

## PART III DIAMOND CORE BORING

Part III Diamond Core Boring

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## Part III Diamond Core Boring

### Chapter 1 Outline of Operation

This operation was aimed to investigate the geological features of the Michiquillay Ore Deposit.

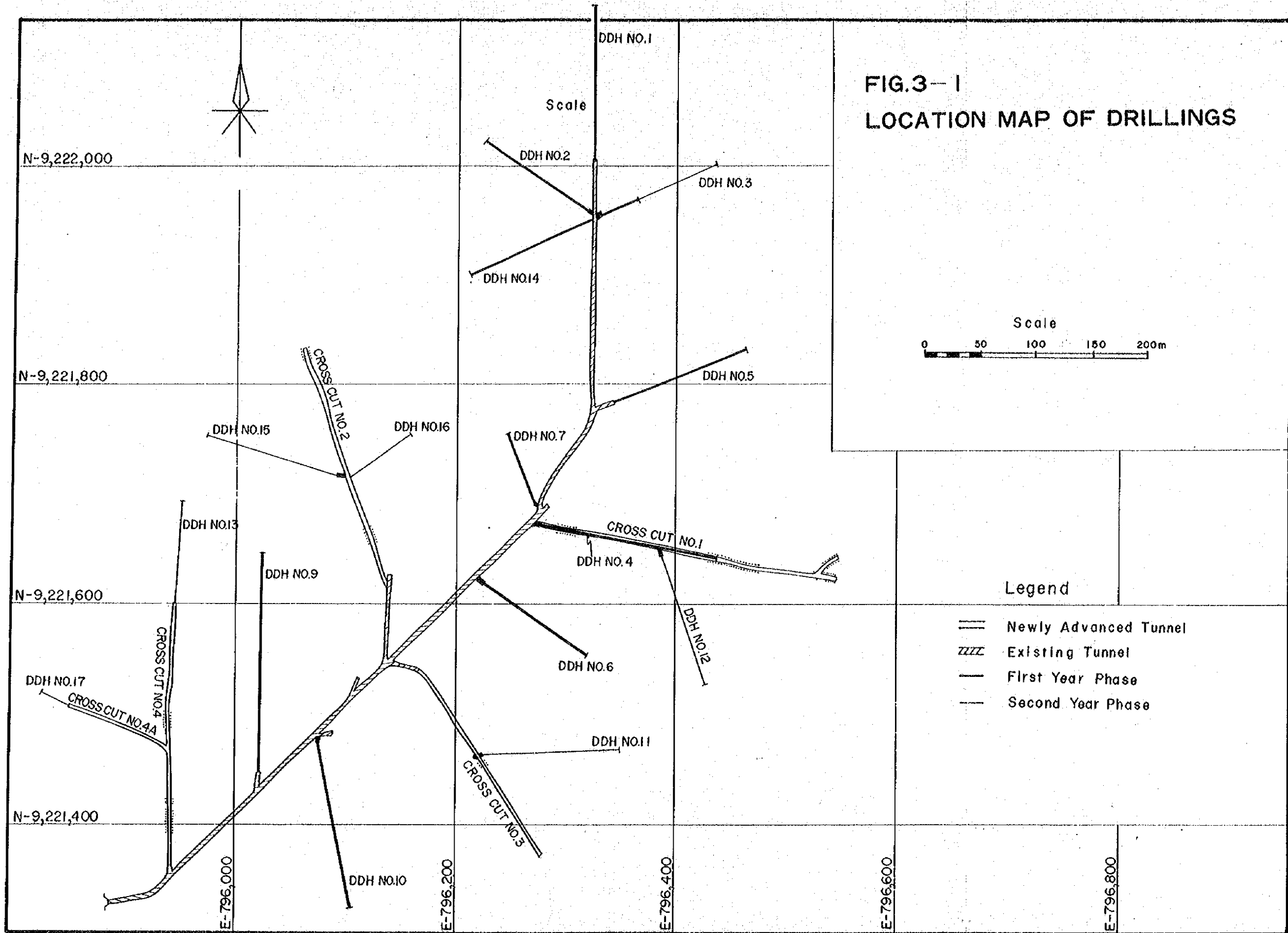
The works accomplished during the period of 285 days amounted to 16 holes of underground borings with the total drilled length of 1,893.72 meters and 4 surface borings with the total drilled length of 706.28 meters, the over-all advance being 2,600 meters. All the underground borings were drilled horizontally, and vertically in all the surface borings.

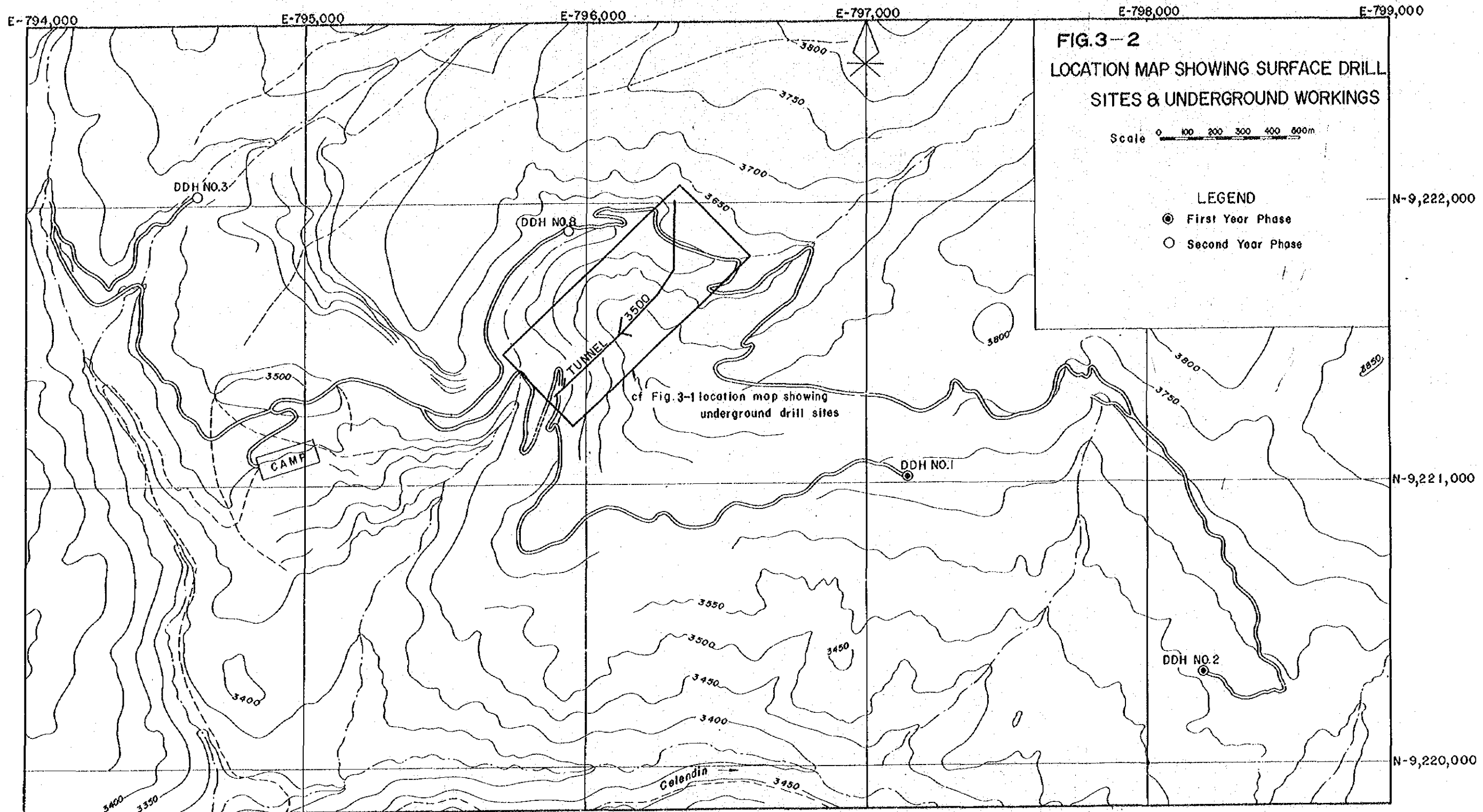
The works were done by the Peruvian supervisors and local laborers on two-shift basis under the guidance of these engineers from Minero Peru and from Japan. The technical training was also given to them.

The drilling equipments used were BDU-2 and JV-8 for the underground works and S-37A and S-17 for the surface. The drilling methods applied were the wire-line method as well as conventional ones.

The rate of works was aimed at 20 to 25 meters per day, but the abundance of gushing water and the frequent encounter of shattered zones in general allowed the average meterage per day only 8.10 meters at maximum and 2.00 meters at minimum, being caused by the quicker abrasion of drill rods, core barrels, and drill bits.







**FIG. 3-2**  
**LOCATION MAP SHOWING SURFACE DRILL**  
**SITES & UNDERGROUND WORKINGS**

Scale 0 100 200 300 400 500m

- LEGEND**
- First Year Phase
  - Second Year Phase

## Chapter 2 Technical Procedures and Equipments Used

As the technical procedures to be applied, the wire-line method was taken to be practiced, under the anticipation that the formation to be drilled was mostly monzonite porphyry as well as with the consideration of occasional encounters of argillized zones, shattered zones, and gushing water.

The types and specifications of the equipments used are shown on Table 2-1.

Table 3-1 Drilling Machines Used and Materials Consumed

A. Surface Drilling Machines; S-37A, S-17

| Item             | Model     | Quantity         | Capacity, Type, and Specification   |
|------------------|-----------|------------------|---|
| Drilling Machine | S-37A     | 1 set            | Capacity NX 400 m<br>Inner Diameter of Spindle 86 m/m<br>Weight (excl. engine) 1,200 kg |
| Drilling Machine | S-17      | 1 set            | Capacity NX 150 m<br>Inner Diameter of Spindle 48 m/m<br>Weight (excl. engine) 800 kg   |
| Drill Engine     | 2713 E    | 1 set            | Diesel Engine<br>1,250 rpm/55 HP ~ 2,500 rpm/96 HP                                      |
| Drill Engine     | 1564 E    | 1 set            | Diesel Engine<br>1,300 rpm/25 HP ~ 2,600 rpm/50 HP                                      |
| Pump             | BBP 25    | 1 set            | Capacity 40 l/min ~ 120 l/min   |
| Engine for Pump  | ES-785    | 1 set            | Diesel Engine 2,600 rpm/20 HP   |
| Generator        | GM-205B4M | 1 set            | 2.5 KVA 230 V 11 A  |
| Generator Engine |           | 1 set            | Gasoline Engine   |
| Derrick          |           | 1 set            | Steel-pipe Made, Tripod Type,<br>Height 9 m   |
| Mud Mixer        |           | 1 set            | Jet Type  |
| Rod Holder       |           | 1 set            |   |
| Drill Rods       |           | 65 pcs<br>80 pcs | NX 3.05 m<br>BX 3.05 m  |
| Casing Pipes     |           | 15 pcs<br>40 pcs | 114 m/m 3.05 m<br>NX 3.05 m<br>BX 3.05 m  |

B. Underground Drilling Machines; BBU-2, JV-8

| Item             | Model | Quantity | Capacity, Type, and Specification   |
|------------------|-------|----------|---|
| Drilling Machine | BBU-2 | 2 sets   | Capacity NX 240 m BX 300 m<br>Inner Diameter of Spindle 46 m/m<br>Weight 467 kg |
| Drilling Machine | JV-8  | 1 set    | Capacity NX 100 m BX 120 m<br>Inner Diameter of Spindle 46 m/m<br>Weight 247 kg |
| Motor            |       | 2 sets   | Built-in Air Motor<br>1,000 rpm/20 HP   |
| Motor            |       | 1 set    | Built-in Air Motor<br>1,000 rpm/10 HP   |
| Hoist            |       | 3 sets   | Built-in Hoist and Rod Puller   |
| Drill Rods       |       | 60 pcs   | NX 3.05 m   |
|                  |       | 80 pcs   | BX 3.05 m   |
|                  |       | 100 pcs  | 42 m/m 3.05 m   |
| Casing Pipes     |       | 40 pcs   | NX 3.05 m   |
|                  |       | 100 pcs  | BX 3.05 m   |

C. Supplies and Drill Parts Consumed

| Description          | Specification | Unit           | Quantity    |       |       |       |       |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       | Total  |
|----------------------|---------------|----------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
|                      |               |                | Underground |       |       |       |       |       |       |       |       |       | Surface |       |       |       |       |       |       |       |       |       |        |
|                      |               |                | No.1        | No.2  | No.3  | No.4  | No.5  | No.6  | No.7  | No.9  | No.10 | No.11 | No.12   | No.13 | No.14 | No.15 | No.16 | No.17 | No.1  | No.2  | No.3  | No.5  |        |
| Gasoline             |               | L              |             |       |       |       |       |       |       |       |       |       |         |       |       |       |       | 1,744 | 2,220 | 1,390 | 1,020 | 6,384 |        |
| Light Oil            |               | L              | 9,999       | 5,140 | 8,100 | 6,178 | 4,718 | 6,573 | 4,770 | 5,100 | 7,120 | 6,600 | 4,460   | 3,280 | 4,790 | 5,610 | 2,210 | 450   | 2,792 | 5,031 | 2,680 | 4,280 | 99,881 |
| Mobil Oil            |               | L              | 58          | 45    | 115   | 61    | 20    | 27    | 55    | 29    | 62    | 107   | 86      | 63    | 74    | 83    | 34    | 12    | 68    | 85    | 43    | 105   | 1,242  |
| Transmission Oil     |               | L              |             |       |       |       |       |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       | 18     |
| Grease               |               | kg             | 21          | 6     | 11    | 69    | 52    | 46    | 19    | 70    | 15    | 9     | 10      | 6     | 6     | 14    | 4     | 3     | 19    | 10    | 9     | 1     | 407    |
| Tricone Bit          | 3-7/8"        | pcs.           |             |       |       |       |       |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       | 1      |
| Tricone Bit          | 4-3/4"        | pcs.           |             |       |       |       |       |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       | 1      |
| Metal Crown          | MCD           | pcs.           |             |       |       |       | 1     | 1     | 1     |       |       |       |         |       |       |       |       |       |       |       |       |       | 4      |
| Diamond Bit          | MCD           | pcs.           |             |       |       | 1     | 1     |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       | 3      |
| Diamond Bit          | NX            | pcs.           | 10          | 4     | 5     | 3     | 6     | 3     | 4     | 6     | 4     | 5     | 4       | 3     | 5     | 1     | 1     | 1     | 12    | 9     | 6     | 6     | 100    |
| Diamond Bit          | BX            | pcs.           | 1           | 2     | 4     | 3     | 3     | 2     | 5     | 3     | 2     | 2     | 1       | 3     | 2     | 2     | 2     | 3     | 5     | 1     | 4     | 4     | 54     |
| Casing Shoe          | NX            | pcs.           | 1           | 1     | 1     | 1     |       |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       | 6      |
| Casing Shoe          | BX            | pcs.           |             |       |       |       |       |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       | 1      |
| Double Core Tube     | NX-NL         | set            | 1           | 1     | 1     | 1     | 1     | 2     | 1     | 1     | 1     | 1     | 1       | 1     | 1     | 1     | 1     | 2     | 1     | 1     | 1     | 1     | 19     |
| Double Core Tube     | BX-NL         | set            | 1           | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1       | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 17     |
| Subs, Rod Box to Pin | NX x 42 m/m   | pcs.           | 1           | 1     | 1     | 2     | 3     | 2     |       | 4     | 1     | 1     | 1       | 1     |       |       |       |       |       |       |       |       | 17     |
| Subs, Rod Box to Pin | BX x 42 m/m   | pcs.           | 1           | 1     | 1     | 1     | 2     | 1     |       | 3     | 1     | 1     | 1       | 1     | 1     | 1     | 1     | 1     |       |       |       |       | 12     |
| Core Lifter          | NX            | pcs.           | 3           | 2     | 2     | 4     | 3     | 2     | 2     | 3     | 2     | 2     | 3       | 3     | 2     | 1     | 1     | 1     | 4     | 5     | 3     | 3     | 51     |
| Core Lifter          | BX            | pcs.           | 1           | 1     | 2     | 2     | 2     | 1     | 2     | 2     | 1     | 1     | 2       | 1     | 2     | 1     | 1     | 2     | 4     | 1     | 3     | 3     | 31     |
| Core Lifter Case     | NX            | pcs.           | 3           | 2     | 2     | 2     | 3     | 2     | 2     | 3     | 2     | 2     | 3       | 2     | 1     | 2     | 1     | 1     | 3     | 5     | 3     | 3     | 47     |
| Core Lifter Case     | BX            | pcs.           | 1           | 1     | 2     | 2     | 2     | 1     | 2     | 2     | 1     | 1     | 2       | 1     | 1     | 1     | 1     | 2     | 4     | 1     | 3     | 3     | 31     |
| Nail                 | 150 m/m       | kg             | 2           | 1     | 4     | 1     | 2     | 1     | 3     | 2     | 3     | 2     | 3       | 1     | 3     | 1     | 1     | 1     | 5     | 5     | 5     | 5     | 53     |
| Wire Rope            | 5 m/m         | n              | 300         |       |       |       |       |       |       |       |       |       |         |       |       |       |       | 300   |       |       |       |       | 900    |
| Wire Rope            | 12 m/m        | n              |             |       |       |       |       |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       | 80     |
| Electric Bulb        | 220V x 60W    | pc             |             |       |       |       |       |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       | 42     |
| Board                |               | m <sup>2</sup> | 0.2         | 0.2   | 0.5   | 0.1   | 0.8   | 0.1   | 0.5   | 1     | 0.5   | 0.5   |         |       |       |       |       |       |       |       |       |       | 3.4    |
| Square Lumber        |               | m <sup>3</sup> | 0.1         |       |       | 0.1   |       | 0.1   |       | 0.5   |       |       |         |       |       |       |       |       |       |       |       |       | 3.3    |
| Log                  |               | m <sup>3</sup> |             |       |       |       |       |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       | 1.1    |
| Bentonite            |               | kg             |             |       |       |       |       |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       | 1.1    |
| Cement               |               | kg             |             |       |       |       |       |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       | 1,888  |
| Wire                 | #12           | kg             | 2           | 1     | 8     | 5     |       | 5     | 3     | 5     | 5     | 10    | 5       | 3     | 5     | 2     | 1     |       |       |       |       |       | 60     |
| Wire                 | #10           | kg             |             |       |       |       |       |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       | 61     |
| Carbide              |               | kg             | 250         | 200   | 160   | 200   | 200   | 200   | 100   | 250   | 150   | 130   | 140     | 115   | 80    | 115   | 70    | 25    |       |       |       |       | 2,385  |
| Quick Hardener       |               | can            |             |       |       |       |       |       |       |       |       |       |         |       |       |       |       |       |       |       |       |       | 4      |

## Chapter 3 Drilling Operation

### 3-1 Preparatory Works

The works were promoted to aim at the earlier attainment of the pre-arranged schedule for the works. At the moment when the access road to the drill site of the surface boring No. 1 was completed by the effort of Minero Peru, the transportation of the equipments and materials were begun by trucks.

At the same time, the equipments and supplies were begun to be transported to the scheduled drill site of underground No. 9, where the space for the immediate drilling could be secured in the existing tunnels.

Drilling water was supplied from the near-by streams or swamps in the surface boring, and from the near-by side ditches of the tunnel and partly from the water supply for rock drills in the underground boring.

The office and other facilities were availed by using in common what was provided for the tunnelling operation.

Table 3-2 Moving Operation

| Items       | Underground No. 1 |           | Underground No. 2 |           | Underground No. 3 |           | Underground No. 4 |           | Underground No. 5 |           | Underground No. 6 |           | Underground No. 7 |           | Underground No. 9 |           |
|-------------|-------------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|-----------|
|             | Days              | Manshifts | Days              | Manshifts | Days              | Manshifts | Days              | Manshifts | Days              | Manshifts | Days              | Manshifts | Days              | Manshifts | Days              | Manshifts |
| Preparation | Site Clearing     |           |                   |           | 1.0               | 7.0       |                   |           |                   |           |                   |           |                   |           | 3.0               | 12.0      |
|             | Transportation    | 0.5       | 3.0               | 0.5       | 3.0               |           |                   | 0.5       | 2.0               | 0.5       | 2.0               | 1.0       | 1.0               | 7.0       | 1.0               | 5.0       |
|             | Installation      | 1.0       | 5.0               | 1.0       | 5.0               | 1.0       | 7.5               | 0.5       | 2.0               | 0.5       | 2.0               | 2.0       | 1.0               | 7.0       | 2.0               | 10.0      |
|             | Water Piping      | 0.5       | 6.0               |           |                   |           |                   |           |                   | 0.5       | 2.0               |           |                   |           | 1.0               | 5.0       |
|             | Test Run & Others |           |                   | 0.5       | 2.0               |           |                   |           |                   | 0.5       | 2.0               |           |                   |           | 3.0               | 15.0      |
| Total       | 2.0               | 14.0      | 2.0               | 10.0      | 2.0               | 14.5      | 1.0               | 4.0       | 2.0               | 8.0       | 1.0               | 4.0       | 2.0               | 14.0      | 10.0              | 47.0      |
| Withdrawal  | Dismantling       | 1.0       | 5.0               | 1.0       | 4.0               | 1.0       | 5.0               | 1.0       | 4.0               | 1.0       | 4.0               | 1.0       | 1.0               | 6.0       | 1.0               | 7.0       |
|             | Removal of Piping |           |                   |           |                   |           |                   |           |                   |           |                   |           |                   |           |                   |           |
|             | Transportation    | 1.0       | 5.0               |           |                   | 1.0       | 6.0               |           |                   |           |                   |           |                   |           |                   |           |
|             | Others            |           |                   |           |                   |           |                   |           |                   |           |                   |           |                   |           |                   |           |
|             | Total             | 2.0       | 10.0              | 1.0       | 4.0               | 2.0       | 11.0              | 1.0       | 4.0               | 1.0       | 4.0               | 1.0       | 1.0               | 6.0       | 1.0               | 7.0       |
| Grand Total | 4.0               | 24.0      | 2.5               | 14.0      | 4.0               | 25.5      | 2.0               | 8.0       | 3.0               | 12.0      | 2.0               | 8.0       | 3.0               | 20.0      | 11.0              | 54.0      |



Moving Operation

| Items             | D D H No. | Underground No. 10 |           | Underground No. 11 |           | Underground No. 12 |           | Underground No. 13 |           | Underground No. 14 |           | Underground No. 15 |           | Underground No. 16 |           | Underground No. 17 |           |  |  |
|-------------------|-----------|--------------------|-----------|--------------------|-----------|--------------------|-----------|--------------------|-----------|--------------------|-----------|--------------------|-----------|--------------------|-----------|--------------------|-----------|--|--|
|                   |           | Days               | Manshifts | Days               | Manshifts | Days               | Manshifts | Days               | Manshifts | Days               | Manshifts | Days               | Manshifts | Days               | Manshifts | Days               | Manshifts |  |  |
| Preparation       |           |                    |           |                    |           |                    |           |                    |           |                    |           |                    |           |                    |           |                    |           |  |  |
| Site Clearing     |           |                    |           | 0.5                | 3.0       |                    |           |                    |           |                    |           |                    |           |                    |           |                    |           |  |  |
| Transportation    |           | 0.5                | 2.0       | 0.5                | 6.0       |                    |           | 0.3                | 2.5       |                    |           | 1.0                | 7.0       | 0.5                | 5.0       | 1.0                | 4.0       |  |  |
| Installation      |           | 2.5                | 8.0       | 1.0                | 6.0       | 1.0                | 10.0      | 0.2                | 2.5       | 1.0                | 3.0       | 0.5                | 4.0       | 0.5                | 4.0       | 1.0                | 7.0       |  |  |
| Water Piping      |           |                    |           |                    |           |                    |           |                    |           |                    |           |                    |           |                    |           |                    |           |  |  |
| Test Run & Others |           |                    |           |                    |           |                    |           |                    |           |                    |           |                    |           |                    |           |                    |           |  |  |
| Total             |           | 3.0                | 10.0      | 2.0                | 15.0      | 1.0                | 10.0      | 0.5                | 5.0       | 1.0                | 3.0       | 1.5                | 11.0      | 1.0                | 9.0       | 2.0                | 11.0      |  |  |
| Withdrawal        |           |                    |           |                    |           |                    |           |                    |           |                    |           |                    |           |                    |           |                    |           |  |  |
| Dismantling       |           |                    |           |                    |           |                    |           |                    |           |                    |           |                    |           |                    |           |                    |           |  |  |
| Removal of Piping |           | 1.0                | 3.0       | 3.0                | 17.0      | 0.5                | 3.0       | 1.0                | 8.0       | 1.0                | 4.0       | 1.0                | 5.0       | 1.0                | 4.0       | 1.0                | 10.0      |  |  |
| Transportation    |           |                    |           |                    |           |                    |           |                    |           |                    |           |                    |           |                    |           |                    |           |  |  |
| Others            |           |                    |           |                    |           |                    |           |                    |           |                    |           |                    |           |                    |           |                    |           |  |  |
| Total             |           | 1.0                | 3.0       | 3.0                | 17.0      | 0.5                | 3.0       | 1.0                | 8.0       | 1.0                | 4.0       | 1.0                | 5.0       | 1.0                | 4.0       | 1.0                | 10.0      |  |  |
| Grand Total       |           | 4.0                | 13.0      | 5.0                | 32.0      | 1.5                | 13.0      | 1.5                | 13.0      | 2.0                | 7.0       | 2.5                | 16.0      | 2.0                | 13.0      | 3.0                | 21.0      |  |  |

Moving Operation

| Items             | D D E No. | Surface No. 1 |           | Surface No. 2 |           | Surface No. 3 |           | Surface No. 8 |           |
|-------------------|-----------|---------------|-----------|---------------|-----------|---------------|-----------|---------------|-----------|
|                   |           | Days          | Manshifts | Days          | Manshifts | Days          | Manshifts | Days          | Manshifts |
| Site Clearing     |           |               |           |               |           |               |           | 2.0           | 11.0      |
| Transportation    |           | 2.0           | 8.0       | 0.5           | 4.0       | 2.0           | 17.0      |               |           |
| Installation      |           | 1.5           | 7.0       | 0.5           | 4.5       | 2.0           | 17.0      | 3.5           | 15.0      |
| Water Piping      |           | 0.5           | 2.0       |               |           |               |           | 0.5           | 7.0       |
| Test Run & Others |           |               |           |               |           |               |           |               |           |
| Total             |           | 4.0           | 17.0      | 1.0           | 8.5       | 4.0           | 34.0      | 6.0           | 33.0      |
| Dismantling       |           |               |           |               |           |               |           |               |           |
| Removal of Piping |           | 1.0           | 3.0       | 1.0           | 6.5       | 0.5           | 5.0       | 2.0           | 11.0      |
| Transportation    |           |               |           |               |           |               |           |               |           |
| Others            |           |               |           |               |           |               |           |               |           |
| Total             |           | 1.0           | 3.0       | 1.0           | 6.5       | 0.5           | 5.0       | 2.0           | 11.0      |
| Grand Total       |           | 5.0           | 20.0      | 2.0           | 15.0      | 4.5           | 39.0      | 8.0           | 44.0      |

### 3-2 Moving Operation

The moving operation required for each drill hole are shown on the attached Table 3-2.

### 3-3 Withdrawal Operation

Pulling-out of the casing pipes and removal of the drilling equipments were done right after the completion of No. 17 in the underground boring and immediately after the completion of No. 8 in the surface boring.

### 3-4 Progress Records (cf. Table 3-23)

The progress records of 17 underground drill holes and 4 in the surface borings are stated as follows; in which all the underground holes were drilled horizontally, and the surface holes vertically.

#### 3-4-1 Underground Drill Hole No. 1 (cf. Table 3-3, 3-24)

|                      |                |
|----------------------|----------------|
| Total Length Drilled | 144.38 meters  |
| Core Recovery        | 77.4%          |
| Direction of Hole    | N 0° 27' 51" E |

It was started by using NXC bits and the hole reached as far as 122 m. With the insertion of BX casings, the hole was extended till 144.38 m by using BXC bits. But the hole had to be abandoned at this advance, as it was found that the hole was severely caved and could not be advanced any farther.

Not only clay but also water caused frequent chokings of the hole, which naturally caused to lower the core recovery, and some device, such as to decrease the water feed, was tried but nothing proved to be the proper remedy.

3-4-2 Underground Drill Hole No. 2 (cf. Table 3-4, 3-25)

|                      |                 |
|----------------------|-----------------|
| Total Length Drilled | 116.19 meters   |
| Core Recovery        | 59.8%           |
| Direction of Hole    | N 54° 40' 11" W |

Being started by using NXC bits, the initial advance of 83.67 m was made, for which BX casings were inserted, and the hole was extended till 116.19 m by using BXC bits. But the hole had to be abandoned at this advance only, as it was made impossible for the hole to be drilled any farther, due to the increase of gushing water from 40 l/min to 80 l/min causing severe cavings of the hole. The core recovery was also extremely lowered by a shattered zone accompanying clay.

3-4-3 Underground Drill Hole No. 3 (cf. Table 3-5, 3-26)

|                      |                 |
|----------------------|-----------------|
| Total Length Drilled | 114.21 meters   |
| Core Recovery        | 76.9%           |
| Direction of Hole    | N 65° 43' 29" E |

The initial advance of 67.30 m was made by using NXC bits. After inserting BX casings to this depth, the hole was extended to 96.71 m by using BX bits. But the drilling was made impossible to proceed any farther due to a shattered zone with clay at about 71 m, which caused the cavings of the hole. Consequently, the hole was roamed by using BX casing shoe to 75.99 m, and after inserting BX casings, the hole was re-drilled to 114.21 m. But the hole was severely caved due to a shattered zone with clay encountered near 102 m. While the hole was cleaned up, it was found that the rods were jammed up at about 104 m, and the assembly was broken at the joint of BX rods and core barrel. Tapping was tried to recover them but ended in vain.

3-4-4 Underground Drill Hole No. 4 (cf. Table 3-6, 3-27)

|                      |               |
|----------------------|---------------|
| Total Length Drilled | 163.45 meters |
| Core Recovery        | 91.3%         |
| Direction of Hole    | S 78° E       |

The drilling was started by using NXC bits and reached as far as 98.50 m. Then, the hole was drilled by using BXC bits after inserting BX casings, and the advance was made as far as 163.45 m, when the BX casings were cut off near 25 m. Recovery of the broken casings was tried by reaming the hole with NCD bits (outer diameter, 92 m/m) for 25 m, but it ended unsuccessful, as the broken edge of the casing was not properly fished, being hampered by the severe cavings of the hole in a shattered zone with clay between 20 m to 40 m. Consequently the hole was abandoned.

3-4-5 Underground Drill Hole No. 5 (cf. Table 3-7, 3-28)

|                      |                 |
|----------------------|-----------------|
| Total Length Drilled | 120.90 meters   |
| Core Recovery        | 95%             |
| Direction of Hole    | N 67° 35' 38" E |

The drilling was initiated by using NXC bits for the advance of the first 90 m. Then, the advance was made as far as 129.90 m with BXC bits after inserting BX casings. But the drilling became impossible to make any more advance caused by the severe cavings around 125 m, which necessitated the extended insertion of BX casings as a remedy. In view of this, all the casings were pulled out and the hole was reamed with NXC bit. When the reaming reached to 109 m, the rods were cut off at about 30 m. In order to recover the remained rods, the reaming was replaced by NCD bit, but the broken edge was not fished successfully and thus the hole had to be abandoned.

3-4-6 Underground Drill Hole No. 6 (cf. Table 3-8, 3-29)

|                      |                 |
|----------------------|-----------------|
| Total Length Drilled | 115.75 meters   |
| Core Recovery        | 88%             |
| Direction of Hole    | S 55° 18' 52" E |

It was advanced as far as 115.75 m by using NXC bits, when the hole was caved severely and the advance was made impossible. While the hole was cleaned by NXC bit, the rods were jammed up near 113 m which caused the break-off the core barrel and core tube at their joint. The salvage was tried by taps but ended in vain as the caving was too severe. As an alternative, it was drilled inclined from about 112 m, but the joint of bit and core tube was broken near 114 m which was unable to be recovered, and thus the drilling had to be given up.

3-4-7 Underground Drill Hole No. 7 (cf. Table 3-9, 3-30)

|                      |                 |
|----------------------|-----------------|
| Total Length Drilled | 72.15 meters    |
| Core Recovery        | 60.1%           |
| Direction of Hole    | N 22° 22' 34" W |

The initial 30.63 m was drilled by using NXC bits, but as the advance was made impossible due to the severe cavings caused by a shattered zone with clay, the hole was cleaned up by NCD bit, but the bit was broken at 29.63 m. After salvaging the bit, the NCD casings were inserted as deep as 30.63 m, then the advance was made till 72.15 m. However, as it was found that a severe caving happened again near 38 m, the BX casings were inserted for 46.82 m and the advance was made to 72.15 m by BXC bits. Being caused by the repeated severe cavings occurred near 64 m, the hole was again tightly choked up and the advance was made impossible. In order to extend BX casings, all the pipes were pulled out and the hole was tried

to be reamed again, but the cavings occurred repeatedly near 58 m, and the hole had to be given up as the advance was made impossible.

3-4-8 Underground Drill Hole No. 9 (cf. Table 3-10, 3-31)

|                      |                |
|----------------------|----------------|
| Total Length Drilled | 200.00 meters  |
| Core Recovery        | 94.6%          |
| Direction of Hole    | N 0° 30' 41" E |

Being started by using NXC bits, the initial advance was made to 82 m. Then, the bit was replaced by BXC and the hole was extended till 90 m. Because of the severe cavings, the farther advance was made by using NXC bits again and reached to 102 m. Inserting BX casings thereon, the drilling was completed to the scheduled depth of 200 meters by using BXC bits.

3-4-9 Underground Drill Hole No. 10 (cf. Table 3-11, 3-32)

|                      |                 |
|----------------------|-----------------|
| Total Length Drilled | 154.96 meters   |
| Core Recovery        | 66.6%           |
| Direction of Hole    | S 10° 54' 40" E |

Drilling was commenced by using NXC bits, and the hole was advanced to 108.5 m, for which BX casings were inserted, and another advance was made to 154.96 m by using BXC bits. But the farther drilling had to be given up, as the amount of outcoming water was increased to about 100 l/min and the cavings became severe too, which made the insertion of the rods impossible.

3-4-10 Underground Drill Hole No. 11 (cf. Table 3-12, 3-33)

|                      |                 |
|----------------------|-----------------|
| Total Length Drilled | 126.52 meters   |
| Core Recovery        | 88.2%           |
| Direction of Hole    | N 87° 51' 17" E |

It was drilled to 92.26 m with NXC bits. Then, the BX casings were inserted and was drilled to 98.21 m by using BXC bits, but the drilling was made impossible due to the cavings near 95 m. At this moment, the casings were all pulled out so that the hole was reamed to 98.21 m by NXC bits. After inserting BX casings, the hole was advanced to 126.52 m with NXC bits. But the drilling had to be quitted at this advance, as the hole encountered a gougy zone near 119 m from which water was coming out at the rate of 20 l/min accompanying the cavings of the hole. While the reaming and cleaning of the hole were done alternatively whenever the rods were lowered, the hole was tightly choked up at last and was forced to be bandoned.

3-4-11 Underground Drill Hole No. 12 (cf. 3-13, 3-34)

|                      |                 |
|----------------------|-----------------|
| Total Length Drilled | 121.74 meters   |
| Core Recovery        | 86.8%           |
| Direction of Hole    | S 19° 10' 17" E |

It was drilled to 91.90 m with NXC bits. After inserting BX casings it was drilled with BXC bits to 121.74 m. But as it encountered a shattered zone about 108 m, which caused the severe cavings of the hole. While the hole was being cleaned, the joint between the rods and core barrel was broken and the assemblies of core tube and drill bit were left inside. Although they were tried to be recovered by tapping, the hole had to be abandoned without salvaging them because of the repeated cavings of the hole.

3-4-12 Underground Drill Hole No. 13 (cf. Table 3-14, 3-35)

|                      |                |
|----------------------|----------------|
| Total Length Drilled | 95.95 meters   |
| Core Recovery        | 73.5%          |
| Direction of Hole    | N 5° 15' 02" E |



It was drilled to 74.31 m with NXC bits, but in view of the severe cavings of the hole caused by a shattered zone encountered, BX casings were inserted and was advanced to 95.95 m with BXC bits. However, as the caving near 88 m made the rods unable to be taken down to the bottom, the casings were tried to be pulled out so that the BX casings were inserted deeper. But as it was found that the casings were in a condition of jamming due to the shattered zone, they were tried to be pulled out enforcively by means of a drive hammer. The hole was tried to be reamed by NXC bits, but the reaming was made difficult due to the severe cavings of the hole which occurred after the pulling out of the BX casings.

3-4-13 Underground Drill Hole No. 14 (cf. Table 3-15, 3-36)

|                      |                 |
|----------------------|-----------------|
| Total Length Drilled | 123.20 meters   |
| Core Recovery        | 78.3%           |
| Direction of Hole    | S 65° 36' 56" W |

The initial advance of 50.08 m was made by using NXC bits, for which BX casings were inserted, and then the hole was drilled to 123.30 m with BXC bits. But the farther advance was made impossible by the cavings of the hole which was caused by encountering water coming out at the rate of 200 l/min.

3-4-14 Underground Drill Hole No. 15 (cf. Table 3-16, 3-37)

|                      |                 |
|----------------------|-----------------|
| Total Length Drilled | 121.95 meters   |
| Core Recovery        | 78.9%           |
| Direction of Hole    | N 72° 47' 56" W |

The initial advance of 70.10 m was drilled by using NXC bits. After inserting BX casings, it was advanced to 121.95 m with BXC bits, but the hole was tightly choked up by the severe cavings of the hole, which caused the work quitted at this advance only.

3-4-15 Underground Drill Hole No. 16 (cf. Table 3-17, 3-38)

|                      |                 |
|----------------------|-----------------|
| Total Length Drilled | 67.67 meters    |
| Core Recovery        | 84.9%           |
| Direction of Hole    | N 55° 21' 00" E |

Being started by using NXC bits, it was advanced till 23.90 m, but the farther advance by NXC bits was made impossible due to the severe cavings of the hole as well as gushing water at the rate of 20 l/min from the point about 21 m. Then the farther advance was made by drilling with BXC bits to 67.67 m after inserting BX casings. In view of the severe cavings near 60.50 m, the casings were tried to be pulled out in order to extend the depth of their insertion, but it was found the casings were tightly jammed up and the farther drilling was found impossible.

3-4-16 Underground Drill Hole No. 17 (cf. Table 3-18, 3-39)

|                      |                 |
|----------------------|-----------------|
| Total Length Drilled | 25.70 meters    |
| Core Recovery        | 68.3%           |
| Direction of Hole    | N 70° 22' 56" W |

The drilling was completed by using NXC bits till the said advance.

3-4-17 Surface Drill Hole No. 1 (cf. Table 3-19, 3-40)

|                      |               |
|----------------------|---------------|
| Total Length Drilled | 200.00 meters |
| Core Recovery        | 90.5%         |

The drilling was started by using tricone bit of 3-7/8". After drilling for 3 meters with it, 114 m/m casings were inserted and the farther advance was made to 20.90 m with NCD bits, for which NX casings were inserted. Thence, the hole was advanced to 132.65 m by using NXC bits, but on account of the water escape and cavings of the hole caused by fractured shale, the BX casings were given to this portion and it was drilled as deep as 200 meters by using BXC bits.

3-4-18 Surface Drill Hole No. 2 (cf. Table 3-20, 3-41)

|                      |               |
|----------------------|---------------|
| Total Length Drilled | 150.55 meters |
| Core Recovery        | 81.8%         |

Drilling was started by using 3-7/8" tricone bits and the initial advance was made to 12.20 m, for which 114 m/m casings were inserted. Next advance was made by using NCD bits, and NX casings were inserted to 21.30 m. When the hole was drilled as deep as 35.80 m with NXC bits, it encountered a shattered zone, which caused so severe cavings that the assemblies were tightly jammed up. Although nothing was able to be pulled out, the rods only were recovered by blasting dynamite inside the rods. However, as the bit and core tube were still remaining in the hole, it was decided to drill a new hole.

In the renewed drilling, the first advance to 12.20 m was done by using 4-3/4" tricone bit with 114 m/m casings, and the next step was made to 17.95 m by using 3-7/8" tricone bit with NX casings. Drilling was continued to 21.30 m by NXC bits, but on account of severe cavings, NX casings were inserted to this depth after reaming the hole with NX casing shoe. To the depth of 57 m, drilling was done by NXC bits, but a shattered zone encountered caused severe cavings of the hole, for which cementation was given, and extended till the depth of 74 m by BXC bit to insert BX casings as deep as 67.50 m. As the farther insertion of the casings were found difficult, all the casings were once pulled out to be replaced as follows; 114 m/m casings to the depth of 20 m, NX casings to 55.95 m, and BX casings to 72.40 m. Then the drilling was proceeded as deep as 150.55 m. But the farther advance was made impossible due to the severe cavings happened near 120 m. While the hole was cleaned up,

the rods were cut off from the core barrel head, which made impossible for them to be recovered. Thus the hole had to be abandoned.

3-4-19 Surface Drill Hole No. 3 (cf. Table 3-21, 3-42)

|                      |               |
|----------------------|---------------|
| Total Length Drilled | 201.50 meters |
| Core Recovery        | 93.3%         |

The initial advance was made by using 4-3/4" tricone bits to 5.20 m with 114 m/m casings. The next advance to 97.90 m was made by using NXC bits, but as the caving was found in the shallow zone about 7 m deep, NX casings were inserted as deep as 14.50 m after reaming the hole with NX casing shoe. Then, the drilling was continued to the depth of 193.10 m with NXC bits, but as the caving was found near 190 m, BX casings were inserted. The hole was advanced farther to 196 m but the advance was made impossible due to the cavings caused by gougy shattered zone. In view of this, the BX casings were pulled out in order to ream the hole with NXC bits to the depth of 195.40 m, and the drilling was proceeded with BXC bits after inserting BX casings to the depth of 201.50 m and the work was completed.

Although it encountered water coming out at the rate of 60 ~ 100 l/min near 102 m, the work, generally speaking, was carried out rather smoothly being favored by less cavings.

3-4-20 Surface Drill Hole No. 8 (cf. 3-22, 3-43)

|                      |               |
|----------------------|---------------|
| Total Length Drilled | 154.23 meters |
| Core Recovery        | 70.4%         |

It was drilled to 3.05 m with 4-3/4" tricone bits, for which 114 m/m casings were inserted, and the NXC bits to 6.49 m. But the 114 m/m casings were pulled out due to cavings, and the hole was drilled as well as reamed

with tricone bits to 9.14 m, for which 114 m/m casings were inserted again. Next advance was made to 29.41 m with NXC bits, but on account of the severe cavings caused by a shattered zone, NX casings were inserted to this depth after reaming the hole with NX casing shoe. From here to 72.69 m, the advance was made with NXC bits by repeating the drilling cementations against the cavings for which BX casings were inserted. Then, the advance with insertion of BX casings was made to 105.77 m by repeating the drilling with BXC bits and reamings with BX casing shoe. When the advance was made to 154.23 m, the hole was choked up due to the severe cavings caused by a shattered zone near 135 m, which made the extension of BX casings very difficult and the drilling advance was practically made impossible. Thus, the work was quitted at this advance.

Summary Record of Drilling Results by Hole

Table 3-3 Underground NO.1

| DRILLING PERIODS     | TOTAL DAYS                             |                                | NET WORKING (DAYS)       |  | LAYOFFS   |                 | TOTAL MANSHIFTS                   |               |            |       |
|----------------------|--|--------------------------------|--------------------------|--|---|-----------------|-----------------------------------|---------------|------------|-------|
|                      | PREPARATION                            | 2                              | 2                        |  |   |                 | 14                                |               |            |       |
|                      | DRILLING                               | 39                             | 32                       |  | 7   |                 | 256                               |               |            |       |
|                      | REMOVING                               | 3                              | 2                        |  | 1   |                 | 10                                |               |            |       |
|                      | TOTAL                                  | 44                             | 36                       |  | 8   |                 | 280                               |               |            |       |
| DRILLED LENGTH       | PLANNED LENGTH                         | 200 <sup>m</sup>               |                          |  | CORE RECOVERY FOR EACH 100 <sup>m</sup> SECTION |                 |                                   |               |            |       |
|                      | INCREASE OR DECREASE IN DRILLED LENGTH | -55.62 <sup>m</sup>            | CORE LENGTH              | 111.73 <sup>m</sup>                    | DEPTH OF HOLE                                   | SECT - ION      | TOTAL                             | DEPTH OF HOLE | SECT - ION | TOTAL |
|                      | LENGTH DRILLED                         | 144.38 <sup>m</sup>            | CORE RECOVERY            | 77.4%                                  | 0 - 100 <sup>m</sup>                            | 80.1%           | 80.1%                             |               |            |       |
| WORKING TIME (HRS)   |  |                                |                          |  | 100 - 200 <sup>m</sup>                          | 71.1%           | 77.4%                             |               |            |       |
|                      | DRILLING                               | 222°25'                        | 30.1%                    | 28.8%                                  | 200 - 300 <sup>m</sup>                          |                 |                                   |               |            |       |
|                      | HOISTING & LOWERING RODS               | 86°35'                         | 11.7%                    | 11.2%                                  | EFFICIENCY OF DRILLING                          |                 |                                   |               |            |       |
|                      | HOISTING & LOWERING I.T.               | 137°00'                        | 18.6%                    | 17.8%                                  | 144.38 <sup>m</sup> /WORK PERIOD                |                 | 3.28 <sup>m</sup> /DAY            |               |            |       |
|                      | MISCELLANEOUS                          | 174°10'                        | 23.6%                    | 22.6%                                  | 144.38 <sup>m</sup> /WORKING DAYS               |                 | 4.01 <sup>m</sup> /DAY            |               |            |       |
|                      | REPAIRING                              | 21°20'                         | 2.9%                     | 2.8%                                   | 144.38 <sup>m</sup> /DRILLING PERIOD            |                 | 3.70 <sup>m</sup> /DAY            |               |            |       |
|                      | OTHERS                                 | 97°00'                         | 13.1%                    | 12.5%                                  | 144.38 <sup>m</sup> /NET DRILLING DAYS          |                 | 4.51 <sup>m</sup> /DAY            |               |            |       |
|                      | TOTAL                                  | 738°30'                        | 100 %                    | 95.7%                                  |   |                 |                                   |               |            |       |
|                      | REMOVING                               |                                |                          |  |   |                 |                                   |               |            |       |
|                      | PREPARATION                            | 24°00'                         |                          | 3.1%                                   |   |                 |                                   |               |            |       |
| MOVING               | 9°00'                                  |                                | 1.2%                     | TOTAL MANSHIFTS/144.38 <sup>m</sup>    |   | 194MANSHIFTS/10 |                                   |               |            |       |
| GRAND TOTAL          | 771°30'                                |                                | 100 %                    | DRILLING MANSHIFTS/144.38 <sup>m</sup> |   | 177MANSHIFTS/m  |                                   |               |            |       |
| CASING PIPE INSERTED | PIPE SIZE & METERAGE INSERTED          | INSERTED LENGTH DRILLED LENGTH | RECOVERY OF CASING PIPES |  | TIMES OF HOISTING & LOWERING RODS               |                 | TIMES OF HOISTING & LOWERING I.T. |               |            |       |
|                      | BX 122.00 <sup>m</sup>                 | 84.5%                          | 100%                     |  | 92  |                 | 198                               |               |            |       |
|                      |  |                                |                          |  | REMARKS   |                 |                                   |               |            |       |

Summary Record of Drilling Results by Hole

Table 3-4 Underground NO.2

| DRILLING PERIODS     |  |             | TOTAL DAYS                     | NET WORKING (DAYS) | LAYOFFS   | TOTAL MANSHIFTS                        |                                     |                                   |                        |                  |       |  |
|----------------------|--|-------------|--------------------------------|--------------------|---|--|-------------------------------------|-----------------------------------|------------------------|------------------|-------|--|
|                      | PREPARATION                            |             | 2                              | 2                  |   | 10                                     |                                     |                                   |                        |                  |       |  |
|                      | DRILLING                               |             | 19                             | 17                 | 2   | 111                                    |                                     |                                   |                        |                  |       |  |
|                      | REMOVING                               |             | 1                              | 1                  |   | 4                                      |                                     |                                   |                        |                  |       |  |
|                      | TOTAL                                  |             | 22                             | 20                 | 2   | 125                                    |                                     |                                   |                        |                  |       |  |
| DRILLED LENGTH       | PLANNED LENGTH                         |             | 200 <sup>m</sup>               |                    | CORE RECOVERY FOR EACH 100 <sup>m</sup> SECTION |  |                                     |                                   |                        |                  |       |  |
|                      | INCREASE OR DECREASE IN DRILLED LENGTH |             | -838.1 <sup>m</sup>            | CORE LENGTH        | 69.5 <sup>m</sup>                               | DEPTH OF HOLE                          | SECT - ION                          | TOTAL                             | DEPTH OF HOLE          | SECT - ION       | TOTAL |  |
|                      | LENGTH DRILLED                         |             | 116.19 <sup>m</sup>            | CORE RECOVERY      | 59.8%   | 0 - 100 <sup>m</sup>                   | 63.4%                               | 63.4%                             |                        |                  |       |  |
|                      |  |             |                                |                    |   | 100 - 200 <sup>m</sup>                 | 33.6%                               | 59.8%                             |                        |                  |       |  |
| WORKING TIME (HRS)   | DRILLING                               |             | 93°10'                         | 23.6%              | 22.9%   | 200 - 300 <sup>m</sup>                 |                                     |                                   |                        |                  |       |  |
|                      | HOISTING & LOWERING RODS               |             | 152°40'                        | 38.8%              | 37.6%   | EFFICIENCY OF DRILLING                 |                                     |                                   |                        |                  |       |  |
|                      | HOISTING & LOWERING I.T.               |             |                                |                    |   |  |                                     |                                   |                        |                  |       |  |
|                      | MISCELLANEOUS                          |             | 94°10'                         | 23.9%              | 23.2%   | 116.19 <sup>m</sup> /WORK PERIOD       |                                     |                                   | 5.28 <sup>m</sup> /DAY |                  |       |  |
|                      | REPAIRING                              |             | 12°30'                         | 3.2%               | 3.1%  | 116.19 <sup>m</sup> /WORKING DAYS      |                                     |                                   | 5.81 <sup>m</sup> /DAY |                  |       |  |
|                      | OTHERS                                 |             | 41°30'                         | 10.5%              | 10.2%   | 116.19 <sup>m</sup> /DRILLING PERIOD   |                                     |                                   | 6.12 <sup>m</sup> /DAY |                  |       |  |
|                      | TOTAL                                  |             | 394°00'                        | 100%               | 97.0%   | 116.19 <sup>m</sup> /NET DRILLING DAYS |                                     |                                   | 6.83 <sup>m</sup> /DAY |                  |       |  |
|                      | REMOVING                               | PREPARATION |                                | 8°00'              |   | 2.0%                                   |                                     |                                   |                        |                  |       |  |
|                      |  | MOVING      |                                | 1°00'              |   | 1.0%                                   | TOTAL MANSHIFTS/116.19 <sup>m</sup> |                                   |                        | 1.08 MANSHIFTS/m |       |  |
|                      | GRAND TOTAL                            |             | 406°00'                        |                    | 100%  | DRILLING MANSHIFTS/116.19 <sup>m</sup> |                                     |                                   | 0.96 MANSHIFTS/m       |                  |       |  |
| CASING PIPE INSERTED | PIPE SIZE & METERAGE INSERTED          |             | INSERTED LENGTH DRILLED LENGTH |                    | RECOVERY OF CASING PIPES                        | TIMES OF HOISTING & LOWERING RODS      |                                     | TIMES OF HOISTING & LOWERING I.T. |                        |                  |       |  |
|                      | BX 83.67 <sup>m</sup>                  |             | 72.0%                          |                    | 100%  | 181                                    |                                     |                                   |                        |                  |       |  |
|                      |  |             |                                |                    |   | REMARKS                                |                                     |                                   |                        |                  |       |  |

