DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

A contribution of the
BUREAU OF LAND MANAGEMENT
Prepared in cooperation with the
IDAHO BUREAU OF MINES AND GEOLOGY

MINERAL INVESTIGATIONS
RESOURCE MAP MR-78
SHEET 1 OF 3

CORRELATION OF MAP UNITS

Qa	Qs		QUATERNARY
	QTs		QUATERNARY AND TERTIARY
	QTb	Pleistocene or Pliocene	QUATERNARY OR TERTIARY
	Tsl	Pliocene and Miocene	TERTIARY
	Tw	Eocene	TERTIARY
	Jt	Middle Jurassic	JURASSIC
	Trt	Lower Triassic	TRIASSIC
	Trd	Lower Triassic	TRIASSIC
	Ppr		PERMIAN
	Ppm		PERMIAN
	PPw		PERMIAN AND PENNSYLVANIAN
	Mc		MISSISSIPPIAN
	Mm		MISSISSIPPIAN

DESCRIPTION OF MAP UNITS

Qa — ALLUVIUM (QUATERNARY) – Unconsolidated sedimentary deposits along stream valleys; may include colluvium in Fossil Canyon quadrangle and hillwash and alluvial fans in Dry Valley quadrangle

Qs — SURFICIAL DEPOSITS (QUATERNARY) – Includes colluvium, older alluvium, hillwash, talus, alluvial-fan, landslide, mudflow, and boulder deposits

* QTs — SEDIMENTARY DEPOSITS (QUATERNARY AND TERTIARY) – Undivided surficial deposits and Salt Lake Formation

* QTb — BASALT (PLEISTOCENE OR PLIOCENE) – Olivine and augite-olivine basalt

* Tsl — SALT LAKE FORMATION (PLIOCENE AND MIOCENE) – Limestone, sandstone, and chert conglomerate and rhyolitic tuff

* Tw — WASATCH FORMATION (LOWER EOCENE) – Red conglomerate and sandstone

* Jt — TWIN CREEK LIMESTONE (MIDDLE JURASSIC) – Limestone, siltstone, and sandstone

* Trt — THAYNES LIMESTONE (LOWER TRIASSIC)-Sandstone, limestone, siltstone, and shale. As mapped, may include the Lanes Tongue of the Ankareh Formation

Trd — DINWOODY FORMATION (LOWER TRIASSIC) – Siltstone, shale, and limestone. As mapped, may include tongue of the Woodside Shale. Approximately 1,650 to 2,200 ft thick

PHOSPHORIA FORMATION (PERMIAN) – Includes:

Ppr — Rex Chert Member (Lower Permian) – Chert. As mapped, may include cherty shale member of the Phosphoria Formation and lentils of the Franson Member of the Park City Formation. Approximately 150 to 350 ft thick

Ppm — Meade Peak Phosphatic Shale Member (Lower Permian) – Phosphorite and mudstone. Approximately 110 to 200 ft thick

PPw — WELLS FORMATION (PERMIAN AND PENNSYLVANIAN) – Sandstone and limestone. As mapped, may include the Grandeur Tongue of the Park City Formation. Approximately 2,275 to 2,510 ft thick

* Mc — CHESTERFIELD RANGE GROUP (UPPER AND LOWER MISSISSIPPIAN) – Limestone, sandstone, and siltstone

* Mm — MADISON LIMESTONE (UPPER AND LOWER MISSISSIPPIAN) – Limestone

CONTACT – Dashed where approximately located, gradational, indefinite or inferred; dotted where concealed; queried where doubtful

FAULT – Dashed where approximately located or inferred; dotted where concealed; queried where doubtful. U, upthrown side; D, downthrown side; arrows show relative horizontal movement

THRUST FAULT – Sawteeth on upper plate. Dashed where approximately located or inferred; dotted where concealed; queried where doubtful

ANTICLINE – Showing crestline. Dashed where approximately located or inferred; dotted where concealed; queried where doubtful

