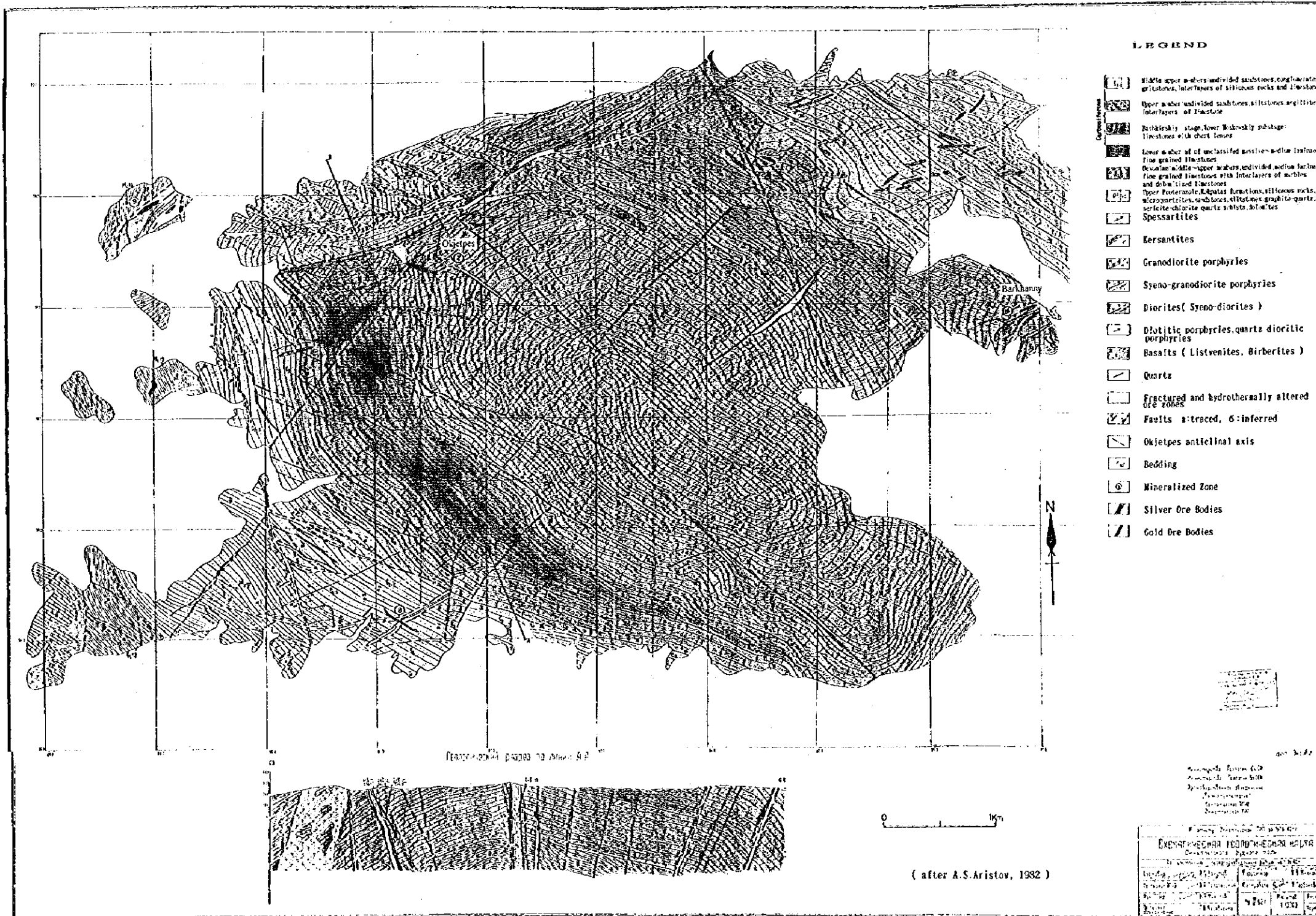
THE MINERAL EXPLORATION
IN
THE EASTERN BUKANTAU AREA
THE REPUBLIC OF UZBEKISTAN
(PHASE I)

SCHEMATIC GEOLOGICAL MAP OF THE
OKJETPES ORE FIELD



JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
FEBRUARY 1995

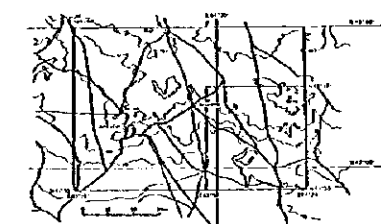
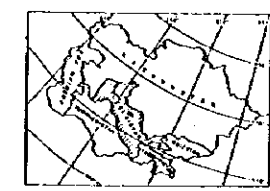
Prepared by MINDECO





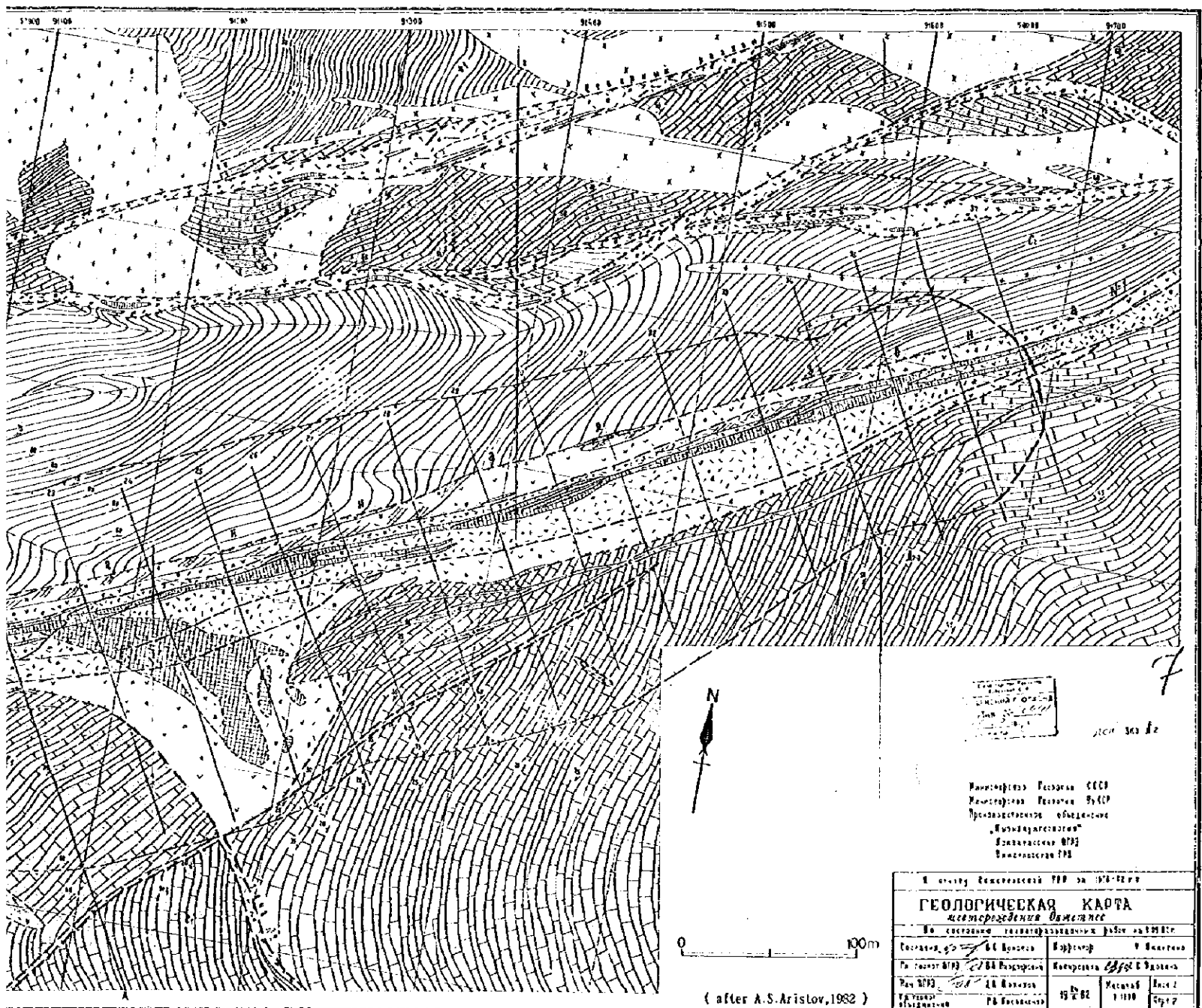
THE MINERAL EXPLORATION
IN
THE EASTERN BUKANTAU AREA
THE REPUBLIC OF UZBEKISTAN
(PHASE I)

GEOLOGICAL MAP OF THE OKJETPES DEPOSITS



JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
FEBRUARY 1995

Prepared by MINDECO



Геологическая карта
месторождения Окжетпес
1:100000

Институт Геологии СССР
Институт Геологии РУСР
Промышленно-объединение
"Узбекгеология"
Институт ГИГ
Институт ГИГ

1:100000

ГЕОЛОГИЧЕСКАЯ КАРТА
месторождения Окжетпес

1:100000

Госгидроцентр	46	Восточная	Восточная	46	Восточная
Институт ГИГ	46	Восточная	Восточная	46	Восточная
Институт ГИГ	46	Восточная	Восточная	46	Восточная
Институт ГИГ	46	Восточная	Восточная	46	Восточная
Институт ГИГ	46	Восточная	Восточная	46	Восточная

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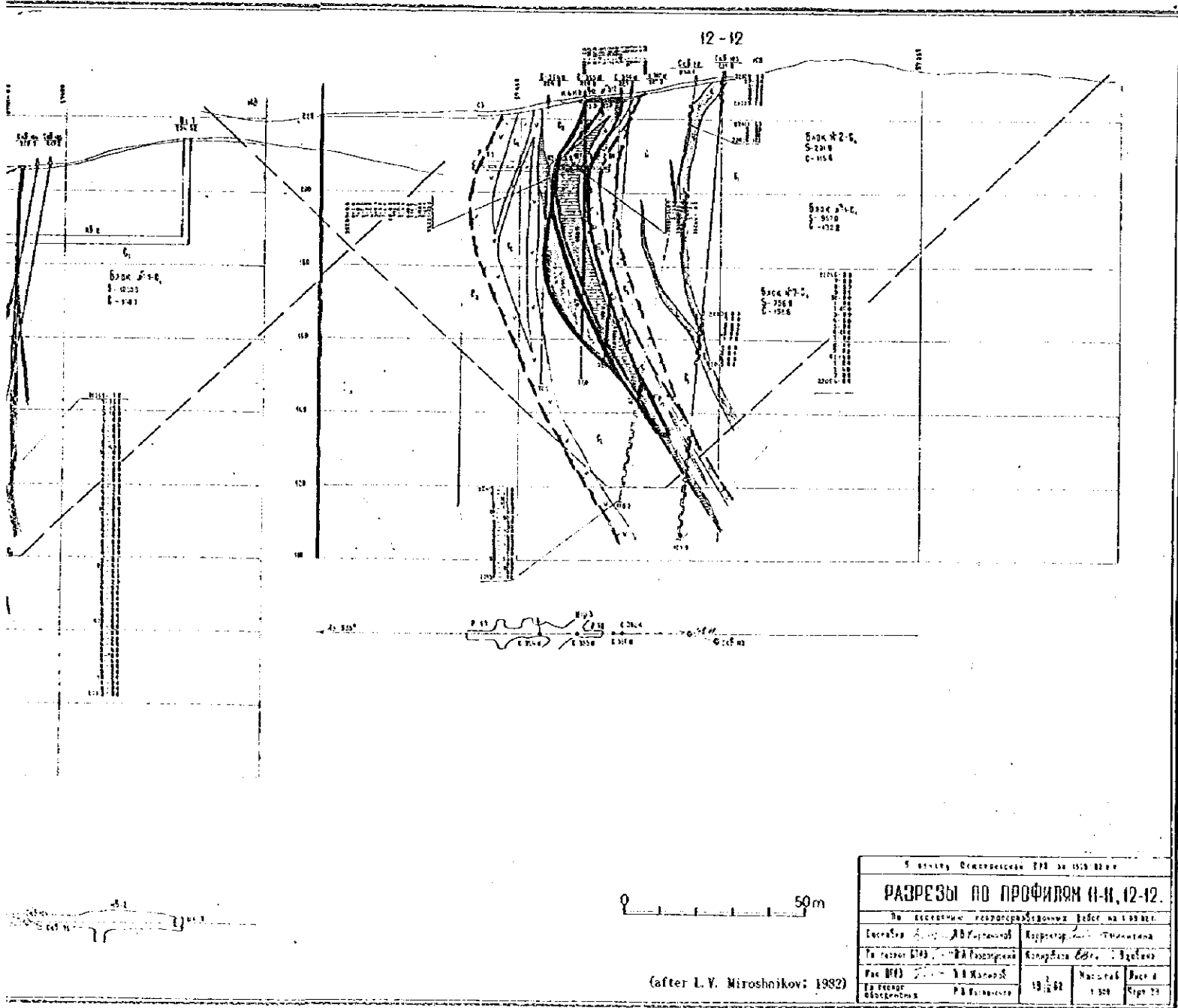
1:100000

(after A.S.Aristov, 1982)

1:100000

LEGEND

	Structural axis		Strike-slip fault
	Geologic boundary (clear)		Geologic boundary (dotted)
	Geologic boundary (dashed)		Boundary of modification zone
	Boundary of modification zone		Fault
	Fault		Fractures and their numbers
	Fractures and their numbers		Profile of a trench and the water
	Profile of a trench and the water		Exploration shaft number and elevation
	Exploration shaft number and elevation		Projection of underground workings
	Projection of underground workings		Exploration shaft number and elevation
	Exploration shaft number and elevation		Projection of underground workings
	Projection of underground workings		Core drill hole number, collar elevation
	Core drill hole number, collar elevation		Face of drill hole number, collar elevation
	Face of drill hole number, collar elevation		Projection of drill holes onto surface
	Projection of drill holes onto surface		Core drill holes
	Core drill holes		Face of drill holes
	Face of drill holes		Drill hole number, collar elevation
	Drill hole number, collar elevation		Projection time
	Projection time		Break length number, interval, collar elevation
	Break length number, interval, collar elevation		Core sample number, interval, collar elevation
	Core sample number, interval, collar elevation		



LEGEND

	Structural axis		Ore zone
	Geologic boundary (clay)		Ore grade (1)
	Geologic boundary (sandstone)		Ore grade (2)
	Boundary of ore deposit		Ore grade (3)
	Fault		Ore grade (4)
	Terrace and alluvial waters		Ore grade (5)
	Fault of a block and the surface		Ore grade (6)
	Exploration shaft number		Ore grade (7)
	Projection of a structural strike		Ore grade (8)
	Projection of a fault strike		Ore grade (9)
	Projection of a structural strike		Ore grade (10)
	Fault strike		Ore grade (11)
	Fault strike		Ore grade (12)
	Fault strike		Ore grade (13)
	Fault strike		Ore grade (14)
	Fault strike		Ore grade (15)
	Fault strike		Ore grade (16)
	Fault strike		Ore grade (17)
	Fault strike		Ore grade (18)
	Fault strike		Ore grade (19)
	Fault strike		Ore grade (20)

**THE MINERAL EXPLORATION
IN
THE EASTERN BUKANTAU AREA
THE REPUBLIC OF UZBEKISTAN
(PHASE I)**

**GEOLOGICAL CROSS SECTION OF THE
OKJETPES ORE DEPOSITS**

JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
FEBRUARY 1995
Prepared by MINDECO

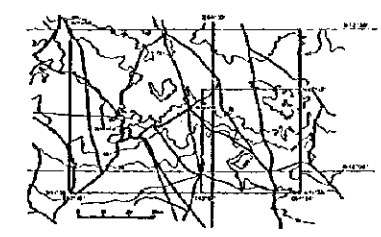
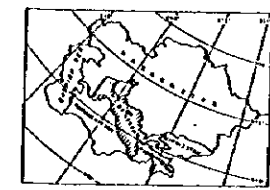
(after L. V. Miroshnikov: 1982)

РАЗРЕЗЫ ПО ПРОФИЛЯМ И-И, 12-12.

Исполнитель: А.А. Карамов	Корректор: Т.А. Тимонина
На заказ: ИИГ УЗНИИГА	Копировано: ИИГ УЗНИИГА
Работы выполнены: А.А. Карамов	Масштаб: 1:500
Дата: 1982	Лист: 1

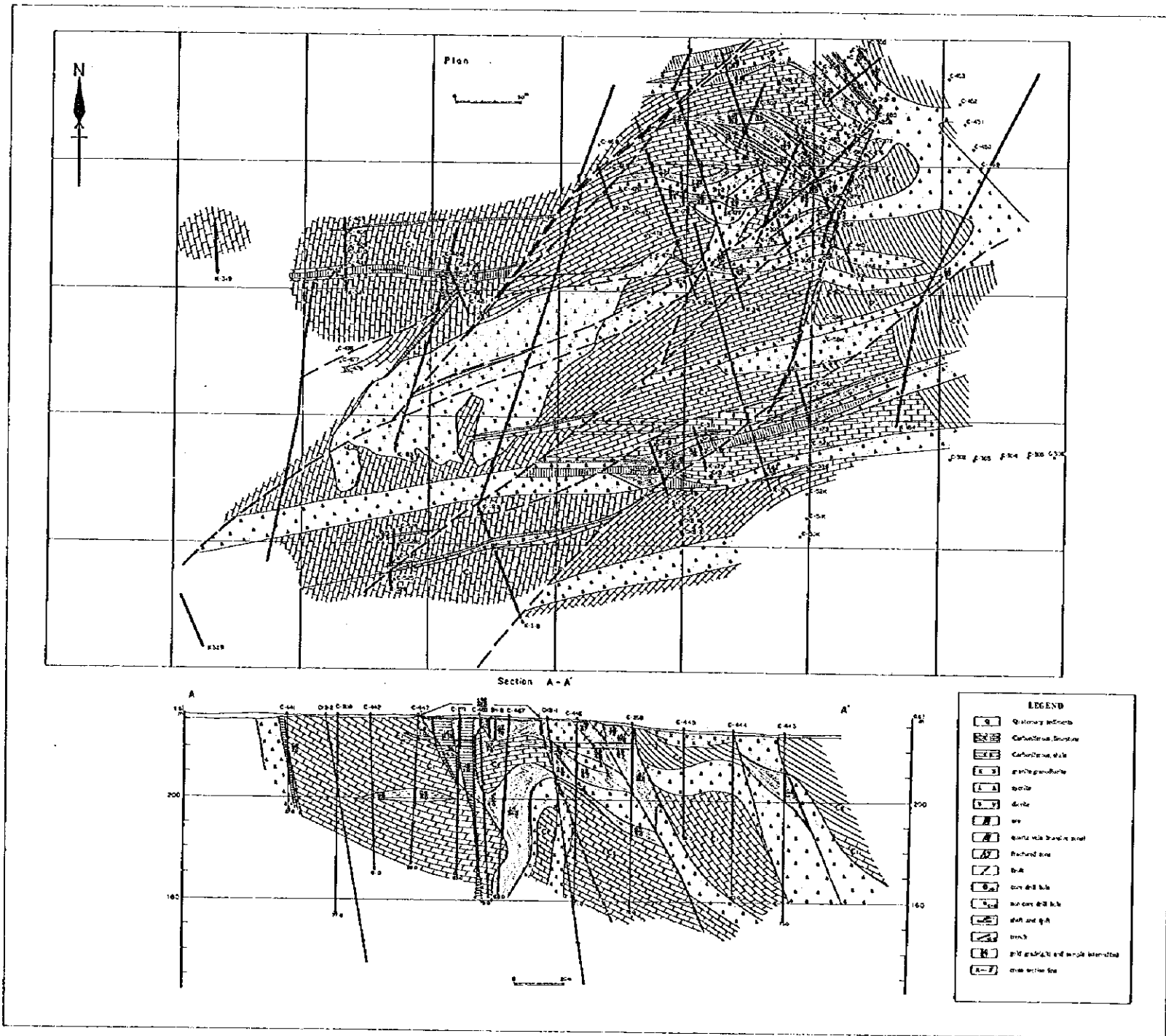
THE MINERAL EXPLORATION
IN
THE EASTERN BUKANTAU AREA
THE REPUBLIC OF UZBEKISTAN
(PHASE I)

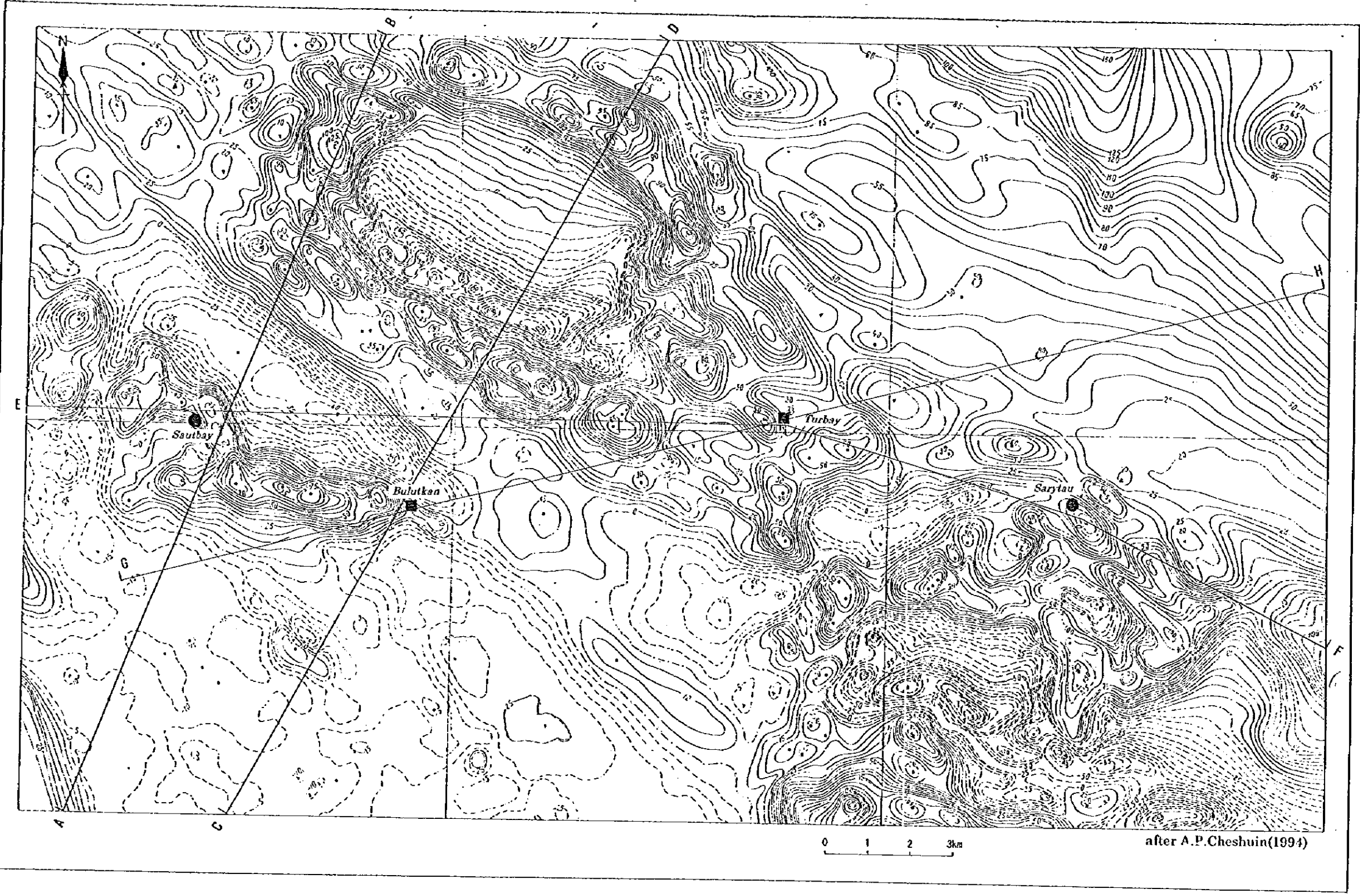
GEOLOGICAL MAP AND CROSS SECTION
OF THE BARHANNY ORE SHOWING



JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
FEBRUARY 1995

Prepared by MINDECO

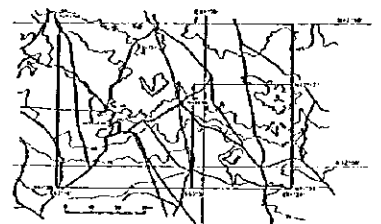
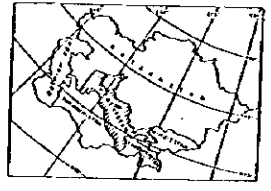




PL. H-2-1

THE MINERAL EXPLORATION
IN
THE EASTERN BUKANTAU AREA
THE REPUBLIC OF UZBEKISTAN
(PHASE I)

TOTAL MAGNETIC ANOMALY MAP



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METAL MINING AGENCY OF JAPAN
FEBRUARY 1995

Prepared by MINDECO

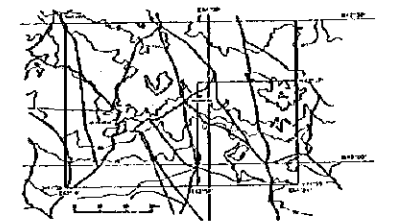
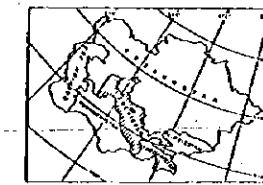
Legend

- 100 — solid line : positive anomaly
- - - 100 - - - dashed line : negative anomaly
- unit : nT
- A — B geophysical-geological section
- , ■ ore deposits and ore showing

after A.P. Cheshuin(1994)