Summary Record of Drilling Results by Hole

Table 3-5 Underground NO.3

| DRILLING PERIODS     | TOTAL DAYS                             |                                | NET WORKING (DAYS)       |                                       | LAYOFFS   |            | TOTAL MANSHIFTS                   |                        |            |       |
|----------------------|--|--------------------------------|--------------------------|---------------------------------------|---|------------|-----------------------------------|------------------------|------------|-------|
|                      | PREPARATION                            | 2                              | 2                        |                                       |   |            | 14.5                              |                        |            |       |
|                      | DRILLING                               | 53                             | 33                       |                                       | 46  |            | 221.5                             |                        |            |       |
|                      | REMOVING                               | 2                              | 2                        |                                       |   |            | 11                                |                        |            |       |
| TOTAL                | 57                                     | 37                             |                          | 46                                    |   | 247        |                                   |                        |            |       |
| DRILLED LENGTH       | PLANNED LENGTH                         | 200 <sup>m</sup>               |                          |                                       | CORE RECOVERY FOR EACH 100 <sup>m</sup> SECTION |            |                                   |                        |            |       |
|                      | INCREASE OR DECREASE IN DRILLED LENGTH | -85.79 <sup>m</sup>            | CORE LENGTH              | 87.87 <sup>m</sup>                    | DEPTH OF HOLE                                   | SECT - ION | TOTAL                             | DEPTH OF HOLE          | SECT - ION | TOTAL |
|                      | LENGTH DRILLED                         | 114.21 <sup>m</sup>            | CORE RECOVERY            | 76.9%                                 | 0 - 100 <sup>m</sup>                            | 77.6%      | 77.6%                             |                        |            |       |
| WORKING TIME (HRS)   |  |                                |                          |                                       | 100 - 200 <sup>m</sup>                          | 72.3%      | 76.9%                             |                        |            |       |
|                      | DRILLING                               | 72°10'                         | 11.2%                    | 10.5%                                 | 200 - 300 <sup>m</sup>                          |            |                                   |                        |            |       |
|                      | HOISTING & LOWERING RODS               | 172°25'                        | 26.7%                    | 25.1%                                 | EFFICIENCY OF DRILLING                          |            |                                   |                        |            |       |
|                      | HOISTING & LOWERING I.T.               |                                |                          |                                       |   |            |                                   |                        |            |       |
|                      | MISCELLANEOUS                          | 257°55'                        | 40.0%                    | 37.6%                                 | 114.21 <sup>m</sup> /WORK PERIOD                |            |                                   | 2.00 <sup>m</sup> /DAY |            |       |
|                      | REPAIRING                              | 70°00'                         | 10.9%                    | 10.2%                                 | 114.21 <sup>m</sup> /WORKING DAYS               |            |                                   | 3.09 <sup>m</sup> /DAY |            |       |
|                      | OTHERS                                 | 72°00'                         | 11.2%                    | 10.5%                                 | 114.21 <sup>m</sup> /DRILLING PERIOD            |            |                                   | 2.15 <sup>m</sup> /DAY |            |       |
|                      | TOTAL                                  | 644°30'                        | 100 %                    | 93.9%                                 | 114.21 <sup>m</sup> /NET DRILLING DAYS          |            |                                   | 3.46 <sup>m</sup> /DAY |            |       |
|                      | REMOVING                               | PREPARATION                    | 35°30'                   |                                       | 5.2%  |            |                                   |                        |            |       |
|                      | MOVING                                 | 6°00'                          |                          | 0.9%                                  | TOTAL MANSHIFTS/11421 <sup>m</sup>              |            |                                   | 2.16 MANSHIFTS/m       |            |       |
| GRAND TOTAL          | 686°00'                                |                                | 100 %                    | DRILLING MANSHIFTS/11421 <sup>m</sup> |   |            | 194 MANSHIFTS/m                   |                        |            |       |
| CASING PIPE INSERTED | PIPE SIZE & METERAGE INSERTED          | INSERTED LENGTH DRILLED LENGTH | RECOVERY OF CASING PIPES |                                       | TIMES OF HOISTING & LOWERING RODS               |            | TIMES OF HOISTING & LOWERING I.T. |                        |            |       |
|                      | NX 26.60 <sup>m</sup>                  | 23.3%                          | 100%                     |                                       | 183   |            |                                   |                        |            |       |
|                      | BX 75.99 <sup>m</sup>                  | 66.5%                          | 100%                     |                                       | REMARKS   |            |                                   |                        |            |       |



Summary Record of Drilling Results by Hole

Table 3-6 Underground NO.4

| DRILLING PERIODS     | TOTAL DAYS                             |                                | NET WORKING (DAYS)       |                                       | LAYOFFS   |            | TOTAL MANSHIFTS                   |                        |            |       |
|----------------------|--|--------------------------------|--------------------------|---------------------------------------|---|------------|-----------------------------------|------------------------|------------|-------|
|                      | PREPARATION                            | 1                              | 1                        |                                       |   | 4          |                                   |                        |            |       |
|                      | DRILLING                               | 40                             | 36                       |                                       | 4   | 244        |                                   |                        |            |       |
|                      | REMOVING                               | 1                              | 1                        |                                       |   | 4          |                                   |                        |            |       |
| TOTAL                | 42                                     | 38                             |                          | 4                                     | 252   |            |                                   |                        |            |       |
| DRILLED LENGTH       | PLANNED LENGTH                         | 200m                           |                          |                                       | CORE RECOVERY FOR EACH 100 <sup>m</sup> SECTION |            |                                   |                        |            |       |
|                      | INCREASE OR DECREASE IN DRILLED LENGTH | -36.5m                         | CORE LENGTH              | 149.20m                               | DEPTH OF HOLE                                   | SECT - ION | TOTAL                             | DEPTH OF HOLE          | SECT - ION | TOTAL |
|                      | LENGTH DRILLED                         | 163.45m                        | CORE RECOVERY            | 91.3%                                 | 0 - 100 <sup>m</sup>                            | 94.0%      | 94.0%                             |                        |            |       |
|                      |  |                                |                          |                                       | 100 - 200 <sup>m</sup>                          | 87.1%      | 91.3%                             |                        |            |       |
| WORKING TIME (HRS)   | DRILLING                               | 158 <sup>00</sup> '            | 25.7%                    | 24.8%                                 | 200 - 300 <sup>m</sup>                          |            |                                   |                        |            |       |
|                      | HOISTING & LOWERING RODS               | 194 <sup>20</sup> '            | 31.5%                    | 30.4%                                 |   |            |                                   |                        |            |       |
|                      | HOISTING & LOWERING I.T.               |                                |                          |                                       | EFFICIENCY OF DRILLING                          |            |                                   |                        |            |       |
|                      | MISCELLANEOUS                          | 115 <sup>00</sup> '            | 18.7%                    | 18.0%                                 | 163.45 <sup>m</sup> /WORK PERIOD                |            |                                   | 3.89 <sup>m</sup> /DAY |            |       |
|                      | REPAIRING                              | 73 <sup>45</sup> '             | 12.0%                    | 11.5%                                 | 163.45 <sup>m</sup> /WORKING DAYS               |            |                                   | 4.30 <sup>m</sup> /DAY |            |       |
|                      | OTHERS                                 | 74 <sup>45</sup> '             | 12.1%                    | 11.7%                                 | 163.45 <sup>m</sup> /DRILLING PERIOD            |            |                                   | 4.09 <sup>m</sup> /DAY |            |       |
|                      | TOTAL                                  | 616 <sup>00</sup> '            | 100%                     | 96.4%                                 | 163.45 <sup>m</sup> /NET DRILLING DAYS          |            |                                   | 4.54 <sup>m</sup> /DAY |            |       |
|                      | REMOVING                               | 15 <sup>00</sup> '             |                          | 2.3%                                  |   |            |                                   |                        |            |       |
|                      | MOVING                                 | 8 <sup>00</sup> '              |                          | 1.3%                                  | TOTAL MANSHIFTS/16345 <sup>m</sup>              |            |                                   | 154MANSHIFTS/m         |            |       |
| GRAND TOTAL          | 639 <sup>00</sup> '                    |                                | 100%                     | DRILLING MANSHIFTS/16345 <sup>m</sup> |   |            | 149MANSHIFTS/m                    |                        |            |       |
| CASING PIPE INSERTED | PIPE SIZE & METERAGE INSERTED          | INSERTED LENGTH DRILLED LENGTH | RECOVERY OF CASING PIPES |                                       | TIMES OF HOISTING & LOWERING RODS               |            | TIMES OF HOISTING & LOWERING I.T. |                        |            |       |
|                      | BX 95.80 <sup>m</sup>                  | 58.6%                          | 74%                      |                                       | 164   |            |                                   |                        |            |       |
|                      |  |                                |                          |                                       | REMARKS   |            |                                   |                        |            |       |

Summary Record of Drilling Results by Hole

Table 3-7 Underground NO.5

| DRILLING PERIODS     |  |                                | TOTAL DAYS               | NET WORKING (DAYS)  | LAYOFFS   | TOTAL MANSHIFTS                       |                                   |                |            |       |  |
|----------------------|--|--------------------------------|--------------------------|---------------------|---|---------------------------------------|-----------------------------------|----------------|------------|-------|--|
|                      | PREPARATION                            |                                | 3                        | 2                   | 1   | 8                                     |                                   |                |            |       |  |
|                      | DRILLING                               |                                | 57                       | 42                  | 15  | 255                                   |                                   |                |            |       |  |
|                      | REMOVING                               |                                | 1                        | 1                   |   | 4                                     |                                   |                |            |       |  |
|                      | TOTAL                                  |                                | 61                       | 45                  | 16  | 267                                   |                                   |                |            |       |  |
| DRILLED LENGTH       | PLANNED LENGTH                         | 200 <sup>m</sup>               |                          |                     | CORE RECOVERY FOR EACH 100 <sup>m</sup> SECTION |                                       |                                   |                |            |       |  |
|                      | INCREASE OR DECREASE IN DRILLED LENGTH | -70.10 <sup>m</sup>            | CORE LENGTH              | 123.45 <sup>m</sup> | DEPTH OF HOLE                                   | SECT - ION                            | TOTAL                             | DEPTH OF HOLE  | SECT - ION | TOTAL |  |
|                      | LENGTH DRILLED                         | 129.90 <sup>m</sup>            | CORE RECOVERY            | 95.0%               | 0 - 100 <sup>m</sup>                            | 96.3%                                 | 96.3%                             |                |            |       |  |
|                      |  |                                |                          |                     | 100 - 200 <sup>m</sup>                          | 90.4%                                 | 95.0%                             |                |            |       |  |
| WORKING TIME (HRS)   | DRILLING                               | 96 <sup>25</sup> '             | 15.6%                    | 15.2%               | 200 - 300 <sup>m</sup>                          |                                       |                                   |                |            |       |  |
|                      | HOISTING & LOWERING RODS               | 156 <sup>35</sup> '            | 25.4%                    | 24.7%               |   |                                       |                                   |                |            |       |  |
|                      | HOISTING & LOWERING I.T.               |                                |                          |                     |   | EFFICIENCY OF DRILLING                |                                   |                |            |       |  |
|                      | MISCELLANEOUS                          | 158 <sup>00</sup> '            | 25.6%                    | 24.9%               | 129.90 <sup>m</sup> /WORK PERIOD                |                                       | 2.13 <sup>m</sup> /DAY            |                |            |       |  |
|                      | REPAIRING                              | 91 <sup>00</sup> '             | 14.8%                    | 14.4%               | 129.90 <sup>m</sup> /WORKING DAYS               |                                       | 2.89 <sup>m</sup> /DAY            |                |            |       |  |
|                      | OTHERS                                 | 114 <sup>30</sup> '            | 18.6%                    | 18.1%               | 129.90 <sup>m</sup> /DRILLING PERIOD            |                                       | 2.28 <sup>m</sup> /DAY            |                |            |       |  |
|                      | TOTAL                                  | 616 <sup>30</sup> '            | 100 %                    | 97.3%               | 129.90 <sup>m</sup> /NET DRILLING DAYS          |                                       | 3.09 <sup>m</sup> /DAY            |                |            |       |  |
|                      | REMOVING                               | PREPARATION                    | 11 <sup>00</sup> '       |                     | 1.7%  |                                       |                                   |                |            |       |  |
|                      |  | MOVING                         | 6 <sup>00</sup> '        |                     | 1.0%  | TOTAL MANSHIFTS/129.90 <sup>m</sup>   |                                   | 206MANSHIFTS/m |            |       |  |
|                      |  | GRAND TOTAL                    | 633 <sup>30</sup> '      |                     | 100 %   | DRILLING MANSHIFTS/12990 <sup>m</sup> |                                   | 196MANSHIFTS/m |            |       |  |
| CASING PIPE INSERTED | PIPE SIZE & METERAGE INSERTED          | INSERTED LENGTH DRILLED LENGTH | RECOVERY OF CASING PIPES |                     | TIMES OF HOISTING & LOWERING RODS               |                                       | TIMES OF HOISTING & LOWERING I.T. |                |            |       |  |
|                      | BX 90.00 <sup>m</sup>                  | 69.3%                          | 67%                      |                     | 151   |                                       |                                   |                |            |       |  |
|                      |  |                                |                          |                     | REMARKS   |                                       |                                   |                |            |       |  |

Summary Record of Drilling Results by Hole

Table 3-8 Underground NO.6

| DRILLING PERIODS     | TOTAL DAYS                             |                                | NET WORKING (DAYS)                              |                     | LAYOFFS                                |            | TOTAL MANSHIFTS                   |               |            |       |
|----------------------|--|--------------------------------|---|---------------------|--|------------|-----------------------------------|---------------|------------|-------|
|                      | PREPARATION                            | 2                              | 1   | 1                   | 1                                      | 4          |                                   |               |            |       |
|                      | DRILLING                               | 33                             | 29  | 4                   | 202                                    |            |                                   |               |            |       |
|                      | REMOVING                               | 1                              | 1   |                     | 4                                      |            |                                   |               |            |       |
|                      | TOTAL                                  | 36                             | 31  | 5                   | 210                                    |            |                                   |               |            |       |
| DRILLED LENGTH       | PLANNED LENGTH                         | 200m                           | CORE RECOVERY FOR EACH 100 <sup>m</sup> SECTION |                     |  |            |                                   |               |            |       |
|                      | INCREASE OR DECREASE IN DRILLED LENGTH | -84.25 <sup>m</sup>            | CORE LENGTH                                     | 101.90 <sup>m</sup> | DEPTH OF HOLE                          | SECT - ION | TOTAL                             | DEPTH OF HOLE | SECT - ION | TOTAL |
|                      | LENGTH DRILLED                         | 115.75 <sup>m</sup>            | CORE RECOVERY                                   | 88.0%               | 0 - 100 <sup>m</sup>                   | 91.9%      | 91.9%                             |               |            |       |
|                      |  |                                |   |                     | 100 - 200 <sup>m</sup>                 | 58.3%      | 88.0%                             |               |            |       |
| WORKING TIME (HRS)   | DRILLING                               | 122°25'                        | 23.1%   | 22.4%               | 200 - 300 <sup>m</sup>                 |            |                                   |               |            |       |
|                      | HOISTING & LOWERING RODS               | 143°25'                        | 27.0%   | 26.2%               | EFFICIENCY OF DRILLING                 |            |                                   |               |            |       |
|                      | HOISTING & LOWERING I.T.               |                                |   |                     |  |            |                                   |               |            |       |
|                      | MISCELLANEOUS                          | 87°30'                         | 16.5%   | 16.0%               | 115.75 <sup>m</sup> /WORK PERIOD       |            | 3.21 <sup>m</sup> /DAY            |               |            |       |
|                      | REPAIRING                              | 107°10'                        | 20.2%   | 19.6%               | 115.75 <sup>m</sup> /WORKING DAYS      |            | 3.73 <sup>m</sup> /DAY            |               |            |       |
|                      | OTHERS                                 | 70°30'                         | 13.2%   | 12.8%               | 115.75 <sup>m</sup> /DRILLING PERIOD   |            | 3.51 <sup>m</sup> /DAY            |               |            |       |
|                      | TOTAL                                  | 531°00'                        | 100%  | 97.0%               | 115.75 <sup>m</sup> /NET DRILLING DAYS |            | 3.99 <sup>m</sup> /DAY            |               |            |       |
|                      | REMOVING PREPARATION                   | 8°00'                          |   | 1.5%                |  |            |                                   |               |            |       |
|                      | MOVING                                 | 8°00'                          |   | 1.5%                | TOTAL MANSHIFTS/115.75 <sup>m</sup>    |            | 181MANSHIFTS/m                    |               |            |       |
|                      | GRAND TOTAL                            | 547°00'                        |   | 100%                | DRILLING MANSHIFTS/115.75 <sup>m</sup> |            | 1.75MANSHIFTS/m                   |               |            |       |
| CASING PIPE INSERTED | PIPE SIZE & METERAGE INSERTED          | INSERTED LENGTH DRILLED LENGTH | RECOVERY OF CASING PIPES                        |                     | TIMES OF HOISTING & LOWERING RODS      |            | TIMES OF HOISTING & LOWERING I.T. |               |            |       |
|                      | BX 113 <sup>m</sup>                    | 97.6%                          | 100%  |                     | 116                                    |            |                                   |               |            |       |
|                      |  |                                |   |                     | REMARKS                                |            |                                   |               |            |       |

Summary Record of Drilling Results by Hole

Table 3-9 Underground NO.7

| DRILLING PERIODS     | TOTAL DAYS                             |                                | NET WORKING (DAYS)       |                                       | LAYOFFS   |            | TOTAL MANSHIFTS                   |                        |            |       |
|----------------------|--|--------------------------------|--------------------------|---------------------------------------|---|------------|-----------------------------------|------------------------|------------|-------|
|                      | PREPARATION                            | 2                              | 2                        |                                       |   |            | 14                                |                        |            |       |
|                      | DRILLING                               | 28                             | 24                       |                                       | 4   |            | 165                               |                        |            |       |
|                      | REMOVING                               | 1                              | 1                        |                                       |   |            | 6                                 |                        |            |       |
| TOTAL                | 31                                     | 27                             |                          | 4                                     |   | 185        |                                   |                        |            |       |
| DRILLED LENGTH       | PLANNED LENGTH                         | 200 <sup>m</sup>               |                          |                                       | CORE RECOVERY FOR EACH 100 <sup>m</sup> SECTION |            |                                   |                        |            |       |
|                      | INCREASE OR DECREASE IN DRILLED LENGTH | -127.85 <sup>m</sup>           | CORE LENGTH              | 43.39 <sup>m</sup>                    | DEPTH OF HOLE                                   | SECT - ION | TOTAL                             | DEPTH OF HOLE          | SECT - ION | TOTAL |
|                      | LENGTH DRILLED                         | 72.15 <sup>m</sup>             | CORE RECOVERY            | 60.1%                                 | 0 - 100 <sup>m</sup>                            | 60.1%      | 60.1%                             |                        |            |       |
| WORKING TIME (HRS)   | DRILLING                               | 44 <sup>25</sup> '             | 8.3%                     | 8.0%                                  |   |            |                                   |                        |            |       |
|                      | HOISTING & LOWERING RODS               | 95 <sup>30</sup> '             | 17.9%                    | 17.1%                                 | 100 - 200 <sup>m</sup>                          |            |                                   |                        |            |       |
|                      | HOISTING & LOWERING I.T.               | 9 <sup>50</sup> '              | 1.9%                     | 1.8%                                  | 200 - 300 <sup>m</sup>                          |            |                                   |                        |            |       |
|                      | MISCELLANEOUS                          | 175 <sup>45</sup> '            | 33.0%                    | 31.5%                                 | EFFICIENCY OF DRILLING                          |            |                                   |                        |            |       |
|                      | REPAIRING                              | 153 <sup>00</sup> '            | 28.7%                    | 27.4%                                 | 72.15 <sup>m</sup> /WORK PERIOD                 |            |                                   | 2.33 <sup>m</sup> /DAY |            |       |
|                      | OTHERS                                 | 54 <sup>00</sup> '             | 10.2%                    | 9.7%                                  | 72.15 <sup>m</sup> /WORKING DAYS                |            |                                   | 2.67 <sup>m</sup> /DAY |            |       |
|                      | TOTAL                                  | 533 <sup>00</sup> '            | 100%                     | 95.5%                                 | 72.15 <sup>m</sup> /DRILLING PERIOD             |            |                                   | 2.58 <sup>m</sup> /DAY |            |       |
|                      | REMOVING - PREPARATION                 | 20 <sup>00</sup> '             |                          | 3.6%                                  | 72.15 <sup>m</sup> /NET DRILLING DAYS           |            |                                   | 3.01 <sup>m</sup> /DAY |            |       |
|                      | MOVING                                 | 5 <sup>00</sup> '              |                          | 0.9%                                  | TOTAL MANSHIFTS/72.15 <sup>m</sup>              |            |                                   | 256 MANSHIFTS/m        |            |       |
| GRAND TOTAL          | 558 <sup>00</sup> '                    |                                | 100%                     | DRILLING MANSHIFTS/72.15 <sup>m</sup> |   |            | 2.20 MANSHIFTS/m                  |                        |            |       |
| CASING PIPE INSERTED | PIPE SIZE & METERAGE INSERTED          | INSERTED LENGTH DRILLED LENGTH | RECOVERY OF CASING PIPES |                                       | TIMES OF HOISTING & LOWERING RODS               |            | TIMES OF HOISTING & LOWERING I.T. |                        |            |       |
|                      | NX 28.10 <sup>m</sup>                  | 38.9%                          | 100%                     |                                       | 111   |            | 21                                |                        |            |       |
|                      | BX 41.20 <sup>m</sup>                  | 57.1%                          | 100%                     |                                       | REMARKS   |            |                                   |                        |            |       |

Summary Record of Drilling Results by Hole

Table 3-10 Underground NO.9

| DRILLING PERIODS     |  |             | TOTAL DAYS                     | NET WORKING (DAYS)       | LAYOFFS   | TOTAL MANSHIFTS                     |                                  |       |                                   |                  |       |  |
|----------------------|--|-------------|--------------------------------|--------------------------|---|-------------------------------------|----------------------------------|-------|-----------------------------------|------------------|-------|--|
|                      | PREPARATION                            |             | 11                             | 10                       | 1   | 47                                  |                                  |       |                                   |                  |       |  |
|                      | DRILLING                               |             | 51                             | 38                       | 13  | 255                                 |                                  |       |                                   |                  |       |  |
|                      | REMOVING                               |             | 2                              | 1                        | 1   | 7                                   |                                  |       |                                   |                  |       |  |
|                      | TOTAL                                  |             | 64                             | 49                       | 15  | 309                                 |                                  |       |                                   |                  |       |  |
| DRILLED LENGTH       | PLANNED LENGTH                         |             | 200 <sup>m</sup>               |                          | CORE RECOVERY FOR EACH 100 <sup>m</sup> SECTION |                                     |                                  |       |                                   |                  |       |  |
|                      | INCREASE OR DECREASE IN DRILLED LENGTH |             | -                              | CORE LENGTH              | 189.25 <sup>m</sup>                             | DEPTH OF HOLE                       | SECT - ION                       | TOTAL | DEPTH OF HOLE                     | SECT - ION       | TOTAL |  |
|                      | LENGTH DRILLED                         |             | 200 <sup>m</sup>               | CORE RECOVERY            | 94.6%   | 0 - 100 <sup>m</sup>                | 96.4%                            | 96.4% |                                   |                  |       |  |
| WORKING TIME (HRS)   | DRILLING                               |             | 122°35'                        | 18.1%                    | 16.5%   | 100 - 200 <sup>m</sup>              | 92.9%                            | 94.6% |                                   |                  |       |  |
|                      | HOISTING & LOWERING RODS               |             | 215°30'                        | 31.8%                    | 29.0%   | 200 - 300 <sup>m</sup>              |                                  |       |                                   |                  |       |  |
|                      | HOISTING & LOWERING I.T.               |             |                                |                          |   | EFFICIENCY OF DRILLING              |                                  |       |                                   |                  |       |  |
|                      | MISCELLANEOUS                          |             | 115°50'                        | 16.5%                    | 15.1%   | 200 <sup>m</sup> /WORK PERIOD       |                                  |       | 3.13 <sup>m</sup> /DAY            |                  |       |  |
|                      | REPAIRING                              |             | 83°30'                         | 12.3%                    | 11.2%   | 200 <sup>m</sup> /WORKING DAYS      |                                  |       | 4.08 <sup>m</sup> /DAY            |                  |       |  |
|                      | OTHERS                                 |             | 144°05'                        | 21.3%                    | 19.4%   | 200 <sup>m</sup> /DRILLING PERIOD   |                                  |       | 3.92 <sup>m</sup> /DAY            |                  |       |  |
|                      | TOTAL                                  |             | 677°30'                        | 100%                     | 91.2%   | 200 <sup>m</sup> /NET DRILLING DAYS |                                  |       | 5.26 <sup>m</sup> /DAY            |                  |       |  |
|                      | REMOVING                               | PREPARATION |                                | 45°00'                   |   | 6.1%                                |                                  |       |                                   |                  |       |  |
|                      |  | MOVING      |                                | 20°00'                   |   | 2.7%                                | TOTAL MANSHIFTS/200 <sup>m</sup> |       |                                   | 1.55 MANSHIFTS/m |       |  |
|                      | GRAND TOTAL                            |             | 742°30'                        |                          | 100%  | DRILLING MANSHIFTS/200 <sup>m</sup> |                                  |       | 1.28 MANSHIFTS/m                  |                  |       |  |
| CASING PIPE INSERTED | PIPE SIZE & METERAGE INSERTED          |             | INSERTED LENGTH DRILLED LENGTH | RECOVERY OF CASING PIPES |   | TIMES OF HOISTING & LOWERING RODS   |                                  |       | TIMES OF HOISTING & LOWERING I.T. |                  |       |  |
|                      | BX 102 <sup>m</sup>                    |             | 51%                            | 100%                     |   | 186                                 |                                  |       |                                   |                  |       |  |
|                      | REMARKS                                |             |                                |                          |   |                                     |                                  |       |                                   |                  |       |  |

Summary Record of Drilling Results by Hole

Table 3-11 Underground NO.10

| DRILLING PERIODS     | TOTAL DAYS                             |                                | NET WORKING (DAYS)       |                     | LAYOFFS   |            | TOTAL MANSHIFTS                   |               |            |       |
|----------------------|--|--------------------------------|--------------------------|---------------------|---|------------|-----------------------------------|---------------|------------|-------|
|                      | PREPARATION                            | 6                              | 3                        | 3                   | 3   | 10         |                                   |               |            |       |
|                      | DRILLING                               | 31                             | 24                       | 7                   | 185   |            |                                   |               |            |       |
|                      | REMOVING                               | 1                              | 1                        |                     | 3   |            |                                   |               |            |       |
|                      | TOTAL                                  | 38                             | 28                       | 10                  | 198   |            |                                   |               |            |       |
| DRILLED LENGTH       | PLANNED LENGTH                         | 200 <sup>m</sup>               |                          |                     | CORE RECOVERY FOR EACH 100 <sup>m</sup> SECTION |            |                                   |               |            |       |
|                      | INCREASE OR DECREASE IN DRILLED LENGTH | -45.04 <sup>m</sup>            | CORE LENGTH              | 103.23 <sup>m</sup> | DEPTH OF HOLE                                   | SECT - ION | TOTAL                             | DEPTH OF HOLE | SECT - ION | TOTAL |
|                      | LENGTH DRILLED                         | 154.96 <sup>m</sup>            | CORE RECOVERY            | 66.6%               | 0 - 100 <sup>m</sup>                            | 72.6%      | 72.6%                             |               |            |       |
|                      |  |                                |                          |                     | 100 - 200 <sup>m</sup>                          | 54.5%      | 66.6%                             |               |            |       |
| WORKING TIME (HRS)   | DRILLING                               | 114°30'                        | 22.3%                    | 21.0%               | 200 - 300 <sup>m</sup>                          |            |                                   |               |            |       |
|                      | HOISTING & LOWERING RODS               | 68°55'                         | 13.4%                    | 12.7%               | EFFICIENCY OF DRILLING                          |            |                                   |               |            |       |
|                      | HOISTING & LOWERING I.T.               | 97°10'                         | 18.9%                    | 17.9%               | 154.96 <sup>m</sup> /WORK PERIOD                |            | 4.08 <sup>m</sup> /DAY            |               |            |       |
|                      | MISCELLANEOUS                          | 154°10'                        | 30.0%                    | 28.3%               | 154.96 <sup>m</sup> /WORKING DAYS               |            | 5.53 <sup>m</sup> /DAY            |               |            |       |
|                      | REPAIRING                              | 22°15'                         | 4.3%                     | 4.1%                | 154.96 <sup>m</sup> /DRILLING PERIOD            |            | 5.00 <sup>m</sup> /DAY            |               |            |       |
|                      | OTHERS                                 | 57°00'                         | 11.1%                    | 10.5%               | 154.96 <sup>m</sup> /NET DRILLING DAYS          |            | 6.46 <sup>m</sup> /DAY            |               |            |       |
|                      | TOTAL                                  | 514°00'                        | 100%                     | 94.5%               |   |            |                                   |               |            |       |
|                      | REMOVING - PREPARATION                 | 22°00'                         |                          | 4.0%                |   |            |                                   |               |            |       |
|                      | MOVING                                 | 8°00'                          |                          | 1.5%                | TOTAL MANSHIFTS/154.96 <sup>m</sup>             |            | 128MANSHIFTS/m                    |               |            |       |
|                      | GRAND TOTAL                            | 544°00'                        |                          | 100%                | DRILLING MANSHIFTS/154.96 <sup>m</sup>          |            | 119MANSHIFTS/m                    |               |            |       |
| CASING PIPE INSERTED | PIPE SIZE & METERAGE INSERTED          | INSERTED LENGTH DRILLED LENGTH | RECOVERY OF CASING PIPES |                     | TIMES OF HOISTING & LOWERING RODS               |            | TIMES OF HOISTING & LOWERING I.T. |               |            |       |
|                      | BX 111.20 <sup>m</sup>                 | 71.8%                          | 100%                     |                     | 94  |            | 108                               |               |            |       |
|                      |  |                                |                          |                     | REMARKS   |            |                                   |               |            |       |

Summary Record of Drilling Results by Hole

Table 3-12 Underground NO.11

| DRILLING PERIODS     |  |             | TOTAL DAYS              | NET WORKING (DAYS)       | LAYOFFS   | TOTAL MANSHIFTS                        |                                     |                                   |                        |                |       |
|----------------------|--|-------------|-------------------------|--------------------------|---|--|-------------------------------------|-----------------------------------|------------------------|----------------|-------|
|                      | PREPARATION                            |             | 2                       | 2                        |   | 15                                     |                                     |                                   |                        |                |       |
|                      | DRILLING                               |             | 23                      | 21                       | 2   | 142                                    |                                     |                                   |                        |                |       |
|                      | REMOVING                               |             | 3                       | 3                        |   | 17                                     |                                     |                                   |                        |                |       |
|                      | TOTAL                                  |             | 28                      | 26                       | 2   | 174                                    |                                     |                                   |                        |                |       |
| DRILLED LENGTH       | PLANNED LENGTH                         |             | 120 <sup>m</sup>        |                          | CORE RECOVERY FOR EACH 100 <sup>m</sup> SECTION |  |                                     |                                   |                        |                |       |
|                      | INCREASE OR DECREASE IN DRILLED LENGTH |             | 6.52 <sup>m</sup>       | CORE LENGTH              | 111.61 <sup>m</sup>                             | DEPTH OF HOLE                          | SECT - ION                          | TOTAL                             | DEPTH OF HOLE          | SECT - ION     | TOTAL |
|                      | LENGTH DRILLED                         |             | 126.52 <sup>m</sup>     | CORE RECOVERY            | 88.2%   | 0 - 100 <sup>m</sup>                   | 88.3%                               | 88.3%                             |                        |                |       |
|                      |  |             |                         |                          |   | 100 - 200 <sup>m</sup>                 | 87.7%                               | 88.2%                             |                        |                |       |
| WORKING TIME (HRS)   | DRILLING                               |             | 86°15'                  | 18.2%                    | 17.2%   | 200 - 300 <sup>m</sup>                 |                                     |                                   |                        |                |       |
|                      | HOISTING & LOWERING RODS               |             | 160°45'                 | 34.0%                    | 32.0%   |  |                                     |                                   |                        |                |       |
|                      | HOISTING & LOWERING I.T.               |             |                         |                          |   | EFFICIENCY OF DRILLING                 |                                     |                                   |                        |                |       |
|                      | MISCELLANEOUS                          |             | 144°00'                 | 30.4%                    | 28.7%   | 126.52 <sup>m</sup> /WORK PERIOD       |                                     |                                   | 4.52 <sup>m</sup> /DAY |                |       |
|                      | REPAIRING                              |             | 1°30'                   | 3.2%                     | 3.0%  | 126.52 <sup>m</sup> /WORKING DAYS      |                                     |                                   | 4.87 <sup>m</sup> /DAY |                |       |
|                      | OTHERS                                 |             | 67°30'                  | 14.2%                    | 13.4%   | 126.52 <sup>m</sup> /DRILLING PERIOD   |                                     |                                   | 5.50 <sup>m</sup> /DAY |                |       |
|                      | TOTAL                                  |             | 472°00'                 | 100%                     | 94.0%   | 126.52 <sup>m</sup> /NET DRILLING DAYS |                                     |                                   | 6.02 <sup>m</sup> /DAY |                |       |
|                      | REMOVING                               | PREPARATION |                         | 27°00'                   |   | 5.4%                                   |                                     |                                   |                        |                |       |
|                      |  | MOVING      |                         | 3°00'                    |   | 0.6%                                   | TOTAL MANSHIFTS/126.52 <sup>m</sup> |                                   |                        | 138MANSHIFTS/m |       |
|                      | GRAND TOTAL                            |             | 502°00'                 |                          | 100%  | DRILLING MANSHIFTS/126.52 <sup>m</sup> |                                     |                                   | 121MANSHIFTS/m         |                |       |
| CASING PIPE INSERTED | PIPE SIZE & METERAGE INSERTED          |             | INSERTED LENGTH DRILLED | RECOVERY OF CASING PIPES | TIMES OF HOISTING & LOWERING RODS               |  |                                     | TIMES OF HOISTING & LOWERING I.T. |                        |                |       |
|                      | BX 98.21 <sup>m</sup>                  |             | 77.6%                   | 100%                     | 183   |  |                                     |                                   |                        |                |       |
|                      |  |             |                         |                          | REMARKS   |  |                                     |                                   |                        |                |       |

Summary Record of Drilling Results by Hole

Table 3-13 Underground NO.12

| DRILLING PERIODS     | TOTAL DAYS                             |                                | NET WORKING (DAYS)                              |          | LAYOFFS                                |            | TOTAL MANSHIFTS                   |               |            |       |
|----------------------|--|--------------------------------|---|----------|--|------------|-----------------------------------|---------------|------------|-------|
|                      | PREPARATION                            | 1                              | 1   |          |  |            | 10                                |               |            |       |
|                      | DRILLING                               | 42.5                           | 29.5  | 13       |  |            | 166                               |               |            |       |
|                      | REMOVING                               | 0.5                            | 0.5   |          |  |            | 3                                 |               |            |       |
| TOTAL                | 44                                     | 31                             | 13  |          |  | 179        |                                   |               |            |       |
| DRILLED LENGTH       | PLANNED LENGTH                         | 120m                           | CORE RECOVERY FOR EACH 100 <sup>m</sup> SECTION |          |  |            |                                   |               |            |       |
|                      | INCREASE OR DECREASE IN DRILLED LENGTH | 1.74 m                         | CORE LENGTH                                     | 105.72 m | DEPTH OF HOLE                          | SECT - ION | TOTAL                             | DEPTH OF HOLE | SECT - ION | TOTAL |
|                      | LENGTH DRILLED                         | 121.74m                        | CORE RECOVERY                                   | 86.8%    | 0 - 100 <sup>m</sup>                   | 88.3%      | 88.3%                             |               |            |       |
|                      |  |                                |   |          | 100 - 200 <sup>m</sup>                 | 80.0%      | 86.8%                             |               |            |       |
|                      |  |                                |   |          | 200 - 300 <sup>m</sup>                 |            |                                   |               |            |       |
| WORKING TIME (HRS)   | DRILLING                               | 98°00'                         | 19.6%   | 18.8%    | EFFICIENCY OF DRILLING                 |            |                                   |               |            |       |
|                      | HOISTING & LOWERING RODS               | 159°40'                        | 32.0%   | 30.6%    | 121.74 <sup>m</sup> /WORK PERIOD       |            |                                   |               |            |       |
|                      | HOISTING & LOWERING I.T.               |                                |   |          | 2.77 <sup>m</sup> /DAY                 |            |                                   |               |            |       |
|                      | MISCELLANEOUS                          | 125°35'                        | 25.2%   | 24.0%    | 121.74 <sup>m</sup> /WORKING DAYS      |            |                                   |               |            |       |
|                      | REPAIRING                              | 18°30'                         | 3.7%  | 3.5%     | 3.93 <sup>m</sup> /DAY                 |            |                                   |               |            |       |
|                      | OTHERS                                 | 97°00'                         | 19.5%   | 18.6%    | 121.74 <sup>m</sup> /DRILLING PERIOD   |            |                                   |               |            |       |
|                      | TOTAL                                  | 498°45'                        | 100 %   | 95.5%    | 121.74 <sup>m</sup> /NET DRILLING DAYS |            |                                   |               |            |       |
|                      |  |                                |   |          | 4.13 <sup>m</sup> /DAY                 |            |                                   |               |            |       |
| REMOVING             | PREPARATION                            | 21°15'                         |   | 4.1%     |  |            |                                   |               |            |       |
|                      | MOVING                                 | 2°00'                          |   | 0.4%     | TOTAL MANSHIFTS/121.74 <sup>m</sup>    |            |                                   |               |            |       |
|                      |  |                                |   |          | 147 MANSHIFTS/m                        |            |                                   |               |            |       |
|                      | GRAND TOTAL                            | 522°00'                        |   | 100 %    | DRILLING MANSHIFTS/121.74 <sup>m</sup> |            |                                   |               |            |       |
|                      |  |                                |   |          | 136 MANSHIFTS/m                        |            |                                   |               |            |       |
| CASING PIPE INSERTED | PIPE SIZE & METERAGE INSERTED          | INSERTED LENGTH DRILLED LENGTH | RECOVERY OF CASING PIPES                        |          | TIMES OF HOISTING & LOWERING RODS      |            | TIMES OF HOISTING & LOWERING I.T. |               |            |       |
|                      | BX 91.90 <sup>m</sup>                  | 75.5%                          | 100%  |          | 180                                    |            |                                   |               |            |       |
|                      |  |                                |   |          | REMARKS                                |            |                                   |               |            |       |



Summary Record of Drilling Results by Hole

Table 3-14 Underground NO.13

| DRILLING PERIODS     | TOTAL DAYS                             |                                | NET WORKING (DAYS)       |        | LAYOFFS   |            | TOTAL MANSHIFTS                   |                        |            |       |
|----------------------|--|--------------------------------|--------------------------|--------|---|------------|-----------------------------------|------------------------|------------|-------|
|                      | PREPARATION                            | 0.5                            | 0.5                      |        |   | 5          |                                   |                        |            |       |
|                      | DRILLING                               | 25.5                           | 23.5                     |        | 2   | 140        |                                   |                        |            |       |
|                      | REMOVING                               | 1                              | 1                        |        |   | 8          |                                   |                        |            |       |
| TOTAL                | 27                                     | 25                             |                          | 2      | 153   |            |                                   |                        |            |       |
| DRILLED LENGTH       | PLANNED LENGTH                         | 120m                           |                          |        | CORE RECOVERY FOR EACH 100 <sup>m</sup> SECTION |            |                                   |                        |            |       |
|                      | INCREASE OR DECREASE IN DRILLED LENGTH | -24.05m                        | CORE LENGTH              | 70.57m | DEPTH OF HOLE                                   | SECT - ION | TOTAL                             | DEPTH OF HOLE          | SECT - ION | TOTAL |
|                      | LENGTH DRILLED                         | 95.95m                         | CORE RECOVERY            | 73.5%  | 0 - 100 <sup>m</sup>                            | 73.5%      | 73.5%                             |                        |            |       |
| WORKING TIME (HRS)   | DRILLING                               | 73°30'                         | 18.8%                    | 17.9%  | 100 - 200 <sup>m</sup>                          |            |                                   |                        |            |       |
|                      | HOISTING & LOWERING RODS               | 126°25'                        | 32.3%                    | 30.8%  | 200 - 300 <sup>m</sup>                          |            |                                   |                        |            |       |
|                      | HOISTING & LOWERING I.T.               |                                |                          |        | EFFICIENCY OF DRILLING                          |            |                                   |                        |            |       |
|                      | MISCELLANEOUS                          | 122°05'                        | 31.1%                    | 29.8%  | 95.95 <sup>m</sup> /WORK PERIOD                 |            |                                   | 3.55 <sup>m</sup> /DAY |            |       |
|                      | REPAIRING                              | 14°45'                         | 3.8%                     | 3.6%   | 95.95 <sup>m</sup> /WORKING DAYS                |            |                                   | 3.84 <sup>m</sup> /DAY |            |       |
|                      | OTHERS                                 | 54°45'                         | 14.0%                    | 13.4%  | 95.95 <sup>m</sup> /DRILLING PERIOD             |            |                                   | 3.76 <sup>m</sup> /DAY |            |       |
|                      | TOTAL                                  | 391°30'                        | 100%                     | 95.5%  | 95.95 <sup>m</sup> /NET DRILLING DAYS           |            |                                   | 4.08 <sup>m</sup> /DAY |            |       |
|                      | REMOVING                               | PREPARATION                    | 16°00'                   |        | 3.9%  |            |                                   |                        |            |       |
|                      | MOVING                                 | 2°30'                          |                          | 0.6%   | TOTAL MANSHIFTS/95.95 <sup>m</sup>              |            |                                   | 1.59 MANSHIFTS/m       |            |       |
|                      | GRAND TOTAL                            | 410°00'                        |                          | 100%   | DRILLING MANSHIFTS/95.95 <sup>m</sup>           |            |                                   | 1.46 MANSHIFTS/m       |            |       |
| CASING PIPE INSERTED | PIPE SIZE & METERAGE INSERTED          | INSERTED LENGTH DRILLED LENGTH | RECOVERY OF CASING PIPES |        | TIMES OF HOISTING & LOWERING RODS               |            | TIMES OF HOISTING & LOWERING I.T. |                        |            |       |
|                      | BX 74.31 <sup>m</sup>                  | 77.4%                          | 100%                     |        | 152   |            |                                   |                        |            |       |
|                      |  |                                |                          |        | REMARKS   |            |                                   |                        |            |       |

Summary Record of Drilling Results by Hole

Table 3-15 Underground NO.14

| DRILLING PERIODS     |  | TOTAL DAYS                       |               | NET WORKING (DAYS)       |   | LAYOFFS                           |       | TOTAL MANSHIFTS                   |            |       |
|----------------------|--|----------------------------------|---------------|--------------------------|---|-----------------------------------|-------|-----------------------------------|------------|-------|
|                      |  | PREPARATION                      | 2             | 1                        | 1   | 3                                 |       |                                   |            |       |
| DRILLING             | 18                                     | 16                               | 2             | 110                      |   |                                   |       |                                   |            |       |
| REMOVING             | 1                                      | 1                                |               | 4                        |   |                                   |       |                                   |            |       |
| TOTAL                | 21                                     | 18                               | 3             | 117                      |   |                                   |       |                                   |            |       |
| DRILLED LENGTH       | PLANNED LENGTH                         | 200 <sup>m</sup>                 |               |                          | CORE RECOVERY FOR EACH 100 <sup>m</sup> SECTION |                                   |       |                                   |            |       |
|                      | INCREASE OR DECREASE IN DRILLED LENGTH | -76.80 <sup>m</sup>              | CORE LENGTH   | 96.5 <sup>m</sup>        | DEPTH OF HOLE                                   | SECT - ION                        | TOTAL | DEPTH OF HOLE                     | SECT - ION | TOTAL |
|                      | LENGTH DRILLED                         | 12320 <sup>m</sup>               | CORE RECOVERY | 78.3%                    | 0 - 100 <sup>m</sup>                            | 77.9%                             | 77.9% |                                   |            |       |
|                      |  |                                  |               |                          | 100 - 200 <sup>m</sup>                          | 80.2%                             | 78.3% |                                   |            |       |
| WORKING TIME (HRS)   | DRILLING                               | 86 <sup>h</sup> 46 <sup>'</sup>  | 23.5%         | 23.0%                    | 200 - 300 <sup>m</sup>                          |                                   |       |                                   |            |       |
|                      | HOISTING & LOWERING RODS               | 166 <sup>h</sup> 25 <sup>'</sup> | 45.2%         | 44.2%                    |   |                                   |       |                                   |            |       |
|                      | HOISTING & LOWERING I.T.               |                                  |               |                          | EFFICIENCY OF DRILLING                          |                                   |       |                                   |            |       |
|                      | MISCELLANEOUS                          | 69 <sup>h</sup> 50 <sup>'</sup>  | 19.0%         | 18.6%                    | 123.20 <sup>m</sup> /WORK PERIOD                |                                   |       | 5.87 <sup>m</sup> /DAY            |            |       |
|                      | REPAIRING                              | 4 <sup>h</sup> 00 <sup>'</sup>   | 1.1%          | 1.1%                     | 123.20 <sup>m</sup> /WORKING DAYS               |                                   |       | 6.84 <sup>m</sup> /DAY            |            |       |
|                      | OTHERS                                 | 41 <sup>h</sup> 30 <sup>'</sup>  | 11.2%         | 11.0%                    | 123.20 <sup>m</sup> /DRILLING PERIOD            |                                   |       | 6.84 <sup>m</sup> /DAY            |            |       |
|                      | TOTAL                                  | 368 <sup>h</sup> 30 <sup>'</sup> | 100 %         | 97.9%                    | 123.20 <sup>m</sup> /NET DRILLING DAYS          |                                   |       | 7.70 <sup>m</sup> /DAY            |            |       |
|                      | REMOVING - PREPARATION                 | 6 <sup>h</sup> 00 <sup>'</sup>   |               | 1.6%                     |   |                                   |       |                                   |            |       |
|                      | MOVING                                 | 2 <sup>h</sup> 00 <sup>'</sup>   |               | 0.5%                     | TOTAL MANSHIFTS/12320 <sup>m</sup>              |                                   |       | 0.95 MANSHIFTS/ <sup>m</sup>      |            |       |
|                      | GRAND TOTAL                            | 376 <sup>h</sup> 30 <sup>'</sup> |               | 100 %                    | DRILLING MANSHIFTS/12320 <sup>m</sup>           |                                   |       | 0.89 MANSHIFTS/ <sup>m</sup>      |            |       |
| CASING PIPE INSERTED | PIPE SIZE & METERAGE INSERTED          | INSERTED LENGTH DRILLED LENGTH   |               | RECOVERY OF CASING PIPES |   | TIMES OF HOISTING & LOWERING RODS |       | TIMES OF HOISTING & LOWERING I.T. |            |       |
|                      | BK 50 <sup>m</sup>                     | 40.9%                            |               | 100%                     |   | 213                               |       |                                   |            |       |
|                      |  |                                  |               |                          | REMARKS   |                                   |       |                                   |            |       |

Summary Record of Drilling Results by Hole

Table 3-16 Underground No.15

| DRILLING PERIODS     | TOTAL DAYS                             |                                | NET WORKING (DAYS)       |  | LAYOFFS   |                  | TOTAL MANSHIFTS                   |               |            |       |
|----------------------|--|--------------------------------|--------------------------|--|---|------------------|-----------------------------------|---------------|------------|-------|
|                      | PREPARATION                            | 1.5                            | 1.5                      |  |   | 11               |                                   |               |            |       |
|                      | DRILLING                               | 29.5                           | 23.5                     |  | 6   | 145              |                                   |               |            |       |
|                      | REMOVING                               | 1                              | 1                        |  |   | 5                |                                   |               |            |       |
| TOTAL                | 32                                     | 26                             |                          | 6                                      | 161   |                  |                                   |               |            |       |
| DRILLED LENGTH       | PLANNED LENGTH                         | 120 <sup>m</sup>               |                          |  | CORE RECOVERY FOR EACH 100 <sup>m</sup> SECTION |                  |                                   |               |            |       |
|                      | INCREASE OR DECREASE IN DRILLED LENGTH | 1.95 <sup>m</sup>              | CORE LENGTH              | 96.19 <sup>m</sup>                     | DEPTH OF HOLE                                   | SECT - ION       | TOTAL                             | DEPTH OF HOLE | SECT - ION | TOTAL |
|                      | LENGTH DRILLED                         | 121.95 <sup>m</sup>            | CORE RECOVERY            | 78.9%                                  | 0 - 100 <sup>m</sup>                            | 75.4%            | 75.4%                             |               |            |       |
|                      |  |                                |                          |  | 100 - 200 <sup>m</sup>                          | 94.5%            | 78.9%                             |               |            |       |
| WORKING TIME (HRS)   | DRILLING                               | 99 <sup>45</sup> '             | 22.1%                    | 20.9%                                  | 200 - 300 <sup>m</sup>                          |                  |                                   |               |            |       |
|                      | HOISTING & LOWERING RODS               | 156 <sup>50</sup> '            | 34.9%                    | 32.9%                                  |   |                  |                                   |               |            |       |
|                      | HOISTING & LOWERING I.T.               |                                |                          |  | EFFICIENCY OF DRILLING                          |                  |                                   |               |            |       |
|                      | MISCELLANEOUS                          | 103 <sup>20</sup> '            | 23.0%                    | 21.7%                                  | 121.95 <sup>m</sup> /WORK PERIOD                |                  | 3.81 <sup>m</sup> /DAY            |               |            |       |
|                      | REPAIRING                              | 27 <sup>35</sup> '             | 6.1%                     | 5.8%                                   | 121.95 <sup>m</sup> /WORKING DAYS               |                  | 4.69 <sup>m</sup> /DAY            |               |            |       |
|                      | OTHERS                                 | 62 <sup>00</sup> '             | 13.8%                    | 13.0%                                  | 121.95 <sup>m</sup> /DRILLING PERIOD            |                  | 4.13 <sup>m</sup> /DAY            |               |            |       |
|                      | TOTAL                                  | 449 <sup>30</sup> '            | 100 %                    | 94.3%                                  | 121.95 <sup>m</sup> /NET DRILLING DAYS          |                  | 5.19 <sup>m</sup> /DAY            |               |            |       |
|                      | REMOVING - PREPARATION                 | 25 <sup>30</sup> '             |                          | 5.3%                                   |   |                  |                                   |               |            |       |
|                      | MOVING                                 | 2 <sup>00</sup> '              |                          | 0.4%                                   | TOTAL MANSHIFTS/121.95 <sup>m</sup>             |                  | 1.32 MANSHIFTS/m                  |               |            |       |
| GRAND TOTAL          | 477 <sup>00</sup> '                    |                                | 100 %                    | DRILLING MANSHIFTS/121.95 <sup>m</sup> |   | 1.19 MANSHIFTS/m |                                   |               |            |       |
| CASING PIPE INSERTED | PIPE SIZE & METERAGE INSERTED          | INSERTED LENGTH DRILLED LENGTH | RECOVERY OF CASING PIPES |  | TIMES OF HOISTING & LOWERING RODS               |                  | TIMES OF HOISTING & LOWERING I.T. |               |            |       |
|                      | BX 70.10 <sup>m</sup>                  | 57.5%                          | 100%                     |  | 213   |                  |                                   |               |            |       |
|                      |  |                                |                          |  | REMARKS   |                  |                                   |               |            |       |

