

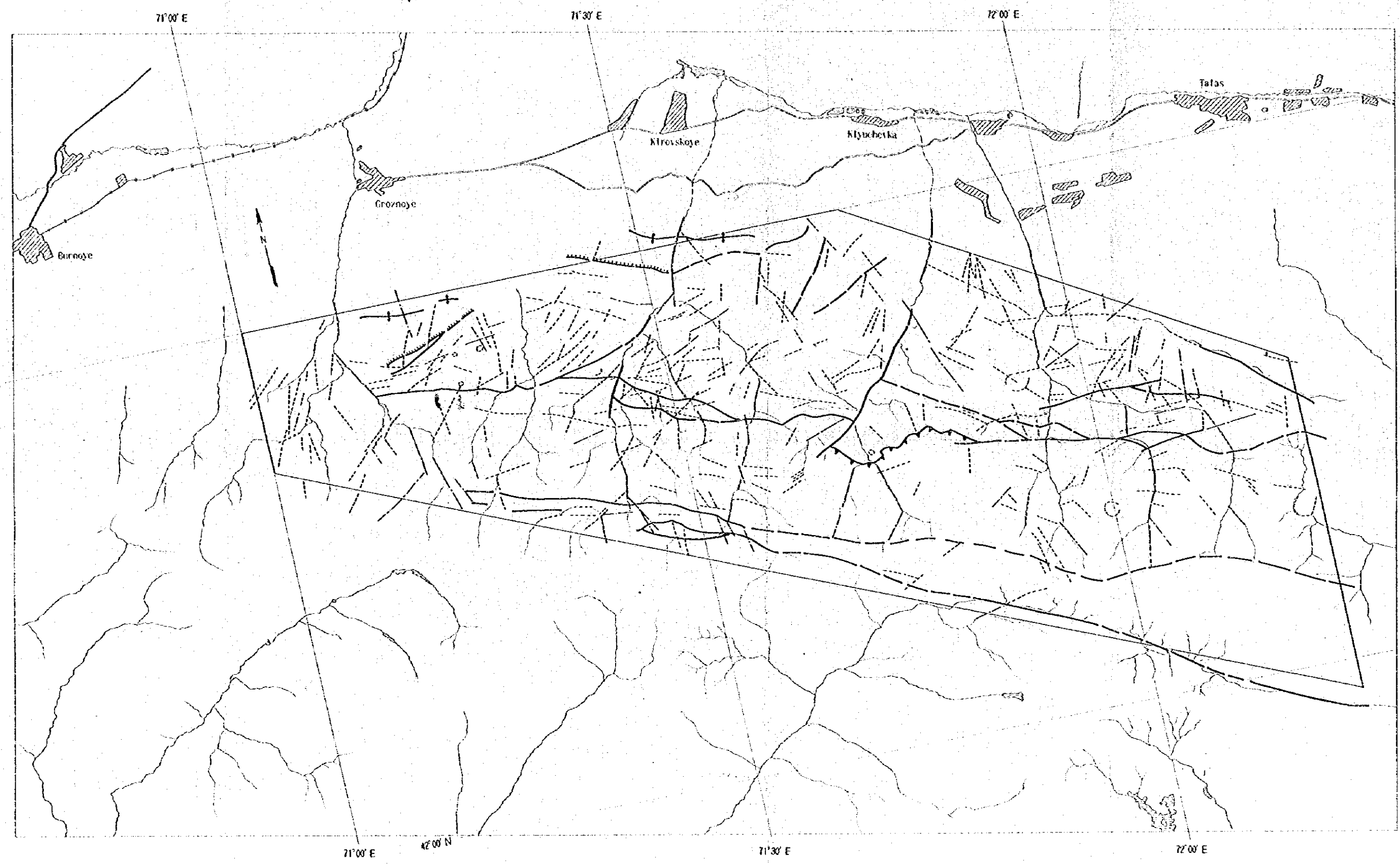
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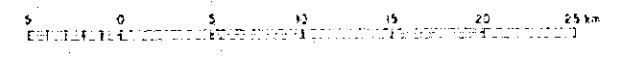
LINEAMENT



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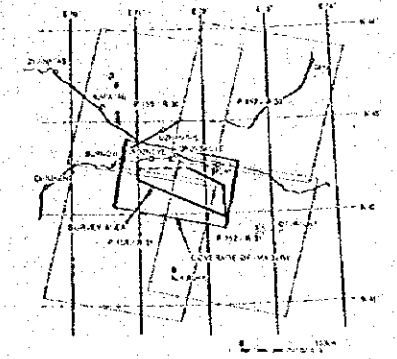


	Fault (observed)
	Inferred Fault
	Thrust Fault
	Major Lineament
	Minor Lineament
	Circular Structure
	Anticline
	Drainage
	Lake, Pond
	Urban Area
	Major Road
	Rail Way

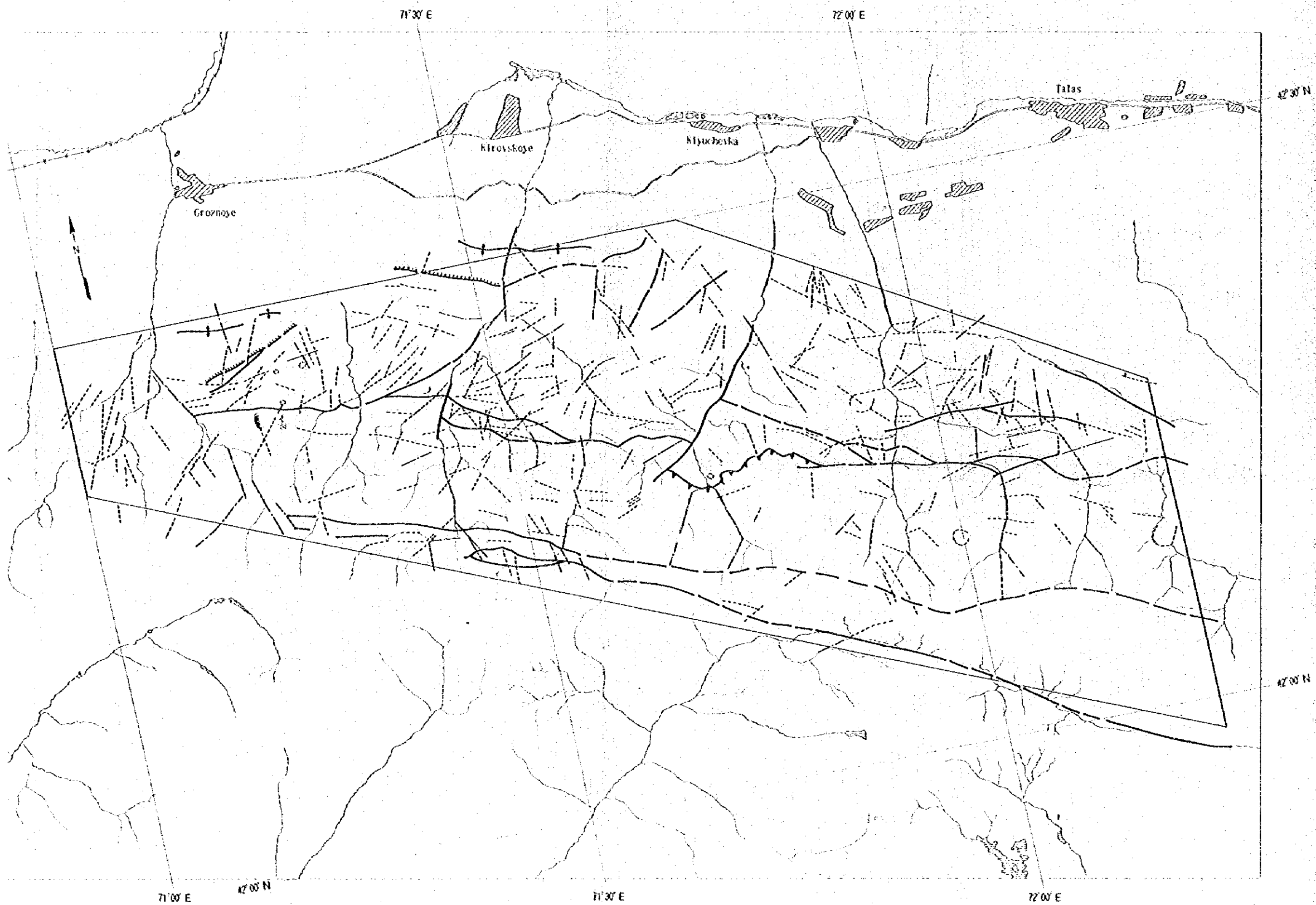


THE MINERAL EXPLORATION
IN THE TALAS AREA,
THE KYRGYZ REPUBLIC
(PHASE I)

LINEAMENT MAP OF LANDSAT TM IMAGE!

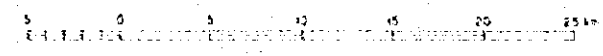


JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
FEBRUARY, 1995

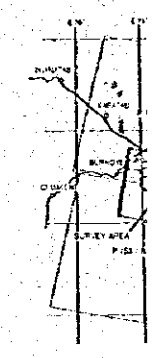


LEGEND

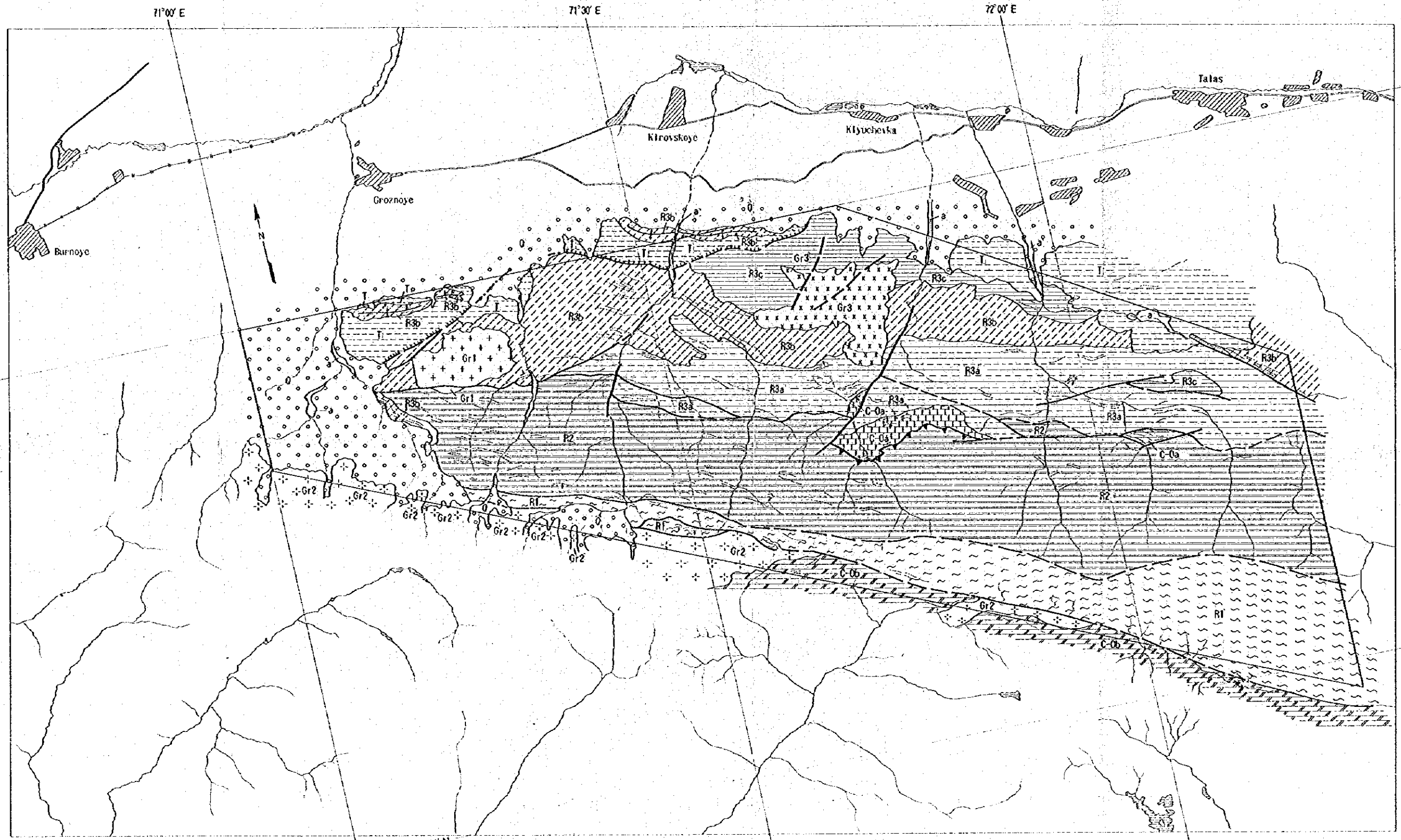
	Fault (barbs on downfall side)
	Inferred Fault (barbs on downfall side)
	Thrust Fault
	Major Lineament
	Minor Lineament
	Circular Structure
	Anticline
	Drainage
	Lake, Pond
	Urban Area
	Major Road
	Rail Way



