WYOMING STATE GEOLOGICAL SURVEY
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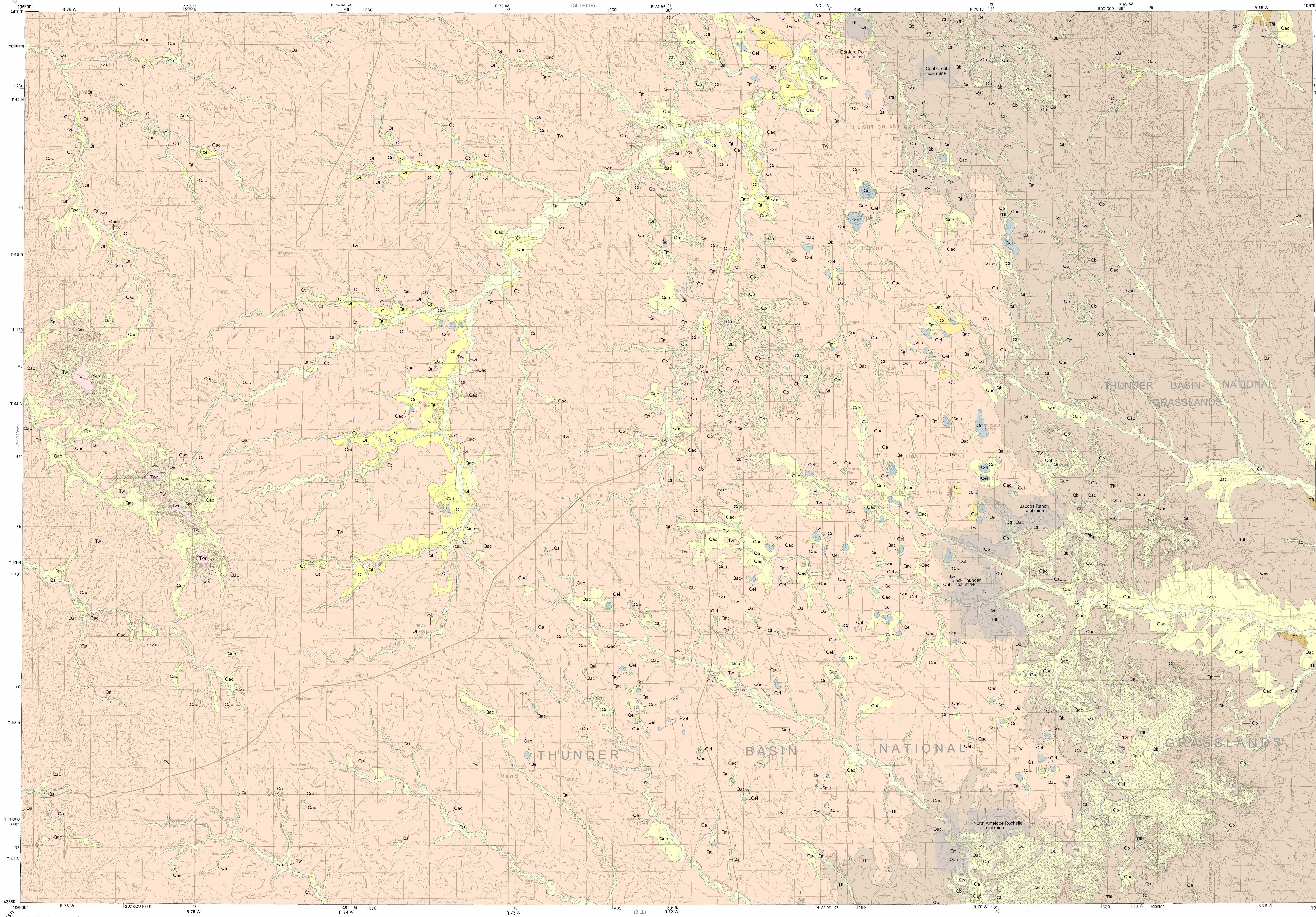
Geology - Interpreting the past to provide for the future