Summary Record of Drilling Results by Hole

Table 3-17 Underground No.16

| DRILLING PERIODS     | TOTAL DAYS                             |                                | NET WORKING (DAYS)       |                    | LAYOFFS   |                                       | TOTAL MANSHIFTS                   |                        |                 |       |  |
|----------------------|--|--------------------------------|--------------------------|--------------------|---|---------------------------------------|-----------------------------------|------------------------|-----------------|-------|--|
|                      | PREPARATION                            | 1                              | 1                        |                    |   |                                       | 9                                 |                        |                 |       |  |
|                      | DRILLING                               | 13                             | 12                       |                    | 1   |                                       | 75                                |                        |                 |       |  |
|                      | REMOVING                               | 2                              | 1                        |                    | 1   |                                       | 4                                 |                        |                 |       |  |
|                      | TOTAL                                  | 16                             | 14                       |                    | 2   |                                       | 88                                |                        |                 |       |  |
| DRILLED LENGTH       | PLANNED LENGTH                         | 120 <sup>m</sup>               |                          |                    | CORE RECOVERY FOR EACH 100 <sup>m</sup> SECTION |                                       |                                   |                        |                 |       |  |
|                      | INCREASE OR DECREASE IN DRILLED LENGTH | -52.33 <sup>m</sup>            | CORE LENGTH              | 57.43 <sup>m</sup> | DEPTH OF HOLE                                   | SECT - ION                            | TOTAL                             | DEPTH OF HOLE          | SECT - ION      | TOTAL |  |
|                      | LENGTH DRILLED                         | 67.67 <sup>m</sup>             | CORE RECOVERY            | 84.9%              | 0 - 100 <sup>m</sup>                            | 84.9%                                 | 84.9%                             |                        |                 |       |  |
| WORKING TIME (HRS)   | DRILLING                               | 56°50'                         | 21.4%                    | 20.3%              | 100 - 200 <sup>m</sup>                          |                                       |                                   |                        |                 |       |  |
|                      | HOISTING & LOWERING RODS               | 67°20'                         | 28.3%                    | 27.0%              | 200 - 300 <sup>m</sup>                          |                                       |                                   |                        |                 |       |  |
|                      | HOISTING & LOWERING I.T.               |                                |                          |                    | EFFICIENCY OF DRILLING                          |                                       |                                   |                        |                 |       |  |
|                      | MISCELLANEOUS                          | 95°50'                         | 40.3%                    | 38.3%              | 67.67 <sup>m</sup> /WORK PERIOD                 |                                       |                                   | 4.23 <sup>m</sup> /DAY |                 |       |  |
|                      | REPAIRING                              | 2°00'                          | 0.8%                     | 0.8%               | 67.67 <sup>m</sup> /WORKING DAYS                |                                       |                                   | 4.84 <sup>m</sup> /DAY |                 |       |  |
|                      | OTHERS                                 | 22°00'                         | 9.2%                     | 8.8%               | 67.67 <sup>m</sup> /DRILLING PERIOD             |                                       |                                   | 5.21 <sup>m</sup> /DAY |                 |       |  |
|                      | TOTAL                                  | 238°00'                        | 100 %                    | 95.2%              | 67.67 <sup>m</sup> /NET DRILLING DAYS           |                                       |                                   | 5.64 <sup>m</sup> /DAY |                 |       |  |
|                      | REMOVING                               | PREPARATION                    | 9°30'                    |                    | 3.8%  |                                       |                                   |                        |                 |       |  |
|                      |  | MOVING                         | 2°30'                    |                    | 1.0%  | TOTAL MANSHIFTS/67.67 <sup>m</sup>    |                                   |                        | 130MANSHIFTS/m  |       |  |
|                      |  | GRAND TOTAL                    | 250°00'                  |                    | 100 %   | DRILLING MANSHIFTS/67.67 <sup>m</sup> |                                   |                        | 1.11MANSHIFTS/m |       |  |
| CASING PIPE INSERTED | PIPE SIZE & METERAGE INSERTED          | INSERTED LENGTH DRILLED LENGTH | RECOVERY OF CASING PIPES |                    | TIMES OF HOISTING & LOWERING RODS               |                                       | TIMES OF HOISTING & LOWERING I.T. |                        |                 |       |  |
|                      | BX 23.90 <sup>m</sup>                  | 35.3%                          | 100%                     |                    | 94  |                                       |                                   |                        |                 |       |  |
|                      |  |                                |                          |                    | REMARKS   |                                       |                                   |                        |                 |       |  |

Summary Record of Drilling Results by Hole

Table 3-18 Underground No.17

| DRILLING PERIODS     | TOTAL DAYS                             |                                | NET WORKING (DAYS)       |                    | LAYOFFS   |            | TOTAL MANSHIFTS                   |               |            |       |
|----------------------|--|--------------------------------|--------------------------|--------------------|---|------------|-----------------------------------|---------------|------------|-------|
|                      | PREPARATION                            | 2                              | 2                        |                    |   |            | 11                                |               |            |       |
|                      | DRILLING                               | 6                              | 3                        |                    | 3   |            | 21                                |               |            |       |
|                      | REMOVING                               | 1                              | 1                        |                    |   |            | 10                                |               |            |       |
|                      | <b>TOTAL</b>                           | <b>9</b>                       | <b>6</b>                 |                    | <b>3</b>  |            | <b>42</b>                         |               |            |       |
| DRILLED LENGTH       | PLANNED LENGTH                         | 120 <sup>m</sup>               |                          |                    | CORE RECOVERY FOR EACH 100 <sup>m</sup> SECTION |            |                                   |               |            |       |
|                      | INCREASE OR DECREASE IN DRILLED LENGTH | -9430 <sup>m</sup>             | CORE LENGTH              | 17.55 <sup>m</sup> | DEPTH OF HOLE                                   | SECT - ION | TOTAL                             | DEPTH OF HOLE | SECT - ION | TOTAL |
|                      | LENGTH DRILLED                         | 25.70 <sup>m</sup>             | CORE RECOVERY            | 68.3%              | 0 - 100 <sup>m</sup>                            | 68.3%      | 68.3%                             |               |            |       |
| WORKING TIME (HRS)   | DRILLING                               | 18°40'                         | 31.1%                    | 18.7%              | 100 - 200 <sup>m</sup>                          |            |                                   |               |            |       |
|                      | HOISTING & LOWERING RODS               | 11°50'                         | 19.7%                    | 11.8%              | 200 - 300 <sup>m</sup>                          |            |                                   |               |            |       |
|                      | HOISTING & LOWERING I.T.               |                                |                          |                    | EFFICIENCY OF DRILLING                          |            |                                   |               |            |       |
|                      | MISCELLANEOUS                          | 16°45'                         | 27.9%                    | 16.8%              | 25.70 <sup>m</sup> /WORK PERIOD                 |            | 2.86 <sup>m</sup> /DAY            |               |            |       |
|                      | REPAIRING                              | 3°45'                          | 6.3%                     | 3.7%               | 25.70 <sup>m</sup> /WORKING DAYS                |            | 4.28 <sup>m</sup> /DAY            |               |            |       |
|                      | OTHERS                                 | 9°00'                          | 15.0%                    | 9.0%               | 25.70 <sup>m</sup> /DRILLING PERIOD             |            | 4.28 <sup>m</sup> /DAY            |               |            |       |
|                      | TOTAL                                  | 60°00'                         | 100 %                    | 60.0%              | 25.70 <sup>m</sup> NET /DRILLING DAYS           |            | 8.57 <sup>m</sup> /DAY            |               |            |       |
|                      | REMOVING PREPARATION                   | 30°00'                         |                          | 30.0%              |   |            |                                   |               |            |       |
|                      | MOVING                                 | 10°00'                         |                          | 10.0%              | TOTAL MANSHIFTS/25.70 <sup>m</sup>              |            | 163MANSHIFTS/m                    |               |            |       |
|                      | GRAND TOTAL                            | 100°00'                        |                          | 100 %              | DRILLING MANSHIFTS/25.70 <sup>m</sup>           |            | 082MANSHIFTS/m                    |               |            |       |
| CASING PIPE INSERTED | PIPE SIZE & METERAGE INSERTED          | INSERTED LENGTH DRILLED LENGTH | RECOVERY OF CASING PIPES |                    | TIMES OF HOISTING & LOWERING RODS               |            | TIMES OF HOISTING & LOWERING I.T. |               |            |       |
|                      |  |                                |                          |                    | 38  |            |                                   |               |            |       |
|                      |  |                                |                          |                    | REMARKS   |            |                                   |               |            |       |

Summary Record of Drilling Results by Hole

Table 3-19 Surface No.1

| DRILLING PERIODS     |  |             | TOTAL DAYS                     | NET WORKING (DAYS)              | LAYOFFS   | TOTAL MANSHIFTS                     |                                   |                        |                  |       |
|----------------------|--|-------------|--------------------------------|---------------------------------|---|-------------------------------------|-----------------------------------|------------------------|------------------|-------|
|                      | PREPARATION                            |             | 4                              | 4                               |   | 17                                  |                                   |                        |                  |       |
|                      | DRILLING                               |             | 45                             | 29                              | 16  | 192                                 |                                   |                        |                  |       |
|                      | REMOVING                               |             | 1                              | 1                               |   | 3                                   |                                   |                        |                  |       |
|                      | TOTAL                                  |             | 50                             | 34                              |   | 212                                 |                                   |                        |                  |       |
| DRILLED LENGTH       | PLANNED LENGTH                         |             | 200 <sup>m</sup>               |                                 | CORE RECOVERY FOR EACH 100 <sup>m</sup> SECTION |                                     |                                   |                        |                  |       |
|                      | INCREASE OR DECREASE IN DRILLED LENGTH |             |                                | CORE LENGTH 180.95 <sup>m</sup> | DEPTH OF HOLE                                   | SECT - ION                          | TOTAL                             | DEPTH OF HOLE          | SECT - ION       | TOTAL |
|                      | LENGTH DRILLED                         |             | 200 <sup>m</sup>               | CORE RECOVERY 90.5%             | 0 - 100 <sup>m</sup>                            | 89.9%                               | 89.9%                             |                        |                  |       |
| WORKING TIME (HRS)   | DRILLING                               |             | 189°10'                        | 33.7%                           | 32.0%   |                                     |                                   |                        |                  |       |
|                      | HOISTING & LOWERING RODS               |             | 29°00'                         | 5.2%                            | 4.9%  |                                     |                                   |                        |                  |       |
|                      | HOISTING & LOWERING I.T.               |             | 85°20'                         | 15.2%                           | 14.4%   |                                     |                                   |                        |                  |       |
|                      | MISCELLANEOUS                          |             | 184°15'                        | 32.9%                           | 31.2%   | EFFICIENCY OF DRILLING              |                                   |                        |                  |       |
|                      | REPAIRING                              |             | 8°00'                          | 1.4%                            | 1.4%  | 200 <sup>m</sup> /WORK PERIOD       |                                   | 4.00 <sup>m</sup> /DAY |                  |       |
|                      | OTHERS                                 |             | 64°45'                         | 11.6%                           | 10.9%   | 200 <sup>m</sup> /WORKING DAYS      |                                   | 5.88 <sup>m</sup> /DAY |                  |       |
|                      | TOTAL                                  |             | 560°30'                        | 100%                            | 94.8%   | 200 <sup>m</sup> /DRILLING PERIOD   |                                   | 4.44 <sup>m</sup> /DAY |                  |       |
|                      | REMOVING                               | PREPARATION |                                | 28°00'                          |   | 200 <sup>m</sup> /NET DRILLING DAYS | 6.90 <sup>m</sup> /DAY            |                        |                  |       |
|                      |  | MOVING      |                                | 3°00'                           |   |                                     | TOTAL MANSHIFTS/200 <sup>m</sup>  |                        | 1.06 MANSHIFTS/m |       |
|                      | GRAND TOTAL                            |             | 591°30'                        |                                 | 100%  | DRILLING MANSHIFTS/200 <sup>m</sup> |                                   | 0.96 MANSHIFTS/m       |                  |       |
| CASING PIPE INSERTED | PIPE SIZE & METERAGE INSERTED          |             | INSERTED LENGTH DRILLED LENGTH | RECOVERY OF CASING PIPES        | TIMES OF HOISTING & LOWERING RODS               |                                     | TIMES OF HOISTING & LOWERING I.T. |                        |                  |       |
|                      | 114 <sup>m</sup> /m 3 <sup>m</sup>     |             | 1.5%                           | 100%                            | 31  |                                     | 170                               |                        |                  |       |
|                      | NX 22.90 <sup>m</sup>                  |             | 11.5%                          | 100%                            | REMARKS   |                                     |                                   |                        |                  |       |
|                      | BX 132.65 <sup>m</sup>                 |             | 66.3%                          | 100%                            |   |                                     |                                   |                        |                  |       |

Summary Record of Drilling Results by Hole

Table 3-20 Surface No.2

| DRILLING PERIODS     |  | TOTAL DAYS                             |  | NET WORKING (DAYS)             |  | LAYOFFS   |  | TOTAL MANSHIFTS                   |  |  |  |
|----------------------|--|--|--|--------------------------------|--|---|--|-----------------------------------|--|--|--|
|                      |  |  |  |                                |  |   |  |                                   |  |  |  |
| PREPARATION          |  | 1                                      |  | 1                              |  |   |  | 8.5                               |  |  |  |
| DRILLING             |  | 56                                     |  | 51                             |  | 5   |  | 398.5                             |  |  |  |
| REMOVING             |  | 1                                      |  | 1                              |  |   |  | 6.5                               |  |  |  |
| TOTAL                |  | 58                                     |  | 53                             |  | 5   |  | 413.5                             |  |  |  |
| DRILLED LENGTH       |  | PLANNED LENGTH                         |  | 200 <sup>m</sup>               |  | CORE RECOVERY FOR EACH 100 <sup>m</sup> SECTION |  |                                   |  |  |  |
|                      |  | INCREASE OR DECREASE IN DRILLED LENGTH |  | -49.45 <sup>m</sup>            |  | CORE LENGTH                                     |  | 123.20 <sup>m</sup>               |  | DEPTH OF HOLE                          |  |
|                      |  | LENGTH DRILLED                         |  | 150.55 <sup>m</sup>            |  | CORE RECOVERY                                   |  | 81.8%                             |  | 0 - 100 <sup>m</sup>                   |  |
| WORKING TIME (HRS)   |  | DRILLING                               |  | 157 <sup>25</sup> '            |  | 16.4%   |  | 15.7%                             |  | 73.9%                                  |  |
|                      |  | HOISTING & LOWERING RODS               |  | 34 <sup>15</sup> '             |  | 3.6%  |  | 3.4%                              |  | 97.4%                                  |  |
| WORKING TIME (HRS)   |  | HOISTING & LOWERING I.T.               |  | 54 <sup>15</sup> '             |  | 5.7%  |  | 5.4%                              |  | 81.8%                                  |  |
|                      |  | MISCELLANEOUS                          |  | 282 <sup>20</sup> '            |  | 29.4%   |  | 28.2%                             |  | EFFICIENCY OF DRILLING                 |  |
| WORKING TIME (HRS)   |  | REPAIRING                              |  | 334 <sup>45</sup> '            |  | 34.9%   |  | 33.4%                             |  | 150.55 <sup>m</sup> /WORK PERIOD       |  |
|                      |  | OTHERS                                 |  | 96 <sup>00</sup> '             |  | 10.0%   |  | 9.6%                              |  | 2.60 <sup>m</sup> /DAY                 |  |
| WORKING TIME (HRS)   |  | TOTAL                                  |  | 959 <sup>00</sup> '            |  | 100%  |  | 95.7%                             |  | 150.55 <sup>m</sup> /WORKING DAYS      |  |
|                      |  | REMOVING                               |  | 25 <sup>00</sup> '             |  |   |  | 2.5%                              |  | 150.55 <sup>m</sup> /DRILLING PERIOD   |  |
| WORKING TIME (HRS)   |  | MOVING                                 |  | 18 <sup>00</sup> '             |  |   |  | 1.8%                              |  | 2.69 <sup>m</sup> /DAY                 |  |
|                      |  | GRAND TOTAL                            |  | 1,002 <sup>00</sup> '          |  | 100%  |  | 100%                              |  | 150.55 <sup>m</sup> /NET DRILLING DAYS |  |
| CASING PIPE INSERTED |  | PREPARATION                            |  |                                |  |   |  |                                   |  | 2.95 <sup>m</sup> /DAY                 |  |
|                      |  | TOTAL MANSHIFTS/150.55 <sup>m</sup>    |  |                                |  |   |  |                                   |  | 2.75 MANSHIFTS/m                       |  |
| CASING PIPE INSERTED |  | DRILLING MANSHIFTS/150.55 <sup>m</sup> |  |                                |  |   |  |                                   |  | 26.5 MANSHIFTS/m                       |  |
|                      |  | PIPE SIZE & METERAGE INSERTED          |  | INSERTED LENGTH DRILLED LENGTH |  | RECOVERY OF CASING PIPES                        |  | TIMES OF HOISTING & LOWERING RODS |  | TIMES OF HOISTING & LOWERING I.T.      |  |
| CASING PIPE INSERTED |  | 114m/m 20 <sup>m</sup>                 |  | 13.3%                          |  | 100%  |  | 48                                |  | 134                                    |  |
|                      |  | NX 55.95 <sup>m</sup>                  |  | 37.2%                          |  | 100%  |  | REMARKS                           |  |  |  |
| CASING PIPE INSERTED |  | BX 72.40 <sup>m</sup>                  |  | 48.1%                          |  | 100%  |  |                                   |  |  |  |
|                      |  |  |  |                                |  |   |  |                                   |  |  |  |

Summary Record of Drilling Results by Hole

Table 3-21 Surface No.3

| DRILLING PERIODS       | TOTAL DAYS                             |                                | NET WORKING (DAYS)       |  | LAYOFFS   |                  | TOTAL MANSHIFTS                   |               |            |       |
|------------------------|--|--------------------------------|--------------------------|--|---|------------------|-----------------------------------|---------------|------------|-------|
|                        | PREPARATION                            | 4                              | 4                        |  |   |                  | 34                                |               |            |       |
|                        | DRILLING                               | 20.5                           | 19.5                     |  | 1   |                  | 129                               |               |            |       |
|                        | REMOVING                               | 0.5                            | 0.5                      |  |   |                  | 5                                 |               |            |       |
|                        | TOTAL                                  | 25                             | 24                       |  | 1   |                  | 168                               |               |            |       |
| DRILLED LENGTH         | PLANNED LENGTH                         | 200 <sup>m</sup>               |                          |  | CORE RECOVERY FOR EACH 100 <sup>m</sup> SECTION |                  |                                   |               |            |       |
|                        | INCREASE OR DECREASE IN DRILLED LENGTH | 1.50 <sup>m</sup>              | CORE LENGTH              | 188.10 <sup>m</sup>                    | DEPTH OF HOLE                                   | SECT - ION       | TOTAL                             | DEPTH OF HOLE | SECT - ION | TOTAL |
|                        | LENGTH DRILLED                         | 201.50 <sup>m</sup>            | CORE RECOVERY            | 93.3%                                  | 0 - 100 <sup>m</sup>                            | 91.2%            | 91.2%                             |               |            |       |
| WORKING TIME (HRS)     |  |                                |                          |  | 100 - 200 <sup>m</sup>                          | 95.5%            | 93.3%                             |               |            |       |
|                        | DRILLING                               | 165°20'                        | 39.2%                    | 36.1%                                  | 200 - 300 <sup>m</sup>                          | 93.3%            | 93.3%                             |               |            |       |
|                        | HOISTING & LOWERING RODS               | 14°25'                         | 3.4%                     | 3.2%                                   | EFFICIENCY OF DRILLING                          |                  |                                   |               |            |       |
|                        | HOISTING & LOWERING I.T.               | 61°35'                         | 14.6%                    | 13.4%                                  | 201.50 <sup>m</sup> /WORK PERIOD                |                  | 8.06 <sup>m</sup> /DAY            |               |            |       |
|                        | MISCELLANEOUS                          | 117°10'                        | 27.8%                    | 25.6%                                  | 201.50 <sup>m</sup> /WORKING DAYS               |                  | 8.40 <sup>m</sup> /DAY            |               |            |       |
|                        | REPAIRING                              | 24°30'                         | 5.8%                     | 5.3%                                   | 201.50 <sup>m</sup> /DRILLING PERIOD            |                  | 9.83 <sup>m</sup> /DAY            |               |            |       |
|                        | OTHERS                                 | 39°00'                         | 9.2%                     | 8.5%                                   | 201.50 <sup>m</sup> /NET DRILLING DAYS          |                  | 10.33 <sup>m</sup> /DAY           |               |            |       |
|                        | TOTAL                                  | 422°00'                        | 100%                     | 92.1%                                  |   |                  |                                   |               |            |       |
|                        | REMOVING PREPARATION                   | 32°00'                         |                          | 7.0%                                   |   |                  |                                   |               |            |       |
|                        | MOVING                                 | 4°00'                          |                          | 0.9%                                   | TOTAL MANSHIFTS/201.50 <sup>m</sup>             |                  | 0.83 MANSHIFTS/m                  |               |            |       |
| GRAND TOTAL            | 458°00'                                |                                | 100%                     | DRILLING MANSHIFTS/201.50 <sup>m</sup> |   | 0.64 MANSHIFTS/m |                                   |               |            |       |
| CASING PIPE INSERTED   | PIPE SIZE & METERAGE INSERTED          | INSERTED LENGTH DRILLED LENGTH | RECOVERY OF CASING PIPES |  | TIMES OF HOISTING & LOWERING RODS               |                  | TIMES OF HOISTING & LOWERING I.T. |               |            |       |
|                        | 114 <sup>m</sup> /5.20 <sup>m</sup>    | 2.6%                           | 100%                     |  | 14  |                  | 152                               |               |            |       |
|                        | NX 14.50 <sup>m</sup>                  | 7.2%                           | 100%                     |  | REMARKS   |                  |                                   |               |            |       |
| BX 195.40 <sup>m</sup> | 97.0%                                  | 100%                           |                          |  |   |                  |                                   |               |            |       |



Summary Record of Drilling Results by Hole

Table 3-22 Surface No.8

| DRILLING PERIODS       |  |                                | TOTAL DAYS               | NET WORKING (DAYS)  | LAYOFFS   | TOTAL MANSHIFTS                    |                                   |                  |            |       |
|------------------------|--|--------------------------------|--------------------------|---------------------|---|------------------------------------|-----------------------------------|------------------|------------|-------|
|                        | PREPARATION                            |                                | 6                        | 6                   |   | 33                                 |                                   |                  |            |       |
|                        | DRILLING                               |                                | 50                       | 42                  | 8   | 265                                |                                   |                  |            |       |
|                        | REMOVING                               |                                | 2                        | 2                   |   | 11                                 |                                   |                  |            |       |
| TOTAL                  |  | 58                             | 50                       | 8                   | 309   |                                    |                                   |                  |            |       |
| DRILLED LENGTH         | PLANNED LENGTH                         | 200 <sup>m</sup>               |                          |                     | CORE RECOVERY FOR EACH 100 <sup>m</sup> SECTION |                                    |                                   |                  |            |       |
|                        | INCREASE OR DECREASE IN DRILLED LENGTH | -45.77 <sup>m</sup>            | CORE LENGTH              | 102.18 <sup>m</sup> | DEPTH OF HOLE                                   | SECT - ION                         | TOTAL                             | DEPTH OF HOLE    | SECT - ION | TOTAL |
|                        | LENGTH DRILLED                         | 154.23 <sup>m</sup>            | CORE RECOVERY            | 70.4%               | 0 - 100 <sup>m</sup>                            | 61.4%                              | 61.4%                             |                  |            |       |
| WORKING TIME (HRS)     | DRILLING                               | 111°40'                        | 13.6%                    | 12.9%               | 100 - 200 <sup>m</sup>                          | 84.4%                              | 70.4%                             |                  |            |       |
|                        | HOISTING & LOWERING RODS               | 28°30'                         | 3.5%                     | 3.3%                | 200 - 300 <sup>m</sup>                          |                                    |                                   |                  |            |       |
|                        | HOISTING & LOWERING I.T.               | 93°15'                         | 11.4%                    | 10.7%               | EFFICIENCY OF DRILLING                          |                                    |                                   |                  |            |       |
|                        | MISCELLANEOUS                          | 378°40'                        | 46.3%                    | 43.6%               | 154.23 <sup>m</sup> /WORK PERIOD                |                                    | 2.66 <sup>m</sup> /DAY            |                  |            |       |
|                        | REPAIRING                              | 124°26'                        | 15.2%                    | 14.3%               | 154.23 <sup>m</sup> /WORKING DAYS               |                                    | 3.08 <sup>m</sup> /DAY            |                  |            |       |
|                        | OTHERS                                 | 82°00'                         | 10.0%                    | 9.4%                | 154.23 <sup>m</sup> /DRILLING PERIOD            |                                    | 3.08 <sup>m</sup> /DAY            |                  |            |       |
|                        | TOTAL                                  | 818°30'                        | 100 %                    | 94.3%               | 154.23 <sup>m</sup> NET /DRILLING DAYS          |                                    | 3.67 <sup>m</sup> /DAY            |                  |            |       |
|                        | REMOVING                               | PREPARATION                    | 43°30'                   |                     | 5.0%  |                                    |                                   |                  |            |       |
|                        |  | MOVING                         | 6°00'                    |                     | 0.7%  | TOTAL MANSHIFTS/15423 <sup>m</sup> |                                   | 2.00 MANSHIFTS/m |            |       |
| GRAND TOTAL            |  | 868°00'                        |                          | 100 %               | DRILLING MANSHIFTS/15423 <sup>m</sup>           |                                    | 1.72 MANSHIFTS/m                  |                  |            |       |
| CASING PIPE INSERTED   | PIPE SIZE & METERAGE INSERTED          | INSERTED LENGTH DRILLED LENGTH | RECOVERY OF CASING PIPES |                     | TIMES OF HOISTING & LOWERING RODS               |                                    | TIMES OF HOISTING & LOWERING I.T. |                  |            |       |
|                        | 114 <sup>m</sup> /m 9.14 <sup>m</sup>  | 5.9%                           | 100%                     |                     | 41  |                                    | 187                               |                  |            |       |
|                        | NX 29.41 <sup>m</sup>                  | 19.1%                          | 100%                     |                     | REMARKS   |                                    |                                   |                  |            |       |
| BX 105.77 <sup>m</sup> | 68.6%                                  | 100%                           |                          |                     |   |                                    |                                   |                  |            |       |

Table 3-23 Generalized Results of Diamond Core Drilling

| Drill Hole No. Underground | Type of Machine | Total Days | Drilled Length m | Core     |            | Numbers of Drilling Shift |                    |             | Drilling Speed |           |
|----------------------------|-----------------|------------|------------------|----------|------------|---------------------------|--------------------|-------------|----------------|-----------|
|                            |                 |            |                  | Length m | Recovery % | Drilling Shift            | Casing, etc. Shift | Total Shift | *m/Shift       | **m/Shift |
| No. 1                      | BBU-2           | 32         | 114.38           | 111.73   | 77.4       | 64                        | 1                  | 65          | 1.76           | 1.79      |
| No. 2                      | JV-8            | 17         | 116.19           | 69.52    | 59.8       | 34                        | 1                  | 35          | 3.32           | 3.42      |
| No. 3                      | JV-8<br>BBU-2   | 33         | 114.21           | 87.87    | 76.9       | 40                        | 31                 | 71          | 1.61           | 2.85      |
| No. 4                      | BBU-2           | 36         | 163.45           | 149.20   | 91.3       | 58                        | 1                  | 59          | 2.77           | 2.82      |
| No. 5                      | BBU-2           | 42         | 129.90           | 123.45   | 95.0       | 52                        | 2                  | 54          | 2.41           | 2.50      |
| No. 6                      | BBU-2           | 29         | 115.75           | 101.90   | 88.0       | 42                        | 12                 | 54          | 2.14           | 2.76      |
| No. 7                      | BBU-2           | 24         | 72.15            | 43.39    | 60.1       | 25                        | 5                  | 30          | 2.41           | 2.89      |
| No. 9                      | BBU-2           | 38         | 200.00           | 189.25   | 94.6       | 56                        | 3                  | 59          | 3.39           | 3.57      |
| No. 10                     | BBU-2           | 24         | 154.96           | 103.23   | 66.6       | 41                        | 2                  | 43          | 3.60           | 3.78      |
| No. 11                     | BBU-2           | 21         | 126.52           | 111.61   | 88.2       | 37                        | 4                  | 41          | 3.09           | 3.42      |
| No. 12                     | BBU-2           | 29.5       | 121.74           | 105.72   | 86.8       | 42                        | 4                  | 46          | 2.65           | 2.90      |
| No. 13                     | JV-8            | 23.5       | 95.95            | 70.57    | 73.5       | 33                        | 4                  | 37          | 2.59           | 2.91      |
| No. 14                     | JV-8            | 16         | 123.20           | 96.51    | 78.3       | 32                        | 1                  | 33          | 3.73           | 3.85      |
| No. 15                     | BBU-2<br>JV-8   | 23.5       | 121.95           | 96.19    | 78.9       | 40                        | 2                  | 42          | 2.90           | 3.05      |
| No. 16                     | JV-8            | 12         | 67.67            | 57.43    | 84.9       | 19                        | 3                  | 22          | 3.08           | 3.56      |
| No. 17                     | BBU-2           | 3          | 25.70            | 17.55    | 68.3       | 6                         |                    | 6           | 4.28           | 4.28      |
| Total                      |                 |            | 1,893.72         | 1,559.09 | 84.0       | 621                       | 76                 | 697         | 2.72           | 3.05      |

Notes: \* Drilled length per one shift covering total works conducted.  
 \*\* Drilled length per one shift covering net drilling operations.

Generalized Results of Diamond Core Drilling

| Drill Hole No. Surface | Type of Machine | Total Days | Drilled Length m | Core     |            | Numbers of Drilling Shift |                    |             | Drilling Speed |           |
|------------------------|-----------------|------------|------------------|----------|------------|---------------------------|--------------------|-------------|----------------|-----------|
|                        |                 |            |                  | Length m | Recovery % | Drilling Shift            | Casing, etc. Shift | Total Shift | *m/Shift       | **m/Shift |
| No. 1                  | S-37A           | 29         | 200.00           | 180.95   | 90.5       | 44                        | 3                  | 47          | 4.26           |           |
| No. 2                  | S-37A           | 51         | 150.55           | 123.20   | 81.8       | 40                        | 23                 | 63          | 2.39           | 3.76      |
| No. 3                  | S-37A           | 19.5       | 201.50           | 188.10   | 93.3       | 32                        | 4                  | 36          | 5.60           | 6.30      |
| No. 8                  | S-17            | 42         | 154.23           | 107.18   | 70.4       | 52                        | 22                 | 74          | 2.08           | 2.97      |
|                        |                 |            |                  |          |            |                           |                    |             |                |           |
|                        |                 |            |                  |          |            |                           |                    |             |                |           |
|                        |                 |            |                  |          |            |                           |                    |             |                |           |
| Total                  |                 |            | 706.28           | 599.43   | 84.9       | 168                       | 52                 | 220         | 3.21           | 4.20      |

Notes: \* Drilled length per one shift covering total works conducted.

\*\* Drilled length per one shift covering net drilling operations.

Time Distribution in Drilling Works

Table 3-24 Underground No. 1

| Working Time & Efficiency<br>Depth of Section | Drilling     |        | Hoisting & Lowering Rod |        | Hoisting & Lowering I.T. |        | Miscellaneous |        | Repairing    |        | Others       |        | Total        |        | Manshifts        |              |
|---|--------------|--------|-------------------------|--------|--------------------------|--------|---------------|--------|--------------|--------|--------------|--------|--------------|--------|------------------|--------------|
|   | Working Time | Time/M | Working Time            | Time/M | Working Time             | Time/M | Working Time  | Time/M | Working Time | Time/M | Working Time | Time/M | Working Time | Time/M | Total man-shifts | Man-shifts/M |
| 0 - 50 m<br>(0 - 50.50 m)                     | 62°25'       | 1°15'  | 14°40'                  | 0°17'  | 21°15'                   | 0°25'  | 36°10'        | 0°43'  | 6°00'        | 0°07'  | 27°00'       | 0°32'  | 167°30'      | 3°19'  | 64.5             | 1.28         |
| 50 - 100 m<br>(50.50 - 100.10 m)              | 89°15'       | 1°48'  | 5°45'                   | 0°07'  | 59°10'                   | 1°12'  | 52°20'        | 1°03'  | 9°00'        | 0°11'  | 28°30'       | 0°34'  | 244°00'      | 4°55'  | 82               | 1.65         |
| 100 - 150 m<br>(100.10 - 144.38 m)            | 70°45'       | 1°36'  | 66°10'                  | 1°30'  | 56°35'                   | 1°17'  | 85°40'        | 1°56'  | 6°20'        | 0°08'  | 41°30'       | 0°56'  | 327°00'      | 7°23'  | 109.5            | 0.25         |
| 150 - 200 m<br>( )                            |              |        |                         |        |                          |        |               |        |              |        |              |        |              |        |                  |              |
| Total   | 222°25'      | 1°32'  | 86°35'                  | 0°36'  | 137°00'                  | 0°57'  | 174°10'       | 1°13'  | 21°20'       | 0°09'  | 97°00'       | 0°40'  | 738°30'      | 5°07'  | 256              | 1.77         |
|   | 30.1%        |        | 11.7%                   |        | 18.5%                    |        | 23.6%         |        | 2.9%         |        | 13.2%        |        | 100%         |        |                  |              |

Time Distribution in Drilling Works

Table 3-25 Underground No. 2

| Depth of Section                   | Working Time & Efficiency |       | Drilling     |       | Hoisting & Lowering Rod |       | Hoisting & Lowering I.T. |       | Miscellaneous |       | Repairing    |       | Others       |       | Total        |      | Manshifts        |              |
|------------------------------------|---------------------------|-------|--------------|-------|-------------------------|-------|--------------------------|-------|---------------|-------|--------------|-------|--------------|-------|--------------|------|------------------|--------------|
|                                    | Working Time              | M/M   | Working Time | M/M   | Working Time            | M/M   | Working Time             | M/M   | Working Time  | M/M   | Working Time | M/M   | Working Time | M/M   | Working Time | M/M  | Total man-shifts | Man-shifts/M |
| 0 - 50 m<br>(0 - 50.29 m)          | 47'20"                    | 0'56" | 47'05"       | 0'56" |                         |       | 35'05"                   | 0'42" | 11'00"        | 0'13" | 19'30"       | 0'23" | 160'00"      | 3'10" | 46           | 0.91 |                  |              |
| 50 - 100 m<br>(50.29 - 102.41 m)   | 35'00"                    | 0'40" | 33'45"       | 1'36" |                         |       | 42'45"                   | 0'49" | 1'30"         | 0'02" | 17'00"       | 0'20" | 180'00"      | 3'27" | 53           | 1.02 |                  |              |
| 100 - 150 m<br>(102.41 - 116.19 m) | 10'51"                    | 0'47" | 21'50"       | 1'35" |                         |       | 16'20"                   | 1'11" |               |       | 5'00"        | 0'22" | 54'00"       | 3'55" | 12           | 0.87 |                  |              |
| 150 - 200 m<br>( )                 |                           |       |              |       |                         |       |                          |       |               |       |              |       |              |       |              |      |                  |              |
| Total                              | 93'10"                    | 0'48" | 152'40"      | 1'19" |                         |       | 94'10"                   | 0'49" | 12'30"        | 0'06" | 41'30"       | 0'21" | 394'00"      | 3'23" | 111          | 0.96 |                  |              |
|                                    | 23.6%                     |       | 38.7%        |       |                         | 23.9% |                          | 3.2%  |               | 10.6% |              | 100%  |              |       |              |      |                  |              |

Time Distribution in Drilling Works

Table 3-26 Underground No. 3

| Working Time & Efficiency<br>Depth of Section | Drilling     |        | Hoisting & Lowering Rod |        | Hoisting & Lowering I.T. |        | Miscellaneous |        | Repairing    |        | Others       |        | Total        |        | Manshifts        |              |
|---|--------------|--------|-------------------------|--------|--------------------------|--------|---------------|--------|--------------|--------|--------------|--------|--------------|--------|------------------|--------------|
|   | Working Time | Time/M | Working Time            | Time/M | Working Time             | Time/M | Working Time  | Time/M | Working Time | Time/M | Working Time | Time/M | Working Time | Time/M | Total Man-shifts | Man-shifts/M |
| 0 - 50 m<br>(0 - 49.56 m)                     | 24°30'       | 0°42'  | 50°30'                  | 1°01'  |                          |        | 72°30'        | 1°28'  | 1°00'        | 0°01'  | 27°30'       | 0°33'  | 186°00'      | 3°45'  | 79.5             | 1.60         |
| 50 - 100 m<br>(49.56 - 98.05 m)               | 28°25'       | 0°35'  | 78°10'                  | 1°37'  |                          |        | 135°25'       | 2°47'  | 56°30'       | 1°10'  | 31°30'       | 0°39'  | 330°00'      | 6°48'  | 103              | 2.12         |
| 100 - 150 m<br>(98.05 - 114.21 m)             | 9°15'        | 0°34'  | 43°45'                  | 2°42'  |                          |        | 50°00'        | 3°07'  | 12°30'       | 0°46'  | 13°00'       | 0°48'  | 128°30'      | 7°57'  | 39               | 2.41         |
| 150 - 200 m<br>( )                            |              |        |                         |        |                          |        |               |        |              |        |              |        |              |        |                  |              |
| Total   | 72°10'       | 0°38'  | 172°25'                 | 1°30'  |                          |        | 257°55'       | 2°15'  | 70°00'       | 0°37'  | 72°00'       | 0°38'  | 644°30'      | 5°38'  | 221.5            | 1.94         |
|   | 11.2%        |        | 26.7%                   |        |                          |        | 40.0%         |        | 10.9%        |        | 11.2%        |        | 100%         |        |                  |              |

Time Distribution in Drilling Works

Table 3-27 Underground No. 4

| Depth of Section                   | Working Time & Efficiency | Drilling     |        | Hoisting & Lowering Rod |        | Hoisting & Lowering I.T. |        | Miscellaneous |        | Repairing    |        | Others       |        | Total        |        | Manshifts        |              |
|------------------------------------|---------------------------|--------------|--------|-------------------------|--------|--------------------------|--------|---------------|--------|--------------|--------|--------------|--------|--------------|--------|------------------|--------------|
|                                    |                           | Working Time | Time/M | Working Time            | Time/M | Working Time             | Time/M | Working Time  | Time/M | Working Time | Time/M | Working Time | Time/M | Working Time | Time/M | Total Man-shifts | Man-shifts/M |
| 0 - 50 m<br>(0 - 49.85 m)          |                           | 54°10'       | 1°05'  | 30°40'                  | 0°37'  |                          |        | 27°40'        | 0°33'  | 7°30'        | 0°09'  | 15°00'       | 0°18'  | 135°00'      | 2°42'  | 54.5             | 1.09         |
| 50 - 100 m<br>(49.85 - 98.80 m)    |                           | 45°50'       | 0°56'  | 79°15'                  | 1°37'  |                          |        | 46°25'        | 0°57'  | 10°30'       | 0°13'  | 25°00'       | 0°31'  | 207°00'      | 4°14'  | 89.5             | 1.83         |
| 100 - 150 m<br>(98.80 - 150.55 m)  |                           | 46°10'       | 0°53'  | 64°05'                  | 1°14'  |                          |        | 25°00'        | 0°29'  |              |        | 22°45'       | 0°26'  | 158°00'      | 3°03'  | 60               | 1.16         |
| 150 - 200 m<br>(150.55 - 163.45 m) |                           | 12°00'       | 0°56'  | 20°20'                  | 1°34'  |                          |        | 15°55'        | 1°14'  | 55°45'       | 4°19'  | 12°00'       | 0°56'  | 116°00'      | 8°59'  | 40               | 3.10         |
| Total                              |                           | 158°10'      | 0°58'  | 194°20'                 | 1°13'  |                          |        | 115°00'       | 0°42'  | 73°45'       | 0°27'  | 74°45'       | 0°27'  | 616°00'      | 3°47'  | 244              | 1.49         |
|                                    |                           | 25.7%        |        | 31.5%                   |        |                          |        | 18.7%         |        | 12.0%        |        | 12.1%        |        | 100%         |        |                  |              |

Time Distribution in Drilling Works

Table 3-28 Underground No. 5

| Working Time & Efficiency<br>Depth of Section | Drilling     |        | Hoisting & Lowering Rod |        | Hoisting & Lowering I.T. |        | Miscellaneous |        | Repairing    |        | Others       |        | Total        |        | Manshifts        |              |
|---|--------------|--------|-------------------------|--------|--------------------------|--------|---------------|--------|--------------|--------|--------------|--------|--------------|--------|------------------|--------------|
|   | Working Time | Time/M | Working Time            | Time/M | Working Time             | Time/M | Working Time  | Time/M | Working Time | Time/M | Working Time | Time/M | Working Time | Time/M | Total Man-shifts | Man-shifts/M |
| 0 - 50 m<br>(0 - 49.20 m)                     | 33'05"       | 0'40"  | 49'15"                  | 1'00"  |                          |        | 21'40"        | 0'26"  | 29'00"       | 0'35"  | 60'00"       | 1'13"  | 193'00"      | 3'55"  | 79               | 1.61         |
| 50 - 100 m<br>(49.20 - 101.05 m)              | 38'45"       | 0'43"  | 51'55"                  | 1'00"  |                          |        | 42'30"        | 0'49"  | 13'00"       | 0'15"  | 23'50"       | 0'27"  | 170'00"      | 3'17"  | 72               | 1.39         |
| 100 - 150 m<br>(101.05 - 129.40 m)            | 24'15"       | 0'51"  | 54'15"                  | 1'54"  |                          |        | 95'20"        | 3'21"  | 49'00"       | 1'45"  | 30'40"       | 1'05"  | 253'30"      | 8'56"  | 104              | 3.67         |
| 150 - 200 m<br>( )                            |              |        |                         |        |                          |        |               |        |              |        |              |        |              |        |                  |              |
| Total   | 96'05"       | 0'45"  | 155'25"                 | 1'12"  |                          |        | 139'30"       | 1'14"  | 91'00"       | 0'42"  | 114'30"      | 0'53"  | 616'30"      | 4'46"  | 255              | 1.97         |
|   | 15.6%        |        | 25.2%                   |        |                          |        | 25.8%         |        | 14.8%        |        | 18.6%        |        | 100%         |        |                  |              |



Time Distribution in Drilling Works

Table 3-29 Underground No. 6

| Working Time & Efficiency<br>Depth of Section | Drilling     |        | Hoisting & Lowering Rod |        | Hoisting & Lowering I.T. |        | Miscellaneous |        | Repairing    |        | Others       |        | Total        |        | Manshifts        |              |
|---|--------------|--------|-------------------------|--------|--------------------------|--------|---------------|--------|--------------|--------|--------------|--------|--------------|--------|------------------|--------------|
|   | Working Time | Time/M | Working Time            | Time/M | Working Time             | Time/M | Working Time  | Time/M | Working Time | Time/M | Working Time | Time/M | Working Time | Time/M | Total Man-shifts | Man-shifts/M |
| 0 - 50 m<br>(0 - 50.80 m)                     | 52'50"       | 1'01"  | 26'00"                  | 0'31"  |                          |        | 22'20"        | 0'26"  | 5'50"        | 0'07"  | 19'00"       | 0'22"  | 126'00"      | 2'29"  | 50               | 0.98         |
| 50 - 100 m<br>(50.80 - 100.70 m)              | 56'10"       | 1'08"  | 77'50"                  | 1'33"  |                          |        | 35'10"        | 0'42"  | 8'20"        | 0'10"  | 27'30"       | 0'33"  | 205'00"      | 4'06"  | 72               | 1.44         |
| 100 - 150 m<br>(100.70 - 115.75 m)            | 13'25"       | 0'53"  | 39'35"                  | 2'38"  |                          |        | 30'00"        | 1'59"  | 93'00"       | 6'11"  | 24'00"       | 1'36"  | 200'00"      | 13'17" | 80               | 5.35         |
| 150 - 200 m<br>( )                            |              |        |                         |        |                          |        |               |        |              |        |              |        |              |        |                  |              |
| Total   | 122'25"      | 1'03"  | 143'25"                 | 1'15"  |                          |        | 87'30"        | 0'45"  | 107'01"      | 0'56"  | 70'30"       | 0'36"  | 531'00"      | 4'35"  | 202              | 1.75         |
|   | 23.1%        |        | 27.0%                   |        |                          |        | 16.5%         |        | 20.2%        |        | 13.2%        |        | 100%         |        |                  |              |

Time Distribution in Drilling Works

Table 3-30 Underground No. 7

| Depth of Section                | Working Time & Efficiency |            | Drilling       |        | Hoisting & Lowering Rod |       | Hoisting & Lowering I.T. |         | Miscellaneous  |         | Repairing      |        | Others         |         | Total          |      | Manshifts        |               |
|---------------------------------|---------------------------|------------|----------------|--------|-------------------------|-------|--------------------------|---------|----------------|---------|----------------|--------|----------------|---------|----------------|------|------------------|---------------|
|                                 | Working Time              | Efficiency | Working Time/M | Time   | Working Time/M          | Time  | Working Time/M           | Time    | Working Time/M | Time    | Working Time/M | Time   | Working Time/M | Time    | Working Time/M | Time | Total Man-shifts | Man-shifts /M |
| 0 - 50 m<br>(0 - 49.77 m)       | 33°25'                    |            | 0°40'          | 48°30' | 0°58'                   | 9°50' | 0°12'                    | 112°30' | 2°17'          | 43°45'  | 0°53'          | 31°30' | 0°38'          | 279°30' | 50°37'         | 87   | 1.75             |               |
| 50 - 100 m<br>(49.77 - 72.15 m) | 11°00'                    |            | 0°29'          | 47°00' | 2°06'                   |       |                          | 63°15'  | 2°50'          | 109°15' | 4°53'          | 23°00' | 1°02'          | 253°30' | 11°20'         | 78   | 3.49             |               |
| 100 - 150 m<br>( )              |                           |            |                |        |                         |       |                          |         |                |         |                |        |                |         |                |      |                  |               |
| 150 - 200 m<br>( )              |                           |            |                |        |                         |       |                          |         |                |         |                |        |                |         |                |      |                  |               |
| Total                           | 44°25'                    |            | 0°37'          | 95°30' | 1°19'                   | 9°50' | 0°08'                    | 175°45' | 2°26'          | 153°00' | 2°07'          | 54°30' | 0°45'          | 533°00' | 7°23'          | 165  | 2.29             |               |
|                                 | 8.3%                      |            |                | 17.9%  |                         | 1.8%  |                          | 33.0%   |                | 28.8%   |                | 10.2%  |                | 100%    |                |      |                  |               |

Time Distribution in Drilling Works

Table 3-31 Underground No. 9

| Depth of Section                   | Working Time & Efficiency | Drilling          |                 | Hoisting & Lowering Rod |                 | Hoisting & Lowering I.T. |        | Miscellaneous     |                 | Repairing        |                 | Others            |                 | Total             |                 | Manshifts    |        |
|------------------------------------|---------------------------|-------------------|-----------------|-------------------------|-----------------|--------------------------|--------|-------------------|-----------------|------------------|-----------------|-------------------|-----------------|-------------------|-----------------|--------------|--------|
|                                    |                           | Working Time      | Time/M          | Working Time            | Time/M          | Working Time             | Time/M | Working Time      | Time/M          | Working Time     | Time/M          | Working Time      | Time/M          | Working Time      | Time/M          | Working Time | Time/M |
| 0 - 50 m<br>(0 - 50.25 m)          |                           | 18 <sup>00</sup>  | 0 <sup>21</sup> | 24 <sup>50</sup>        | 0 <sup>30</sup> |                          |        | 6 <sup>20</sup>   | 0 <sup>08</sup> | 2 <sup>00</sup>  | 0 <sup>02</sup> | 41 <sup>50</sup>  | 0 <sup>50</sup> | 93 <sup>00</sup>  | 1 <sup>51</sup> | 37           | 0.76   |
| 50 - 100 m<br>(50.25 - 101.00 m)   |                           | 25 <sup>20</sup>  | 0 <sup>30</sup> | 50 <sup>30</sup>        | 1 <sup>00</sup> |                          |        | 29 <sup>10</sup>  | 0 <sup>24</sup> | 38 <sup>30</sup> | 0 <sup>45</sup> | 60 <sup>30</sup>  | 1 <sup>12</sup> | 204 <sup>00</sup> | 4 <sup>01</sup> | 79           | 1.56   |
| 100 - 150 m<br>(101.00 - 151.40 m) |                           | 32 <sup>45</sup>  | 0 <sup>39</sup> | 63 <sup>20</sup>        | 1 <sup>15</sup> |                          |        | 39 <sup>10</sup>  | 0 <sup>42</sup> | 35 <sup>00</sup> | 0 <sup>42</sup> | 20 <sup>45</sup>  | 0 <sup>25</sup> | 187 <sup>00</sup> | 3 <sup>43</sup> | 72           | 1.43   |
| 150 - 200 m<br>(151.40 - 200 m)    |                           | 46 <sup>30</sup>  | 0 <sup>57</sup> | 76 <sup>50</sup>        | 1 <sup>35</sup> |                          |        | 41 <sup>10</sup>  | 0 <sup>51</sup> | 8 <sup>00</sup>  | 0 <sup>10</sup> | 21 <sup>00</sup>  | 0 <sup>26</sup> | 193 <sup>30</sup> | 3 <sup>59</sup> | 67           | 1.38   |
| Total                              |                           | 122 <sup>35</sup> | 0 <sup>37</sup> | 215 <sup>30</sup>       | 1 <sup>04</sup> |                          |        | 111 <sup>51</sup> | 0 <sup>34</sup> | 83 <sup>30</sup> | 0 <sup>25</sup> | 144 <sup>05</sup> | 0 <sup>43</sup> | 677 <sup>30</sup> | 3 <sup>23</sup> | 255          | 1.28   |
|                                    |                           | 18.1%             |                 | 31.8%                   |                 |                          |        | 16.5%             |                 | 12.3%            |                 | 21.3%             |                 | 100%              |                 |              |        |

Time Distribution in Drilling Works

Table 3-32 Underground No.10

| Depth of Section                   | Working Time & Efficiency |       | Drilling     |       | Hoisting & Lowering Lod |       | Hoisting & Lowering I.T. |       | Miscellaneous |       | Repairing    |       | Others       |       | Total        |     | Manshifts |           |
|------------------------------------|---------------------------|-------|--------------|-------|-------------------------|-------|--------------------------|-------|---------------|-------|--------------|-------|--------------|-------|--------------|-----|-----------|-----------|
|                                    | Working Time              | M/M   | Working Time | M/M   | Working Time            | M/M   | Working Time             | M/M   | Working Time  | M/M   | Working Time | M/M   | Working Time | M/M   | Working Time | M/M | Total     | Manshifts |
| 0 - 50 m<br>(0 - 51.18 m)          | 39°20'                    | 0°46' | 39°35'       | 0°46' |                         |       | 19°05'                   | 0°22' | 1°00'         | 0°01' | 17°00'       | 0°21' | 116°00'      | 2°16' |              |     | 45        | 0.88      |
| 50 - 100 m<br>(51.18 - 101.50 m)   | 37°40'                    | 0°45' | 10°20'       | 0°12' | 40°40'                  | 0°48' | 40°35'                   | 0°48' | 18°45'        | 0°22' | 20°00'       | 0°24' | 168°00'      | 3°20' |              |     | 70        | 1.39      |
| 100 - 150 m<br>(101.50 - 154.96 m) | 37°30'                    | 0°42' | 19°00'       | 0°21' | 57°10'                  | 1°04' | 94°30'                   | 1°46' | 2°30'         | 0°02' | 20°00'       | 0°22' | 230°40'      | 4°19' |              |     | 70        | 1.31      |
| 150 - 200 m<br>( )                 |                           |       |              |       |                         |       |                          |       |               |       |              |       |              |       |              |     |           |           |
| Total                              | 114°30'                   |       | 68°55'       |       | 97°50'                  |       | 154°10'                  |       | 22°15'        |       | 57°00'       |       | 514°40'      |       |              |     | 185       | 1.19      |
|                                    | 22.2%                     |       | 13.4%        |       | 19.2%                   |       | 29.9%                    |       | 4.3%          |       | 11.0%        |       | 100%         |       |              |     |           |           |