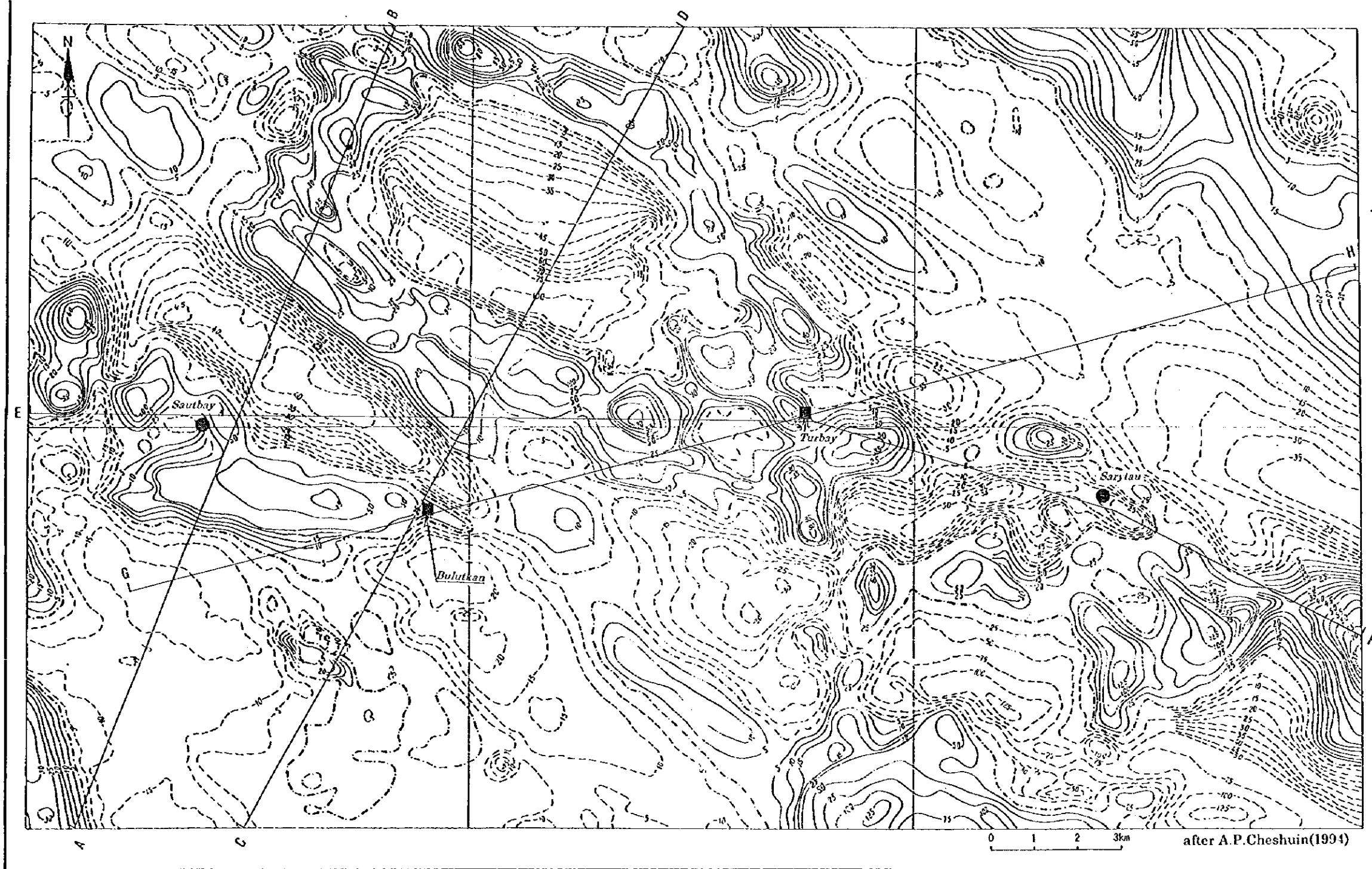
THE MINERAL EXPLORATION
IN
THE EASTERN BUKANTAU AREA
THE REPUBLIC OF UZBEKISTAN
(PHASE I)

LOCAL MAGNETIC ANOMALY MAP



JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
FEBRUARY 1995

Prepared by MINDECO



Legend

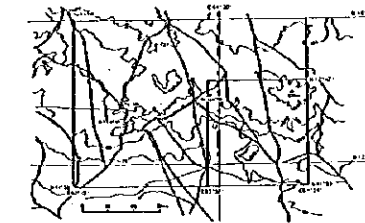
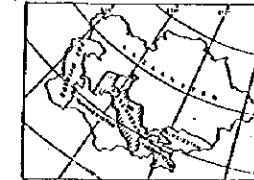
- 100— solid line : positive anomaly
- -100 - - dashed line : negative anomaly
- unit : nT

(filtered wavelength 10,000m)
A B geophysical-geological section

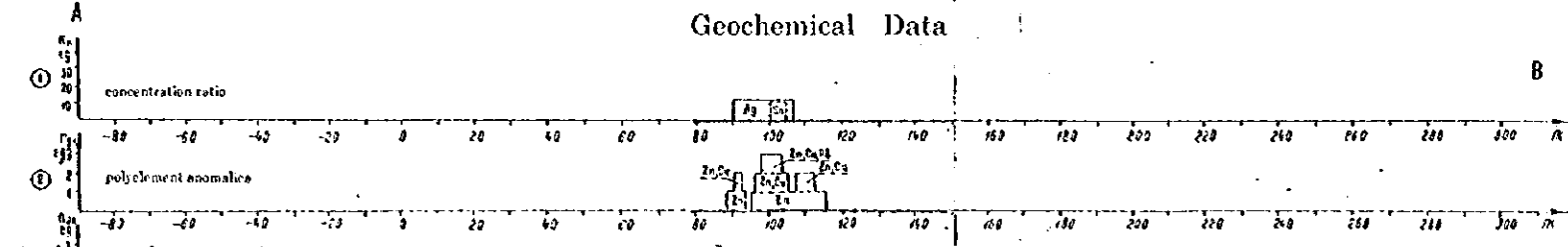
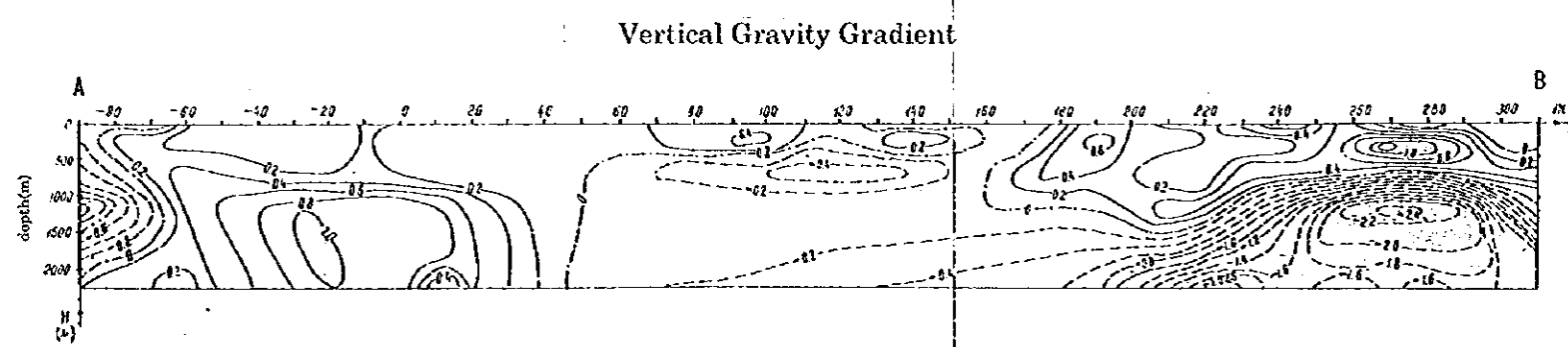
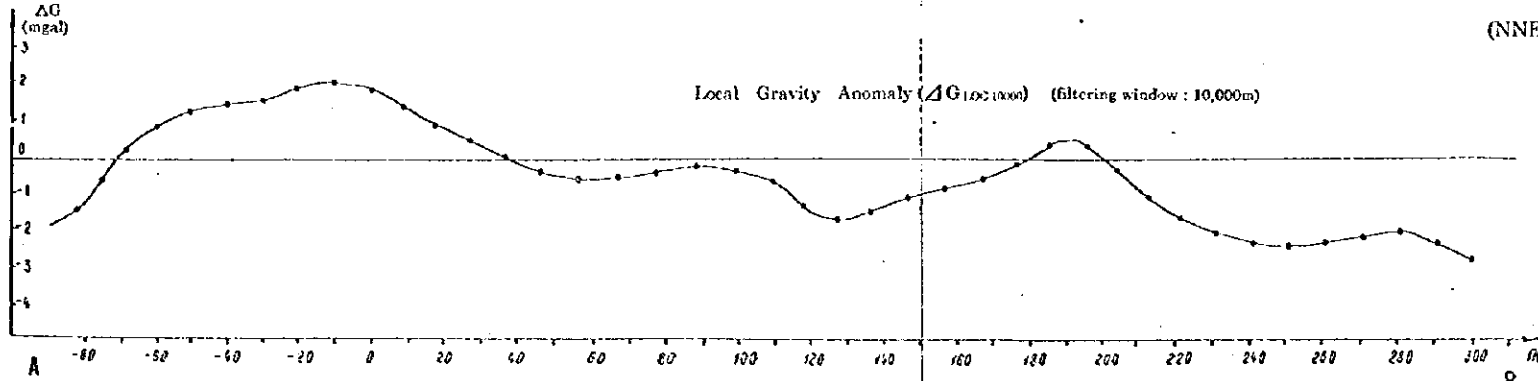
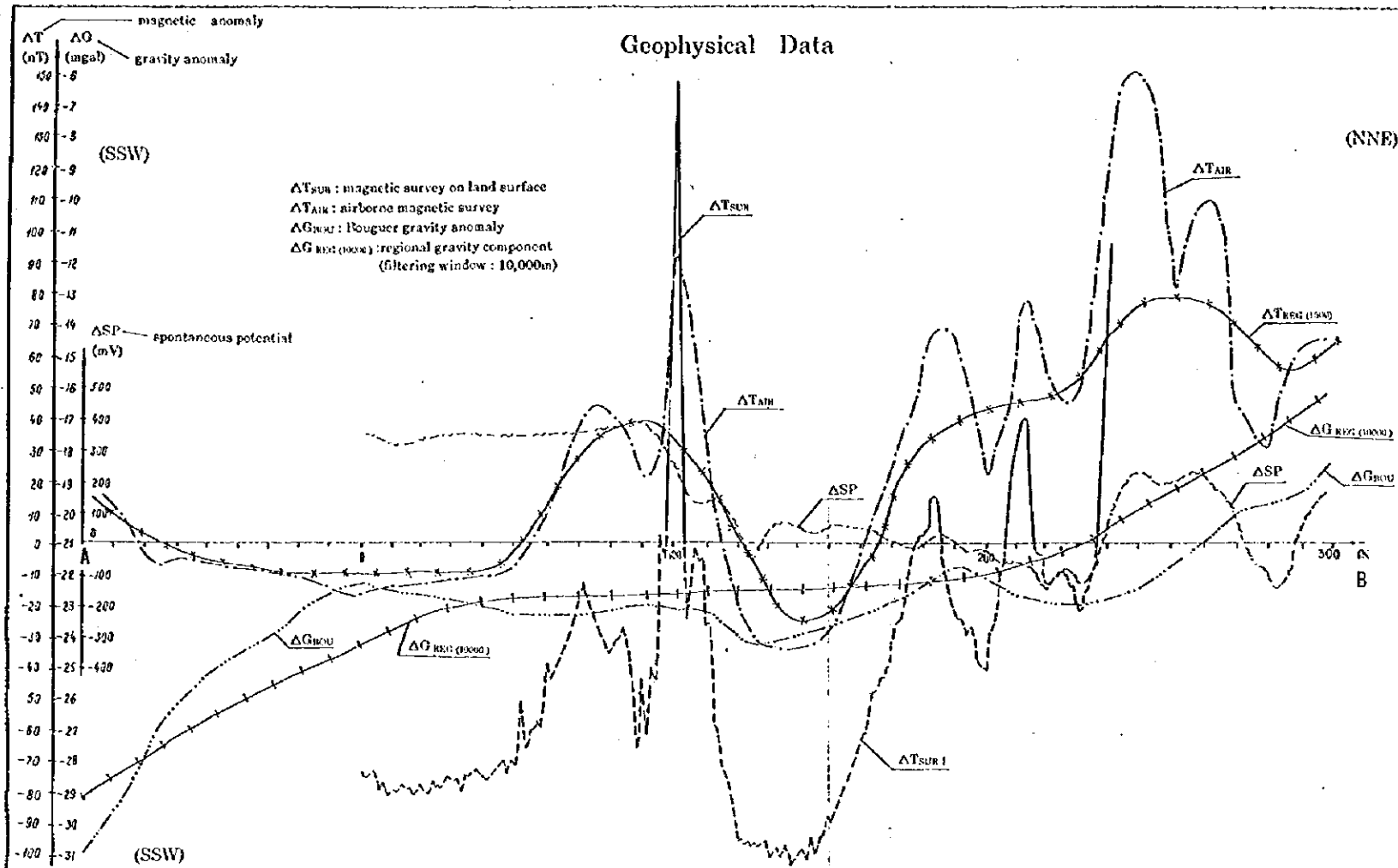
●, ■ ore deposits and ore showing

THE MINERAL EXPLORATION
IN
THE EASTERN BUKANTAU AREA
THE REPUBLIC OF UZBEKISTAN
(PHASE I)

GEOPHYSICAL - GEOLOGICAL
SECTION A - B

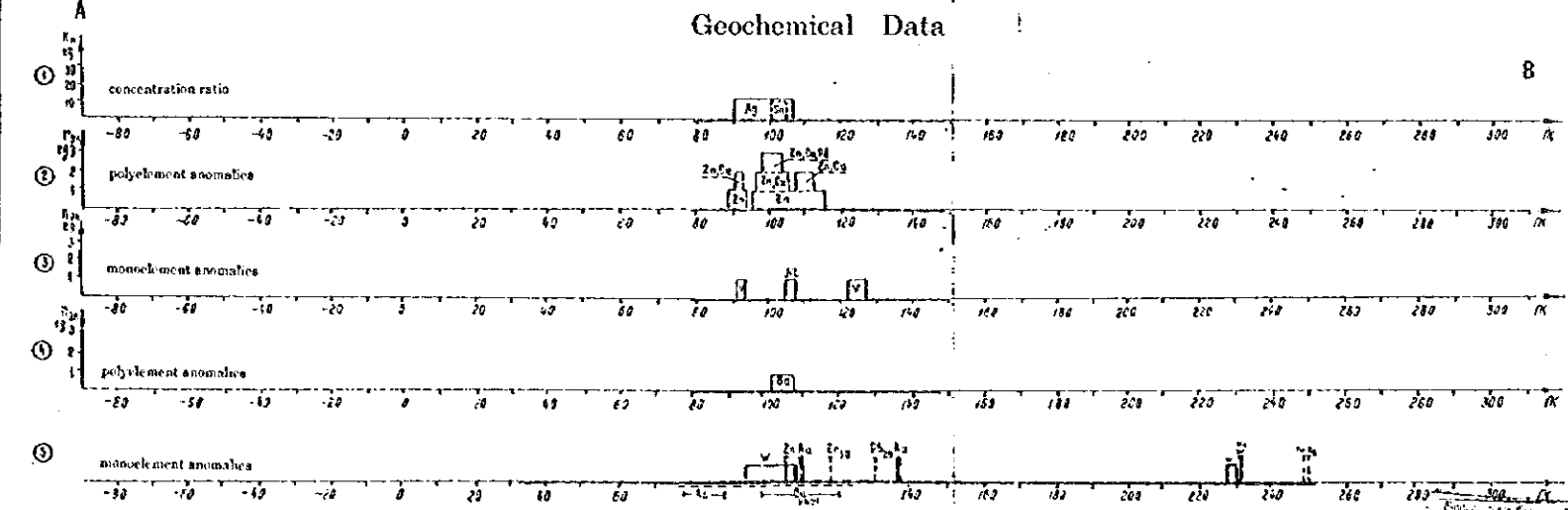
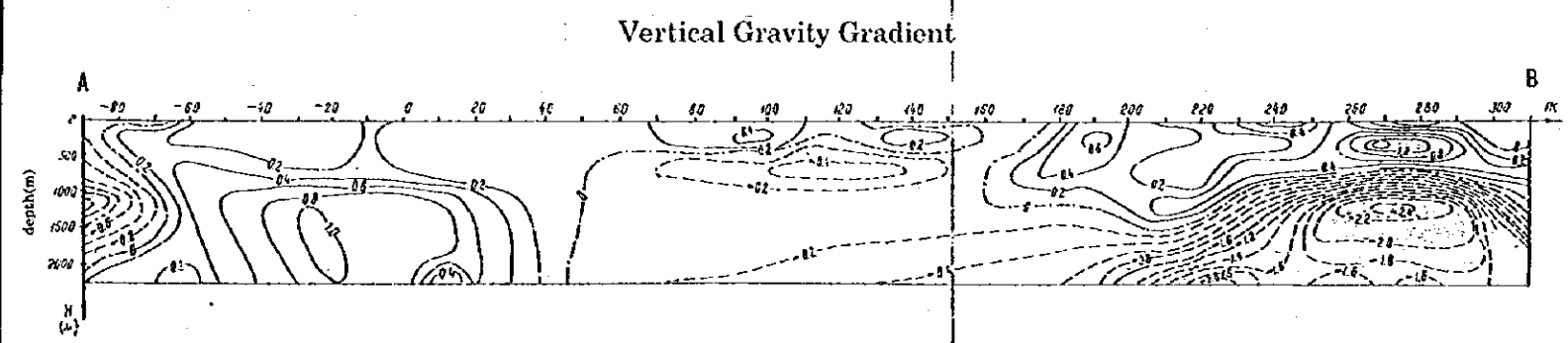
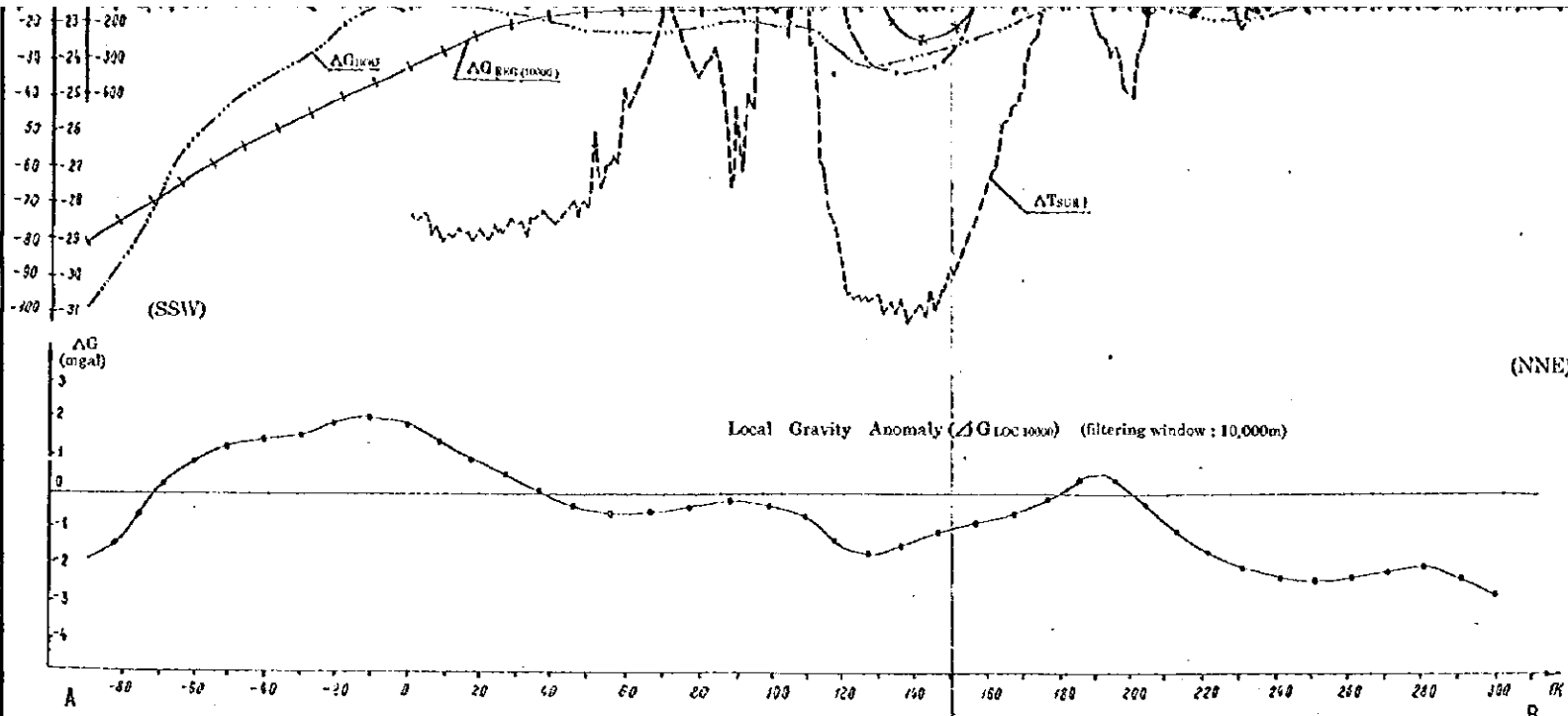


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FEBRUARY 1995
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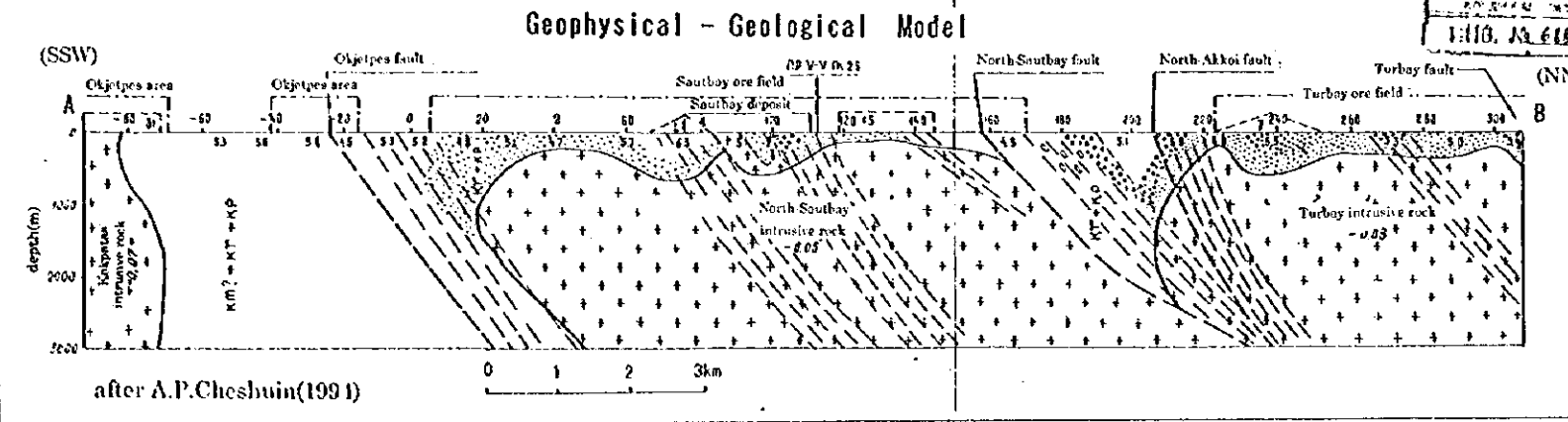


Legend

- granitoid intrusive rock
 - solid line: inferred from gravity modeling
 - dashed line: prospective border
 - 0.1-0.05: density contrast in g/cm³, against to country rock (2.67g/cm³)
- km: Kumbalak formation
 - kr: Karashakh formation
 - kp: Kokpatas formation
 - ha: Khodjaahmet formation
 - ks: Koksai formation
- contact with granitoid intrusive rock (according to geophysical data, and hydrothermal metamorphic changes of rocks)
 - a: close contact
 - b: middle contact
 - δ: with mineral associations including sulfide
- dislocations with break in continuity
 - a: known (solid line)
 - b: inferred (dashed line)
 - δ, β: enriched zone of magnetic minerals (δ: including sulfide)
- location of ore field and prospective area
- drilling data
 - drill hole and its No.
 - density (g/cm³)
 - magnetic susceptibility ($\times 10^3$ SI)
- longitudinal wave velocity (km/sec) according to seismic prospecting
- magnetic susceptibility ($\times 10^3$ g/cm³) derived from magnetic modeling

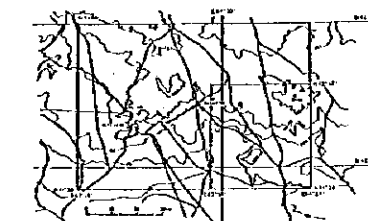
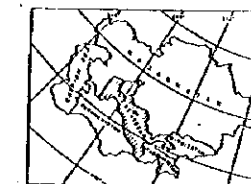


- ### Legend
- granitoid intrusive rock
 - solid line : inferred from gravity modeling
 - dashed line : prospective border
 - 0.1, 0.05 : density contrast in g/cm^3 against to country rock ($2.67g/cm^3$)
 - km : Kambafak formation
 - kr : Krasakh formation
 - kp : Kokpatas formation
 - ka : Khodjaskhet formation
 - ks : Koksal formation
 - contact with granitoid intrusive rock (according to geophysical data, and hydrothermal metasomatic changes of rocks)
 - a : close contact b : middle contact
 - δ : with mineral associations including sulfide
 - dislocations with break in continuity
 - a : known (solid line) inferred (dashed line)
 - δ, β : enriched zone of magnetic minerals (δ : including sulfide)
 - location of ore field and prospective area
 - drilling data
 - drill hole and its No.
 - density (g/cm^3)
 - magnetic susceptibility ($\times 10^3 SI$)
 - longitudinal wave velocity (km/sec) according to seismic prospecting
 - magnetic susceptibility ($\times 10^4 egs/cm^3$) derived from magnetic modeling