THE MIN
IN THE
GEOLOGIC
LANDSAT

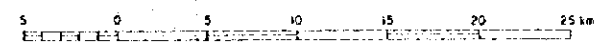


JAPANITE
META



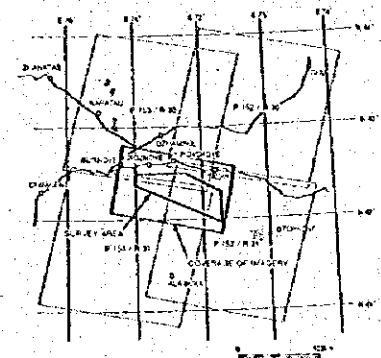
Symbol	Unit	Correlation w/ Geologic Ma
(Dotted pattern)	Q	Q
(Horizontal lines)	T	N1, P, N
(Vertical lines)	C-Oa	C-Oa
(Diagonal lines)	C-Ob	C-Ob
(Horizontal dashed lines)	R3c	R3c
(Diagonal dashed lines)	R3b	R3b
(Wavy lines)	R3a	R3a, R3d
(Horizontal solid lines)	R2	R2, R1-2
(Vertical solid lines)	R1	R1-2
(Cross-hatch pattern)	Gr3	γSd
(Dotted pattern with dots)	Gr2	
(Cross-hatch pattern with dots)	Gr1	γOv?

(Dashed line)	Bedding Trace or Sc
(Line with barbs on down)	Fault (barbs on dow)
(Line with barbs on up)	Inferred Fault (ba)
(Line with barbs on both)	Thrust Fault
(Line with arrow)	Anticline
(Line with T-shape)	Drainage
(Oval)	Lake, Pond
(Hatched area)	Urban Area
(Thick line)	Major Road
(Thin line)	Rail Way

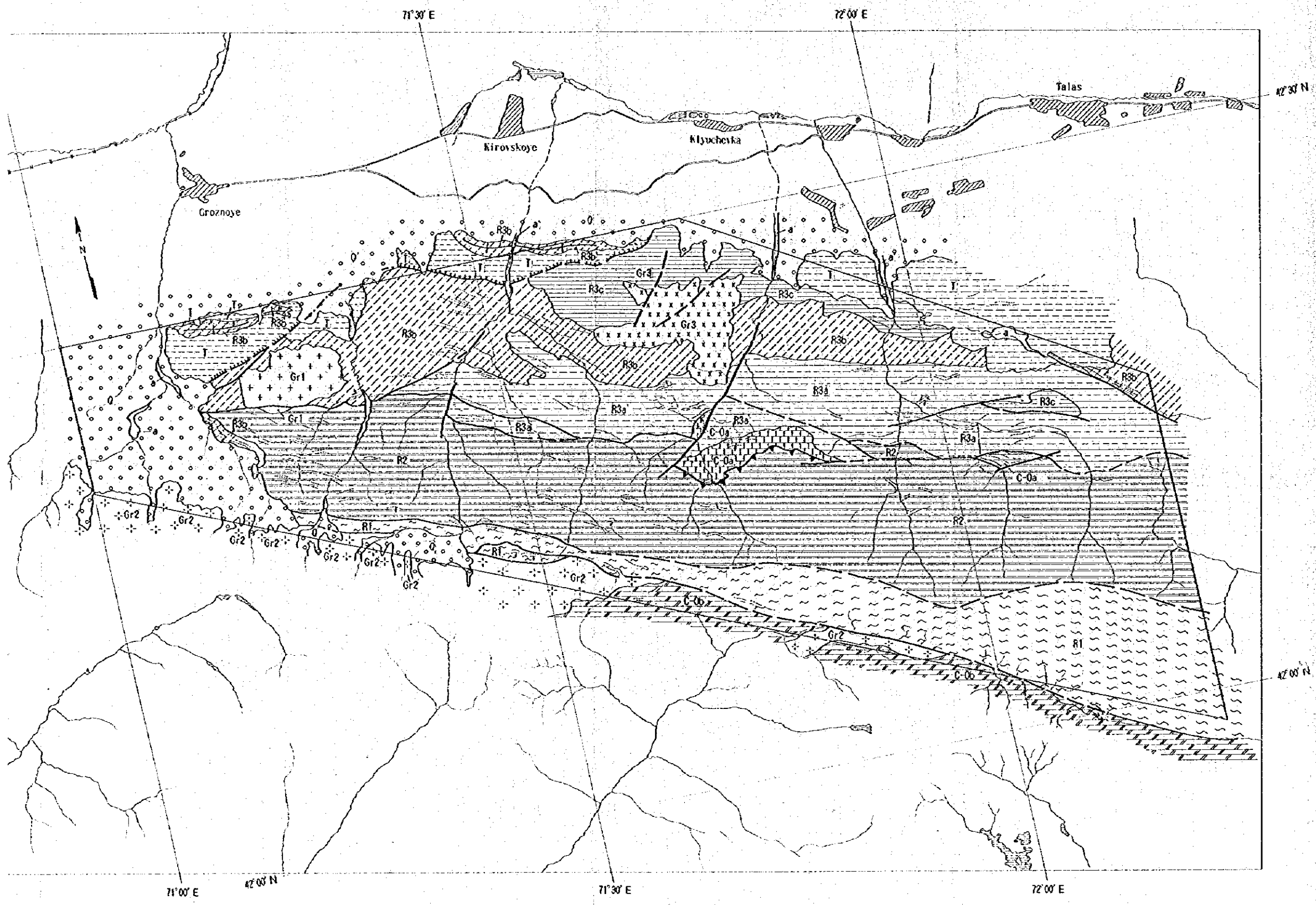


THE MINERAL EXPLORATION
IN THE TALAS AREA,
THE KYRGYZ REPUBLIC
(PHASE I)

GEOLOGIC INTERPRETATION MAP OF
LANDSAT TM FALSE COLOR IMAGE



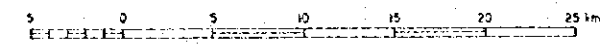
JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
FEBRUARY, 1995



LEGEND

Symbol	Unit	Correlation with Geologic Map	Probable Rock Types
a	a	O	gravel, loam
O	O		
T	T	Ni2, P3 Ni	clay, sandstone
C-0a	C-0a	C-0a/b	limestone
C-0b	C-0b		
R3c	R3c	R3c	shale, siltstone, sandstone
R3b	R3b		
R3a	R3a	R3a, R3c	shale, siltstone, sandstone
R2	R2	R2c, R2b	sandstone, shale, phyllite, limestone
R1	R1	R1b	phyllite, limestone
Gr3	Gr3	ySd	granitic rock
Gr2	Gr2		granitic rock ?
Gr1	Gr1	yOv?	granitic rock

	Bedding Trace or Schistosity (arrows show dip direction)
	Fault (barbs on downfall side)
	Inferred Fault (barbs on downfall side)
	Thrust Fault
	Anticline
	Drainage
	Lake, Pond
	Urban Area
	Major Road
	Rail Way

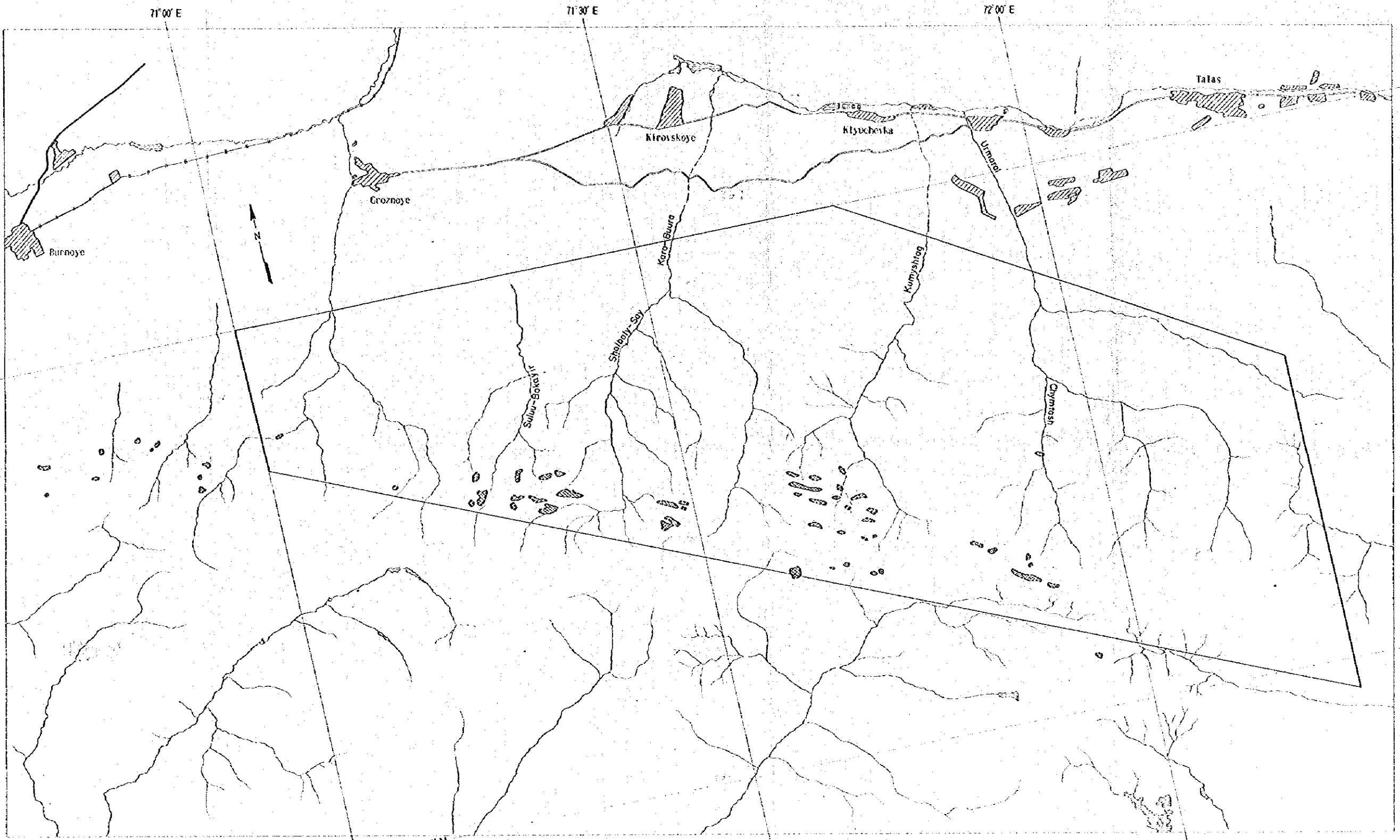


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DISTRIBUTION I



JAPAN

	Spectral Anomal
	Drainage
	Lake, Pond
	Urban Area
	Major Road
	Rail Way

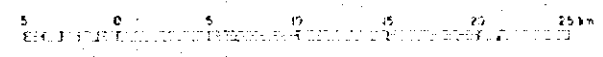


71°00' E 71°30' E 72°00' E

42°30' N

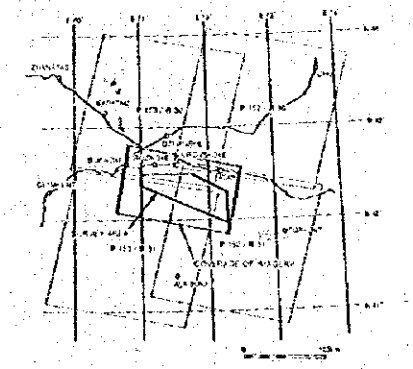
42°00' N

71°00' E 71°30' E 72°00' E



THE MINERAL EXPLORATION
IN THE TALAS AREA,
THE KYRGYZ REPUBLIC
(PHASE I)