Time Distribution in Drilling Works

Table 3-33 Underground No.11

| Depth of Section                 | Working Time & Efficiency | Drilling     |        | Hoisting & Lowering Rod |        | Hoisting & Lowering I.T. |        | Miscellaneous |        | Repairing    |        | Others       |        | Total        |        | Manshifts    |        |
|----------------------------------|---------------------------|--------------|--------|-------------------------|--------|--------------------------|--------|---------------|--------|--------------|--------|--------------|--------|--------------|--------|--------------|--------|
|                                  |                           | Working Time | Time/M | Working Time            | Time/M | Working Time             | Time/M | Working Time  | Time/M | Working Time | Time/M | Working Time | Time/M | Working Time | Time/M | Working Time | Time/M |
| 0 - 50 m<br>(0 - 50.84 m)        |                           | 32°15'       | 0°38'  | 32°00'                  | 0°38'  |                          |        | 21°45'        | 0°26'  | 2°00'        | 0°02'  | 25°30'       | 0°30'  | 113°30'      | 2°14'  | 41           | 0.81   |
| 50 - 100 m<br>(50.84 - 100.31 m) |                           | 38°00'       | 0°46'  | 77°00'                  | 1°33'  |                          |        | 60°00'        | 1°13'  | 10°00'       | 0°12'  | 22°30'       | 0°27'  | 207°30'      | 4°11'  | 62           | 1.25   |
| 100 - 150 m<br>(100.31 - 126.52) |                           | 16°00'       | 0°37'  | 51°45'                  | 1°58'  |                          |        | 62°15'        | 2°22'  | 1°30'        | 0°03'  | 19°30'       | 0°45'  | 151°00'      | 5°46'  | 39           | 1.49   |
| 150 - 200 m<br>( )               |                           |              |        |                         |        |                          |        |               |        |              |        |              |        |              |        |              |        |
| Total                            |                           | 86°15'       | 0°41'  | 160°45'                 | 1°16'  |                          |        | 144°00'       | 1°08'  | 13°30'       | 0°06'  | 67°30'       | 0°32'  | 472°00'      | 3°43'  | 142          | 1.12   |
|                                  |                           | 18.3%        |        | 34.0%                   |        |                          |        | 30.5%         |        | 2.9%         |        | 14.3%        |        | 100%         |        |              |        |

Time Distribution in Drilling Works

Table 3-34 Underground No.12

| Depth of Section                   | Working Time & Efficiency |        | Drilling     |        | Hoisting & Lowering Rod |        | Hoisting & Lowering I.P. |        | Miscellaneous |        | Repairing    |        | Others       |        | Total        |        | Manshifts        |               |
|------------------------------------|---------------------------|--------|--------------|--------|-------------------------|--------|--------------------------|--------|---------------|--------|--------------|--------|--------------|--------|--------------|--------|------------------|---------------|
|                                    | Working Time              | Time/M | Working Time | Time/M | Working Time            | Time/M | Working Time             | Time/M | Working Time  | Time/M | Working Time | Time/M | Working Time | Time/M | Working Time | Time/M | Total Man-shifts | Man-shifts /M |
| 0 - 50 m<br>(0 51.05 m)            | 43'30"                    | 0'51"  | 47'05"       | 0'55"  |                         |        | 39'55"                   | 0'47"  | 10'00"        | 0'12"  | 30'15"       | 0'55"  | 170'45"      | 3'20"  | 64           | 1.25   |                  |               |
| 50 - 100 m<br>(51.05 - 101.16 m)   | 38'50"                    | 0'46"  | 73'30"       | 1'28"  |                         |        | 41'40"                   | 0'50"  |               |        | 40'00"       | 0'48"  | 194'00"      | 3'52"  | 59           | 1.12   |                  |               |
| 100 - 150 m<br>(101.16 - 121.74 m) | 15'40"                    | 0'46"  | 39'05"       | 1'54"  |                         |        | 44'00"                   | 2'08"  | 8'30"         | 0'25"  | 26'45"       | 1'18"  | 134'00"      | 6'31"  | 43           | 2.09   |                  |               |
| 150 - 200 m<br>( )                 |                           |        |              |        |                         |        |                          |        |               |        |              |        |              |        |              |        |                  |               |
| Total                              | 98'00"                    | 0'48"  | 159'40"      | 1'19"  |                         |        | 125'35"                  | 1'02"  | 18'30"        | 0'09"  | 97'00"       | 0'48"  | 498'45"      | 4'06"  | 166          | 1.36   |                  |               |

Time Distribution in Drilling Works

Table 3-35 Underground No.13

| Depth of Section                | Working Time & Efficiency |            | Drilling       |                | Hoisting & Lowering Rod |                | Hoisting & Lowering I. T. |                | Miscellaneous  |                | Repairing      |                | Others         |                | Total          |                | Manshifts        |               |
|---------------------------------|---------------------------|------------|----------------|----------------|-------------------------|----------------|---------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|---------------|
|                                 | Working Time              | Efficiency | Working Time/M | Working Time/M | Working Time/M          | Working Time/M | Working Time/M            | Working Time/M | Working Time/M | Working Time/M | Working Time/M | Working Time/M | Working Time/M | Working Time/M | Working Time/M | Working Time/M | Total Man-shifts | Man-shifts /M |
| 0 - 50 m<br>(0 - 50.02 m)       | 39°35'                    |            | 0°47'          | 63°40'         | 1°16'                   |                |                           |                | 38°30'         | 0°46'          | 7°30'          | 0°09'          | 30°45'         | 0°37'          | 180°00'        | 3°35'          | 66               | 1.32          |
| 50 - 100 m<br>(50.02 - 95.95 m) | 33°55'                    |            | 0°44'          | 62°45'         | 1°22'                   |                |                           |                | 83°35'         | 1°49'          | 7°15'          | 0°09'          | 24°00'         | 0°31'          | 211°30'        | 4°35'          | 74               | 1.61          |
| 100 - 150 m<br>( )              |                           |            |                |                |                         |                |                           |                |                |                |                |                |                |                |                |                |                  |               |
| 150 - 200 m<br>( )              |                           |            |                |                |                         |                |                           |                |                |                |                |                |                |                |                |                |                  |               |
| Total                           | 75°30'                    |            | 0°46'          | 126°25'        | 1°19'                   |                |                           |                | 122°05'        | 1°16'          | 14°45'         | 0°09'          | 54°45'         | 0°34'          | 391°30'        | 4°04'          | 140              | 1.46          |
|                                 | 19.0%                     |            |                | 32.2%          |                         |                |                           |                | 31.1%          |                | 3.7%           |                | 14.0%          |                | 100%           |                |                  |               |

Time Distribution in Drilling Works

Table 3-36 Underground No.14

| Depth of Section                  | Working Time & Efficiency | Drilling     |        | Hoisting & Lowering Rod |        | Hoisting & Lowering I.T. |        | Miscellaneous |        | Repairing    |        | Others       |        | Total        |        | Manshifts    |        |
|-----------------------------------|---------------------------|--------------|--------|-------------------------|--------|--------------------------|--------|---------------|--------|--------------|--------|--------------|--------|--------------|--------|--------------|--------|
|                                   |                           | Working Time | Time/M | Working Time            | Time/M | Working Time             | Time/M | Working Time  | Time/M | Working Time | Time/M | Working Time | Time/M | Working Time | Time/M | Working Time | Time/M |
| 0 - 50 m<br>(0 - 50.32 m)         |                           | 42°10'       | 0°50'  | 59°15'                  | 1°11'  |                          |        | 34°35'        | 0°41'  | 4°00'        | 0°05'  | 18°00'       | 0°20'  | 158°00'      | 3°07'  | 51           | 1.01   |
| 50 - 100 m<br>(50.32 - 99.24 m)   |                           | 30°00'       | 0°37'  | 68°30'                  | 1°24'  |                          |        | 19°15'        | 0°24'  |              |        | 14°15'       | 0°17'  | 132°00'      | 2°42'  | 38           | 0.78   |
| 100 - 150 m<br>(99.24 - 123.20 m) |                           | 14°35'       | 0°36'  | 38°40'                  | 1°37'  |                          |        | 16°00'        | 0°40'  |              |        | 9°15'        | 0°23'  | 78°30'       | 3°16'  | 21           | 0.88   |
| 150 - 200 m<br>( )                |                           |              |        |                         |        |                          |        |               |        |              |        |              |        |              |        |              |        |
| Total                             |                           | 86°45'       | 0°42'  | 166°25'                 | 1°21'  |                          |        | 69°30'        | 0°34'  | 4°00'        | 0.02   | 41°30'       | 0°20'  | 368°30'      | 2°59'  | 110          | 0.89   |
|                                   |                           | 23.5%        |        | 45.2%                   |        |                          |        | 18.9%         |        | 1.1%         |        | 11.3%        |        | 100%         |        |              |        |



Time Distribution in Drilling Works

Table 3-37 Underground No.15

| Depth of Section                  | Working Time & Efficiency |        | Drilling     |        | Hoisting & Lowering Rod |        | Hoisting & Lowering L.F. |        | Miscellaneous |        | Repairing    |        | Others       |        | Total        |        | Manshifts        |              |
|-----------------------------------|---------------------------|--------|--------------|--------|-------------------------|--------|--------------------------|--------|---------------|--------|--------------|--------|--------------|--------|--------------|--------|------------------|--------------|
|                                   | Working Time              | Time/M | Working Time | Time/M | Working Time            | Time/M | Working Time             | Time/M | Working Time  | Time/M | Working Time | Time/M | Working Time | Time/M | Working Time | Time/M | Total Man-shifts | Man-shifts/M |
| 0 - 50 m<br>(0 - 52.21 m)         | 49°15'                    | 0°56'  | 61°20'       | 1°05'  |                         |        | 41°50'                   | 0°48'  | 26°35'        | 0°31'  | 31°30'       | 0°36'  | 210°30'      | 3°56'  |              |        | 71               | 0.74         |
| 50 - 100 m<br>(52.21 - 98.88 m)   | 36°00'                    | 0°46'  | 61°45'       | 1°19'  |                         |        | 31°30'                   | 0°40'  |               |        |              |        | 18°45'       | 0°24'  | 148°00'      | 3°10'  | 46               | 1.01         |
| 100 - 150 m<br>(98.88 - 121.95 m) | 14°30'                    | 0°38'  | 33°45'       | 1°28'  |                         |        | 30°00'                   | 1°18'  | 1°00'         | 0°03'  | 11°45'       | 0°31'  | 91°00'       | 3°57'  |              |        | 28               | 0.82         |
| 150 - 200 m<br>( )                |                           |        |              |        |                         |        |                          |        |               |        |              |        |              |        |              |        |                  |              |
| Total                             | 99°45'                    | 0°49'  | 156°50'      | 1°17'  |                         |        | 103°20'                  | 0°51'  | 27°35'        | 0°14'  | 62°00'       | 0°31'  | 449°30'      | 3°41'  |              |        | 145              | 0.84         |
|                                   | 22.2%                     |        | 34.9%        |        |                         |        | 23.0%                    |        | 6.1%          |        | 13.8%        |        | 100%         |        |              |        |                  |              |

Time Distribution in Drilling Works

Table 3-38 Underground No. 16

| Depth of Section                | Working Time & Efficiency |            | Drilling       |              | Hoisting & Lowering Rod |              | Hoisting & Lowering I. T. |              | Miscellaneous  |              | Repairing      |              | Others         |              | Total          |                    | Manshifts            |                  |              |
|---------------------------------|---------------------------|------------|----------------|--------------|-------------------------|--------------|---------------------------|--------------|----------------|--------------|----------------|--------------|----------------|--------------|----------------|--------------------|----------------------|------------------|--------------|
|                                 | Working Time              | Efficiency | Working Time/M | Working Time | Working Time/M          | Working Time | Working Time/M            | Working Time | Working Time/M | Working Time | Working Time/M | Working Time | Working Time/M | Working Time | Working Time/M | Total Working Time | Total Working Time/M | Total Man-shifts | Man-shifts/M |
|                                 |                           |            |                |              |                         |              |                           |              |                |              |                |              |                |              |                |                    |                      |                  |              |
| 0 - 59 m<br>(0 - 48.52 m)       | 39°00'                    |            | 0°48'          | 42°40'       | 0°53'                   |              |                           |              | 58°50'         | 1°13'        | 2°00'          | 0°02'        | 14°00'         | 0°17'        | 156°30'        | 3°13'              | 50                   | 0.97             |              |
| 50 - 100 m<br>(48.52 - 67.67 m) | 11°50'                    |            | 0°37'          | 24°40'       | 1°17'                   |              |                           |              | 37°00'         | 1°36'        |                |              | 8°00'          | 0°25'        | 81°30'         | 4°15'              | 25                   | 0.77             |              |
| 100 - 150 m<br>( )              |                           |            |                |              |                         |              |                           |              |                |              |                |              |                |              |                |                    |                      |                  |              |
| 150 - 200 m<br>( )              |                           |            |                |              |                         |              |                           |              |                |              |                |              |                |              |                |                    |                      |                  |              |
| Total                           | 50°50'                    |            | 0°45'          | 67°20'       | 1°00'                   |              |                           |              | 95°50'         | 1°25'        | 2°00'          | 0°02'        | 22°00'         | 0°20'        | 238°00'        | 3°31'              | 75                   | 0.90             |              |
|                                 | 21.3%                     |            | 28.3%          |              |                         |              |                           |              | 40.3%          |              | 0.8%           |              | 9.3%           |              | 100%           |                    |                      |                  |              |

Time Distribution in Drilling Works

Table 3-39 Underground No. 17

| Depth of Section        | Working Time & Efficiency |        | Drilling     |        | Hoisting & Lowering Rod |        | Hoisting & Lowering I. T. |        | Miscellaneous |        | Repairing    |        | Others       |        | Total        |        | Manshifts        |              |       |      |
|-------------------------|---------------------------|--------|--------------|--------|-------------------------|--------|---------------------------|--------|---------------|--------|--------------|--------|--------------|--------|--------------|--------|------------------|--------------|-------|------|
|                         | Working Time              | Time/M | Working Time | Time/M | Working Time            | Time/M | Working Time              | Time/M | Working Time  | Time/M | Working Time | Time/M | Working Time | Time/M | Working Time | Time/M | Total Man-shifts | Man-shifts/M |       |      |
| 0 - 50 m<br>(0 25.70 m) | 18°40'                    | 0°44'  | 11°50'       | 0°28'  | 16°45'                  | 0°39'  | 3°45'                     | 0°09'  | 9°00'         | 0°21'  | 60°00'       | 2°20'  | 21           | 1.22   |              |        |                  |              |       |      |
| 50 - 100 m<br>( )       |                           |        |              |        |                         |        |                           |        |               |        |              |        |              |        |              |        |                  |              |       |      |
| 100 - 150 m<br>( )      |                           |        |              |        |                         |        |                           |        |               |        |              |        |              |        |              |        |                  |              |       |      |
| 150 - 200 m<br>( )      |                           |        |              |        |                         |        |                           |        |               |        |              |        |              |        |              |        |                  |              |       |      |
| Total                   | 18°40'                    | 0°44'  | 11°50'       | 0°28'  | 16°45'                  | 0°39'  | 3°45'                     | 0°09'  | 9°00'         | 0°21'  | 60°00'       | 2°20'  | 21           | 1.22   | 31.1%        | 19.7%  | 27.9%            | 6.3%         | 15.0% | 100% |

Time Distribution in Drilling Works

Table 3-40 Surface No. 1

| Depth of Section                   | Working Time & Efficiency |        | Drilling     |        | Hoisting & Lowering Rod |        | Hoisting & Lowering I. T. |        | Miscellaneous |        | Repairing    |        | Others       |        | Total        |        | Manshifts        |               |
|------------------------------------|---------------------------|--------|--------------|--------|-------------------------|--------|---------------------------|--------|---------------|--------|--------------|--------|--------------|--------|--------------|--------|------------------|---------------|
|                                    | Working Time              | Time/M | Working Time | Time/M | Working Time            | Time/M | Working Time              | Time/M | Working Time  | Time/M | Working Time | Time/M | Working Time | Time/M | Working Time | Time/M | Total Man-shifts | Man-shifts /M |
| 0 - 50 m<br>(0 - 55.50 m)          | 51°45'                    | 0°56'  | 8°00'        | 0°09'  | 17°00'                  | 0°18'  | 77°30'                    | 1°24'  | 4°00'         | 0°04'  | 29°45'       | 0°32'  | 188°00'      | 3°23'  | 60           | 1.08   |                  |               |
| 50 - 100 m<br>(55.50 - 100.95)     | 56°45'                    | 1°15'  | 5°00'        | 0°07'  | 20°30'                  | 0°27'  | 19°45'                    | 0°26'  | 3°00'         | 0°04'  | 11°00'       | 0°14'  | 116°00'      | 2°33'  | 40           | 0.88   |                  |               |
| 100 - 150 m<br>(100.95 - 148.60 m) | 39°00'                    | 0°49'  | 11°00'       | 0°14'  | 23°30'                  | 0°29'  | 64°30'                    | 1°21'  |               |        | 14°00'       | 0°18'  | 152°00'      | 3°11'  | 55.5         | 1.16   |                  |               |
| 150 - 200 m<br>(148.60 - 200)      | 42°10'                    | 0°49'  | 5°00'        | 0°06'  | 24°20'                  | 0°28'  | 22°30'                    | 0°26'  | 1°00'         | 0°01'  | 10°00'       | 0°12'  | 105°00'      | 2°02'  | 36.5         | 0.71   |                  |               |
| Total                              | 189°40'                   | 0°57'  | 29°00'       | 0°09'  | 85°20'                  | 0°26'  | 184°15'                   | 0°55'  | 8°00'         | 0°02'  | 64°45'       | 0°19'  | 561°00'      | 2°48'  | 192          | 0.96   |                  |               |
|                                    | 33.8%                     |        | 5.2%         |        | 15.2%                   |        | 32.8%                     |        | 1.5%          |        | 11.5%        |        | 100%         |        |              |        |                  |               |

Time Distribution in Drilling Works

Table 3-41 Surface No. 2

| Depth of Section                  | Working Time & Efficiency | Drilling     |        | Hoisting & Lowering Rod |        | Hoisting & Lowering I. T. |        | Miscellaneous |        | Repairing    |        | Others       |        | Total        |        | Manshifts    |        |
|-----------------------------------|---------------------------|--------------|--------|-------------------------|--------|---------------------------|--------|---------------|--------|--------------|--------|--------------|--------|--------------|--------|--------------|--------|
|                                   |                           | Working Time | Time/M | Working Time            | Time/M | Working Time              | Time/M | Working Time  | Time/M | Working Time | Time/M | Working Time | Time/M | Working Time | Time/M | Working Time | Time/M |
| 0 - 50 m<br>(0 - 53.30 m)         |                           | 61°45'       | 1°09'  | 13°30'                  | 0°14'  | 10°45'                    | 0°11'  | 71°45'        | 1°27'  | 109°15'      | 2°02'  | 27°00'       | 0°29'  | 294°00'      | 5°32'  | 110.5        | 2.07   |
| 50 - 100 m<br>(53.30 - 98.30 m)   |                           | 46°15'       | 1°02'  | 13°15'                  | 0°18'  | 20°10'                    | 0°27'  | 131°50'       | 2°56'  | 113°30'      | 2°31'  | 32°00'       | 0°42'  | 357°00'      | 7°56'  | 134.5        | 2.99   |
| 100 - 150 m<br>(98.30 - 150.55 m) |                           | 49°25'       | 0°57'  | 7°30'                   | 0°09'  | 23°20'                    | 0°27'  | 78°45'        | 1°30'  | 112°00'      | 2°09'  | 37°00'       | 0°42'  | 308°00'      | 5°54'  | 153.5        | 2.93   |
| 150 - 200 m<br>( )                |                           |              |        |                         |        |                           |        |               |        |              |        |              |        |              |        |              |        |
| Total                             |                           | 157°25'      | 1°03'  | 34°15'                  | 0°14'  | 54°15'                    | 0°22'  | 282°20'       | 1°52'  | 334°45'      | 2°13'  | 96°00'       | 0°38'  | 959°00'      | 6°22'  | 398.5        | 2.65   |
|                                   |                           | 16.4%        |        | 3.6%                    |        | 5.6%                      |        | 29.4%         |        | 35.0%        |        | 10.0%        |        | 100%         |        |              |        |

Time Distribution in Drilling Works

Table 3-42 Surface No. 3

| Working Time & Efficiency          | Drilling     |        | Hoisting & Lowering Rod |        | Hoisting & Lowering I. T. |        | Miscellaneous |        | Repairing    |        | Others       |        | Total        |        | Manshifts |               |
|------------------------------------|--------------|--------|-------------------------|--------|---------------------------|--------|---------------|--------|--------------|--------|--------------|--------|--------------|--------|-----------|---------------|
|                                    | Working Time | Time/M | Working Time            | Time/M | Working Time              | Time/M | Working Time  | Time/M | Working Time | Time/M | Working Time | Time/M | Working Time | Time/M | Total     | Man-shifts /M |
| 0 - 50 m<br>(0 - 53.90 m)          | 46°20'       | 0°52'  | 1°25'                   | 0°02'  | 9°20'                     | 0°10'  | 21°55'        | 0°24'  |              |        | 11°00'       | 0°12'  | 90°00'       | 1°40'  | 23.5      | 0.44          |
| 50 - 100 m<br>(53.90 - 102.05 m)   | 35°00'       | 0°46'  | 2°00'                   | 0°02'  | 12°00'                    | 0°15'  | 17°00'        | 0°21'  |              |        | 6°00'        | 0°07'  | 72°00'       | 1°30'  | 24.5      | 0.51          |
| 100 - 150 m<br>(102.05 - 152.70 m) | 36°15'       | 0°43'  | 1°00'                   | 0°01'  | 18°45'                    | 0°22'  | 10°00'        | 0°12'  |              |        | 6°00'        | 0°07'  | 72°00'       | 1°25'  | 22.5      | 0.44          |
| 150 - 200 m<br>(152.70 - 201.50)   | 47°45'       | 0°58'  | 10°00'                  | 0°12'  | 21°30'                    | 0°26'  | 68°15'        | 1°23'  |              |        | 16°00'       | 0°19'  | 188°00'      | 3°48'  | 58.5      | 1.18          |
| Total                              | 165°20'      | 0°49'  | 14°25'                  | 0°04'  | 61°35'                    | 0°18'  | 117°10'       | 0°35'  |              |        | 39°00'       | 0°12'  | 422°00'      | 2°06'  | 129       | 0.64          |
|                                    | 39.2%        |        | 3.4%                    |        | 14.6%                     |        | 27.8%         |        |              |        | 9.2%         |        | 100%         |        |           |               |

Time Distribution in Drilling Works

Table 3-43 Surface No. 8

| Working Time & Efficiency<br>Depth of Section | Drilling     |        | Hoisting & Lowering Rod |        | Hoisting & Lowering I. T. |        | Miscellaneous |        | Repairing    |        | Others       |        | Total        |        | Manshifts          |        |
|---|--------------|--------|-------------------------|--------|---------------------------|--------|---------------|--------|--------------|--------|--------------|--------|--------------|--------|--------------------|--------|
|   | Working Time | Time/M | Working Time            | Time/M | Working Time              | Time/M | Working Time  | Time/M | Working Time | Time/M | Working Time | Time/M | Working Time | Time/M | Total Working Time | Time/M |
| 0 - 50 m<br>(0 48.80 m)                       | 36°00'       | 0°44'  | 10°30'                  | 0°13'  | 20°15'                    | 0°25'  | 167°20'       | 3°26'  | 80°55'       | 1°39'  | 41°00'       | 0°50'  | 356°00'      | 7°17'  | 122                | 2.50   |
| 50 - 100 m<br>(48.80 - 99.00 m)               | 33°50'       | 0°40'  | 11°00'                  | 0°13'  | 34°40'                    | 0°41'  | 133°00'       | 2°39'  | 36°00'       | 0°43'  | 24°00'       | 0°29'  | 272°30'      | 5°25'  | 90                 | 1.79   |
| 100 - 150 m<br>(99.00 - 154.23 m)             | 41°50'       | 0°45'  | 7°00'                   | 0°08'  | 38°20'                    | 0°42'  | 78°20'        | 1°25'  | 7°30'        | 0°08'  | 17°00'       | 0°18'  | 190°00'      | 3°26'  | 53                 | 0.96   |
| 150 - 200 m<br>( )                            |              |        |                         |        |                           |        |               |        |              |        |              |        |              |        |                    |        |
| Total   | 111°40'      | 0°43'  | 28°30'                  | 0°11'  | 93°15'                    | 0°36'  | 378°40'       | 2°27'  | 124°25'      | 0°49'  | 82°00'       | 0°32'  | 838°30'      | 5°18'  | 265                | 1.72   |
|   | 13.6%        |        | 3.9%                    |        | 11.4%                     |        | 46.3%         |        | 15.2%        |        | 10.0%        |        | 100%         |        |                    |        |

**APPENDICES**  
**(Geological Data)**



## APPENDICES

### GEOLOGY

- A-1 List of Rock Samples
- A-2 Locality Map of Rock Samples on Level 3,500 m, Michiquillay Ore Deposit
- A-3 List of Microphotographs Thin Sections
- A-4 List of Microphotographs Polished sections
- A-5 Chart of Xray Diffraction Analysis
- A-6 Photographs of Fossils
- A-7 Flowsheet of Preparation of Assay Samples
- A-8 Flowsheet of Chemical Analysis
- A-9 Comparison of Ore Grades between Crosscut No.1 and Underground Drill Hole No.4
- A-10 Comparison of Assays between C.R.L. and Plenge C.R.L. :

Central Research Laboratory of Mitsui Mining and Smelting Co., Tokyo.

A-1 List of Rock Samples

| Sample No. | Location        | Formation | Rock                   | Thin Section | Polished section       | Chemical analysis |     | X-ray analysis | Fossil | Remarks |
|------------|-----------------|-----------|------------------------|--------------|------------------------|-------------------|-----|----------------|--------|---------|
|            |                 |           |                        |              |                        | Rock              | Ore |                |        |         |
| 3101       | Cross cut No. 1 |           | qtz monzonite porphyry | o            | o                      |                   |     | o              |        |         |
| 3102       |                 |           | "                      | o            | o                      |                   |     | o              |        |         |
| 3103       |                 |           | "                      | o            | o                      |                   |     |                |        |         |
| 3104       |                 |           | "                      | o            | o                      |                   |     |                |        |         |
| 1432       |                 |           | "                      | o            | o                      |                   | o   |                |        |         |
| 1818       |                 |           | "                      | o            | o                      |                   | o   |                |        |         |
| 3201       | Cross cut No. 2 |           | qtz monzonite porphyry | o            | o                      |                   |     | o              |        |         |
| 3202       |                 |           | "                      | o            | o                      |                   |     | o              |        |         |
| 3203       |                 |           | "                      | o            | o                      |                   |     |                |        |         |
| 3204       |                 |           | "                      | o            | o                      |                   |     |                |        |         |
| 3205       |                 |           | "                      | o            | o                      |                   |     |                | o      |         |
| 3206       |                 |           | "                      | o            | o                      |                   |     |                |        |         |
| 2508       |                 |           | "                      | o            | o                      |                   | o   |                |        |         |
| 3301       |                 |           | Cross cut No. 3        |              | qtz monzonite porphyry | o                 | o   |                |        |         |
| 3302       | "               | o         |                        |              | o                      |                   |     |                |        |         |
| 3303       | "               | o         |                        |              | o                      |                   |     |                | o      |         |
| 3304       | "               | o         |                        |              | o                      |                   |     |                | o      |         |
| 3305       | "               | o         |                        |              | o                      |                   |     |                | o      |         |
| 3306       | "               | o         |                        |              | o                      |                   |     |                | o      |         |
| 3515       | "               | o         |                        |              | o                      |                   | o   |                |        |         |

qtz : quartz

| Sample No. | Location            | Formation | Rock                   | Thin section | Polished section | Chemical analysis |     | X-ray analysis | Fossil | Remarks |
|------------|---------------------|-----------|------------------------|--------------|------------------|-------------------|-----|----------------|--------|---------|
|            |                     |           |                        |              |                  | Rock              | Ore |                |        |         |
| 3401       |                     |           | qtz monzonite porphyry | o            | o                |                   |     | o              |        |         |
| 3402       |                     |           | "                      | o            | o                |                   |     | o              |        |         |
| 3403       |                     |           | "                      | o            | o                |                   |     | o              |        |         |
| 3404       |                     |           | "                      | o            | o                |                   |     | o              |        |         |
| 3405       |                     |           | "                      | o            | o                |                   |     | o              |        |         |
| 5221       | Cross cut No.4-A    |           | qtz monzonite porphyry | o            | o                | o                 | o   |                |        |         |
| 4501       | No.5                |           | qtz monzonite porphyry | o            | o                |                   |     |                |        |         |
| 4601       | No.6                |           | "                      | o            | o                |                   |     |                |        |         |
| 4701       | No.7                |           | "                      | o            | o                |                   |     |                |        |         |
| 2821       | Surface Boring No.8 |           | qtz monzonite porphyry | o            | o                |                   |     |                |        |         |
| 2822       |                     |           | "                      | o            | o                |                   |     |                |        |         |
| 2102       | Surface             |           | sandstone / magnetite  | o            | o                |                   |     |                |        |         |
| 2103       | Boring              |           | magnetite              | o            | o                |                   |     |                |        |         |
| 2104       | No.1                |           | porphyrite             | o            |                  |                   |     |                |        |         |
| 2201       | Surface             | Inca      | andestic sandy tuff    | o            |                  |                   |     |                |        |         |
| 2202       | Boring              | "         | shale with sandstone   | o            |                  |                   |     |                |        |         |
| 2203       | No.2                | "         | black shale (tuff)     | o            |                  |                   |     |                |        |         |
| 2301       | Surface             |           | porphyrite             | o            |                  |                   |     |                |        |         |
| 2302       | Boring              |           | qtz monzonite porphyry | o            |                  |                   |     |                |        |         |
| 2303       | No.3                |           | "                      | o            |                  |                   |     |                |        |         |

qtz : quartz

| Sample No.1 | Location                  | Formation | Rock                   | Thin section | Polished section | Chemical analysis |     | X-ray analysis | Fossil | Remarks |
|-------------|---------------------------|-----------|------------------------|--------------|------------------|-------------------|-----|----------------|--------|---------|
|             |                           |           |                        |              |                  | Rock              | Ore |                |        |         |
| 2304        | Surface<br>Boxing<br>No.3 |           | qtz monzonite porphyry | o            |                  |                   |     |                |        |         |
| 2305        |                           |           | "                      | o            |                  |                   |     |                |        |         |
| 2306        |                           |           | "                      | o            |                  |                   |     |                |        |         |
| 2307        |                           |           | "                      | o            |                  |                   |     |                |        |         |
| 0401A       |                           | Inca      | qtz monzonite porphyry | o            |                  |                   |     |                |        |         |
| 0401B       |                           |           | silicified rock        | o            |                  |                   |     |                |        |         |
| 0401C       |                           |           | "                      |              |                  |                   |     |                |        |         |
| 0402A       |                           |           | shale                  |              |                  |                   |     |                |        |         |
| 0402B       |                           |           | "                      |              |                  |                   |     |                |        |         |
| 0402C       |                           |           | quartzite              |              |                  |                   |     |                |        |         |
| 0402D       |                           |           | shale                  |              |                  |                   |     |                |        |         |
| 0402E       |                           |           | "                      |              |                  |                   |     |                |        |         |
| 0402F       |                           |           | sandy shale            |              |                  |                   |     |                |        |         |
| 0403        |                           |           | shale                  |              |                  |                   |     |                |        |         |
| 0601        | Chulec                    |           | limestone & skarn      | o            |                  |                   |     |                |        |         |
| 0602        |                           |           | garnet skarn           |              |                  |                   |     |                |        |         |
| 0901        | Inca                      |           | quartzite & skarn      |              |                  |                   |     |                |        |         |
| 1001        |                           |           | monz. & shale contact  | o            |                  |                   |     |                |        |         |
| 1002        |                           |           | qtz monzonite porphyry | o            |                  |                   |     |                |        |         |
| 0201        |                           | Inca      | shale                  | o            |                  |                   |     |                |        |         |

qtz : quartz

monz : monzonite

| Sample No. | Location       | Formation          | Rock                   | Thin section | Polished section | Chemical analysis |     | X-ray analysis | Fossil | Remarks |  |
|------------|----------------|--------------------|------------------------|--------------|------------------|-------------------|-----|----------------|--------|---------|--|
|            |                |                    |                        |              |                  | Rock              | Ore |                |        |         |  |
| 0202       | Magnetite Hill | Inca               | qtz monzonite porphyry | o            |                  |                   |     |                |        |         |  |
| 0203       |                |                    | "                      | o            |                  |                   |     |                |        |         |  |
| 0204       |                |                    | shale                  |              |                  |                   |     |                |        |         |  |
| 0205       |                |                    | monz. with xenolith    | o            |                  |                   |     |                |        |         |  |
| 3000       |                |                    | qtz monzonite porphyry | o            |                  |                   |     |                |        |         |  |
| 2801       | Western Valley | Inca               | shale                  |              |                  |                   |     |                |        |         |  |
| 2802       |                | Goyaris-<br>quizga | quartzite              |              |                  |                   |     |                |        |         |  |
| 2803       |                | "                  | quartzite & shale      |              |                  |                   |     |                |        |         |  |
| 2804       |                | "                  | quartzite              |              |                  |                   |     |                |        |         |  |
| 2805       |                |                    | qtz monzonite porphyry | o            |                  |                   |     |                |        |         |  |
| 2806       |                |                    | "                      | o            |                  |                   |     |                |        |         |  |
| 2807       |                |                    | gossan                 |              |                  |                   |     |                |        |         |  |
| 2808       | Western Valley | Chulec             | qtz monzonite porphyry |              |                  |                   |     |                |        |         |  |
| 2809       |                |                    | "                      |              |                  |                   |     |                |        |         |  |
| 2810       |                |                    | limestone              |              |                  |                   |     |                |        |         |  |
| 2811       |                |                    | qtz monzonite porphyry |              |                  |                   |     |                |        |         |  |
| 2812       |                |                    | "                      | o            |                  |                   |     |                |        |         |  |
| 2813       |                | Inca               | sandstone              |              |                  |                   |     |                |        |         |  |
| 2901       |                |                    | qtz monzonite porphyry | o            |                  |                   |     |                |        |         |  |
| 2902       |                | Inca               | magnetite              |              |                  |                   |     |                |        |         |  |

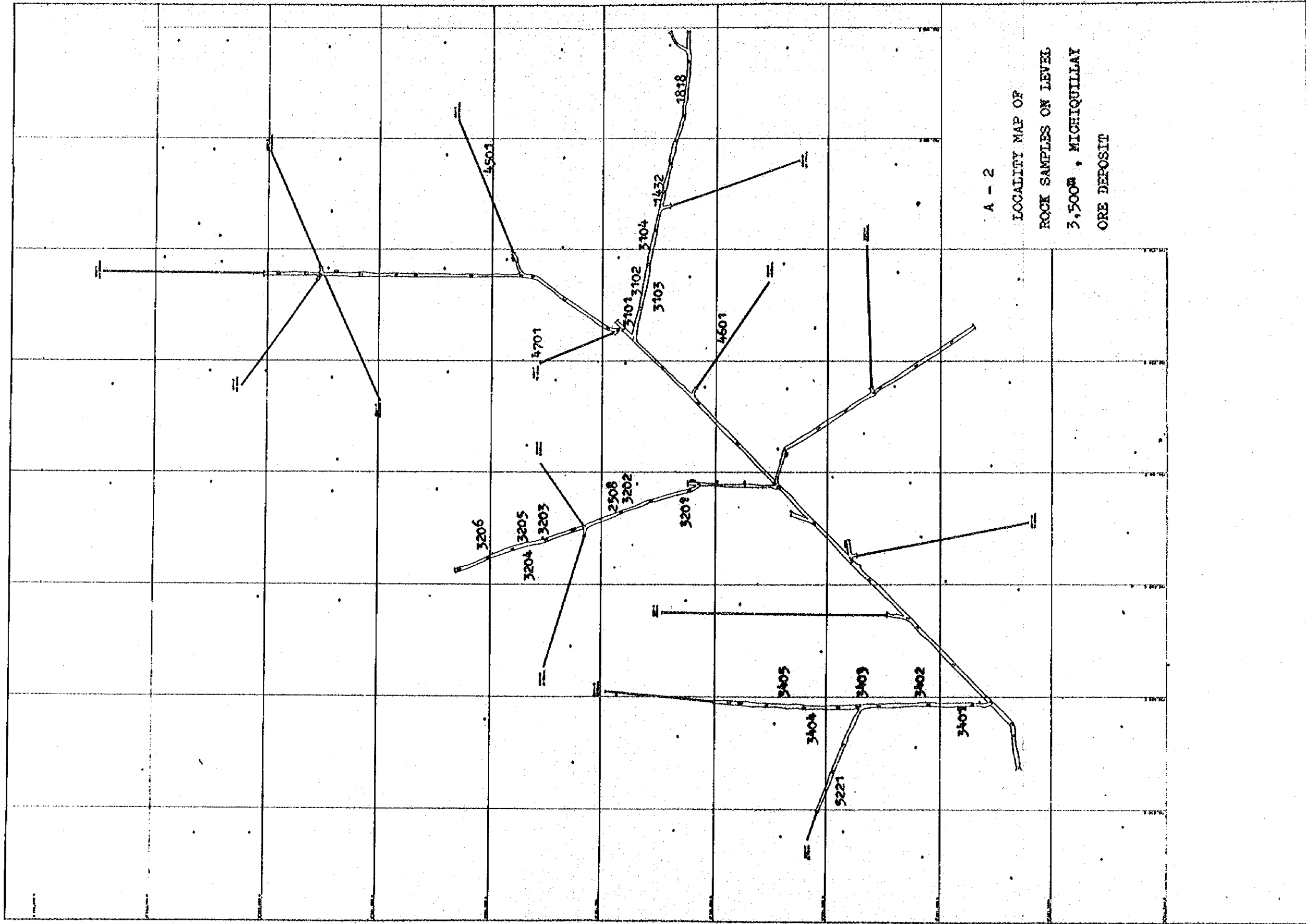
qtz : quartz

monz : monzonite

| Sample No. | Location                        | Formation      | Rock             | Thin section | Polished section | Chemical analysis |     | X-ray analysis | Fossil | Remarks |
|------------|---------------------------------|----------------|------------------|--------------|------------------|-------------------|-----|----------------|--------|---------|
|            |                                 |                |                  |              |                  | Rock              | Ore |                |        |         |
| 2903       | Western Valley                  | Inca           | gossan           |              |                  |                   |     |                |        |         |
| 2904       |                                 | "              | sandy shale      | o            |                  |                   |     |                |        |         |
| 1001       |                                 | "              | "                | "            |                  |                   |     |                |        |         |
| 2905       |                                 | "              | brecciated shale | o            |                  |                   |     |                |        |         |
| 1002       |                                 | "              | "                | "            |                  |                   |     |                |        |         |
| 1301       | Western Valley                  | Goyaris-quizga | sandstone        |              |                  |                   |     |                |        |         |
| 1302       |                                 | Chulec         | limestone        |              |                  |                   |     |                |        |         |
| 1303       |                                 | Inca           | fossile          |              |                  |                   |     |                | o      |         |
| 1304       |                                 |                | porphyrite       |              | o                |                   |     |                |        |         |
| 1305       |                                 | Inca           | fossile          |              |                  |                   |     |                | o      |         |
| 1306       |                                 | Chulec         | "                |              |                  |                   |     |                | o      |         |
| 2905       | Eastern Valley<br>(Celendin R.) | Chulec         | fossile          |              |                  |                   |     |                | o      |         |
| 2906       |                                 | "              | "                |              |                  |                   |     |                | o      |         |
| 2907       |                                 | "              | andesite tuff    |              | o                |                   |     |                |        |         |
| 3001       |                                 | "              | fossile          |              |                  |                   |     |                | o      |         |
| 3002       |                                 | "              | "                |              |                  |                   |     |                | o      |         |
| 3003       |                                 | "              | "                |              |                  |                   |     |                | o      |         |

A-2      Locality Map of Rock Samples on Level 3,500 m,  
            Michiquillay Ore Deposit





A - 2  
 LOCALITY MAP OF  
 ROCK SAMPLES ON LEVEL  
 3,500<sup>m</sup>, MICHIGUILLAY  
 ORE DEPOSIT

A-3 List of Microphotographs

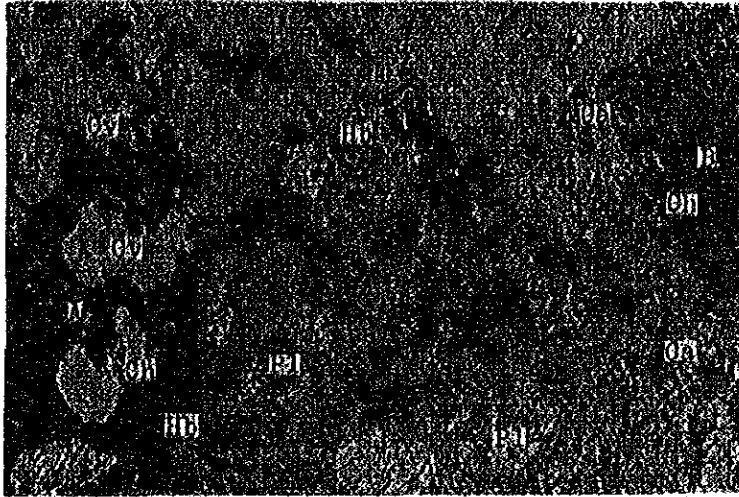
Thin Sections

|      | Sample No. | Rock Name                            | Location            |
|------|------------|--------------------------------------|---------------------|
| (1)  | 2805       | hornblende quartz monzonite porphyry | western valley      |
| (2)  | 2307       | "                                    | surface boring No.3 |
| (3)  | 2821       | biotite quartz monzonite porphyry    | surface boring No.8 |
| (4)  | 1818       | "                                    | crosscut No.1       |
| (5)  | 1432       | "                                    | crosscut No.1       |
| (6)  | 3202       | "                                    | crosscut No.2       |
| (7)  | 5221       | "                                    | crosscut No.4-A     |
| (8)  | 5221       | "                                    | "                   |
| (9)  | 3101       | "                                    | crosscut No.1       |
| (10) | 3515       | "                                    | crosscut No.3       |
| (11) | 3515       | "                                    | crosscut No.3       |

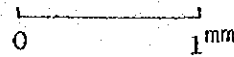
Sample No. 2805

Location: western valley

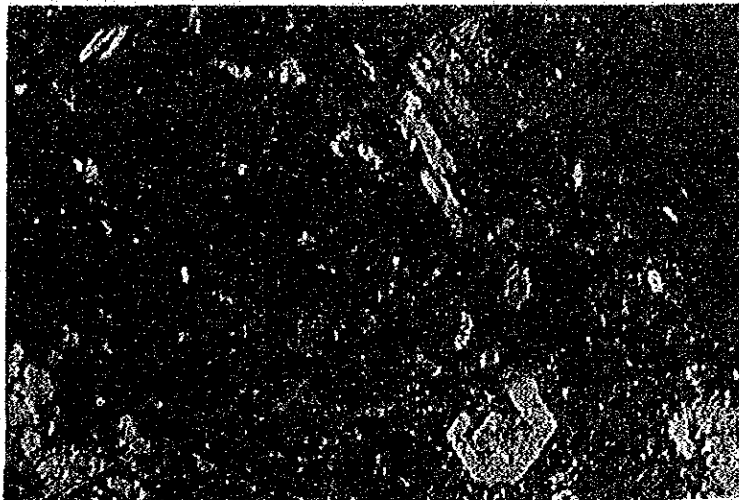
Rock Name: hornblende quartz monzonite porphyry



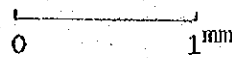
opened nicol



Hb: hornblende  
Pl: plagioclase  
Ca: calcite  
Ch: chlorite  
B : green biotite  
Ap: apatite  
Cv: cavity



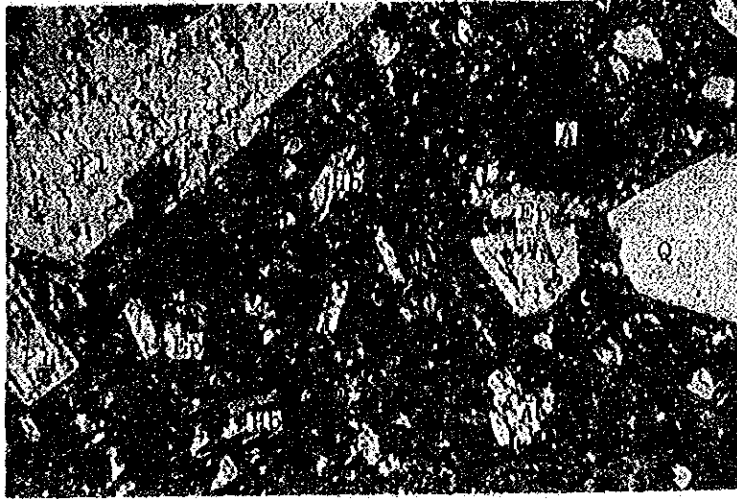
crossed nicols



Sample No. 2307

Location: surface boring No. 3

Rock Name: hornblende quartz monzonite porphyry



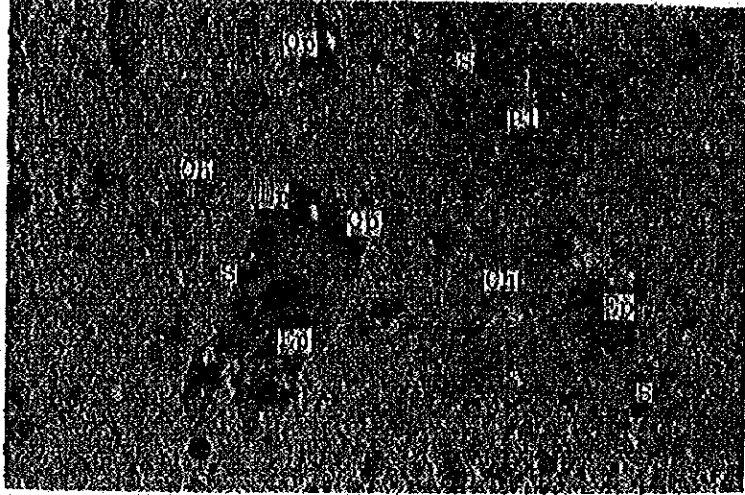
crossed nicols

Hb: hornblende  
Q : quartz  
Pl: plagioclase  
Ep: epidote  
A : antiperthite

0 1 mm

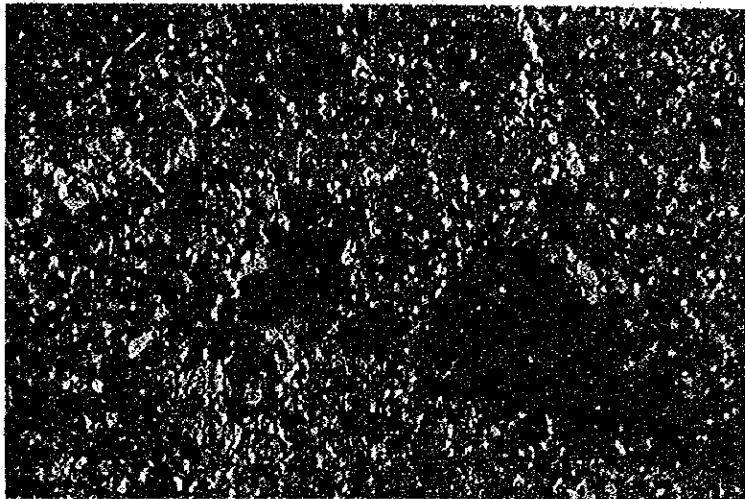
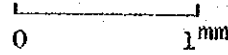
Sample No. 2821

