

PART III CONCLUSIONS AND RECOMMENDATIONS

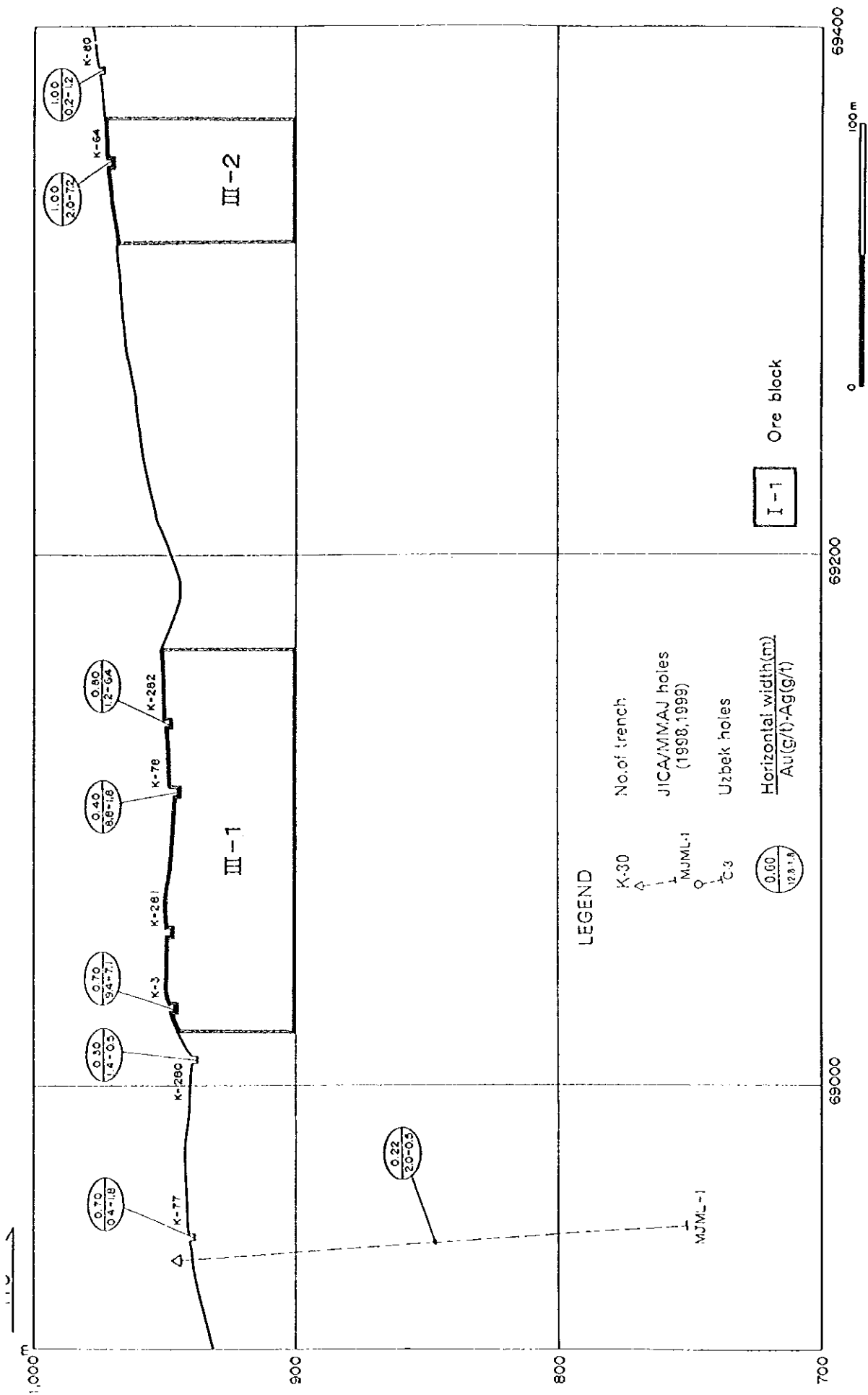
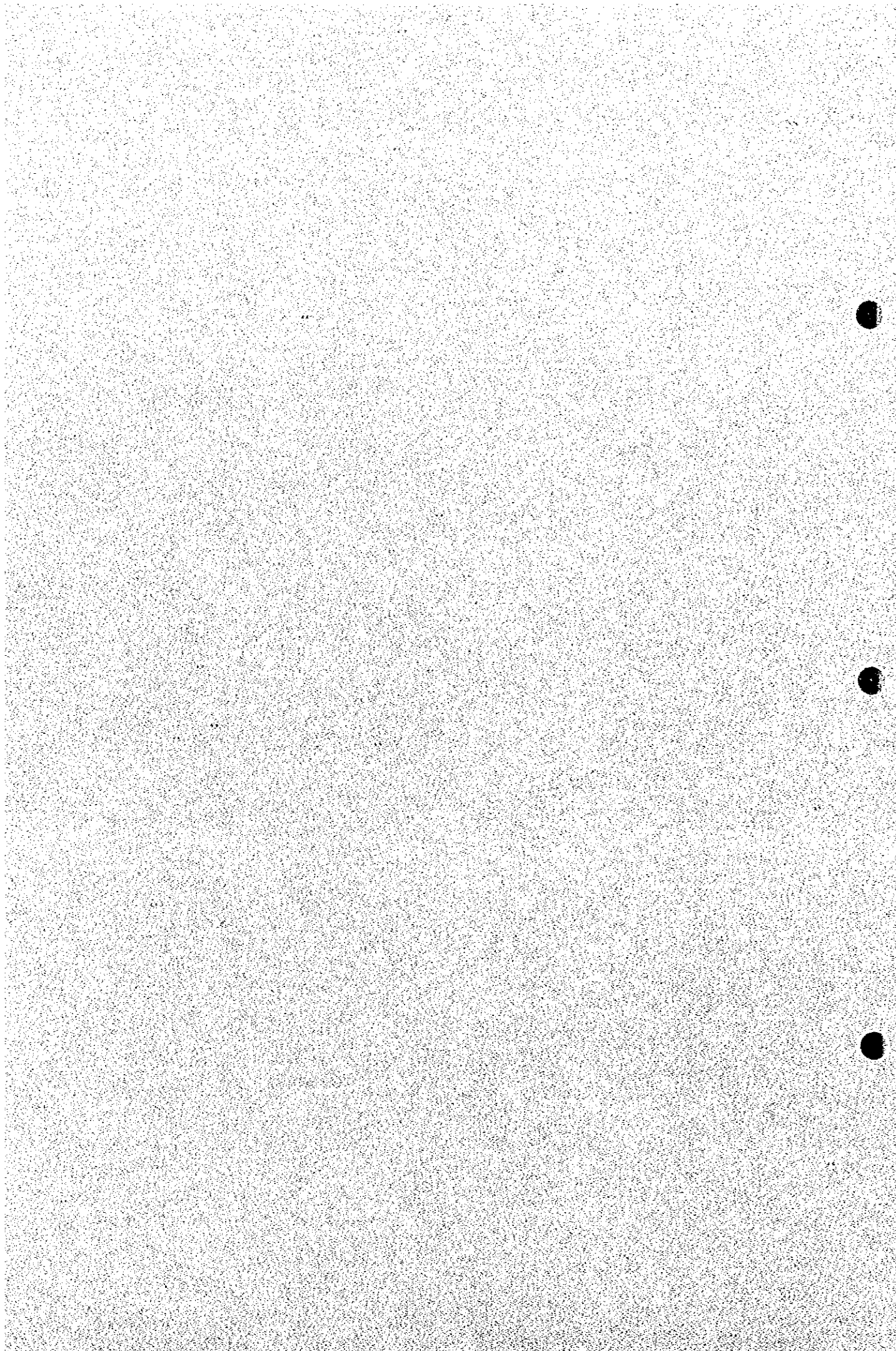


Fig II-4-16 Perspective Section for Ore Reserves Calculation of Maulyan No.3 Ore Body (No.1 Ore Zone)

PART III CONCLUSIONS AND RECOMMENDATIONS



Chapter 1 Conclusions

During the Phase I survey, execution of satellite image analysis, collection and analysis of existing geological data, and geological reconnaissance covered the entire survey area. In addition, a detailed geological survey was carried out in the Altynsai district, as well as drilling survey on the Altynsai deposit.

In Phase II, geological and geochemical surveys in the Maulyan district and drilling survey at the Maulyan manifestation were carried out. At the Altynsai deposit, a drilling survey was executed.

In Phase III, a drilling survey was executed at the Altynsai ore deposit and Maulyan manifestation.

The findings of the three-year survey may be summarized as follows:

1-1 Whole Area of the Survey

(1) Geology and ore deposit

- The survey area is underlain by Lower Cambrian to Lower Silurian terrigenous sediments, Upper Silurian to Middle Carboniferous limestones, Silurian to Triassic dikes of lamprophyre, diorite, gabbro, etc. and Carboniferous to Permian granites.
- The strata are folded with an axis in the WNW-ESE direction and cut by fractures in similar directions, forming a narrow tectonic zone stretching in the WNW-ESE direction. Traversing the direction, fractures develop also in the NE-SW and NW-SE direction.
- Ore deposits and manifestations in the survey area occur along fracture zones in the WNW-ESE direction, forming the Karatau ore zone (70 km E-W and 2 km to 4 km N-S) along the northern side of the Karatau granite bodies and the Aktau ore zone (70 km E-W and 2 km to 5 km N-S) along the southern side of the Aktau granite bodies.
- In the Karatau ore zone, there occur gold-silver bearing quartz vein-type deposits and manifestations such as the Karamechet-Kurai manifestations and the Altynsai deposit.
- The Aktau ore zone embraces gold-silver bearing quartz vein-type manifestations such as Bitab, Bashtut, Maulyan and Taulyan. Besides, there are the iron-manganese manifestation at Akmulla, the niobium-tantalum manifestation at Sartakchi and the skarn-type tungsten-molybdenum deposit at Lyangar.
- Based on analysis of the existing data, the Altynsai deposit (Au) and Maulyan manifestation (Au) were extracted as promising exploration targets.

(2) Satellite image analysis

- Satellite images produced on a basis of the LANDSAT TM data clearly reflect the

geological units and tectonic structure, proving to be effective for the geologic interpretation in the survey area.

- The clear lineament with the NW-SE trend, which traverses the central part of the granite body in the north-central part of the survey area, has been known to represent a fault with a fracture zone, about 100 m wide.
- In the anomalous zones extracted as iron oxide zones by the ratioing processing of TM data, iron oxide zones were really verified in some parts while the rest represented shaded slopes. The zones extracted as argillized, carbonatized alteration zones were not those accompanied by mineralization; however, occurrence of weathered granites including kaolinite, sericite and calcite was verified.

1-2 Altynsai District

(1) Geology and ore deposit

- The Altynsai district is underlain by sediments of Ordovician-Silurian System and Late Permian to Early Triassic lamprophyre, represents a fold structure along the axis in the WNW-ESE direction. The sedimentary rocks are metamorphosed into phyllites and schists through low temperature, medium pressure-type metamorphism, and consist of biotite, muscovite, chlorite, staurolite, etc.
- The deposits in the district are gold bearing vein-type deposits consisting of quartz veins, accompanied with fracture-zones of the WNW-ESE trend and those of NW-SE trend intersecting the former, and tourmaline-quartz veins accompanied with joints of the N-S trend.

(2) Ore zone

- The district is located in the Karatau ore zone where gold manifestations occur in fractures and silicification zones in the WNW-ESE direction. The Karatau ore zone embraces ore deposits and manifestations of gold-silver bearing quartz vein type, such as the Sarmich deposit, Biran deposit (these are out of the survey area), Kurai manifestations and Altynsai deposit.
- In the Altynsai deposit, ore bodies of quartz veins such as the Nos. 1, 2, 8 ("Northwest Vein"), 9 ("Kazanbulak Vein") and 10 ("Berkut Vein") have been confirmed in hornfelsed sedimentary rocks within an area of 2.5 km in length and 500 m to 800 m in width. Tourmaline-quartz veinlet zones with the N-S trend are also developed in the areas where the ore zones occur.
- Bonanzas are located at the intersections of the WNW-ESE veins with the NW-SE fractures and tourmaline-quartz veinlets are concentrated.

(3) Size and continuity of ore deposit

- The Phase I, II and Uzbek drilling surveys, aimed at the lower extension of the

bonanzas confirmed in Adit No. 4 at veins Nos. 1 and 2, discovered that the mineralization degenerates below the depth of 100 m (600 m above sea level) under the adit. This is presumably attributable to denudation of the main portions of the ore body by erosion.

- The drillhole MJSN-16 of the Phase III drilling survey, aimed at the lower extension of the Northwest Vein (No. 8 vein) as confirmed by the Uzbek trenches, discovered the dominant mineralization (true width 0.98 m; Au 44.8 g/t) 60 m under the surface. But the drillhole MJSN-15, aimed at the lower extension (50 m) of it, only confirmed low-grade gold mineralization (true width 1.06 m; Au 1.8 g/t). From these findings, it was confirmed that gold grade considerably varies though mineralization is continuous. The lower portion of No.8 vein remains unexplored, however, big increase of ore reserves can not be expected by further drilling because the mineralization is small in size.
- The Phase I, II and Uzbek drilling surveys, aimed to examine mineralization of tourmaline-quartz veinlet zones with the N-S trend and also examine the feasibility of open pit mining, discovered low-grade gold mineralization (Au trace to 23.6 g/t) at various locations; however, the overall average of Au grade did not exceed 0.2 g/t which is insufficient for justifying open pit mining.

(4) Mineralization

- Component minerals of the quartz veins that occur in fractures zones with the WNW-ESE and NW-SE trends are pyrite, marcasite, arsenopyrite, chalcopyrite, sphalerite, goethite, lepidocrocite, galena, native bismuth, aikinite, wittichenite, scheelite, etc., while gold occurs as electrum. The tourmaline-quartz veins with the N-S trend are accompanied with pyrite, arsenopyrite, goethite, lepidocrocite, etc.
- Homogenization temperatures of fluid inclusions of quartz veins with the WNW-ESE and NW-SE trends and the tourmaline-quartz veinlets with the N-S trend generally range between 270°C and 370°C. There was no significant difference observable between them. The quartz veins and tourmaline-quartz veinlets are inferred to have been formed during the similar period of mineralization and under similar temperature ambience. No significant correlation was observed between homogenization temperature and gold grade, nor between homogenization temperature and depth at which drilling samples were taken.
- The occurrence of ore and hornfels zones and the anomalous zones of the Uzbek airborne magnetic survey mostly correspond to each other, which suggests the possible existence of concealed granites at shallow levels. The ore zones are inferred to have been formed by the mineralization originating in the intrusion of granites.
- The mineralization of the subject ore deposit represents continuity but has variable

grade.