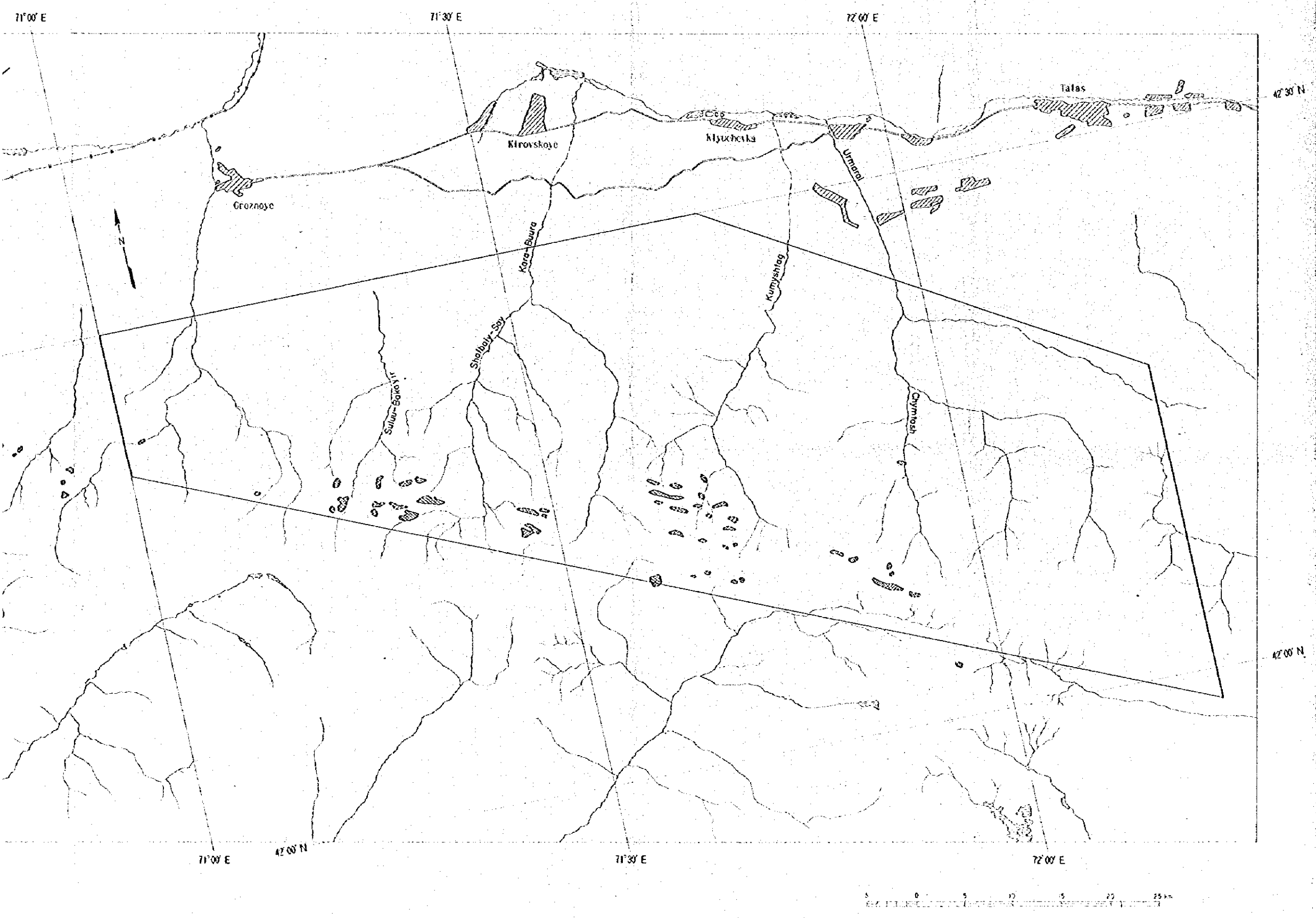
DISTRIBUTION OF SPECTRAL ANOMALIES
ON LANDSAT TM IMAGE

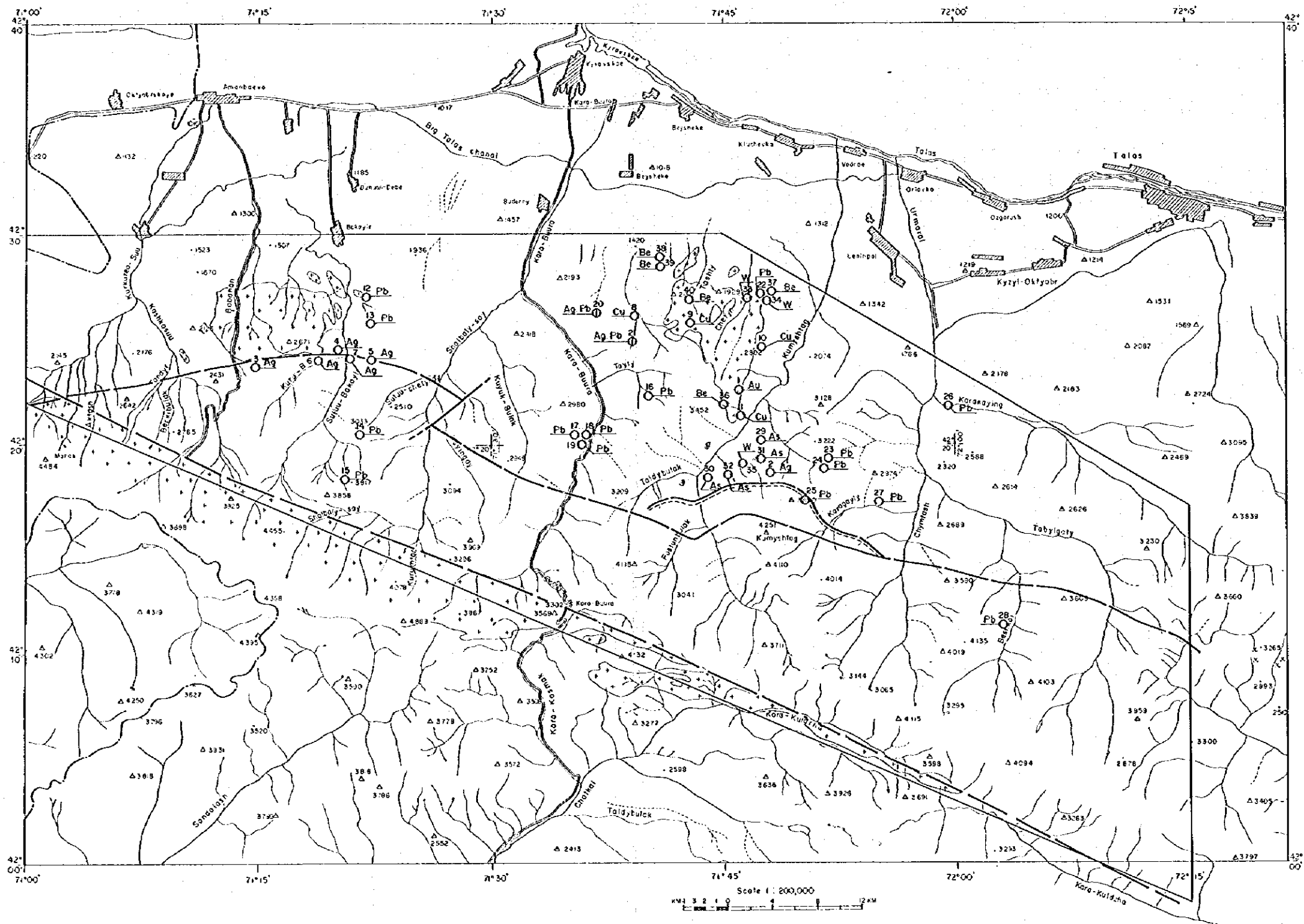


JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
FEBRUARY, 1985

LEGEND

	Spectral Anomalies on Band3/Bands1 Ratio and BRCA Image
	Drainage
	Lake, Pond
	Urban Area
	Major Road
	Rail Way





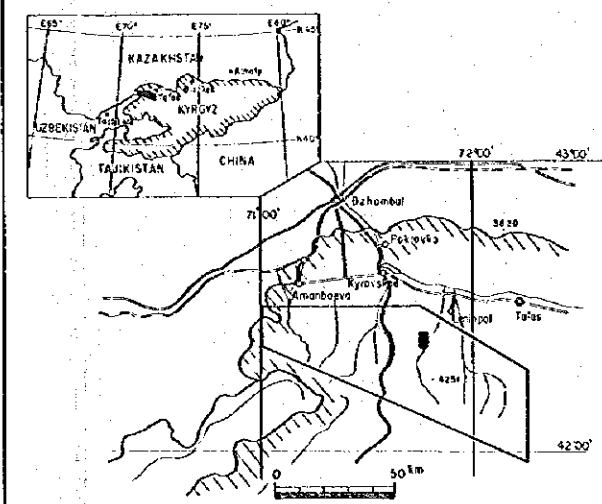
PL-4

THE MINERAL EXPLORATION
 IN
 THE TALAS AREA, THE KYRGYZ REPUBLIC
 (PHASE I)
Distribution of Ore Deposit and Mineral Occurrences

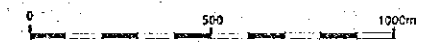
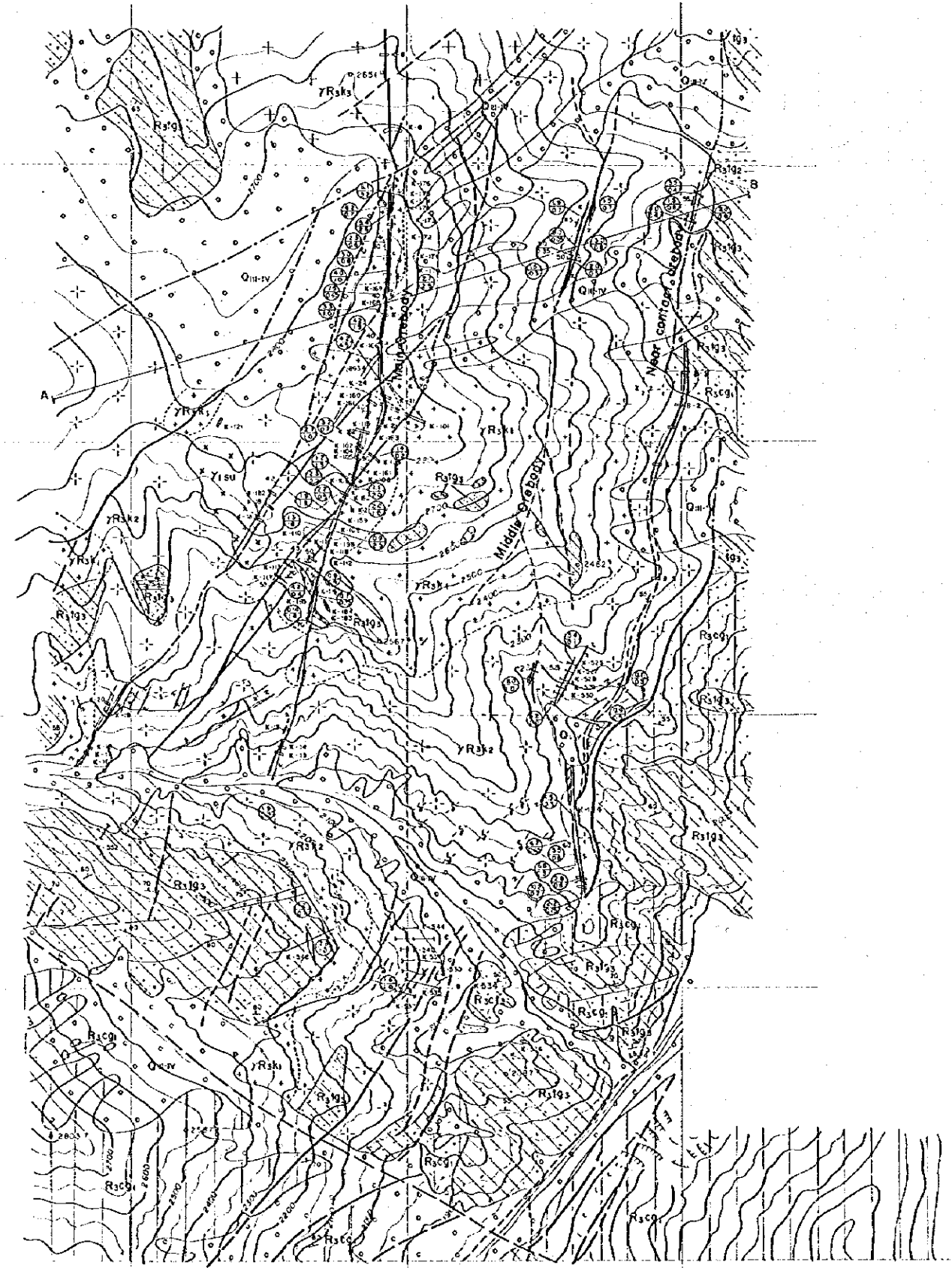
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- LEGEND**
- Site of deposit, number and kind of element
 - Granitic batholith
 - Fault

