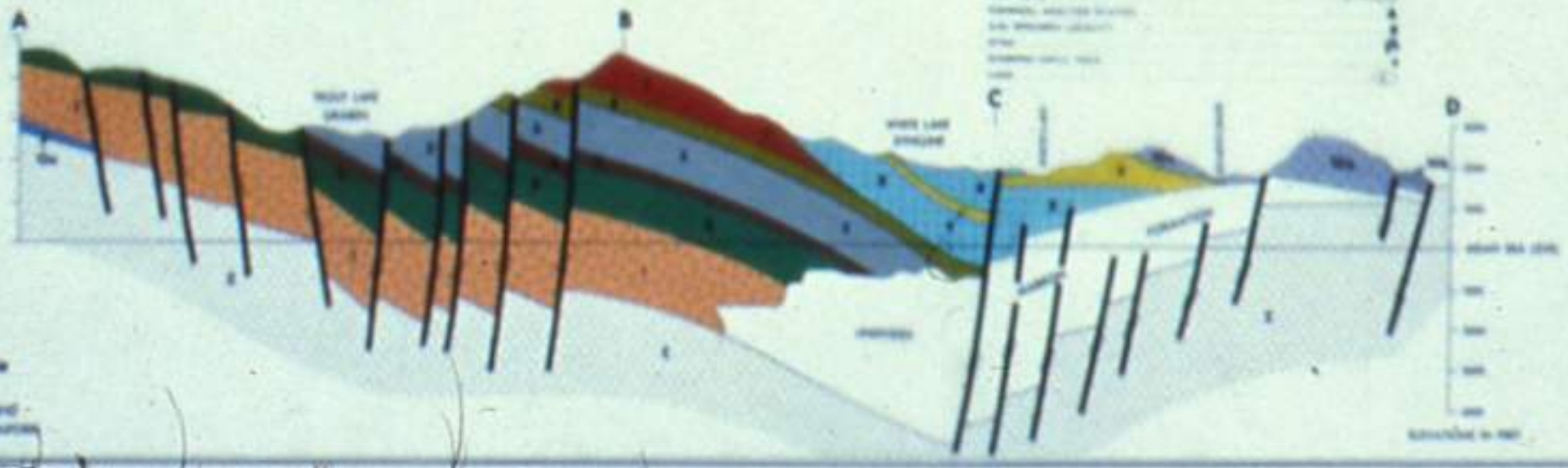
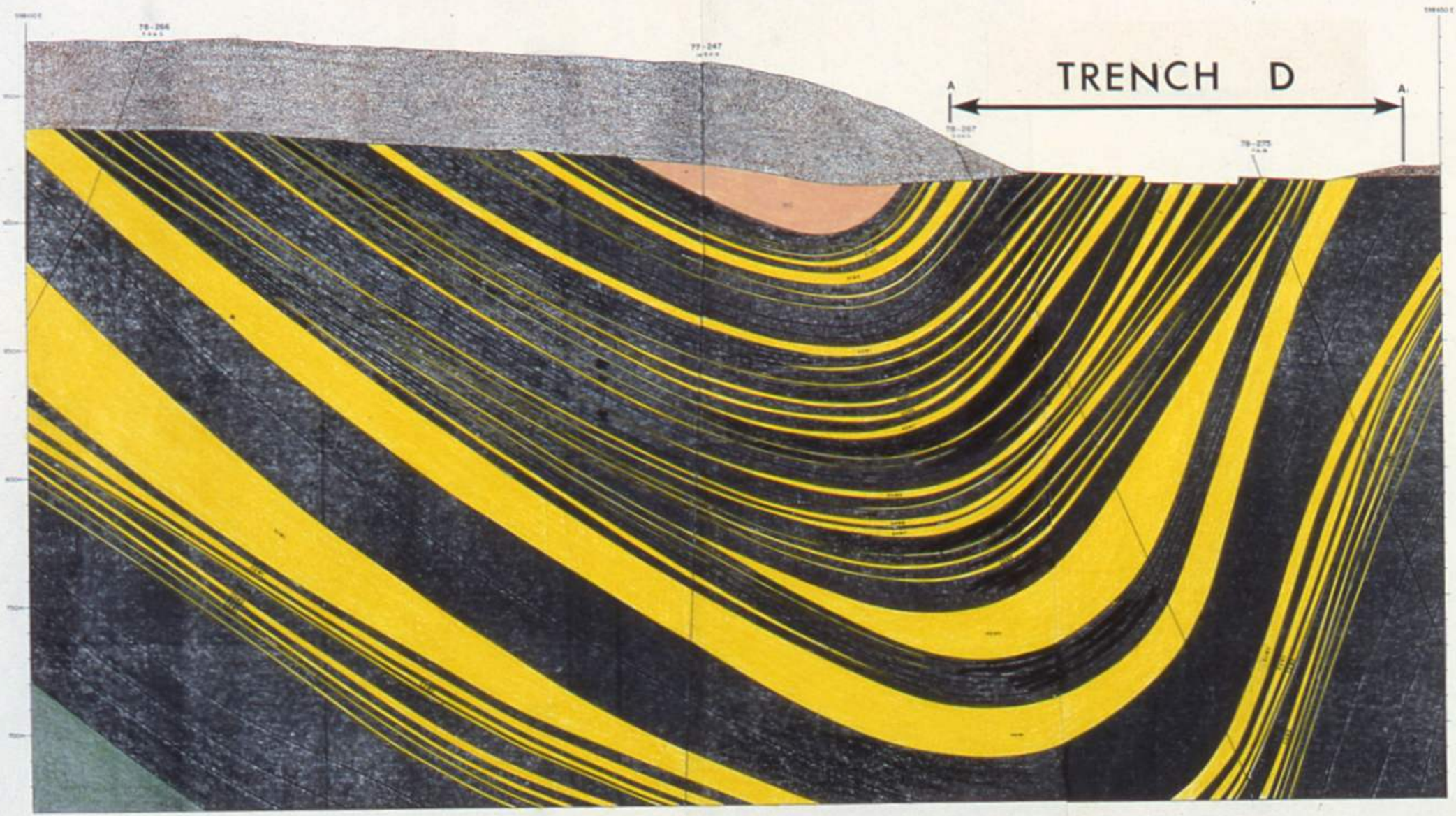
PENTICTON

