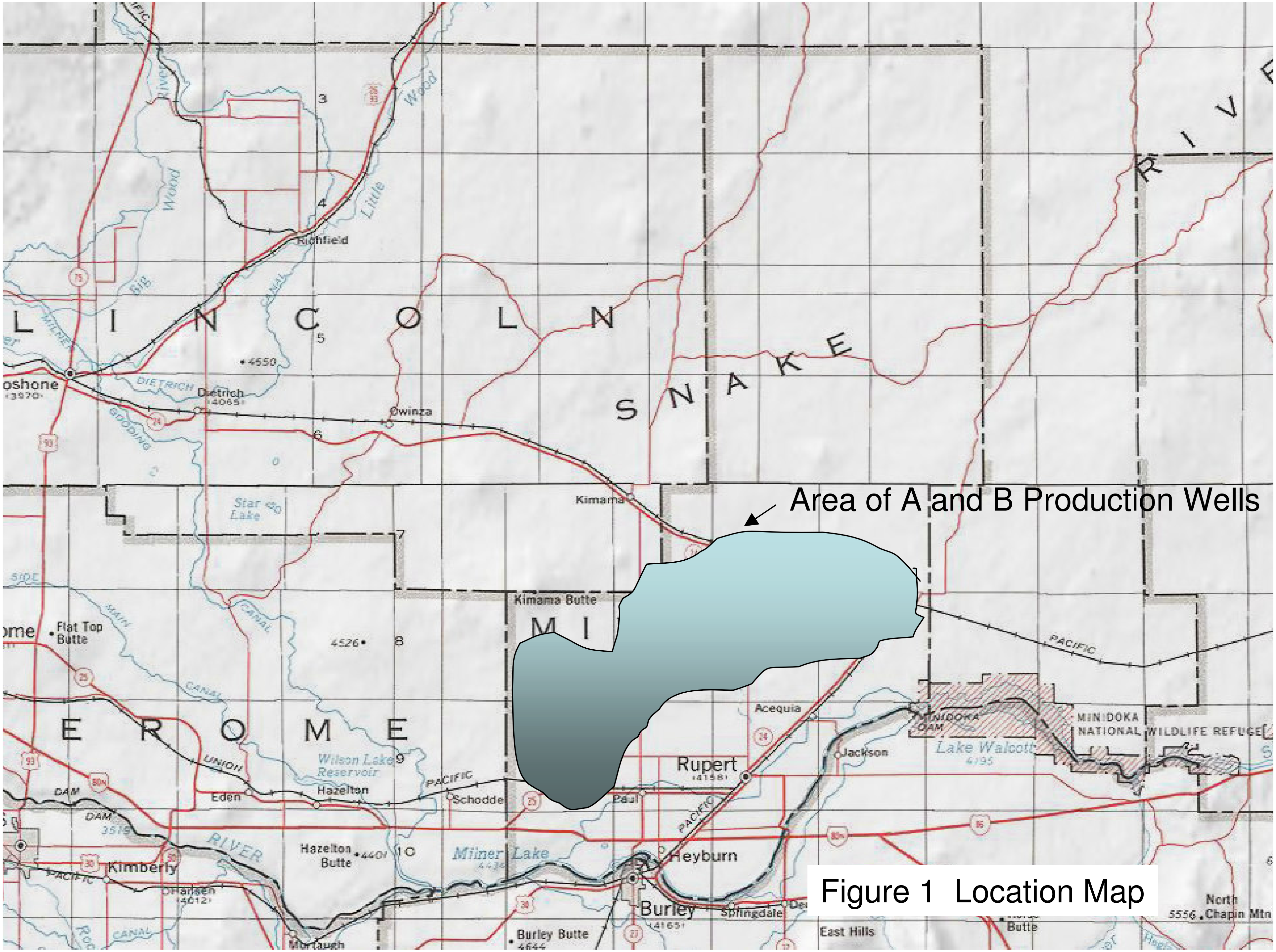


Figure 1 Location Map

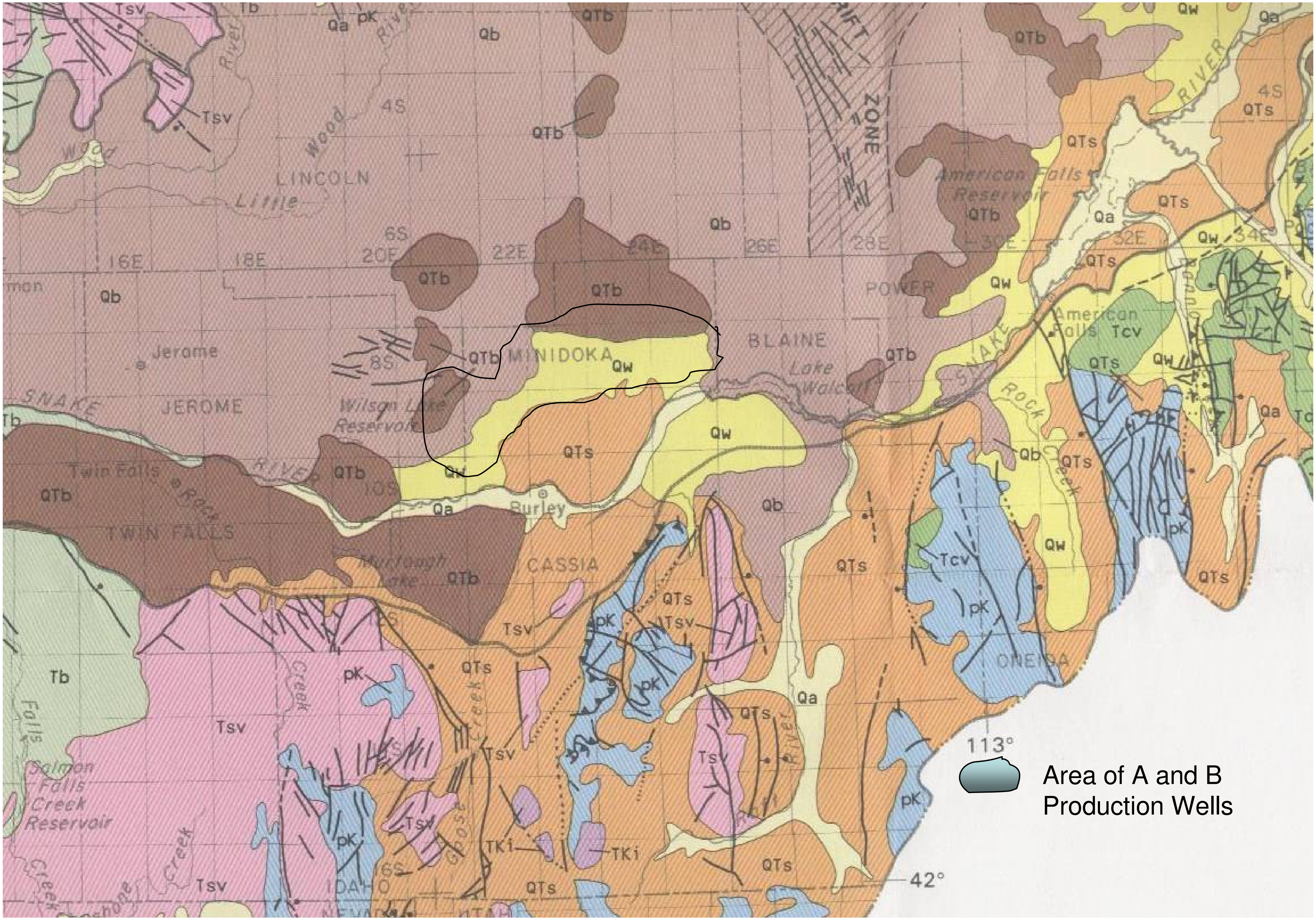


Figure 2a Geologic Map (from Whitehead, 1992)

EXPLANATION AND DESCRIPTION OF MAP UNITS

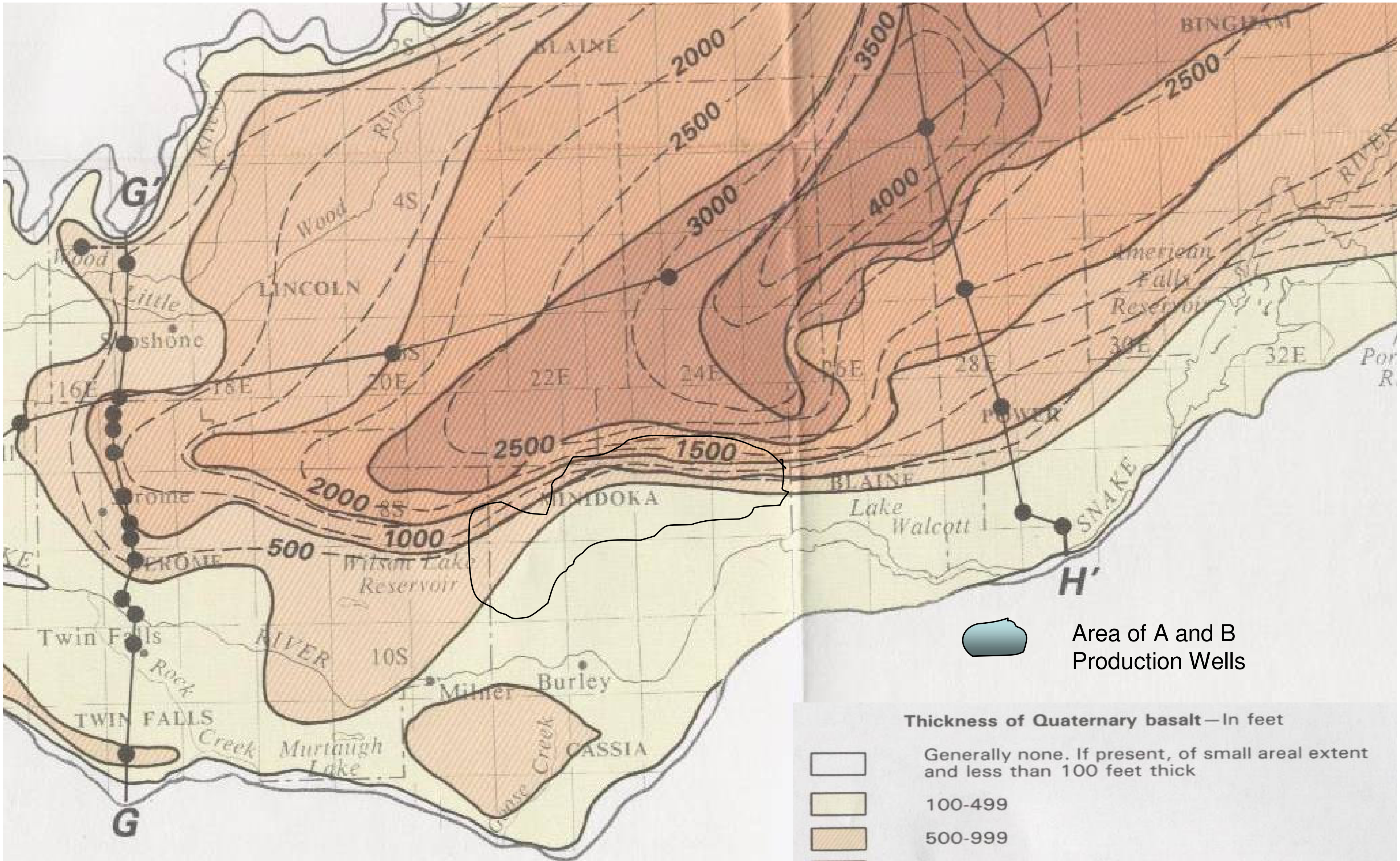
Age	Rock unit and map symbol	Physical characteristics and areal distribution	Water-yielding characteristics	Known thickness (ft)
QUATERNARY — Holocene	Alluvium (Qa)	Chiefly flood-plain deposits. May contain some glacial deposits and colluvium in the uplands. Clay, silt, sand, gravel, and boulders; unconsolidated to well compacted; unstratified to well stratified. Alluvium floors the tributary valleys and flood plains of the main streams and forms fans at mouths of some valleys.	Hydraulic conductivity variable, moderately high in coarse-grained deposits. Sandy and gravelly alluvium yields moderate to large quantities of water to wells. Transmissivity ranges from about 16,000 to more than 160,000 ft^2/d (Nace and others, 1957, p. 55). Specific capacities commonly range from 20 to 100 (gal/min)/ft. An important aquifer.	<250 (?)