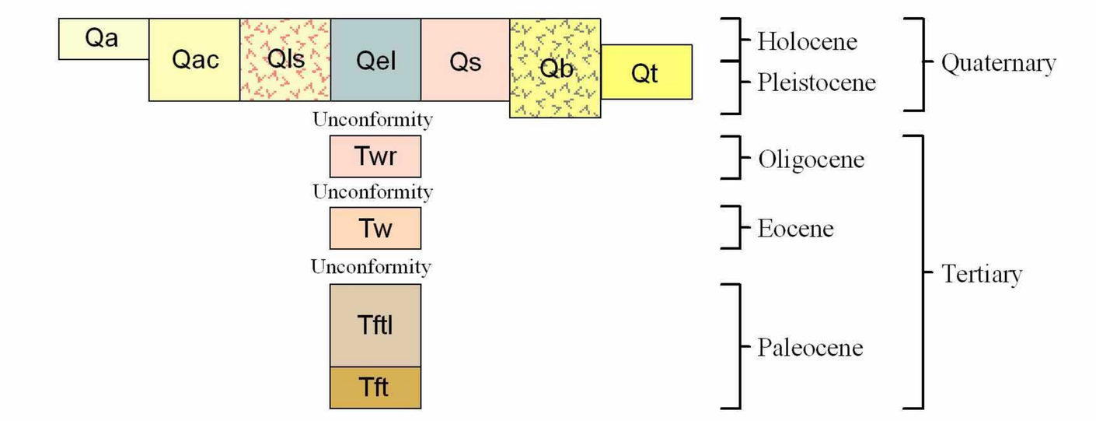
Prepared in cooperation with the U.S. GEOLOGICAL SURVEY

MAP SERIES 62
Reno Junction 1:100,000 - scale Geologic Map



EXPLANATION

CORRELATION OF MAP UNITS



DESCRIPTION OF MAP UNITS

Quaternary surficial deposits

Qa **Alluvial deposits (Holocene)** —Unconsolidated, main channel fill, flood plain, and lowest terraces consisting of reworked sediments including sandstone, ironstone, and fossil wood, locally derived from the White River Formation. Thickness 5 to 25 feet (1.5 to 7.6m) (Boyd and Ver Ploeg, 1998; Reheis and Coates, 1987)

Qac **Mixed alluvium and colluvium (Holocene/Pleistocene)**—Unconsolidated clay, silt, sand, gravel, and baked and fused rock found above the level of present day flooding, deposited prior to the recent incision of streams. Includes slope wash and smaller alluvial fans that coalesce with alluvium and deposits associated with the larger lake sediments (Qel). Thickness ranges from less than 3 feet to about 60 feet (0.9 to 18.3m) (Boyd and Ver Ploeg, 1998)

Qls **Landslide/Talus deposits (Holocene/Pleistocene)**—Unsorted angular bedrock fragments of baked and fused rock, sandstone, and siltstone mixed with sediments ranging in size from clay particles to boulders that have undergone mass movement. Thickness 10 to 100 feet (3 to 30.5m) (Boyd and Ver Ploeg, 1998; Reheis and Coates, 1987)

Qel **Lake sediments (Holocene/Pleistocene)**—Ephemeral lake deposits consisting of clay, silt, and sand interbedded in closed drainage basins. Stringers and surface encrustations of evaporate minerals may also be present. Only the largest deposits are shown; for more detail, see Reheis and Coates, 1987. Thickness ranges from 3 to 15 feet (0.9 to 4.6m) (Boyd and Ver Ploeg, 1998; Reheis and Coates, 1987)

Qs **Windblown sand (Holocene/Pleistocene)**—Loose particles of quartz sand, mainly from poorly lithified outcrops of Wasatch Formation, and silt deposited in dunes and sheets downwind from source areas. Thickness ranges from a thin sheet to 15 feet (4.6m) (Boyd and Ver Ploeg, 1998; Reheis and Coates, 1987)