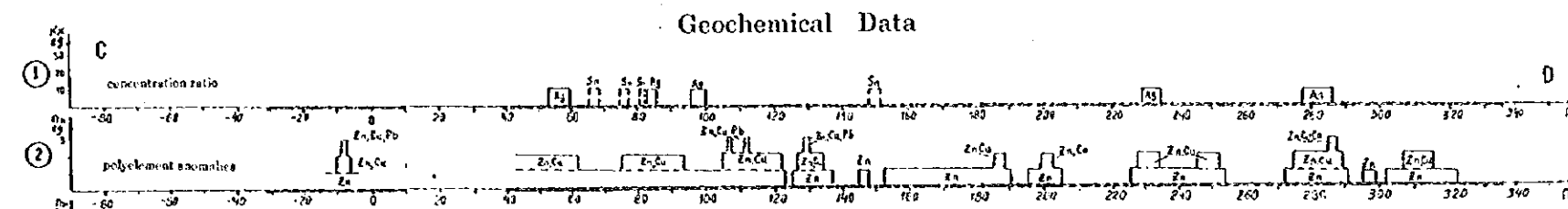
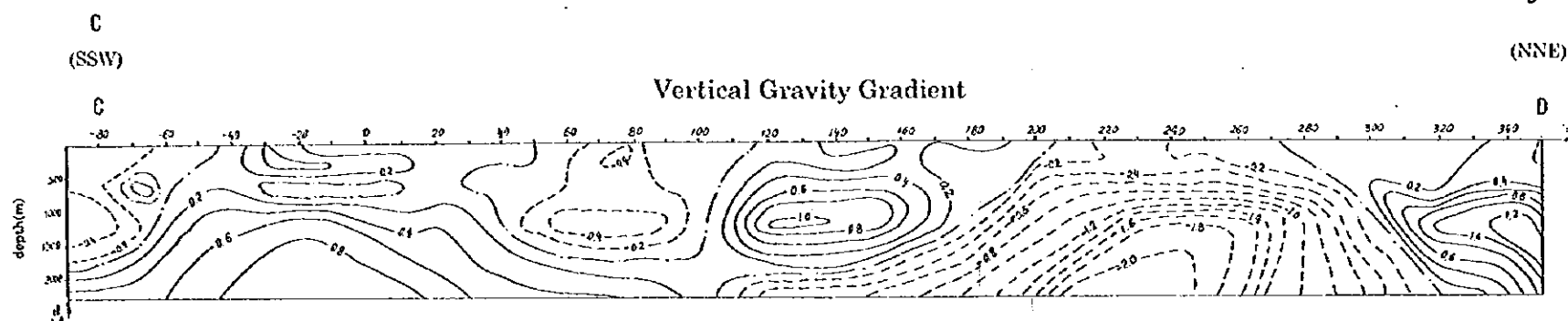
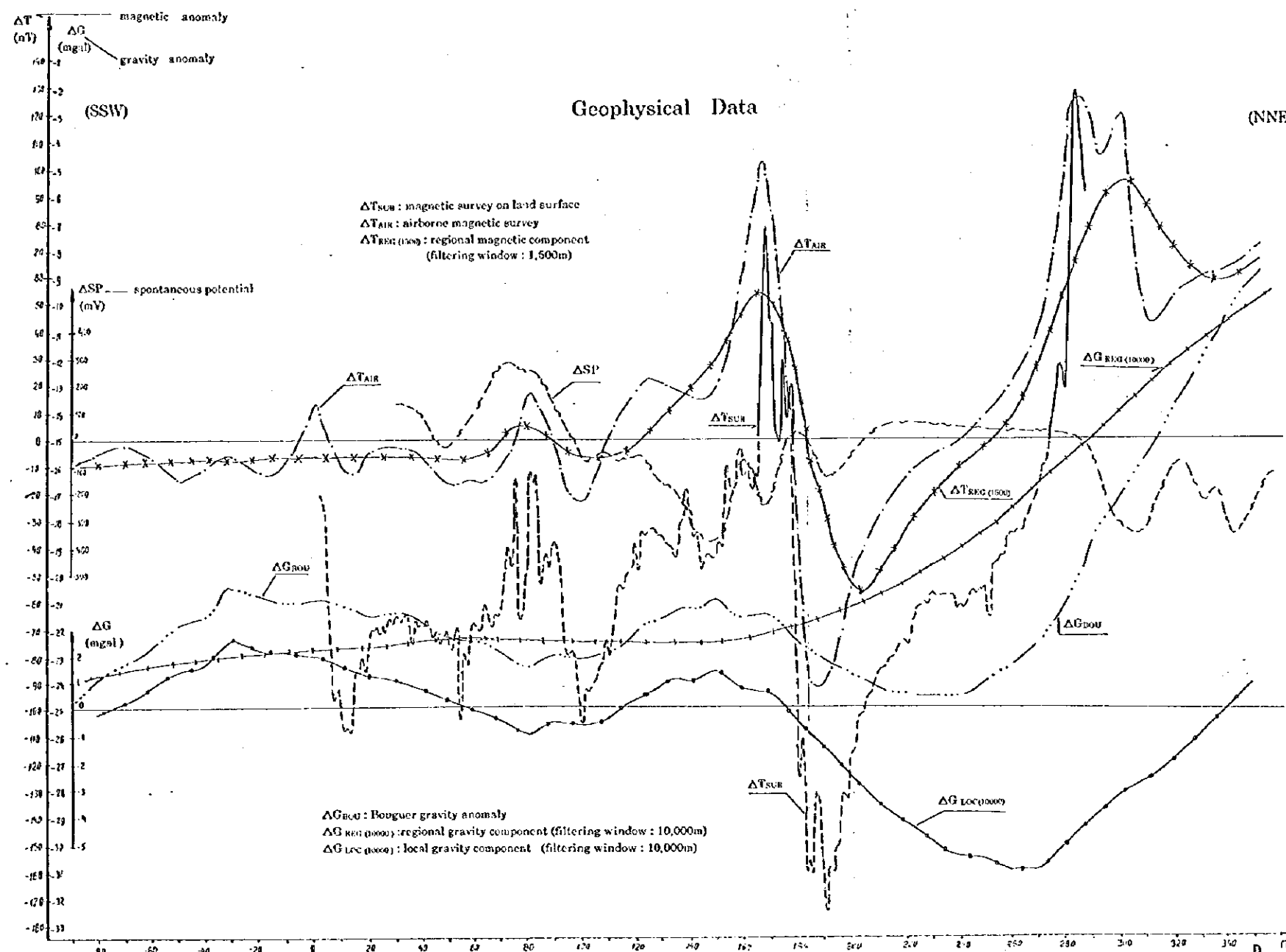


THE MINERAL EXPLORATION
IN
THE EASTERN BUKANTAU AREA
THE REPUBLIC OF UZBEKISTAN
(PHASE I)

GEOPHYSICAL - GEOLOGICAL
SECTION C - D

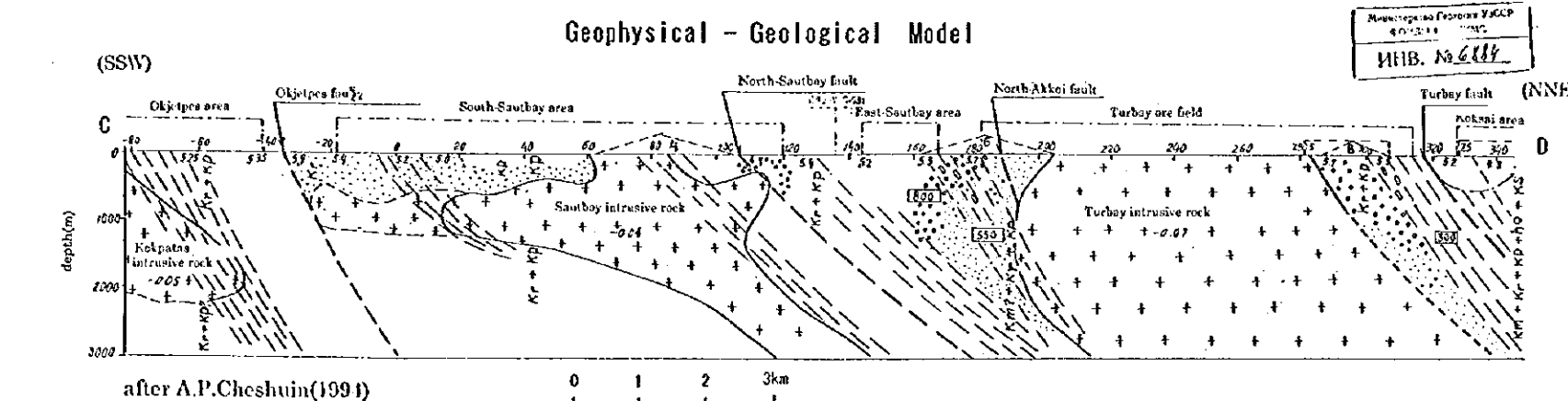
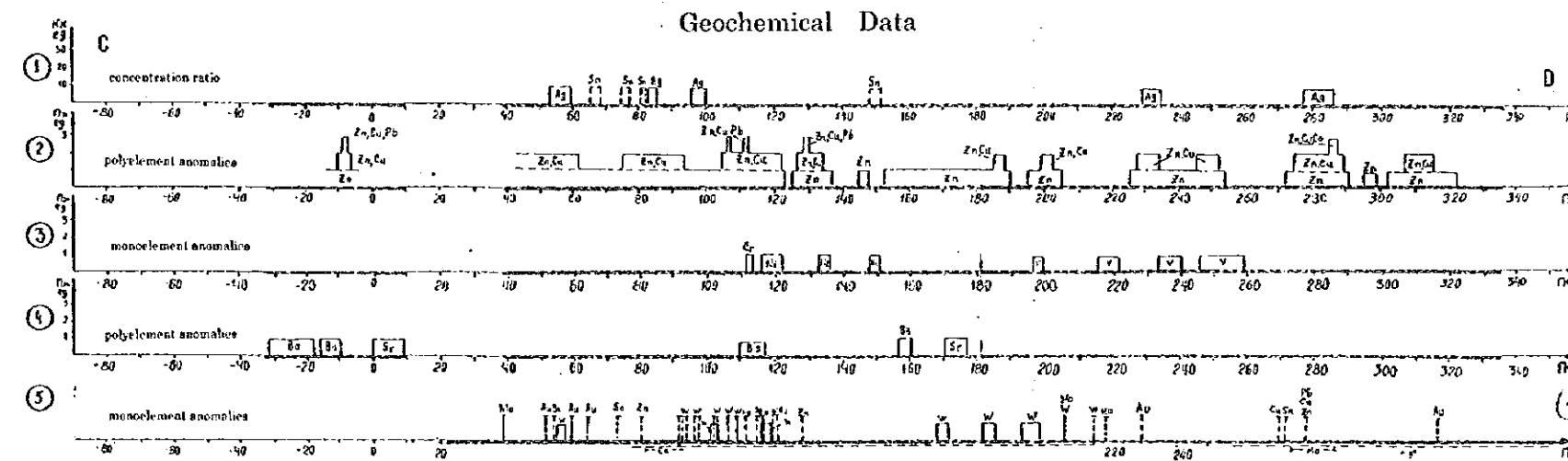
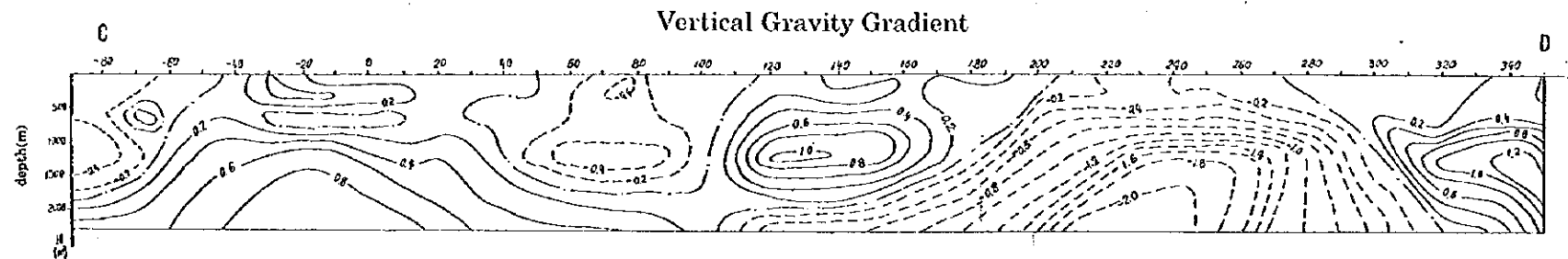
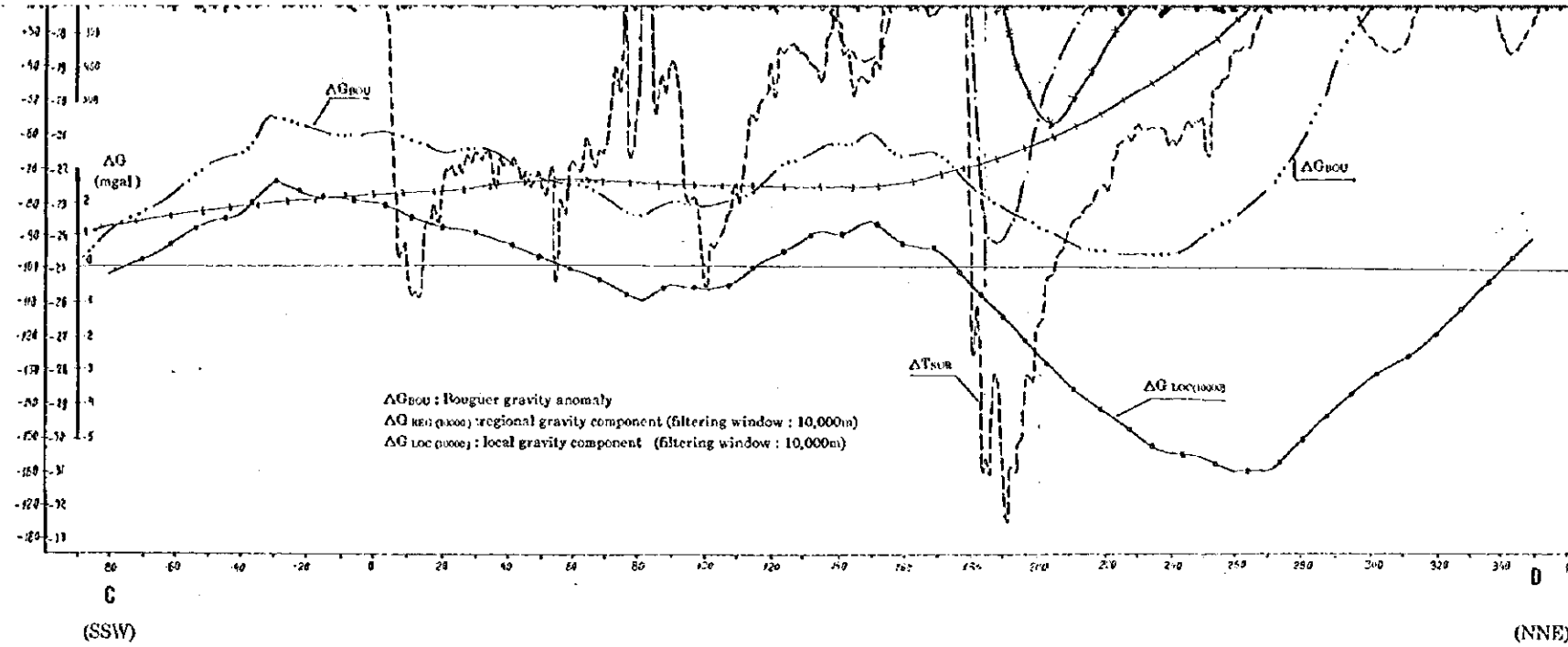


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METAL MINING AGENCY OF JAPAN
FEBRUARY 1995
Prepared by MINDECO



Legend

- granitoid intrusive rock
- solid line: inferred from gravity modeling
- dashed line: prospective border
- 0.1, 0.05: density contrast in g/cm³, against to country rock (2.67g/cm³)
- km: Kumbalak formation
kr: Karashakh formation
kp: Kokpotas formation
ku: Khodysakhmet formation
ks: Koksoi formation
- contact with granitoid intrusive rock (according to geophysical data, and hydrothermal metamorphic changes of rocks)
a: close contact b: middle contact
δ: with mineral associations including sulfide
- dislocations with break in continuity
a: known solid line inferred (dashed line)
δ, β: enriched zone of magnetic minerals (β: including sulfide)
- location of ore field and prospective area
- drilling data
drill hole and its No.
density (g/cm³)
magnetic susceptibility (x10³SI)
- longitudinal wave velocity (km/sec) according to seismic prospecting
- magnetic susceptibility (x10⁴ga/cm³)



Legend

- granitoid intrusive rock
 - solid line: inferred from gravity modeling
 - dashed line: prospective border
 - 0.1, 0.05: density contrast in g/cm^3 against to country rock ($2.67g/cm^3$)
- Km: Kumbulak formation
 - Kr: Karashakh formation
 - Kp: Kokpatas formation
 - Kh: Khodjakhet formation
 - Ks: Koksai formation
- contact with granitoid intrusive rock (according to geophysical data, and hydrothermal metamorphic changes of rocks)
 a: close contact b: middle contact
 S: with mineral associations including sulfide
- dislocations with break in continuity
 a: known (solid line) inferred (dashed line)
 S, B: enriched zone of magnetic minerals (B: including sulfide)
- location of ore field and prospective area
- drilling data
 drill hole and its No.
- density (g/cm^3)
- magnetic susceptibility ($\times 10^{-3} SI$)
- longitudinal wave velocity (km/sec) according to seismic prospecting
- magnetic susceptibility ($\times 10^{-4} g/cm^3$) derived from magnetic modeling

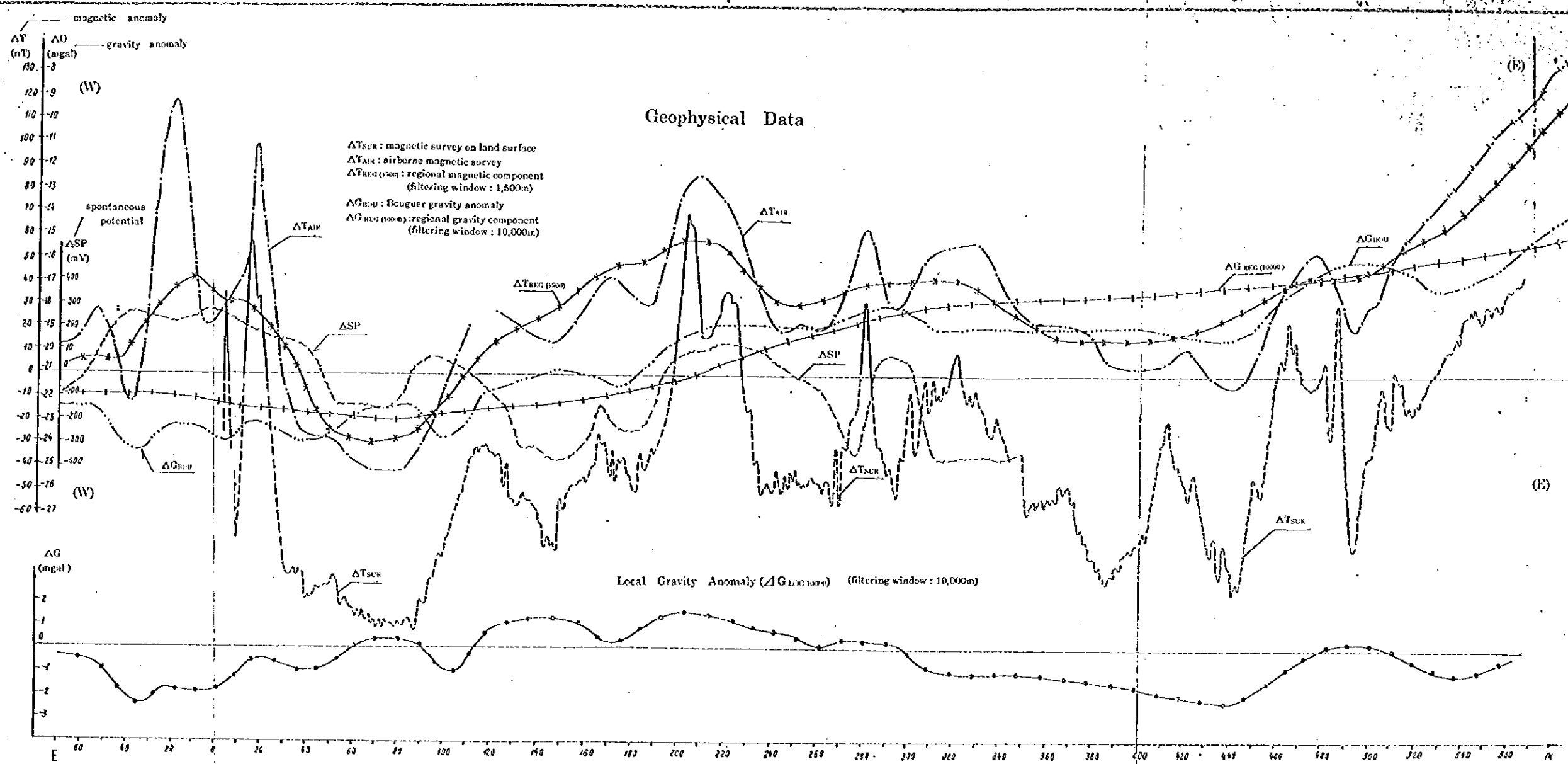
THE MINERAL FIELD
IN
THE EASTERN PART OF
THE REPUBLIC OF
PHILIPPINES

GEOPHYSICAL - G
SECTION E

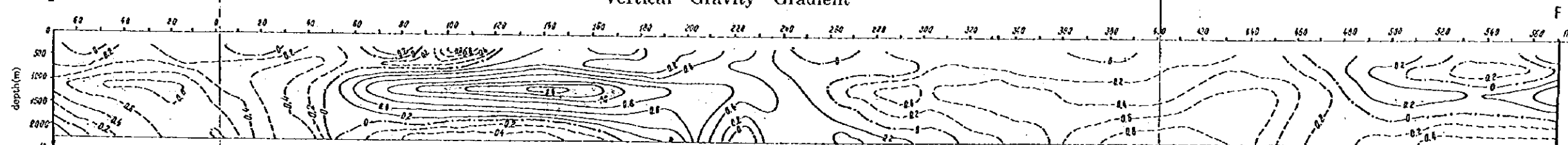


JAPAN INTERNATIONAL
METAL MINING AG
FEBRUARY
Prepared by

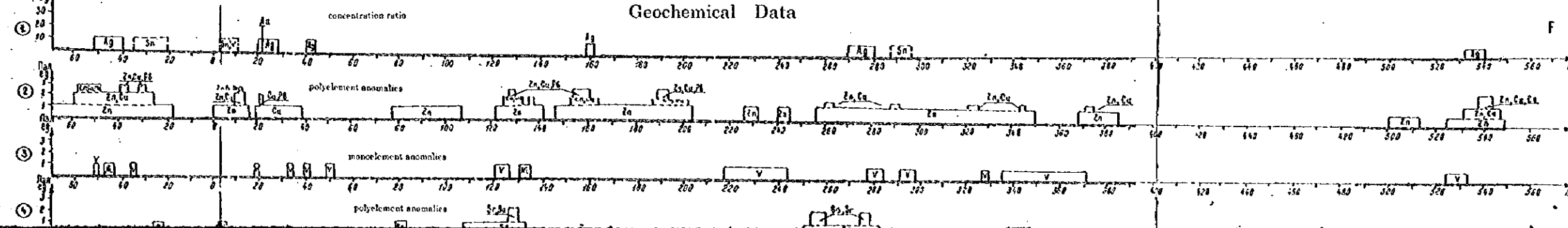
Geophysical Data



Vertical Gravity Gradient



Geochemical Data

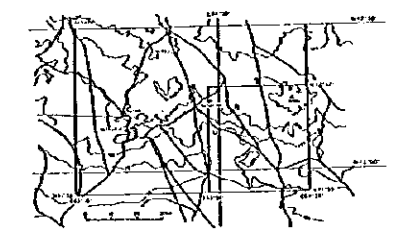
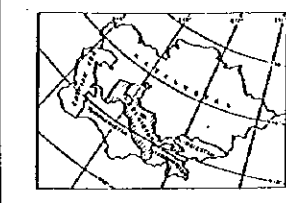


Legend

- granitoid intrusion
 - solid line: inferred
 - dashed line: proven
- 0.1, 0.05: density against to cu
- km: Kumbok form
 kr: Karashaki form
 kp: Kokpatas form
 ha: Khodjakmet
 ka: Koksai formatic
- contact with granitoid (according to geophysical metamorphic character)
 a: close contact
 b: with mineral association
- dislocations with known/enriched zones
 a: known zone
 b: enriched zone
 c: including sulfide
- location of ore field
- drilling data
 drill hole and its No.
 density (g/cm³)
 magnetic susceptibility
- longitudinal wave velocity according to seismicity
- magnetic susceptibility derived from magnetic anomaly

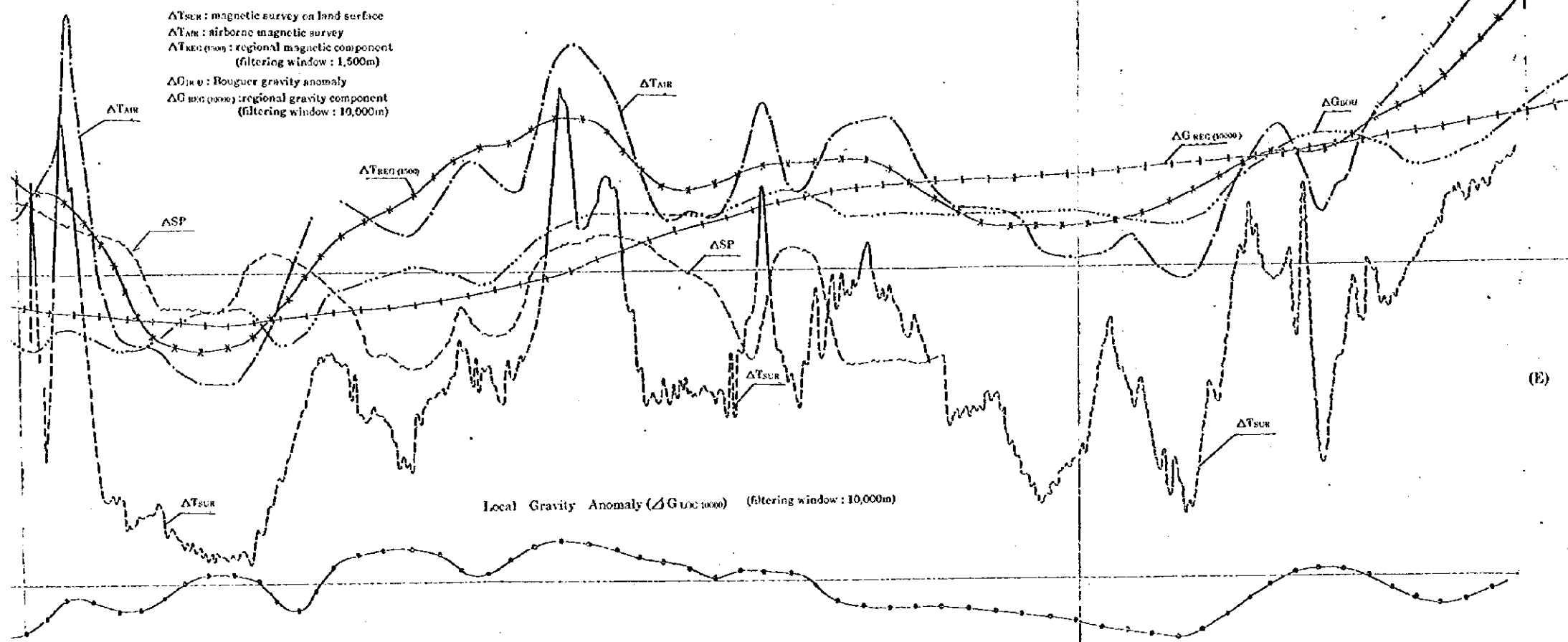
THE MINERAL EXPLORATION
IN
THE EASTERN BUKANTAU AREA
THE REPUBLIC OF UZBEKISTAN
(PHASE I)