December 1980
REVISED PRELIMINARY MAP 33
GEOLOGY OF THE PENTICTON TERTIARY OUTLIER
BY S. H. CHURCH

LEGEND



Province of British Columbia
Ministry of Energy, Mines and Petroleum Resources



LEGEND

OVERBURDEN – clay, silt, gravel and boulders

MEDICINE CREEK FORMATION – bentonitic claystone and siltstone

HAT CREEK FORMATION WASTE BEDS – mostly claystone and siltstone with intercalated coal

HAT CREEK FORMATION COAL BEDS – mostly coal with intercalated siltstone and claystone

COLDWATER FORMATION – siltstone, claystone, sandstone, conglomerate, minor coal

SCALE IN METRES

CROSS SECTION OF SYNCLINE

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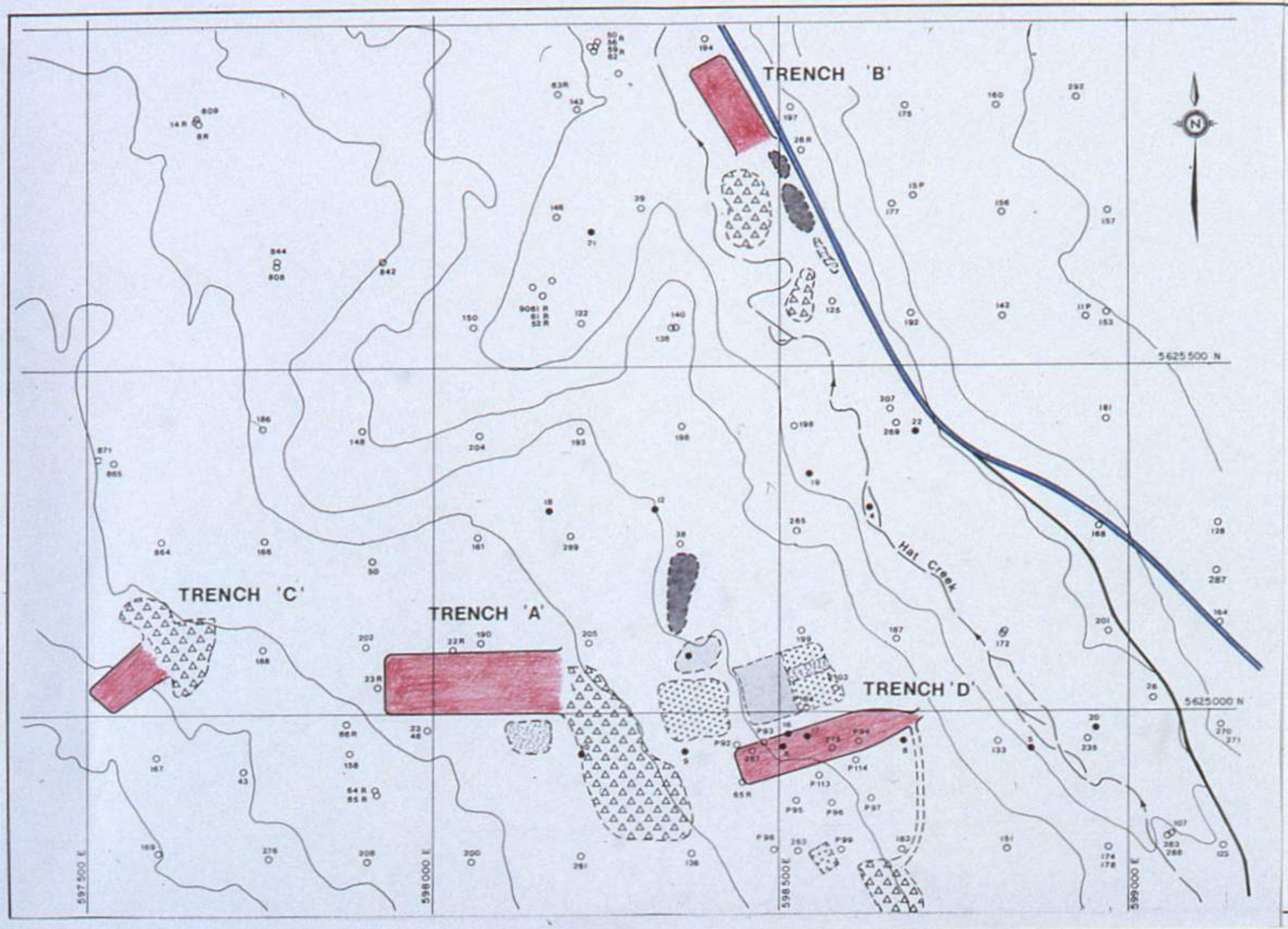
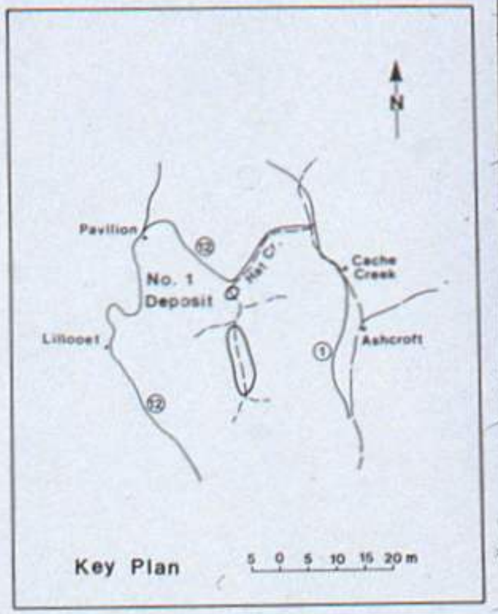
FIGURE 5