THE MINERAL EXPLORATION
 IN
 THE TALAS AREA, THE KYRGYZ REPUBLIC
 (PHASE I)
 Geological Map of Shyraldzhyn Deposit

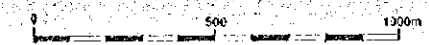
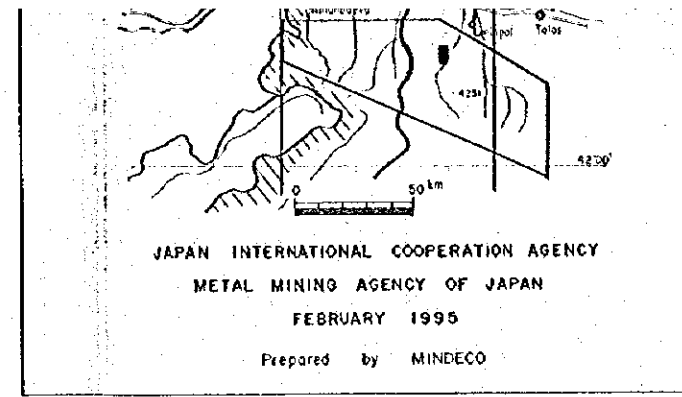
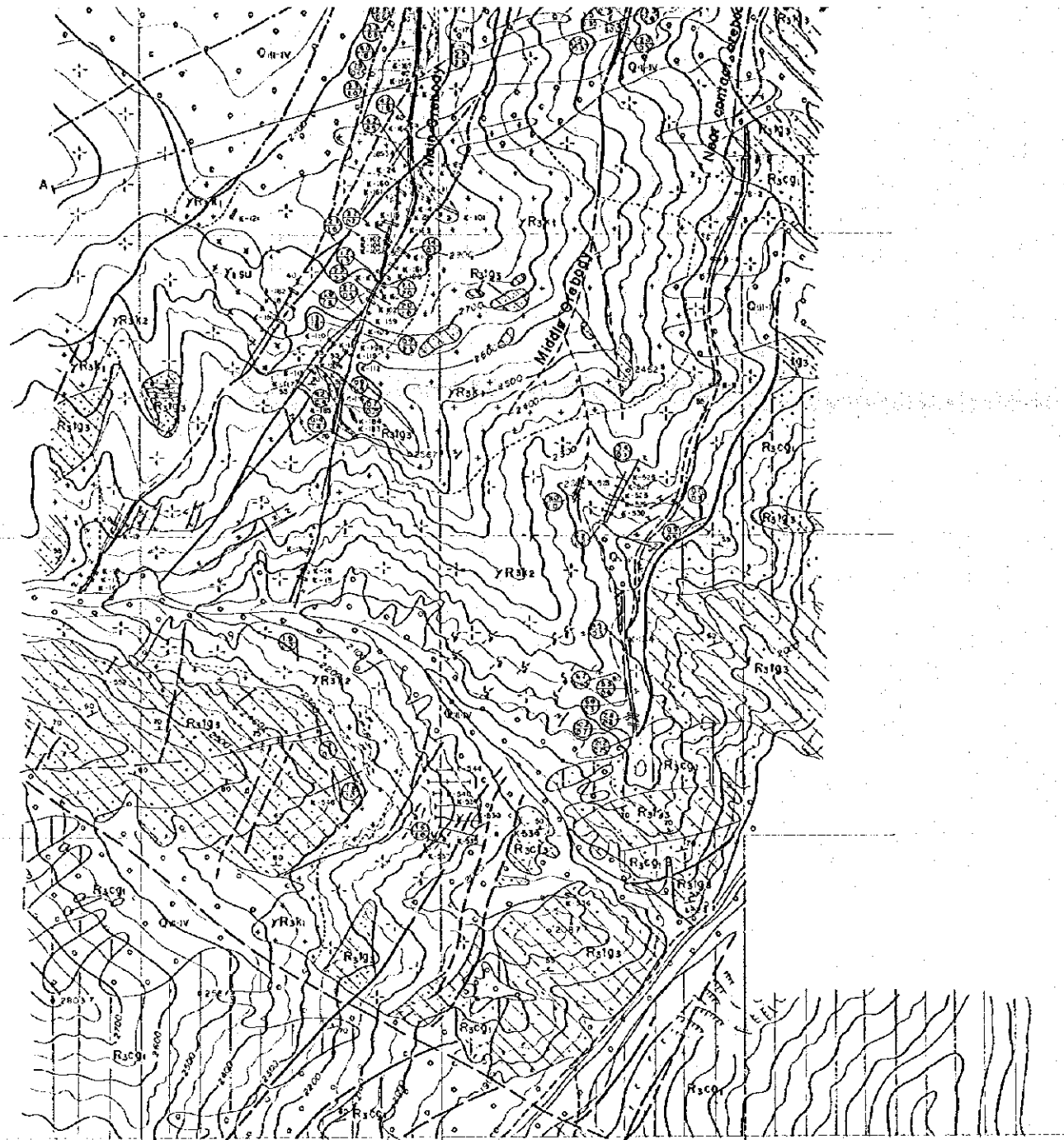


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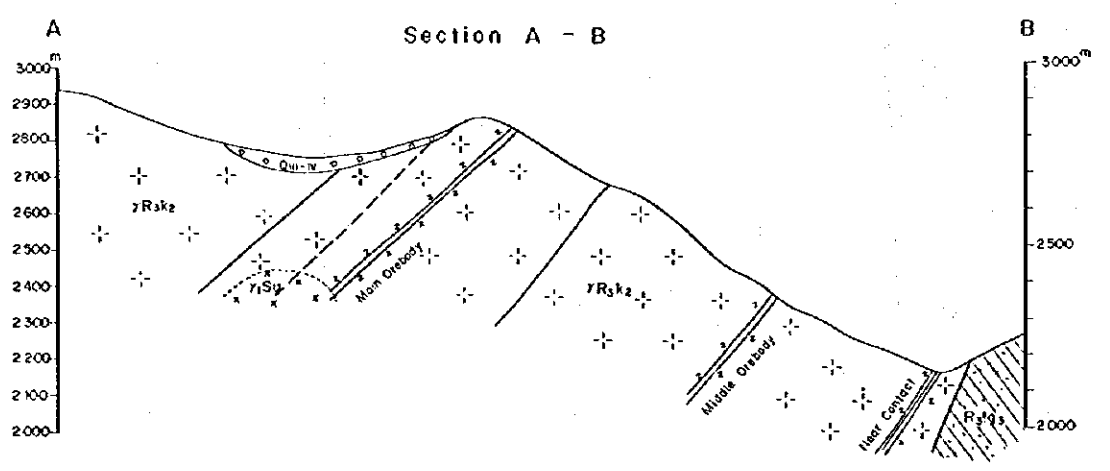
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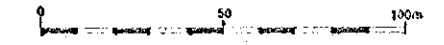
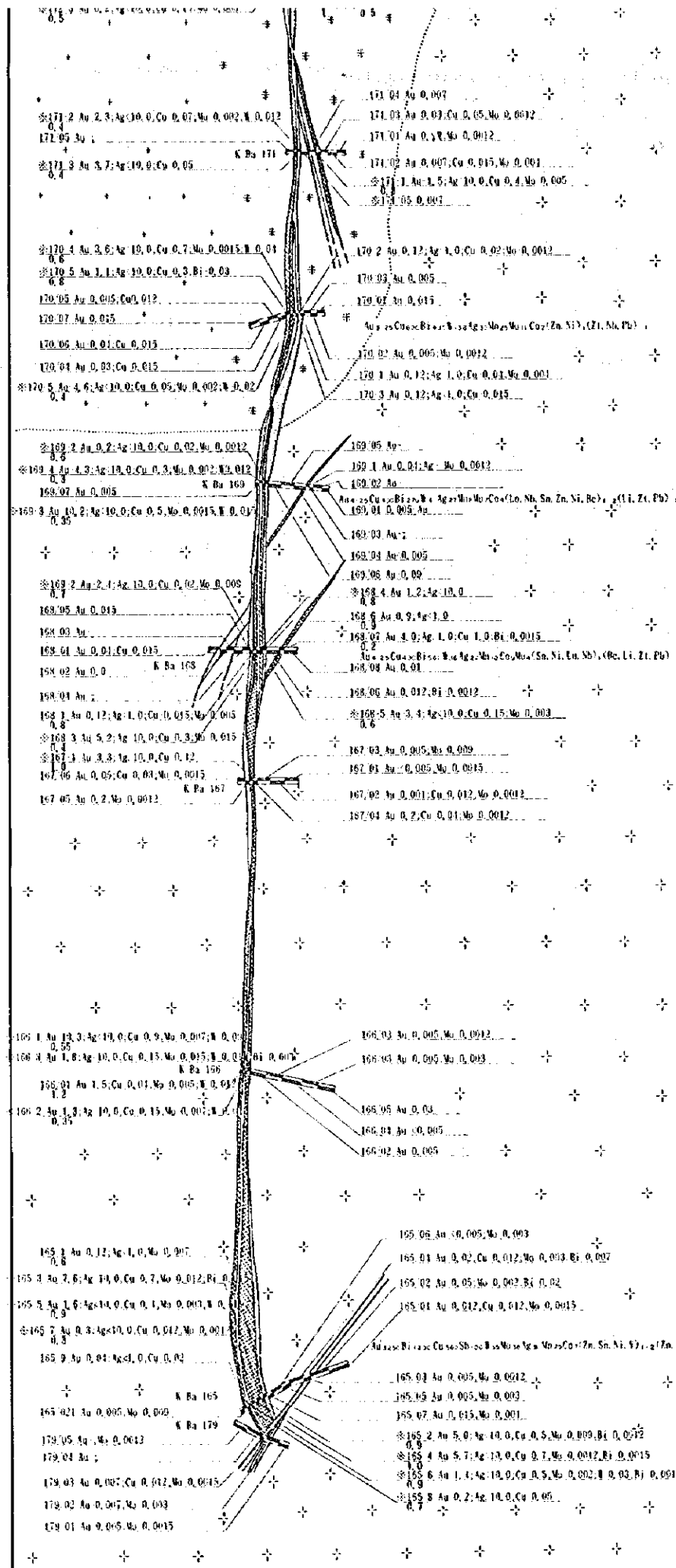
- Upper Quaternary - recent sediments : undivided diluvial-proluvial, loams, detritus
- Chydygoloyskaya formation : Lower Chydygoloysa sub-formation : limestone, thin layers of conglomerate, sandstone, calciferous siltstone
- Layer 3. Alternation of greyish-green conglomerate, variable grained sandstone
- Layer 2. Medium-grained sandstone, thin layers of conglomerate
- Fine-grained grey, pinkish-grey granite
- Leucocratic fine-grained grey, pinkish-grey granite
- Leucocratic medium-grained grey, pinkish grey, pinkish-red granite
- Coarse-grained lilac-coloured porphyritic granite
- Dykes of aplittic granite
- Dykes of quartz diorite porphyry
- Quartz-hornblende-pyroxene hornfels, hornblende-pyroxene hornfels
- a) Greisenization zone b) Hydrothermal altered zone
- Quartz-manganosiderite veins, quartz veins
a) already known b) presumed
- gold grade (g/t)
width (m)
- Trenches