Location: surface boring No.8

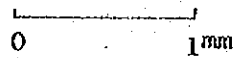


opened nicol

Ch: chlorite  
Ep: epidote  
S : siderite  
Pl: plagioclase  
Op: opaque

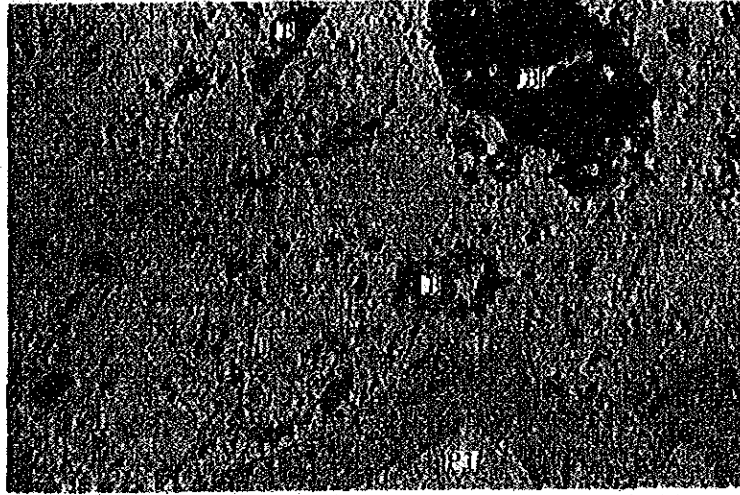


crossed nicols



Sample No.1818

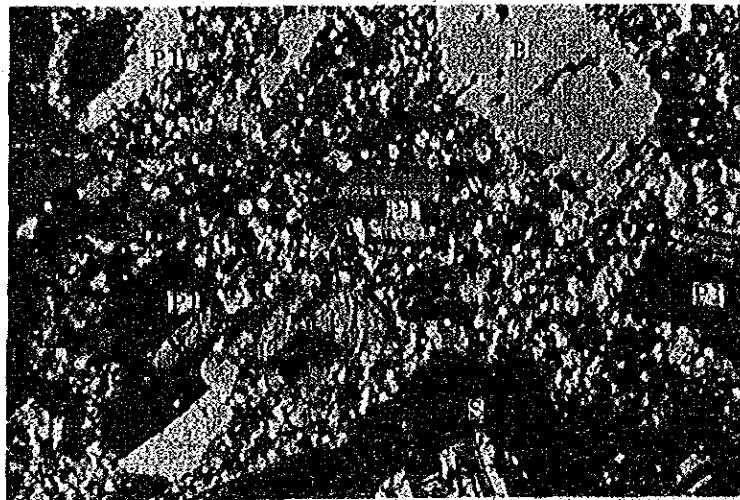
Location: crosscut No.1



opened nicol

0 1 mm

B : biotite  
Pl: plagioclase  
S : sericite

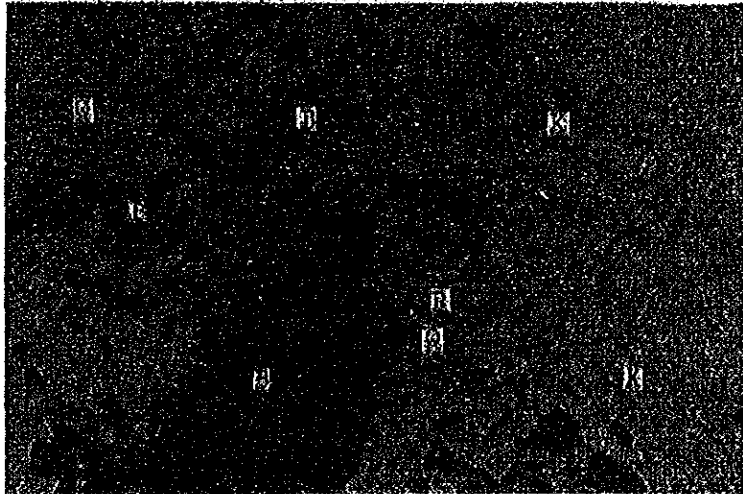


crossed nicols

0 1 mm

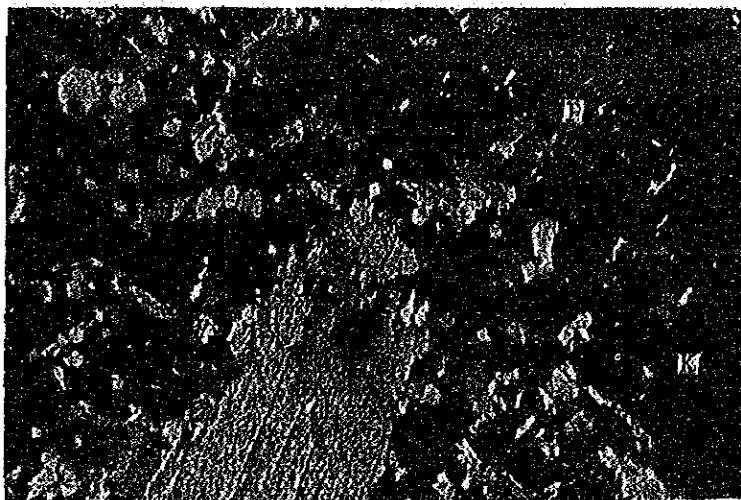
Sample No. 1432

Location: crosscut No. 1



B : biotite  
K : orthoclase  
P : perthite  
Q : quartz

0 0.5mm

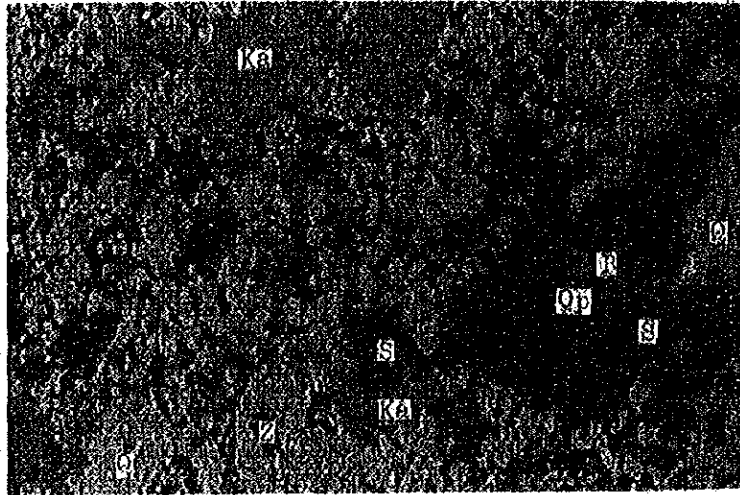


crossed nicols

0 0.5mm

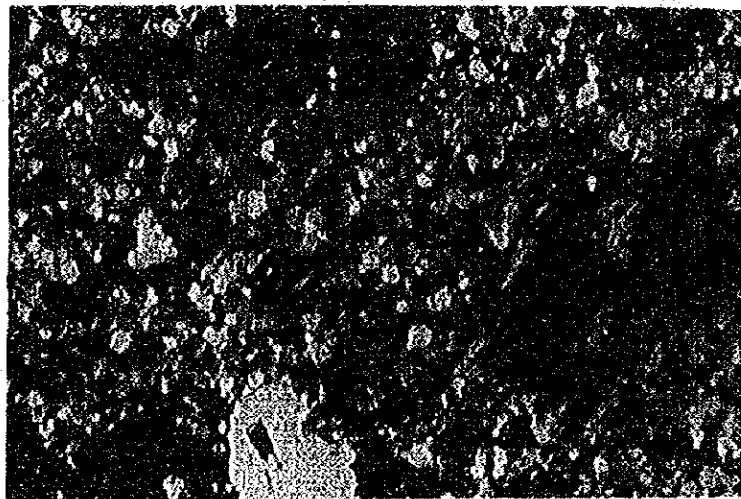
Sample No. 3202

Location: crosscut No. 2

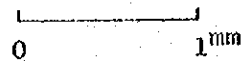


opened nicol

Q : quartz  
B : biotite  
Z : zircon  
Ka: kaoline  
S : sericite  
Op: opaque



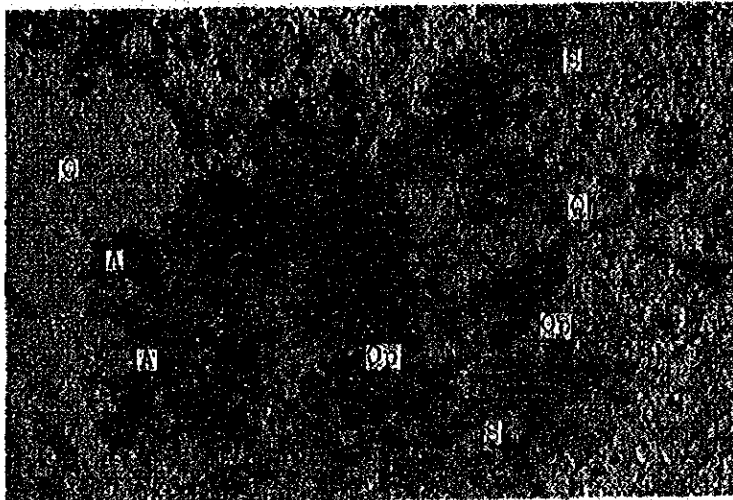
crossed nicols





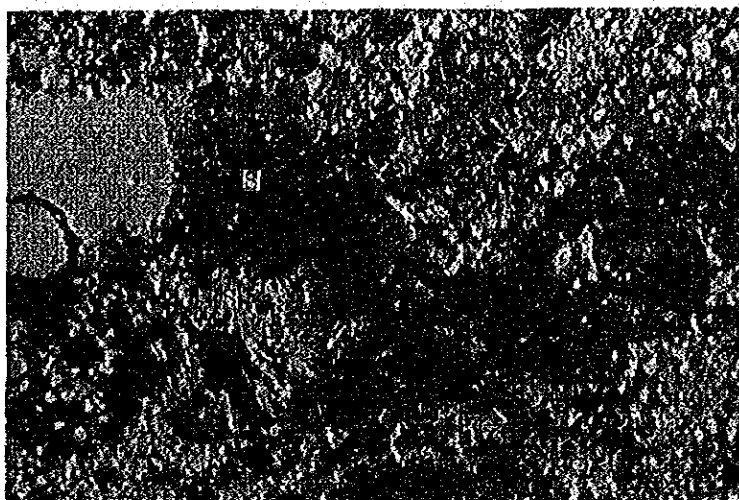
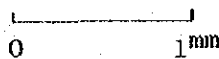
Sample No. 5221

Location: crosscut No. 4-A

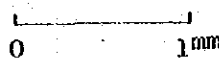


opened nicol

Q : quartz  
A : andalucite  
S : sericite  
Op: opaque

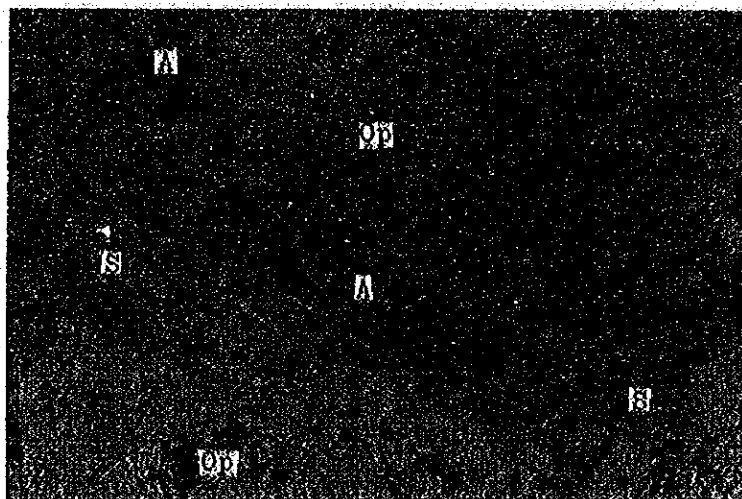


crossed nicols



Sample No.5221

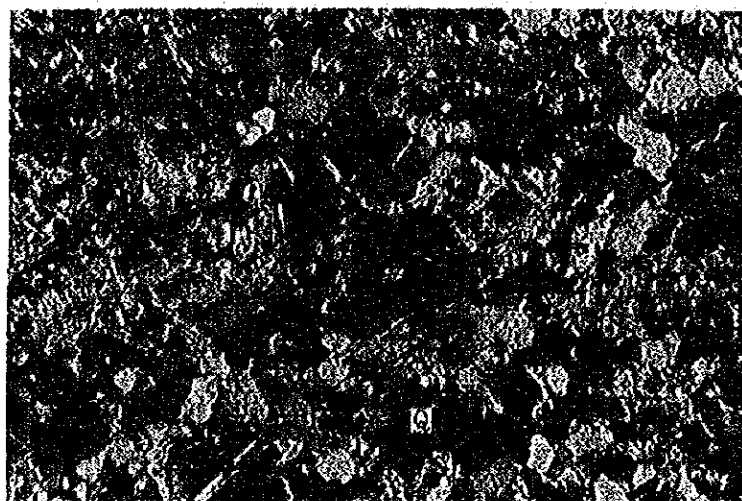
Location: crosscut No.4-A



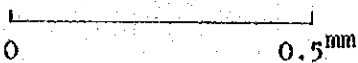
opened nicol



A : andalucite  
Q : quartz  
S : sericite  
Op: opaque

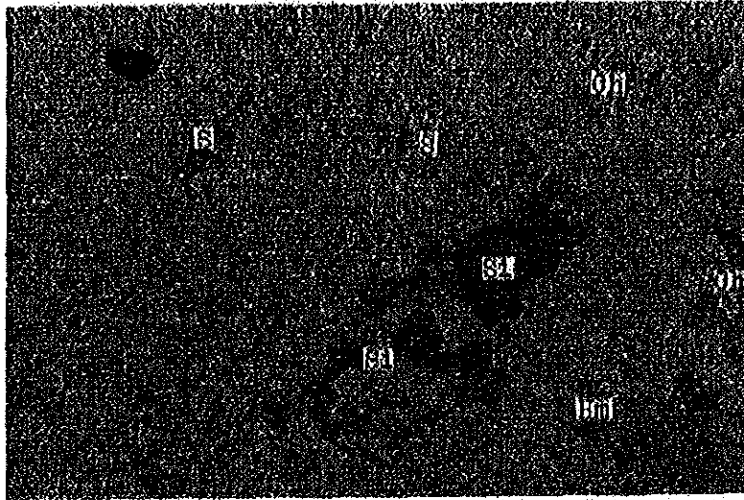


crossed nicols



Sample No.3101

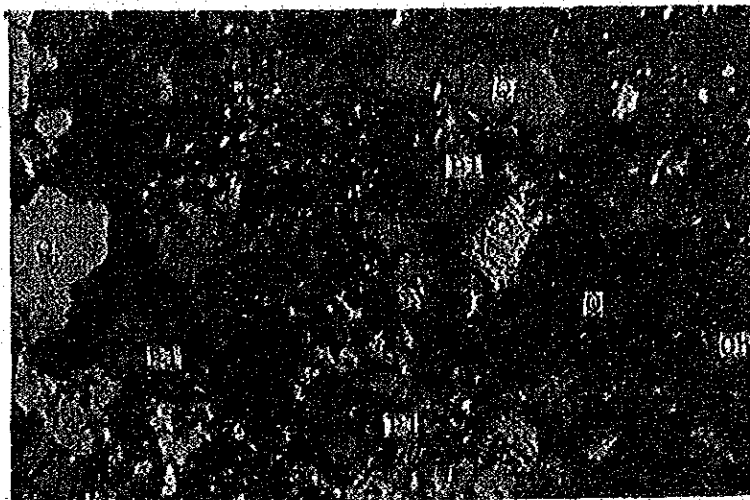
Location: crosscut No.1



opened. nicol

0 0.5<sup>mm</sup>

Si: siderite  
Ch: chlorite  
S : sericite  
Hm: hematite  
Pl: Plagioclase  
Q : quartz

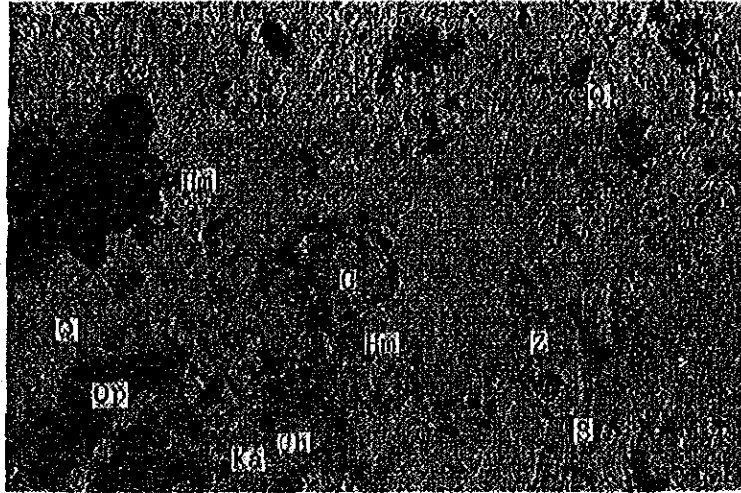


crossed nicols

0 0.5<sup>mm</sup>

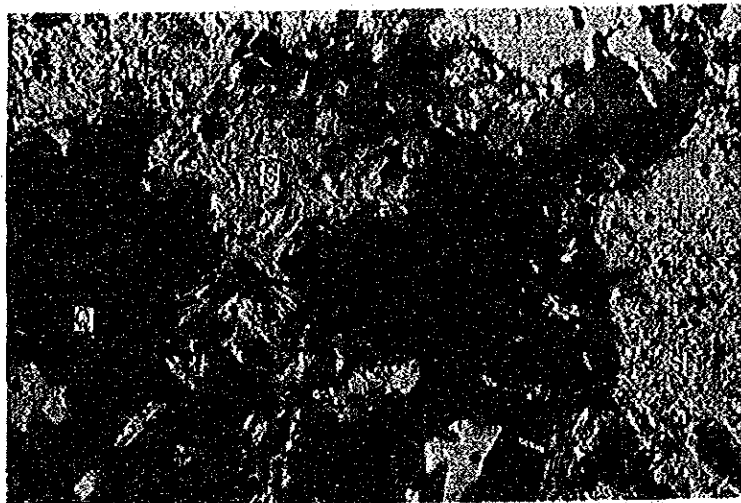
Sample No.3515

Location: crosscut No.3



G : garnet  
Q : quartz  
Z : zircon  
S : sericite  
Ka: kaoline  
Ch: chlorite  
Hm: hematite  
Op: opaque

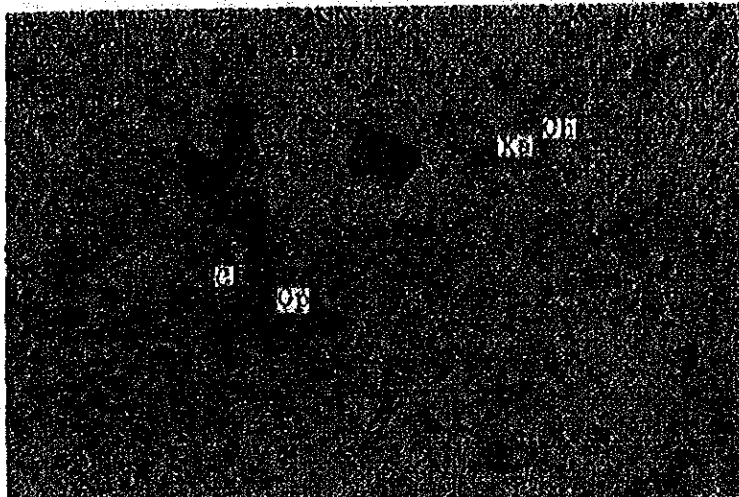
0 0.5mm



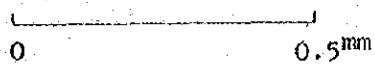
0 0.5mm

Sample No. 3515

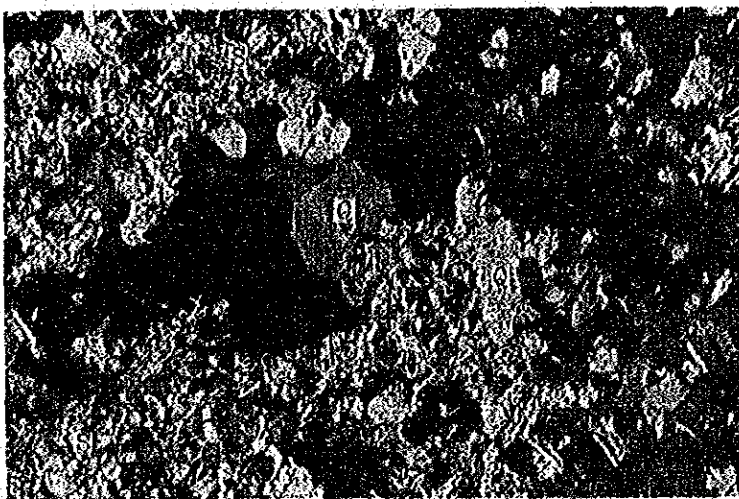
Location: crosscut No. 3



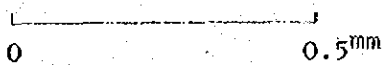
opened nicol



C : corundum  
Q : quartz  
S : sericite  
Ka: kaoline  
Ch: chlorite  
Op: opaque



crossed nicols



A-4 List of Microphotographs

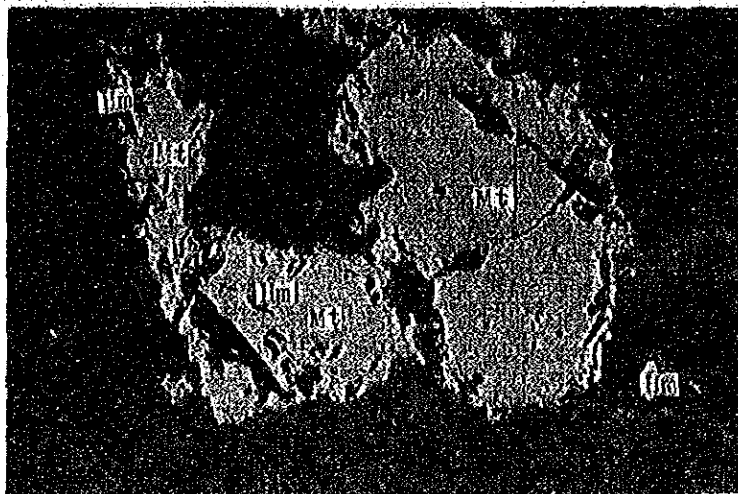
Polished Sections

|      | Sample No. | Rock Name                            | Location                   |
|------|------------|--------------------------------------|----------------------------|
| (1)  | 3000       | Hornblende quartz monzonite porphyry | Magnetite hill             |
| (2)  | 3101       | Biotite quartz monzonite porphyry    | Crosscut No.1              |
| (3)  | 1818       | "                                    | Crosscut No.1              |
| (4)  | 1432       | "                                    | Crosscut No.1              |
| (5)  | 3306       | "                                    | Crosscut No.3              |
| (6)  | 3402       | "                                    | Crosscut No.4              |
| (7)  | 3203       | "                                    | Crosscut No.3              |
| (8)  | 4501       | "                                    | Underground<br>boring No.5 |
| (9)  | 3403       | "                                    | Crosscut No.4              |
| (10) | 3205       | "                                    | Crosscut No.2              |
| (11) | 3515       | "                                    | Crosscut No.3              |
| (12) | 3201       | "                                    | Crosscut No.2              |

Sample No.3000

Location: magnetite hill

Rock Name: hornblende quartz monzonite porphyry

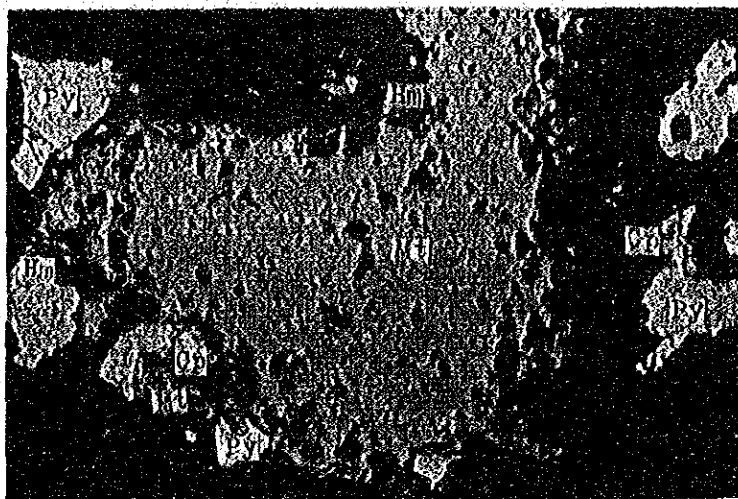


0 0.5 mm

Mt: magnetite  
Hm: hematite

Sample No.3101

Location: crosscut No.1

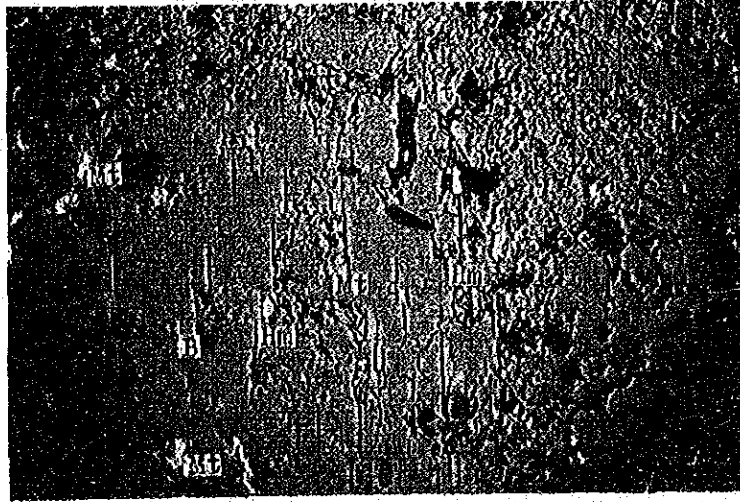


0 0.5 mm

Mt: magnetite  
Hm: hematite  
Py: pyrite  
Cp: chalcopyrite

Sample No.1818

Location: crosscut No.1

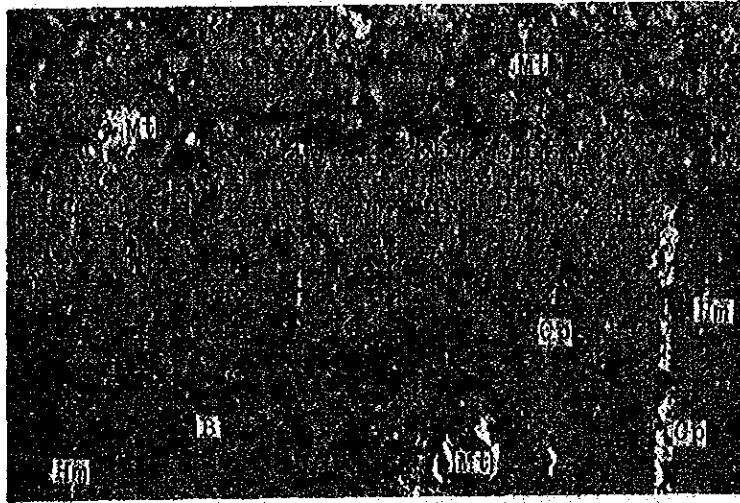


0 1 mm

B : biotite  
Mt: magnetite  
Hm: hematite

Sample No.1432

Location: crosscut No.1



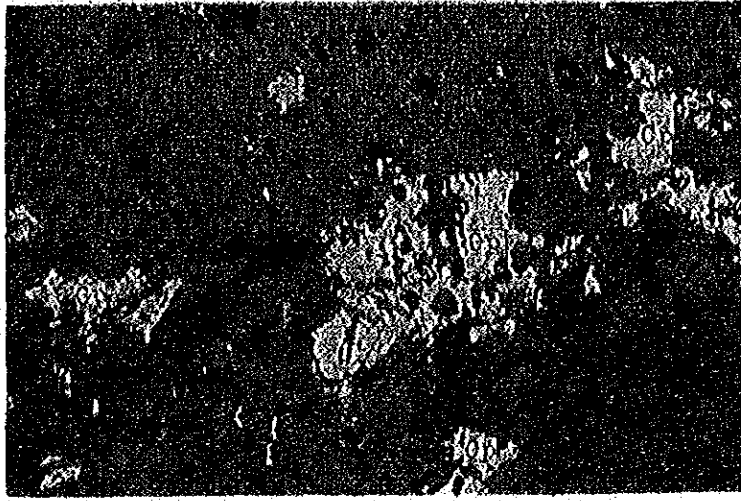
0 0.5 mm

B : biotite  
Cp: chalcopyrite  
Mt: magnetite  
Hm: hematite



Sample No.3306

Location: crosscut No.3

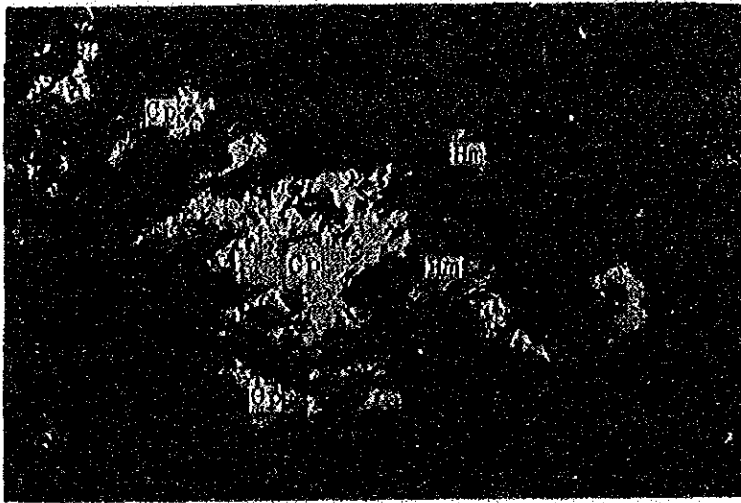


0 0.5 mm

Cp: chalcopyrite

Sample No.3402

Location: crosscut No.4

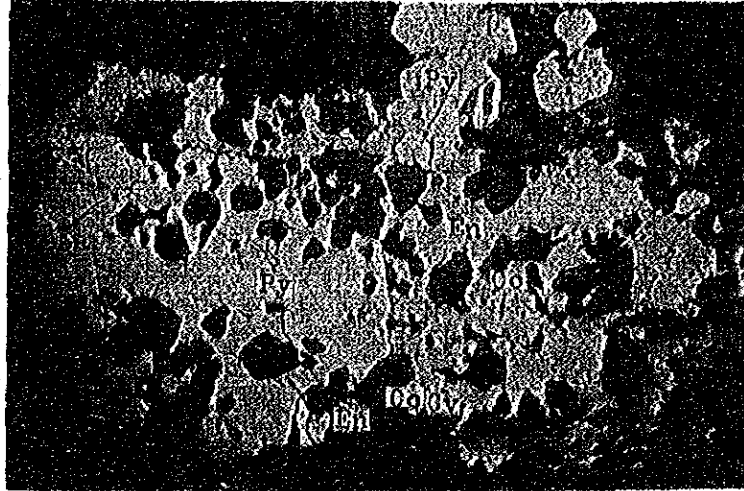


0 0.5 mm

Cp: chalcopyrite  
Hm: hematite

Sample No.3203

Location: crosscut No.3

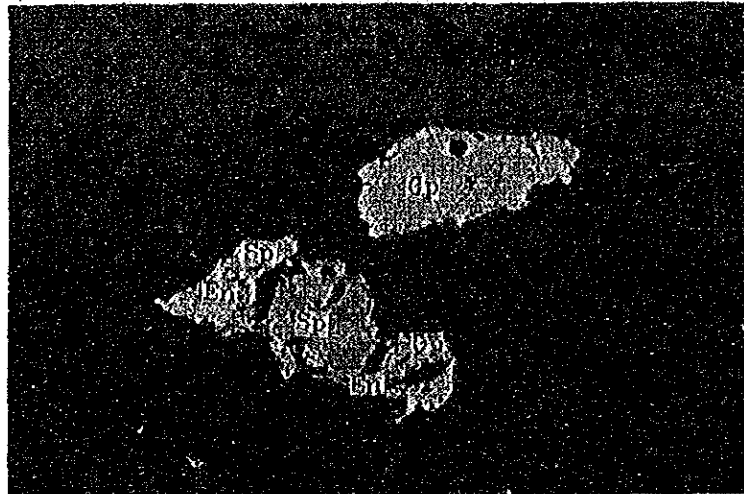


0 1 mm

Py: pyrite  
En: enargite  
Cc: chalcocite  
Cv: covelline

Sample No.4501

Location: underground boring No.5

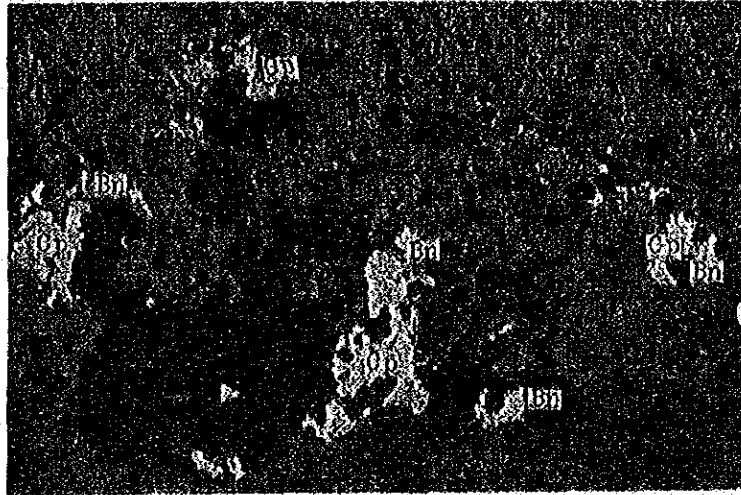


0 0.5 mm

Cp: chalcopyrite  
En: enargite  
Sp: sphalerite

Sample No. 3403

Location: crosscut No. 4

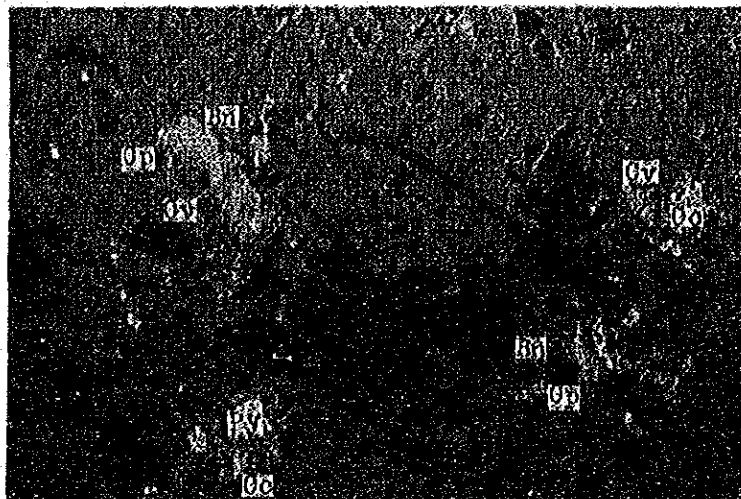


Cp: chalcopyrite  
Bn: bornite

0 0.5 mm

Sample No. 3205

Location: crosscut No. 2

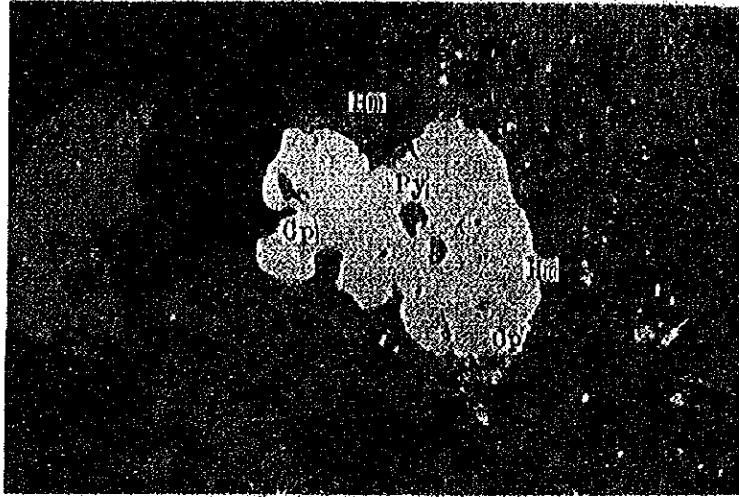


Py: pyrite  
Cp: chalcopyrite  
Bn: bornite  
Cv: covellite  
Cc: chalcocite

0 0.5 mm

Sample No.3515

Location: crosscut No.3

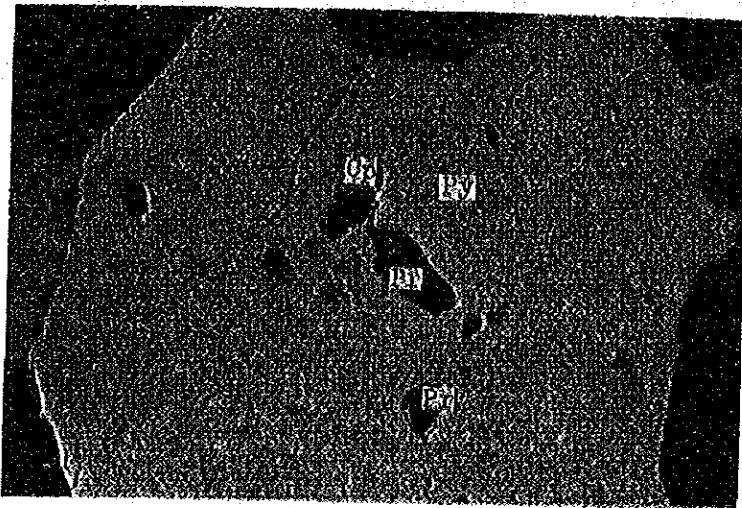


Py: pyrite  
Hm: hematite  
Cp: chalcopyrite

0 0.5<sup>mm</sup>

Sample No.3201

Location: crosscut No.2

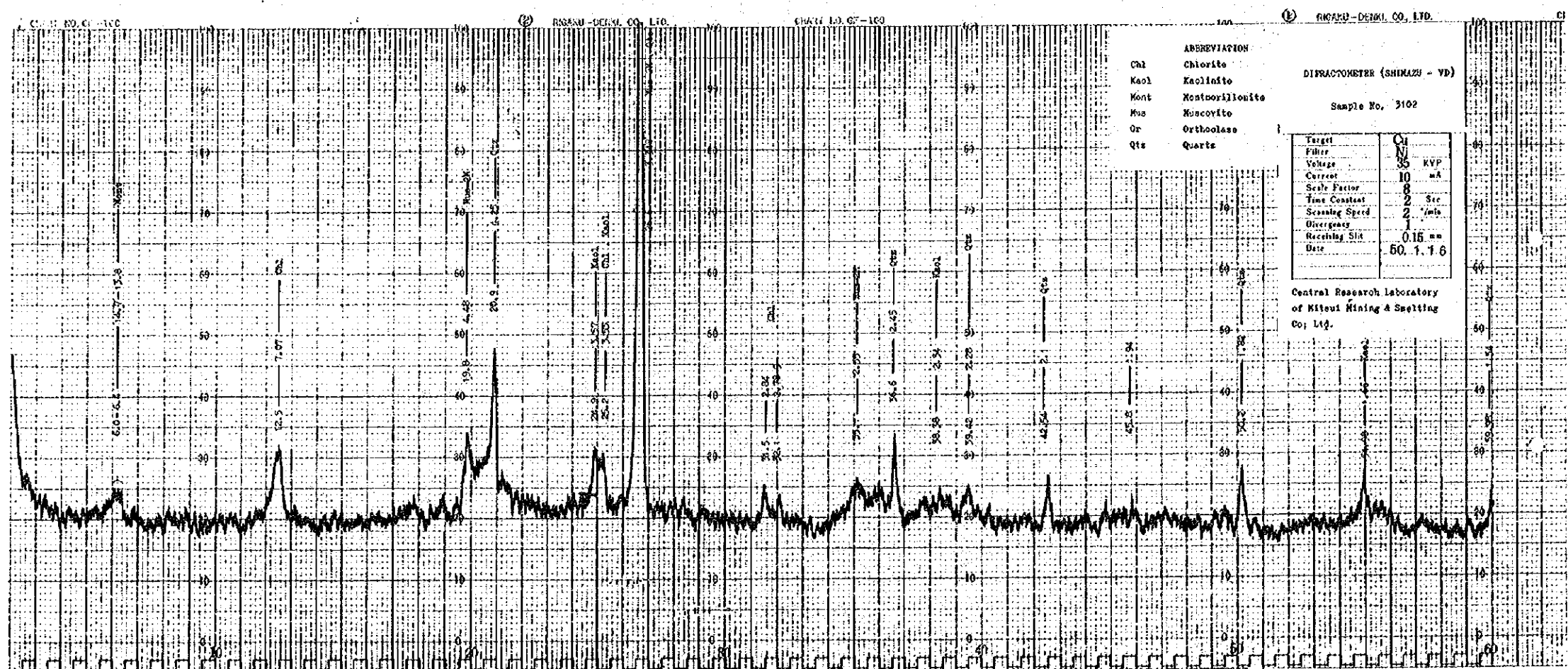
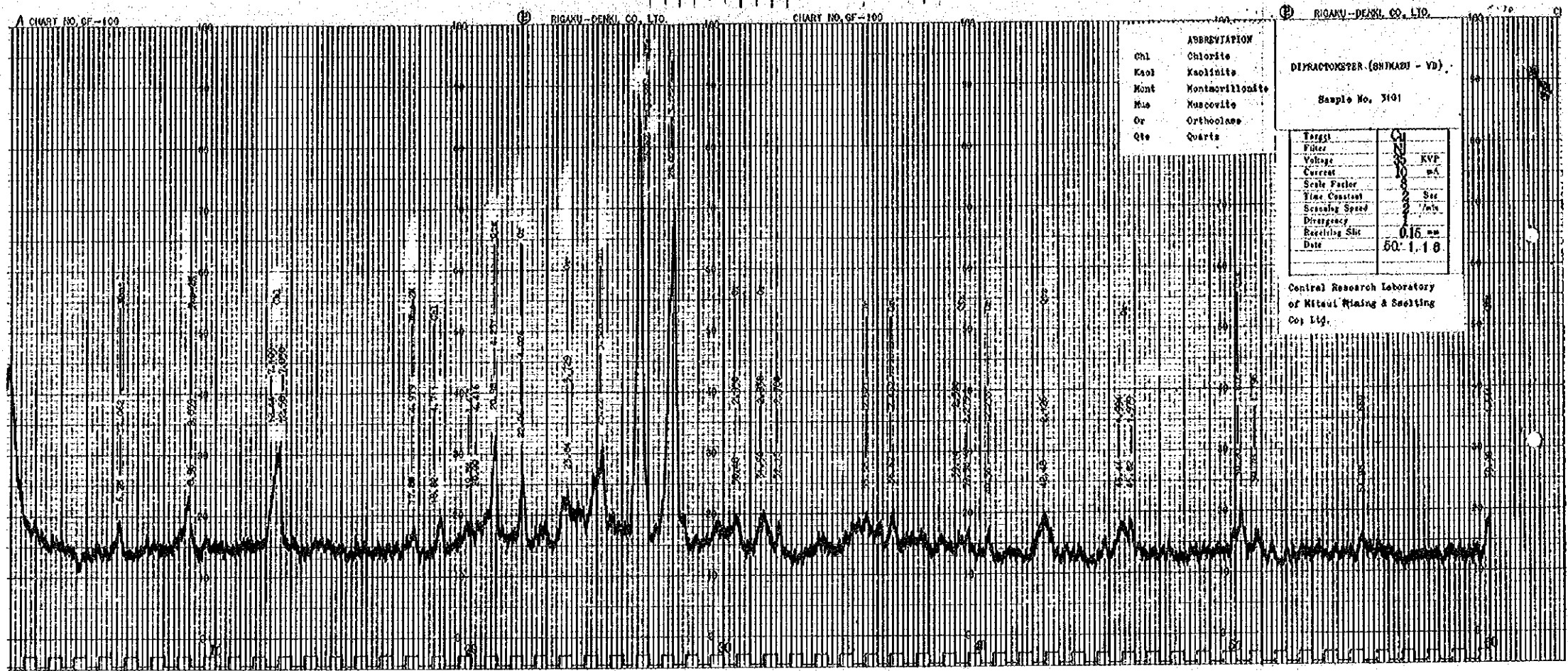


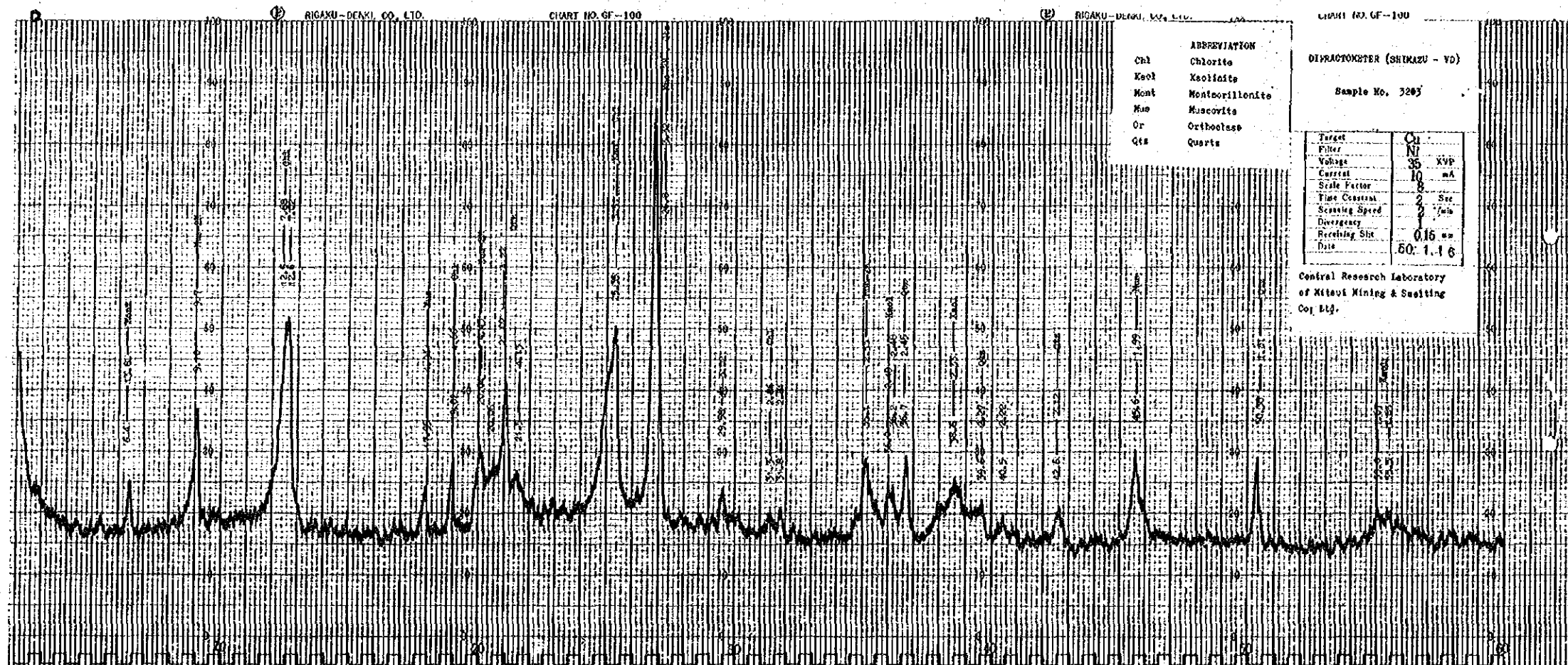
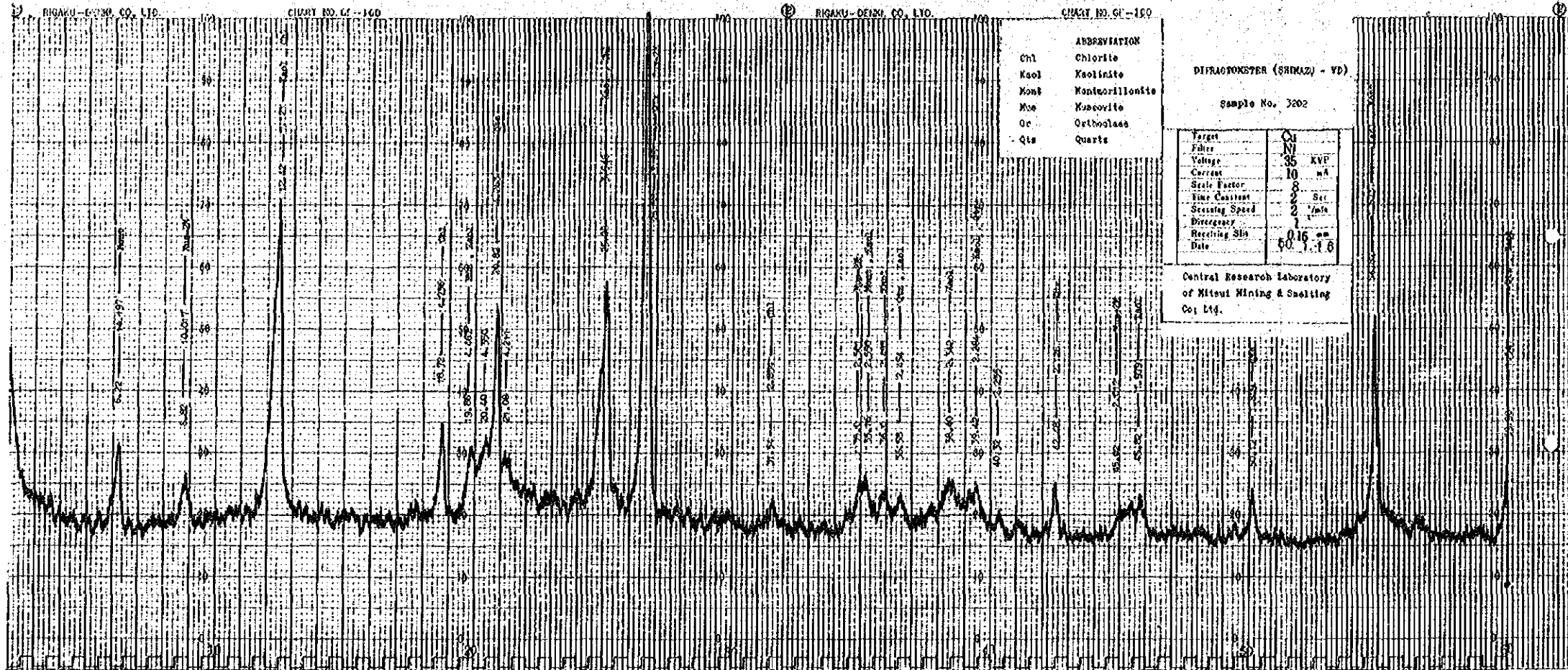
Py: pyrite  
Cp: chalcopyrite  
Pr: pyrrhotite

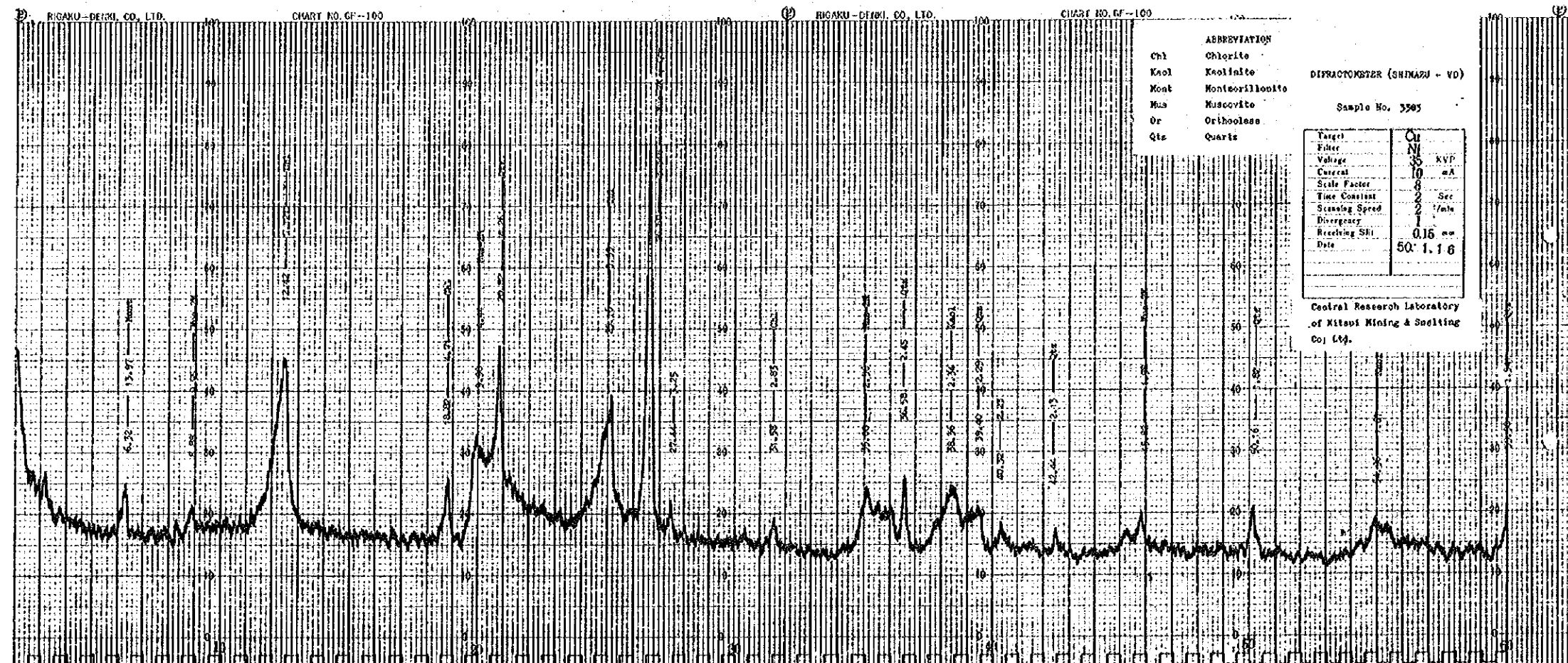
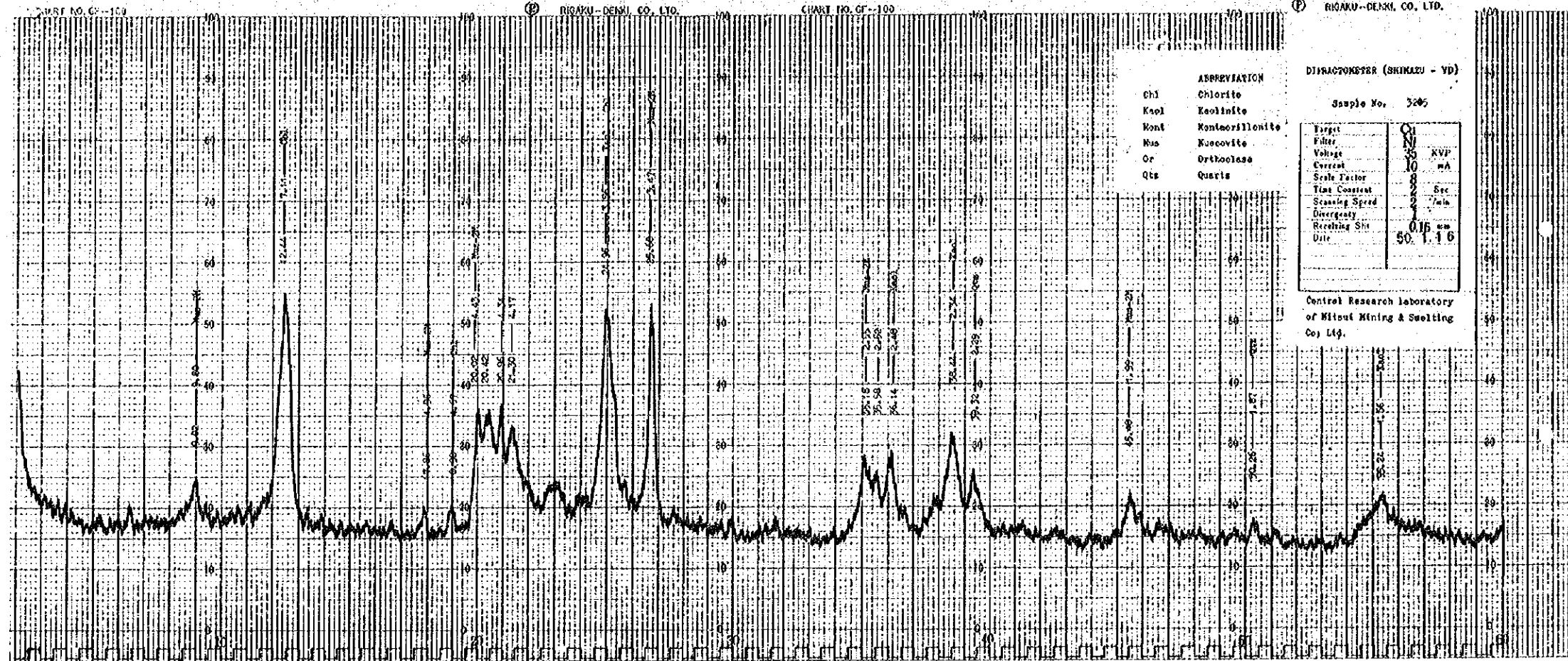
0 0.5<sup>mm</sup>

