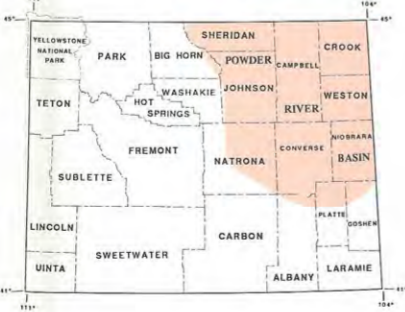


EXPLANATION

- AGGREGATE RAW MATERIALS (EXCLUDING STONE)**
- WINDBLOWN SAND**
Recent stabilized and unstabilized windblown sand and silt deposits.
 - ALLUVIAL SAND AND GRAVEL**
Recent stream deposits containing varying proportions of sand, gravel, silt, and clay.
 - GLACIAL SAND AND GRAVEL**
Pleistocene glacial moraine, outwash, and related deposits that sometimes contain a high proportion of material coarser than gravel.
 - TERRACE SAND AND GRAVEL**
Quaternary terrace gravel with a variable proportion of finer material.
 - SAND AND GRAVEL OF VARIOUS ORIGINS**
Undifferentiated sand- and gravel-bearing deposits of Quaternary and late Tertiary age and the Eocene Kingsbury Conglomerate Member of the Wasatch Formation. These units sometimes contain a high proportion of material coarser than gravel.
 - BAKED AND FUSED ROCK**
Rock baked or melted by naturally ignited coal fires, sometimes called clinker, scoria, or natural slag.
- BENTONITE**
- BENTONITE-BEARING STRATA**
Cretaceous Frontier Formation, Belle Fourche Shale, Mowry Shale, Newcastle Sandstone, and Thermopolis Shale.
- GYPSUM**
- GYPSUM-BEARING STRATA**
Jurassic Gypsum Spring Formation (including Opeche Shale and Minnekahta Limestone in and near the Hartville uplift), Triassic Chugwater Formation, and Triassic-Permian Goose Egg and Spearfish Formations.
- STONE**
- IGNEOUS ROCKS (TERTIARY)**
Eocene alkalic and silicic igneous rocks, and minor alkalic mafic intrusive rocks. Rock types include: rhyolite, trachyte, latite, syenite, monzonite, basalt, nepheline syenite, pyroxenite, diorite, and lamprophyre.
 - LIMESTONE AND DOLOMITE**
Permian Minnekahta Limestone and Opeche Shale, Permian-Pennsylvanian Casper and Hartville Formations, Mississippian Madison and Pahassa Limestones, Mississippian-Devonian Guernsey Formation and Englewood Limestone, and Ordovician Bighorn and Whitewood Dolomites.
 - GRANITIC ROCKS (PRECAMBRIAN)**
Archean and Proterozoic granite, quartz monzonite, granodiorite, tonalite (quartz diorite), and diorite.
- MISCELLANEOUS SYMBOLS**
Commodity specified with abbreviation for formation name, sediment type, or rock type, where known, in parentheses.
- OCCURRENCE OF SPECIALTY OR MISCELLANEOUS MATERIAL** Dot indicates occurrence of small extent (not to scale).
 - QUARRY OR PIT**
 - PROCESSING PLANT** (tpy = tons per year capacity)
 - CLAY PIT**
 - BAKED AND FUSED ROCK (CLINKER) AGGREGATE PIT OR QUARRY**
 - GRANITE AGGREGATE PIT OR QUARRY**
 - LIMESTONE AGGREGATE PIT OR QUARRY**
 - SAND AND GRAVEL PIT**
 - UNSPECIFIED AGGREGATE PIT OR QUARRY**

LOCATION MAP



FORMATION NAMES, SEDIMENT TYPES, AND ROCK TYPES

- CENOZOIC**
- Qal Quaternary alluvium
 - Ql Quaternary lake deposits
 - Ot Quaternary terrace deposits
 - Og Quaternary glacial deposits
 - Tw Wasatch Formation
 - Tu Fort Union Formation
 - Ti Tertiary igneous rocks
- MESOZOIC continued**
- Js Sundance Formation
 - Jg Gypsum Spring Formation
 - Tc Chugwater Formation
 - Tp Spearfish Formation
 - Tg Goose Egg Formation
- PALEOZOIC**
- Pm Minnekahta Limestone
 - Pp Hartville Formation
 - PiP Minnekahta Limestone
 - Mp Pahassa Limestone
 - MDg Guernsey Formation
 - Ob Bighorn Dolomite
 - Cu Cambrian rocks
- PRECAMBRIAN**
- PEu Precambrian undivided
 - PEg granite
 - PEmd mafic dikes
 - PEms metasedimentary rocks
 - PEp pegmatite
 - PEum ultramafic rocks
 - PEmu mafic and ultramafic rocks

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MAP OF THE POWDER RIVER BASIN AND ADJACENT
UPLIFTS, WYOMING**

by Ray E. Harris and Jon K. King

1989

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