LEGEND

- Upper Quaternary - recent sediments : undivided diluvial-proluvial, loams, detritus
- Chydygolovskaya formation : Lower Chydygolovskaya sub-formation : limestone, thin layers of conglomerate, sandstone, calciferous siltstone
- Layer 3. Alternation of greyish-green conglomerate, variable grained sandstone
- Layer 2. Medium-grained sandstone, thin layers of conglomerate
- Fine-grained grey, pinkish-grey granite
- Leucocratic fine-grained grey, pinkish-grey granite
- Leucocratic medium-grained grey, pinkish grey, pinkish-red granite
- Coarse-grained lilac-coloured porphyritic granite
- Dykes of aplitic granite
- Dykes of quartz diorite porphyry
- Quartz-hornblende-pyroxene hornfels, hornblende-pyroxene hornfels
- a) Greisenization zone b) Hydrothermal altered zone
- Quartzmanganosiderite veins, quartz veins
a) already known b) presumed
- gold grade (g/t)
width (m)
- Trenches
- Strikes and dips (bedding, faults)
- Fault a) actual b) inferred c) concealed

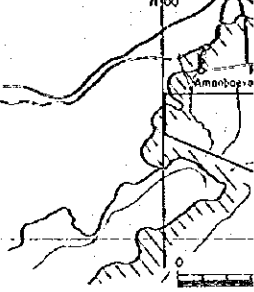




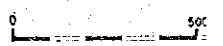
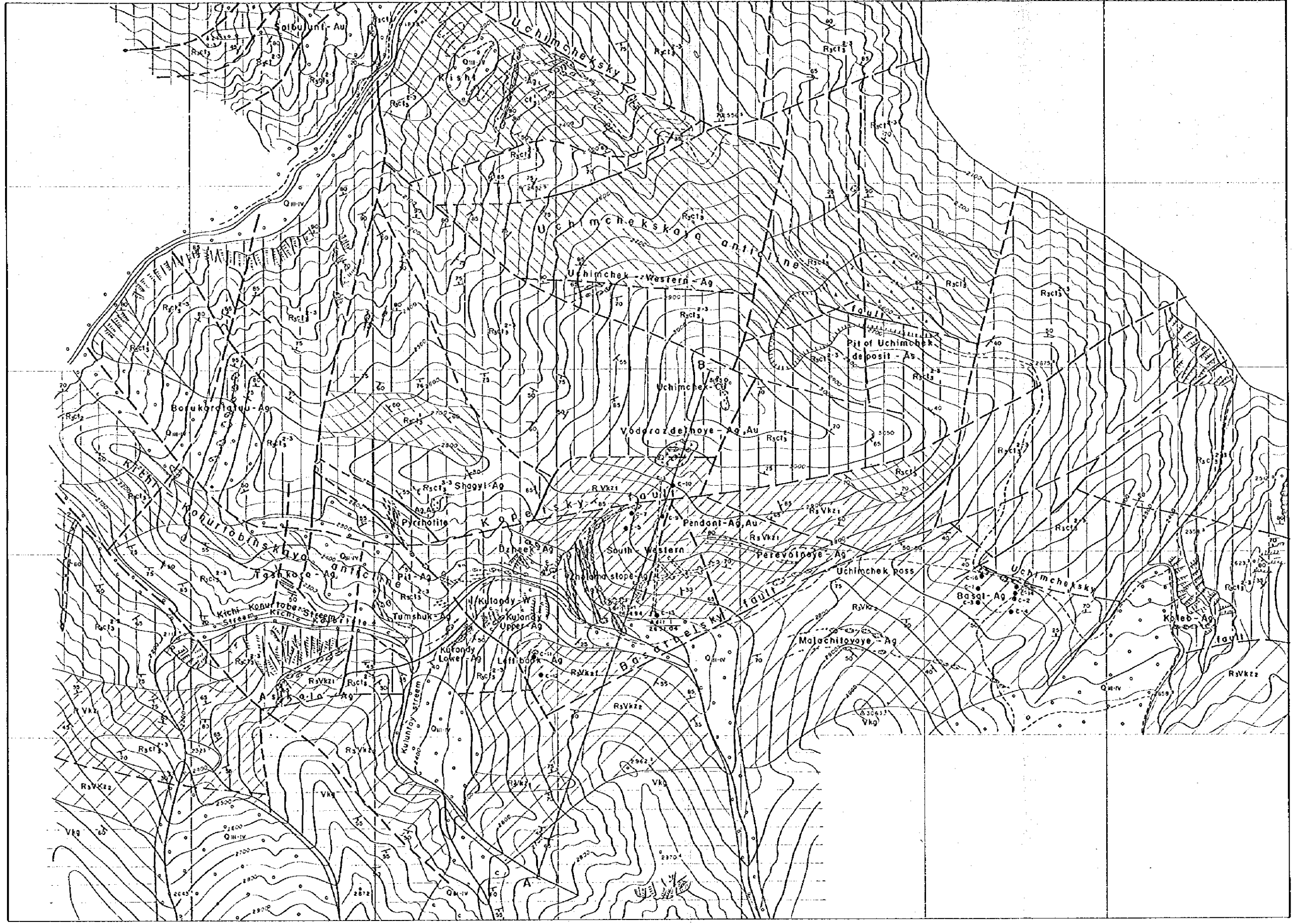
LEGEND

- Fine grained grey to pinkish grey leucocratic granite
 - Middle grained grey to pinkish red leucocratic granite
 - Greisenization
 - Veins : a) quartz - manganosiderite b) quartz
 - Crushing zones
 - Trench and trench No.
- 175.4 Au 0.2, Ag 0.015, Cu 0.002, Mo 0.002 Sample No. Au(g%), Cu(%), Mo(%), Wt(%)
 width (m) (spectral analysis)
- 172.2 Au 0.2, Ag 0.0, Cu 0.0 Sample No. Au(g%), Ag(g%)
 width (m) (fire assay)
- Au, Cu, Bi, W, Ag, Mo, Pb, Co, Sb, Ni, Sn, Zn, Ni, Bi, Pb, Zn
 Geochemical characteristic of ore body after trench survey
- Actual faults
 - Channel samples
 - Linear spot samples

THE MINERAL
IN
THE TALAS AREA, T
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Geological Map of



JAPAN INTERNATIONAL
METAL MINING A
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Prepared b



LEGEN

- Upper Quaternary recent sediments (diluvial, proluvial, alluvial, etc.)
- Kurganskaya formation: siltstone, conglomerate, limestone
- Upper Kyzylbayskaya sub-formation (sandstone), lenses of limestone
- Lower Kyzylbayskaya sub-formation (siltstone, greenish siltstone)
- Upper Chatkaragaiskaya sub-formation (alternation of hornfels, siltstone)
- Upper Chatkaragaiskaya sub-formation (hornfels, siltstone with thin limestone layers)
- Middle Chatkaragaiskaya sub-formation (limestone with layers of calcarenite)
- a) limestone b) siltstone
- a) shale b) sands
- granule conglomerate
- Quartz-porphry dykes
- Manganosiderite veins
- Skarn zone
- Faults
- Strike and dip a) rock

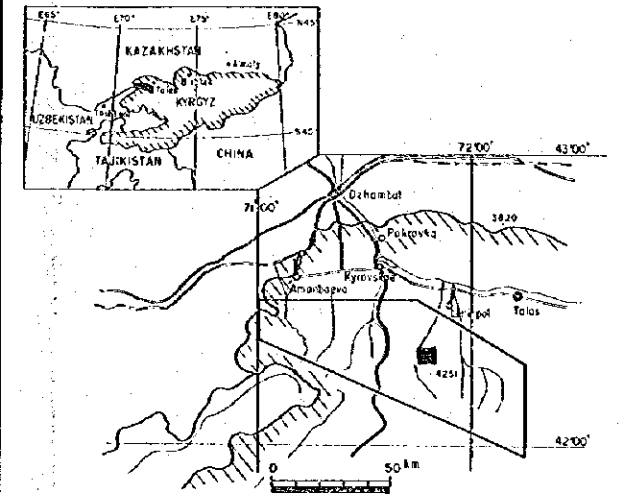
Section A - B

A
3200m

B
3200m

THE MINERAL EXPLORATION
IN
THE TALAS AREA, THE KYRGYZ REPUBLIC
(PHASE I)