A-5 Chart of X-ray Diffractive Analysis

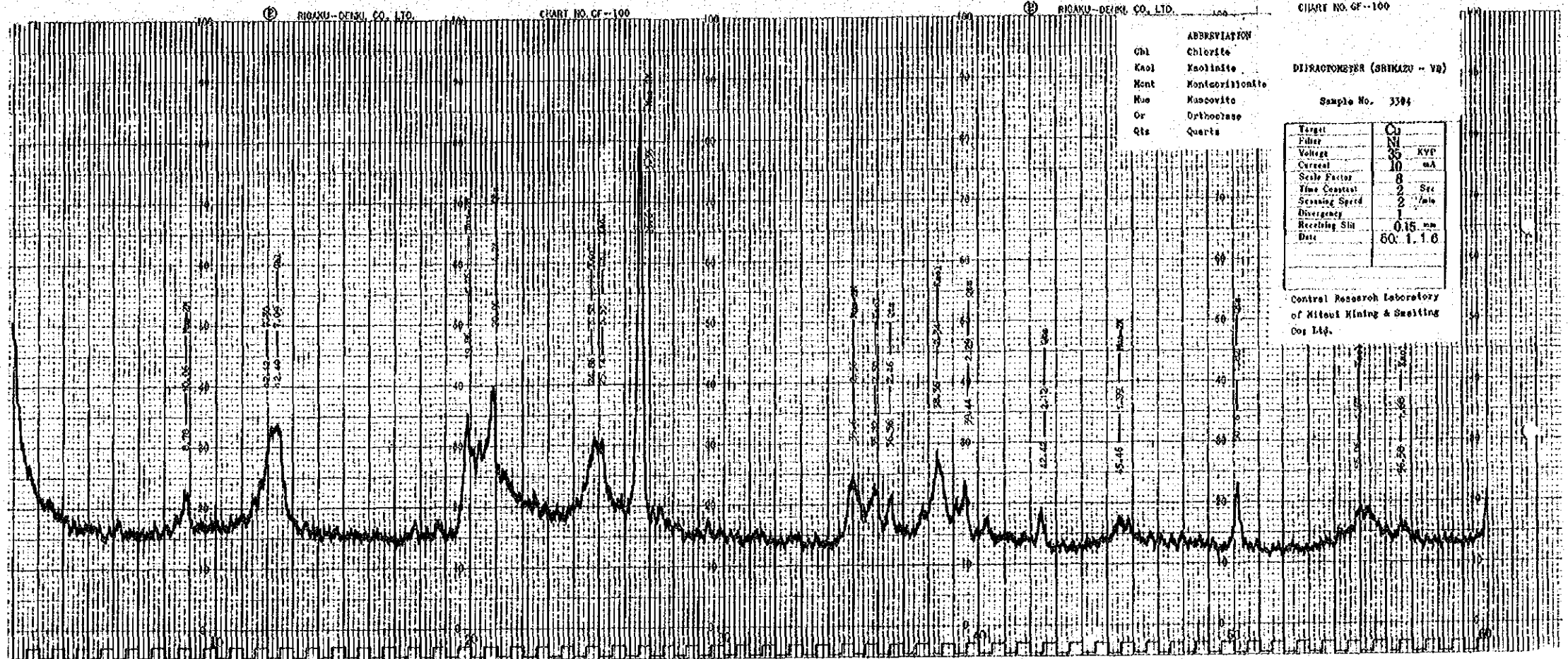
| Sample No. | Location        |
|------------|-----------------|
| 3101       | Crosscut No. 1  |
| 3102       | ditto           |
| 3202       | Crosscut No. 2  |
| 3203       | ditto           |
| 3205       | ditto           |
| 3303       | Cross cut No. 3 |
| 3304       | ditto           |
| 3305A      | ditto           |
| 3305B      | ditto           |
| 3306A      | ditto           |
| 3402       | Crosscut No. 4  |
| 3403A      | ditto           |
| 3404       | ditto           |

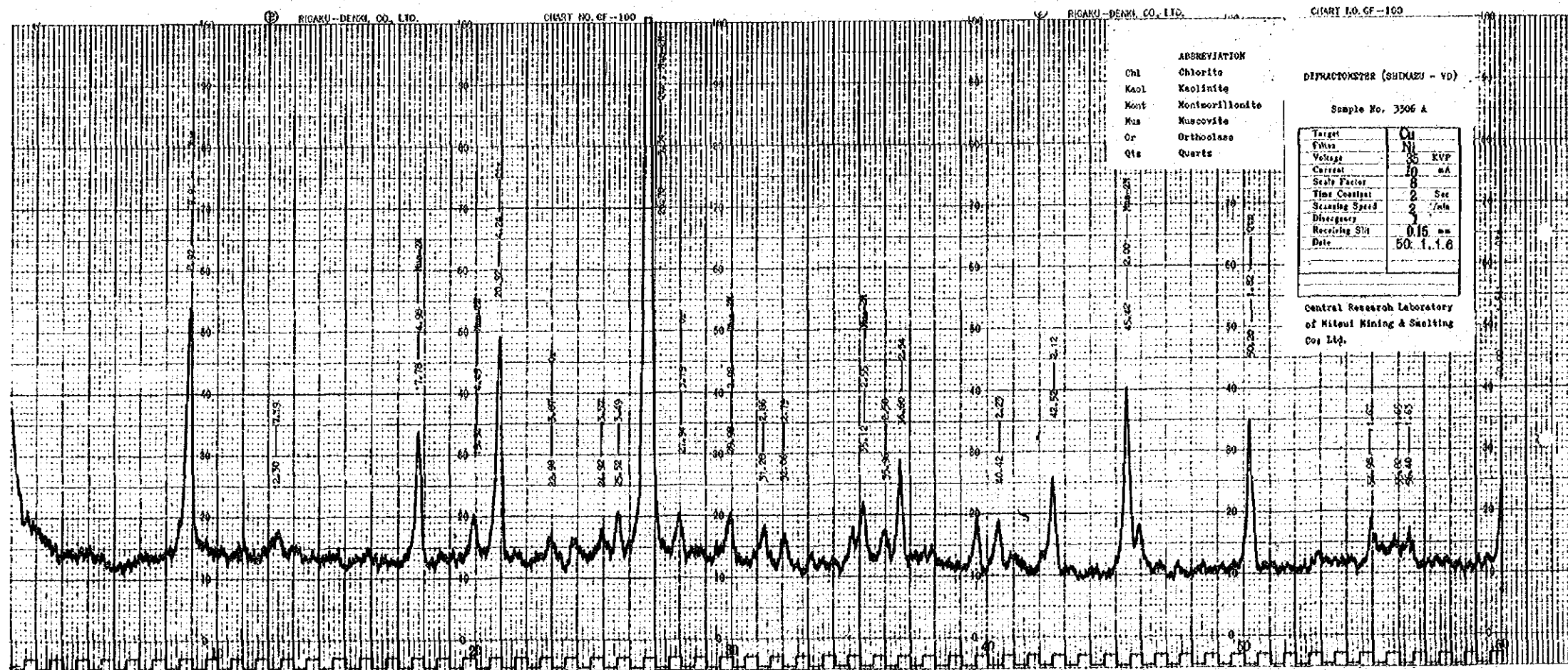
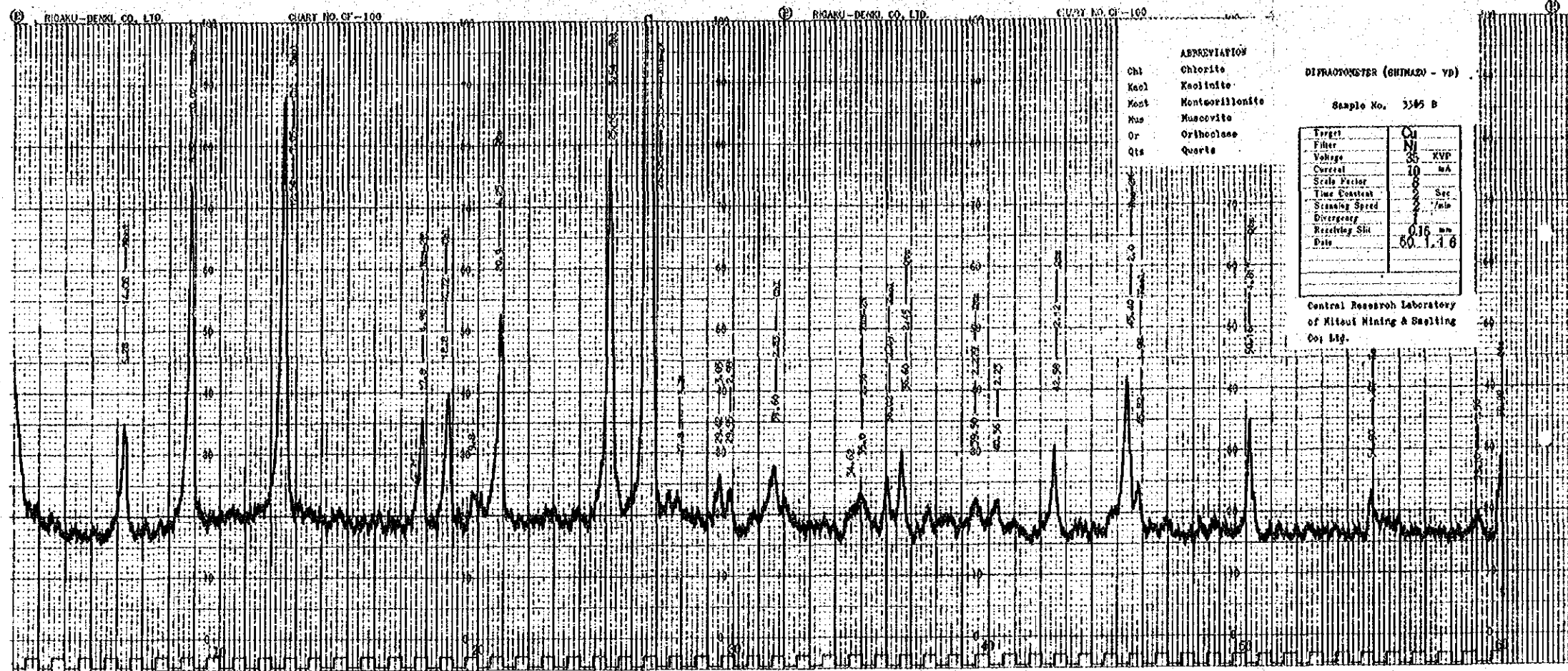




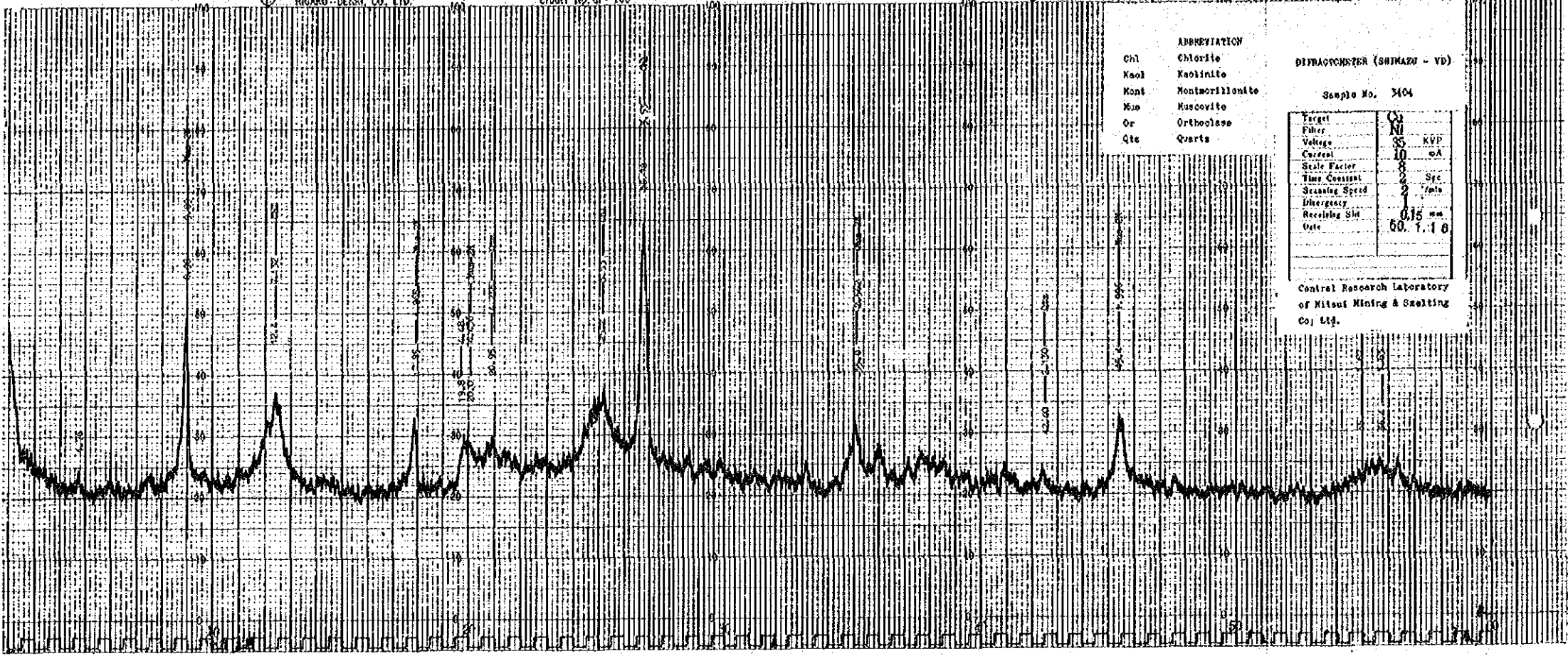












ABBREVIATION

|      |                 |
|------|-----------------|
| Chl  | Chlorite        |
| Kaol | Kaolinite       |
| Mont | Montmorillonite |
| Musc | Muscovite       |
| Or   | Orthoclase      |
| Qz   | Quartz          |

DIFFRACOMETER (SHIMAZU - VD)

Sample No. M04

|                |           |
|----------------|-----------|
| Target         | Cu        |
| Filter         | Ni        |
| Voltage        | 35 KVP    |
| Current        | 10 mA     |
| Scale Factor   | 8         |
| Time Constant  | 2 Sec     |
| Scanning Speed | 2°/min    |
| Divergency     | 1°        |
| Receiving slit | 0.15 mm   |
| Date           | 60. 1. 10 |

Central Research Laboratory  
of Mitsui Mining & Smelting  
Co., Ltd.

A-6 Photographs of Fossils

(All figures X 1)

Fig. 1. "Chlamys" sp. Sample No. 3003.

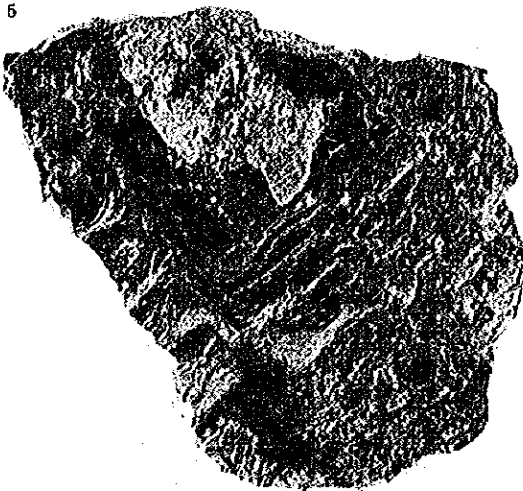
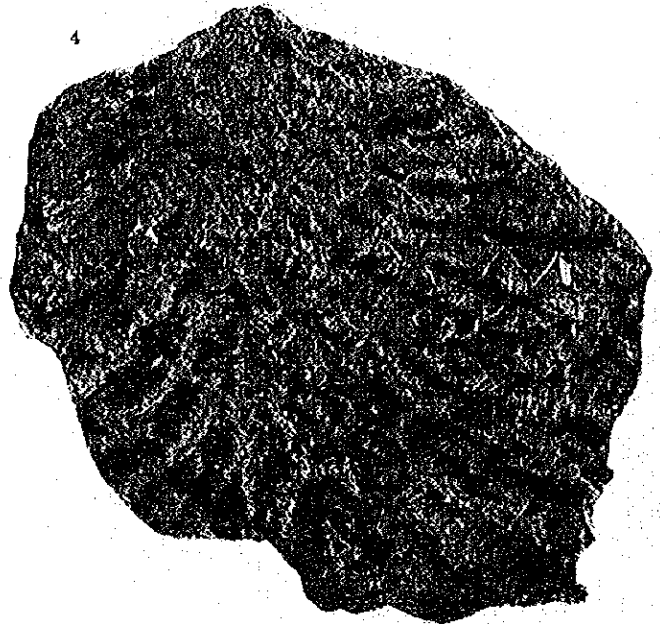
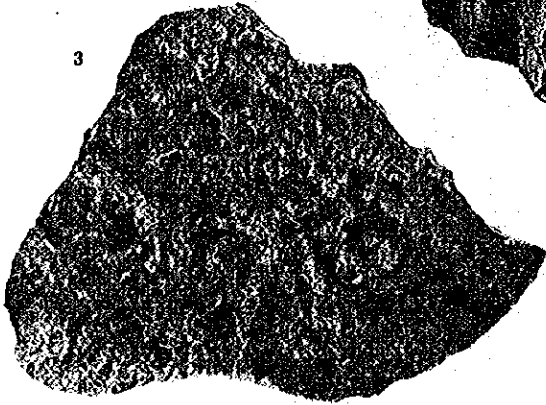
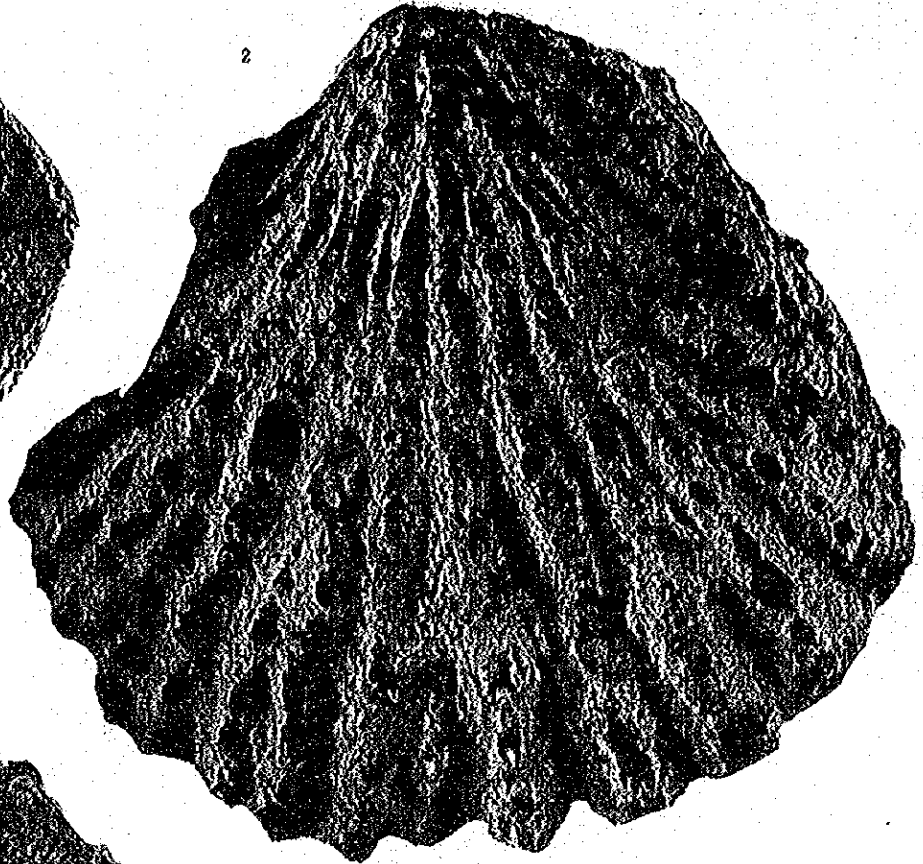
Figs. 2-5. Lopha (Actinosteon) aff. bellaplicata (Shumard)

fig. 2. Lateral view of a large left valve. Sample No. 3003

fig. 3. Lateral view of a fragmental left valve. Sample No. 2904.

fig. 4. Lateral view of a typical left valve. Sample No. 2906.

fig. 5. Interior view of a fragmental left valve. Sample No. 3002.



Figs. 1-6. Gryphaea (s. l.) aff. regionis Camacho

figs. 1a-d. Left, posterior, anterior and right views of a left valve,  
X 1. Sample No. 3001-A.

figs. 2a, b. Left and right views of a left valve, and left view of an  
another fragmental left valve, X 1. Sample No. 3001-B.

figs. 3, 4. Left view of the left valves, X 1. Sample Nos. 3001-C, -D.

figs. 5a-d. Left, posterior, anterior and right views of a left valve,  
X 1. Sample No. 3001-E.

fig. 6. Right view of a small right valve, X 2. Sample No. 1305-A.

Figs. 7a, b. Yoldia ? sp. Right and left valves, X 1. Sample No. 2905.

Figs. 9, 10. Neithea (Neithea) ficalhoi (Choffat)

Lateral view of two right valves, X 1.5. Sample No. 1306.

Figs. 8a, b. Cucullaea ? sp.

Anterior and lateral views of a fragmental left valve, X 1.5.

Sample No. 1305-B.

Figs. 11, 12. Protarca sp.

Lateral view of the left and right valves, X 1.

Sample Nos. 1305-C, -D.

Figs. 13, 15. Astarte ? sp.

Left and right valves, X 1.5. Sample Nos. 1305-E, -F.

Figs. 14. Etea ? sp.

Lateral view of an ill-preserved right valve, X 1.5.

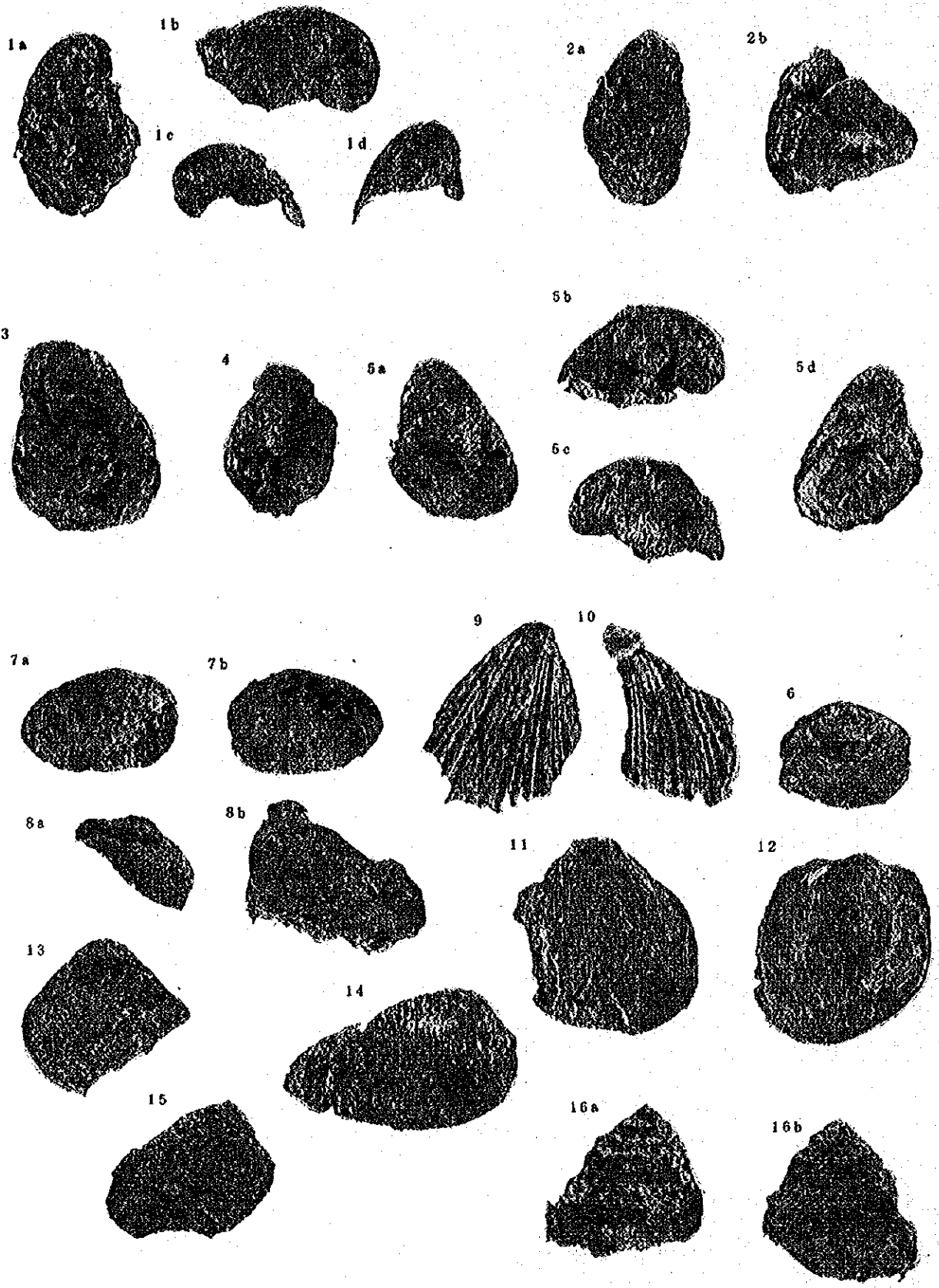
Sample No. 1305-G.

Figs. 16a, b. Conominolia ? sp.

Adaptural and apertural views of an ill-preserved specimen,

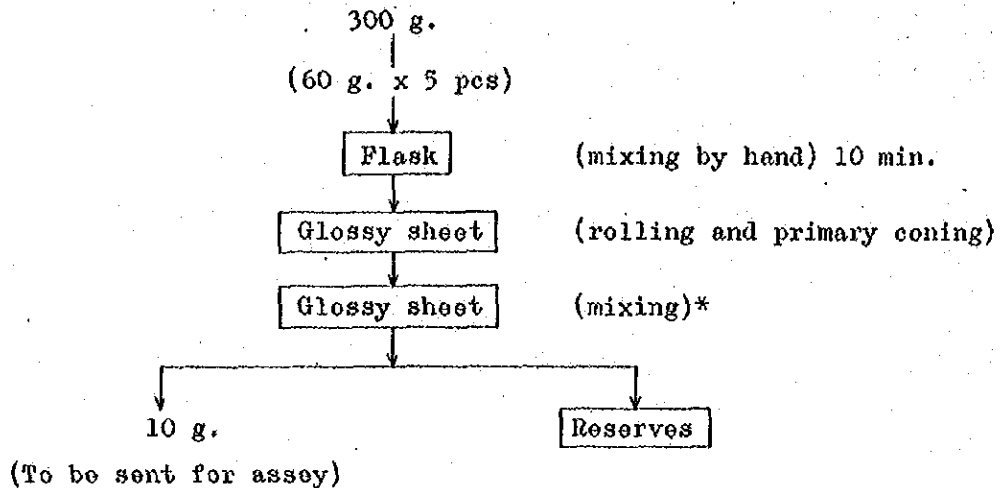
X 2.5. Sample No. 1305-H.





A-7 Flowsheet of Preparation of Assay Samples

Preparation of 15 m composite  
for MoS<sub>2</sub>, Au, Ag, Fe and S

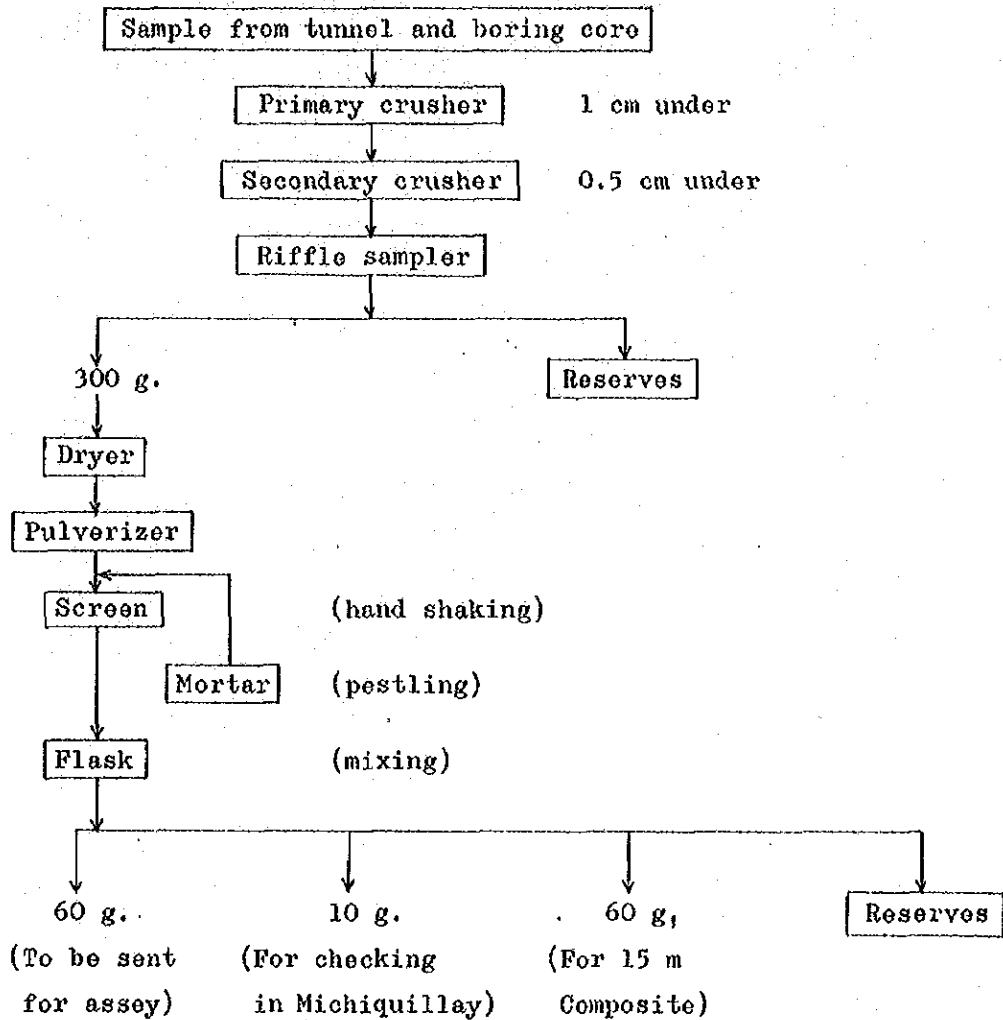


\* Procedure to Heap Up the sample into the Secondary Cone

- (1) Flattening the primary cone into rectangular shape,
- (2) Dividing the rectangle into 30 small rectangles as illustrated below,
- (3) Scooping the sample by spatula from the first small rectangular section and spreading it over the glossy sheet,
- (4) Repeating the scooping and spreading as stated above, but the sample is to be spread over the pre-spread sample, from the second spreading on.
- (5) Repeating the said procedure of (4) until the entire sample is removed by picking up samples from the small section in order of numbering given on the illustration, and heaping each of them so that to build up the secondary cone
- (6) Repeating the entire round for half an hour

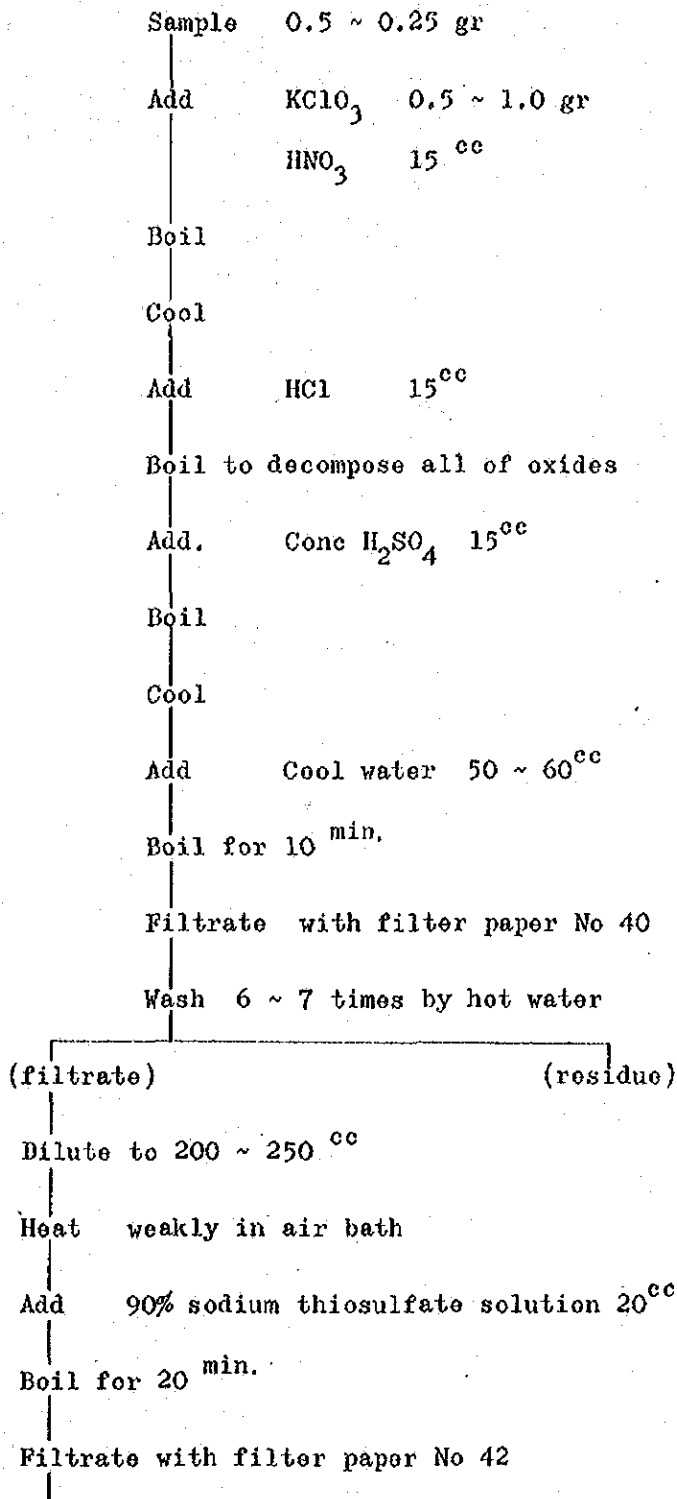
|    |    |    |    |    |
|----|----|----|----|----|
| 13 | 16 | 10 | 25 | 1  |
| 20 | 11 | 17 | 2  | 26 |
| 12 | 21 | 3  | 18 | 6  |
| 27 | 4  | 22 | 7  | 19 |
| 5  | 28 | 8  | 23 | 14 |
| 30 | 9  | 29 | 15 | 24 |

Preparation of sample for T-Cu and S-Cu



A-8 Flowsheet of Analysis

Flow Sheet of Assay Method of Total-Cu.



Wash 8 times by hot water.

(residue)

(filtrate)

Dry in air bath

Carbide at 500°C for 1/2 hour in electric muffle furnace

Cool

Add a few crystals of  $KClO_3$

Wash by  $HNO_3$  10<sup>cc</sup>

Heat weakly to dissolve

Add  $HNO_3$  5<sup>cc</sup>

Evaporate at low temperature

Add  $H_2O$  15<sup>cc</sup>

Add ammonium until the color of solution changes to blue

Boil until the vapor of ammonium is smelled

Add acetic acid a few c.c.

Boil until the vapor of acetate is smelled

Cool

Dilute to 1000<sup>cc</sup> by water

Add 10%  $AgNO_3$  2 drops

43%  $KI$  5 cc

Almidon\* 5 cc

Titrate by standard sodium hyposulphite\*\*

$$Cu\% = \frac{\text{c.c. of standard solution} \times \text{factor} \times 100}{\text{weight of sample}}$$

\* Almidon

|                   |       |   |
|-------------------|-------|---|
| Starch            | 5 gr  | } dilute to 1000 <sup>cc</sup><br>of H <sub>2</sub> O |
| KI                | 10 gr |   |
| ZnCl <sub>2</sub> | 4 gr  |   |

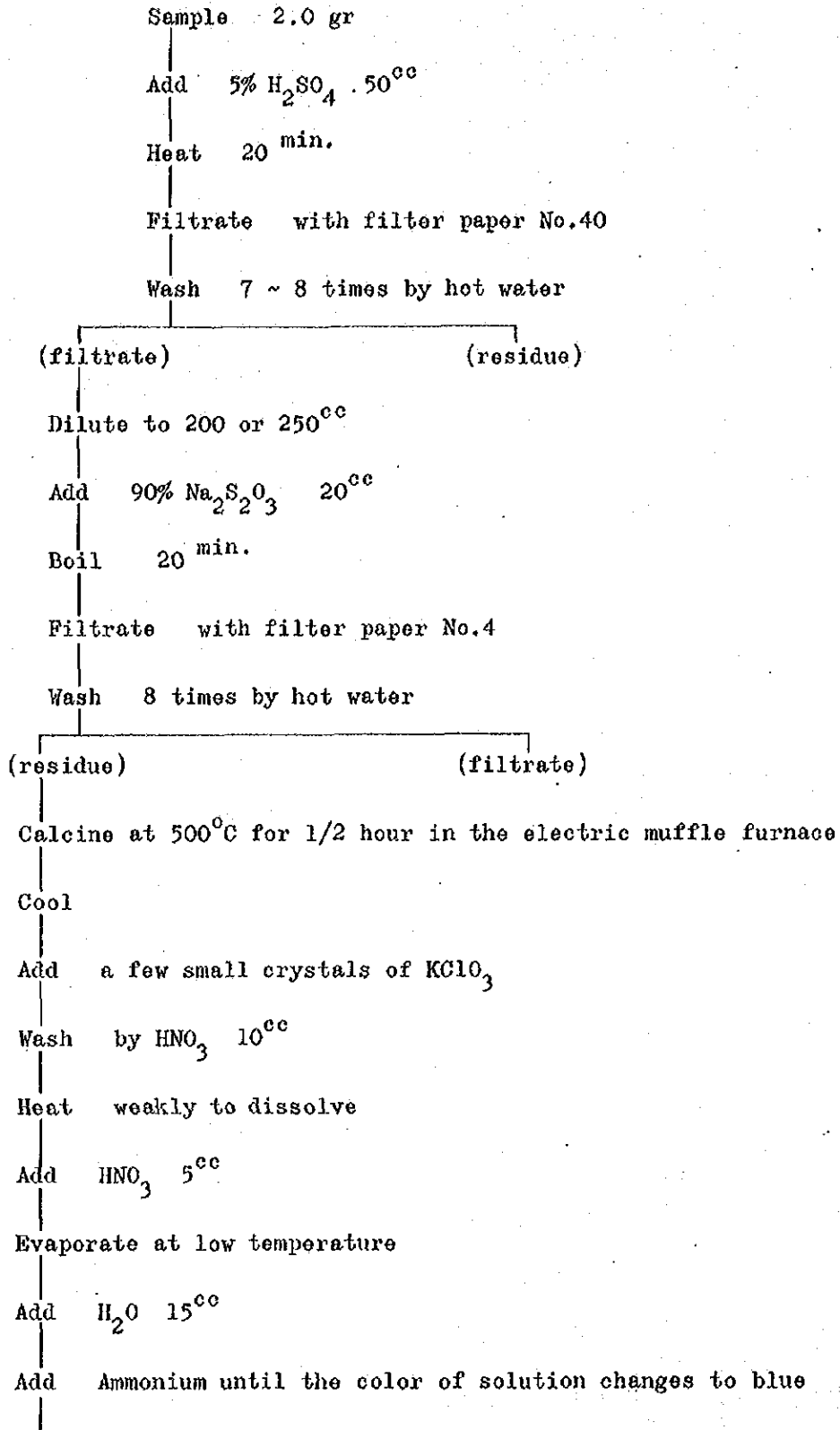
\*\* Standard sodium hyposulphite

|              |      |  |
|--------------|------|--|
| hyposulphite | 20 g | } dilute to 1000 <sup>cc</sup> of H <sub>2</sub> O |
| NaOH         | 20 g |  |

in this case the factor is 0.005.



The Flow Sheet of Assay Method of Soluble Cu



Boil until the ammonium vapor is smelled.

Add acetic acid 5<sup>cc</sup>

Boil 10<sup>min.</sup> until the vapor of acetate is smelled.

Cool

Add 10% AgNO<sub>3</sub> 2 drops

20% KI 5 ~ 10<sup>cc</sup>

Almidon \* 5<sup>cc</sup>

Titrate by standard sodium hyposulphite solution \*\*

$$\text{Soluble Cu \%} = \frac{\text{c.c. of standard solution} \times \text{factor} \times 100}{\text{weight of sample}}$$

\* Almidon

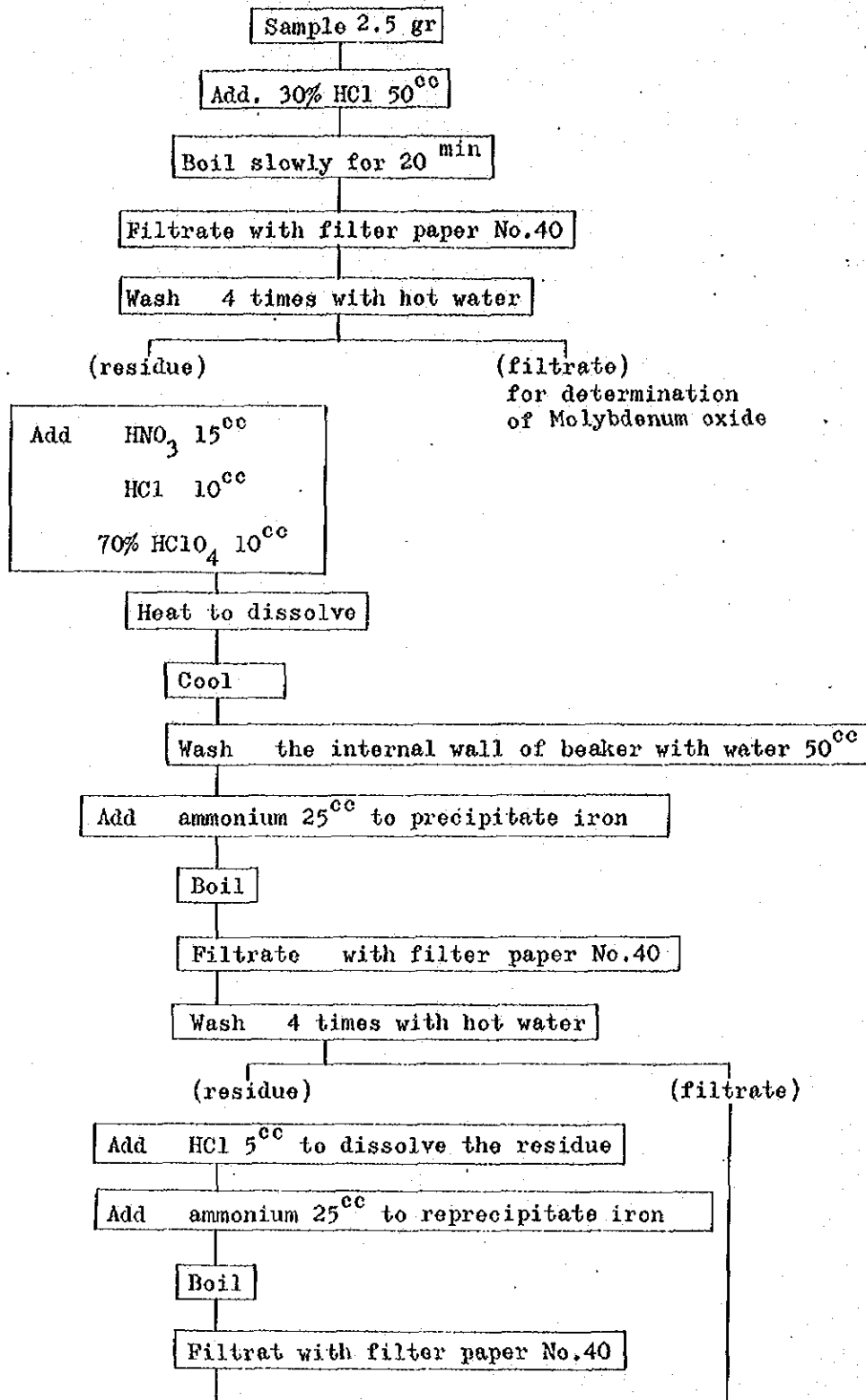
|                    |      |   |
|--------------------|------|---|
| Starch             | 5 g  | } dilute to 1000 <sup>cc</sup><br>of H <sub>2</sub> O |
| KI                 | 10 g |   |
| Zn Cl <sub>2</sub> | 4 g  |   |

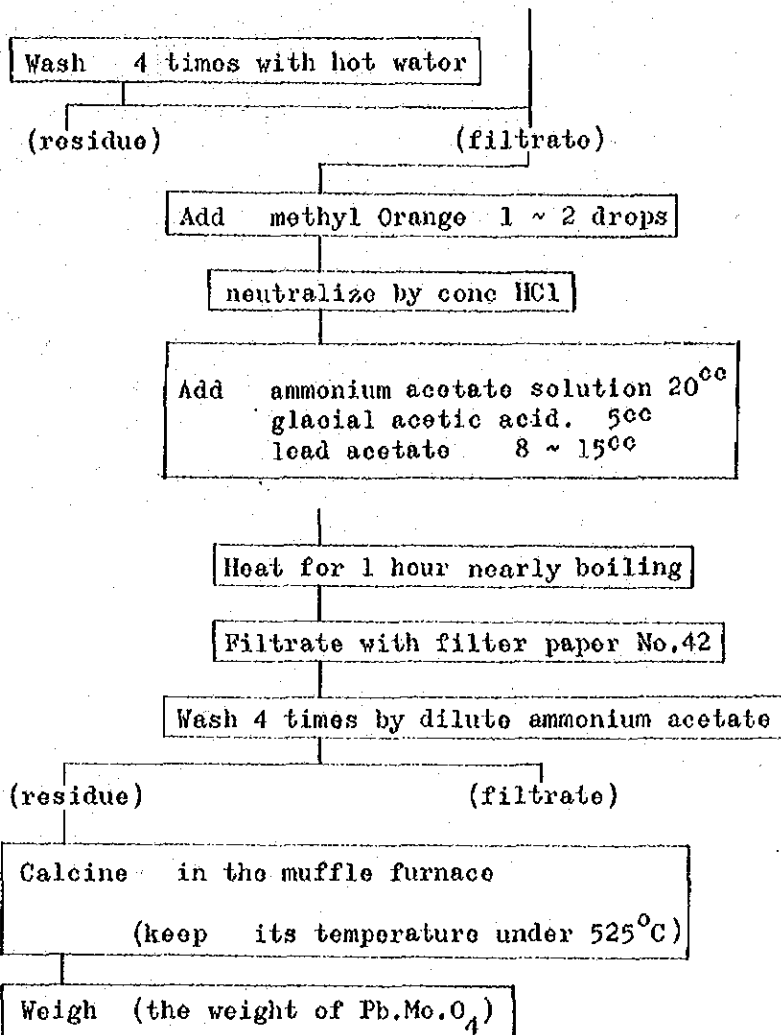
\*\* Standard sodium hyposulphite solution

|              |        |  |
|--------------|--------|--|
| hyposulphite | 20 grs | } dilute to 1000 <sup>cc</sup> of H <sub>2</sub> O |
| NaOH         | 20 grs |  |

in this case the factor is 0.005.