Qb **Baked and fused rock (clinker) (Holocene/Pleistocene)**—Hard, dense red to orange baked shale and siltstone, and bubbly sometimes glassy rock formed as overlying strata was altered by burning coal beds in the Wasatch and Fort Union Formations. Talus forms locally where blocks have detached from scarps of baked and fused rock and have moved down slope. Thickness ranges between 3 and 33 feet (0.9 to 10.1m) (Boyd and Ver Ploeg, 1998; Reheis and Coates, 1987)

Qt **Terrace deposits (Holocene/Pleistocene)**—Sand, silt, and gravel capping higher terraces along major drainages. Gravels consist of locally derived and transported sandstone, ironstone, fossil wood, and other rock material derived from the White River Formation. Thickness ranges from a thin veneer to about 25 feet (7.6m) (Boyd and Ver Ploeg, 1998; Reheis and Coates, 1987)

Tertiary sedimentary rocks

Twr **White River Formation (Oligocene)**—Upper part pink, green, and brown tuffaceous bentonitic claystone and siltstone which has yielded vertebrate fossils of Oligocene age. Lower part consists of cross bedded coarse grained sand and chalcedony cemented conglomerate. Found only as cap rock on Pumpkin Buttes in the west central part of the mapped area. Thickness from 30 to 250 feet (9.1 to 76.2m) (Denson and others, 1989; Love and others, 1987; Reheis and Coates, 1987)

Tw **Wasatch Formation (Eocene)**—Gray to buff claystone and siltstone, medium- to coarse grained crossbedded arkosic sandstone. Thin beds of carbonaceous shale and coal occur locally. Sediments are fluvial and paludal in origin. Thickness 1575 to 2250 feet (480.1 to 685.8m) (Denson and others, 1989; Reheis and Coates, 1987)

Fort Union Formation (Paleocene)

Tftl **Tongue River and Lebo Members undivided**

Tongue River Member—Light to dark gray fine-grained sandstone interbedded with drab siltstone, claystone, and shale; thick coal beds, some more than 150 feet (m) thick, are found near the top. All of these sediments were deposited in streams, swamps, or lakes (Denson and others, 1989; Love and others, 1987)