(5) Ore reserves

- At the cutoff grade of 2.0 g/t (Au), the total ore reserves of No.1, No.2 and No.8 veins combined are 423,000 t, grading 9.6 g/t Au, or approximately 4.0 t of Au in terms of metal content. While those of No.1, No.2 and No.8 veins are 109,000 t, grading 10.3 g/t Au (1.1 t of Au content), 239,000 t, grading 6.9 g/t Au (1.7 t of Au content) and 75,000 t, grading 17.0 g/t Au (1.3 t of Au content), respectively.

1-3 Maulyan District

(1) Geology

- The Maulyan district is underlain by Palcozoic sedimentary rocks such as limestone, slate and sandstone, intruded by granites and dikes of lamprophyre, etc. The sedimentary rocks are metamorphosed into phyllites and schists through low temperature, medium pressure-type metamorphism, and consist of biotite, muscovite, chlorite, staurolite, etc..
- These strata are folded along an axis in the WNW-ESE direction and divided in blocks by faults in the WNW-ESE, NE-SW and NW-SE directions.

(2) Ore Zone

- The District forms a part of the Aktau ore zone where gold manifestations occur in fractures and silicification zones in the WNW-ESE direction. Gold manifestations have been confirmed at Maulyan, Beshbulak, Taulyan and Shur.
- Geochemical survey did not find a clear continuity between the scattered Au anomalies. The Au anomalies are spotted around the known gold manifestations -- in the southern part of the Maulyan manifestation, vicinity of the Taulyan manifestation and southern part of the Shur manifestation.

(3) Size and continuity of ore manifestation

- The extent of the Maulyan manifestation on the surface is 1 m to 4 m wide and 1,000 m long (No.1 ore body), 400 m long (No.2 ore body) and 200 m long (No.3 ore body). The gold grade varies from 1 g/t to 33.4 g/t.
- Two drillholes of the Phase II drilling survey and six Uzbek drillholes independently confirmed the continuity of the No.1, No.2 and No.3 ore bodies between 16m and 135 m under the surface. They, however, only confirmed low-grade gold mineralization (true width 0.2-1.8 m; Au 1.6-8 g/t). From these findings, the near-surface mineralization is inferred to be dominant.
- Twenty drillholes of the Phase III drilling survey were aimed to examine mineralization of shallow portion of the No.1, No.2 and No.3 ore bodies, between 10 m and 15 m under the surface, and also examine the feasibility of open pit mining. Among the thirteen drillholes, aimed to examine mineralization of lower

portion of the No.1 ore body, four drillholes discovered low-grade gold mineralization (true width 0.4-1.9 m; Au 1.7-5.8 g/t). Among the seven drillholes, aimed to examine mineralization of the No.2 ore body, three drillholes confirmed weak gold mineralization (true width 0.4-1.1 m; Au 1.8-9.6 g/t). However, analyses of ore samples collected from another thirteen drillholes did not indicate Au grade higher than 1.0 g/t.

- The Phase II geological survey and Uzbek trenching survey indicate that the Beshbulak, Taulyan and Shur manifestations have low Au grades.

(4) Mineralization

- Samples collected from gold-bearing quartz veins at the Mailyan manifestation are accompanied by ore minerals such as pyrite, goethite, lepidocrocite, arsenopyrite, chalcopyrite and sphalerite, while gold occurs as electrum.
- Homogenization temperatures of fluid inclusions at the ore zone mostly fall within the range of 250°C-350°C. The homogenization temperatures of quartz samples grading Au 1.2-2.0 g/t were 221°C-281°C, higher than the general temperature range of gold occurrence, 100°C-250°C. No significant correlation was observed between homogenization temperature and depth at which drilling samples were taken.
- In light of the occurrence of the Aktau granites, characteristics of the surrounding manifestations, drilling results and homogenization temperatures, gold-bearing quartz veins at the subject manifestation are inferred to have been formed under high temperature ambience, which is considered to lack the conditions required for a high-grade, large-scale gold concentration zone.

(5) Ore reserves

- At the cutoff grade of 1.0 g/t (Au), the tentative estimation of the total ore reserves of No.1, No.2 and No.3 ore bodies indicated 252,000 t, grading 4.2 g/t Au, or approximately 1.1 t of Au in terms of metal content. While those of No.1, No.2 and No.3 ore bodies are 149,000 t, grading 3.8 g/t Au (0.6 t of Au content), 87,000 t, grading 5.0 g/t Au (0.4 t of Au content) and 16,000 t, grading 4.2 g/t Au (0.07 t of Au content), respectively.

Chapter 2 Recommendations

1) Altynsai Deposit

- (1) Ore reserves estimates of No.1, No.2 and No.8 veins added up to 423,000 t, grading 9.6 g/t Au, or approximately 4.0 t of Au in terms of metal content. The lower portion of No.8 vein remains unexplored, except the shallow portions surveyed by the Phase III and Uzbek drilling surveys. In order to verify the deep mineralization, it is advisable to continue the drilling survey by the Uzbek side.
- (2) All the ore bodies of No.1, No.2 and No.8 veins are small in size, however, have dominant mineralization (Au grade higher than 10 g/t) in the upper portions. There is the possibility that the Altynsai deposit could be developed as a small-scale mine by tunnel mining, though it depends on the results of future drilling and tunneling surveys by the Uzbek side.

2) Maulyan Manifestation

- (1) Tentative calculation indicated that the total ore reserves of No.1, No.2 and No.3 ore bodies combined are 252,000 t, grading 4.2 g/t Au, or approximately 1.1 t of Au in terms of metal content. A certain increase in ore reserves by further exploration may be anticipated but a significant improvement in Au grade is unlikely.
- (2) All the ore bodies in the subject manifestation are small in size and have variable and low overall grade (Au grade less than 5 g/t). At present, there is little possibility that the Maulyan manifestation could be developed as a large-scale deposit. For developing the manifestation as a small-scale mine, discovery of considerably high grade ore is necessary by the future drilling and tunneling surveys by the Uzbek side.

COLLECTED DATA

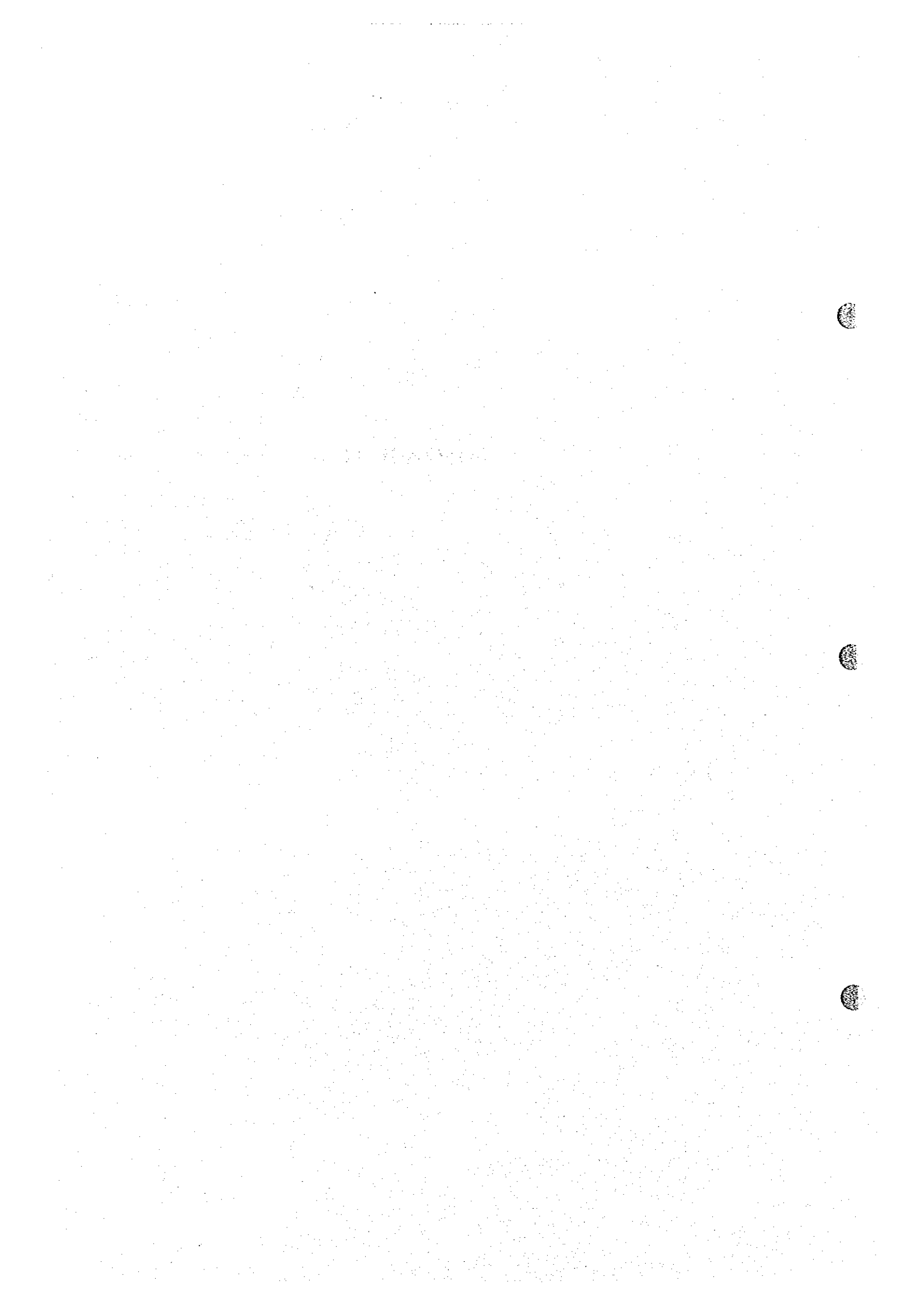


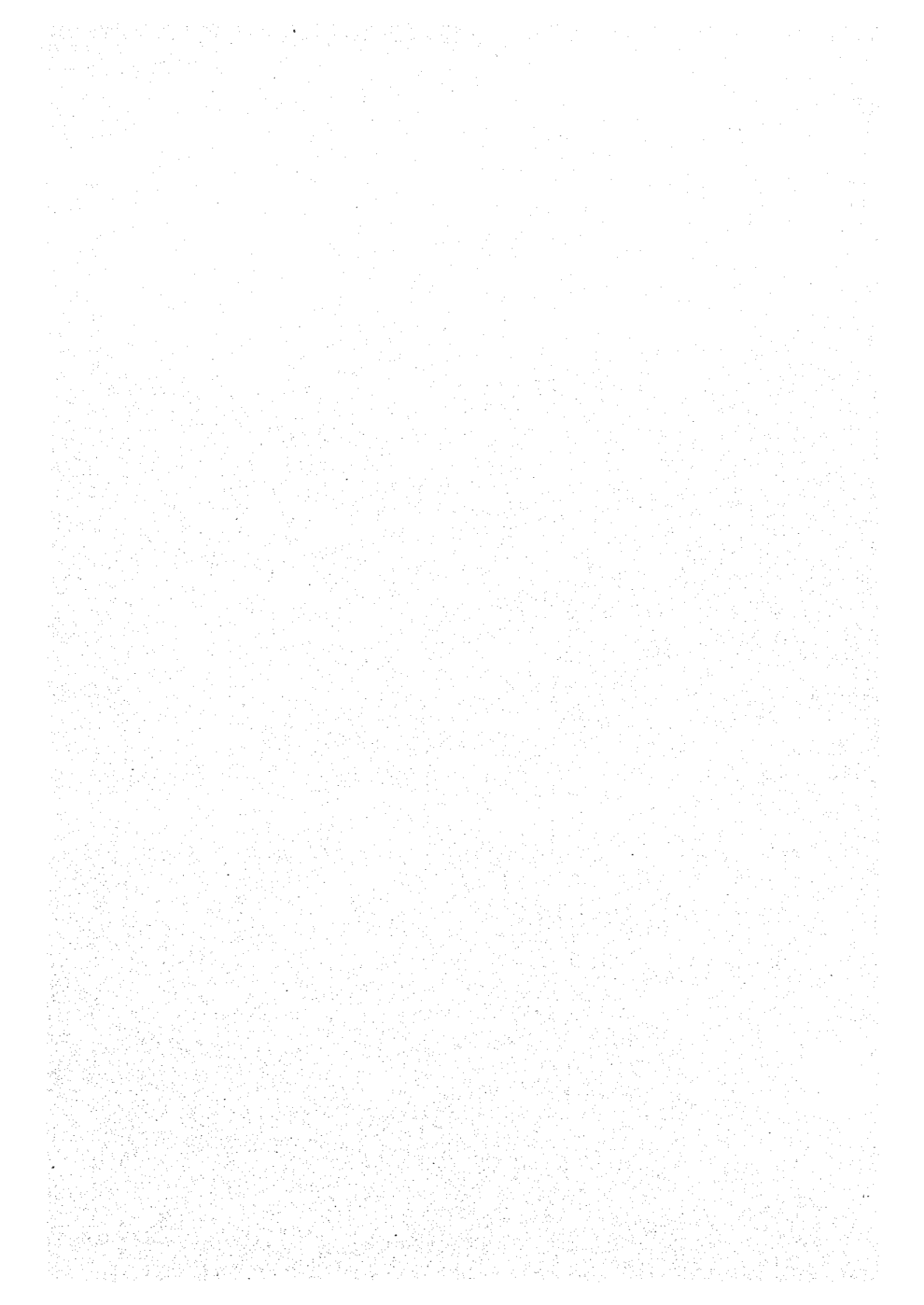
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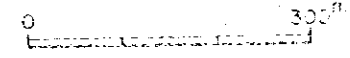
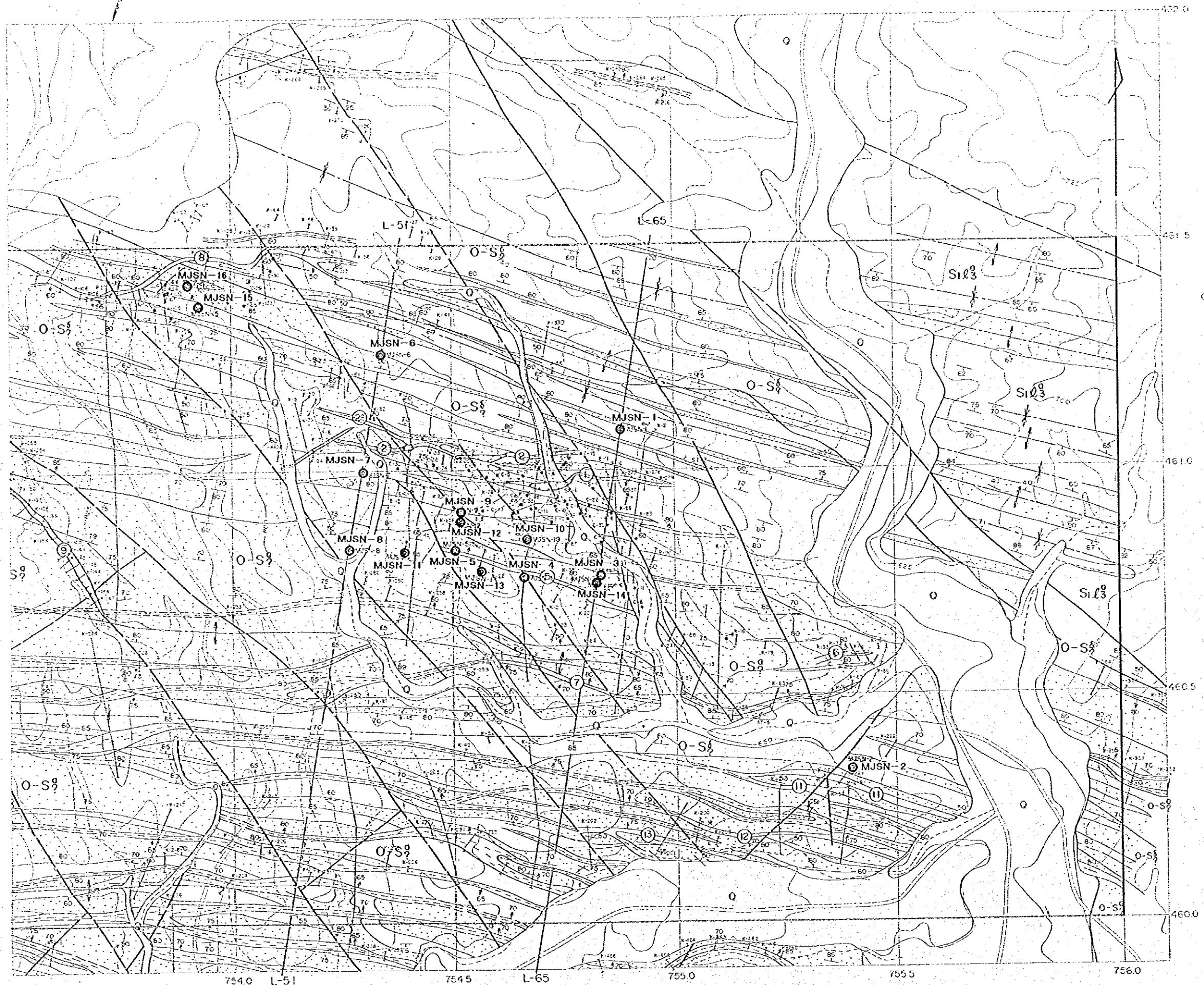
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APPENDICES