The Flow Sheet of Assay Method of  $\text{MOS}_2$

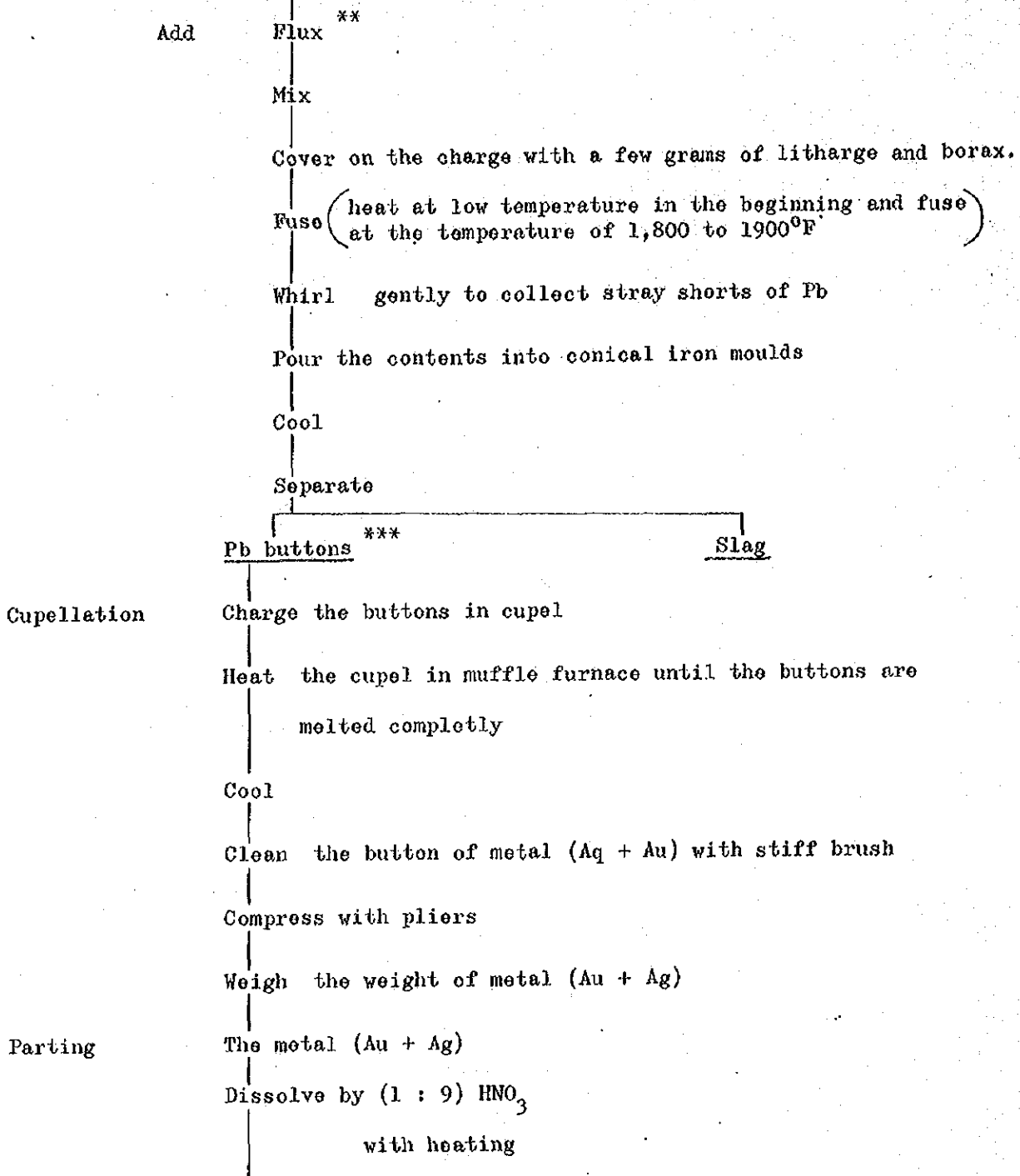




$$\text{MoS}_2 \% = \frac{\text{weight of Pb.Mo.O}_4 \times 0.2613}{\text{weight of sample} \times 0.5995} \times 100$$

The Flow Sheet of Assay Methods of Au and Ag\*

Sample 1 = 29.16667 gr (assay-ton)



Decant the acid

Wash with water and (1 : 9) ammonium hydroxide solution

Dry

Calcine in the muffle furnace about 10 min.

Cool

Weigh the weight of metal (Au).

#### Calculation

for 1 assay ton of sample, the calculation is as follow.

oz/ton Ag = weight of metal (Au+Ag)  $\frac{\text{mgs}}{\text{mgs}}$  weight of metal Au  $\frac{\text{mgs}}{\text{mgs}}$ ,

oz/ton Au = Weight of metal Au  $\frac{\text{mgs}}{\text{mgs}}$ .

#### The amount of flux

\* The analysis of Au and Ag has been carried out by the assay ton system of furnace method.

\*\* Depends on a sample as follow

crude ore cabezas : 5 ~ 30 gr  $\text{KNO}_3$  + 50 gr litharge

Tailing : 2 ~ 25 gr  $\text{KNO}_3$  + 50 gr litharge

Cu concentrate : 15 gr  $\text{KNO}_3$  + 25 gr litharge + 25 gr Flux - B

Pb concentrate : 10 gr  $\text{KNO}_3$  + 25 gr litharge + 25 gr Flux -B

Zn concentrate : 15 gr  $\text{KNO}_3$  + 50 gr Flux B

Fe concentrate : 20 gr  $\text{KNO}_3$  + 50 gr Flux B

Quality of  $\text{KNO}_3$  depend on Fe contents of sample.

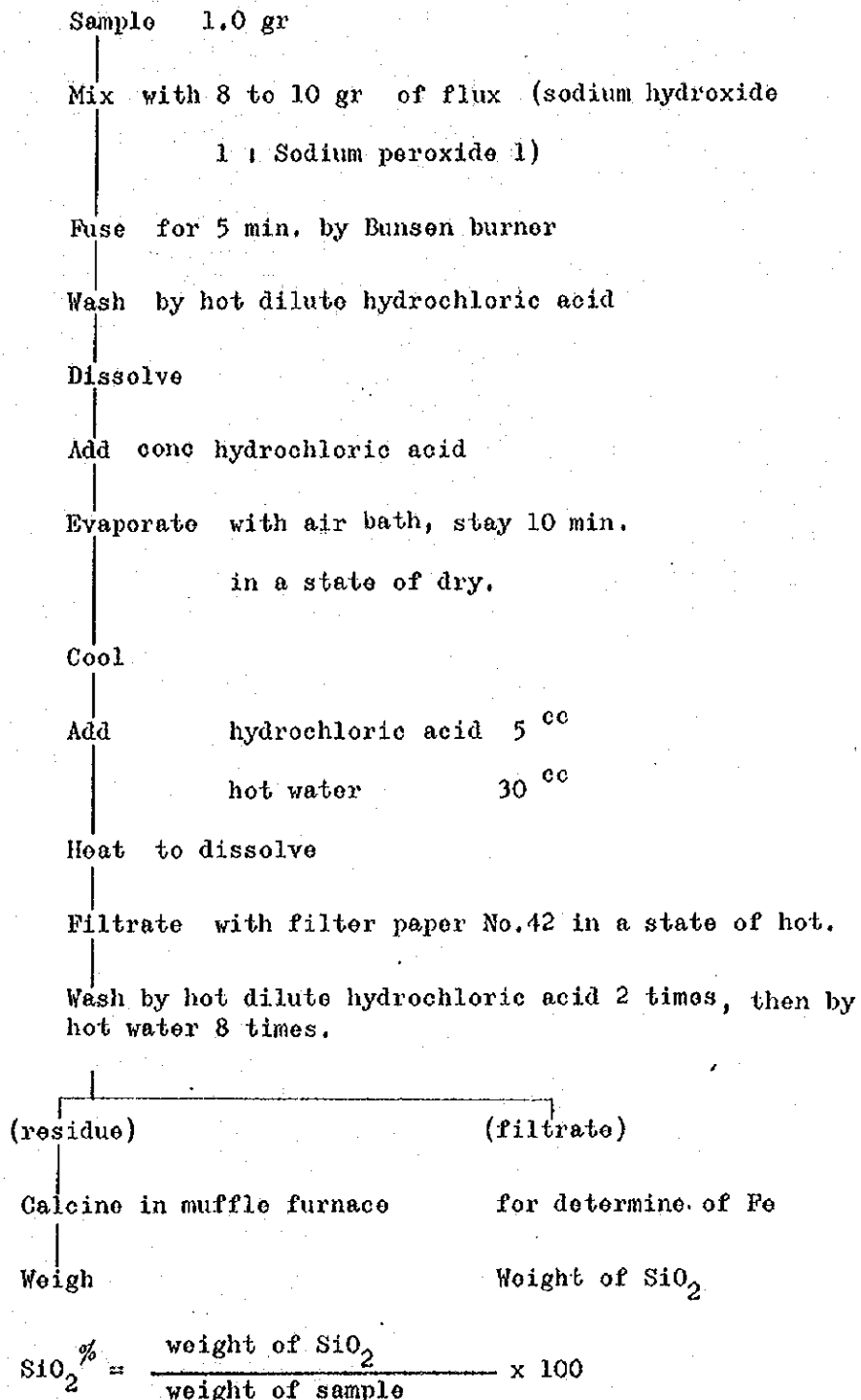
In case of less Fe content, add a few grams of flour.

Flux - B consists of

|   |          |
|---|----------|
| PbO   | 18.75 kg |
| Na <sub>2</sub> CO <sub>3</sub>               | 7.50 kg  |
| Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub> | 3.00 kg  |
| SiO <sub>2</sub>                              | 1.20 kg  |

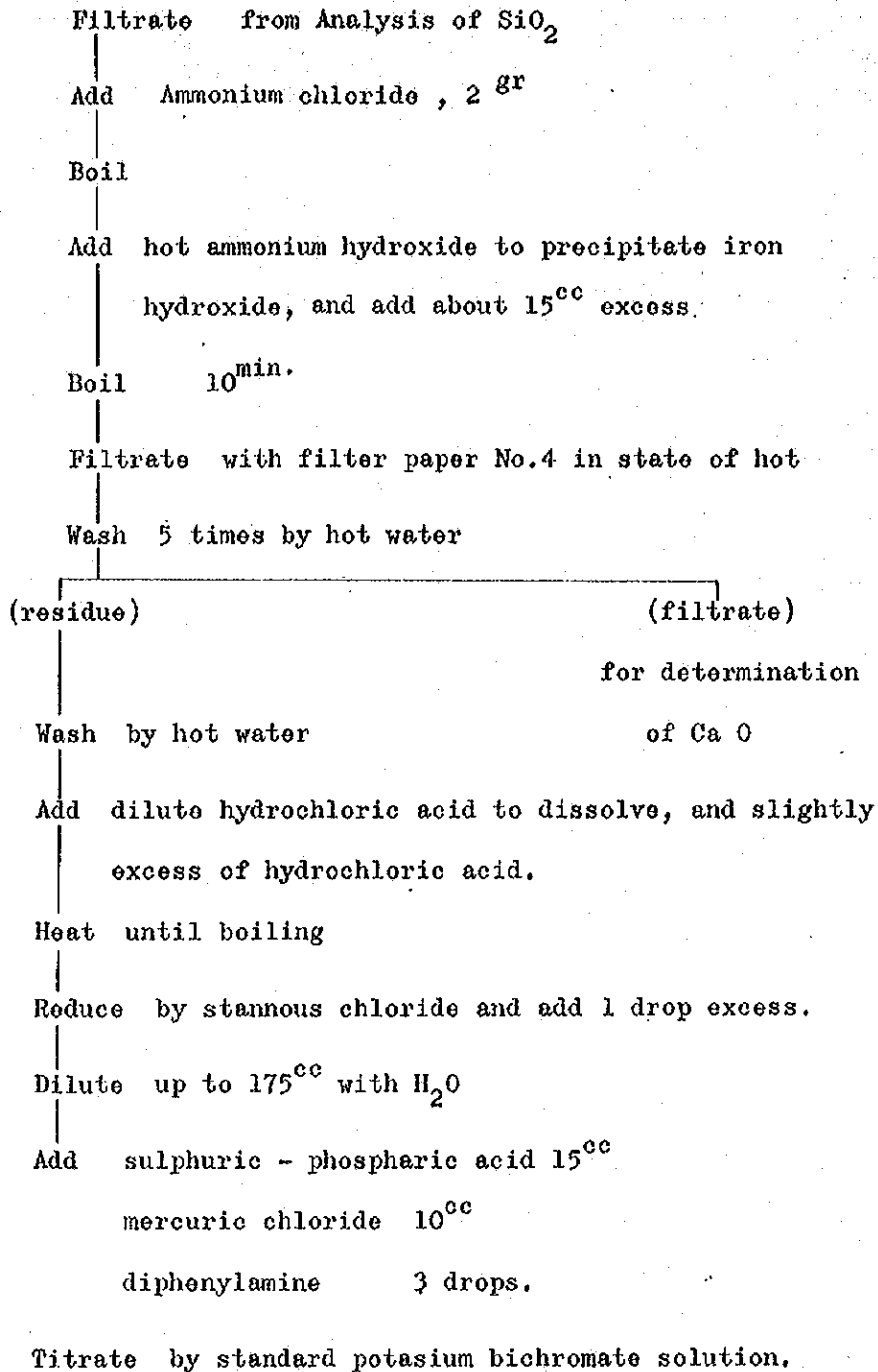
\*\*\* If the weight of Pb buttons are more than 28 gr, repeat the scorification.

The Flow Sheet of Assay Method of  $\text{SiO}_2$



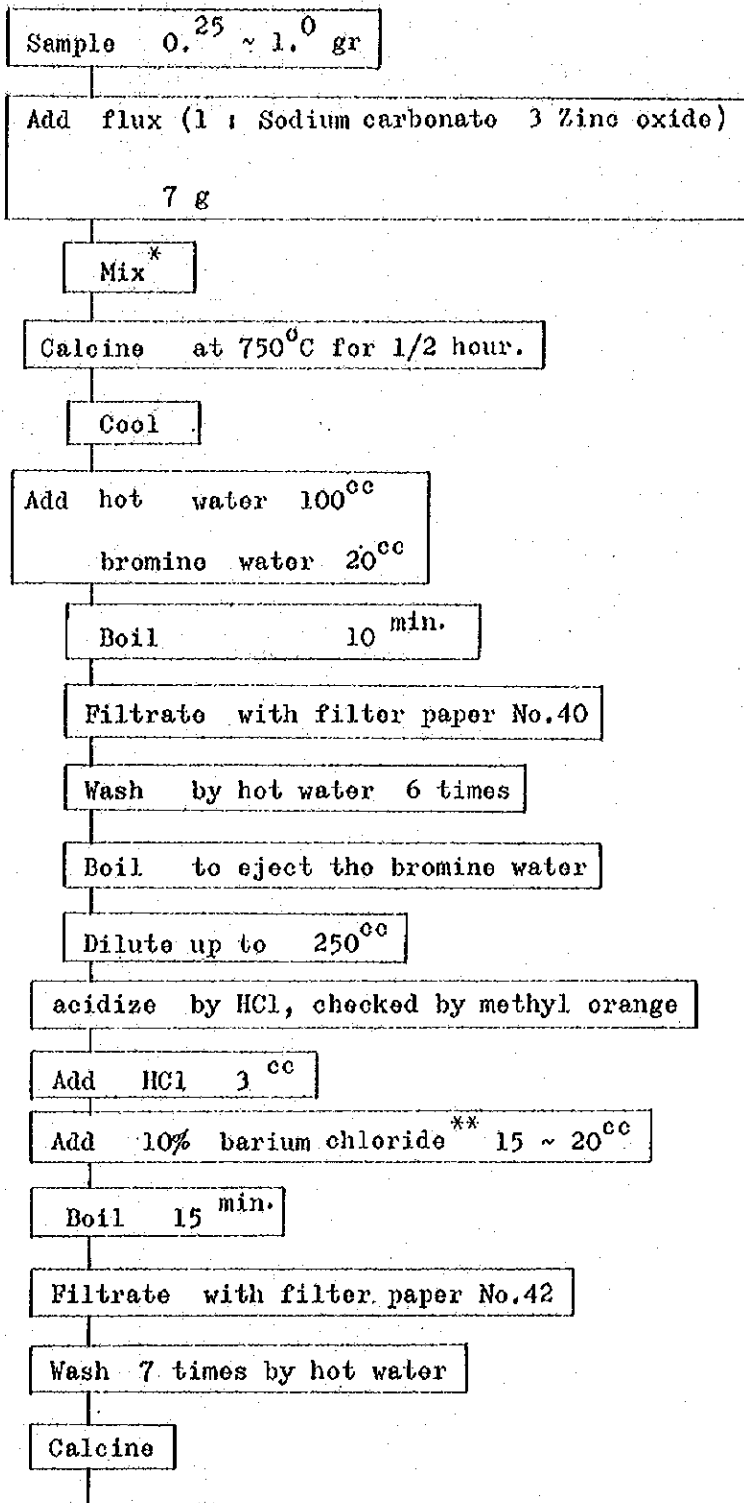


The Flow Sheet of Assay Method of Fe



$$\text{Fe \%} = \frac{\text{c.c of standard solution} \times \text{factor} \times 100}{\text{weight of sample}}$$

The Flow Sheet of Assay Method of S



Weigh the weight of BaSO<sub>4</sub>

$$S\% = \frac{\text{wt. BaSO}_4 \times 0.13734 \times 100}{\text{Weight of sample}}$$

\* Flux 3 zinc oxide, 1 sodium Carbonate.

\*\* Barium Chloride

117 gr of Barium Chloride

diluting to 1000 cc

A-9 Comparison of Ore Grades between Crosscut No. 1 and Underground  
Drill Hole No. 4

| Distance |     | Crosscut No. 1 |       | Underground Drill Hole No. 4 |       |
|----------|-----|----------------|-------|------------------------------|-------|
| From     | To  | Sample No.     | Cu. % | Sample No.                   | Cu. % |
| 0        | 3   | 3101           | 0.11  | 1401                         | 0.10  |
| 3        | 6   | 2              | 0.14  | 2                            | 0.09  |
| 6        | 9   | 3              | 0.13  | 3                            | 0.09  |
| 9        | 12  | 4              | 0.12  | 4                            | 0.12  |
| 12       | 15  | 5              | 0.10  | 5                            | 0.13  |
| 15       | 18  | 6              | 0.09  | 6                            | 0.17  |
| 18       | 21  | 7              | 0.14  | 7                            | 0.10  |
| 21       | 24  | 8              | 0.09  | 8                            | 0.16  |
| 24       | 27  | 9              | 0.15  | 9                            | 0.10  |
| 27       | 30  | 3110           | 0.12  | 1410                         | 0.11  |
| 30       | 33  | 1              | 0.16  | 1                            | 0.09  |
| 33       | 36  | 2              | 0.12  | 2                            | 0.11  |
| 36       | 39  | 3              | 0.09  | 3                            | 0.12  |
| 39       | 42  | 4              | 0.22  | 4                            | 0.23  |
| 42       | 45  | 5              | 0.26  | 5                            | 0.07  |
| 45       | 48  | 6              | 0.09  | 6                            | 0.08  |
| 48       | 51  | 7              | 0.06  | 7                            | 0.08  |
| 51       | 54  | 8              | 0.13  | 8                            | 0.11  |
| 54       | 57  | 9              | 0.07  | 9                            | 0.23  |
| 57       | 60  | 3120           | 0.20  | 1420                         | 0.24  |
| 60       | 63  | 1              | 0.16  | 1                            | 0.71  |
| 63       | 66  | 2              | 0.50  | 2                            | 0.58  |
| 66       | 69  | 3              | 0.43  | 3                            | 0.33  |
| 69       | 72  | 4              | 0.64  | 4                            | 0.69  |
| 72       | 75  | 5              | 0.77  | 5                            | 0.72  |
| 75       | 78  | 6              | 0.74  | 6                            | 0.74  |
| 78       | 81  | 7              | 0.80  | 7                            | 0.97  |
| 81       | 84  | 8              | 0.56  | 8                            | 0.56  |
| 84       | 87  | 9              | 0.95  | 9                            | 0.66  |
| 87       | 90  | 3130           | 0.89  | 1430                         | 0.74  |
| 90       | 93  | 1              | 1.14  | 1                            | 0.84  |
| 93       | 96  | 2              | 0.89  | 2                            | 0.69  |
| 96       | 99  | 3              | 0.87  | 3                            | 1.18  |
| 99       | 102 | 4              | 0.66  | 4                            | 0.72  |
| 102      | 105 | 5              | 0.66  | 5                            | 0.97  |
| 105      | 108 | 6              | 0.84  | 6                            | 0.87  |
| 108      | 111 | 7              | 0.59  | 7                            | 0.87  |
| 111      | 114 | 8              | 0.77  | 8                            | 0.77  |
| 114      | 117 | 9              | 0.89  | 9                            | 0.82  |
| 117      | 120 | 3140           | 0.92  | 1440                         | 0.70  |
| 120      | 123 | 1              | 0.95  | 1                            | 0.79  |
| 123      | 126 | 2              | 0.79  | 2                            | 0.72  |
| 126      | 129 | 3              | 0.84  | 3                            | 0.79  |
| 129      | 132 | 4              | 1.09  | 4                            | 0.66  |
| 132      | 135 | 5              | 0.95  | 5                            | 0.84  |
| 135      | 138 | 6              | 0.79  | 6                            | 1.16  |
| 138      | 141 | 7              | 0.74  | 7                            | 0.85  |
| 141      | 144 | 8              | 0.74  | 8                            | 0.68  |
| 144      | 147 | 9              | 0.69  | 9                            | 0.60  |
| 147      | 150 | 3150           | 0.59  | 1450                         | 0.63  |
| 150      | 153 | 1              | 0.61  | 1                            | 0.60  |
| 153      | 156 | 2              | 0.57  | 2                            | 0.92  |
| 156      | 159 | 3              | 0.54  | 3                            | 0.84  |
| 159      | 162 | 4              | 0.54  | 4                            | 0.75  |

A-10 Comparison of Assays between C.R.L. and Plenge  
 C.R.L. : Central Research Laboratory of Mitsui  
 Mining and Smelting Co., Tokyo

| Sample No. | P l e n g e |                    | C. R. L.   |                    |
|------------|-------------|--------------------|------------|--------------------|
|            | Total-Cu %  | MoS <sub>2</sub> % | Total-Cu % | MoS <sub>2</sub> % |
| 0116       | 0.54        | 0.030              | 0.52       | 0.011              |
| 0132       | 0.28        | 0.017              | 0.28       | 0.013              |
| 0219       | 0.60        | 0.032              | 0.59       | 0.023              |
| 0317       | 0.75        |                    | 0.60       |                    |
| 0418       | 0.11        | 0.007              | 0.11       | 0.003              |
| 0436       | 0.87        | 0.003              | 0.85       | 0.003              |
| 0514       | 0.95        | 0.003              | 0.86       | 0.003              |
| 0529       | 0.82        | 0.002              | 0.78       | 0.003              |
| 0620       | 0.31        | tr.                | 0.16       | 0.003              |
| 0712       | 0.30        | 0.002              | 0.17       | 0.003              |
| 0917       | 0.41        | 0.027              | 0.36       | 0.038              |
| 0934       | 0.66        | 0.028              | 0.64       | 0.032              |
| 0951       | 1.00        | 0.008              | 0.96       | 0.007              |
| 1035       | 1.30        | 0.135              | 1.22       | 0.098              |
| 1050       | 0.43        | 0.042              | 0.41       | 0.090              |
| 1114       | 0.68        |                    | 0.67       |                    |
| 1128       | 0.74        |                    | 0.87       |                    |
| 1214       | 0.46        |                    | 0.44       |                    |
| 1228       | 0.69        |                    | 0.66       |                    |
| 1316       | 0.91        |                    | 0.88       |                    |
| 1414       | 1.46        | 0.008              | 1.36       | 0.003              |
| 1428       | 0.43        | 0.005              | 0.42       | 0.003              |
| 1514       | 0.79        |                    | 0.75       |                    |
| 1528       | 0.95        |                    | 0.87       |                    |
| 1612       | 1.07        |                    | 1.03       |                    |
| 1705       | 0.77        |                    | 0.72       |                    |
| 2104       | 0.20        | tr.                | 0.15       | 0.003              |
| 2816       | 0.07        |                    | 0.07       |                    |
| 2833       | 0.10        |                    | 0.09       |                    |
| 3120       | 0.20        |                    | 0.19       |                    |
| 3140       | 0.92        |                    | 0.83       |                    |
| 3150       | 0.59        |                    | 0.52       |                    |
| 3160       | 0.55        |                    | 0.49       |                    |
| 3180       | 1.16        |                    | 1.04       |                    |
| 3219       | 0.24        | 0.005              | 0.24       | 0.003              |
| 3239       | 1.18        | 0.010              | 1.12       | 0.007              |
| 3317       | 0.30        | 0.005              | 0.28       | 0.005              |
| 3334       | 0.87        | 0.005              | 0.82       | 0.003              |
| 3351       | 0.38        | 0.008              | 0.35       | 0.007              |
| 3420       | 0.84        | 0.217              | 0.80       | 0.234              |
| 3440       | 1.43        | 0.077              | 1.38       | 0.060              |
| 3460       | 1.33        |                    | 1.22       |                    |
| 3516       | 1.68        |                    | 1.66       |                    |
| 4210       | 1.71        | 0.003              | 1.08       | 0.003              |
| 4310       | 0.89        | 0.015              | 0.82       | 0.010              |
| 4504       | 2.10        |                    | 1.56       |                    |
| 4605       | 1.38        | 0.012              | 1.72       | 0.025              |

# APPENDICES

(Drilling Data)



The Metrage Drilled by Each Diamond Bit

| Item        | Size  | No.    | Drill Holes (Underground) |       |       |       |       |       |       |       |        |        |        |        |        |        |        |        |  | Total |       |
|-------------|-------|--------|---------------------------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--|-------|-------|
|             |       |        | No. 1                     | No. 2 | No. 3 | No. 4 | No. 5 | No. 6 | No. 7 | No. 9 | No. 10 | No. 11 | No. 12 | No. 13 | No. 14 | No. 15 | No. 16 | No. 17 |  |       |       |
| Diamond Bit | NK-WL | 18055  |                           |       |       |       |       |       |       |       |        |        |        |        |        |        | 19.75  |        |  | 19.75 |       |
|             |       | 18056  |                           |       | 9.32  |       |       |       |       |       |        |        |        |        |        |        |        |        |  |       | 41.76 |
|             |       | 18058  |                           |       |       |       |       |       |       |       |        |        |        |        |        |        | 32.44  |        |  |       | 26.46 |
|             |       | 18037  |                           |       | 24.73 |       |       |       |       |       |        |        |        |        |        |        |        |        |  |       | 24.73 |
|             |       | 18038  |                           |       |       |       |       |       |       |       |        |        |        |        |        |        | 16.62  |        |  |       | 16.62 |
|             |       | 18234  |                           |       |       |       |       |       |       |       |        |        |        |        |        |        | 30.74  |        |  |       | 30.74 |
|             |       | 18331  |                           |       |       |       |       |       |       |       |        |        |        |        |        |        |        | 1.04   |  |       | 1.04  |
|             |       | 19103  |                           |       |       |       |       |       |       |       |        |        |        |        |        |        |        | 0.91   |  |       | 25.70 |
|             |       | 19115  | 1.30                      |       |       |       |       |       |       |       |        |        |        |        |        |        |        |        |  |       | 1.30  |
|             |       | 19117  |                           |       |       |       |       |       |       |       |        |        |        |        |        |        |        |        |  |       | 35.70 |
|             |       | 19118  |                           |       |       | 20.20 |       |       |       |       |        |        |        |        |        |        |        |        |  |       | 20.20 |
|             |       | 19236  |                           |       |       |       |       |       |       |       |        |        |        |        |        |        | 8.70   |        |  |       | 23.90 |
|             |       | 19237  |                           |       |       |       |       |       |       |       |        |        |        |        |        |        |        |        |  |       | 47.07 |
|             |       | 19238  |                           |       |       |       |       |       |       |       |        |        |        |        |        |        | 23.60  |        |  |       | 23.60 |
|             |       | 18907  |                           |       |       |       |       |       |       |       |        |        |        |        |        |        |        |        |  |       | 15.99 |
|             |       | 18908  |                           |       | 6.00  |       |       |       |       |       |        |        |        |        |        |        |        |        |  |       | 6.00  |
|             |       | 18909  |                           |       |       |       |       |       |       |       |        |        |        |        |        |        |        |        |  |       | 24.60 |
|             |       | 18910  |                           |       |       |       |       |       |       |       |        |        |        |        |        |        |        |        |  |       | 19.54 |
|             |       | 18911  |                           |       |       |       |       |       |       |       |        |        |        |        |        |        |        |        |  |       | 7.89  |
|             |       | 18912  |                           |       |       |       |       |       |       |       |        |        |        |        |        |        |        |        |  |       | 28.86 |
|             |       | 18913  |                           |       |       |       |       |       |       |       |        |        |        |        |        |        |        |        |  |       | 10.12 |
|             |       | 23766  |                           |       |       |       |       |       |       |       |        |        |        |        |        |        |        |        |  |       | 29.60 |
|             |       | 23767  |                           |       |       |       |       |       |       |       |        |        |        |        |        |        |        |        |  |       | 7.20  |
|             |       | 23768  |                           |       |       |       |       |       |       |       |        |        |        |        |        |        |        |        |  |       | 1.00  |
|             |       | 23879  |                           |       |       |       |       |       |       |       |        |        |        |        |        |        |        |        |  |       | 14.70 |
|             |       | 20091  |                           |       |       |       |       |       |       |       |        |        |        |        |        |        |        |        |  |       | 44.70 |
|             |       | 100688 |                           |       |       |       |       |       |       |       |        |        |        |        |        |        |        |        |  |       | 22.00 |

25.48





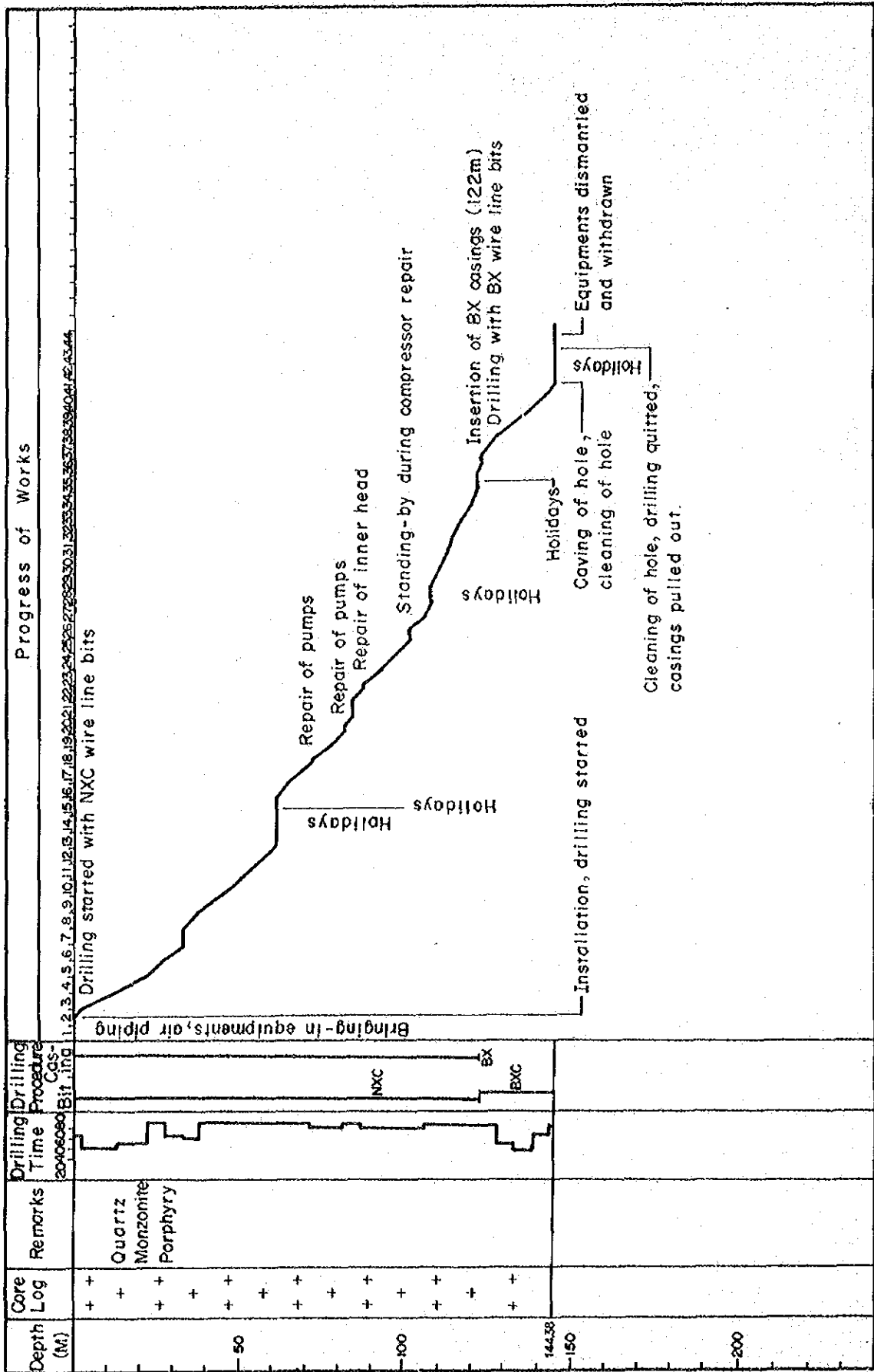


The Metrage Drilled by Each Diamond Bit

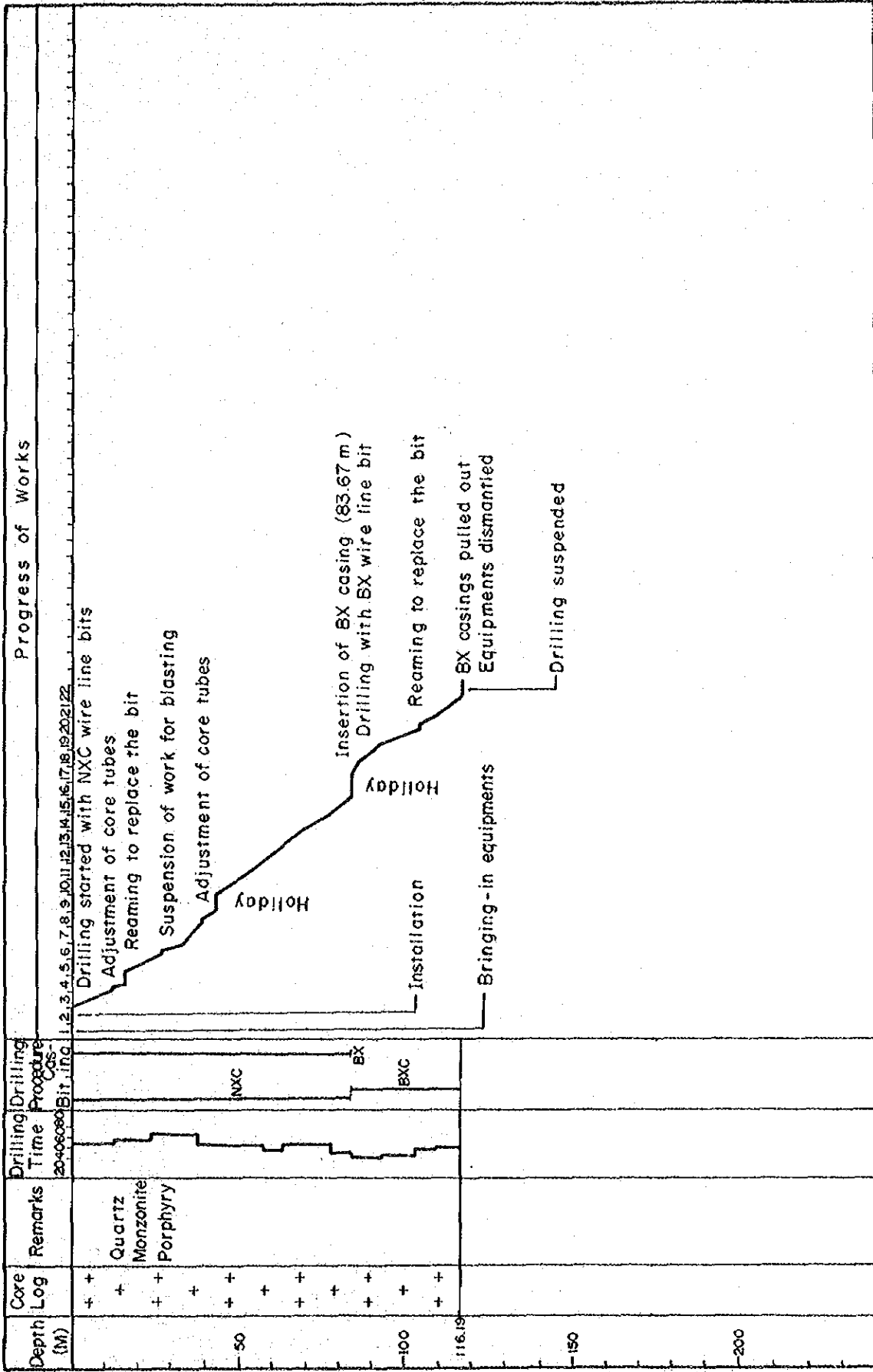
| Item        | Size  | No.   | Drill Holes (Surface) |       |       |       |     |     |     |     |     |     |     |     |     |     |     |  | Total |       |
|-------------|-------|-------|-----------------------|-------|-------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-------|-------|
|             |       |       | No. 1                 | No. 2 | No. 3 | No. 8 | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. |  |       |       |
| Diamond Bit | NX-WL | 14020 | 3.65                  |       |       |       |     |     |     |     |     |     |     |     |     |     |     |  |       | 3.65  |
|             |       | 14027 | 7.70                  |       |       |       |     |     |     |     |     |     |     |     |     |     |     |  |       | 7.70  |
|             |       | 14074 | 22.80                 |       |       |       |     |     |     |     |     |     |     |     |     |     |     |  |       | 22.80 |
|             |       | 14079 | 1.55                  |       |       |       |     |     |     |     |     |     |     |     |     |     |     |  |       | 1.55  |
|             |       | 15656 | 10.25                 |       |       |       |     |     |     |     |     |     |     |     |     |     |     |  |       | 10.25 |
|             |       | 15896 |                       | 17.00 |       |       |     |     |     |     |     |     |     |     |     |     |     |  |       | 17.00 |
|             |       | 15898 |                       | 0.85  |       |       |     |     |     |     |     |     |     |     |     |     |     |  |       | 0.85  |
|             |       | 15913 | 13.15                 |       |       |       |     |     |     |     |     |     |     |     |     |     |     |  |       | 13.15 |
|             |       | 15914 | 14.05                 | 3.70  | 46.90 |       |     |     |     |     |     |     |     |     |     |     |     |  |       | 64.65 |
|             |       | 15916 |                       |       | 16.85 |       |     |     |     |     |     |     |     |     |     |     |     |  |       | 16.85 |
|             |       | 15985 |                       |       | 24.65 |       |     |     |     |     |     |     |     |     |     |     |     |  |       | 24.65 |
|             |       | 16004 |                       |       | 38.65 |       |     |     |     |     |     |     |     |     |     |     |     |  |       | 38.65 |
|             |       | 16005 |                       |       | 42.75 |       |     |     |     |     |     |     |     |     |     |     |     |  |       | 42.75 |
|             |       | 18234 |                       |       |       | 0.37  |     |     |     |     |     |     |     |     |     |     |     |  |       | 0.37  |
|             |       | 19020 | 5.20                  |       |       |       |     |     |     |     |     |     |     |     |     |     |     |  |       | 5.20  |
|             |       | 19115 | 11.60                 |       |       |       |     |     |     |     |     |     |     |     |     |     |     |  |       | 11.60 |
|             |       | 19116 | 7.30                  |       |       |       |     |     |     |     |     |     |     |     |     |     |     |  |       | 7.30  |
|             |       | 19235 |                       |       |       | 23.89 |     |     |     |     |     |     |     |     |     |     |     |  |       | 23.89 |
|             |       | 19238 |                       |       |       | 13.87 |     |     |     |     |     |     |     |     |     |     |     |  |       | 13.87 |
|             |       | 18909 |                       |       |       | 13.71 |     |     |     |     |     |     |     |     |     |     |     |  |       | 13.71 |
|             |       | 18910 |                       |       |       | 17.07 |     |     |     |     |     |     |     |     |     |     |     |  |       | 17.07 |
|             |       | 18911 |                       |       |       | 0.73  |     |     |     |     |     |     |     |     |     |     |     |  |       | 0.73  |
|             |       | 19881 |                       | 30.00 |       |       |     |     |     |     |     |     |     |     |     |     |     |  |       | 30.00 |
|             |       | 23880 | 4.50                  |       |       |       |     |     |     |     |     |     |     |     |     |     |     |  |       | 4.50  |
|             |       | 23881 | 25.30                 |       |       |       |     |     |     |     |     |     |     |     |     |     |     |  |       | 25.30 |
|             |       | 77956 |                       | 0.80  | 10.30 |       |     |     |     |     |     |     |     |     |     |     |     |  |       | 11.10 |
|             |       | 1945  | 1.50                  |       |       |       |     |     |     |     |     |     |     |     |     |     |     |  |       | 1.50  |



