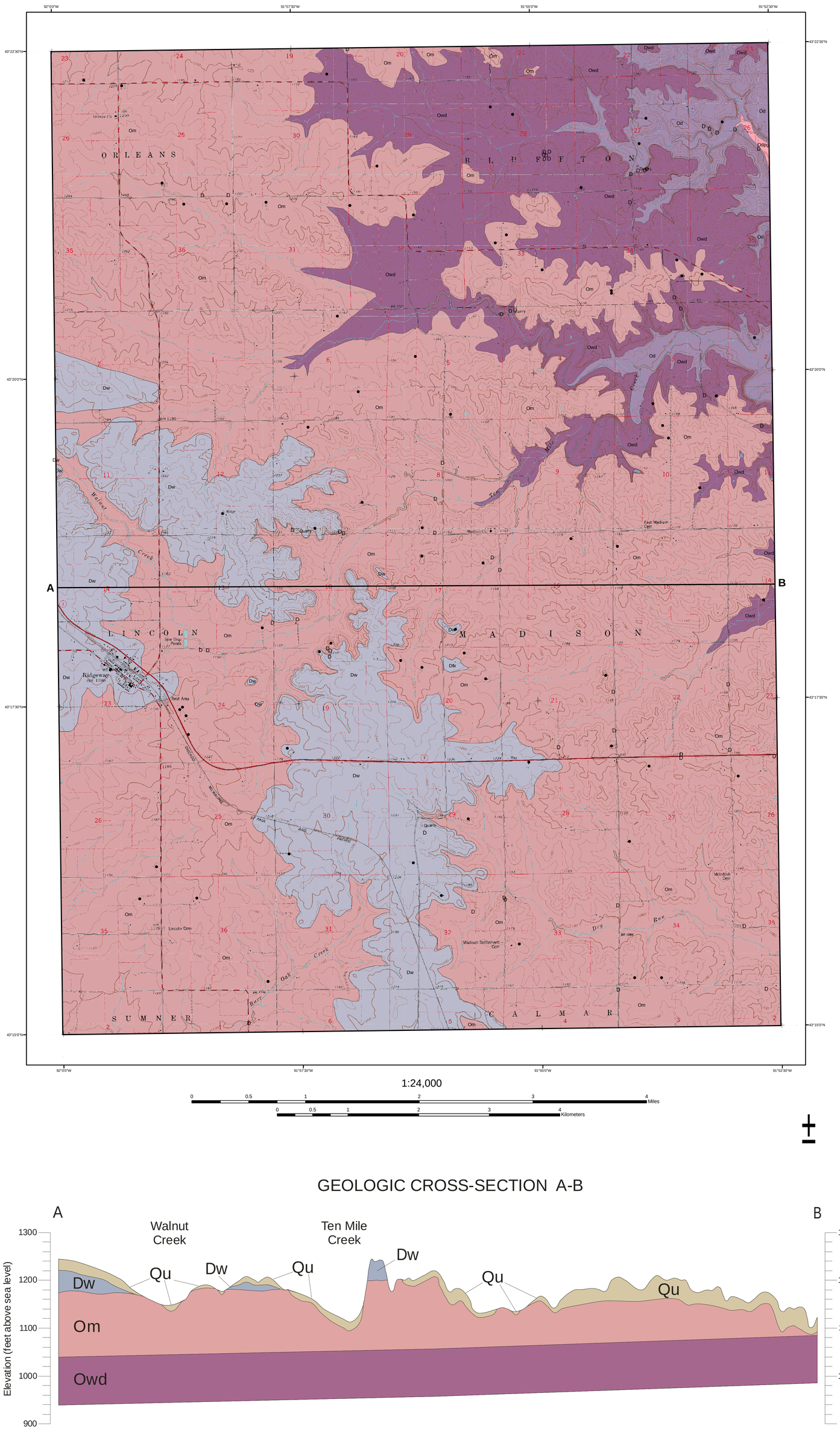
Bedrock Geology of the Ridgeway (Iowa) 7.5' Quadrangle



GEOLOGIC CROSS-SECTION A-B

LEGEND

CENOZOIC

QUATERNARY SYSTEM

Qu

Qu – Undifferentiated unconsolidated sediment Consists of loamy soils developed in loess and glacial till of variable thickness, and alluvial clay, silt, sand and gravel. This unit is only shown on the cross-section, not on the geologic map.