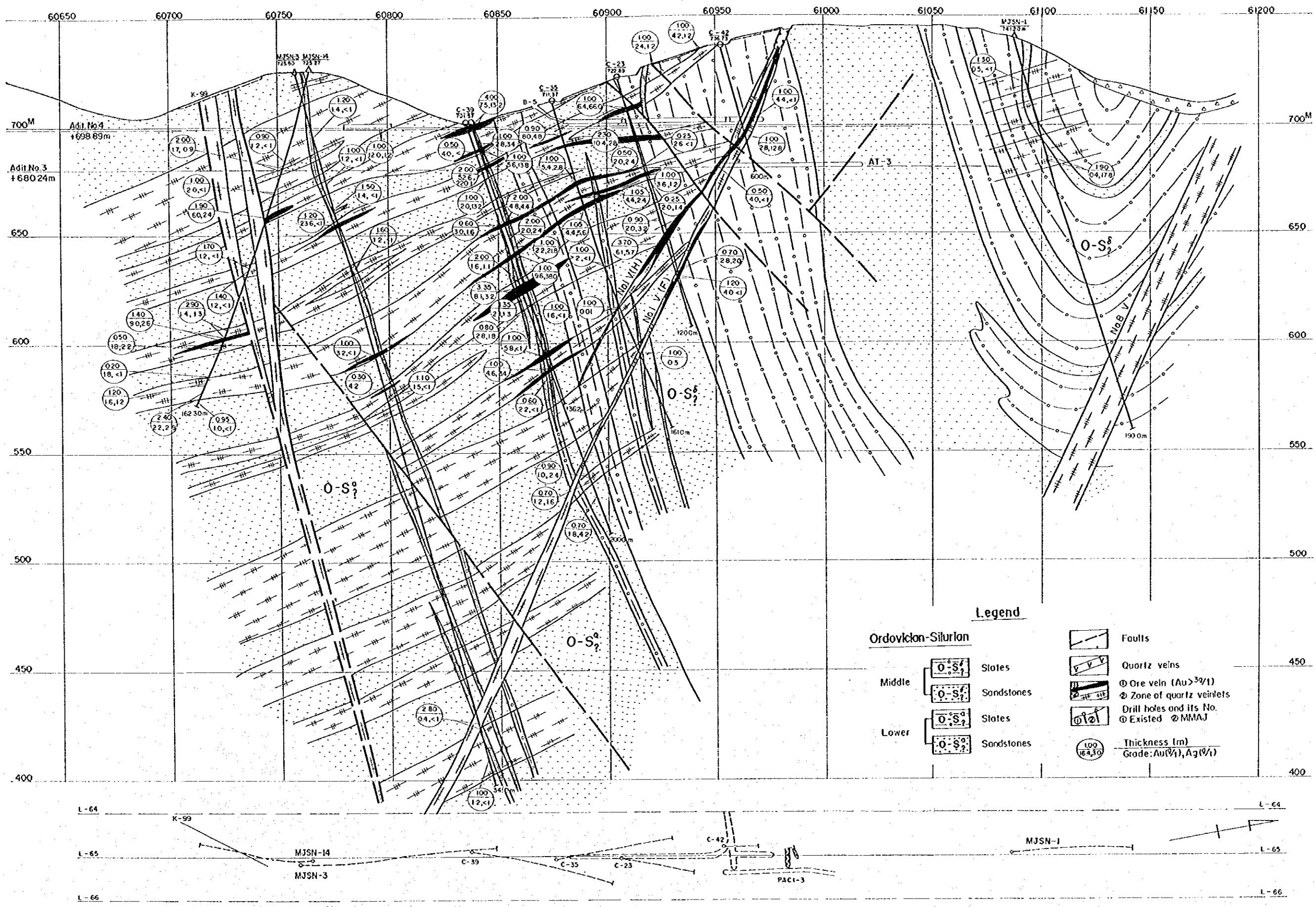


Legend

- Quaternary Tsius gravel sand
- Lower Silurian Slates, Siltstones
- Quartz sandstones
- Silurian Cherty slates } Middle Formation
- Sandstones } Middle Formation
- Ordovician Cherty slates } Lower Formation
- Sandstones } Lower Formation
- Dike Lamprophyres
- Fractures: 1. Traced 2. Suspected
- Zones of brecciation and silicification
- Zones of quartz veins and veinlets
- Ore zone and its number
- Strike and dip: 1. Bedding 2. Fracture
- 1. Anticlinal axes 2. Synclinal axes
- Trench and its number
- Shaft and its number
- Adit and its number
- Old workings
- Drillholes: 1. Existed
 2. MMAJ

- 1 ● C13
 - 2 ● MJSN-5
 - 3 ● MJSN-12
 - 4 ● MJSN-15
- Drillholes: 1. Existed
2. MMAJ (1997)
3. MMAJ (1998)
4. MMAJ (1999)

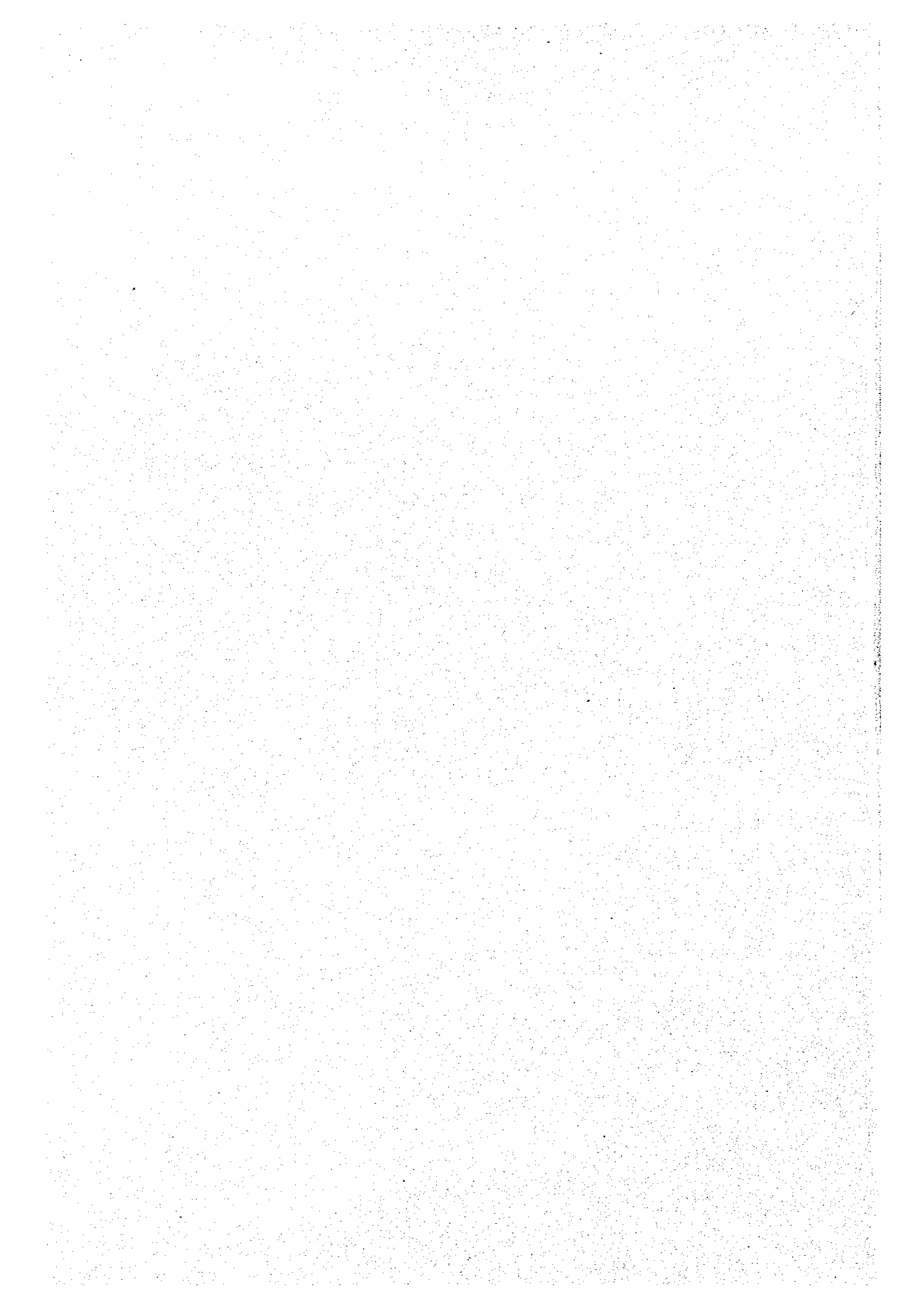
Appendix 1 Location Map of the Drillholes in the Altynsai District