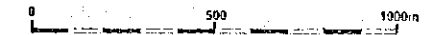
Geological Map of Kumyshtag Area



JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN

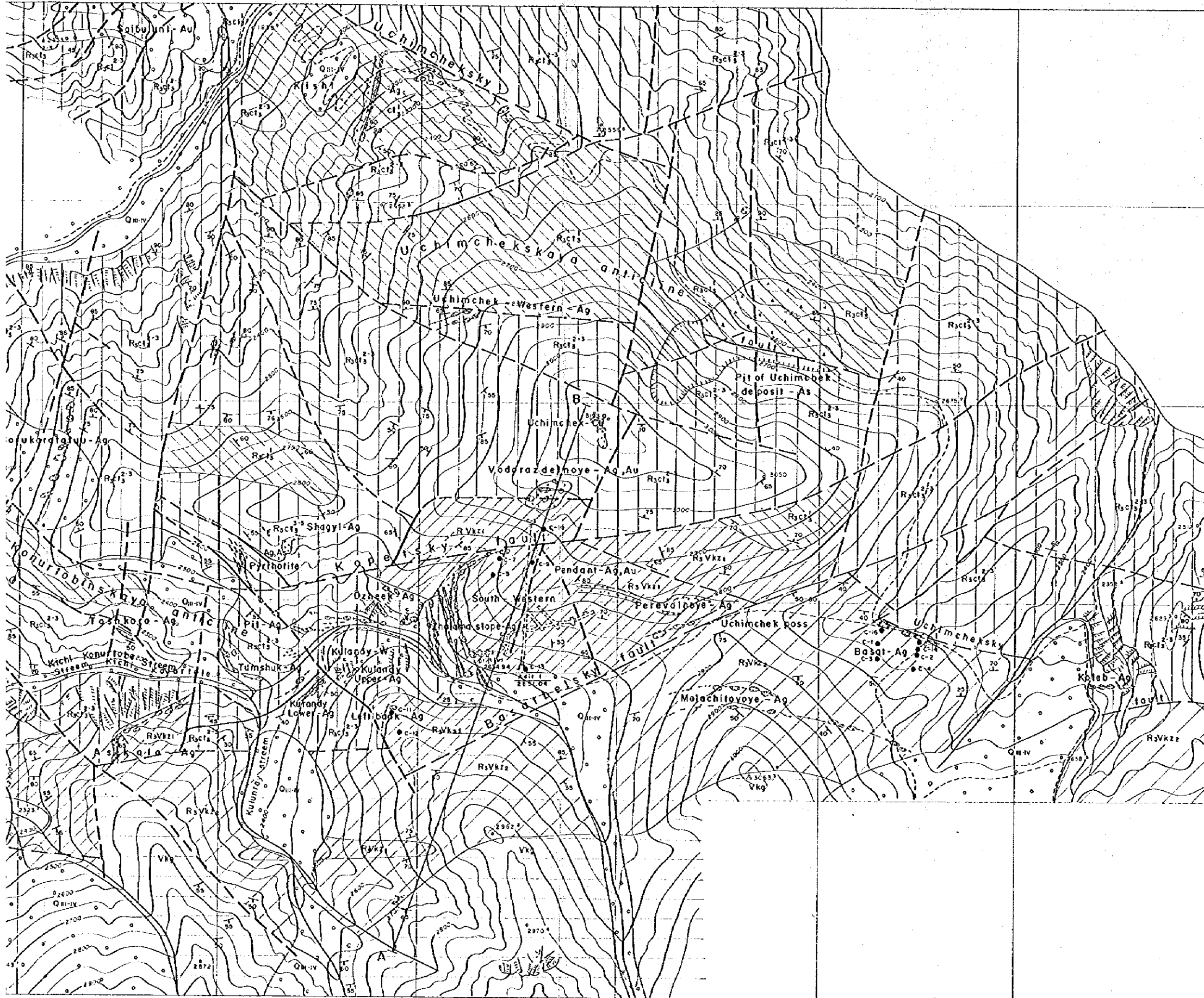
FEBRUARY 1995

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LEGEND

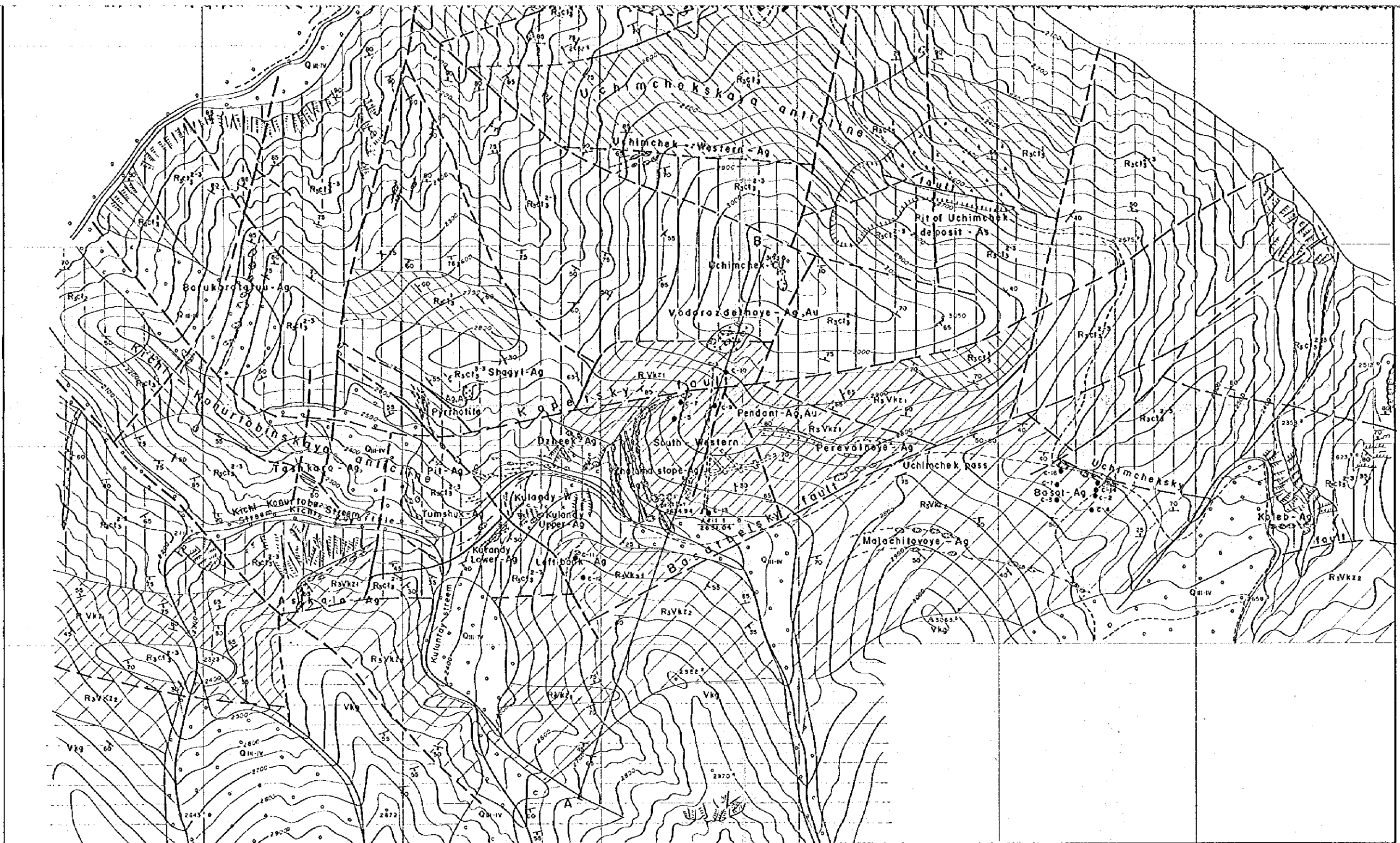
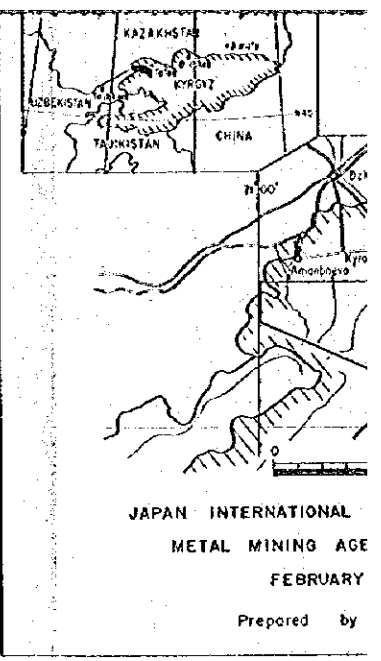
- Upper Quaternary recent sediments (diluvial, proluvial, alluvial, glacial)
- Kurganskaya formation: sandstone, shale, jasper lydite, limestone, conglomerate, tuff, tuffaceous sandstone, chert
- Upper Kyzylbelskaya sub-formation: shale (mostly dark-red sandstone), lenses of limestone
- Lower Kyzylbelskaya sub-formation: sandstone dark grey siltstone, greenish siltstone, greyish-green and wine red shale
- Upper Chatkaragaiskaya sub-formation: upper and middle layers; Alternation of hornfels, siltstone, limestone
- Upper Chatkaragaiskaya sub-formation: lower layer; hornfels, siltstone with thin layers of sandstone, conglomerate
- Middle Chatkaragaiskaya sub-formation: medium-grained limestone with layers of carbonatic shale
- a) limestone b) siltstone
- a) shale b) sandstone
- granule conglomerate
- Quartz-porphyry dykes
- Manganosiderite veins
- Skarn zone
- Faults
- Strike and dip a) rock beds



Section A - B

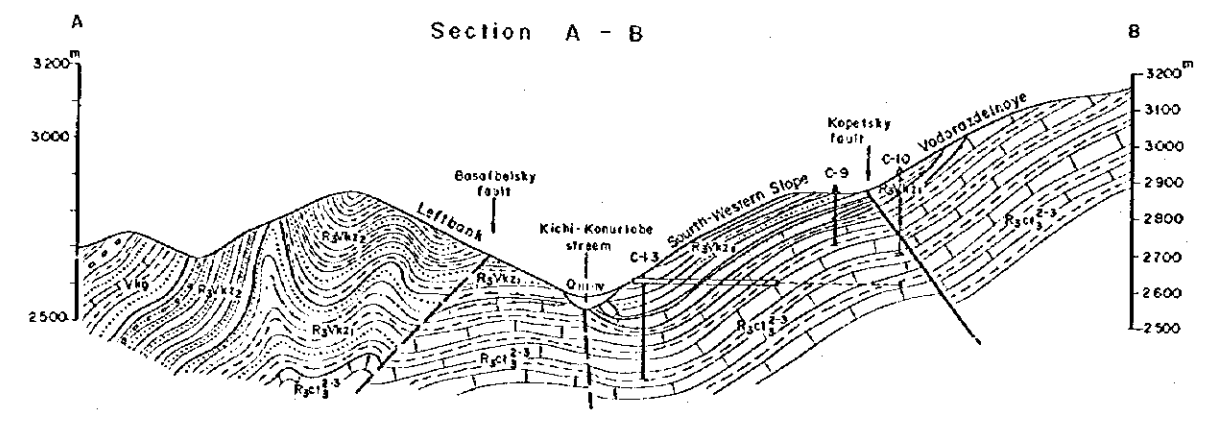
B

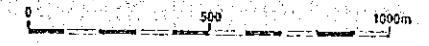
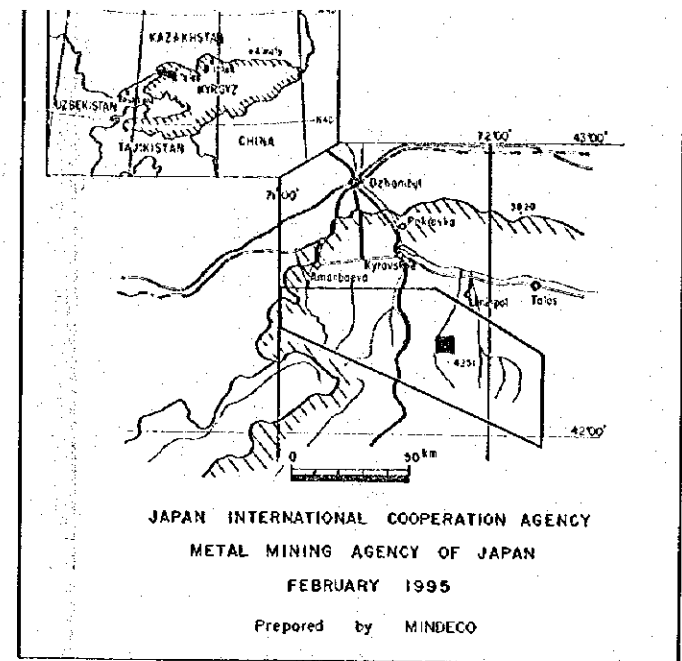
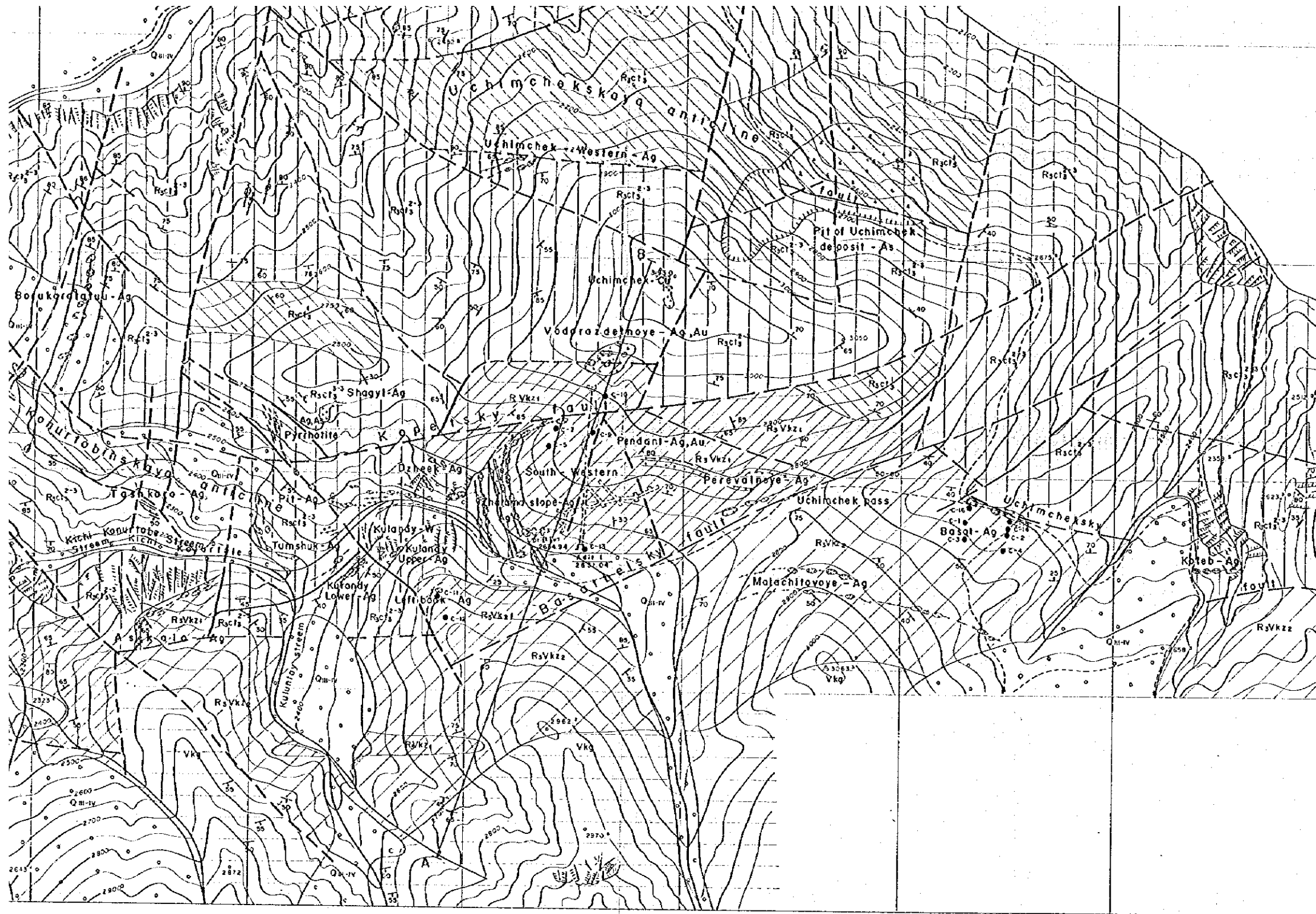
3200m