GEOPHYSICAL - GEOLOGICAL
SECTION E - F

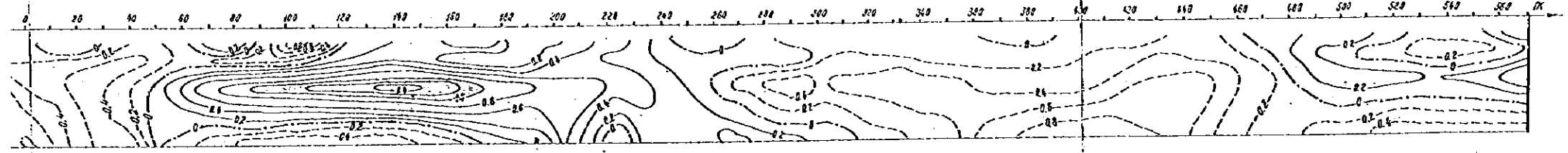


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METAL MINING AGENCY OF JAPAN
FEBRUARY 1995
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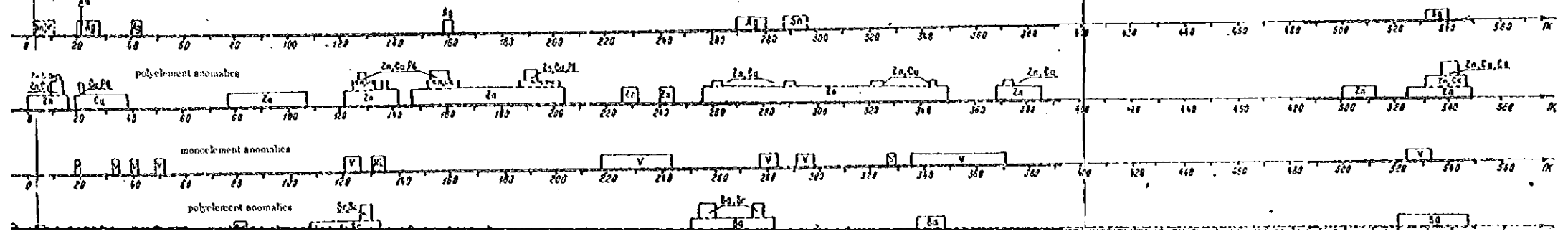
Geophysical Data



Vertical Gravity Gradient

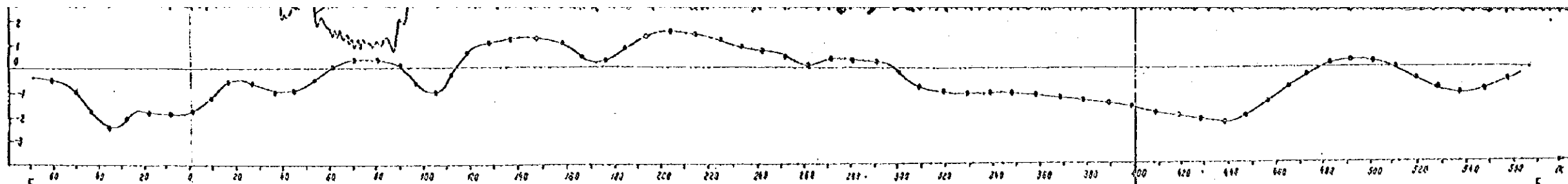


Geochemical Data

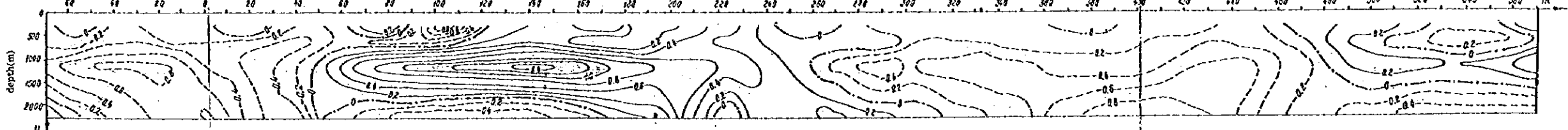


Legend

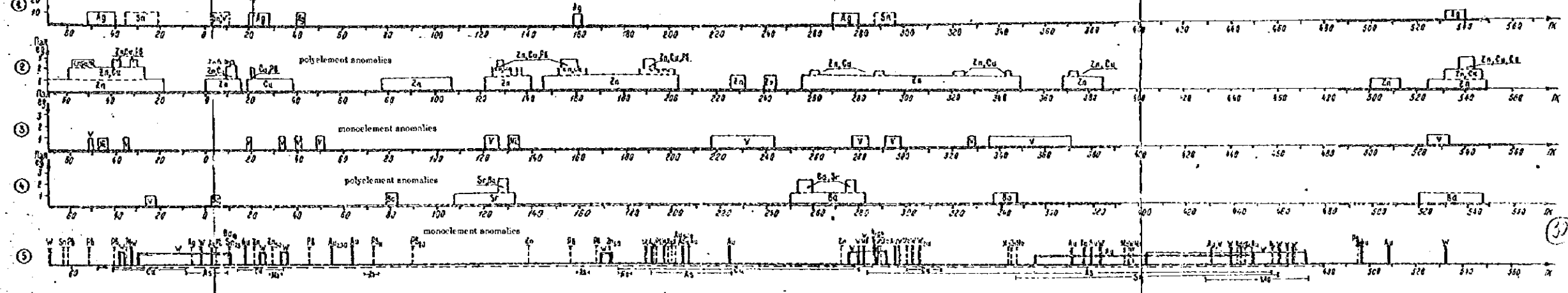
- granitoid intrusive rock
- solid line: inferred from gravity modeling
- dashed line: prospective border
- 0.1/-0.05: density contrast in g/cm³ against to country rock (2.67g/cm³)
- km: Kumbulak formation
kr: Karashakh formation
kp: Kokpotas formation
kh: Khodjakhmet formation
ks: Keksai formation
- contact with granitoid intrusive rock (according to geophysical data, and hydrothermal metamorphic changes of rocks)
a: close contact b: middle contact
δ: with mineral associations including sulfide
- dislocations with break in continuity
a: known (solid line) inferred (dashed line)
δ, β: enriched zone of magnetic minerals (δ: including sulfide)
- location of ore field and prospective area
- drilling data
drill hole and its No.
- density (g/cm³)
- magnetic susceptibility (x10⁻⁵ SI)
- longitudinal wave velocity (km/sec) according to seismic prospecting
- magnetic susceptibility (x10⁻⁴ gsm/cm³) derived from magnetic modeling



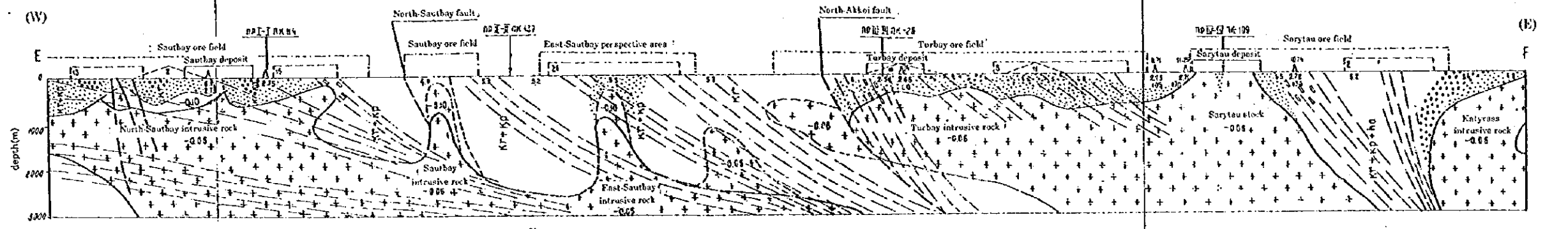
Vertical Gravity Gradient



Geochemical Data



Geophysical - Geological Model

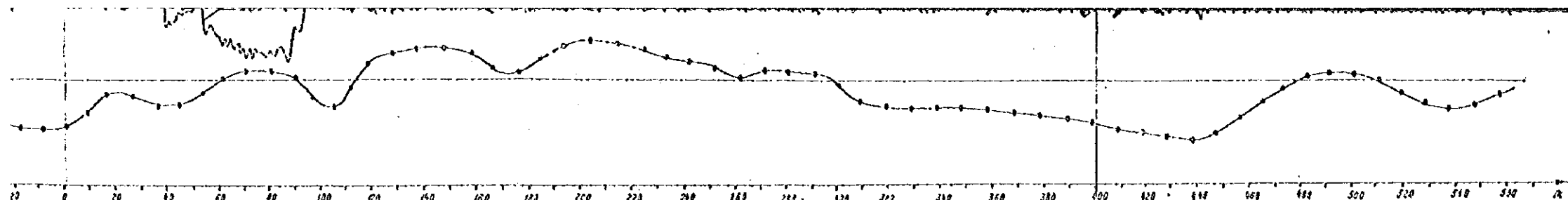


after A.P.Cheshuin(1994)

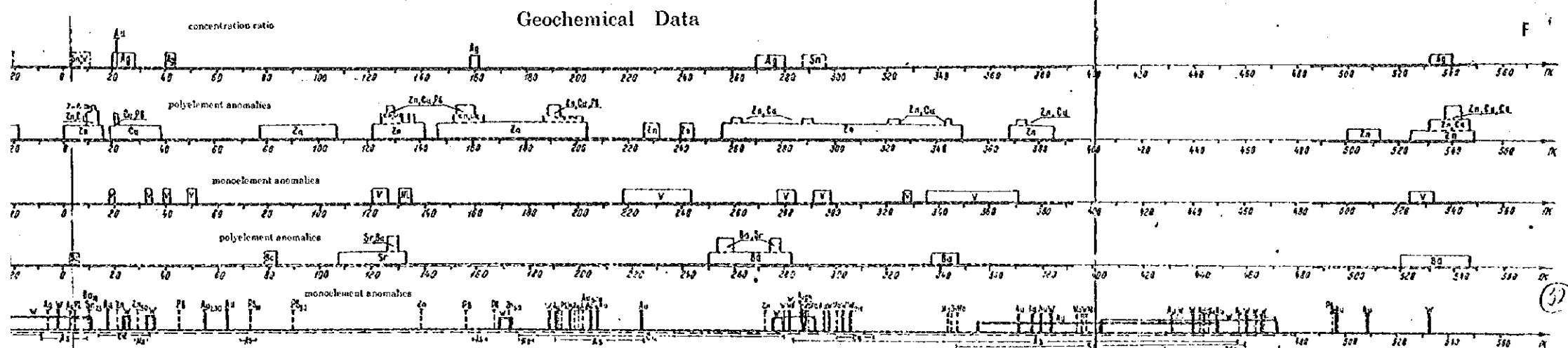
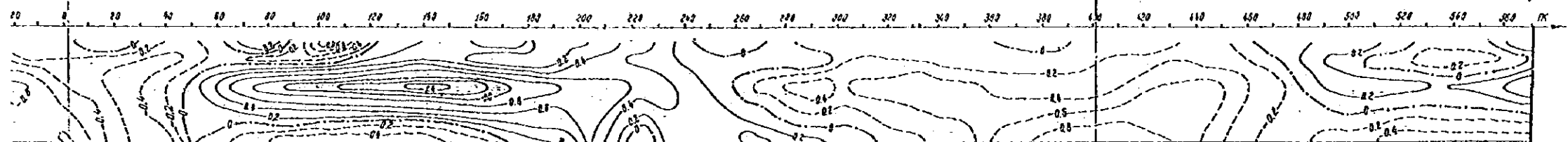
Legend

- granitoid intrusion
- solid line: inferred
- dashed line: proven
- 0.1, -0.05: density against to c
- km: Kumbulak for
kr: Krasakh for
kp: Kokpetas for
ha: Khodnakhmet
ka: Koksai for mati
- contact with granitoid intrusion (according to geophysical and metamorphic changes)
a: close contact
b: with mineral assemblage
- dislocations with
a: known (solid line)
b, c: enriched zone (b: including sulfide)
- location of ore field
- drilling data
drill hole and its depth
- density (g/cm³)
- magnetic susceptibility
- longitudinal wave velocity according to seismic data
- magnetic susceptibility derived from magnetometry

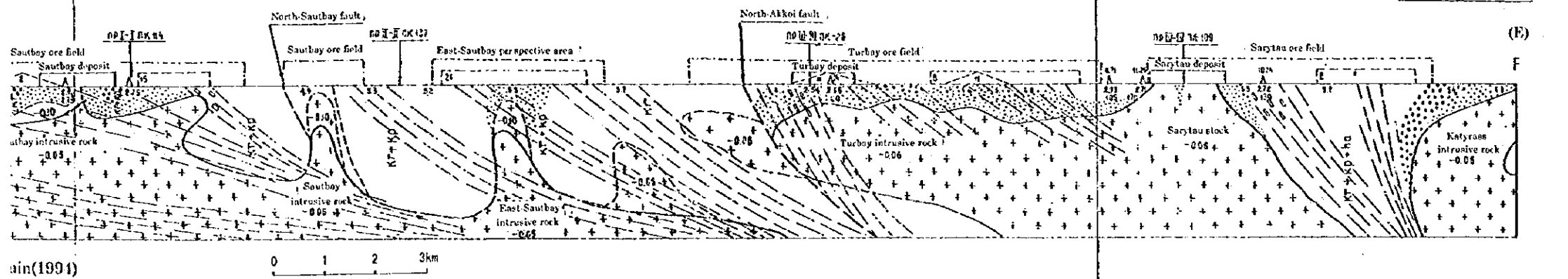
Мониторинг геологической обстановки в районе месторождения
1:100,000



Vertical Gravity Gradient



Geophysical - Geological Model

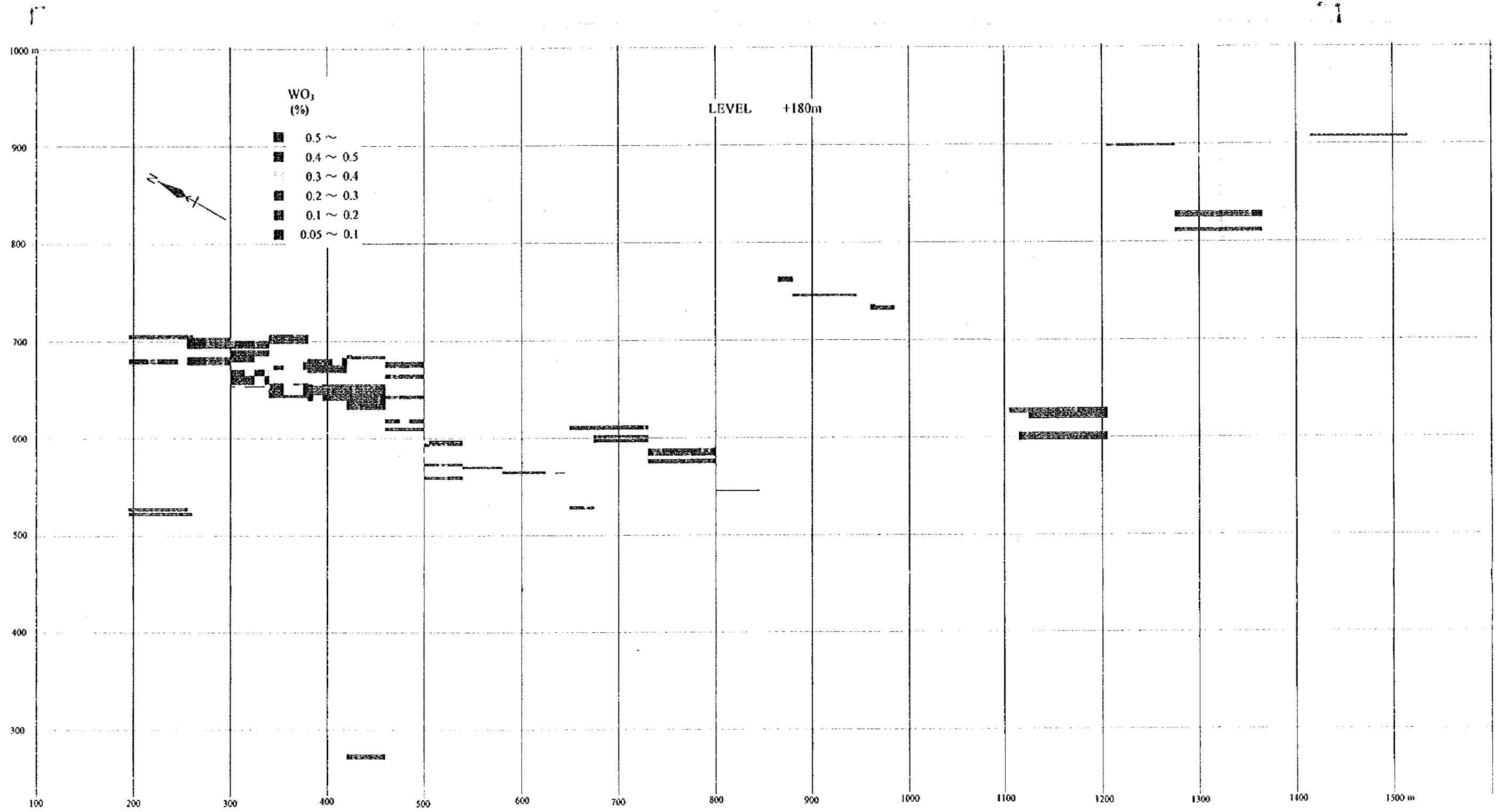


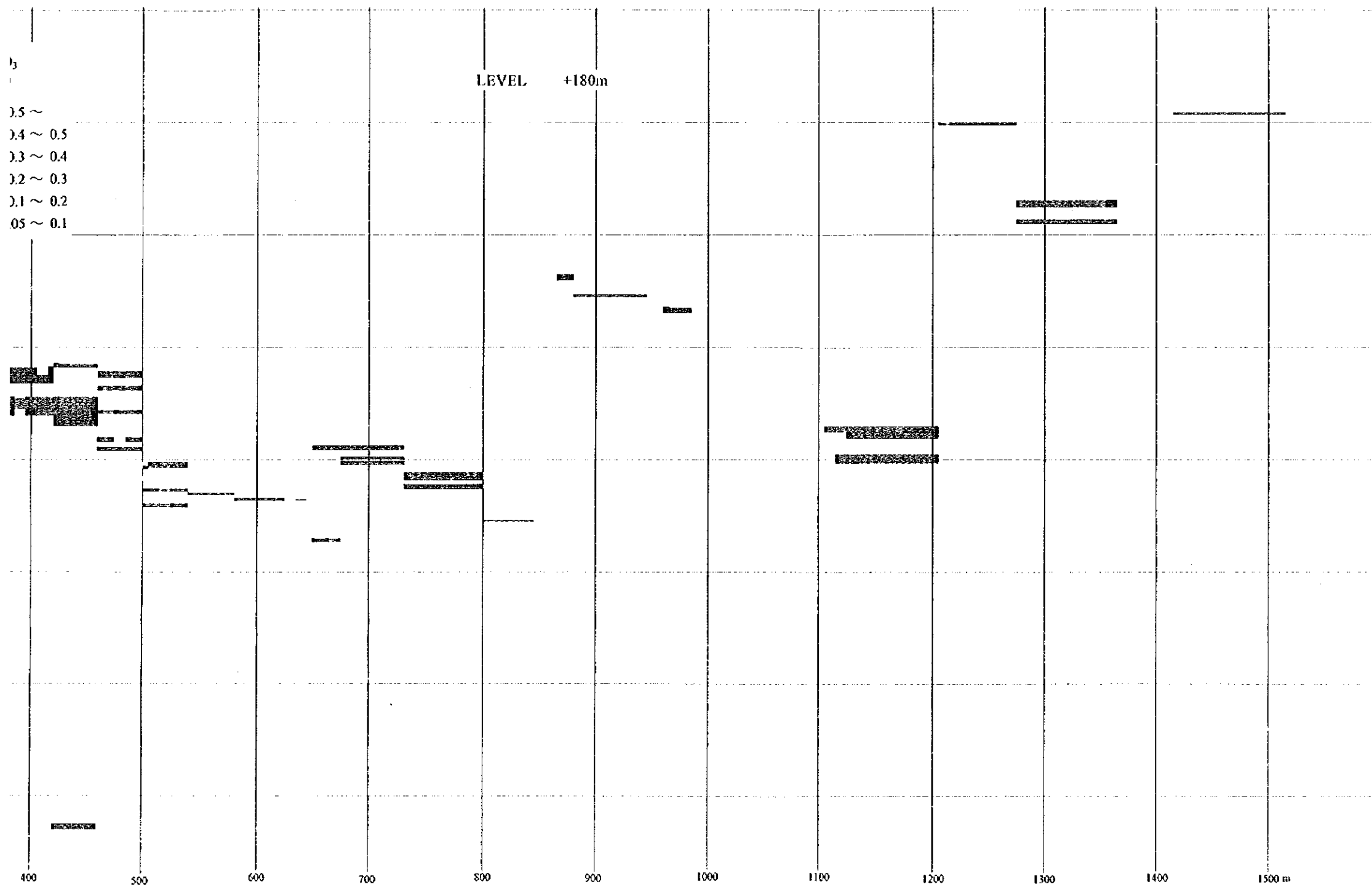
Legend

- granitoid intrusive rock
- solid line: inferred from gravity modeling
- dashed line: prospective border
- 0.1, -0.05: density contrast in g/cm³, against to country rock (2.67g/cm³)
- km: Kumbalak formation
kr: Karashakh formation
kp: Kokpatao formation
ka: Khodjaahmet formation
ks: Keksal formation
- contact with granitoid intrusive rock (according to geophysical data, and hydrothermal metamorphic changes of rocks)
a: close contact b: middle contact
5: with mineral associations including sulfide
- dislocations with break in continuity
a: known (solid line) inferred (dashed line)
5, 6: enriched zone of magnetic minerals (5: including sulfide)
- location of ore field and prospective area
- drilling data
drill hole and its №
- density (g/cm³)
- magnetic susceptibility ($\times 10^3$ SI)
- longitudinal wave velocity (km/sec) according to seismic prospecting
- magnetic susceptibility ($\times 10^4$ ga/cm³) derived from magnetic modeling

Масштаб: геологический 1:50000
47° 45' N
67° 15' E
ИИБ, 13.6.1994

ain(1994)

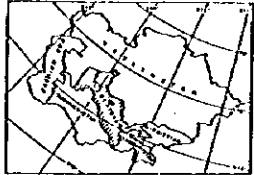
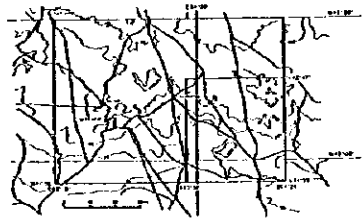