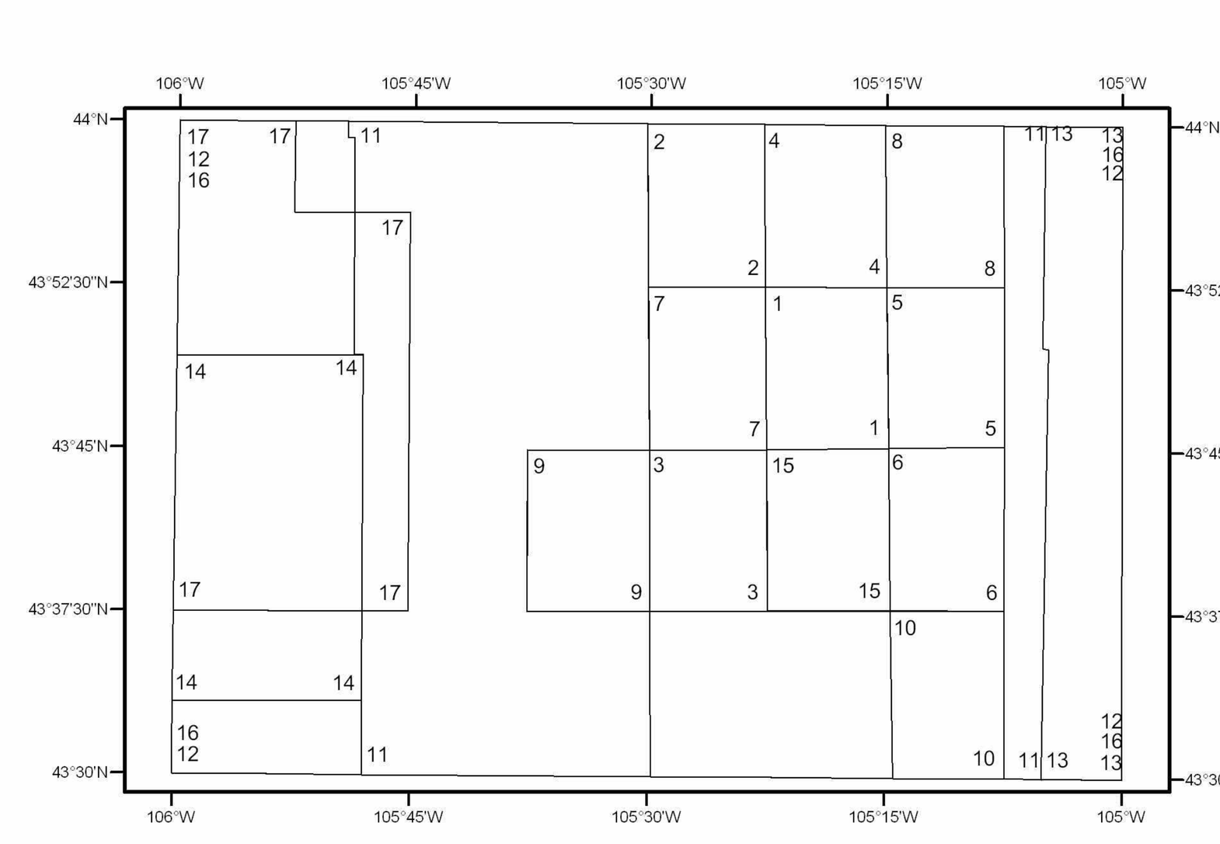
Lebo Member—Interbedded gray, very fine-grained sandstone, siltstone, claystone, carbonaceous shale and coal; all fluvial and paludal in origin. Ironrich calcareous concretions ranging from marble size to several feet in diameter are found throughout the unit of massive white sandstone and clayey shale. Thickness of undivided Tongue River and Lebo members ranges from 1370 to 3280 feet (417.6 to 99.7m) (Denson and others, 1989)

Tft **Tullock Member**—Drab appearing massive sandstone interbedded with siltstone, claystone, shale, carbonaceous shale and thin coal beds. Distinguished from overlying Lebo Member by being significantly lighter in color. Thickness 780 to 1700 feet (237.7 to 518.2m) (Love and others, 1987; Denson and others, 1989)

MAP SYMBOLS

Formation contact

Active coal mine--stippled areas where bedrock has been disturbed, removed, or reclaimed as of the 2004 mining plan/permit



INDEX SHOWING SOURCES OF GEOLOGIC DATA

REFERENCES CITED AND SOURCES OF GEOLOGIC DATA

(Numbers are those shown in Index map showing sources of geologic data)

Boyd, C.S., and Ver Ploeg, A.J., 1998, Geologic map of the Gillette 30' x 60' Quadrangle, Campbell, Crook, and Weston Counties, Wyoming: Wyoming State Geological Survey Map Series MS-49, scale 1:100,000.

1 Coates, D.A., 1977, Surficial geologic map of the Hilight Quadrangle, Campbell County, Wyoming: U.S. Geological Survey Miscellaneous Field Studies Map MF-894, scale 1:24,000.

2 Coates, D.A., 1978, Surficial geologic map of the Eagle Rock Quadrangle, Campbell County, Wyoming: U.S. Geological Survey Miscellaneous Field Studies Map MF-970, scale 1:24,000.

3 Coates, D.A., 1978, Surficial geologic map of the Little Thunder Reservoir Quadrangle, Campbell County, Wyoming: U.S. Geological Survey Miscellaneous Field Studies MF-1019, scale 1:24,000.

4 Coates, D.A., 1978, Surficial geologic map of the Neil Butte Reservoir Quadrangle, Campbell County, Wyoming: U.S. Geological Survey Miscellaneous Field Studies Map MF-971, scale 1:24,000.

5 Coates, D.A., 1978, Surficial geologic map of the Open A Ranch Quadrangle, Campbell County, Wyoming: U.S. Geological Survey Miscellaneous Field Studies Map MF-938, scale 1:24,000.