LEGEND

- Upper Quaternary recent sedin (diluvial, protuvial, alluvial, gla)
- Kurganskaya formation: sands, limestone, conglomerate, tuff, l
- Upper Kyzylbelskaya sub-form (sandstone), lenses of limeston
- Lower Kyzylbelskaya sub-form (siltstone, greenish siltstone, gr)
- Upper Chatkaragaiskaya sub-fc (Alternation of hornfels, siltston)
- Upper Chatkaragaiskaya sub-fc (hornfels, siltstone with thin lay)
- Middle Chatkaragaiskaya sub-fc (limestone with layers of carbor)
- a) limestone b) siltsto
- a) shale b) sandsto
- granule conglomerate
- Quartz-porphry dykes
- Manganosiderite veins
- Skarn zone
- Faults
- Strike and dip a) rock br
- Underground horizontal
- Drill holes
- a) Ancient mines b)

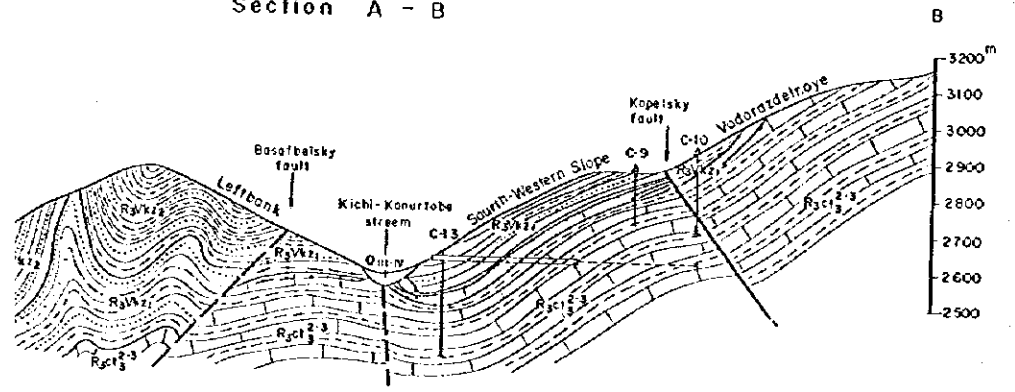


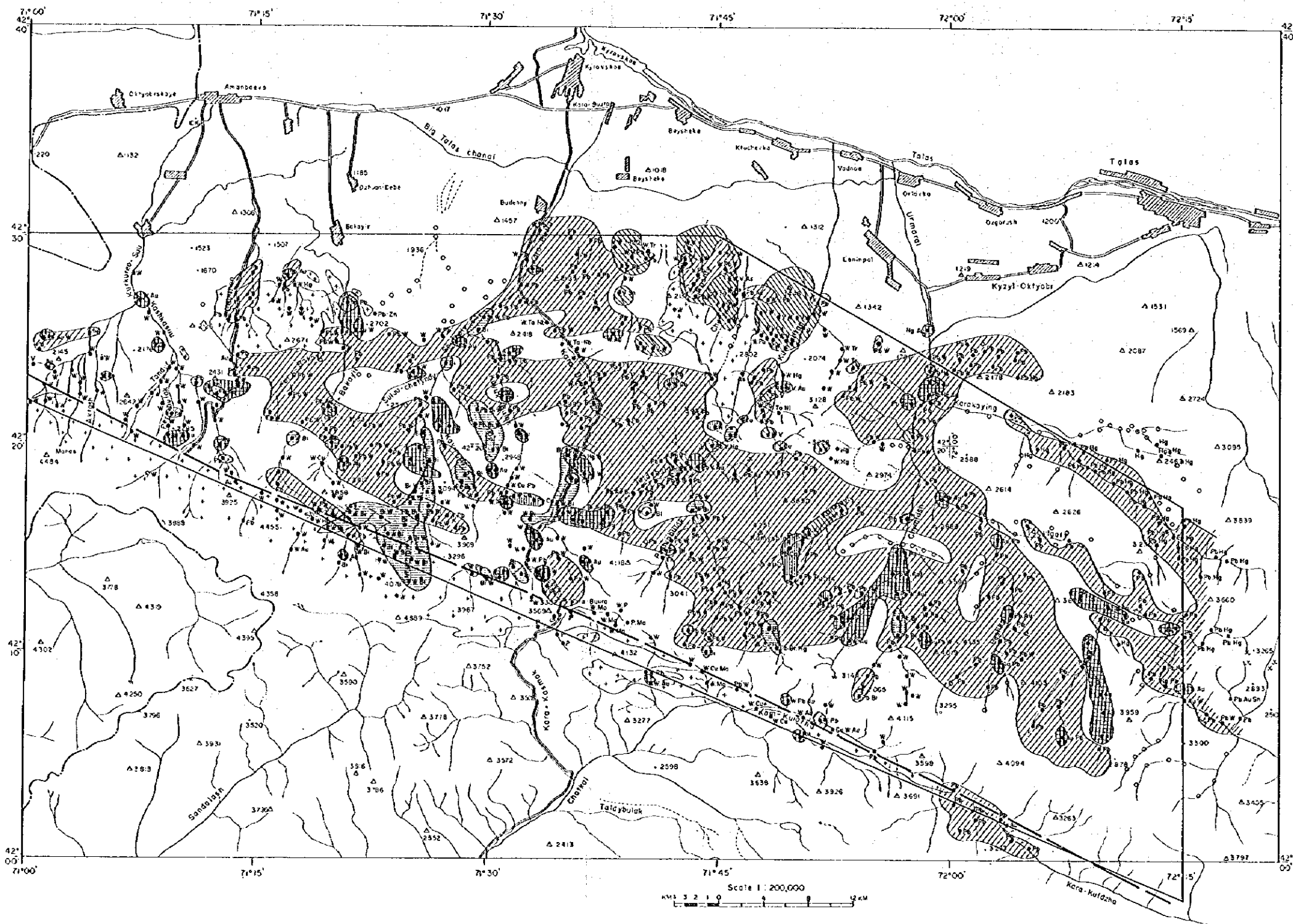


LEGEND

- Upper Quaternary recent sediments (diluvial, proluvial, alluvial, glacial)
- Kurganskaya formation: sandstone, shale, jasper lydite, limestone, conglomerate, tuff, tuffaceous sandstone, chert
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- Upper Chatkaragaiskaya sub-formation: upper and middle layers; Alternation of hornfels, siltstone, limestone
- Upper Chatkaragaiskaya sub-formation: lower layer; hornfels, siltstone with thin layers of sandstone, conglomerate
- Middle Chatkaragaiskaya sub-formation: medium-grained limestone with layers of carbonaceous shale
- a) limestone b) siltstone
- a) shale b) sandstone
- granule conglomerate
- Quartz-porphry dykes
- Manganosiderite veins
- Skarn zone
- Faults
- Strike and dip a) rock beds
- Underground horizontal workings
- Drill holes
- a) Ancient mines b) Ancient rock dumps

Section A - B



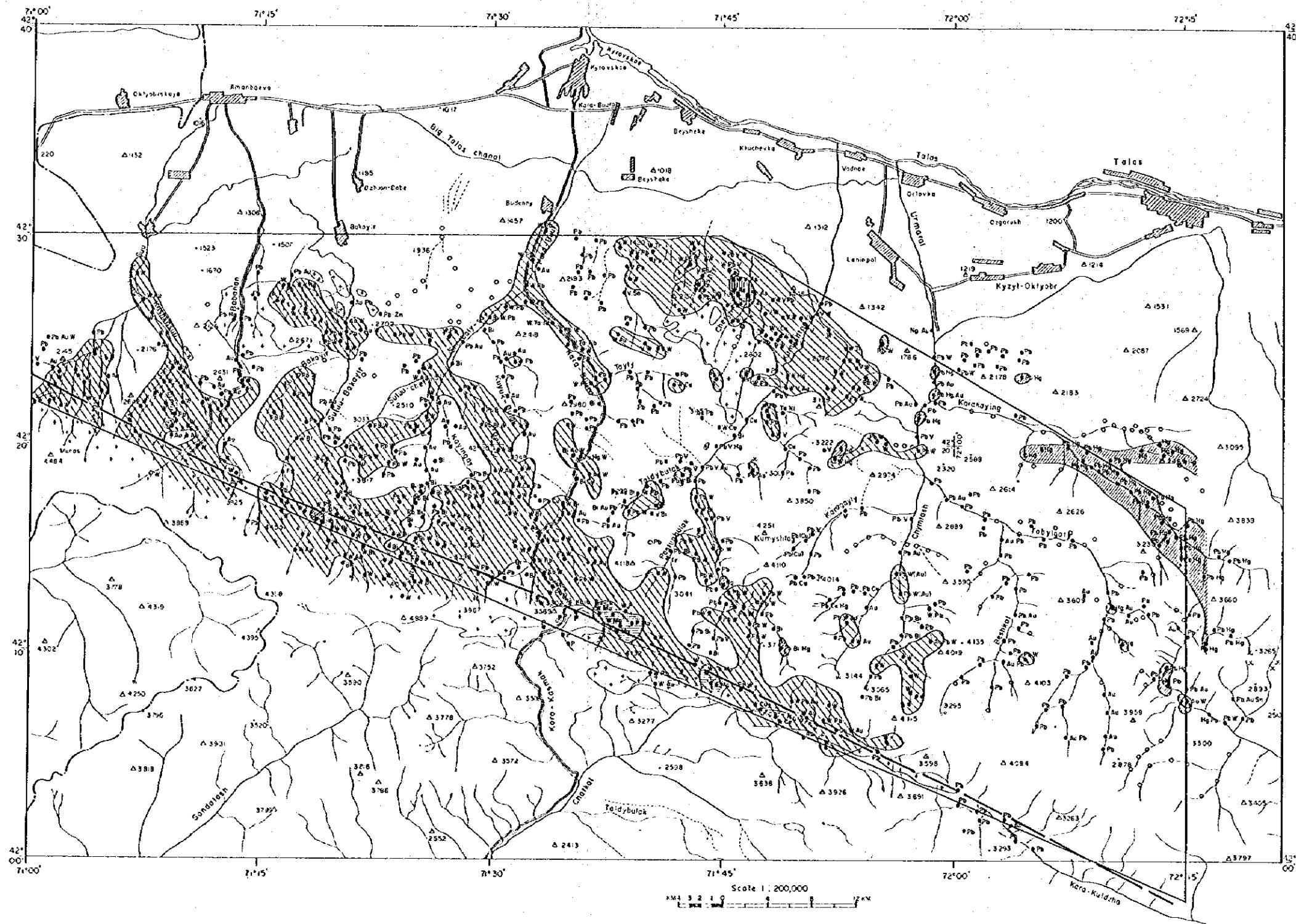


PL-8(1)

THE MINERAL EXPLORATION
IN
THE TALAS AREA, THE KYRGYZ REPUBLIC
(PHASE I)
Geochemical Anomaly Map of the Survey Area
(Au, Pb, Cu, Bi, V)

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

- LEGEND**
- Gold
 - Lead-Zinc
 - Copper
 - Bismuth
 - Vanadium
 - Panning points containing metal minerals
 - Panning points without metal minerals
 - Granitic batholith
 - Fault