PALEOZOIC

DEVONIAN SYSTEM

Dw

Dw - Dolomite, Limestone, Shale, and minor Sandstone (Wapsipinicon Group) Middle Devonian deposits include the Spillville Formation, up to 19 m (60 ft), overlain by the Pinicon Ridge Formation, up to 2 m (6 ft), for a maximum total thickness up to 21 m (68 ft). The Spillville Formation is dominated by medium to thick bedded dolomite, with scattered to abundant fossil molds, and vugs commonly filled with calcite crystals; basal portion is sandy or silty; a distinctive stromatolitic limestone facies occurs locally in the upper part. The Spillville is quarried for local aggregate and also hosts numerous small springs. The Pinicon Ridge Formation is dominated by shaly, laminated or brecciated, unfossiliferous limestone and dolomite.

ORDOVICIAN SYSTEM

Om

Om - Shale, Limestone, and Dolostone (Maquoketa Formation.) A nonresistant slope-forming unit of up to 40 m (131 ft) of interbedded argillaceous limestone, dolostone, and gray and brown shale. Fragmentary trilobite and graptolite fossils are common in the basal Elgin Limestone Member, and chert nodules are notable in the middle Fort Atkinson Member. It forms an upper confining unit that bounds a karst system in underlying Dubuque,Wise Lake and Dunleith formations of the Galena Group, and may host sinkholes in its lower portion.

Owd

Owd - Limestone and minor Shale (Wise Lake Formation and overlying Dubuque Formation, both of the Galena Group) A prominent ledge and cliff-forming unit of up to 31 m (102 ft) of limestone with thin interbedded gray shale beds in the upper 6 m. This map unit is the upper of two successive major cavern and karst-forming bedrock units in the area. The Wise Lake Formation consists of 21 m (67 ft) of medium to thick-bedded, relatively chert-free limestone, portions of which exhibit a distinctive bioturbated fabric; it serves as a source of concrete aggregate. The Dubuque Formation consists of 10 m (34 ft) of crinoidal limestone and thin interbedded shale. Sinkholes are common to abundant within this map unit.

Od

Od - Limestone (Dunleith Formation of the Galena Group) A prominent ledge and cliff-forming unit of up to 42 m (137 ft) of limestone with minor thin interbedded shale. This is the lower of two successive major cavern and karst-forming bedrock units in the area. The formation consists of fossiliferous limestone and argillaceous limestone with common chert nodules; it is commonly quarried for aggregate. Major springs occur near its base and sinkholes and karst features are common.

Odpg

Odpg - Shale, Limestone, and Dolomite (Decorah, and underlying Platteville, and Glenwood formations) A nonresistant slope-forming unit of green-grey shales, dense limestones, argillaceous limestones, and dolostone with average thickness of 26 m to 27 m (85 –90 ft). Along steep valley wall slopes large detached slump-blocks of overlying Dunleith Formation limestone often rest on the upper surface of this unit. The unit forms a regional confining unit that serves as the basal boundary of the karst system in the overlying Dunleith, Wise Lake and Dubuque formations of the Galena Group. The upper division, the Decorah Formation, consists of 12 m to 14 m (39 – 46 ft) of interbedded fossiliferous green-grey shale and limestone. The middle division, the Platteville Formation, consists of 7.5 m (25 ft) of limestone, argillaceous limestone, and dolostone; it serves as a source of quarried aggregate. The lower division, the Glenwood Formation, consists of 2 m to 3 m (7 – 9 ft) of green-grey shale with minor siltstone to fine sandstone. This map unit, especially the upper and lower subdivisions (Decorah and Glenwood formations), is rarely exposed and is commonly mantled by 0 m to 2 m (0 – 6 ft) of Quaternary age colluvium.

● **Drill Holes**

D **Outcrops**

Adjacent 7.5' Quadrangles

CRESCO_NE	BLUFFTON	BURR_OAK
CRESCO_SE	RIDGEWAY	DECORAH
PROTIVIN	FORT_ATKINSON	CALMAR

Quadrangle Location

Base map from USGS Ridgeway 7.5' Digital Raster Graphic (IGS GIS file DRGC39.TIF) which was scanned from the Ridgeway 7.5' Topographic Quadrangle map, published by US Geological Survey in 1981
Topographic contours and land features based on 1975 aerial photography, field checked in 1977
Land elevation contours (20' interval) based on NGVD 1929.

Iowa Geological Survey digital cartographic file Ridgeway08quad_bedrock.mxd, version 8/28/08 (ArcGIS 9.2)
Map projection and coordinate system based on Universal Transverse Mercator (UTM) Zone 15, datum NAD83.

The map and cross section are based on interpretations of the best available information at the time of mapping. Map interpretations are not a substitute for detailed site specific studies.

GEOLOGIC MAPPING OF THE UPPER IOWA RIVER WATERSHED: PHASE 4: Ridgeway 7.5' Quadrangle

Iowa Geological Survey
Open File Map OFM-08-03
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