GEOLOGICAL CROSS SECTION "D"
CUTTING ACROSS TRENCH "D"





LEGEND

- Coal Dump
- Low Grade Coal Dump
- Coaly Waste Dump
- Overburden Dump
- Topsoil Dump
- Medicine Creek Clay Leachate Pile

50m 0 100 200m
Scale in metre 1 : 5000

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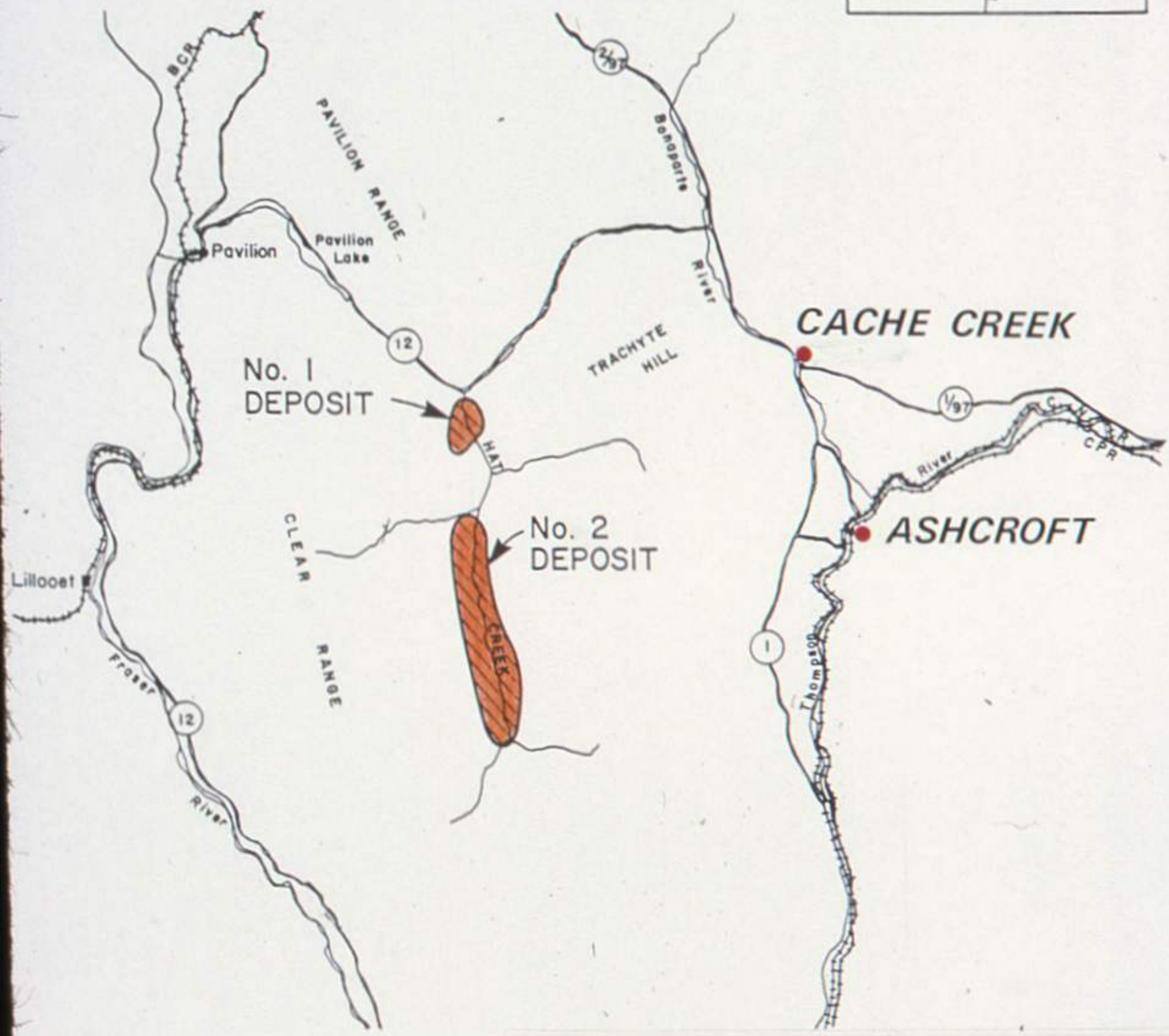
FIGURE I