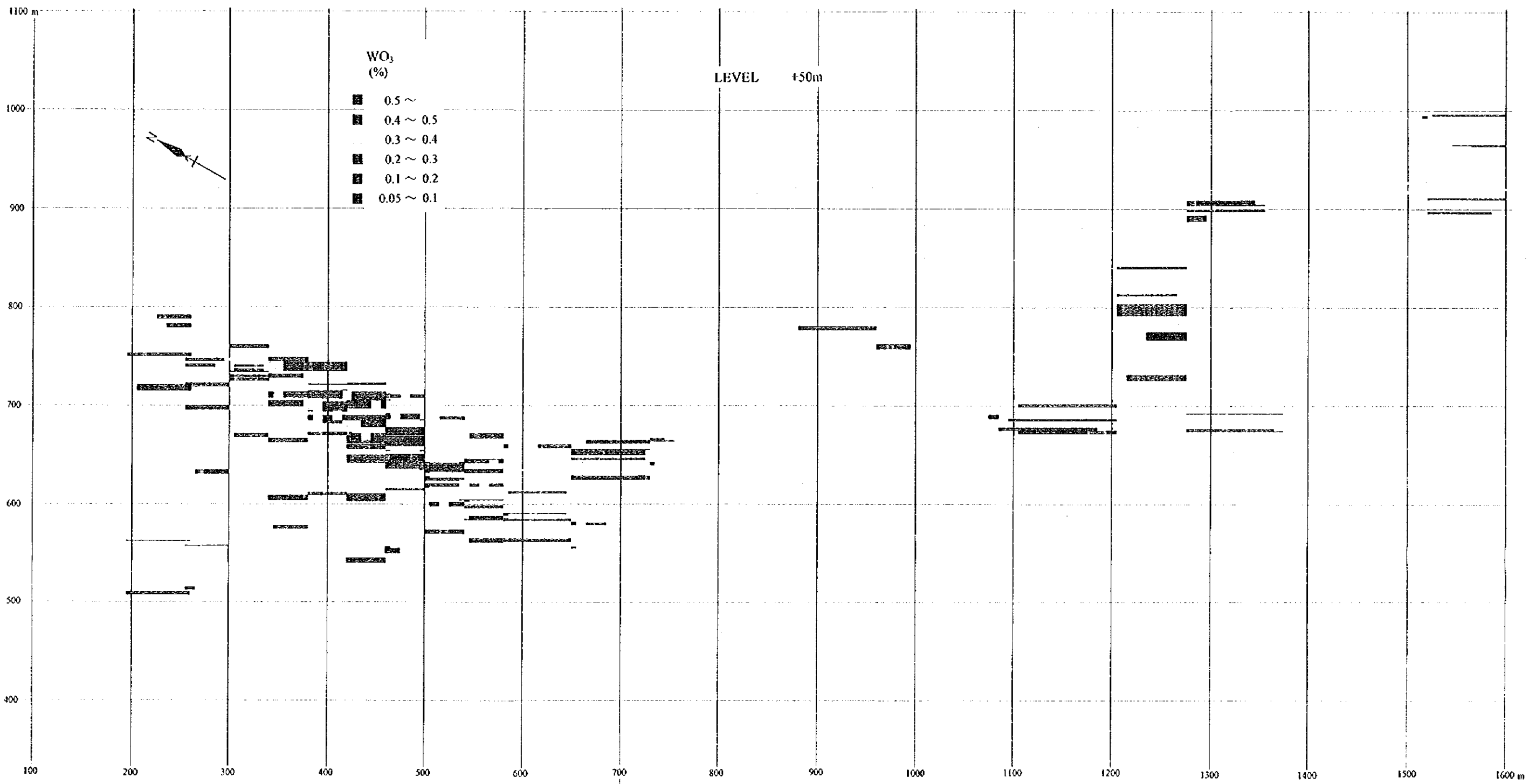
PL. H-3-10

**THE MINERAL EXPLORATION
IN
THE EASTERN BUKANTAU AREA
THE REPUBLIC OF UZBEKISTAN
(PHASE I)**

ESTIMATED GRADES OF WO₃ AT THE
LEVEL OF +180m

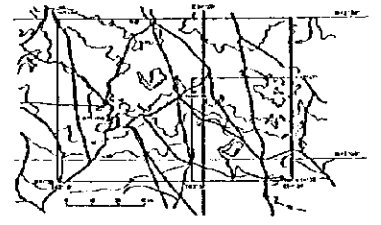
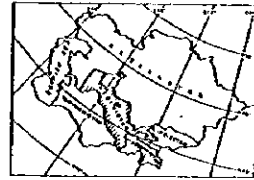



JAPAN INTERNATIONAL COOPERATION AGENCY
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FEBRUARY 1995
Prepared by MINDECO



THE MINERAL EXPLORATION
IN
THE EASTERN BUKANTAU AREA
THE REPUBLIC OF UZBEKISTAN
(PHASE I)

ESTIMATED GRADES OF WO₃ AT THE
LEVEL OF + 50m

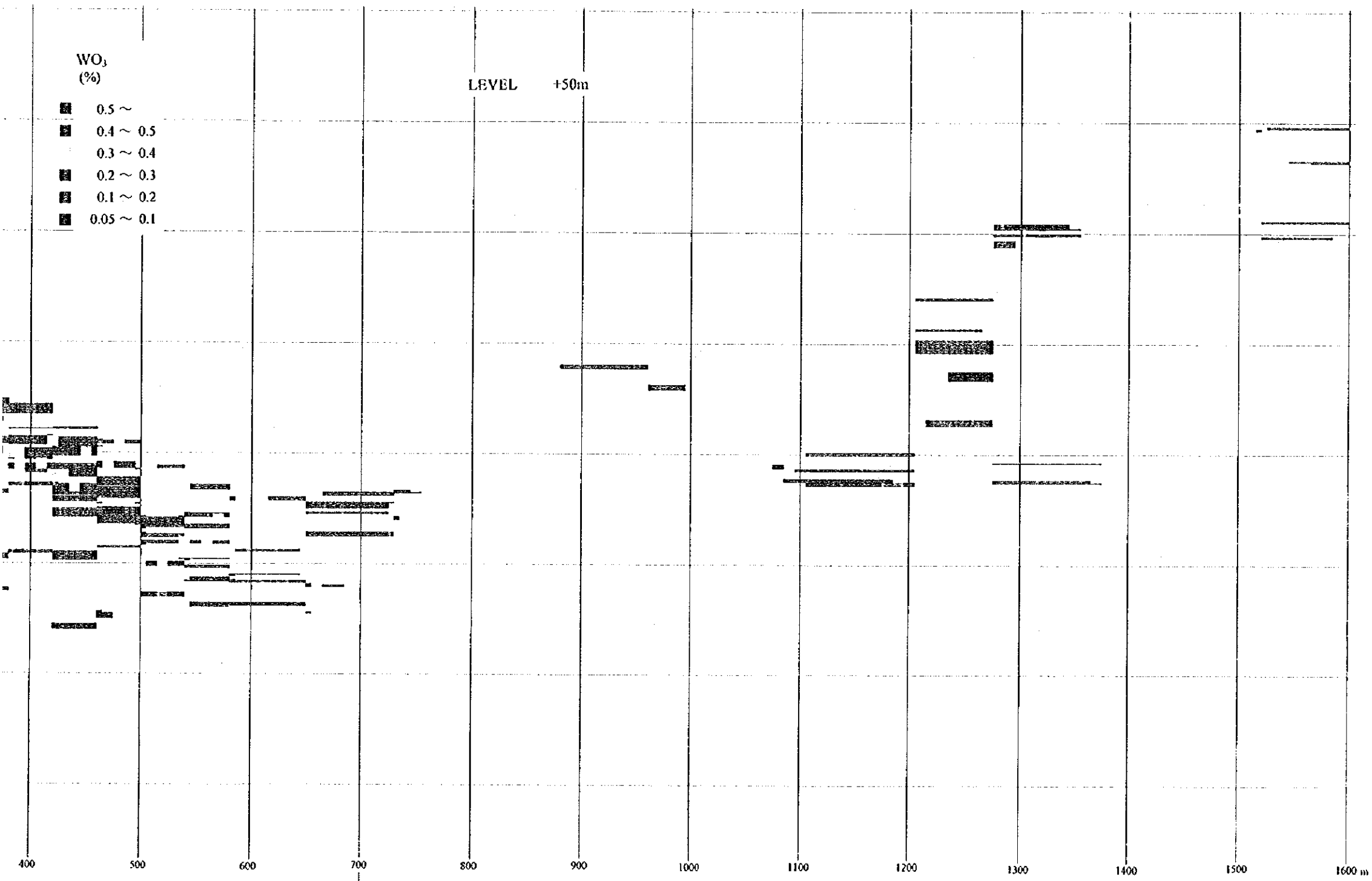


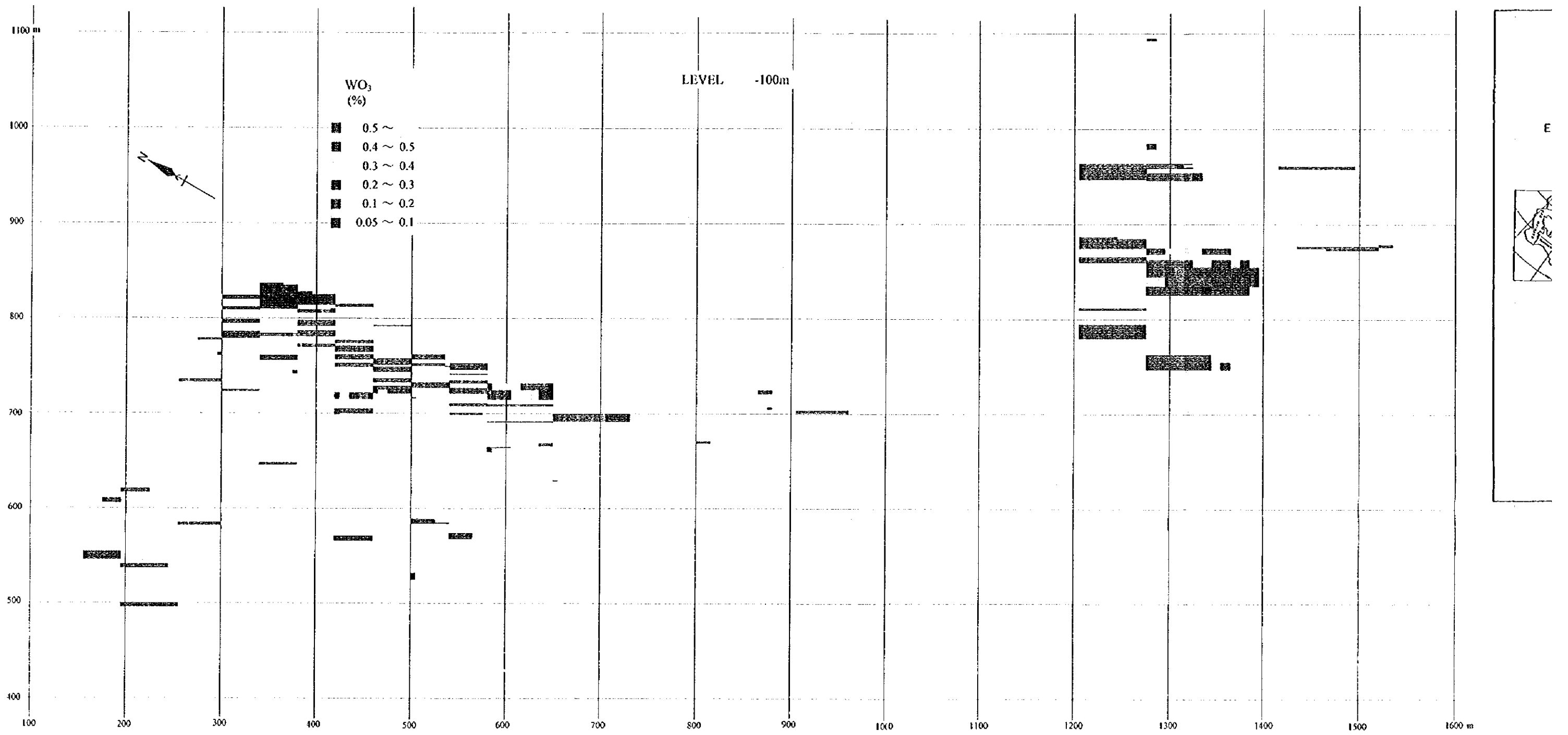
JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
FEBRUARY 1995
Prepared by MINDECO

LEVEL +50m

WO₃
(%)

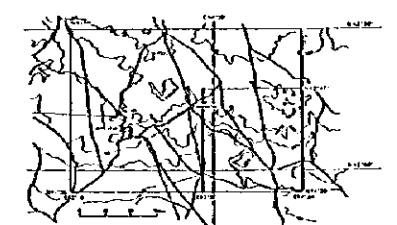
- 0.5 ~
- 0.4 ~ 0.5
- 0.3 ~ 0.4
- 0.2 ~ 0.3
- 0.1 ~ 0.2
- 0.05 ~ 0.1



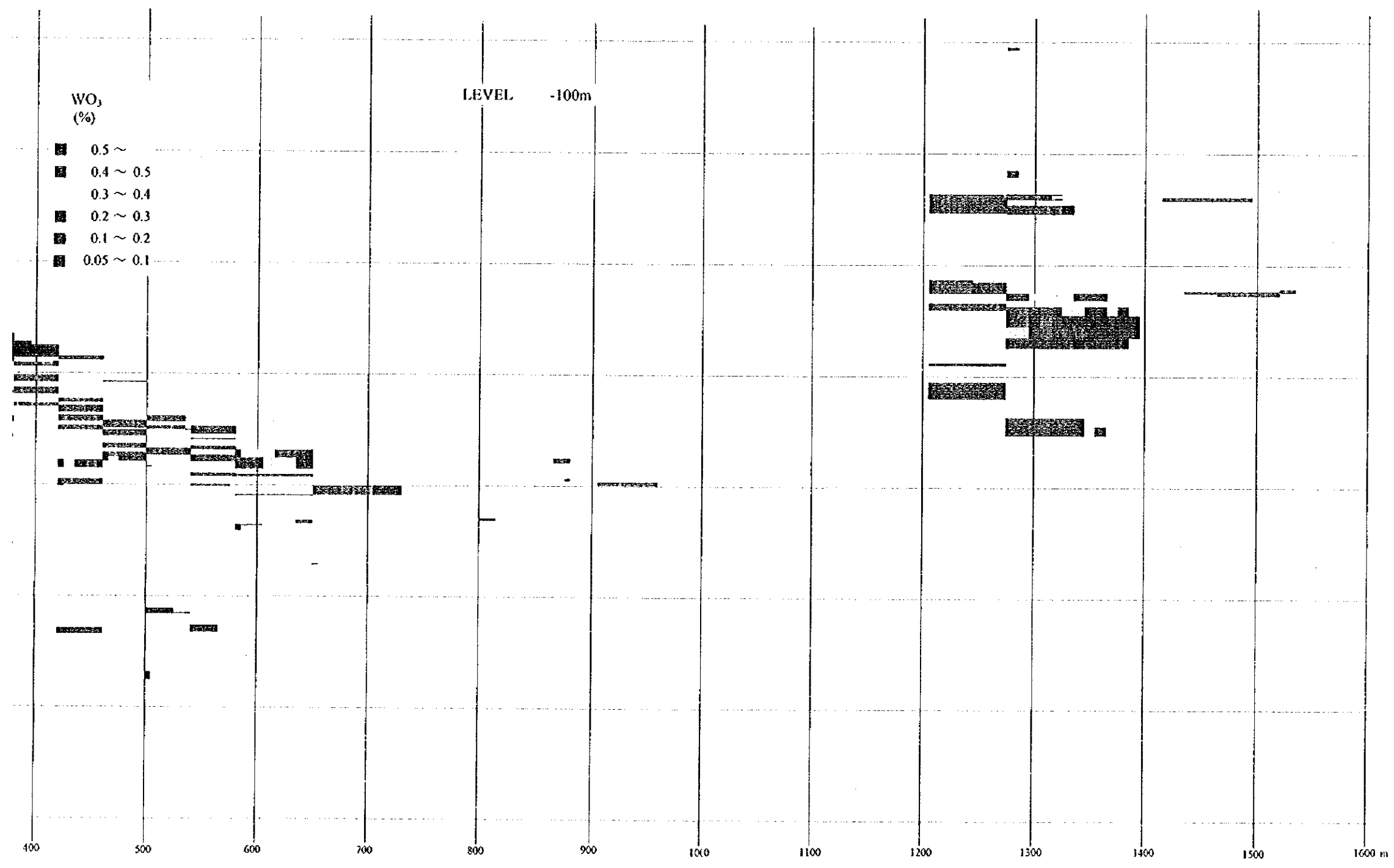


THE MINERAL EXPLORATION
IN
THE EASTERN BUKANTAU AREA
THE REPUBLIC OF UZBEKISTAN
(PHASE I)

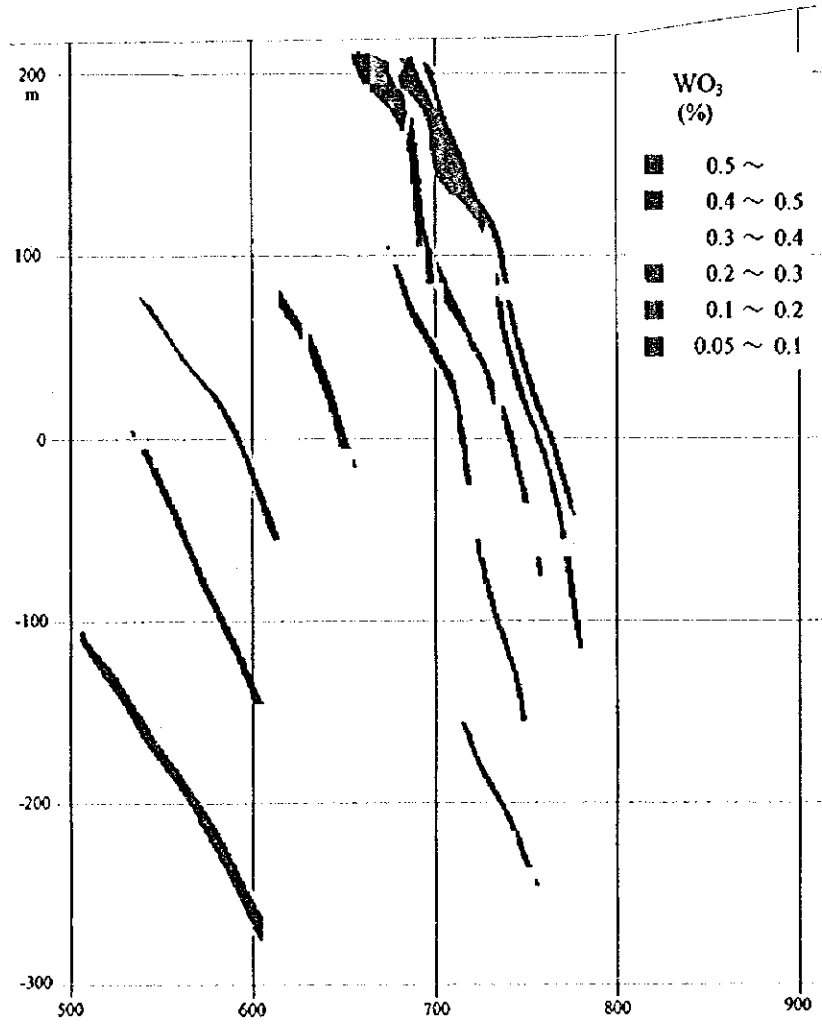
ESTIMATED GRADES OF WO₃ AT THE
LEVEL OF -100m



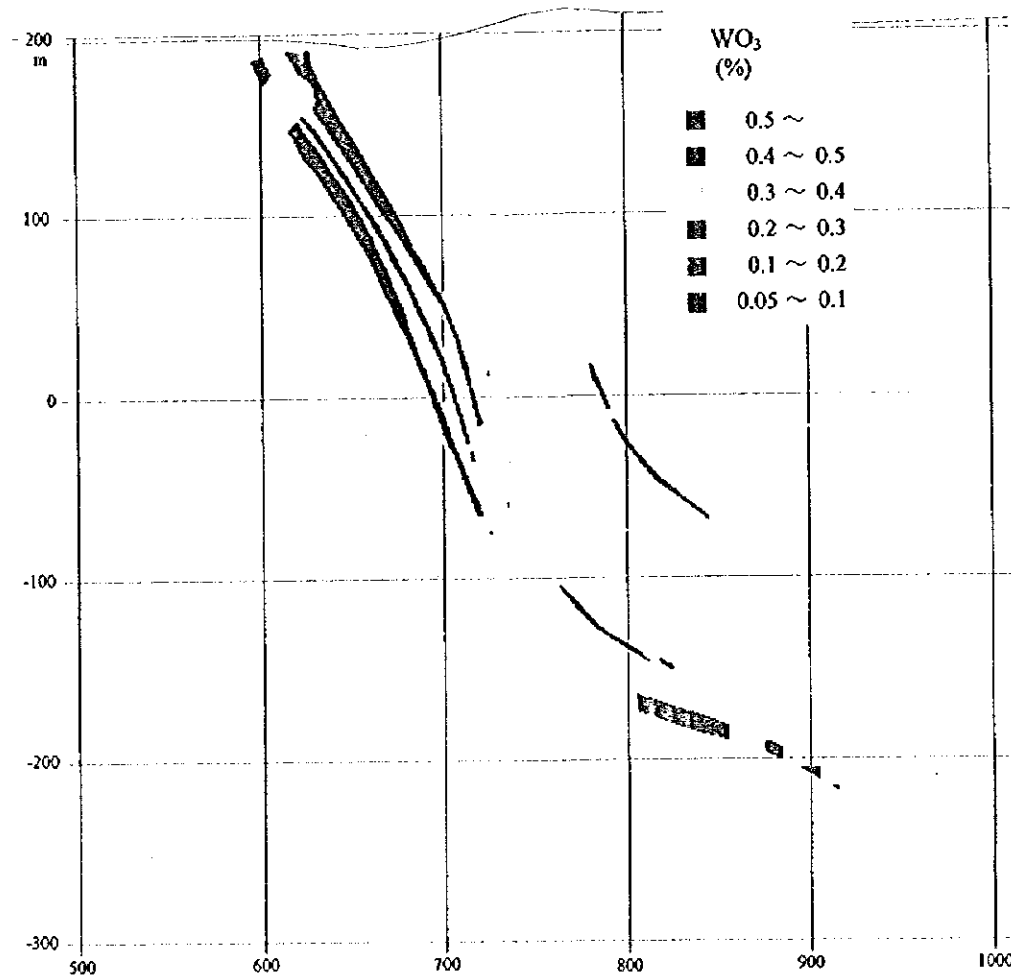
JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
FEBRUARY 1995
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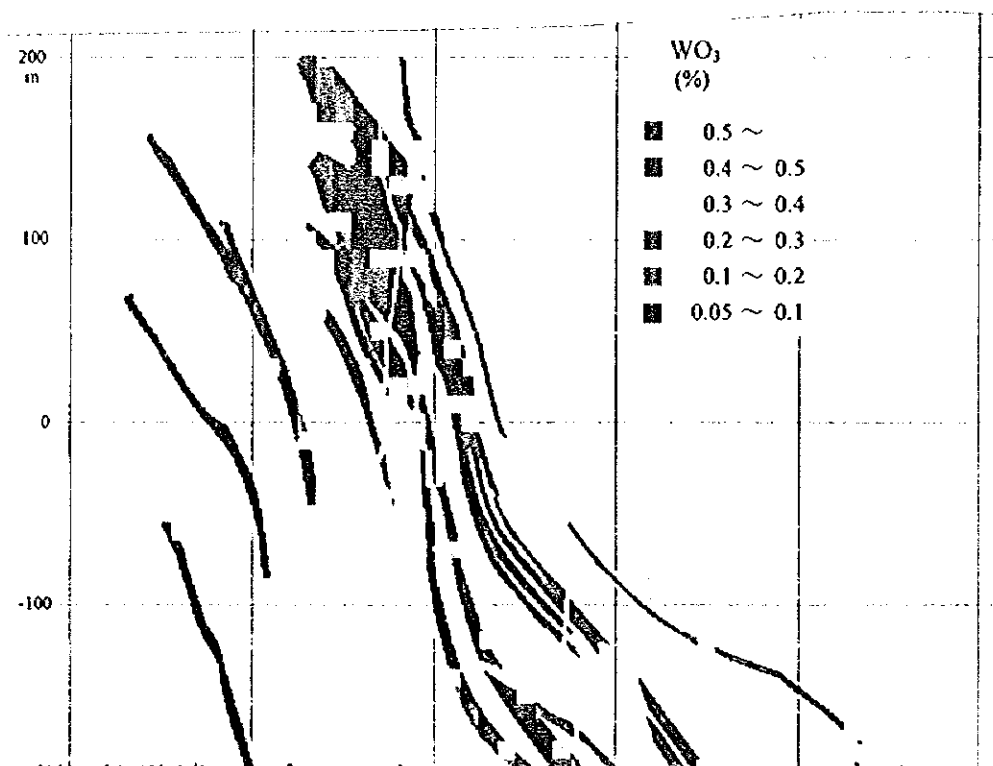
LINE 36 - 36



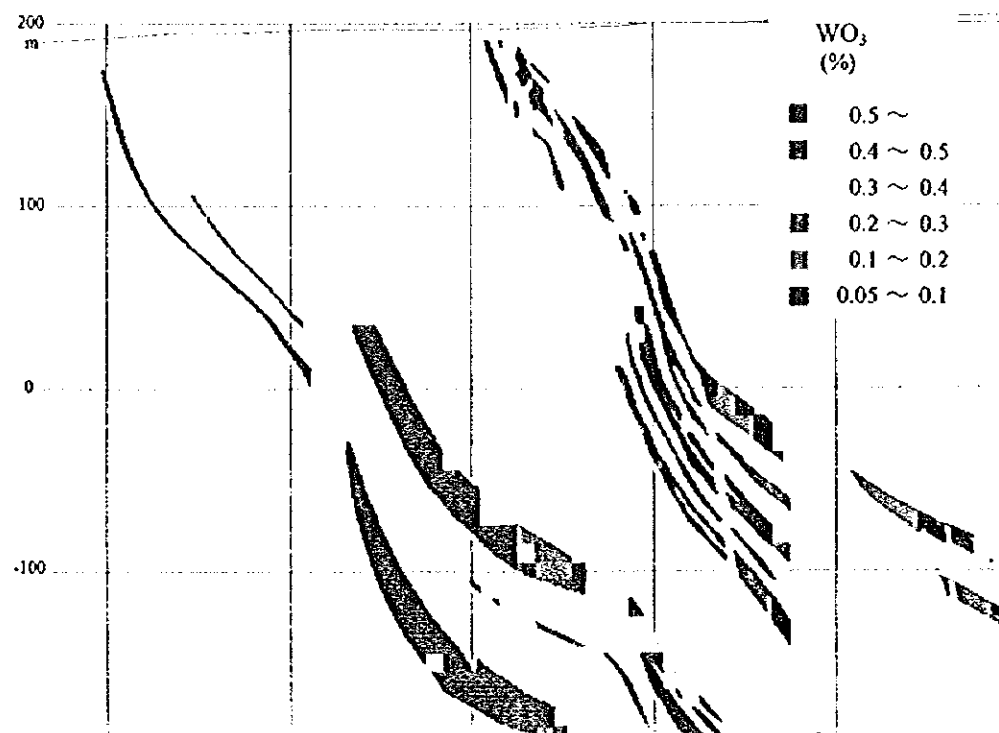
LINE 58 - 58



LINE 40 - 40

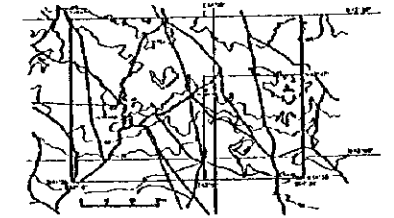
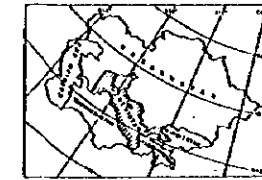


