



Legend:

- ALLUVIUM**  
Stratified silt, sand and gravel; undifferentiated  
Mainly channel and bar gravel.
- LANDSLIDE DEPOSITS**  
Random blocks of various formations in a matrix of finer material; some slump blocks retain stratigraphic relations of units involved.
- VOLCANIC ROCKS OF THE HIGH CASCADE RANGE AND BORING LAVA**  
Basaltic andesite, olivine basalt, and pyroxene andesite; mostly intracanyon flows.
- UNCONFORMITY**
- SARLINE FORMATION**  
Pyroxene andesite, tuff, tuff breccia, lapilli tuff and mudflows.
- UNCONFORMITY**
- COLUMBIA RIVER BASALT GROUP (YAKIMA BASALT SUBGROUP)**
- FRENCHMAN SPRINGS MEMBER (NANAPUM BASALT)**  
Medium gray to dark gray medium to fine grained basalt containing one to abundant plagioclase phenocrysts; generally blocky to columnar jointed with platy jointing locally; often weathers to a characteristic pale red-brown.
- VANTAGE MEMBER**  
Interbedded stratified sedimentary volcaniclastic deposits 1 to 4 m thick; includes light gray to tan sandstone and siltstone; local rare gravel, tuff, lapilli tuff, tuff breccia and mudflow; similar in composition to the Sarline Formation.
- GRANDE RONDE BASALT**
- HIGH MD GEOCHEMICAL TYPE**  
Dark gray fine-grained basalt, often diktytaxitic; jointing is irregular with poorly formed narrow blocky columns predominating; vesicite sheets are common.
- UPPER LOW MD GEOCHEMICAL TYPE**  
Dark gray very fine grained basalt with prominent blocky columnar jointing and thin blocky basal columns.
- PRINCEVILLE GEOCHEMICAL TYPE**  
Dark gray fine grained to very fine grained basalt; dominated by broad irregular columns or blocky jointing, jointing, with some platy jointing locally; weathers to a pale salmon; anomalously large acicular apatite crystals.
- MIDDLE LOW MD GEOCHEMICAL TYPE**  
Dark gray very fine grained basalt physically resembling other low MD flows.
- LOWER LOW MD GEOCHEMICAL TYPE**  
Dark gray very fine grained basalt, physically resembling other low MD flows.
- UNCONFORMITY**
- LITTLE BUTTE VOLCANIC SERIES**  
Dark-colored tuff, lapilli tuff, mudflows and less abundant andesite flows; one localized, stratified siltstone and silty sandstone.

**GEOLOGIC MAP**  
CLACKAMAS RIVER AREA, OREGON  
FIGURE 12

BY JAMES LEE ANDERSON 1978