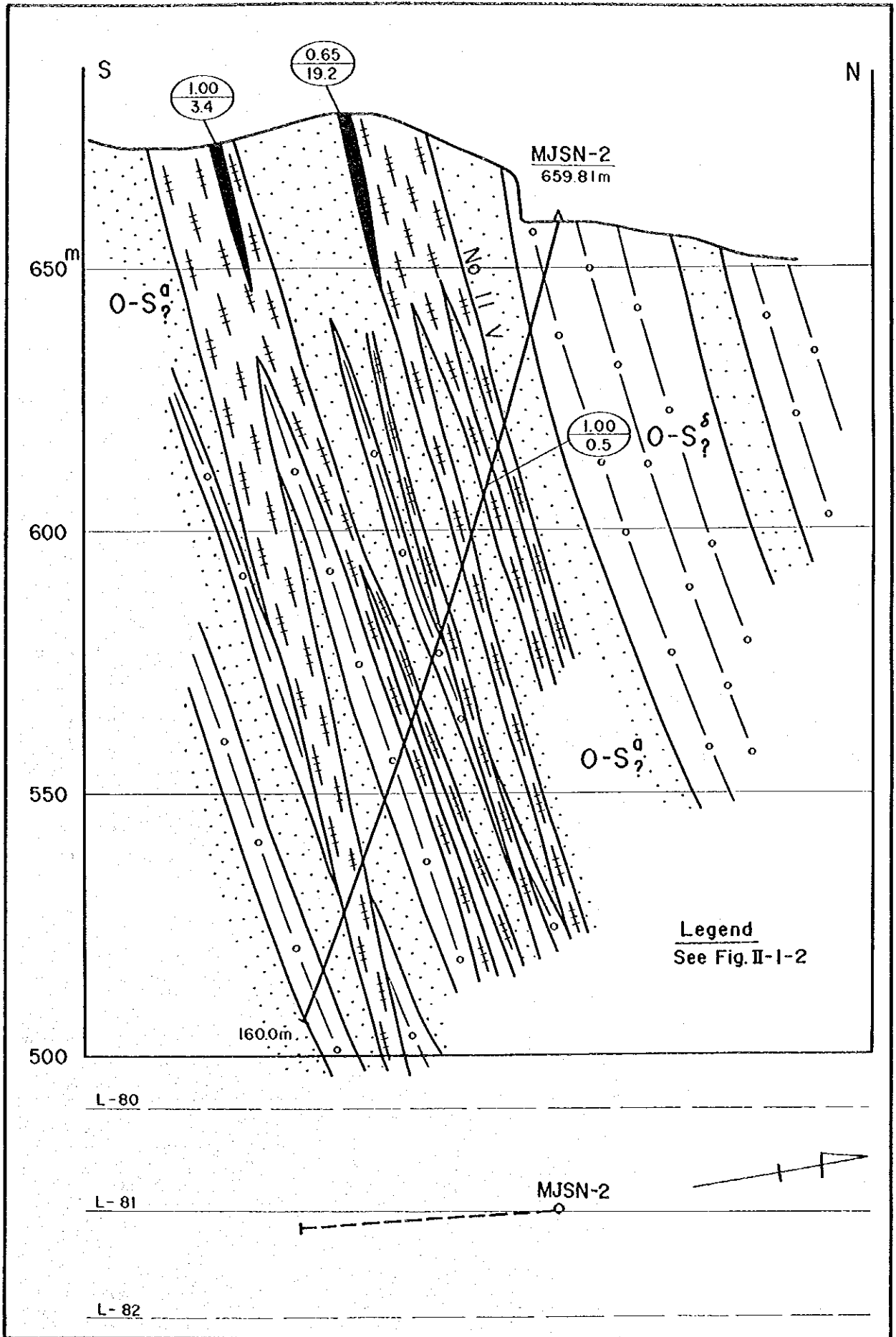


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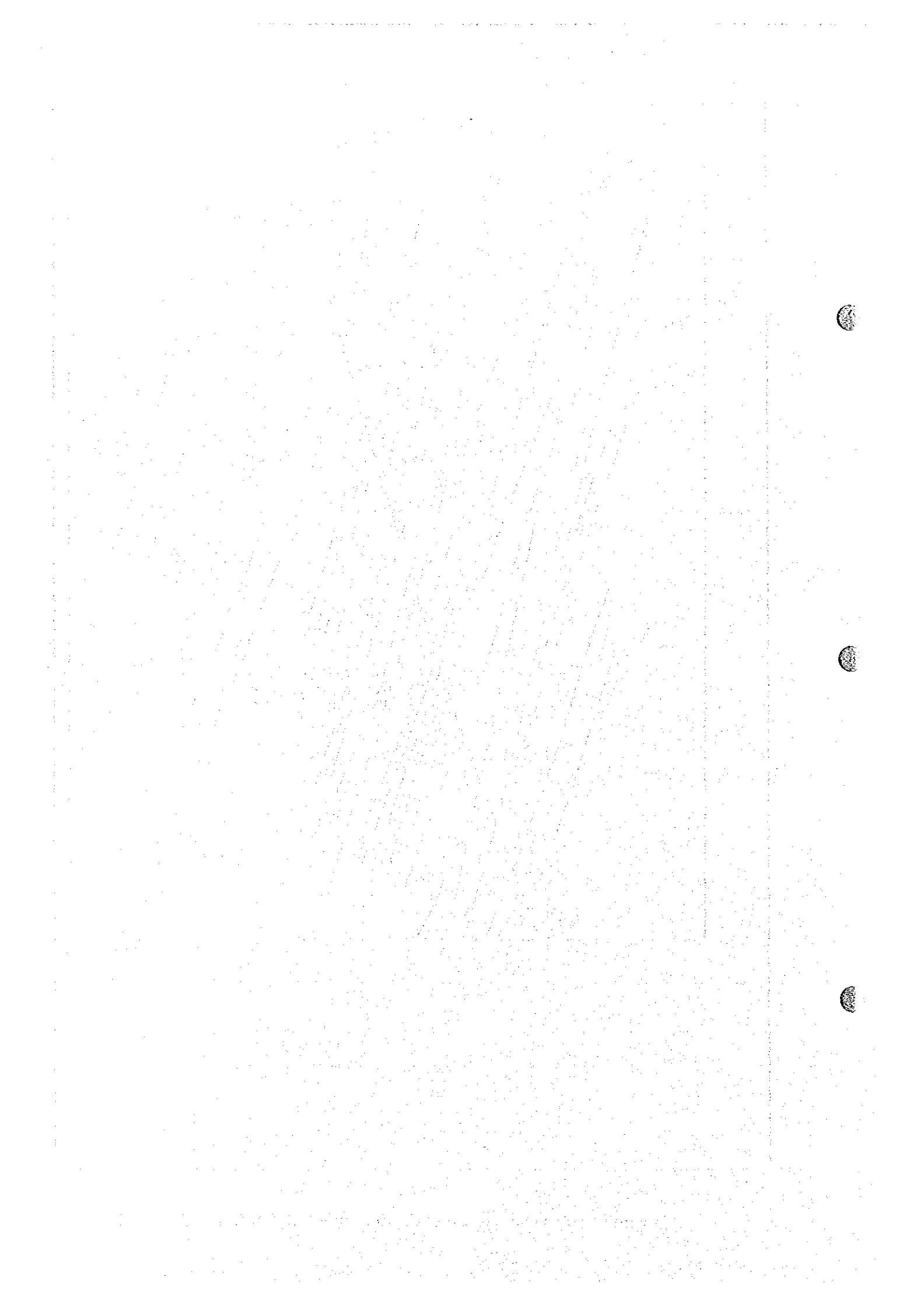
Ordovician-Silurian		Faults Quartz veins Ore vein (Au > 3g/t) Zone of quartz veinlets Drill holes and its No. Existing MMAJ Thickness (m) Grade: Au(g/t), Ag(g/t)
Middle	O-S ₁ ^o Slates O-S ₁ ^o Sandstones	
Lower	O-S ₂ ^o Slates	
	O-S ₂ ^o Sandstones	

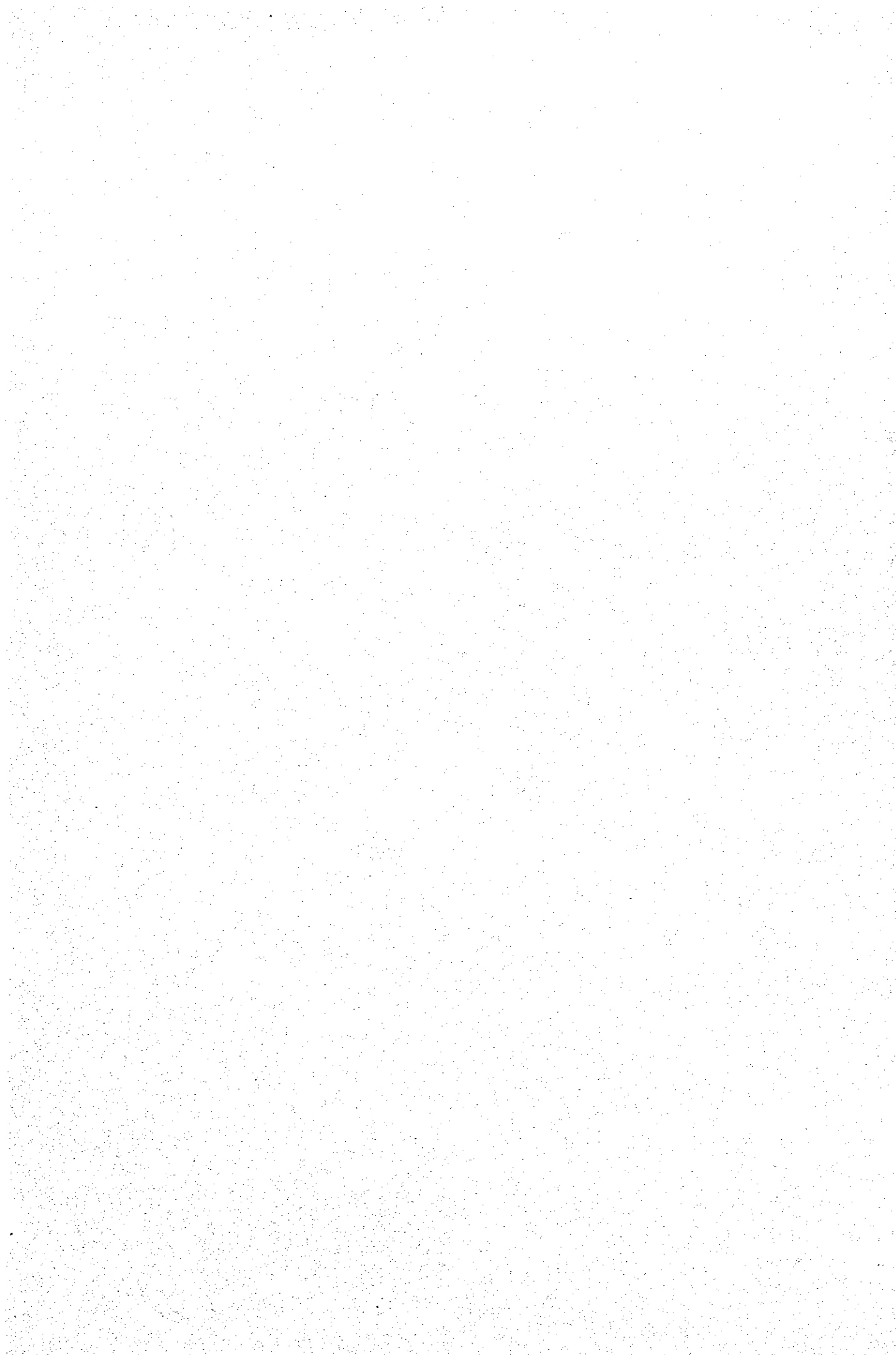
Appendix 2-1 Geologic Cross Section along MJSN-1, 3 and 14 (L-65)

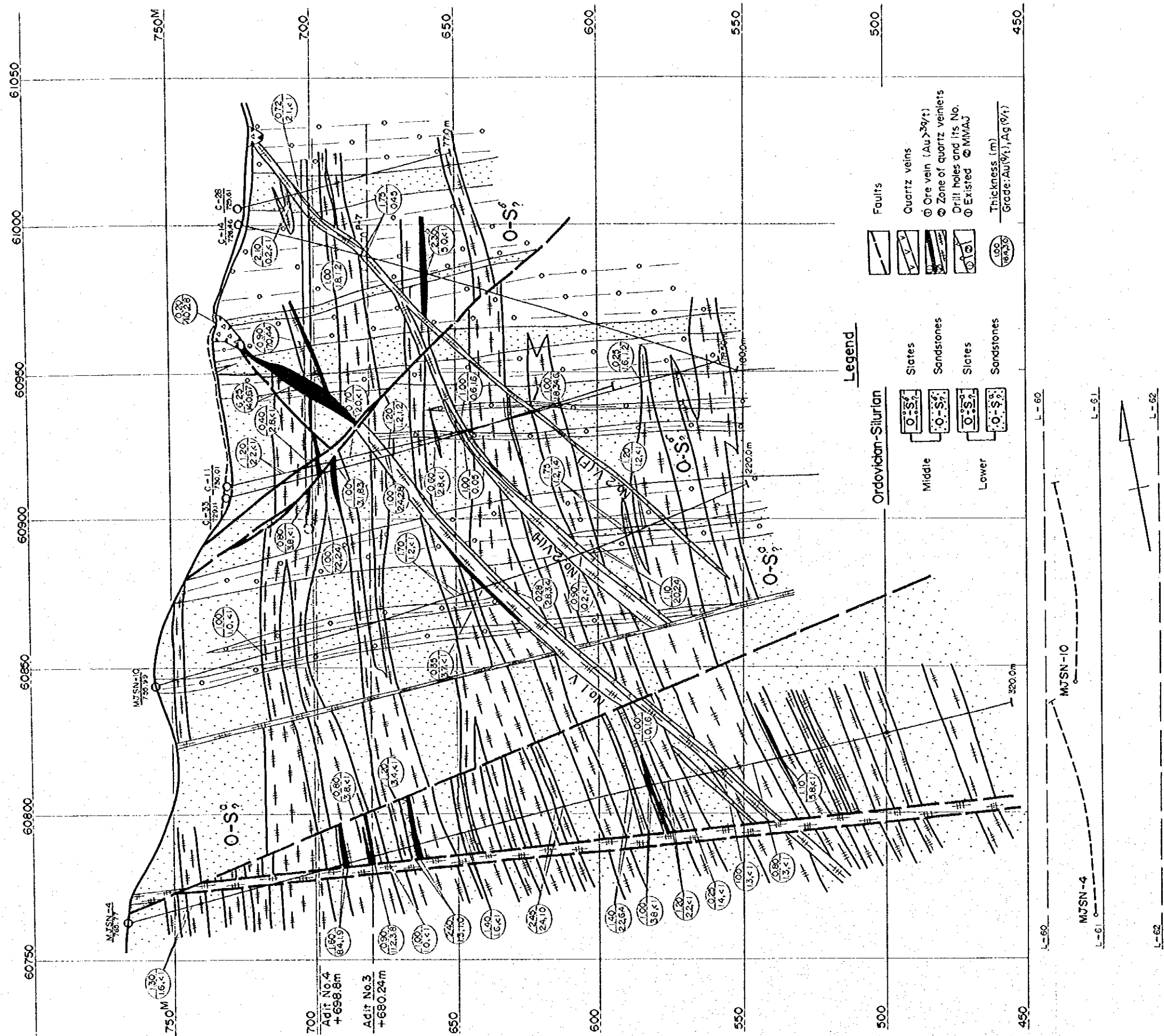




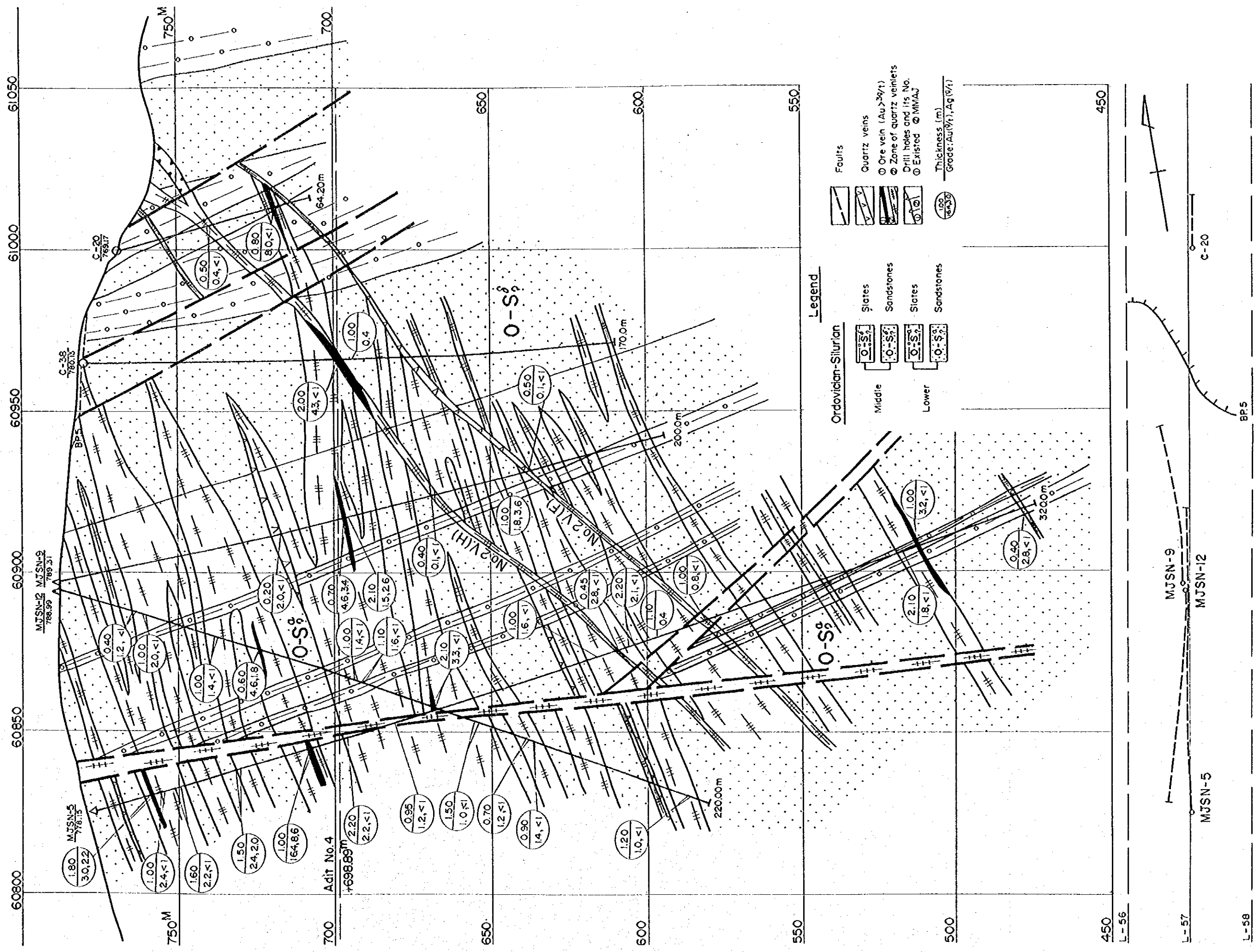
Appendix 2-2 Geologic Cross Section along MJSN-2 (L-81)