GENERAL LOCATION PLAN

Feb. 1982

HAT CREEK



5 0 5 10 15 20

SCALE IN KILOMETRES

LOCATION MAP

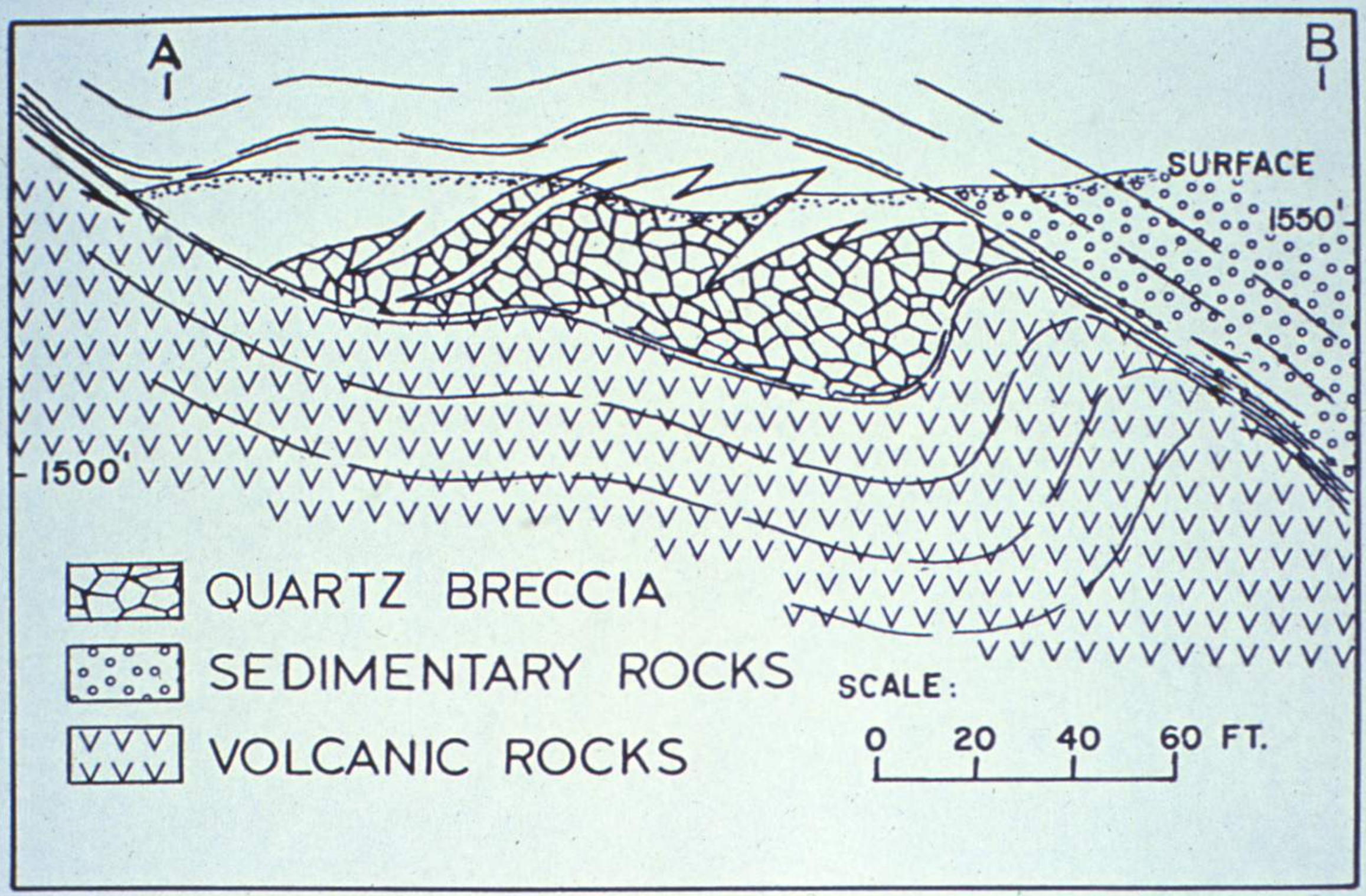
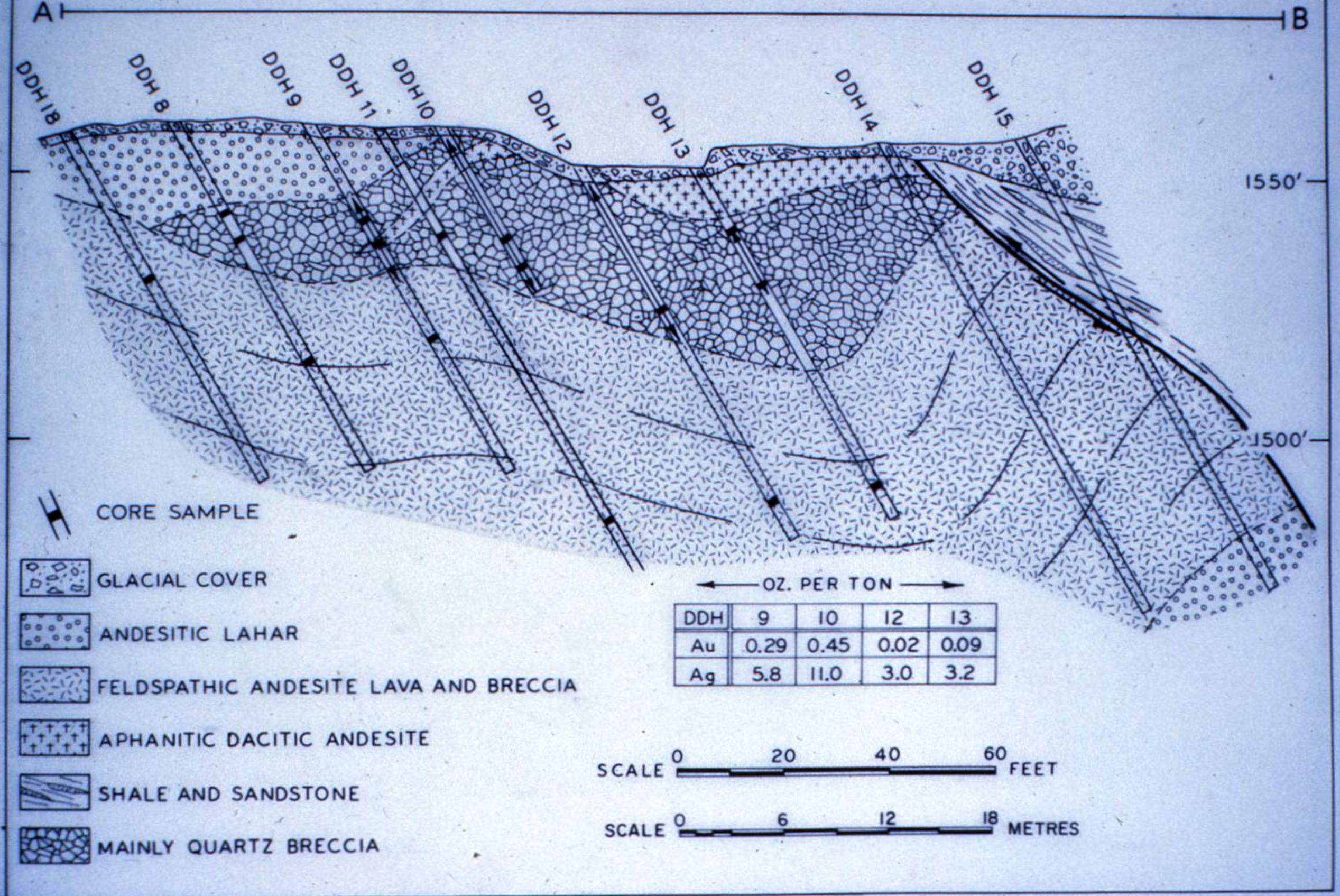