6 Coates, D.A., 1978, Surficial geologic map of the Piney Canyon NW Quadrangle, Campbell County, Wyoming: U.S. Geological Survey Miscellaneous Field Studies Map MF-955, scale 1:24,000.

7 Coates, D.A., 1978, Surficial geologic map of the Reno Junction Quadrangle, Campbell County, Wyoming: U.S. Geological Survey Miscellaneous Field Studies Map MF-969, scale 1:24,000.

8 Coates, D.A., 1978, Surficial geologic map of the Rough Creek Quadrangle, Campbell County, Wyoming: U.S. Geological Survey Miscellaneous Field Studies Map MF-972, scale 1:24,000.

9 Coates, D.A., 1978, Surficial geologic map of the Turnercrest NE Quadrangle, Campbell County, Wyoming: U.S. Geological Survey Miscellaneous Field Studies Map MF-1020, scale 1:24,000.

10 Coates, D.A., and Moore, H.D., 1978, Surficial geologic map of the Piney Canyon SW Quadrangle, Campbell County, Wyoming: U.S. Geological Survey Miscellaneous Field Studies Map MF-987, scale 1:24,000.

11 Denson, N.M., Dover, J.H., and Osmonson, L.M., 1980, Lower Tertiary coal bed distribution and coal resources of the Reno Junction-Antelope Creek area, Campbell, Converse, Niobrara, and Weston Counties, Wyoming: U.S. Geological Survey Miscellaneous Investigations Map I-1201, scale 1:125,000.

12 Denson, N.M., Macke, D.L., and Schumann, R.R., 1989, Geologic map and distribution of heavy minerals in Tertiary rocks of the Reno Junction 30' x 60' Quadrangle, Campbell and Weston Counties: U.S. Geological Survey Miscellaneous Investigations Map I-2025, scale 1:100,000.

13 Dobbin, C.E., Kramer, W.B., and Horn, G.H., 1957, Geologic and structure map of the southeastern part of the Powder River Basin, Wyoming: U.S. Geological Survey Oil and Gas Investigations Map OM-185, scale 1:125,000.

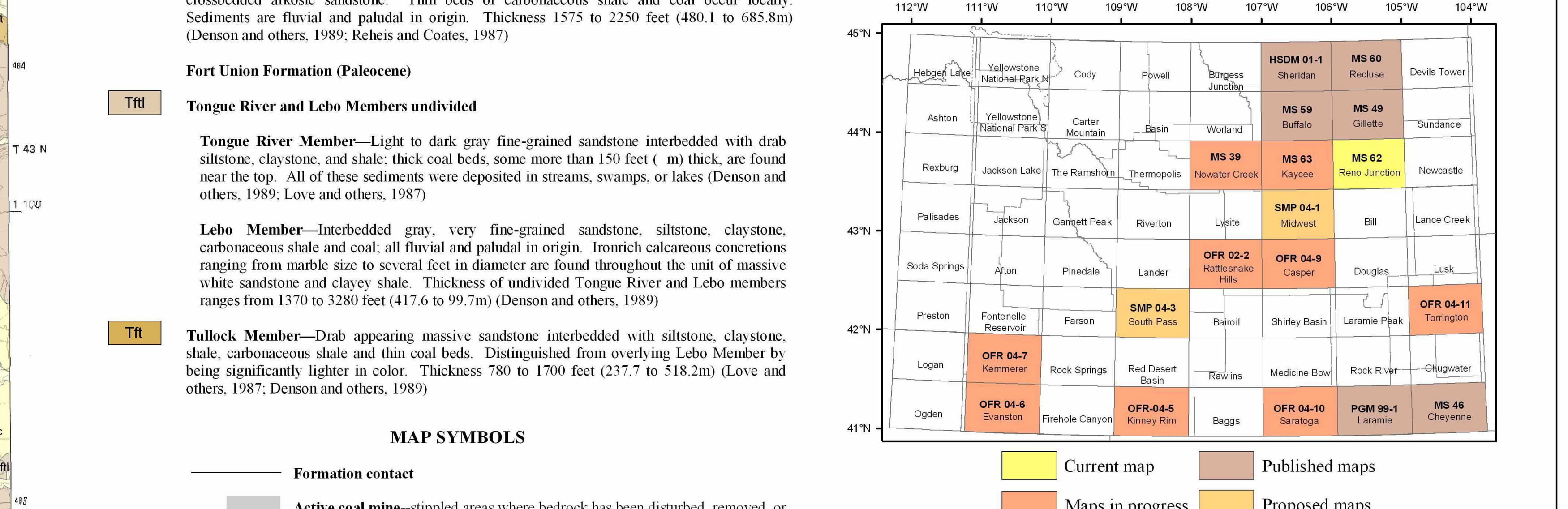
14 Love, J.D., 1952, Preliminary report on uranium deposits in the Pumpkin Buttes area, Powder River Basin, Wyoming: U.S. Geological Survey Circular 176, pl. 1, scale 1:62,500.