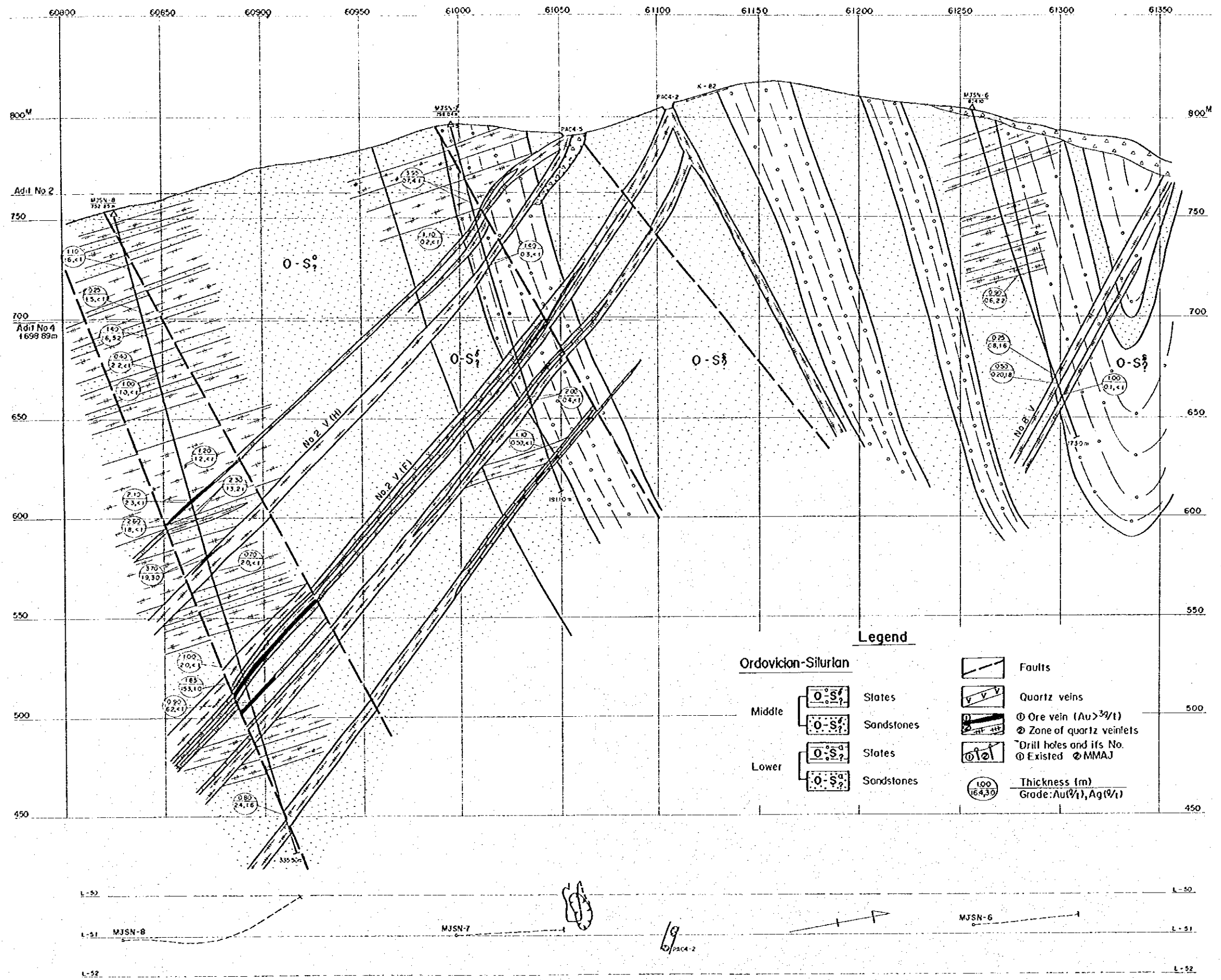




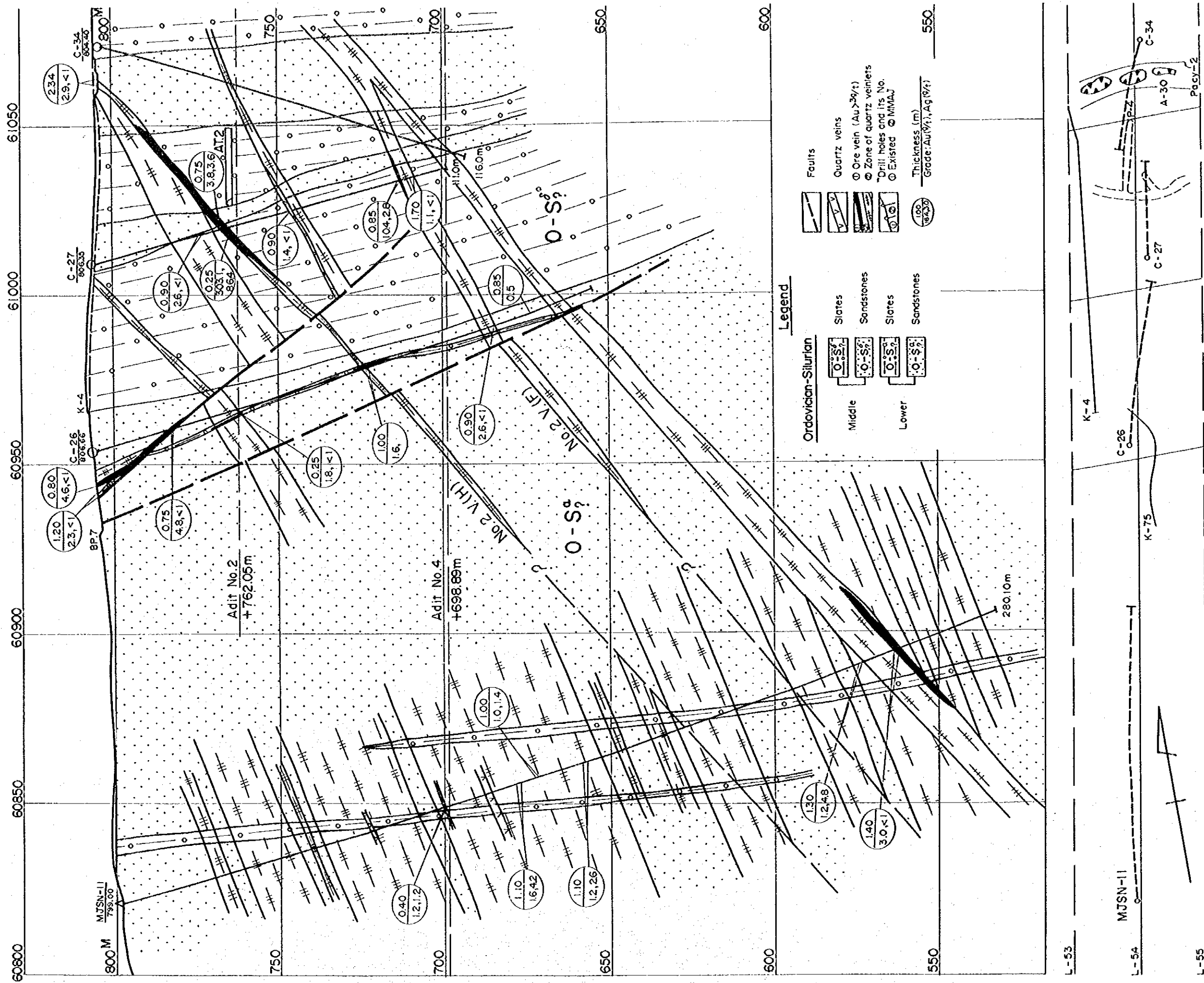
Appendix 2-3 Geologic Cross Section along MJSN-4 and 10 (L-61)



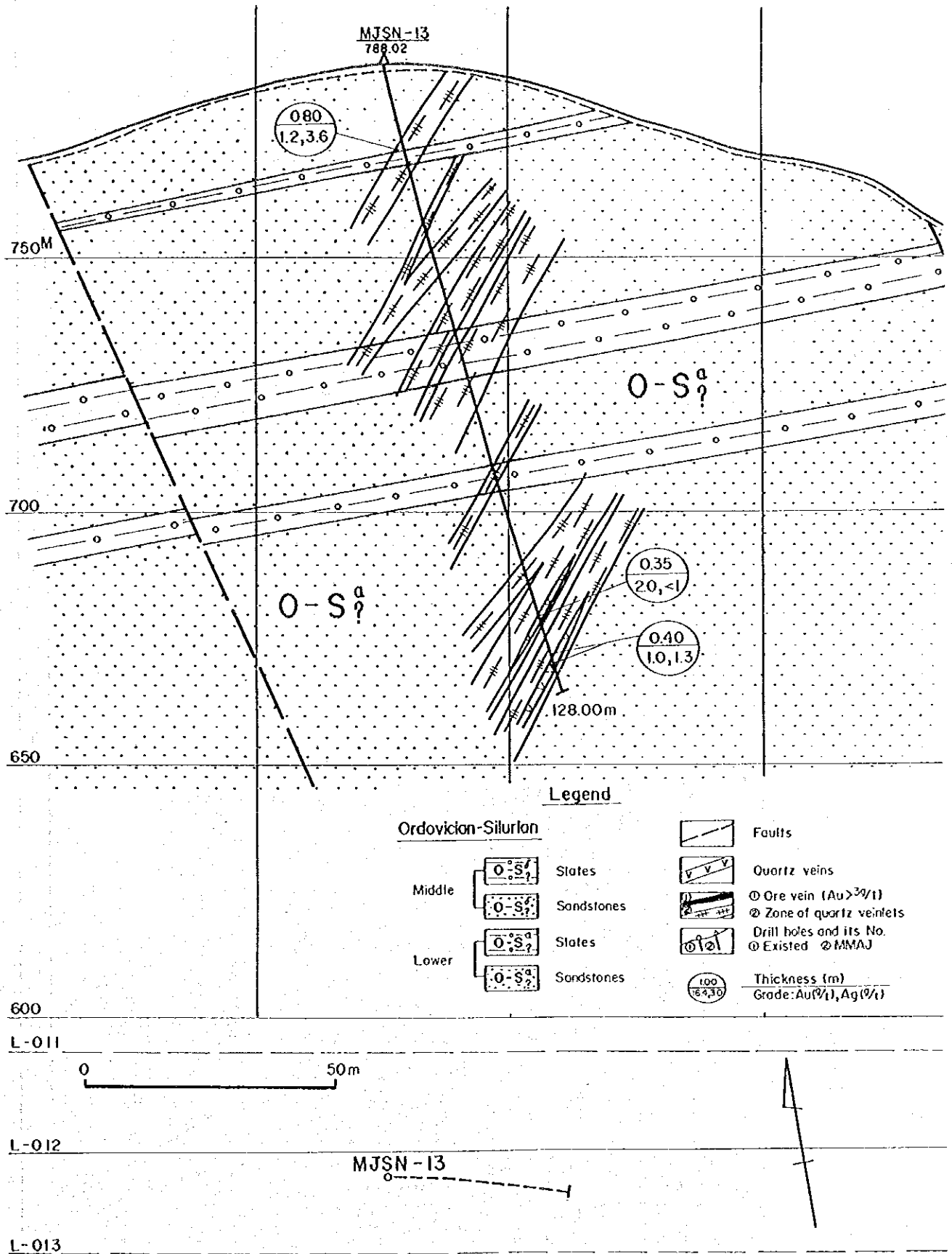
Appendix 2-4 Geologic Cross Section along MJSN-5, 9 and 12 (L-57)



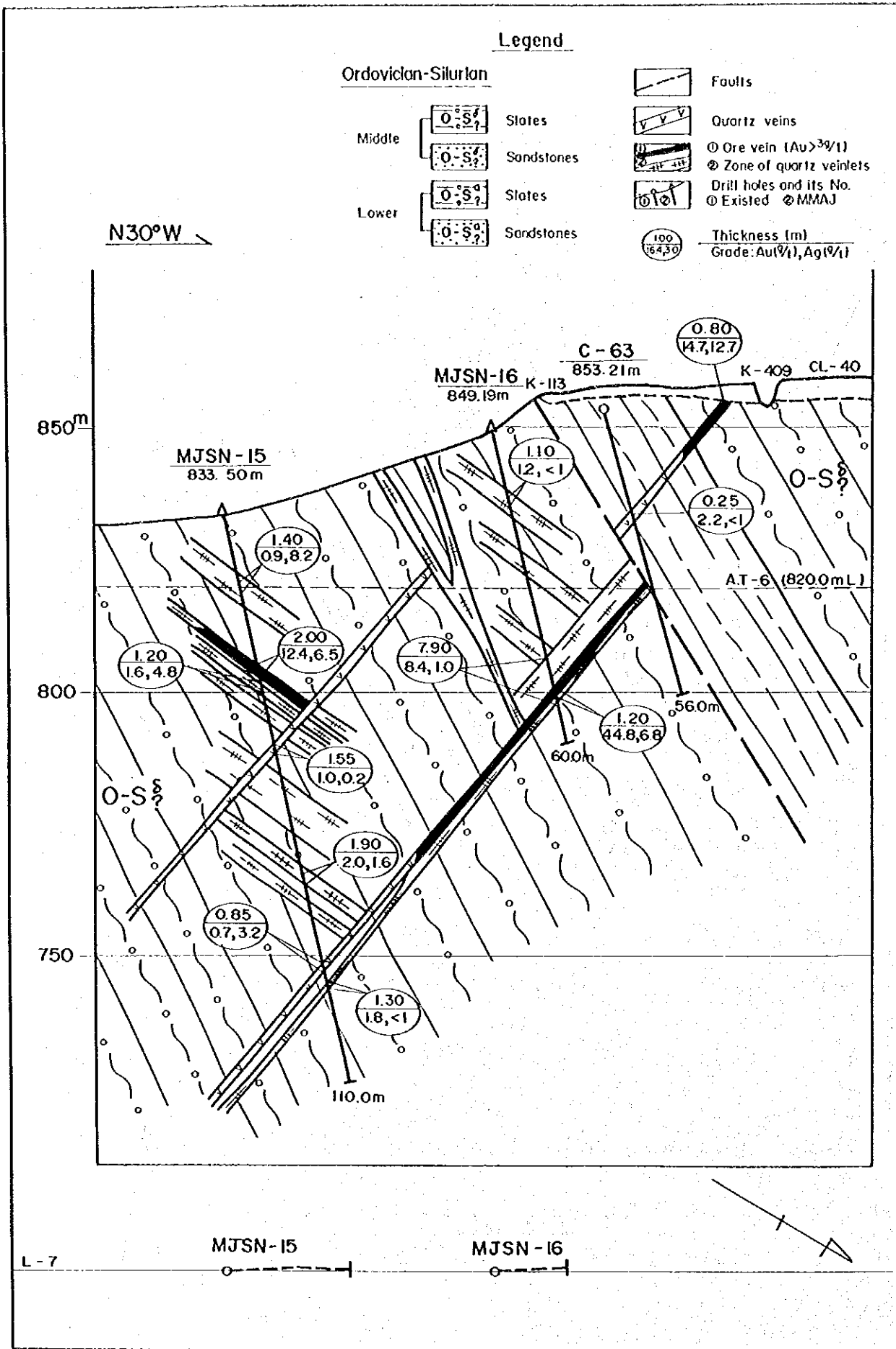
Appendix 2-5 Geologic Cross Section along MJSN-6, 7 and 8 (L-51)