FIG.1:3a CROSS-SECTION OF DUSTY MAC DEPOSIT



OZ. PER TON

DDH	9	10	12	13
Au	0.29	0.45	0.02	0.09
Ag	5.8	11.0	3.0	3.2

GEOLOGY BY B.N. CHURCH, 1970

LEGEND

WHITE LAKE FORMATION

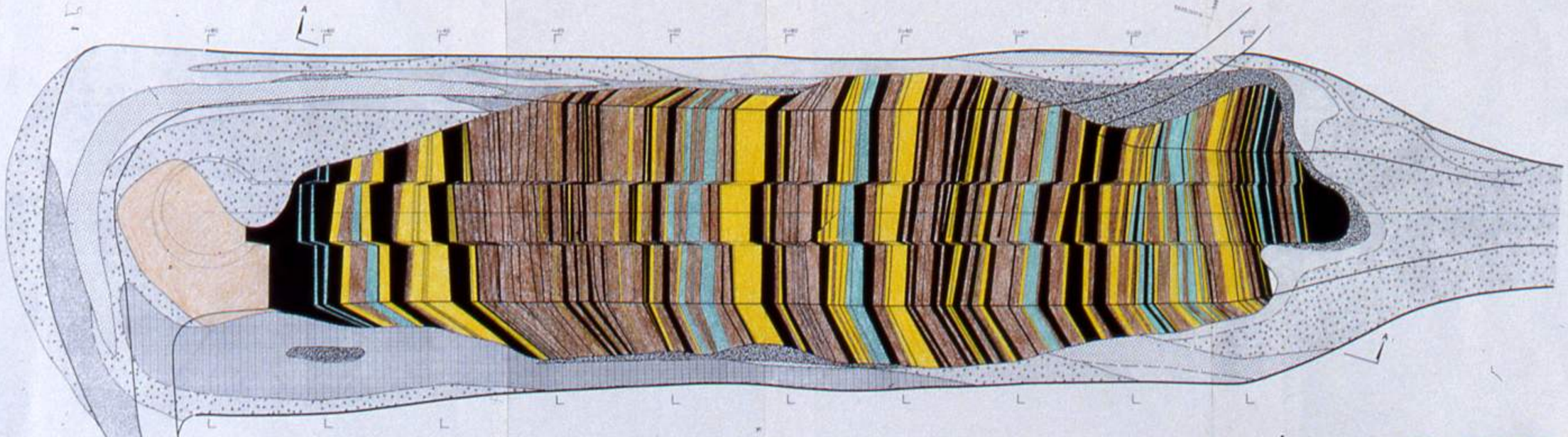
- TUFF-BRECCIA / SANDSTONE, SHALE
- BLOCKY FELDSPAR PORPHYRY LAHAR, LAVA / SANDSTONE AND SHALE
- BLOCKY LAHAR WITH ACCESSORY DACITE FRAGMENTS, MINOR TUFF-BRECCIA AND SANDSTONE

MARAMA FORMATION

- DACITE LAVA, MINOR BRECCIA
- TECTONIC BRECCIA, SILICIFICATION, QUARTZ VEINS AND GOSSAN

FAULT
GEOLOGICAL CONTACT
1750 TOPOGRAPHIC CONTOUR
ROAD
A—B GEOLOGICAL SECTION
BUILDING
PORTAL
BEDDING
LV LAVA

TOPOGRAPHIC BASE PROVIDED BY NORANDA MINES LTD



TRENCH D

LEGEND

SURFICIAL DEPOSITS

- DENSE CLAYS
- FILL - Dense clays with angular to subangular gravels and boulders (unstratified)
- LOOSE SILTS AND CLAYS
- LOOSE SILTS AND CLAYS WITH SUBANGULAR TO SUBROUNDED PEBBLES, GRAVELS AND BOULDERS
- GLACIO FLUVIAL BED - Clays sandy with rounded to subrounded pebbles, gravels and cobbles
- LACUSTRINE SILTS

BEDROCK

- MEDICINE CREEK FORMATION
- OXIDIZED COAL MIXED WITH SOILS
- WASTE BEDS CONSISTING OF CLAYSTONE, SILTSTONE, FINE GRAINED TO MEDIUM GRAINED SANDSTONE
- CARBONACEOUS CLAYSTONE
- SHALY COAL, DARK GREY EARTY LOOKING, GENERALLY THINLY BEDDED TO LAMINATED
- MASSIVE COAL, BLACK TO DARK GREY, LUSTROUS, VISIBLE VITRAINS, OCCASIONALY PLATY AND THICKLY BEDDED