LINE 62 - 62



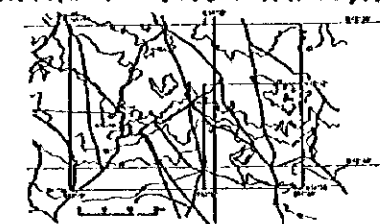
THE MINERAL EXPLORATION
IN
THE EASTERN BUKANTAU AREA
THE REPUBLIC OF UZBEKISTAN
(PHASE I)

ESTIMATED GRADES OF WO₃ ALONG
LINE 36-36, 40-40, 58-58, 62-62

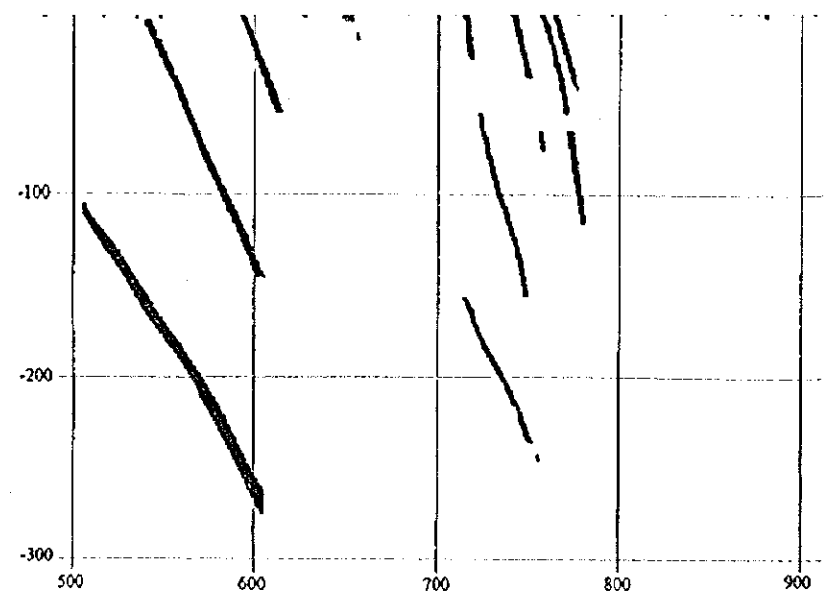


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FEBRUARY 1995

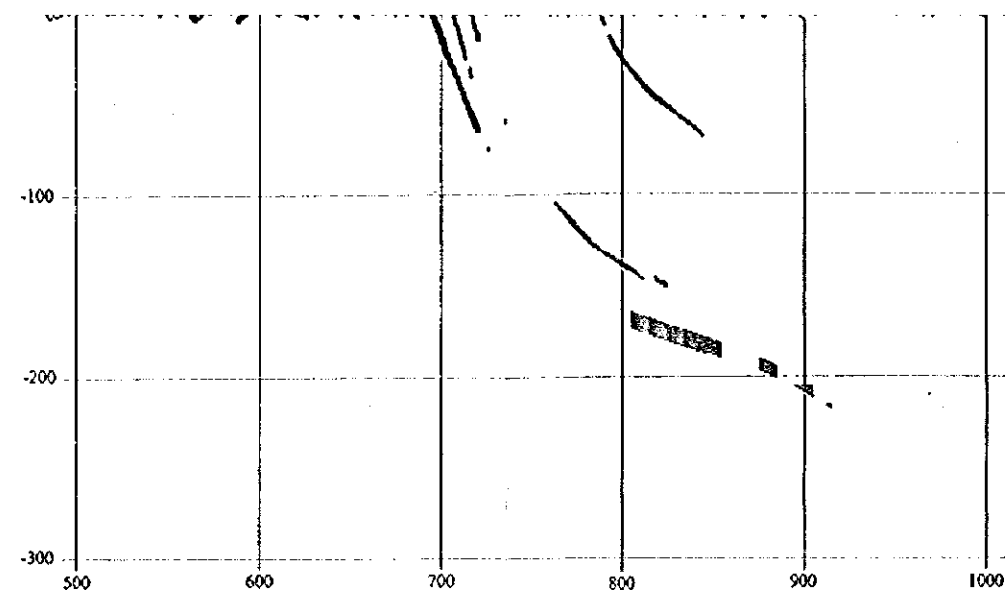
Prepared by MINDECO



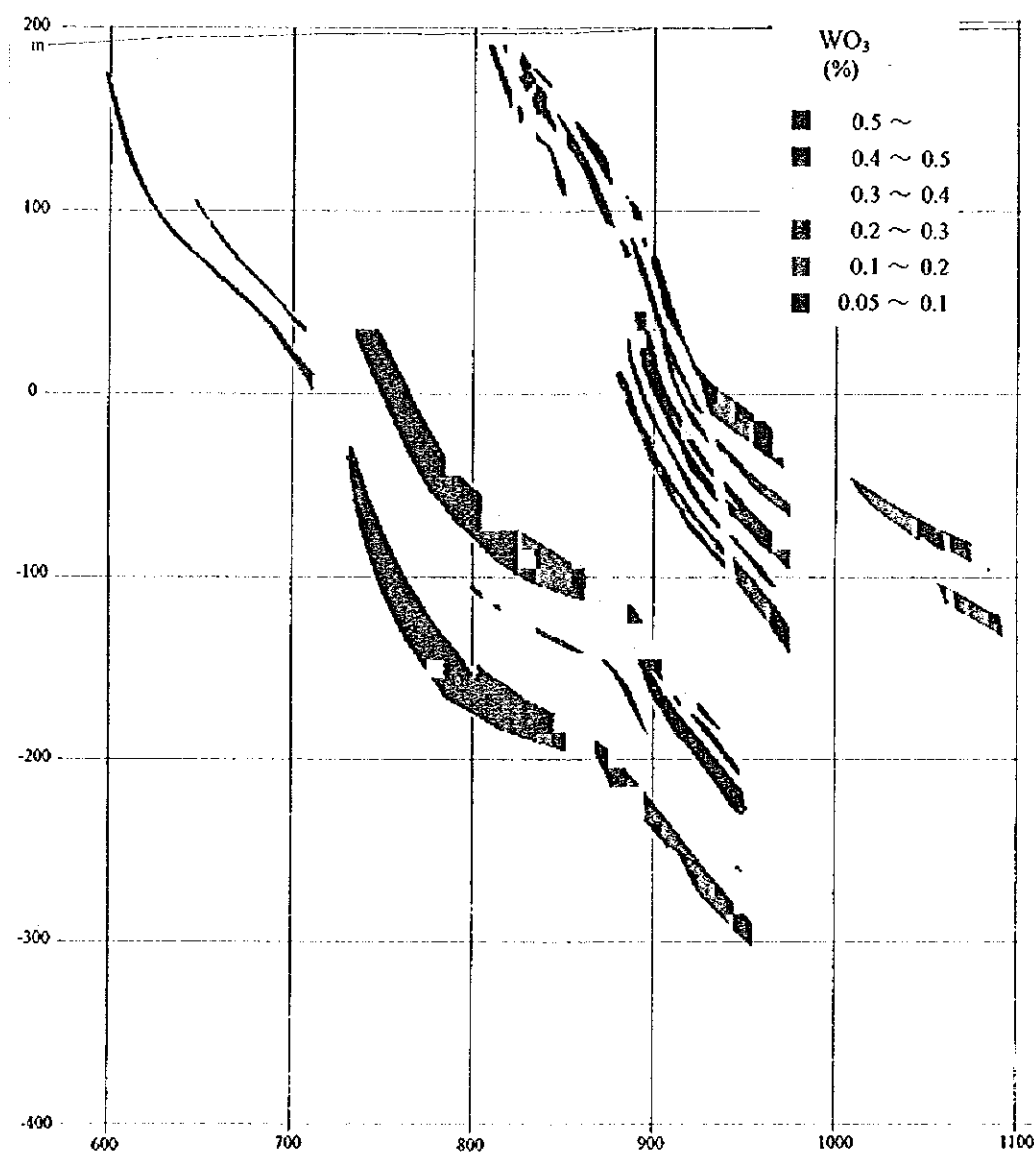
JAPAN INTERNATIONAL COOPERATION AGENCY
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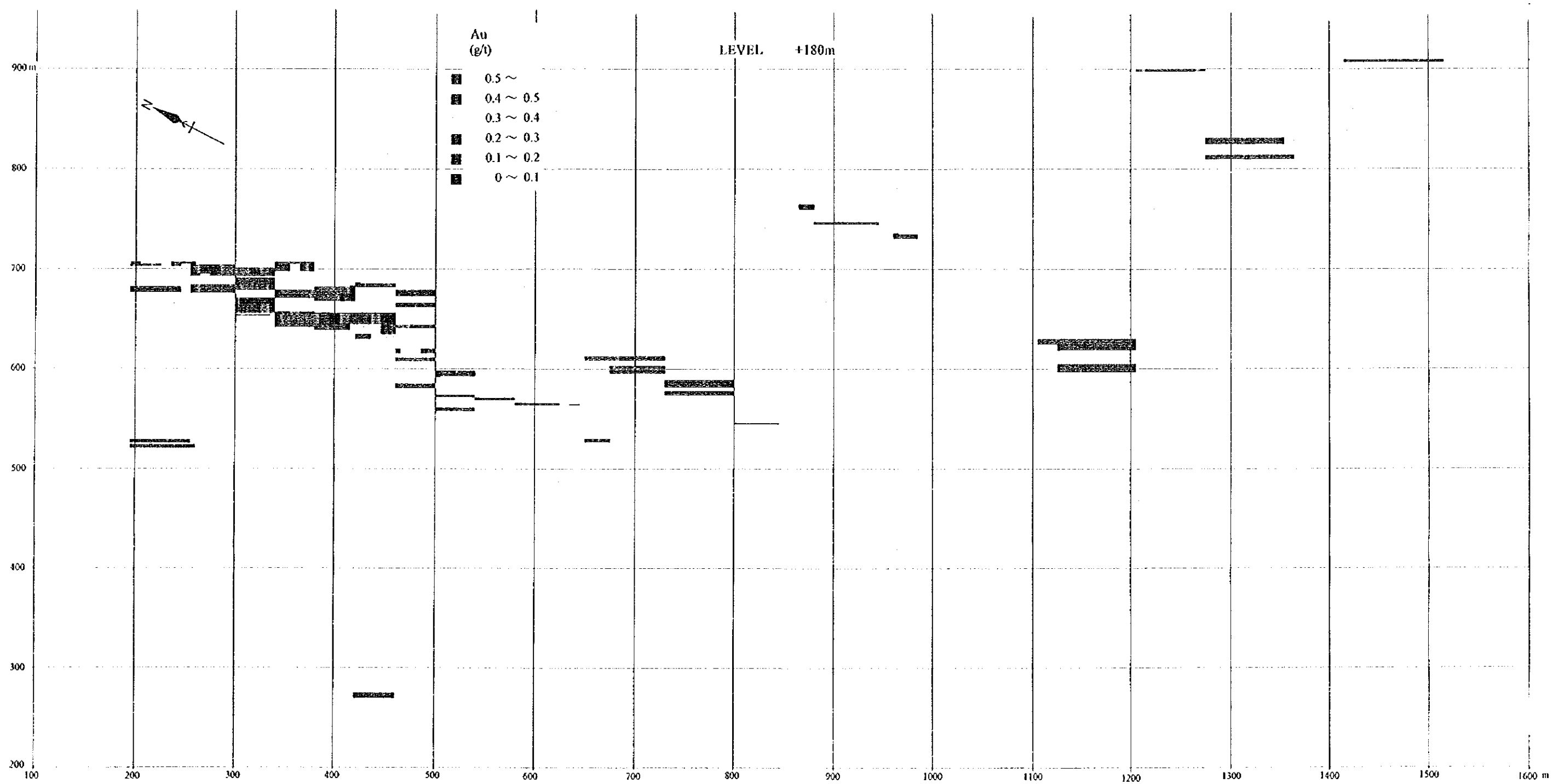


LINE 40 - 40



LINE 62 - 62





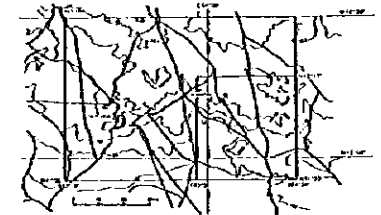
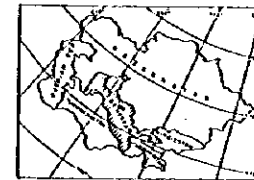
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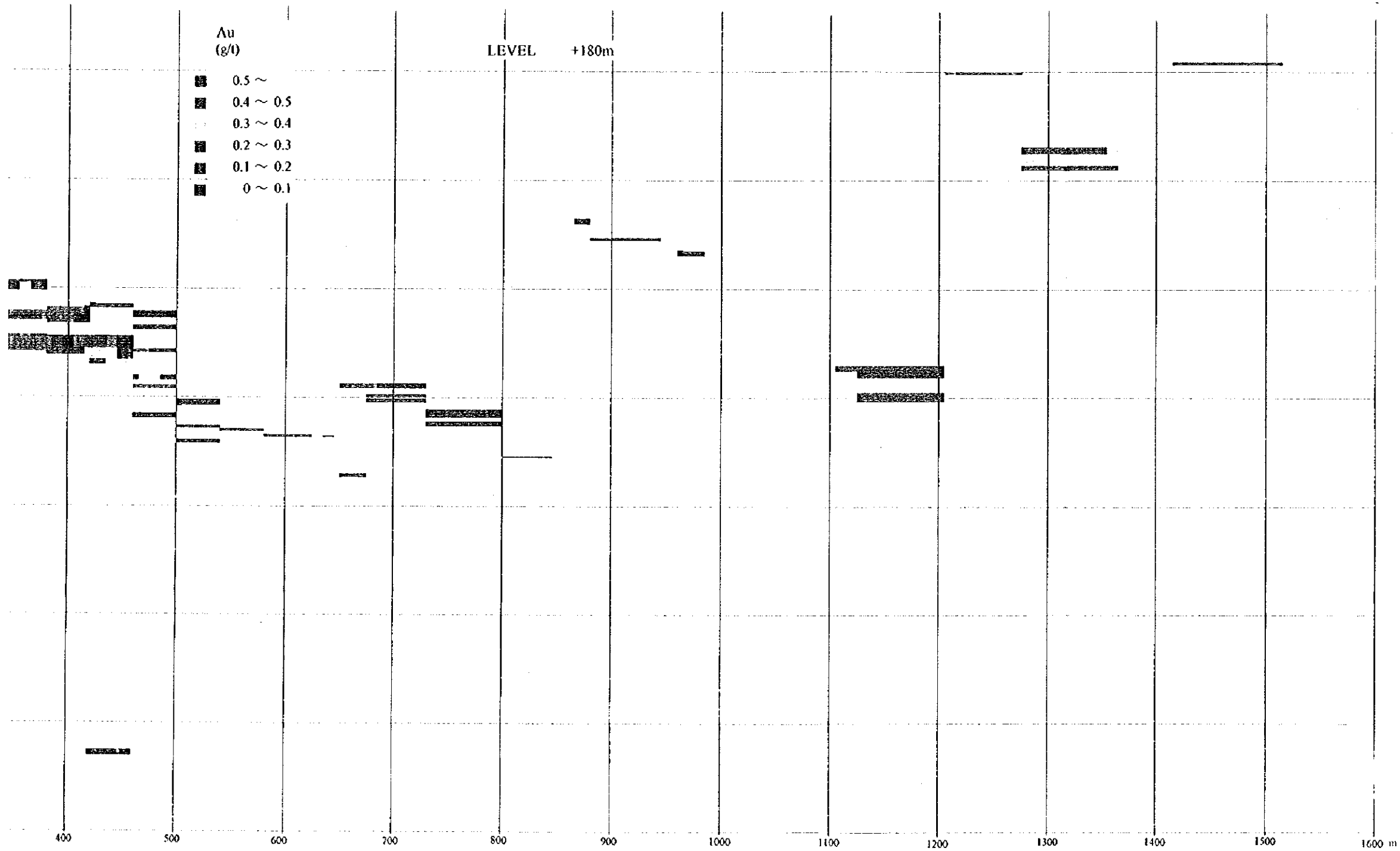
THE MINERAL EXPLORATION
IN
THE EASTERN BUKANTAU AREA
THE REPUBLIC OF UZBEKISTAN
(PHASE I)

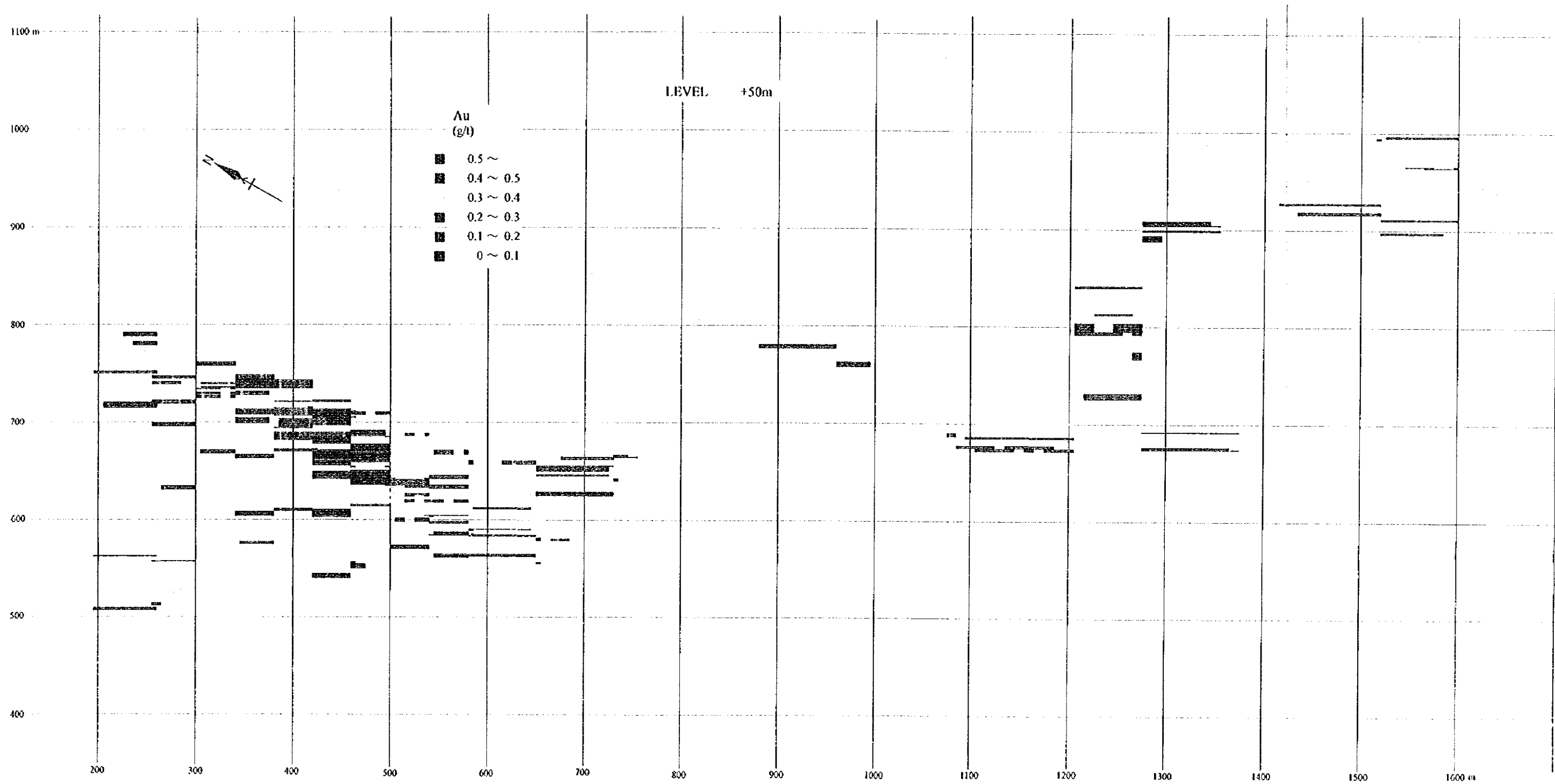
ESTIMATED GRADES OF Au AT THE
LEVEL OF +180m

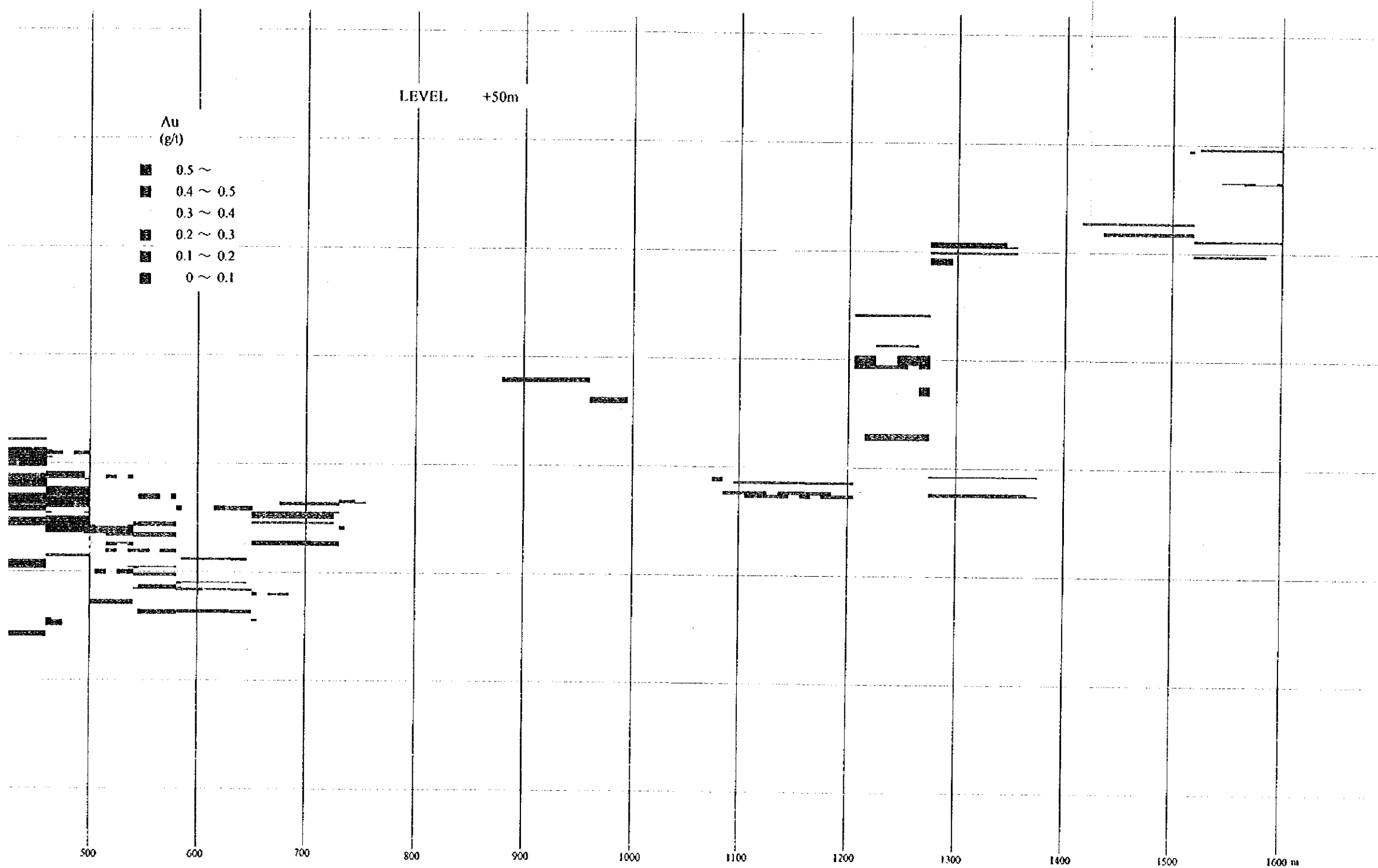


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METAL MINING AGENCY OF JAPAN
FEBRUARY 1995

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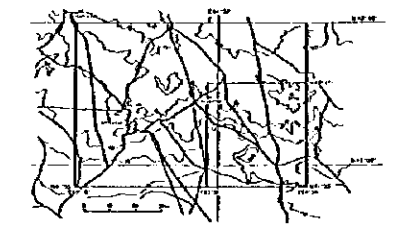
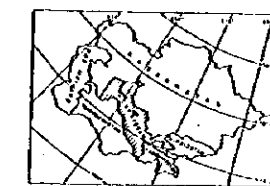




PI. II-3-3(2)