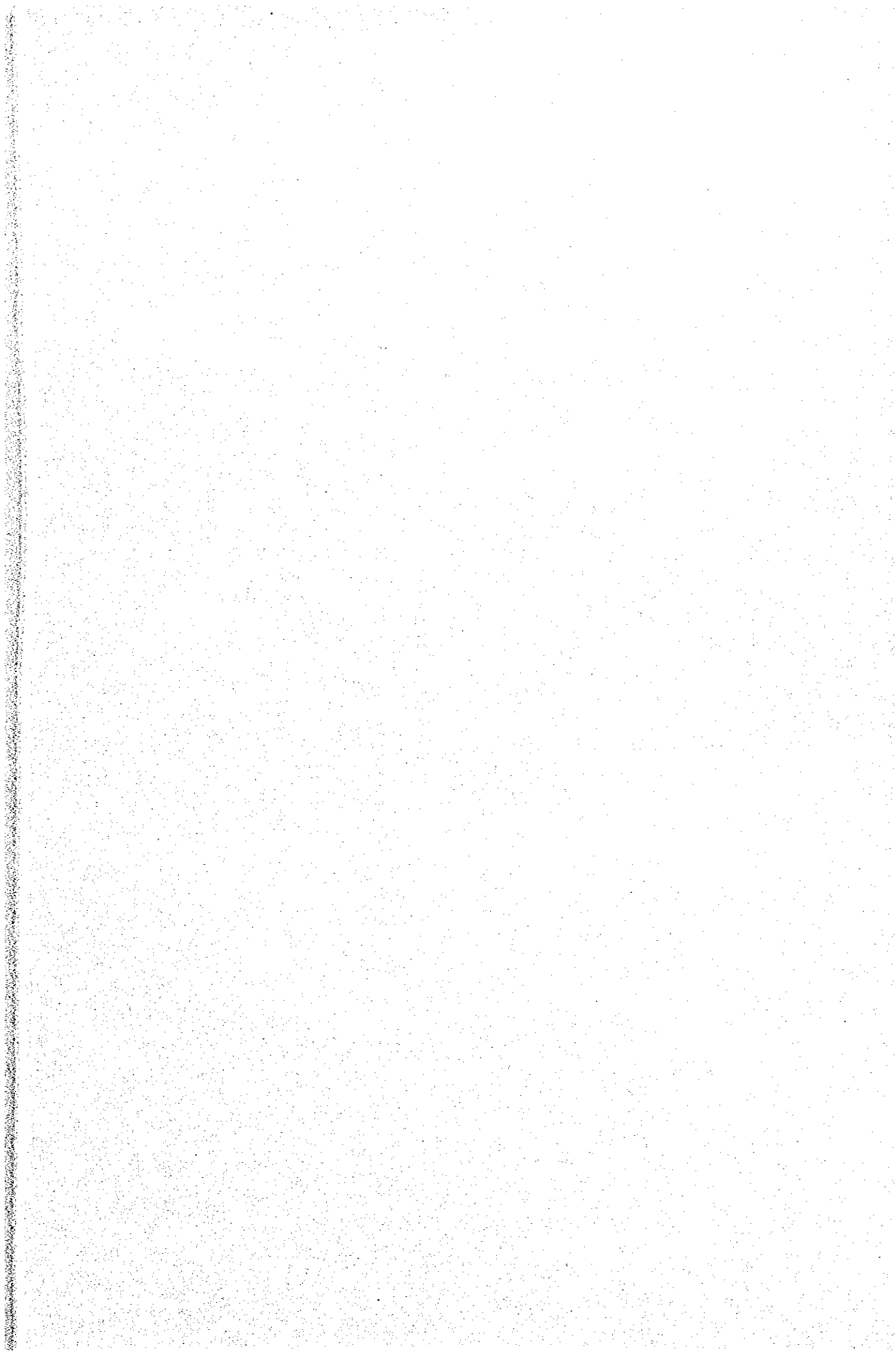
Appendix 2-6 Geologic Cross Section along MJSN-11 (L-54)

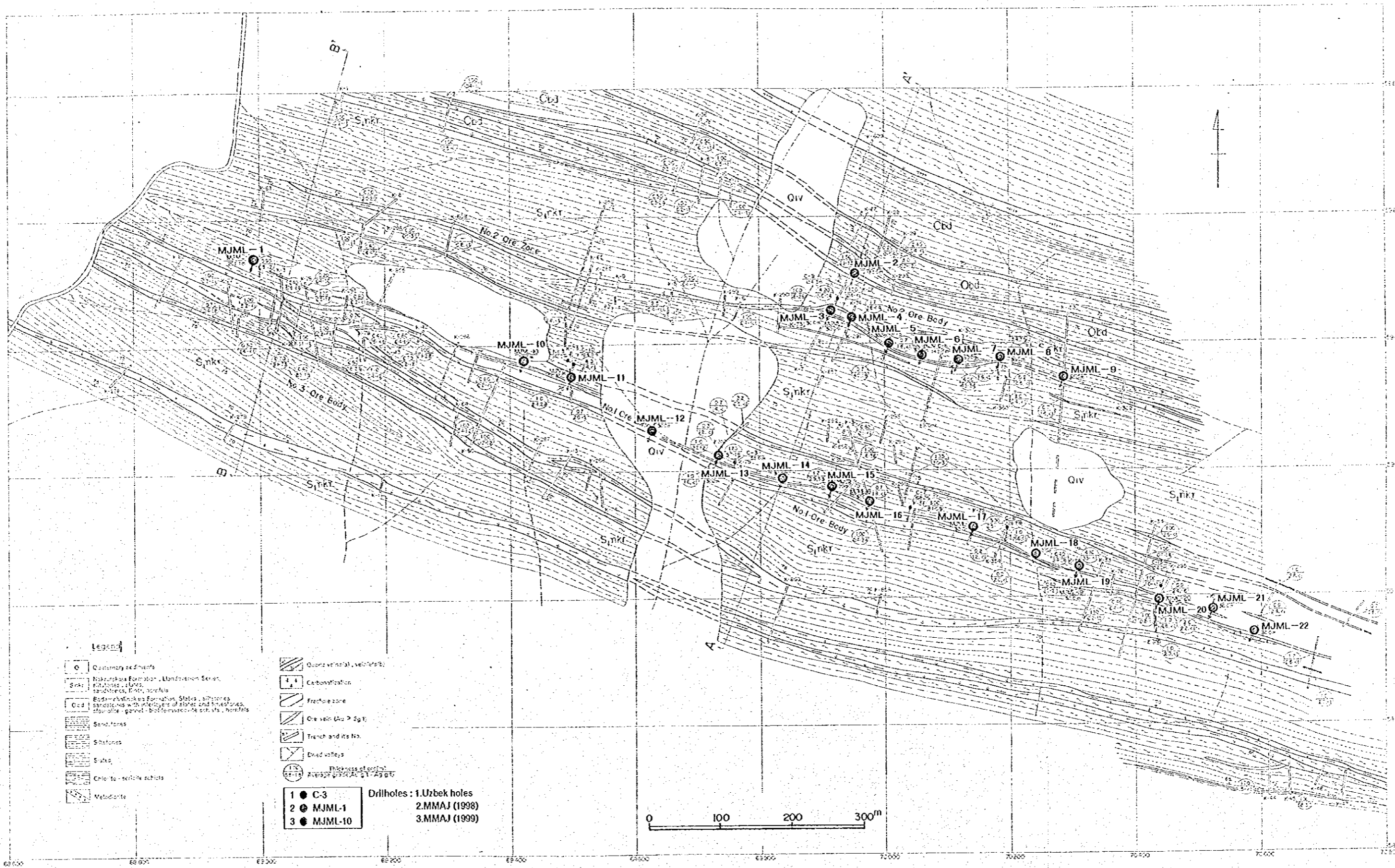


Appendix 2-7 Geologic Cross Section along MJSN-13 (L-012)