ASH BED

FAULT

Note: For cross section A - A refer to Dwg. Fig. 5

0 10 20 30 40 Metres

Scale in metre
June, Dec. 1982

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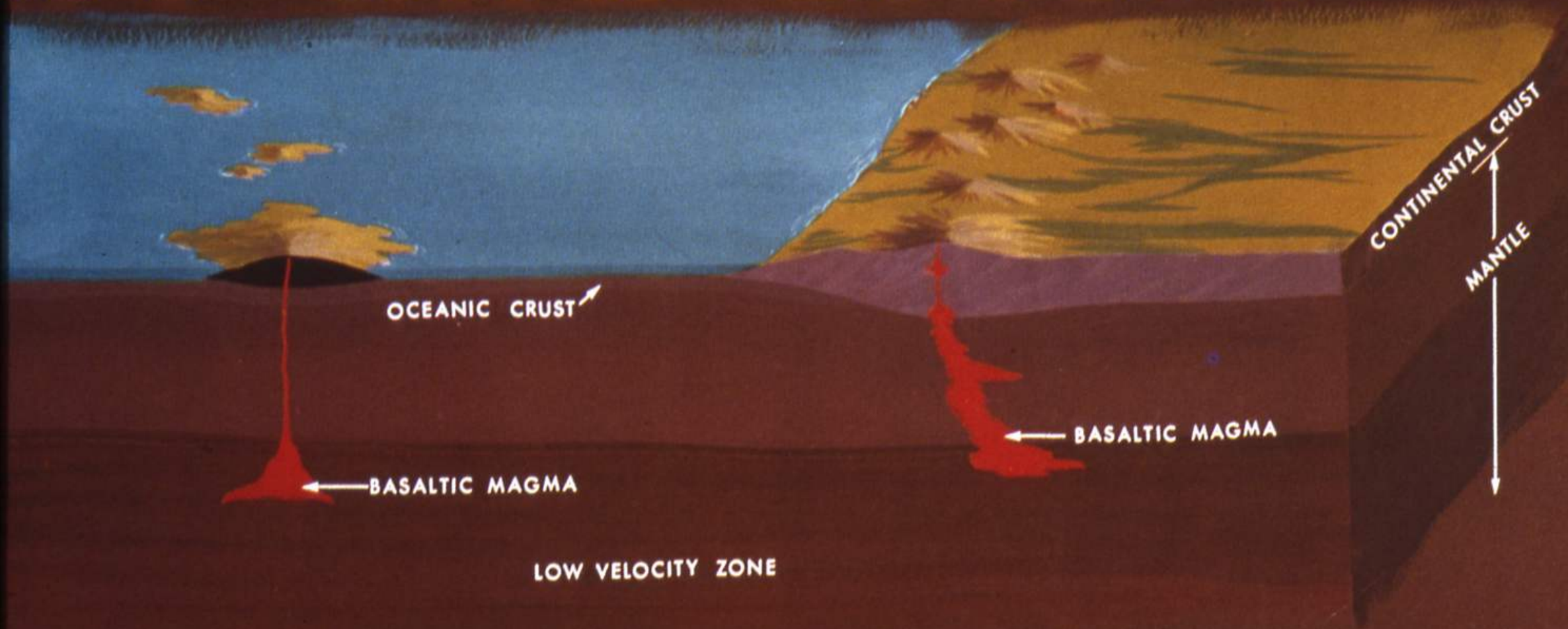
TRENCH D
GEOLOGICAL PLAN

MA and LAVA



THE CRUST OF THE EARTH is thin beneath the oceans and thick beneath the continents. The OCEANIC CRUST has an average thickness of 5½ kilometers and consists chiefly of basaltic rocks. The CONTINENTAL CRUST has an average thickness of 33 kilometers but locally attains thicknesses of as much as 60 kilometers. It consists chiefly of granitic