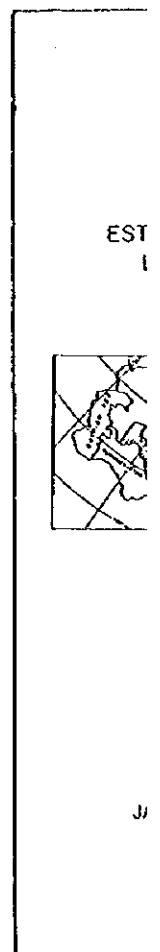
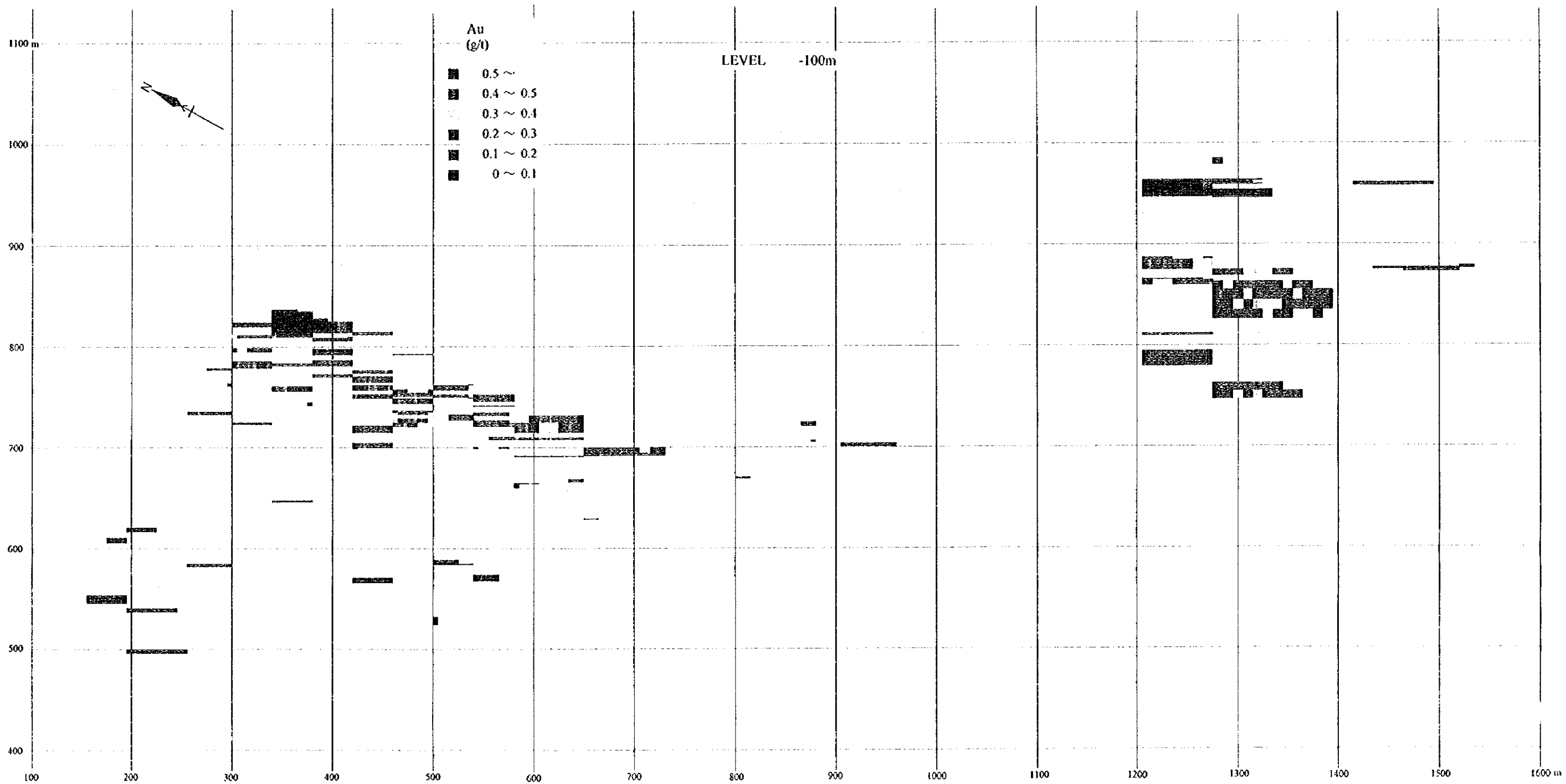
**THE MINERAL EXPLORATION
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THE REPUBLIC OF UZBEKISTAN
(PHASE I)**

ESTIMATED GRADES OF Au AT THE
LEVEL OF + 50m



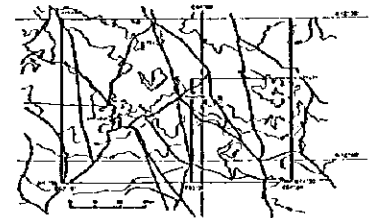
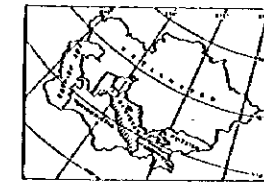
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FEBRUARY 1995

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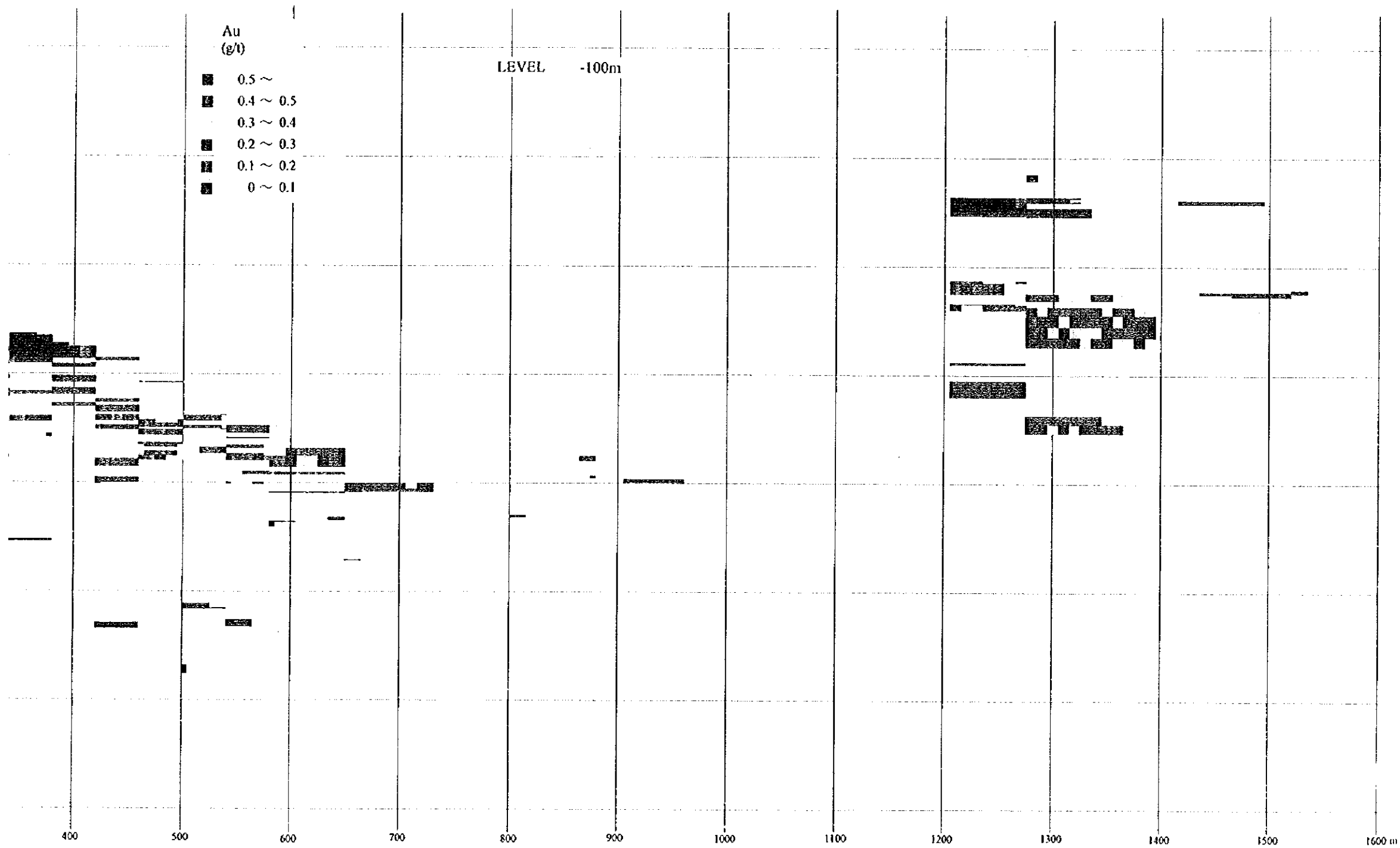
THE MINERAL EXPLORATION
IN
THE EASTERN BUKANTAU AREA
THE REPUBLIC OF UZBEKISTAN
(PHASE I)

ESTIMATED GRADES OF Au AT THE
LEVEL OF -100m

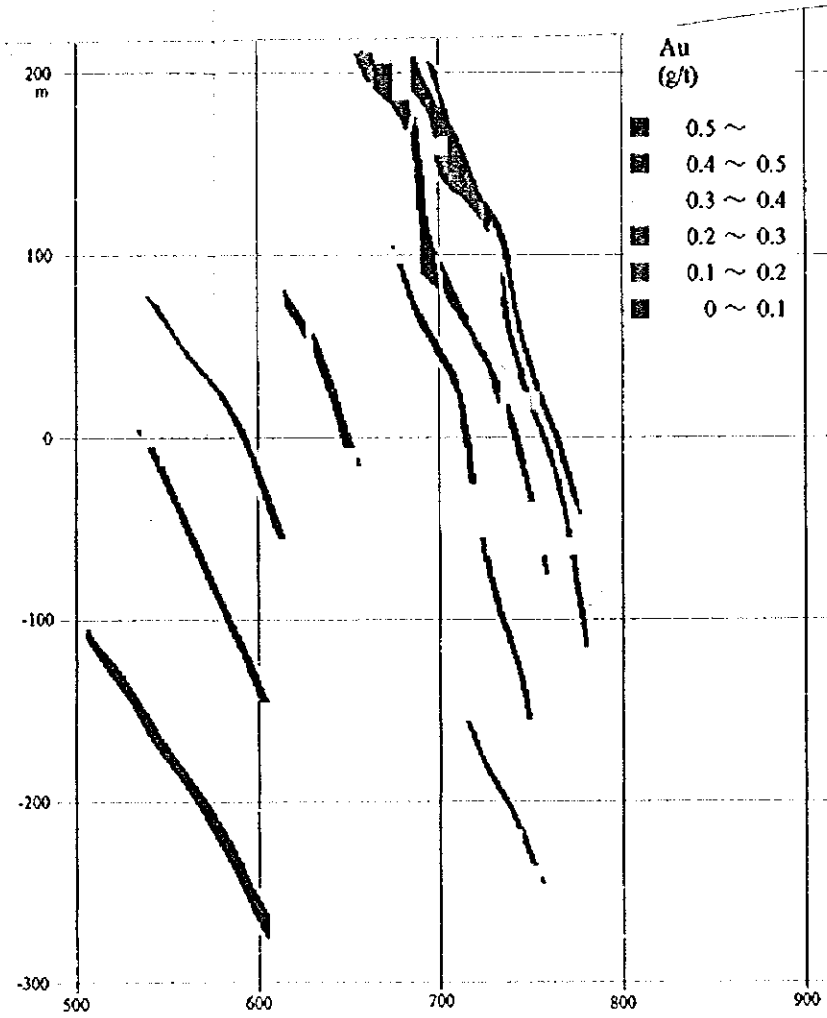


JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
FEBRUARY 1995

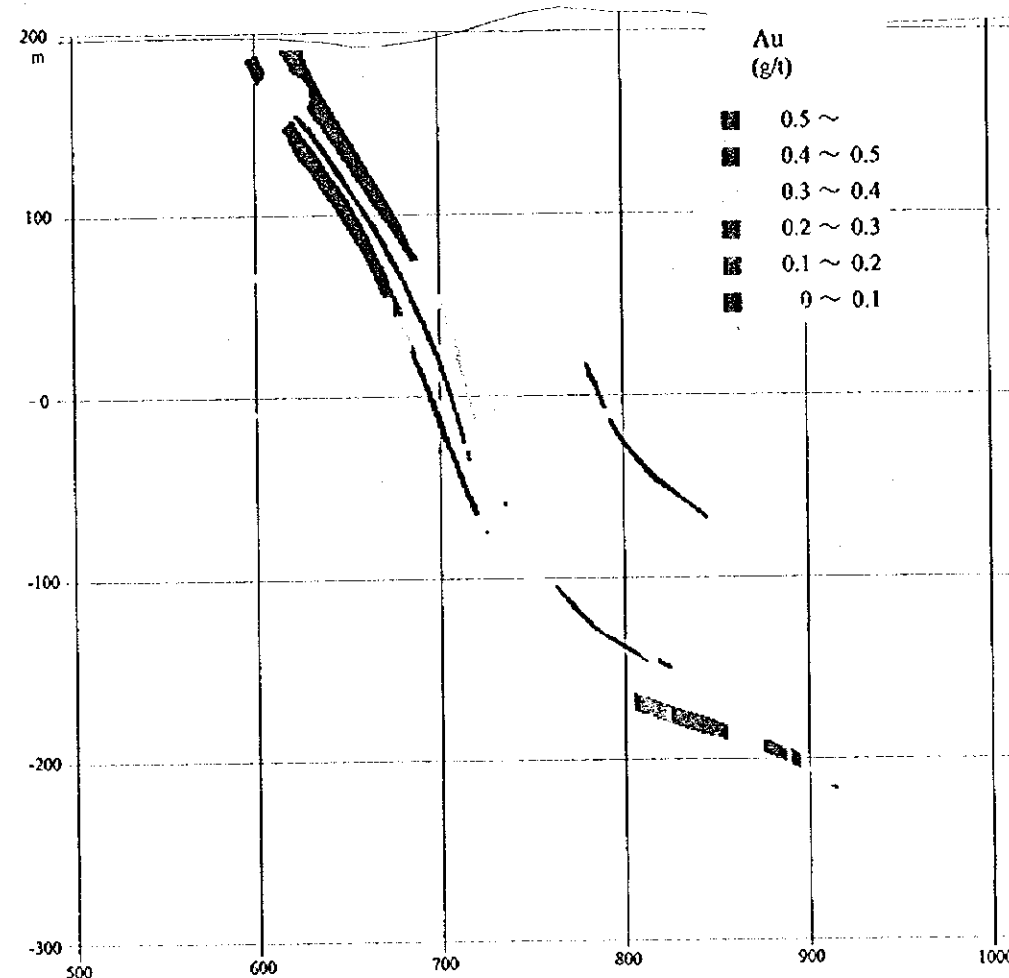
Prepared by MINDECO



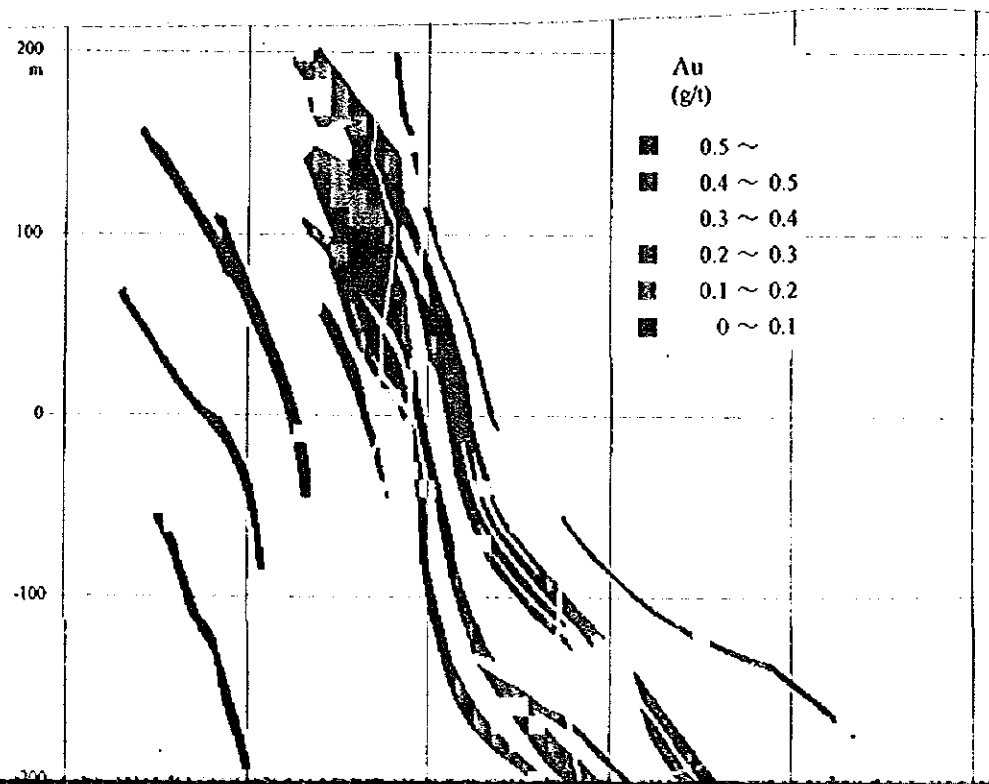
LINE 36 - 36



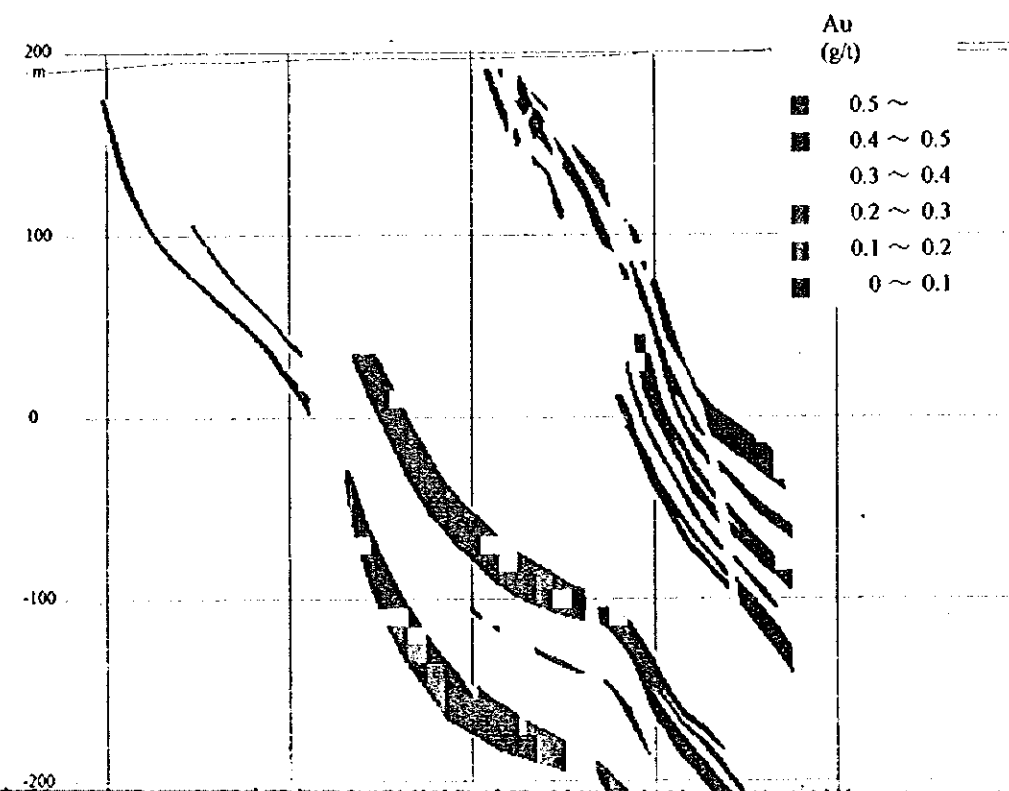
LINE 58 - 58



LINE 40 - 40

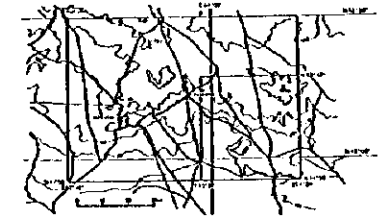
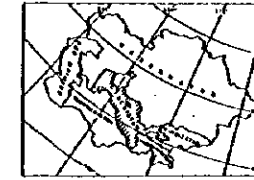


LINE 62 - 62



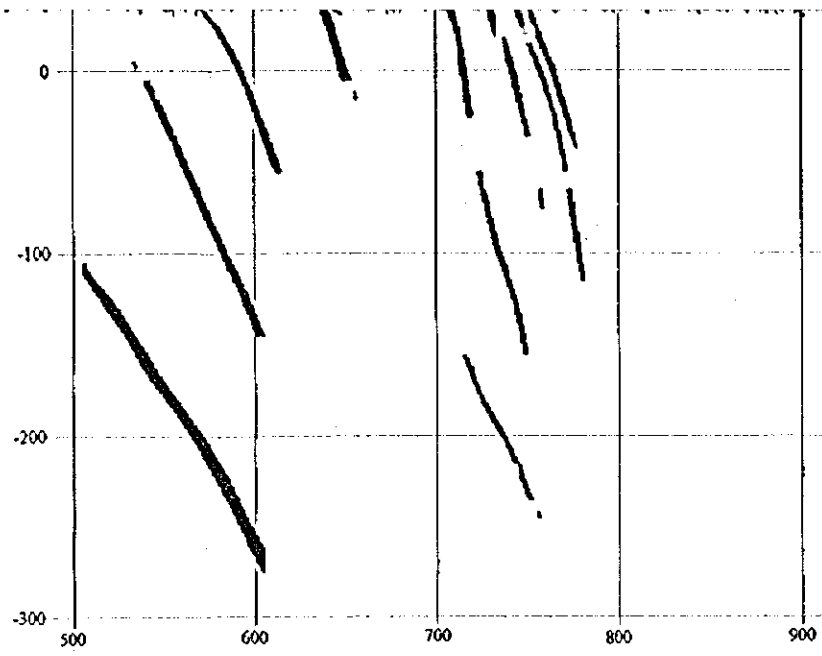
THE MINERAL EXPLORATION
IN
THE EASTERN BUKANTAU AREA
THE REPUBLIC OF UZBEKISTAN
(PHASE I)

ESTIMATED GRADES OF Au ALONG
LINE 36-36, 40-40, 58-58, 62-62

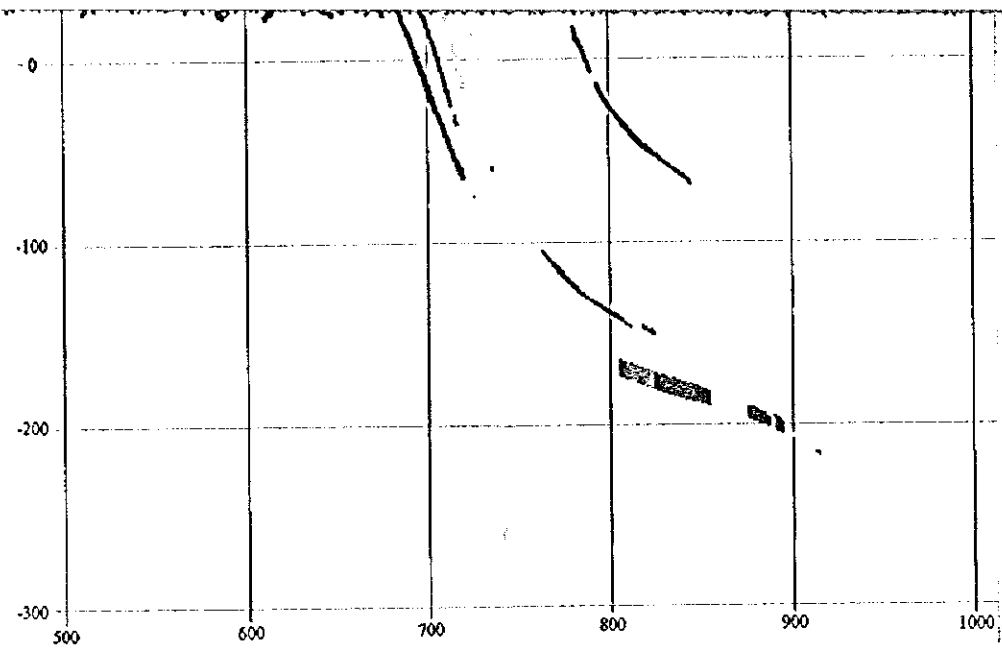


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FEBRUARY 1995

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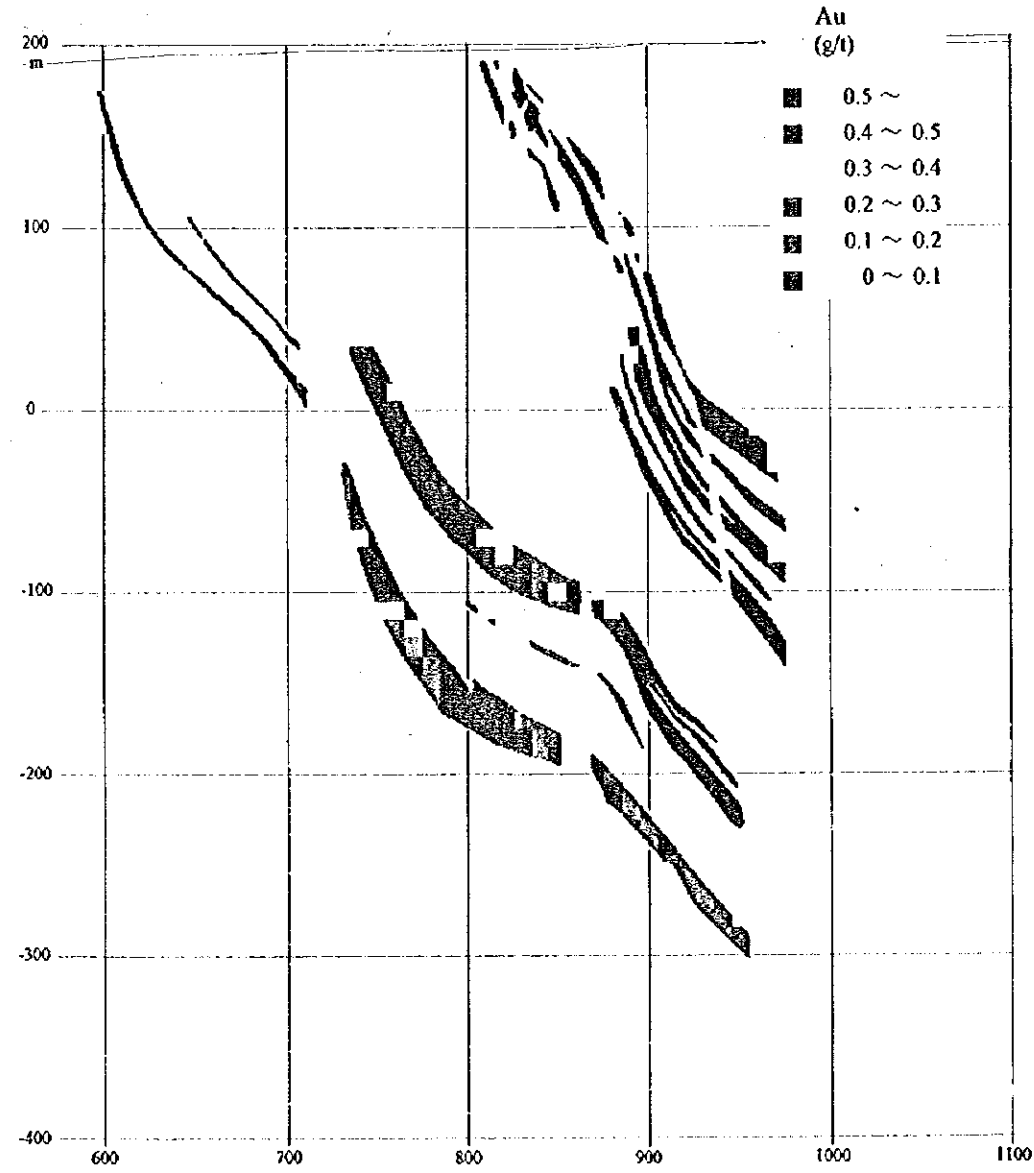
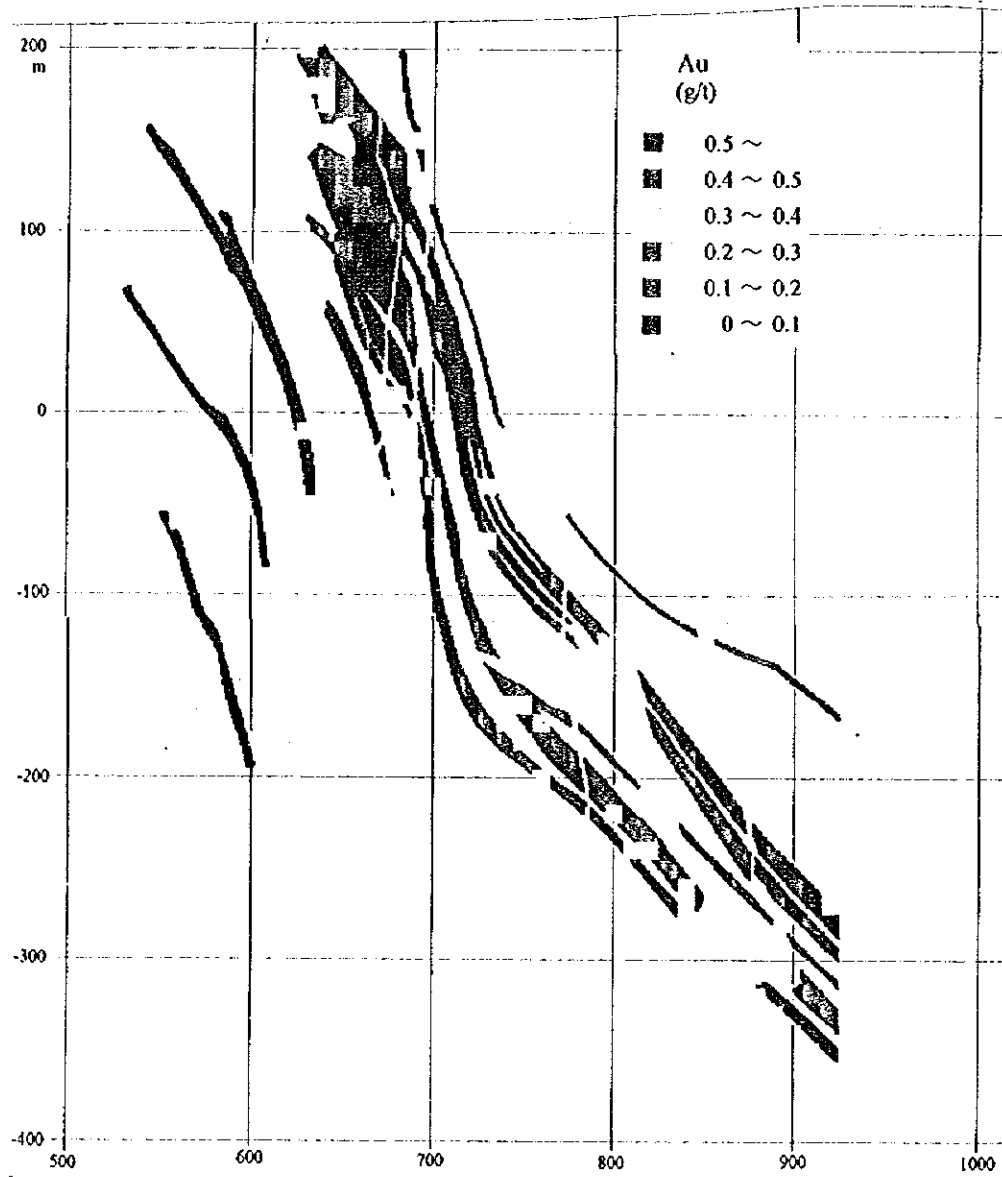