SYNCLINE – Showing troughline. Dashed where approximately located or inferred; dotted where concealed; queried where doubtful

* OVERTURNED ANTICLINE – Showing direction of dip of limbs. Dashed where approximately located or inferred; dotted where concealed; queried where doubtful

* OVERTURNED SYNCLINE – Showing direction of dip of limbs. Dashed where approximately located or inferred; dotted where concealed; queried where doubtful

STRIKE AND DIP OF BEDS – Inclined; overturned; vertical; horizontal

PHOSPHATE DRILL HOLE
PHOSPHATE TRENCH
} For computing resource tonnages

PHOSPHATE MINE PIT BOUNDARY – As of September 1979

The geology shown includes: 1) the trace of the top and bottom contacts of the Phosphoria Formation and where data are available the top and bottom contacts of the Meade Peak Phosphatic Shale Member of the Phosphoria Formation, 2) appropriate structural data required for construction of structure contours, overburden isopachs, and resource blocks, and 3) other structural data necessary for understanding the regional geologic picture.

* FAULT SEPARATION – No calculated resource

FAULT OVERLAP – Twice calculated resources if covered by 1500 ft. or less of overburden

* FAULT TRACE AT DEPTH

STRUCTURE CONTOURS – On the top of the Meade Peak Phosphatic Shale Member of the Phosphoria Formation. Contour interval 200 feet. Dashed lines where control is poor and interpretation of structure is uncertain

6000 — Index Contour

5800 — Intermediate Contour

(*) — Map units and symbols shown with an asterisk are not on this map.

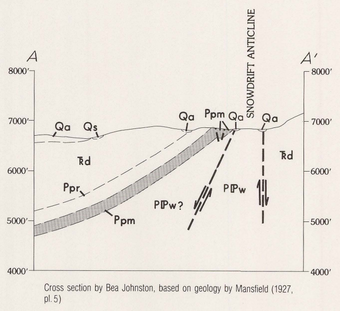
Base from U.S. Geological Survey, 1980

APPROXIMATE MEAN DECLINATION 1984
TRUE NORTH
MAGNETIC NORTH
15 ½°

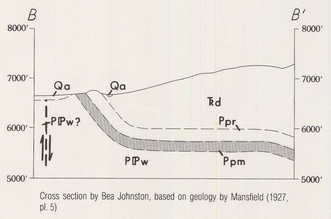
1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 KILOMETER

CONTOUR INTERVAL 40 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

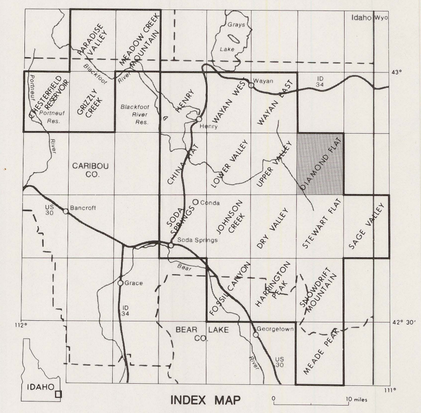
Geology compiled by Pamela Palmer from Mansfield (1927, pl. 5) and Alumet; geologic interpretation and structure contours by Bea Johnston; drill hole logs analyzed by Alexandra Zemanek; assisted by Margie Lane and Mahasti Fakourbayat; cartography by David Taylor and Gibb C. Johnson



Cross section by Bea Johnston, based on geology by Mansfield (1927, pl. 5)



Cross section by Bea Johnston, based on geology by Mansfield (1927, pl. 5)



STRUCTURE CONTOURS ON THE TOP OF THE MEADE PEAK PHOSPHATIC SHALE MEMBER

MAPS SHOWING SELECTED GEOLOGY AND PHOSPHATE RESOURCES OF THE DIAMOND FLAT QUADRANGLE, CARIBOU COUNTY, IDAHO

By

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1984

For sale by Branch of Distribution, U.S. Geological Survey, Box 25286, Federal Center, Denver, CO 80225

Explanatory pamphlet accompanies map

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