Love, J.D., Christiansen, A.C., and McGrew, L.W., 1987, Geologic map of the Newcastle 1 x 2 degree Quadrangle, northeastern Wyoming and western South Dakota: Wyoming State Geological Survey Map Series 25-I, scale 1:250,000.

15 Moore, H.D., and Coates, D.A., 1978, Surficial geologic map of the Reno Reservoir Quadrangle, Campbell County, Wyoming: U.S. Geological Survey Miscellaneous Field Studies Map MF-954, scale 1:24,000.

16 Reheis, M.C., and Coates, D.A., 1987, Surficial geologic map of the Reno Junction 30' x 60' Quadrangle, Campbell and Weston Counties, Wyoming: U.S. Geological Survey Coal Investigations Map C-106, scale 1:100,000.

17 Sharp, W.N., McKay, E.J., McKeown, F.A., and White, A.M., 1964, Geology and uranium deposits of the Pumpkin Buttes area of the Powder River Basin, Wyoming: U.S. Geological Survey Bulletin 1107-H, pl. II, scale 1:24,000.



INDEX TO 1:100,000-SCALE BEDROCK GEOLOGIC MAPS OF WYOMING

KEY TO ABBREVIATIONS
Wyoming State Geological Survey maps: Map Series (M), Open File Report (OFR), Preliminary Geologic Map (PGM), Hazards Section Digital Map (HSDM), and unpublished STATEMAP project (SMP).

DISCLAIMERS

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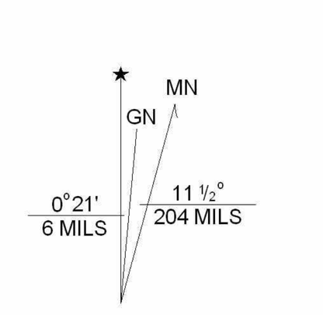
Email: sales_wsgs@uwyo.edu

A digital version of this map is also available on CD - ROM.

Base map from U.S. Geological Survery 1:100000 - scale metric topographic map of the Reno Junction, Wyoming Quadrangle, 1974

Projection: Universal Transverse Mercator (UTM), zone 13
North American Datum of 1927 (NAD 27)
10,000-meter grid ticks: UTM, zone 13
50,000-foot grid ticks: Wyoming State Plane Coordinate System, East zone

SCALE 1:100,000
Contour Interval 20 meters



UTM GRID CONVERGENCE (GN)
1974 MAGNETIC DECLINATION (MN) AT CENTER OF SHEET
DIAGRAM IS APPROXIMATE

GEOLOGIC MAP OF THE RENO JUNCTION 30' x 60' QUADRANGLE, CAMPBELL AND WESTON COUNTIES, WYOMING

Compiled by
Alan J. Ver Ploeg and Cynthia S. Boyd

2004

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Digital cartography by Robin W. Lyons and Justin M. Mulbay

WYOMING
QUADRANGLE LOCATION