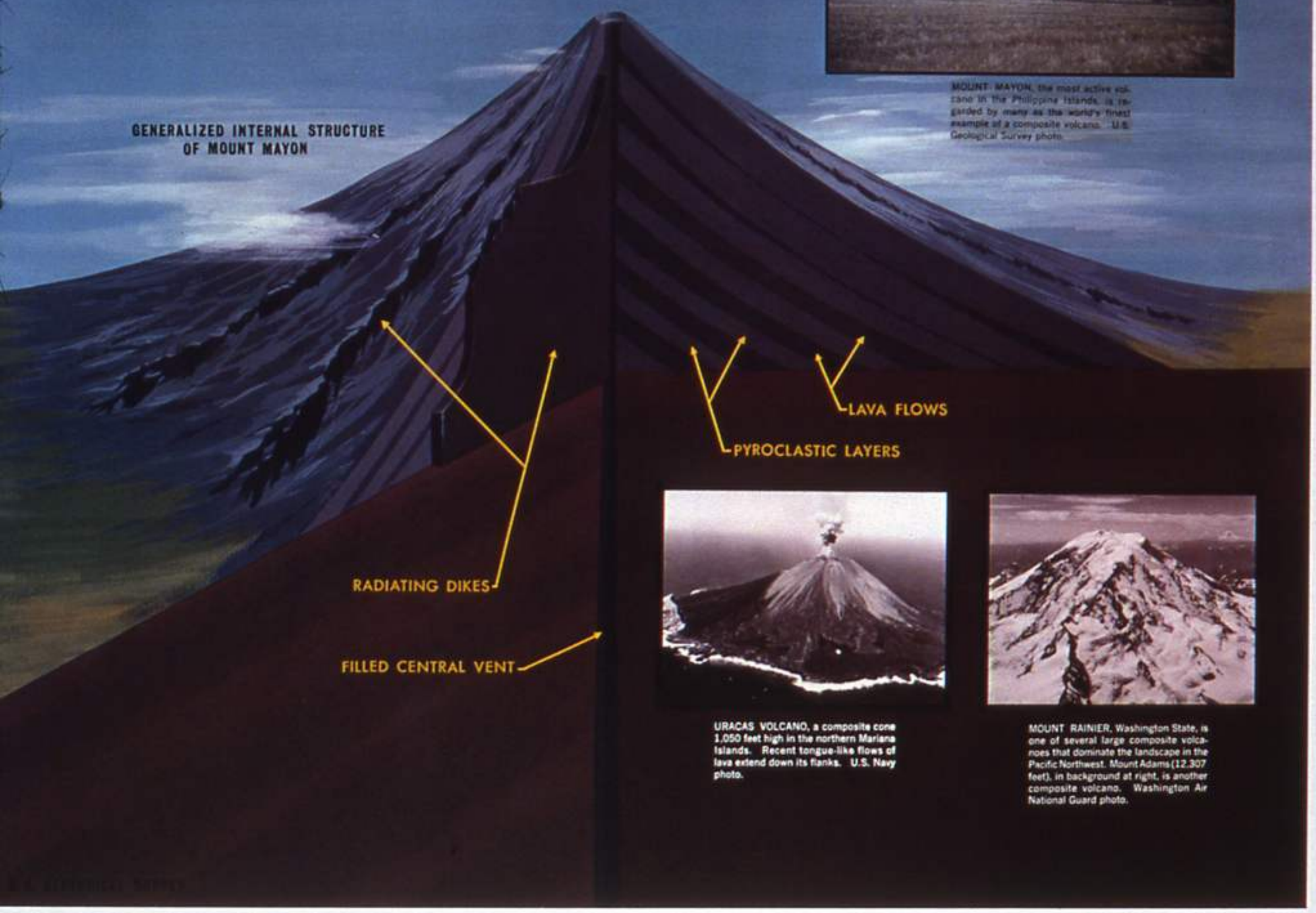
THE UPPER MANTLE consists either of ECLOGITE, a very dense form of basalt, or PERIDOTITE, a rock containing a greater proportion of magnesium-iron silicates than basalt and thus of more "basic" composition. Within the upper mantle, 60 to 250 kilometers beneath the earth's surface, there is a slight decrease in the velocity of earthquake waves. This phenomenon is attributed to a decrease in rigidity at

COMPOSITE VOLCANOES

SHISHALDIN VOLCANO, an imposing composite cone, towers 9,372 feet above mean sea level on Unimak Island in the Aleutian Chain. U.S. Navy photo.

COMPOSITE VOLCANOES, also known as STRATOVOLCANOES, are cones of large dimension built up of layers of pyroclastic material (ash, cinders, blocks, and bombs) and tongue-like flows of lava. Some of the most conspicuous and loftiest mountains in the world are composite volcanoes, such as Mount Fuji in Japan (12,388 feet), Mount Rainier in Washington State (14,410 feet), and Mount Cotopaxi in Ecuador (19,498 feet). Most composite volcanoes have a crater at the summit which overlies a central vent. Lavas either flow through breaks in the crater wall or issue from fissures on the flanks of the cone. Lava frozen within the fissures forms dikes that act as ribs which greatly strengthen the cone.

MOUNT MAYON, the most active volcano in the Philippine Islands, is regarded by many as the world's finest example of a composite volcano. U.S. Geological Survey photo.



URACAS VOLCANO, a composite cone 1,050 feet high in the northern Mariana Islands. Recent tongue-like flows of lava extend down its flanks. U.S. Navy photo.

MOUNT RAINIER, Washington State, is one of several large composite volcanoes that dominate the landscape in the Pacific Northwest. Mount Adams (12,307 feet), in background at right, is another composite volcano. Washington Air National Guard photo.