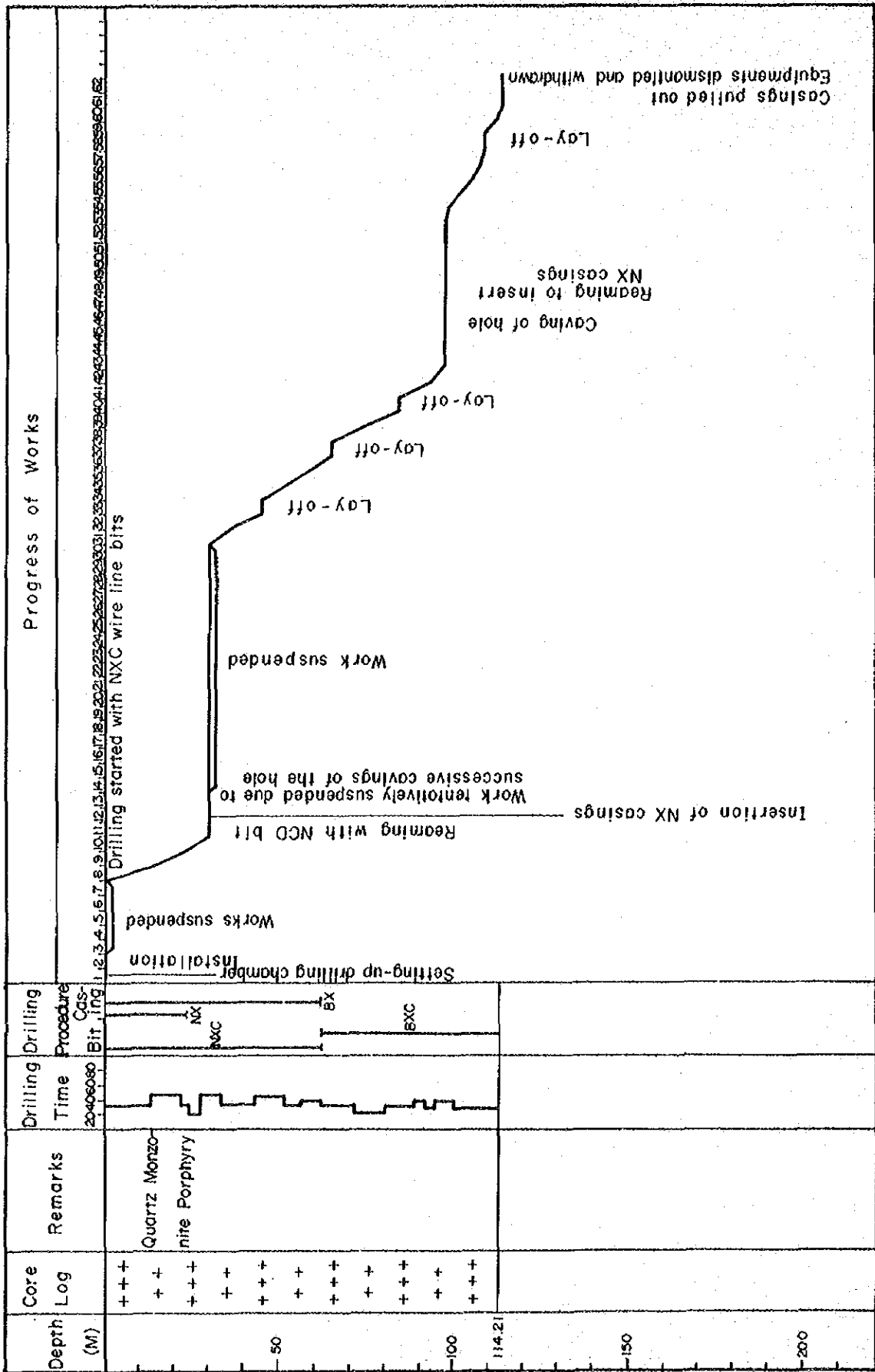
ANNEX 2 PROGRESS RECORD OF DIAMOND DRILLING UNDERGROUND No.1



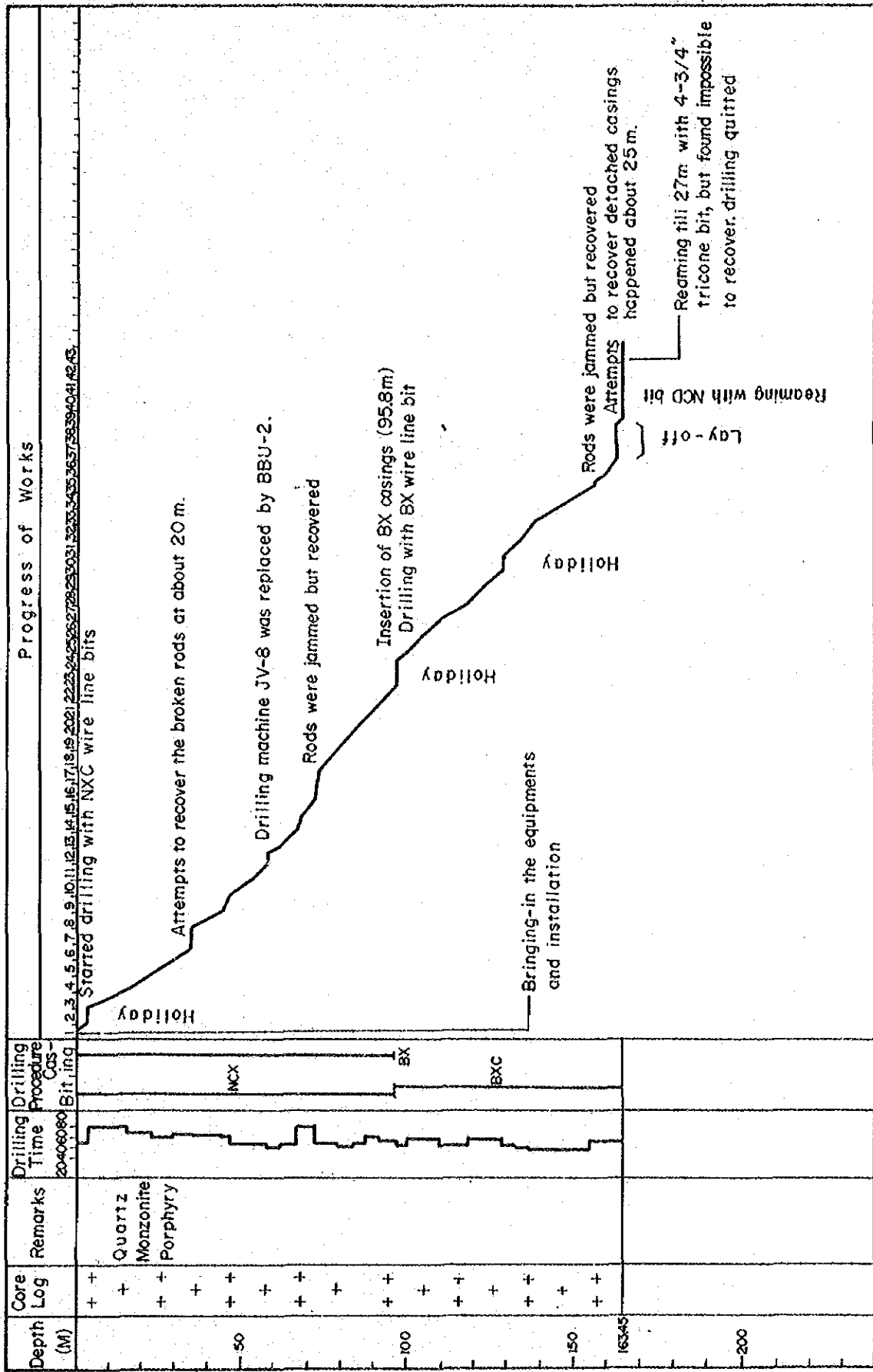
ANNEX 3 PROGRESS RECORD OF DIAMOND DRILLING UNDERGROUND No. 2



ANNEX 4 PROGRESS RECORD OF DIAMOND DRILLING UNDERGROUND No. 3

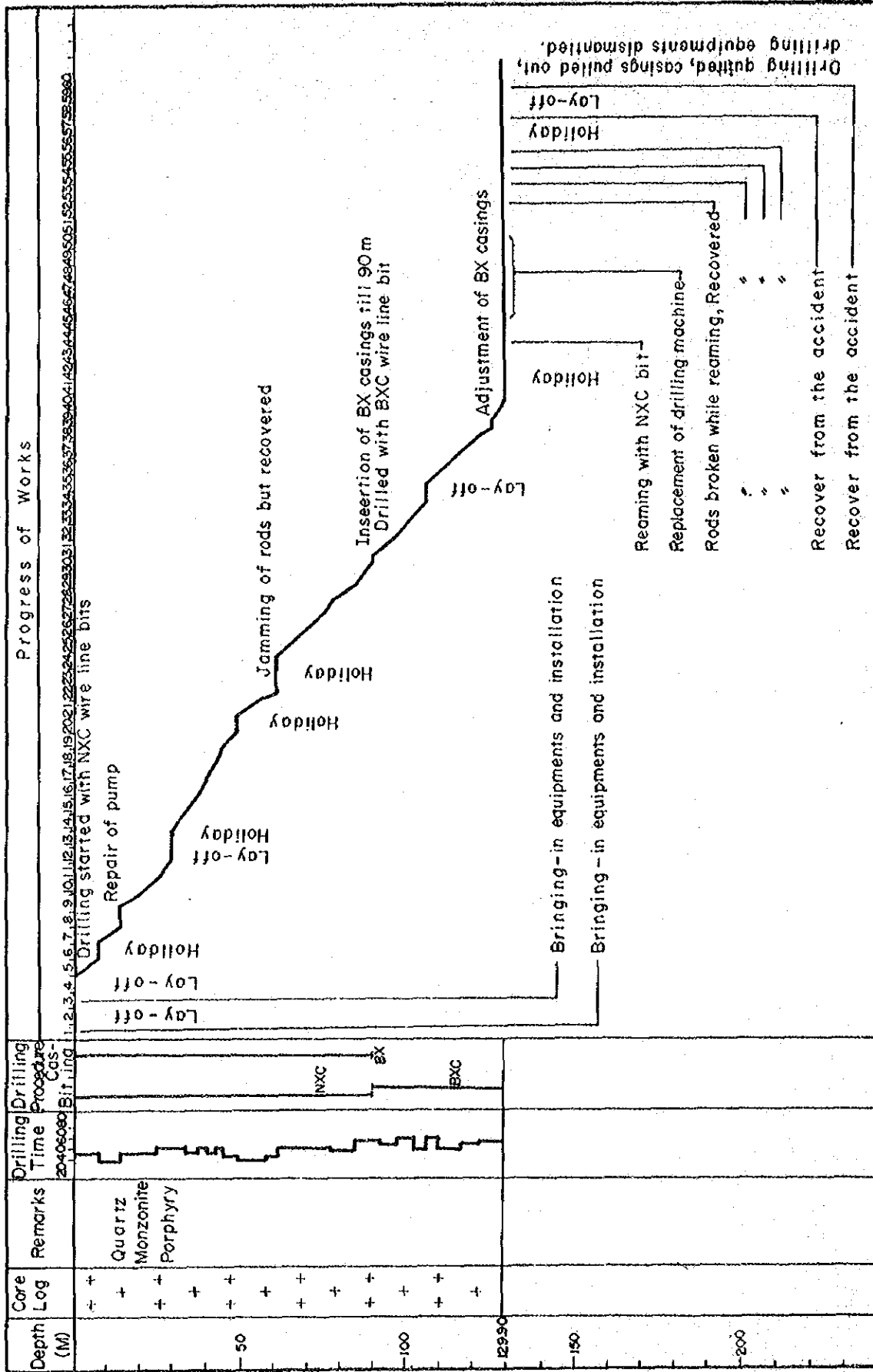


ANNEX 5 PROGRESS RECORD OF DIAMOND DRILLING UNDERGROUND No. 4

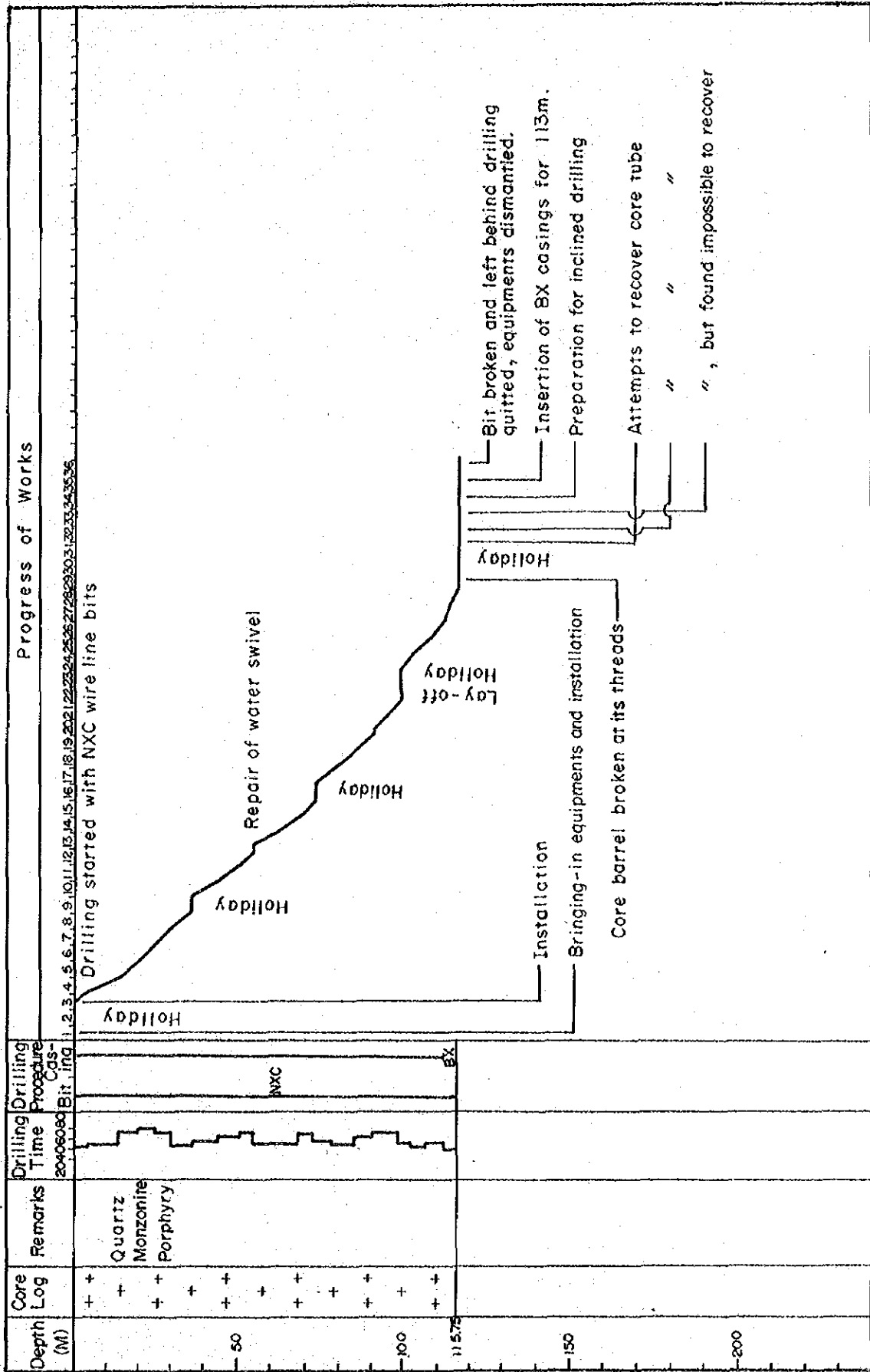




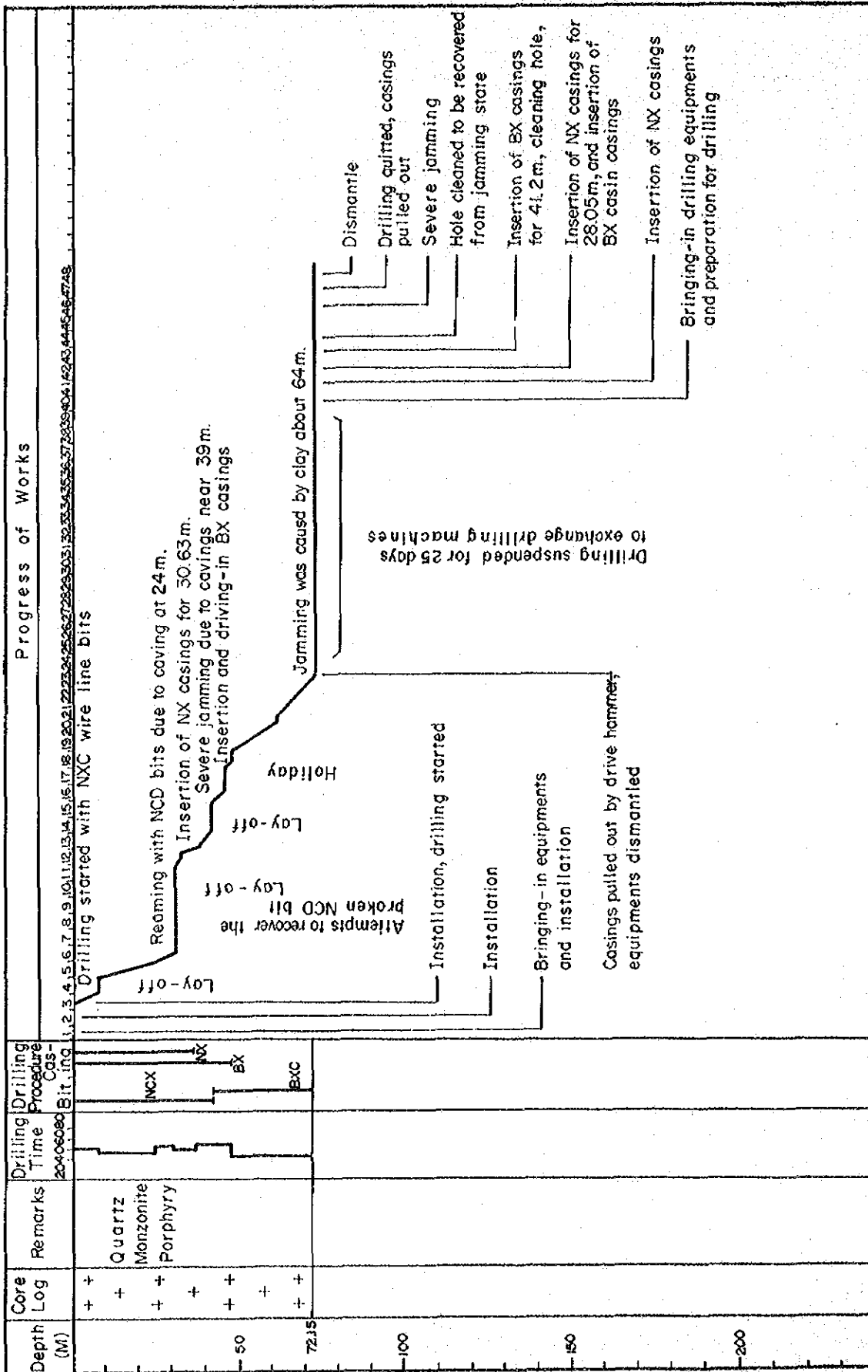
ANNEX 6 PROGRESS RECORD OF DIAMOND DRILLING UNDERGROUND No. 5



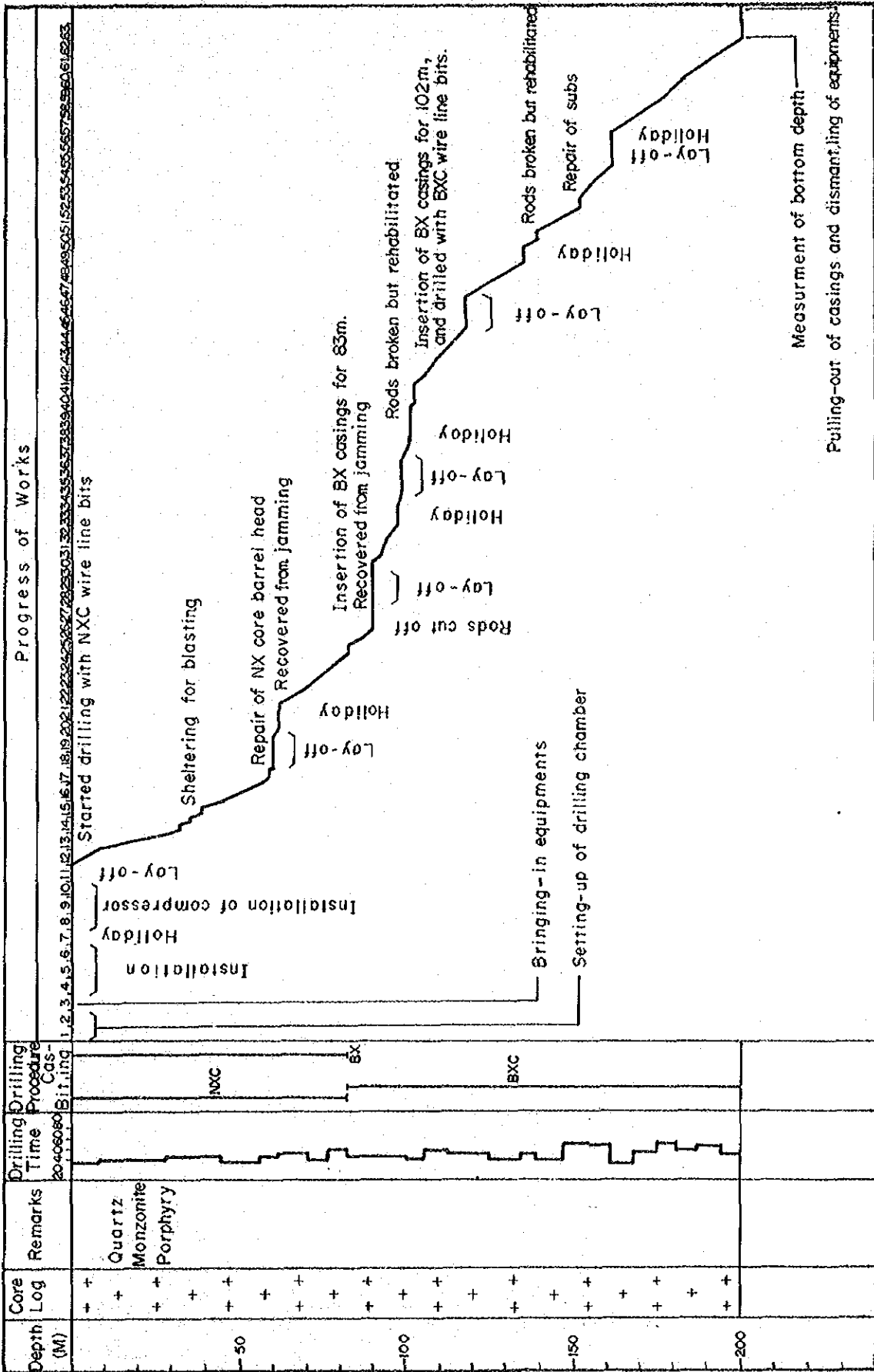
ANNEX 7 PROGRESS RECORD OF DIAMOND DRILLING UNDERGROUND No.6



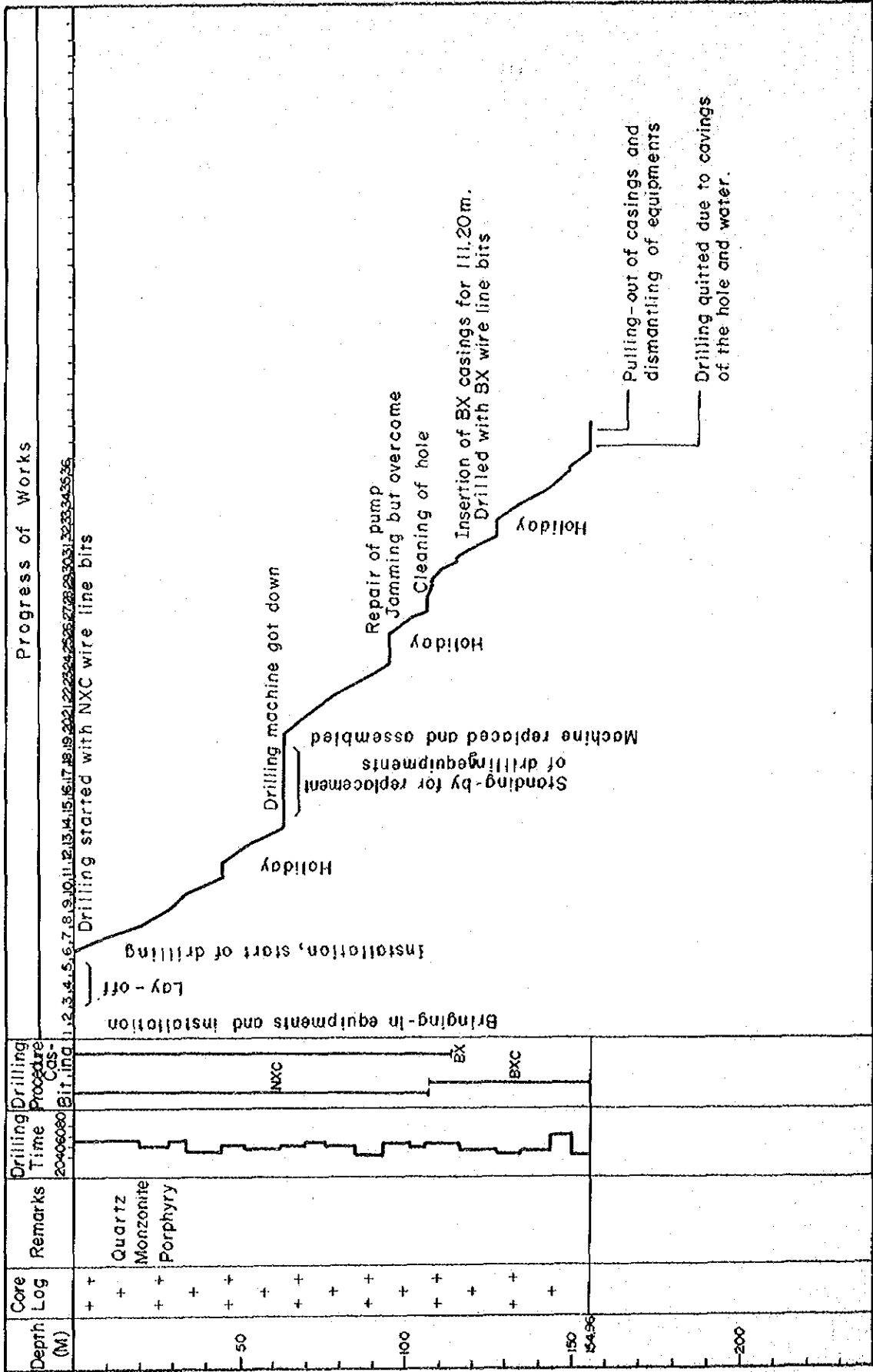
ANNEX 8 PROGRESS RECORD OF DIAMOND DRILLING UNDERGROUND No.7



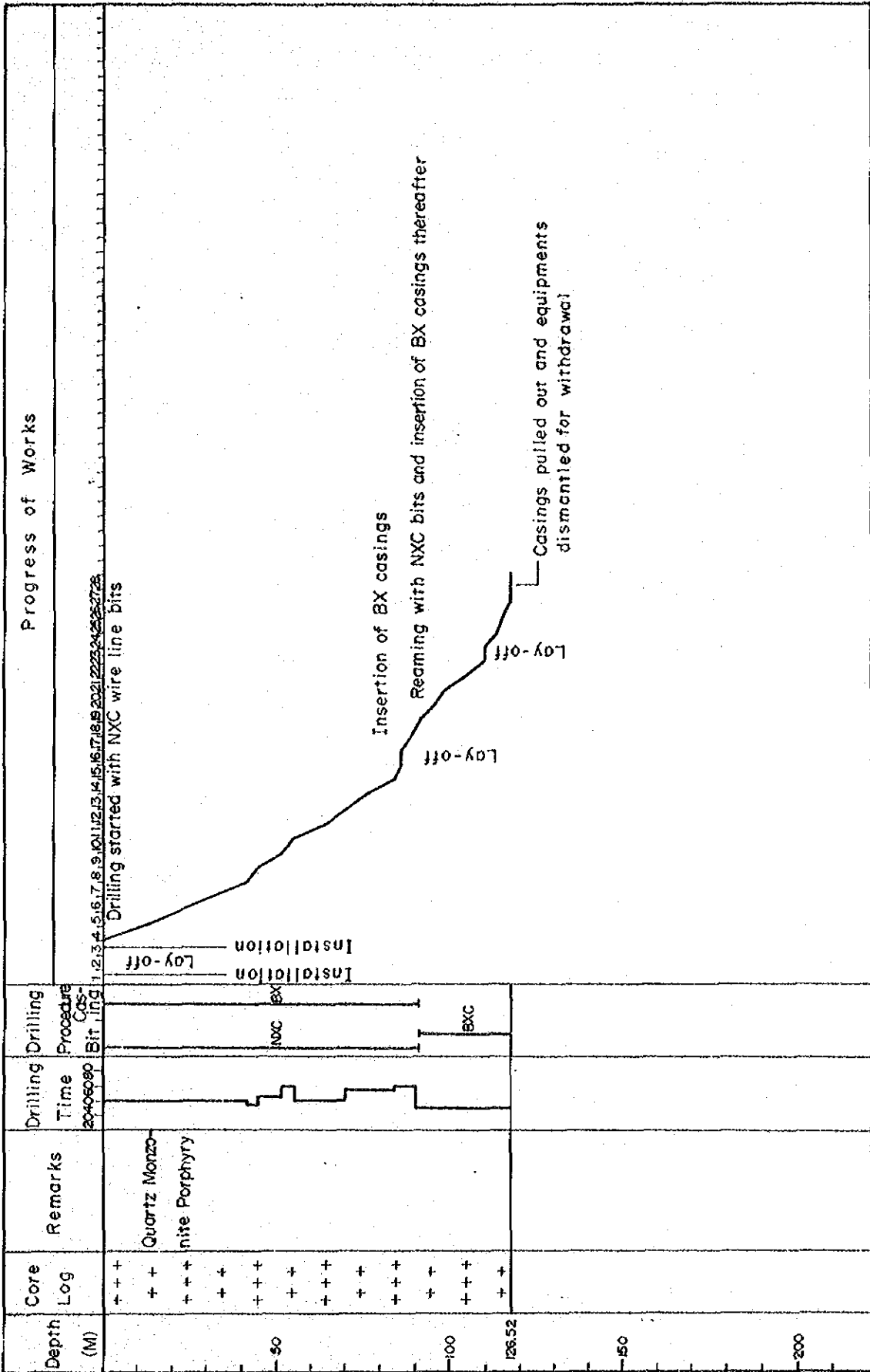
ANNEX 9 PROGRESS RECORD OF DIAMOND DRILLING UNDERGROUND No. 9



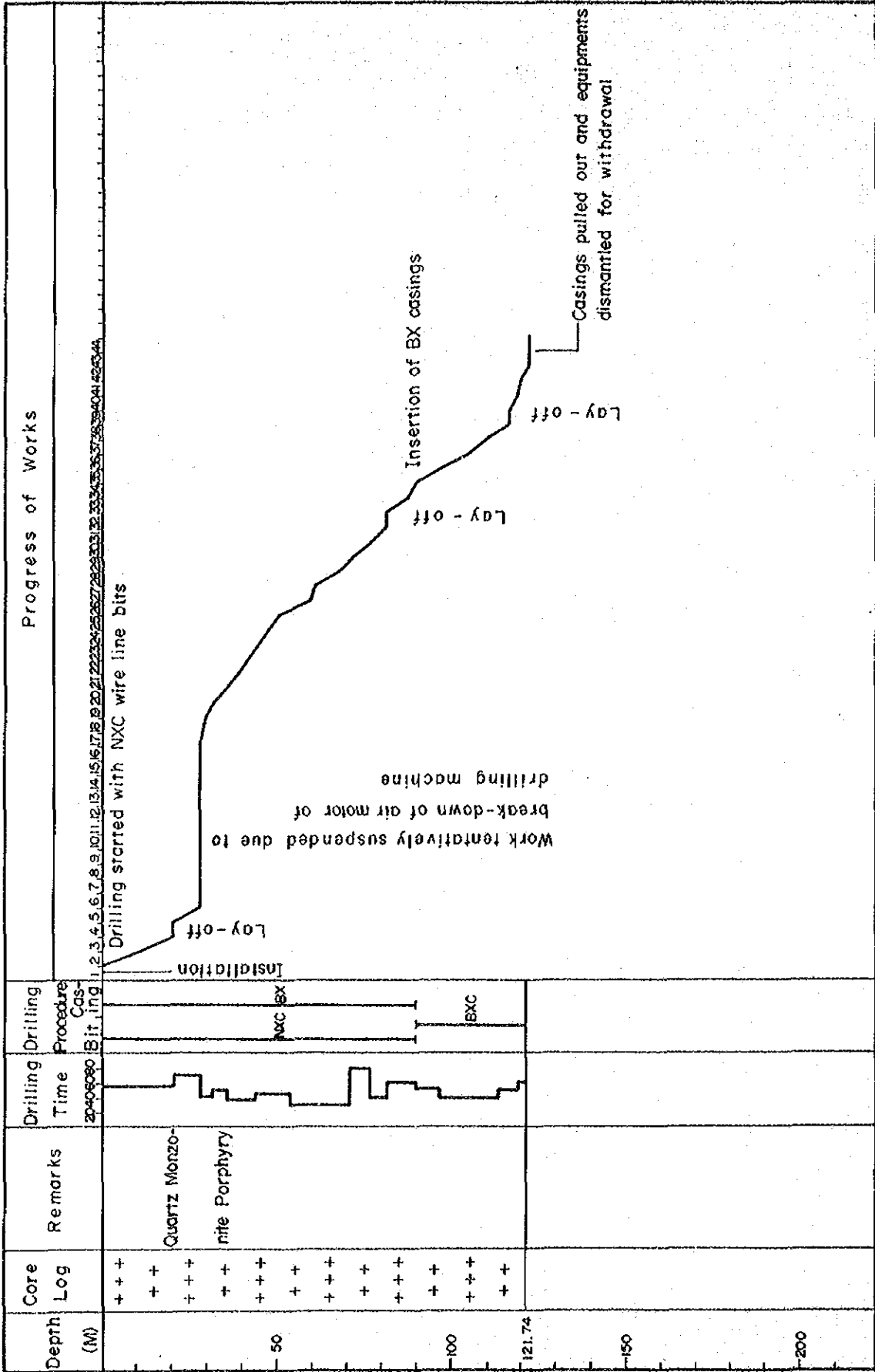
ANNEX 10 PROGRESS RECORD OF DIAMOND DRILLING UNDERGROUND No.10



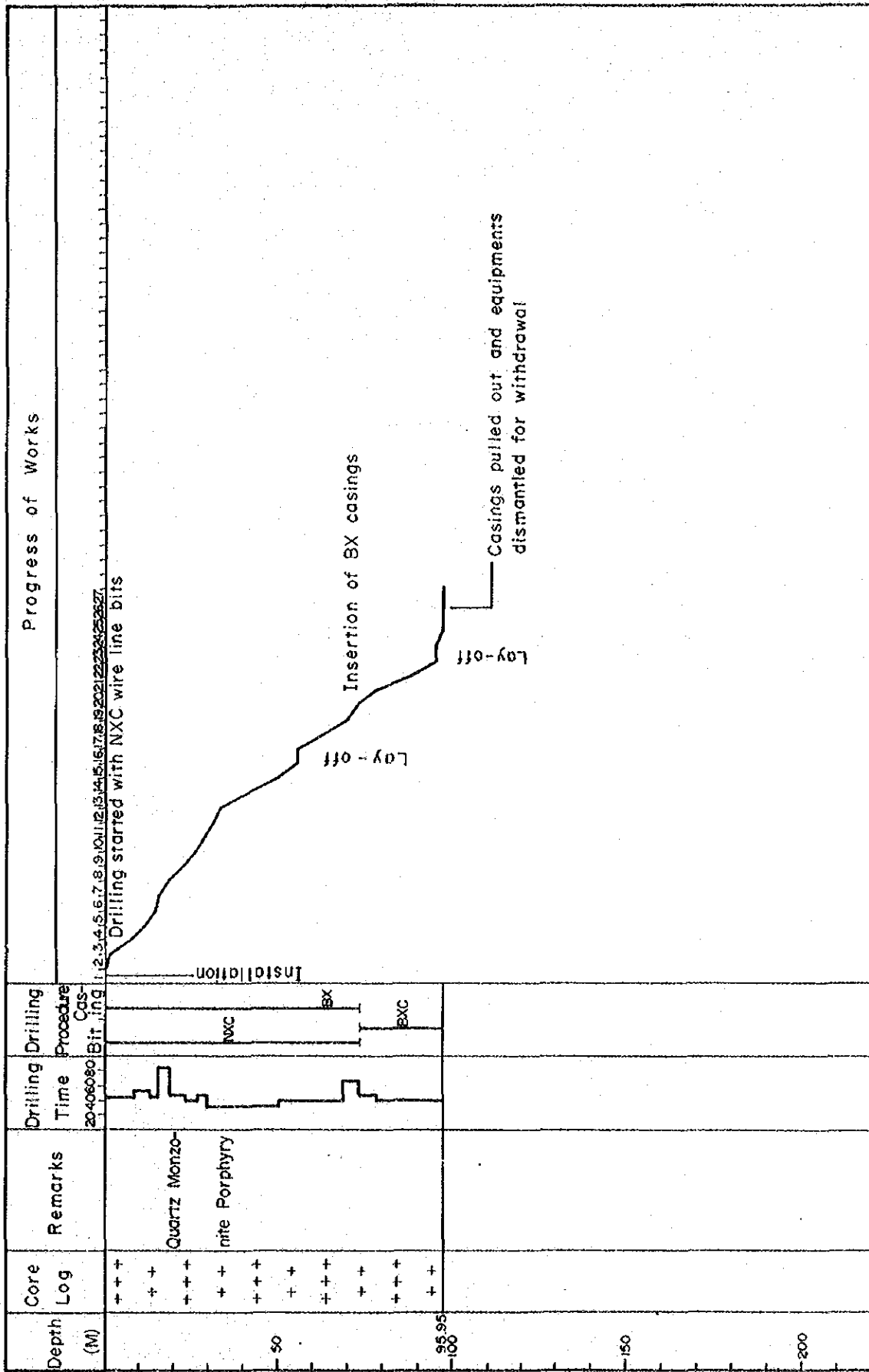
ANNEX 11 PROGRESS RECORD OF DIAMOND DRILLING UNDERGROUND No.11



ANNEX 12 PROGRESS RECORD OF DIAMOND DRILLING UNDERGROUND No.12

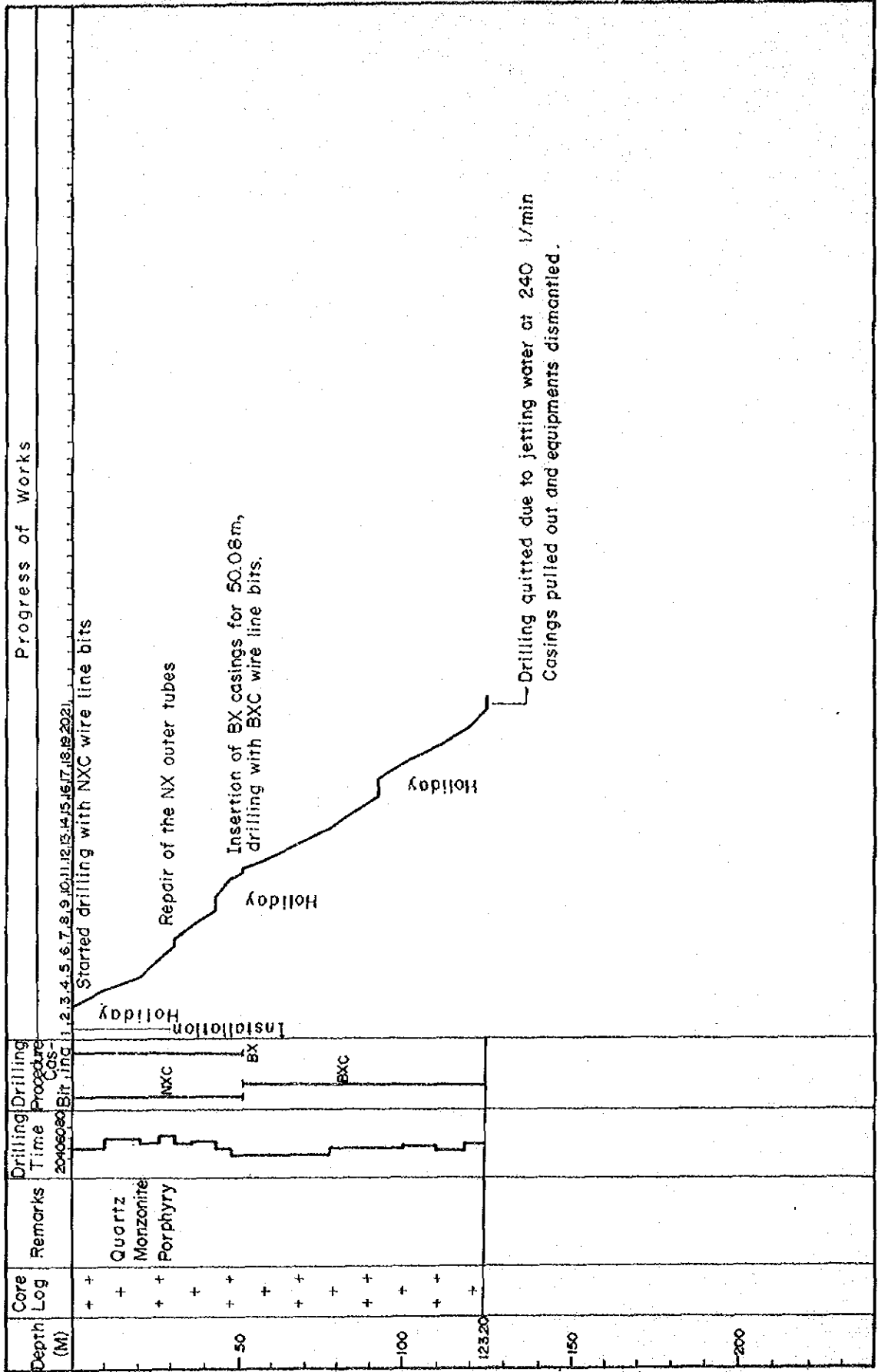


ANNEX 13 PROGRESS RECORD OF DIAMOND DRILLING UNDERGROUND No.13

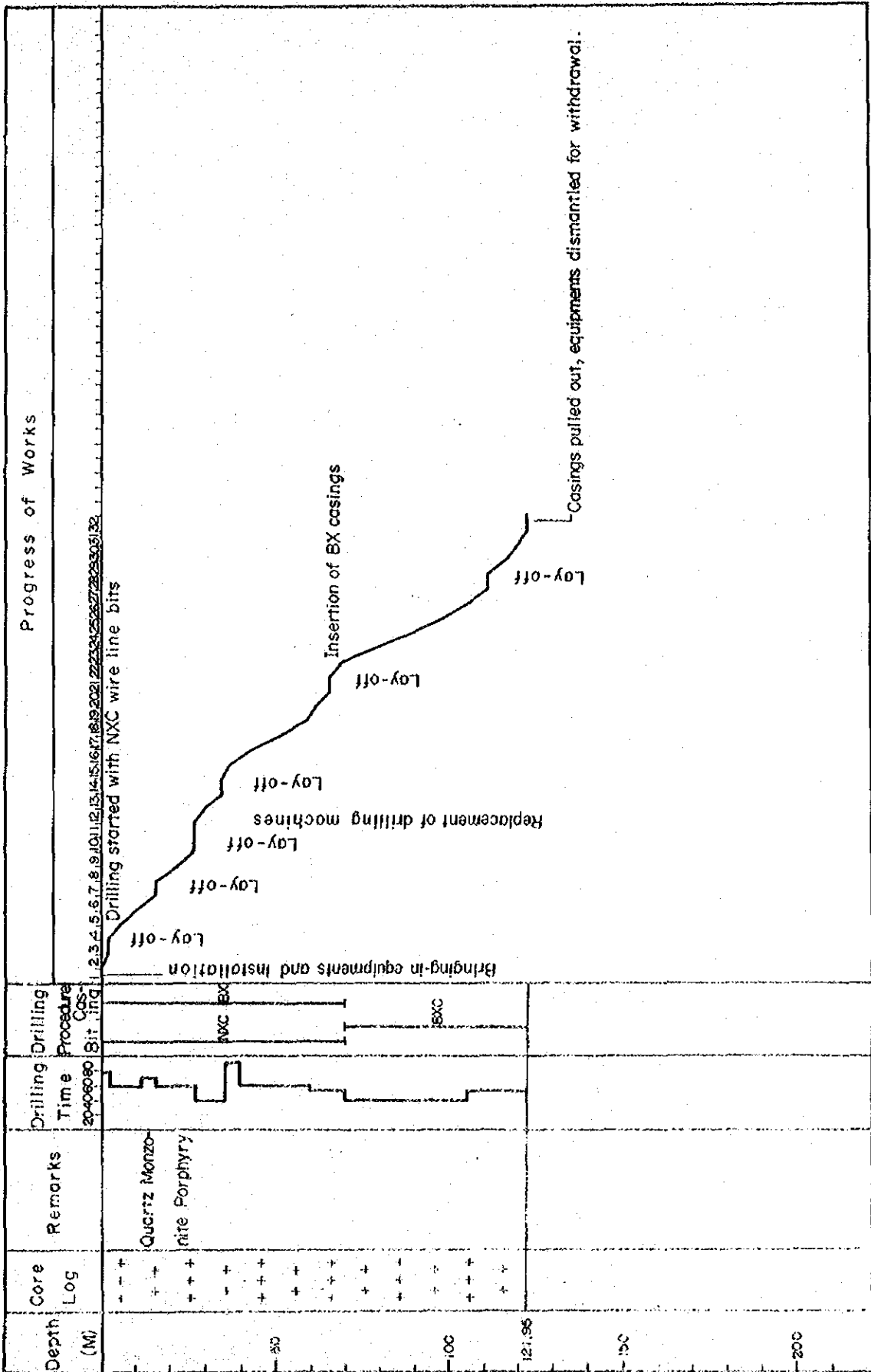




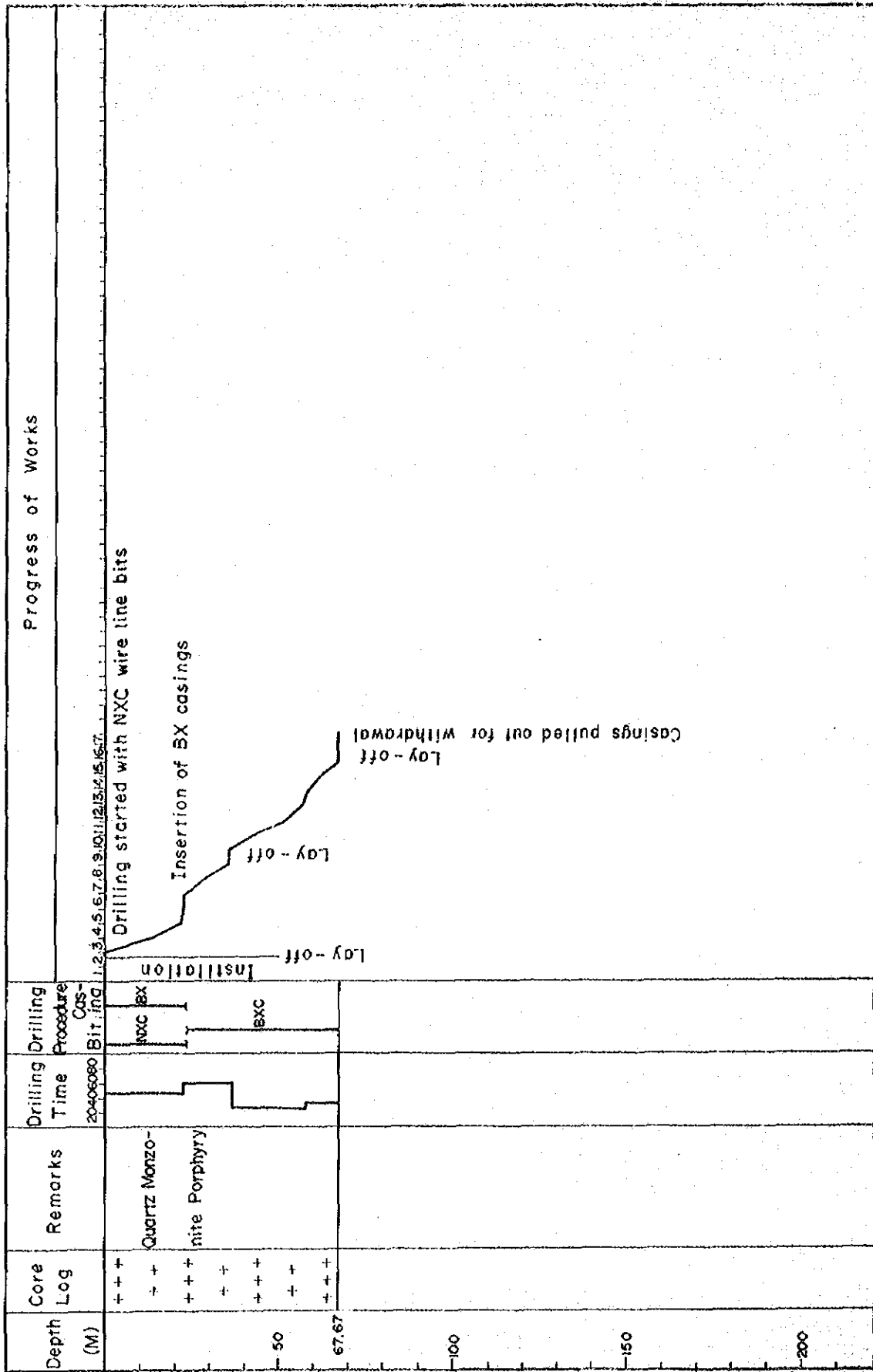
ANNEX 14 PROGRESS RECORD OF DIAMOND DRILLING  
UNDERGROUND No.14



ANNEX 15 PROGRESS RECORD OF DIAMOND DRILLING UNDERGROUND No.15



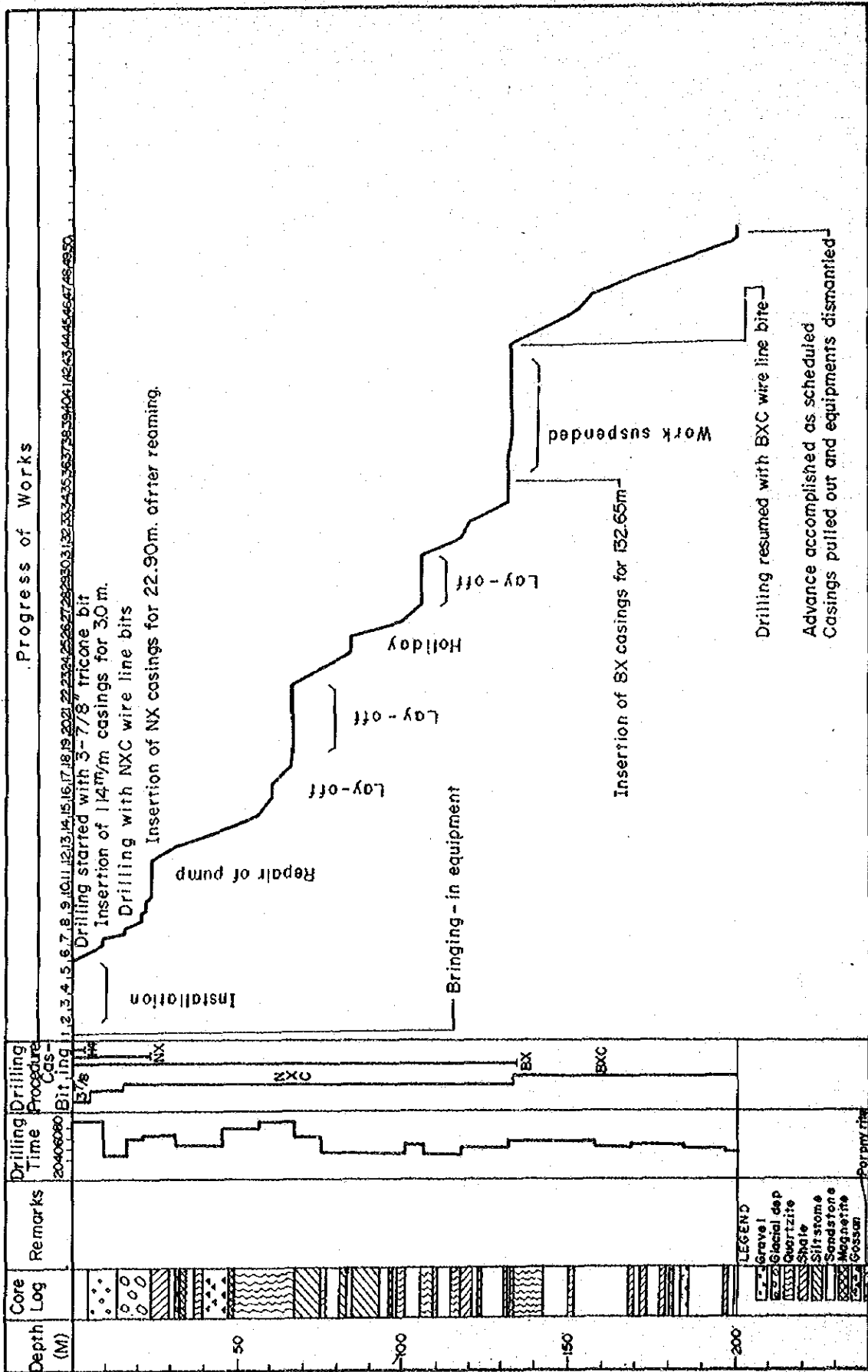
ANNEX 16 PROGRESS RECORD OF DIAMOND DRILLING UNDERGROUND No.16



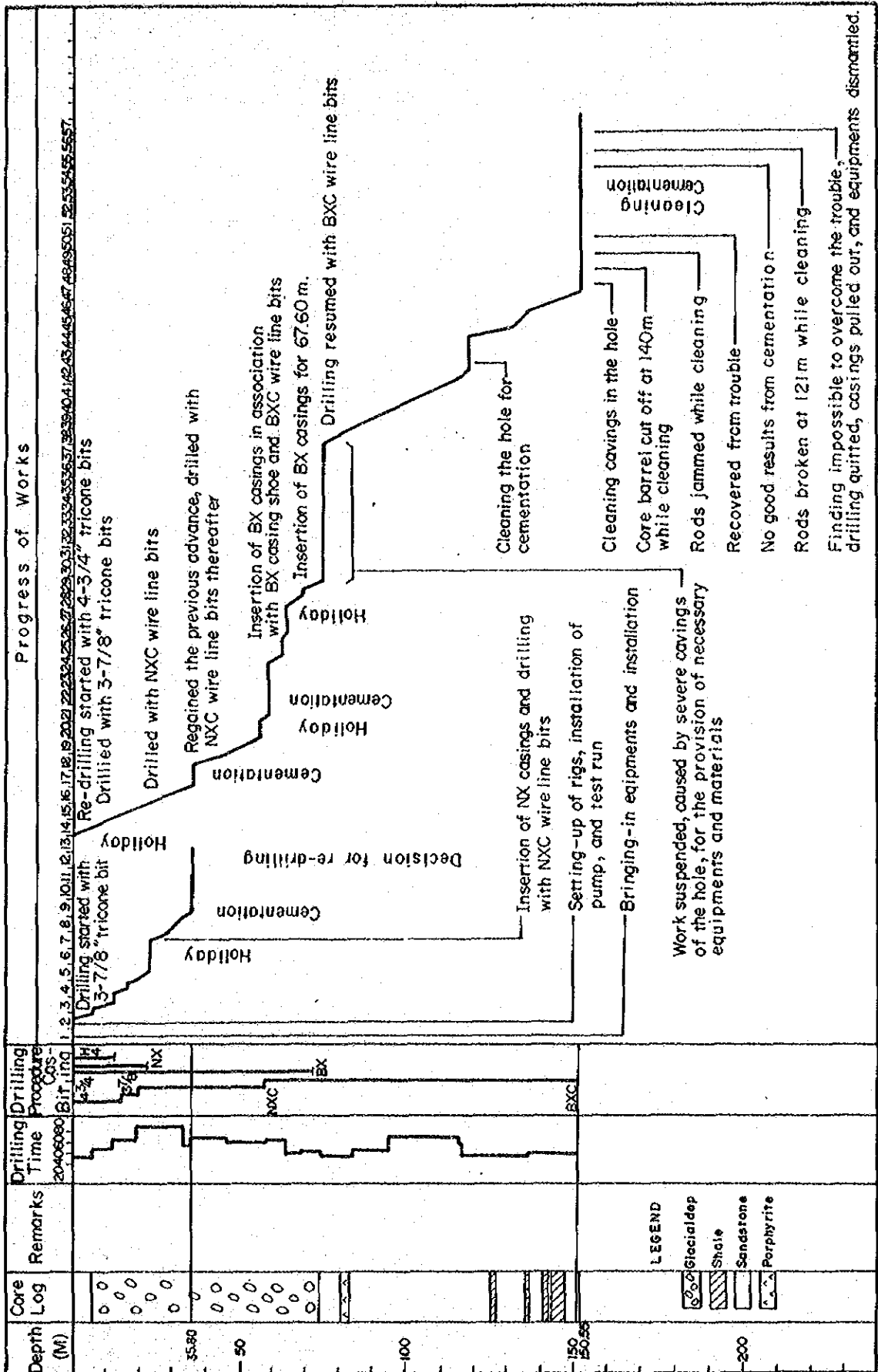
ANNEX 17 PROGRESS RECORD OF DIAMOND DRILLING UNDERGROUND No.17

| Depth (M) | Core Log | Remarks                      | Drilling Time      | Drilling Procedure | Progress of Works  |
|-----------|----------|------------------------------|--------------------|--------------------|--|
| 2570      | ++ +     | Quartz Mon-<br>nite Porphyry | 2040000<br>Bitting | Cos-<br>NXC        | <p>1, 2, 3, 4, 5, 6, 7, 8, 9<br/>           Bringing-in equipment installation<br/>           Work tentatively suspended due to break down of equipments<br/>           Dismantling and withdrawal<br/>           Drilling started with NXC wirt line bits</p> |
| -50       |          |                              |                    |                    |  |
| -100      |          |                              |                    |                    |  |
| -150      |          |                              |                    |                    |  |
| -200      |          |                              |                    |                    |  |

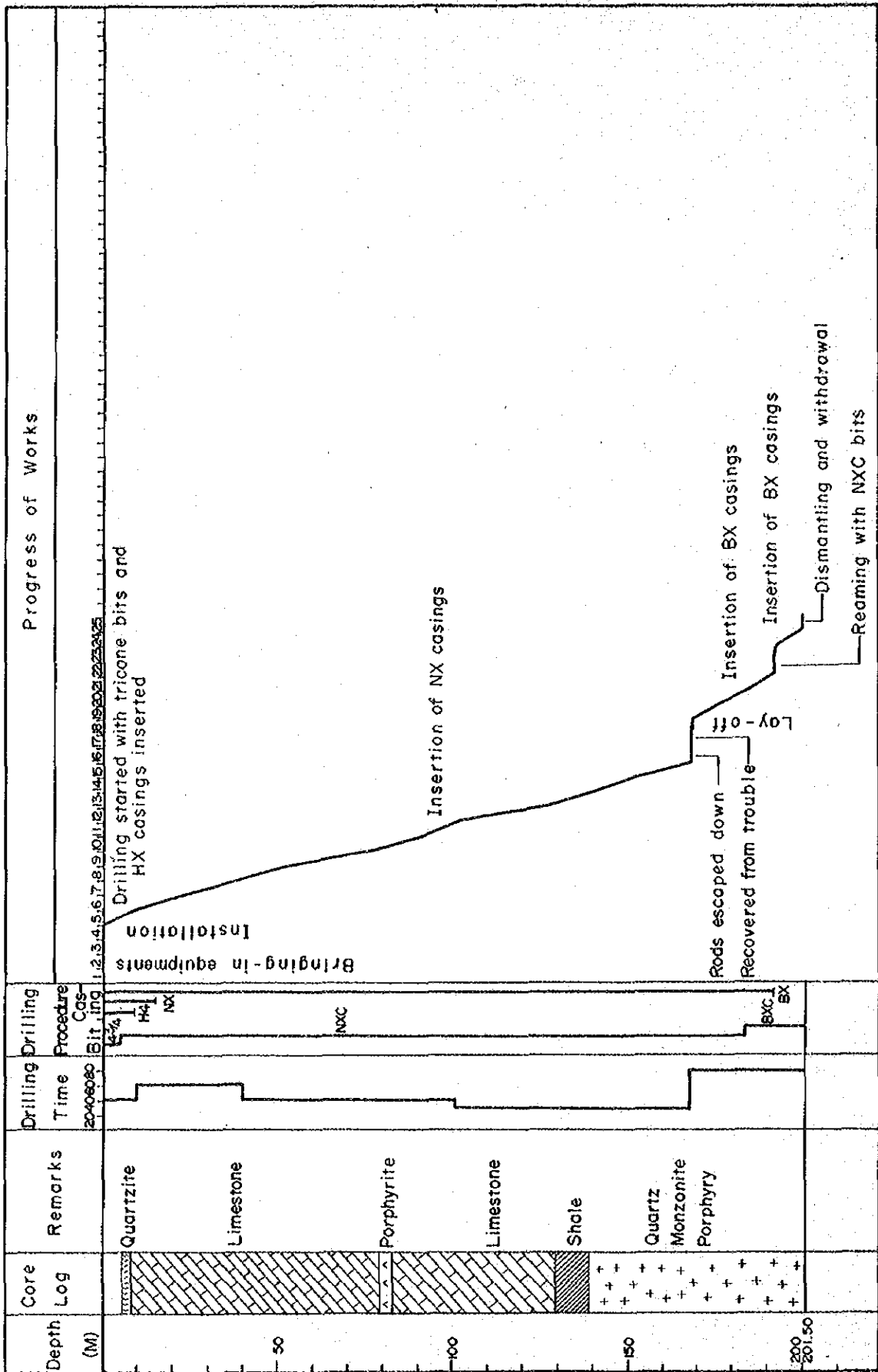
ANNEX 18 PROGRESS RECORD OF DIAMOND DRILLING  
SURFACE No.1



ANNEX 19 PROGRESS RECORD OF DIAMOND DRILLING SURFACE No.2



ANNEX 20 PROGRESS RECORD OF DIAMOND DRILLING  
SURFACE No. 3



ANNEX 21 PROGRESS RECORD OF DIAMOND DRILLING SURFACE No.8