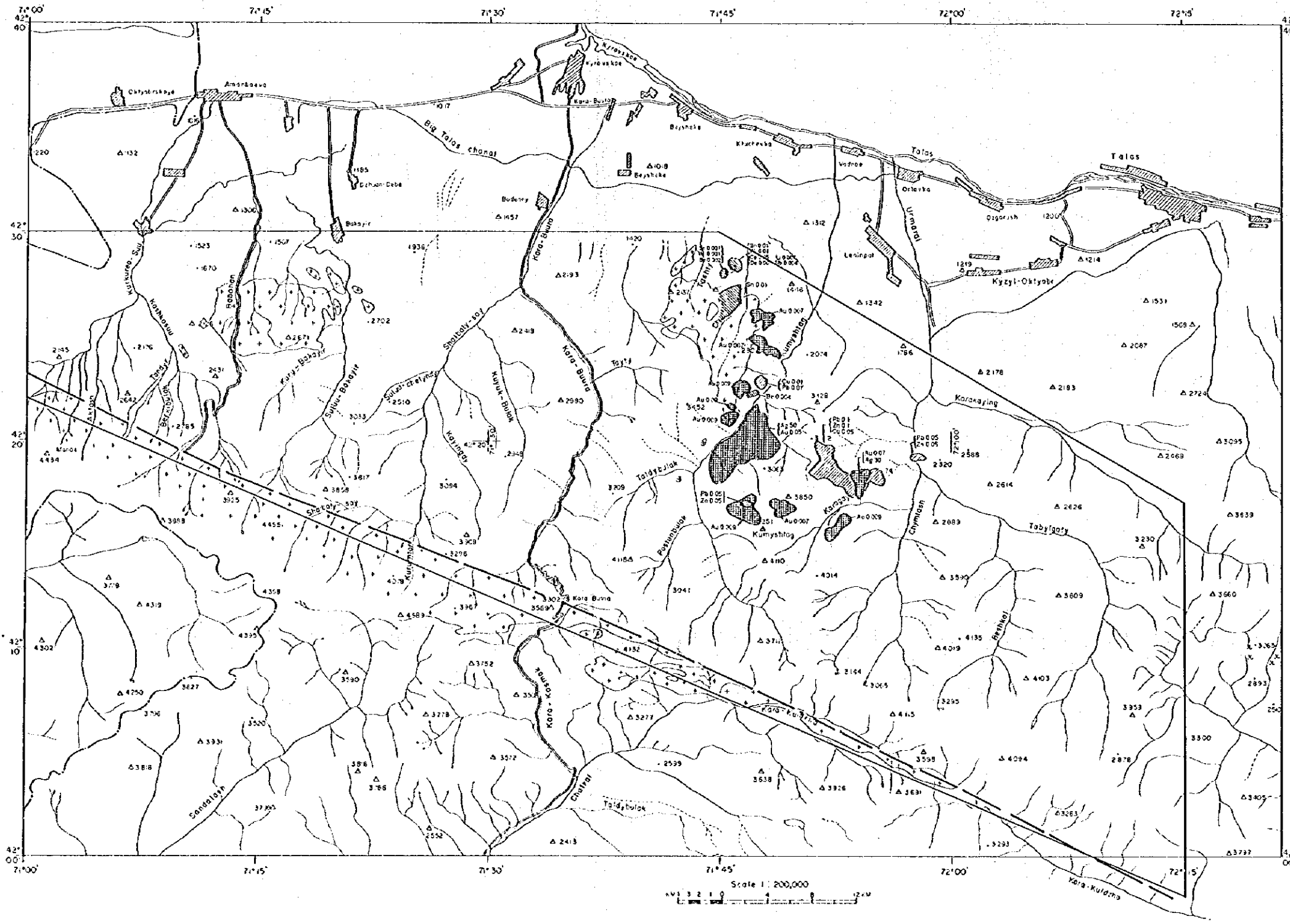


PL-8(2)

THE MINERAL EXPLORATION
IN
THE TALAS AREA, THE KYRGYZ REPUBLIC
(PHASE I)
Geochemical Anomaly Map of the Survey Area
(As, Hg, W, Mo)

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

- LEGEND**
- Arsenic
 - Mercury
 - Tungsten
 - Molybdenum
 - Panning points containing metal minerals
 - Panning points without metal minerals
 - Granitic batholith
 - Fault

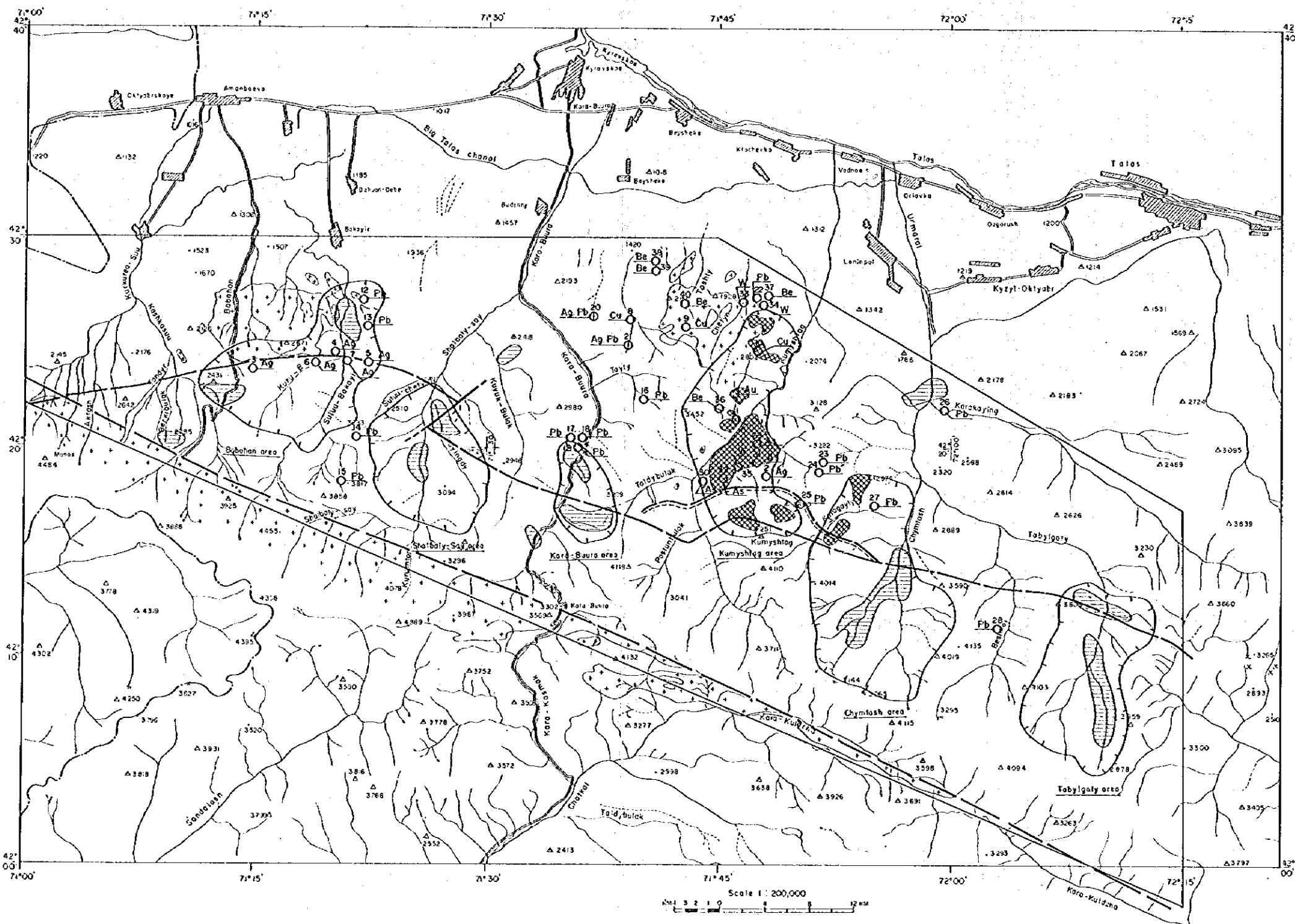


PL-9

THE MINERAL EXPLORATION
 IN
 THE TALAS AREA, THE KYRGYZ REPUBLIC
 (PHASE I)
**Geochemical Anomaly Map of the Shyrdaldzhyn
 and Kumyshtag Area**

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

- LEGEND**
- Au, Ag (g/l)
 - Pb, Zn, Cu (%)
 - Sn, W, Be, Nb, Ce, Li (%)
 - Granitic batholith
 - Fault

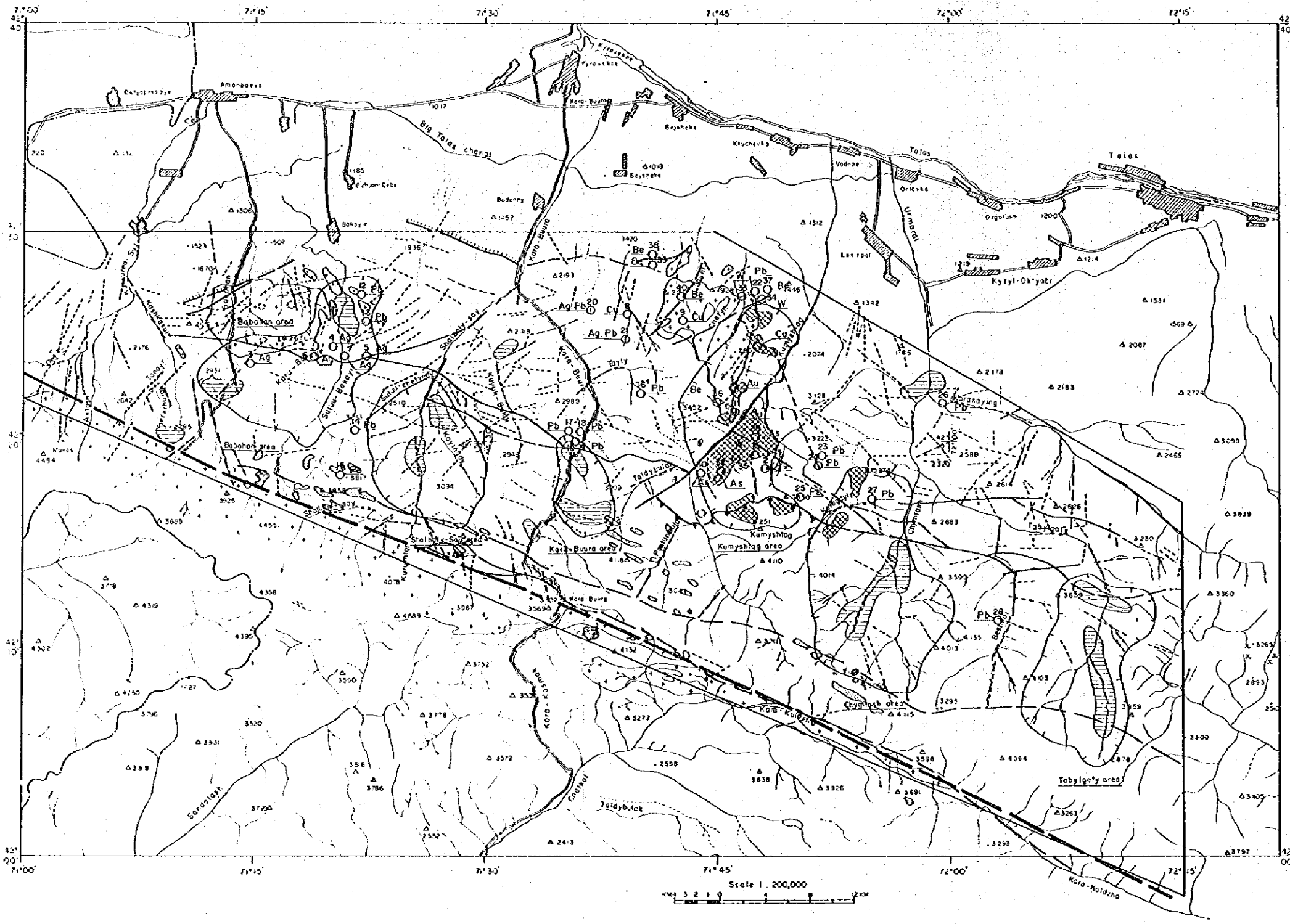


PL.-10

THE MINERAL EXPLORATION
IN
THE TALAS AREA, THE KYRGYZ REPUBLIC
(PHASE I)
Summary of the Compilation

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

- LEGEND**
- The promising area for future survey
 - Site of deposit, number and kind of element
 - Geochemical gold anomaly of semi-detail survey
 - Geochemical gold anomaly of reconnaissance survey
 - Granitic batholith
 - Fault



PL. - 11

THE MINERAL EXPLORATION
IN
THE TALAS AREA, THE KYRGYZ REPUBLIC
(PHASE I)
Generalized Results of the Survey

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

- LEGEND**
- The promising area for future survey
 - Site of deposit, number and kind of element
 - Geochemical gold anomaly of semi-detail survey
 - Geochemical gold anomaly of reconnaissance survey
 - Spectral anomaly after satellite image analysis
 - Interpreted fault and major lineament
 - Minor lineament
 - Granitic batholith
 - Fault

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