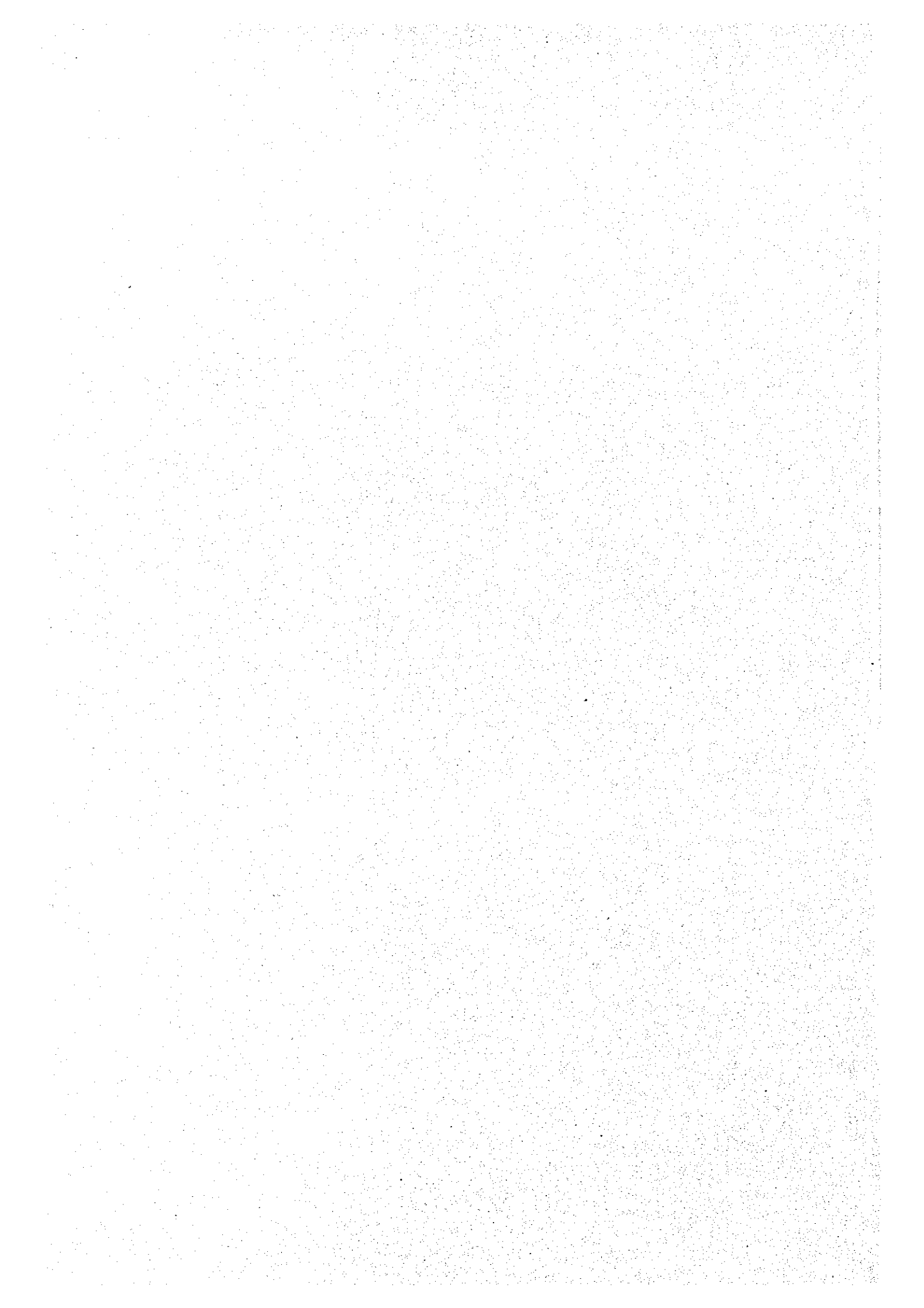


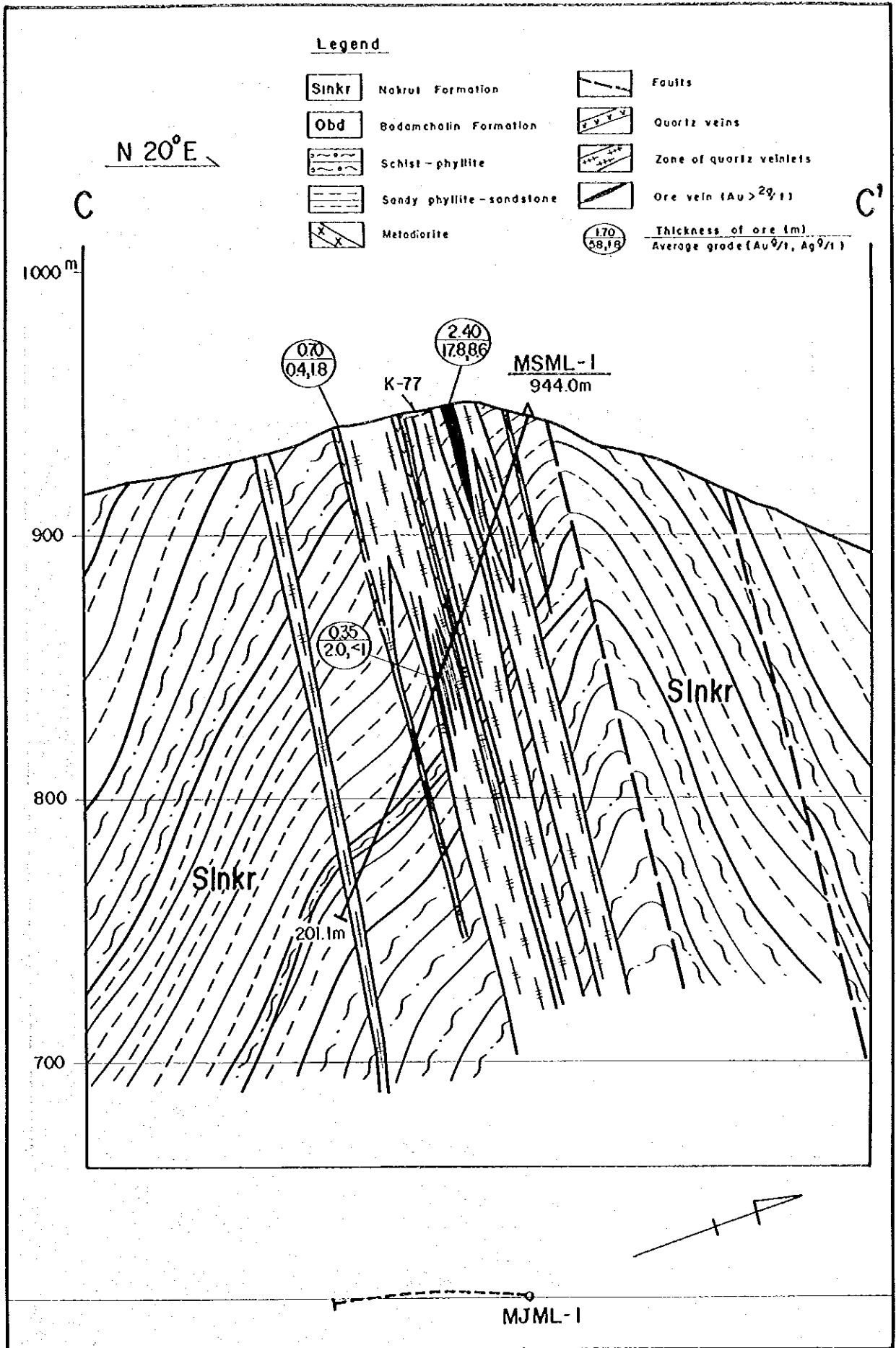
Appendix 2-8 Geologic Cross Section along MJSN-15 and 16 (L-7)



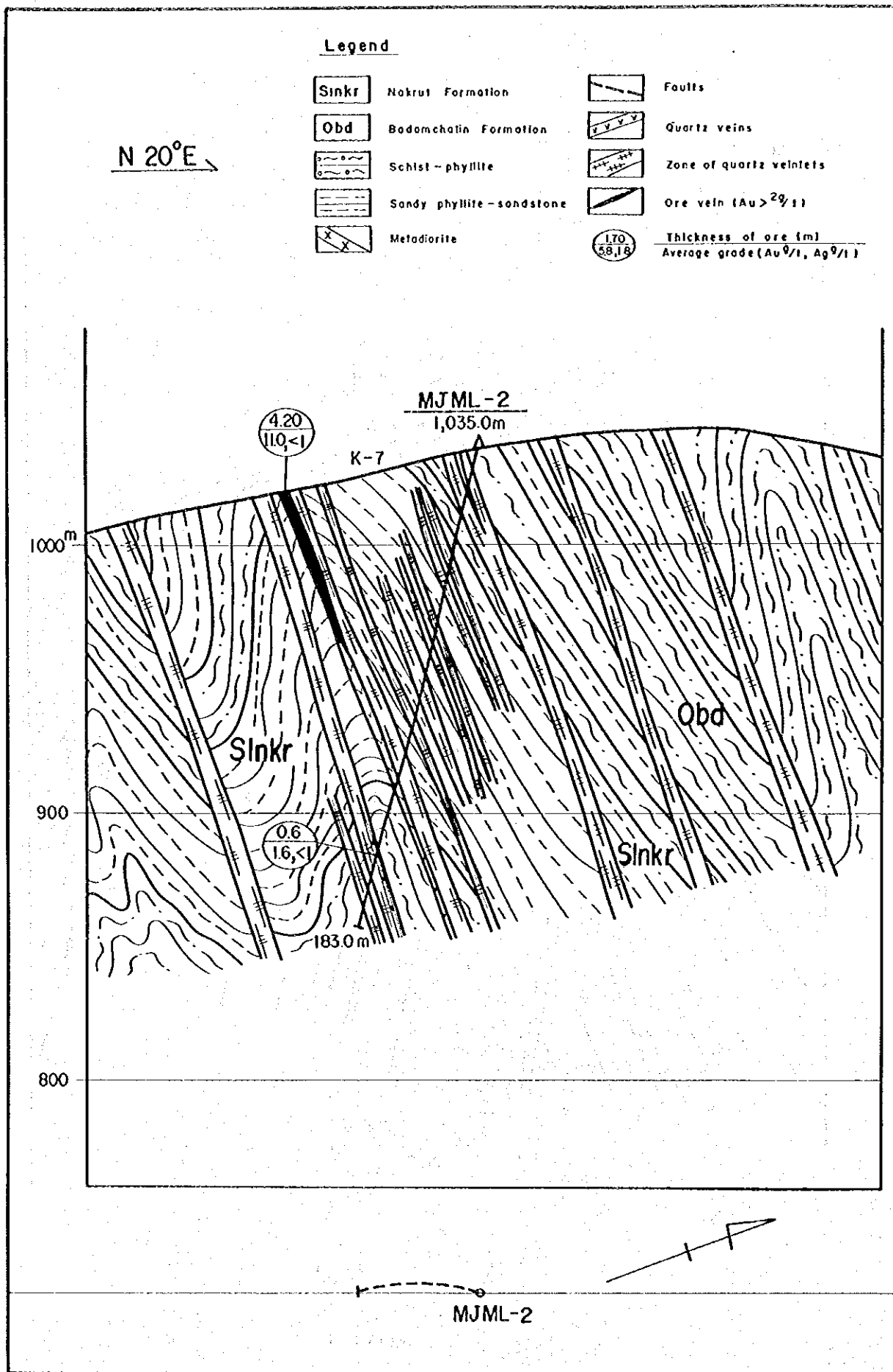


Appendix 3 Location Map of the Drillholes in the Maulyan District

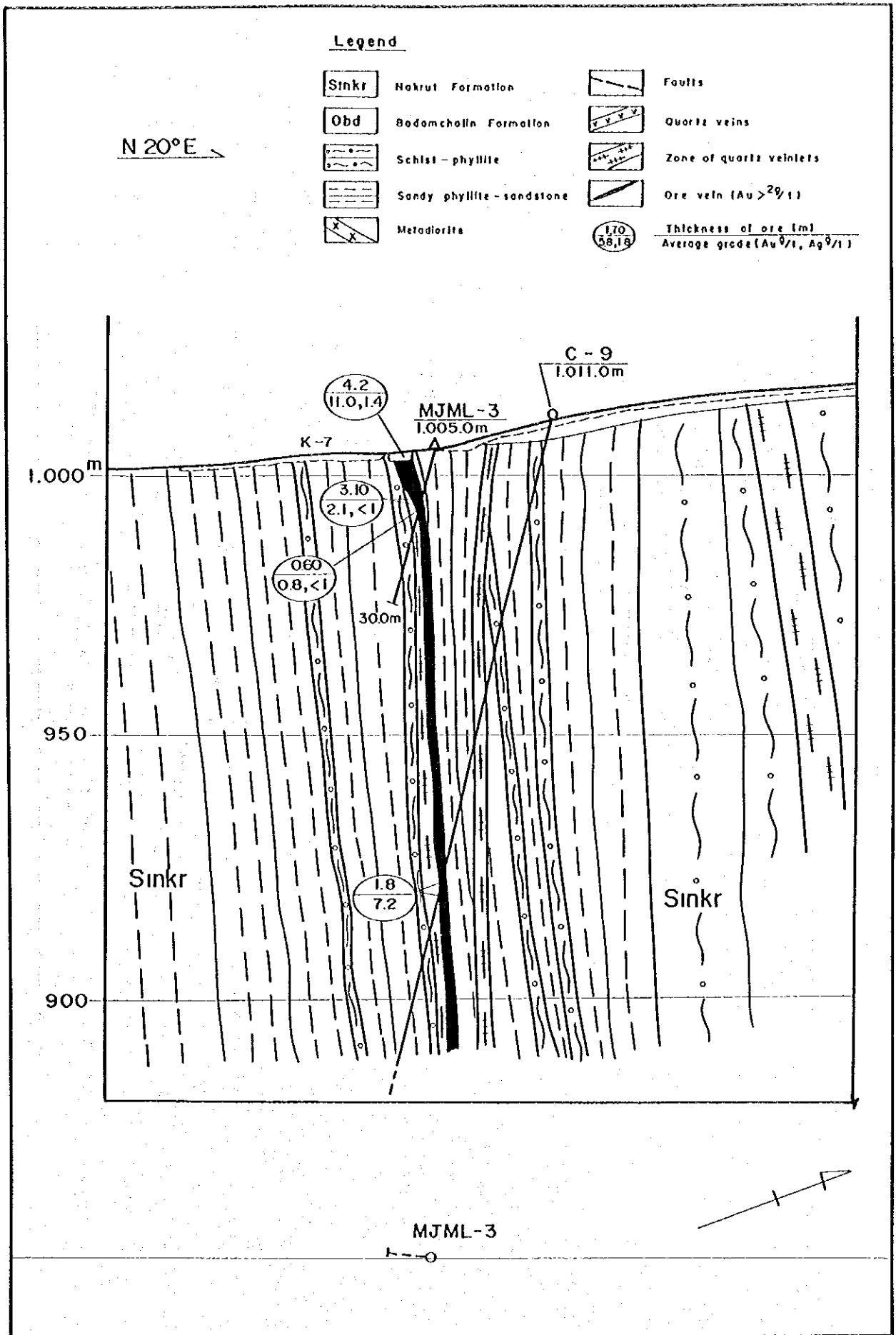




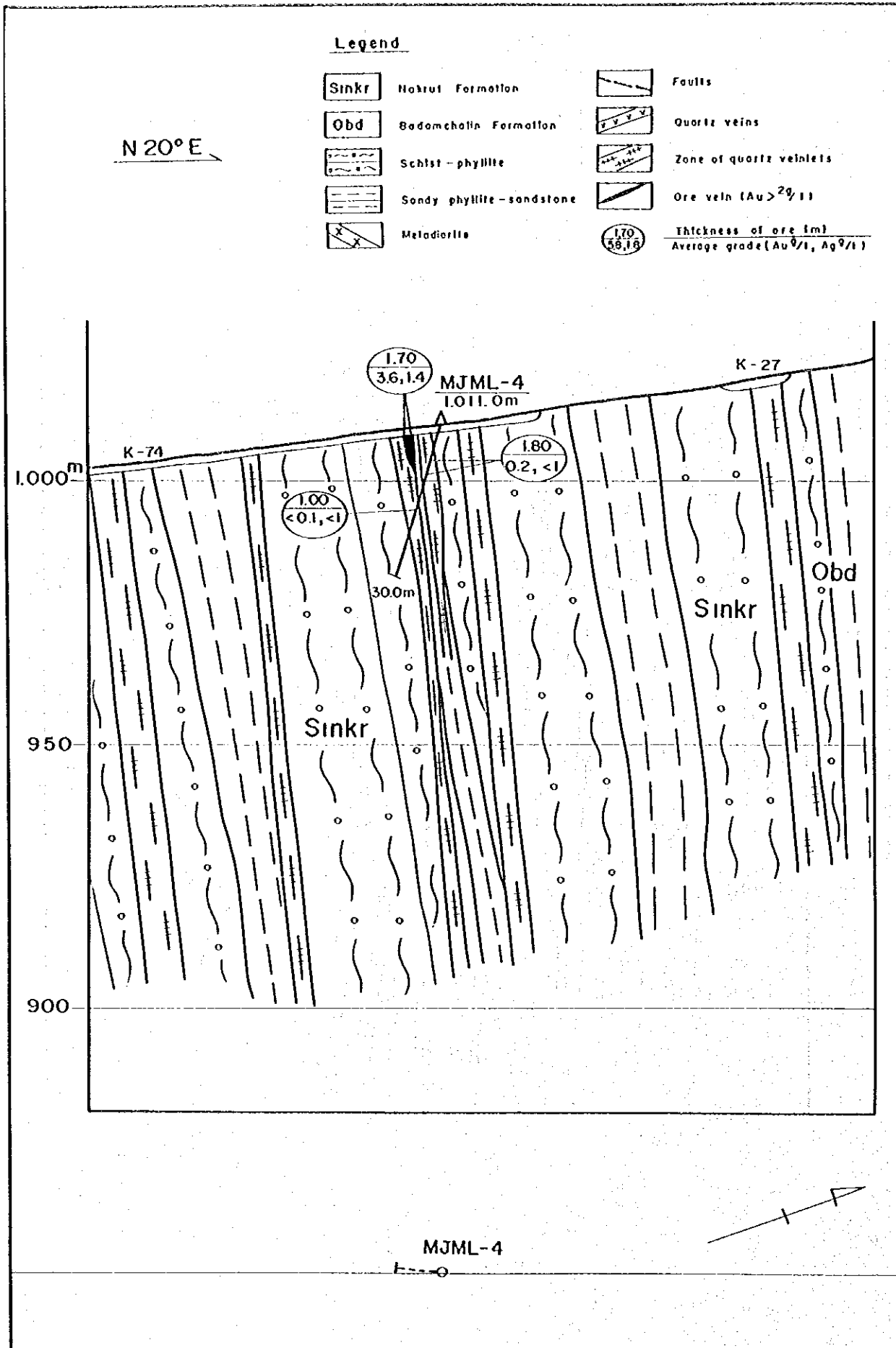
Appendix 4-1 Geologic Cross Section along MJML-1



