EXPLANATION

SEDIMENTARY ROCKS

QUATERNARY

Molluscan
Unconsolidated sand, silt, and clay, shown only
where considered to be of importance as an aquifer
and where scale of map permits. Locally yields
water to wells in small quantities

UNCONFORMITY

Cheyenne sandstone
Consolidated and semiconsolidated sand, includes
some silt beds, permeable throughout and yields
water capably to springs

UNCONFORMITY

Morrison, Fruitland, and Kiowa formations
Consolidated sand and silt, essentially non-water-
yielding

Point Lookout sandstone
Consolidated sand, yields water to wells in small
quantities

Mancos shale
Consolidated silt and clay deposited in an upper trim
and a lower (trim) part, by the Gallup sandstone of
the Nanapaha group (fig. 6), non-water-yielding
except for the Gallup which yields water to
wells in small quantities

Deutsche sandstone
Consolidated sand, yields water to wells in small
quantities

UNCONFORMITY

Morrison formation
Consolidated sand and silt subdivided in some
areas into the Drumline Base member (Judds,
Westwater Canyon member (Judd’s, Recapture
member (Judd’s, and Salt Wash member (Judd’s)
locally undifferentiated in its upper part, Judd’s,
or in its entirety Judd’s, locally yields fairly large
amounts of water to wells

Cow Springs sandstone
Consolidated sand, grades laterally into Morrison
and Summerave formations, yields water freely
to wells

Summerave formation
Sandy faceted

Consolidated sand, yields water fairly freely to wells

Tuculosa limestone
Dense gray limestone, an effective sealing layer

Entrada sandstone
Consolidated sand and silt, includes both sandy
facies and upper sandy facies, yields water
fairly freely to wells

Wingate sandstone
Consolidated sand and silt, including sandy
water member (upper), and silty lower member (lower),
locally yields water to wells in small quantities

Triassic

Chinle formation
Consolidated sand and clay, subdivided in an upper
luted unit (Precipit), a middle Pennsylvanian member
(Trip), and a lower sandy unit (Precipit), The Pennsylvanian
Formation member contains a nodular sandstone (Shinumo)
which is locally regarded and divides the Pennsylvanian
Formation member into an upper part (Trip) and a
lower part (Shinumo), essentially non-water-yielding
except for the nodular sandstone of the Eocene
Formation member and some sandstones in the lower
unit which yield water to wells in small quantities.

Shinumo conglomerate
Consolidated sand and gravel, yields water to wells
in small quantities

IGNEOUS ROCKS

DeChelly sandstone
Consolidated sand, yields water to wells in fairly
large quantities

Extrusive igneous rocks
Yield small quantities of water to springs

Intrusive igneous rocks
Yield small quantities of water to springs

TERTIARY

Uplift basin fault
Dashed where approximately located; U, upthrown side, L, downthrown side
Anticline
Showing location of crest with direction
and degree of plunge

Syncline
Showing position of trough with direction
and degree of plunge

Monocline
Showing crest position of anticlinal feature
(purple) and trough position of synclinal
feature (yellow)
Shorter arrows indicate steeper dips

Contact
(Dashed where approximately located)
Graded contact
Indeinite contact

Canyon de Chelly National Monument Boundary

State boundary line
Perennial stream
Intermittent stream
Spring
Gaging point
Strike and dip of beds
Horizontal beds

Princpal roads
Minor roads
Trail
Building or settlement
School
Church or mission
Drilled well with water
Dug well with hand pump
Flowing well

Natural lake
Reservoir

EXPLANATION FOR PLATE I