LINE 40 - 40

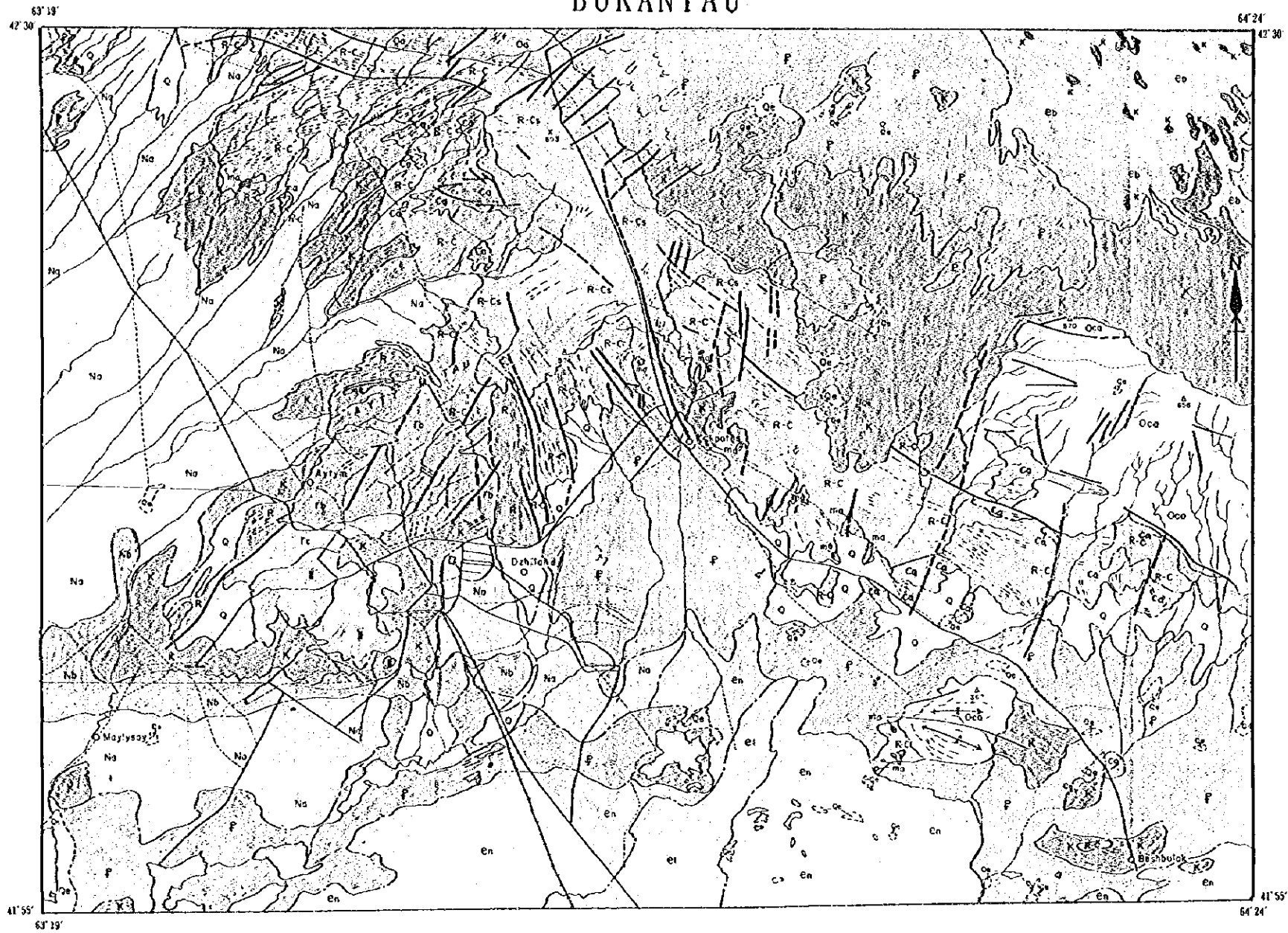


LINE 62 - 62

JAPAN INTERNATIONAL COOPERATION AGENCY
 METAL MINING AGENCY OF JAPAN
 FEBRUARY 1995
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BUKANTAU



Color	Photographic Feature		Topographic Feature		Development of Bedding	Lithology interpreted from Photography
	Feature	Pattern	Density	Resistivity		
Dark blue/black	fine	sub-parallel	moderate	high	well	very dark, fine grained sedimentary metamorphosed rocks
Grayish blue/white	medium	dendritic, trellis	high	moderate	well	alteration of light and dark colored rocks
Brown	medium	dendritic, trellis	high	moderate	well	similar to T.C., thicker aeolian sand cover
Dark green/dark blue	fine	dendritic	high	high	well	dark colored, fine-medium grained sedimentary rocks
Pale pink/gray	medium	dendritic, parallel	moderate	high	partially well	light colored sedimentary rocks
Dark grayish blue	fine	pinpoint, parallel	high	high	very well	dark colored, fine grained sedimentary rocks
Pale reddish purple	medium	parallel	low	low	partially well	fine-medium grained sediments (loosely consolidated)
Pale pink/white	medium-coarse	parallel	low	low	partially well	fine-medium grained sediments
Grayish blue	fine	parallel	moderate	low	partially well	medium grained sediments (unconsolidated)
Dark blue	medium	sub-parallel	moderate	low	partially well	fine grained sediments (unconsolidated)
Gray, reddish brown, dark blue	fine	parallel	moderate	very low	-	alluvium, talus deposits
White	fine	-	-	low	rare	salt lake (evaporates)
Yellow/other	coarse	-	-	low	-	aeolian deposits (includes barabans)
White/Pale yellow	medium	-	-	low	-	aeolian deposits (includes linear dunes)
White/Pale yellow/Reddish brown	fine	-	-	very low	-	aeolian deposits (thinner than 'eb' and 'ec')
Grayish purple	medium	pinpoint	very high	high	poor/assessive	granitic intrusive
Pale pink	medium	parallel	moderate	moderate	poor/assessive	granitic intrusive
Pale yellow, white	fine	-	-	-	-	mine site (open pit and waste dumps)

- (m) Alteration zone or mineralized zone
- Anticlinal axis
- Bedding trace
- Joints
- Lineament (topographically clear)
- Lineament (topographically rather clear)
- Principal road
- rough road
- Village or town
- Elevation in meter
- lake/salt lake
- Airport/ air strip

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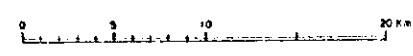
BUKANTAU



LEGEND

Unit	Photographic Feature		Topographic Feature			Development of Bedding	Lithology interpreted from Photogeology
	Color	Texture	Drainage	Density	Resistivity		
P	Dark blue, black	fine	sub parallel	moderate	high	well	very dark, fine grained sedimentary metamorphosed rocks
R-C	Grayish blue, White	medium	deobitic, trelis	high	moderate	well	alteration of light and dark colored rocks
F-C	Brown	medium	deobitic, trelis	high	moderate	well	similar to R-C, thicker section sand cover
Oa	Dark green, Dark blue	fine	deobitic	high	high	well	dark colored, fine medium grained sedimentary rocks
Oc	Pale pink, gray	medium	deobitic, parallel	moderate	high	partially well	light colored sedimentary rocks
Q	Dark grayish blue	fine	pinate, parallel	high	high	very well	dark colored, fine grained sedimentary rocks
Qb	Pale reddish purplish	medium	parallel	low	low	partially well	fine medium grained sediments (loosely consolidated)
Qc	Pale pink, ochre	medium-coarse	parallel	low	low	partially well	fine medium grained sediments
Qd	Grayish blue	fine	parallel	moderate	low	partially well	medium grained sediments (consolidated)
Qe	Dark blue	medium	sub parallel	moderate	low	partially well	fine grained sediments (unconsolidated)
Qf	Gray, Reddish brown, Dark Blue	fine	parallel	moderate	very low	-	alluvium, talus deposits
Qg	White	fine	-	-	low	rare	salt lake (evaporated)
Qh	Yellow Ochre	coarse	-	-	low	-	scollin deposits (includes barchans)
Qi	White, Pale yellow	medium	-	-	low	-	scollin deposits (includes linear dunes)
Qj	White, Pale yellow, Reddish brown	fine	-	-	very low	-	scollin deposits (thinner than 'Qi' and 'Qj')
Qk	Grayish purple	medium	pinate	very high	high	porfusive	granitic intrusive
Ql	Pale pink	medium	parallel	moderate	moderate	porfusive	granitic intrusive
Qm	Pale yellow, White	fine	-	-	-	-	mine site (open pit and waste dump)

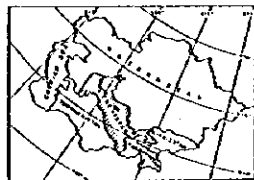
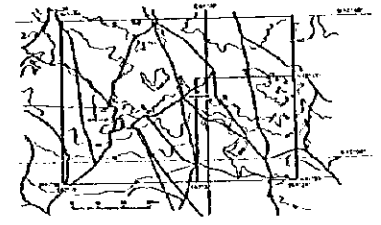
- (in) Alteration zone or mineralized zone
- Anticlinal axis
- Bedding trace
- Joints
- Lineament (topographically clear)
- Lineament (topographically rather clear)
- Principal road
- rough road
- Village or town
- Elevation in meter
- Inter-salt lake
- Airport/ Air strip



Pl. H-4-1

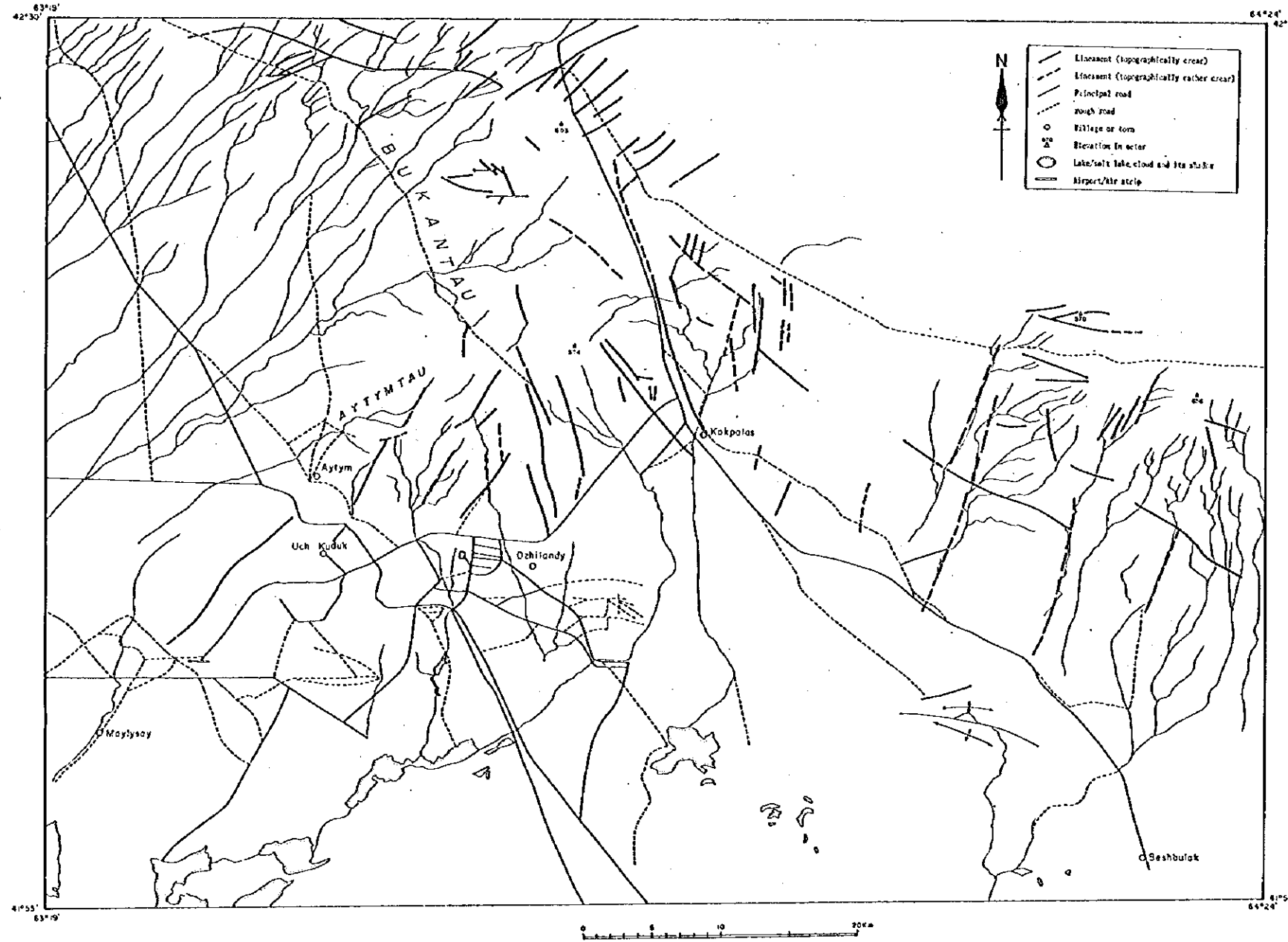
**THE MINERAL EXPLORATION
IN
THE EASTERN BUKANTAU AREA
THE REPUBLIC OF UZBEKISTAN
(PHASE I)**

PHOTOGEOLOGICAL INTERPRETATION MAP

JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
FEBRUARY 1995
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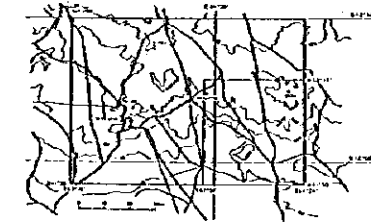
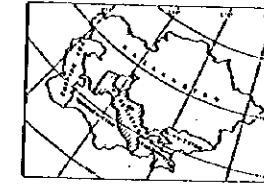
BUKANTAU



PL. II-1-2

THE MINERAL EXPLORATION IN THE EASTERN BUKANTAU AREA THE REPUBLIC OF UZBEKISTAN (PHASE I)

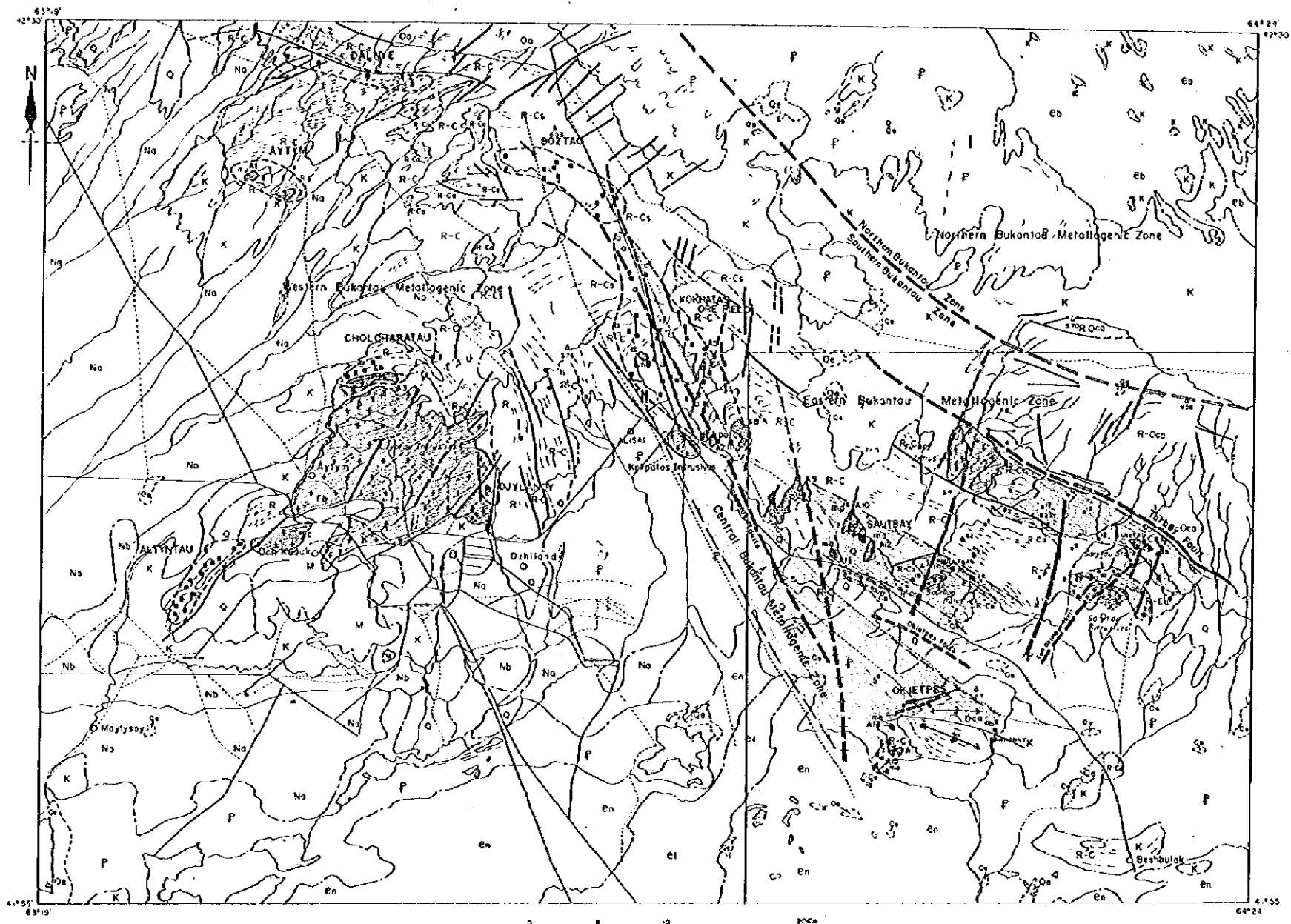
LINEAMENTS EXTRACTION MAP



JAPAN INTERNATIONAL COOPERATION AGENCY
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FEBRUARY 1995

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BUKANTAU



Pl. H-5-1

THE MINERAL EXPLORATION IN THE EASTERN BUKANTAU AREA THE REPUBLIC OF UZBEKISTAN (PHASE I)

INTEGRATED INTERPRETATION MAP

JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
FEBRUARY 1995
Prepared by MINDECO

A. Ore Deposits and Showings

(1) Main Ore Deposits showings within Ground Truth Survey Area

- [SARAYAY] : Saryay deposits (W, Au)
- [SARAYAY] : Saryay deposits (W, Au)
- [TURBAY] : Turbay deposits (Au)
- [OZTAPPE] : Oztappe deposits (Ag, Au, Au)
- [KALANSSAY] : Kalanssay deposits (Au)
- [KALANSSAY] : Kalanssay showings (Au)

(2) Other showings within Ground Truth Survey Area

- [M] : Au-Ag showings
- [M] : Au-Ag showings
- [M] : Au-Ag showings

(3) Central, 9 Central Turbay, 3 South Turbay, 4 North Turbay, 5 Near Contact, 8 Dalkovoye, 7 Kaysanai, 8 East Akkol, 9 Akkol, 10 South Sarvtau, 11 East Turbay, 12 Kurgantau, 13 Karatau, 14 Northeast Turbay, 15 Karabai, 16 Kortash, 17 West Turbay, 18 Central Sarvtau

(4) Showings

- [M] : Southeast Sarvtau, 20 Nizki Kashkar, 21 East Sarvtau, 22 West Sarvtau, 23 Kadzhan, 24 West Kadzhan, 24 Bentash, 25 South Bentash, 26 East Kadzhan, 27 Kaktas, 28 South Bentash, 29 Bentash, 30 Showings, 30 North Sarvtau

B. Metallogenic Zone

- [M] : Metallogenic zone boundary (by Mr. Ushakov)
- [M] : Ore zone boundary (curiously defined by the Survey)

C. Geologic Features

(1) Intrusive Rocks

- [G] : granite-diorite
- [G] : gneiss-gneissoidite

(2) Main Geologic Structures

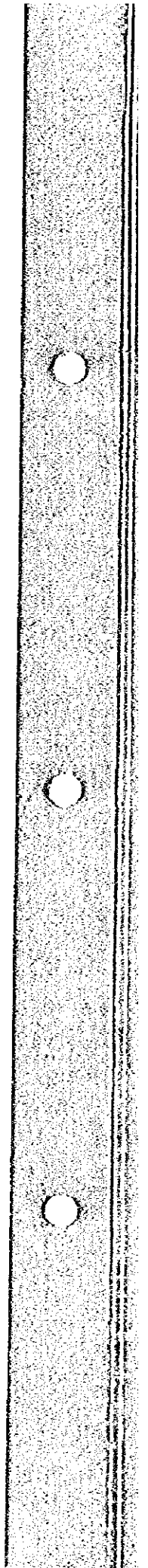
- [M] : faults or fracture zone
- [M] : Anticline axis

D. Ground Truth Survey

- [M] : Ground Truth Survey Area
- [M] : Main check point

Age	Symbol	Lithology (Rocks Confirmed by Ground Survey)
Quaternary	[Q]	alluvial fan deposits (sand gravel)
	[Qa]	evaporites (salt)
	[Qb]	soil-like deposits (includes barite and zinc)
	[Qc]	soil-like deposits (includes barite and zinc)
Pliocene	[Pb]	fine grained sediments (consolidated)
	[Pa]	soil-like deposits (includes barite and zinc)
Pleistocene-Miocene	[P]	fine-grained sediments (consolidated)
	[Pc]	light colored sediments (sandstone, siltstone)
Cretaceous	[C]	fine-grained sediments (consolidated)
	[Cc]	light colored sediments (sandstone, siltstone)
Mesozoic	[M]	dark colored, fine-grained sediments (sandstone, siltstone)
	[Mc]	light colored sediments (shale)
Proterozoic (Archaean)	[P]	alternation of light colored and dark colored rocks (siliceous shales, quartzites, white, black, etc. metamorphoses)
	[Pc]	very dark, fine-grained sediments and metamorphosed rocks (quartzite, black shales, dolerites)
Intrusives	[G]	granite (no also granite)
	[Gc]	granodiorite, andesite, granite
	[M]	ultra site (open pit, waste dump)

[M]	Alteration zone
[M]	Anticline axis
[M]	Bedding trace
[M]	Joins
[M]	Linesament (topographically clear)
[M]	Linesament (topographically rather clear)
[M]	Principal road
[M]	rough road
[M]	Village or town
[M]	Elevation in meter
[M]	Salt/salt lake, cloud and site shade
[M]	Striped/Air strip



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