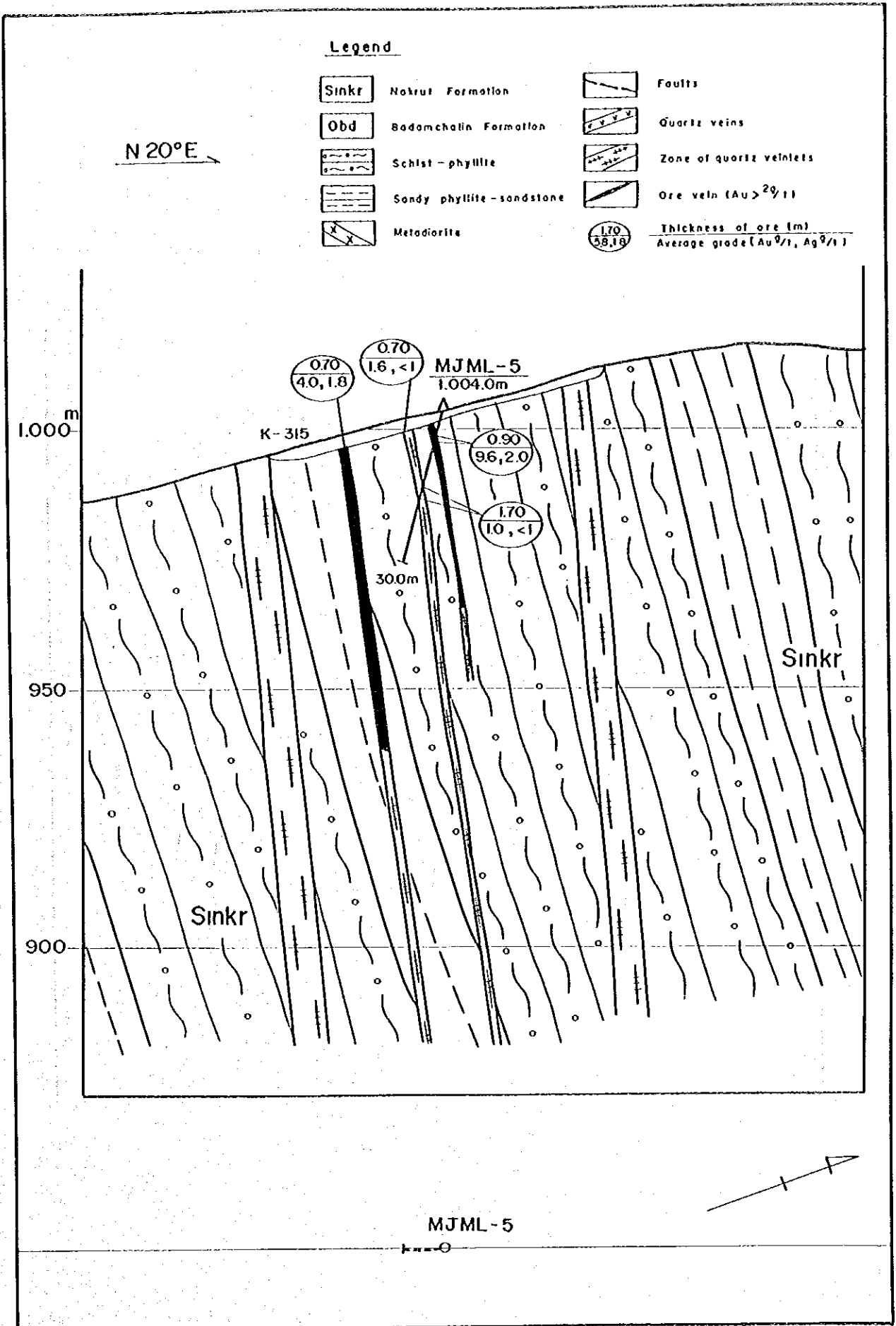
Appendix 4-2 Geologic Cross Section along MJML-2



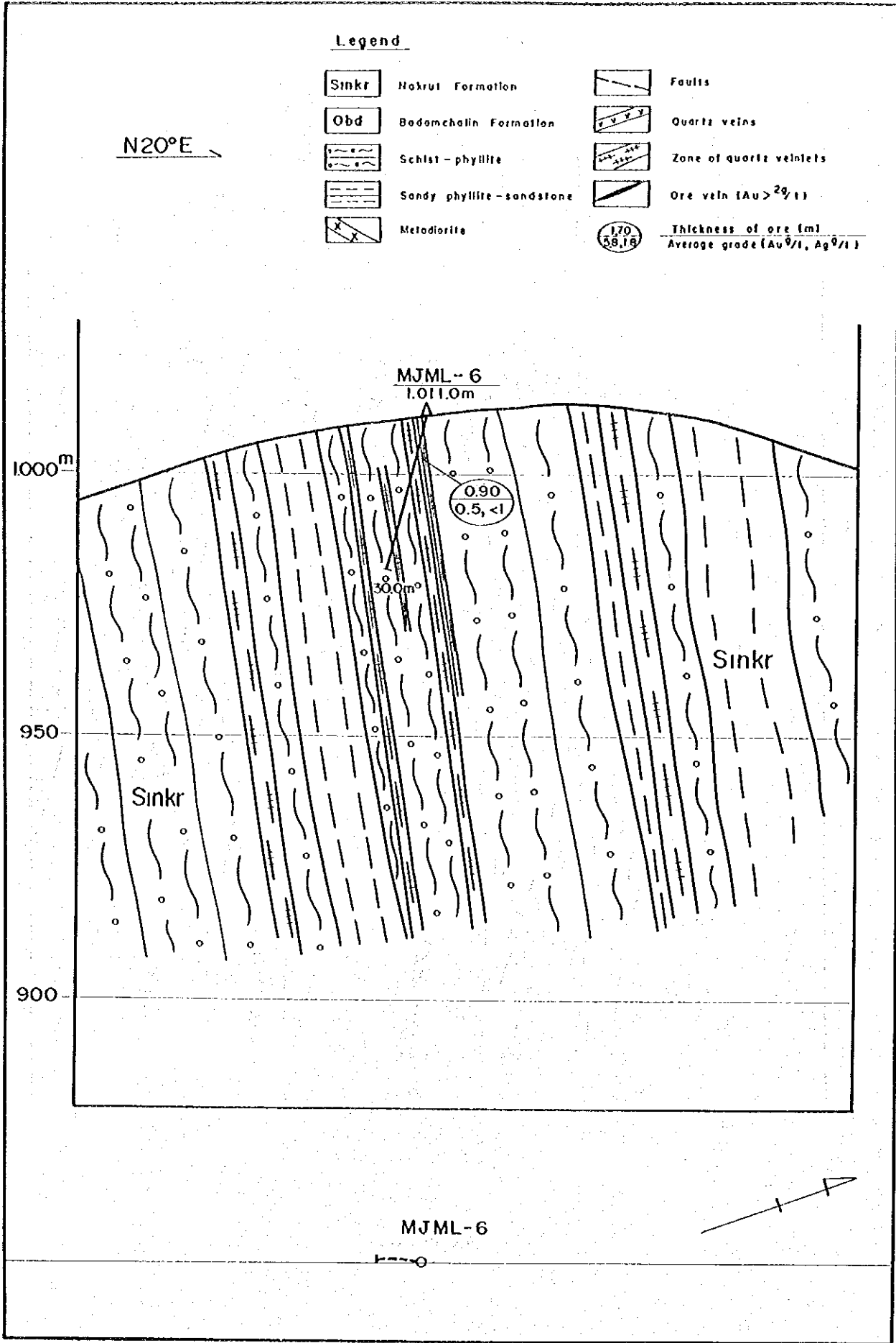
Appendix 4-3 Geologic Cross Section along MJML-3



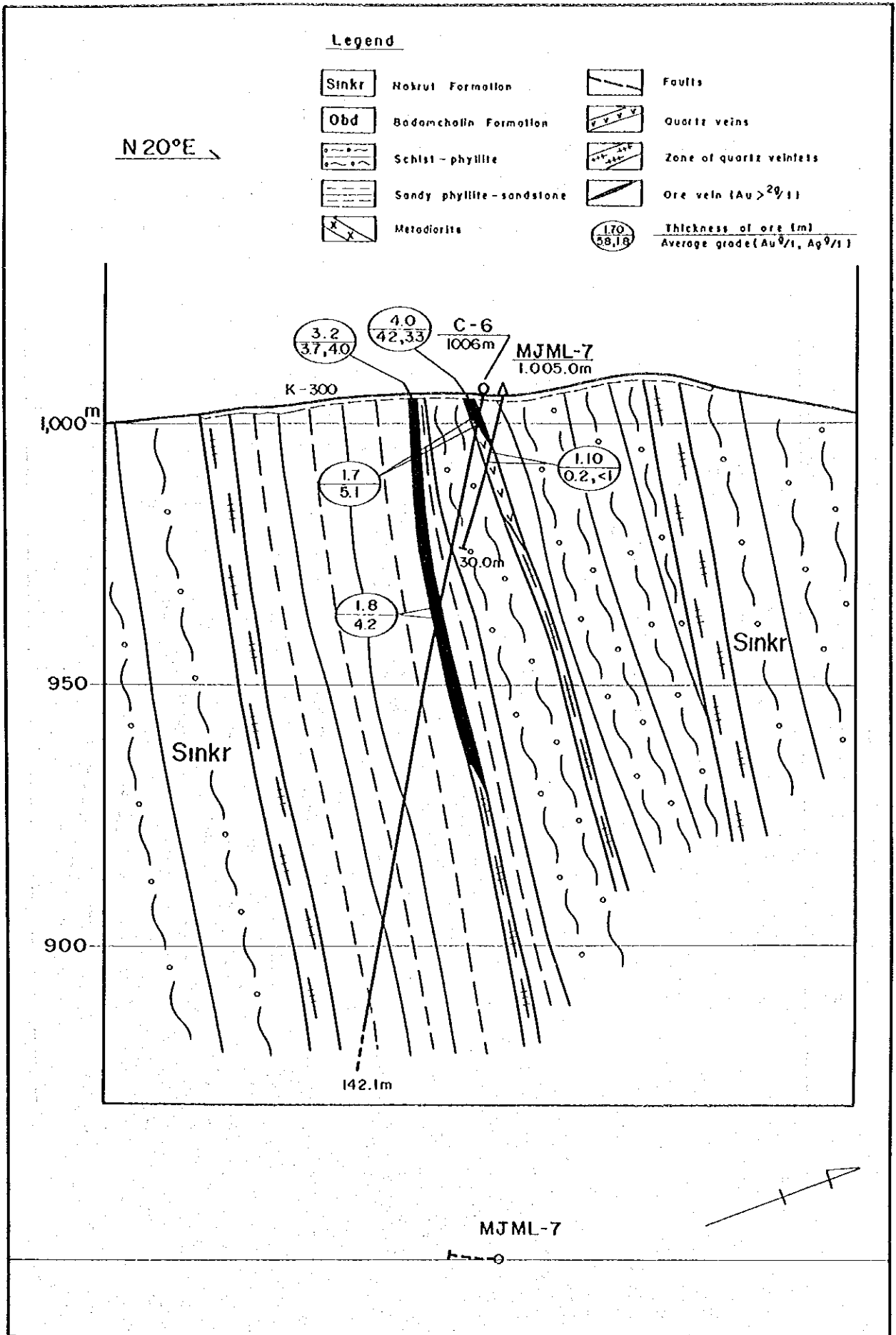
Appendix 4-4 Geologic Cross Section along MJML-4



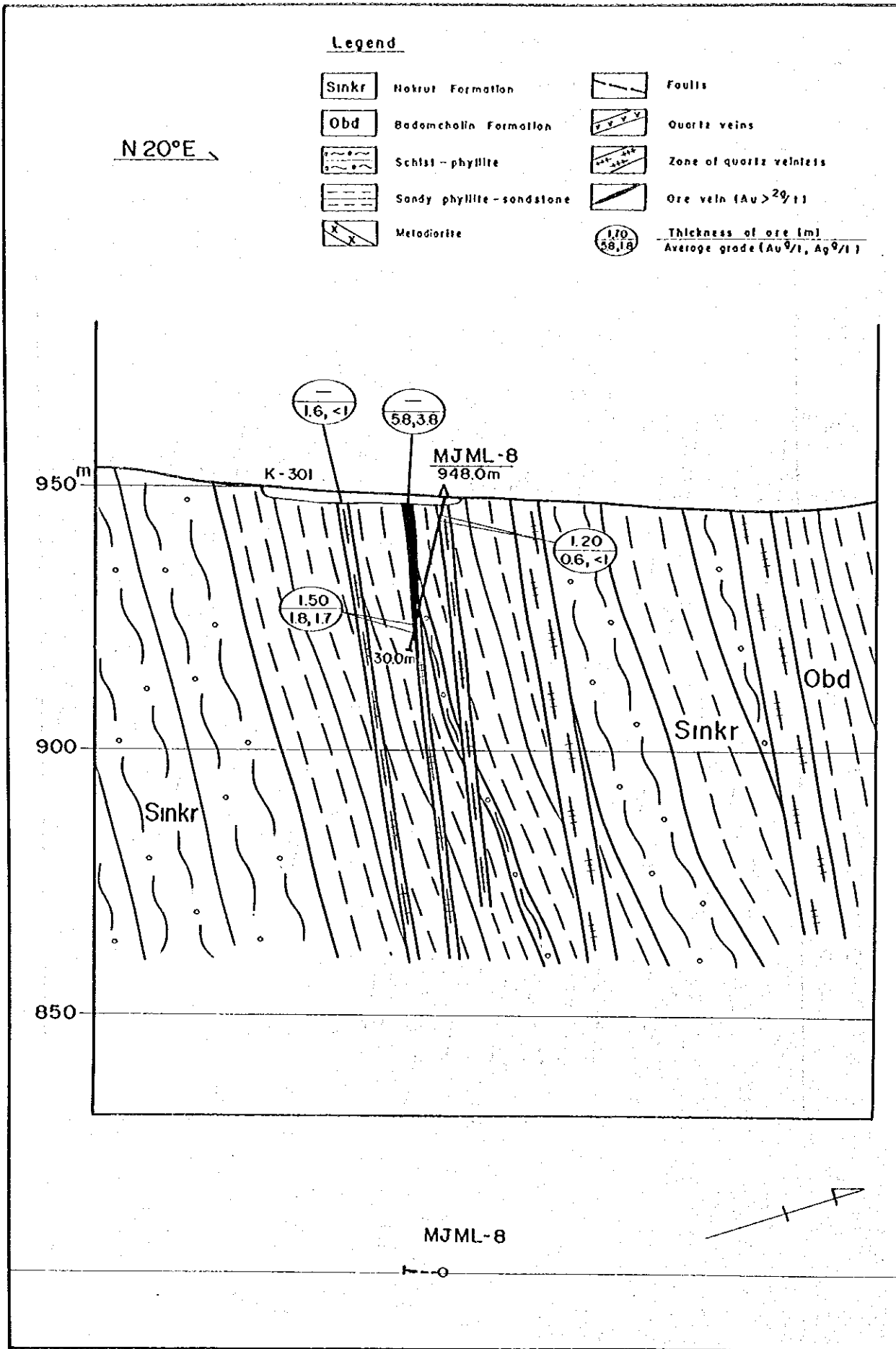
Appendix 4-5 Geologic Cross Section along MJML-5



Appendix 4-6 Geologic Cross Section along MJML-6



Appendix 4-7 Geologic Cross Section along MJML-7



Appendix 4-8 Geologic Cross Section along MJML-8