QUATERNARY — Holocene	Windblown deposits (Qw)	Chiefly windblown deposits, include some lake and glacial-flood deposits; mantle much of the lowland areas; include active sand dunes in places, generally in northern Owyhee County and in northern part of eastern plain.	Generally above the water table.	<100 (?)
QUATERNARY — Holocene and Pleistocene	Younger basalt (Qb)	Olivine basalt, dense to vesicular, aphanitic to porphyritic; irregular to columnar jointing; thickness of individual flows variable, but averages about 20-25 ft (Mundorff and others, 1964, p. 143). Includes beds of basaltic cinders, rubbly basalt, and interflow sedimentary rocks. Chiefly basalt of the Snake River Group. Crops out in much of Snake River Plain; mantled in many places with alluvium, terrace gravel, and windblown deposits.	Hydraulic conductivity variable but extremely high in places; formational conductivity high because of jointing and rubbly contacts between numerous flows; rock conductivity low. Unit constitutes the Snake River Plain aquifer east of King Hill (Mundorff and others, 1964, p. 8). Specific capacities of 500-1,000 (gal/min)/ft are common. Transmissivity determined from aquifer tests ranges from about 100,000 to more than 1,000,000 ft^2/d in much of the Snake River Plain (Mundorff and others, 1964, p. 159; Nace and others, 1957, p. 55).	>4,000 Includes QTb below
QUATERNARY — Pleistocene	Younger silicic volcanic rocks (Qsv)	Rhyolitic ash-flow tuff, occurs as thick flows and blankets of welded tuff with associated fine- to coarse-grained ash and pumice beds. Include rocks of upper part of the Yellowstone Group and Plateau Rhyolite. Mantle much of Yellowstone Plateau in northeastern part of basin.	Hydraulic conductivity generally unknown but may be high as indicated by rapid percolation of surface runoff (Whitehead, 1978, p. 10). Tightly welded in places. Specific capacities range from 2 to 60 (gal/min)/ft. An important aquifer locally.	>3,000
QUATERNARY AND TERTIARY — Pleistocene, Pliocene, and Miocene	Basalt (QTb)	Olivine basalt similar to Qb above. Included as part of the Snake River Plain aquifer. Tentatively assigned to upper part of Idaho Group. Exposures generally have well-developed soil cover.	Hydraulic conductivity slightly lower than Qb above. It decreases with increasing age.	Included with Qb above
QUATERNARY AND TERTIARY — Pleistocene, Pliocene, and Miocene	Older alluvium (QTs)	Subaerial and lake deposits of clay, silt, sand, and gravel. Compacted to poorly consolidated; poorly to well stratified; beds somewhat lenticular and intertongued: contains beds of ash and intercalated basalt. Widespread tuffaceous sedimentary rocks and tuff in western part of basin. Includes upper part of Idaho Group and Payette and Salt Lake Formations. In places, underlies the older basalt (Tb).	Hydraulic conductivity highly variable; generally contains water under confined conditions; yields to wells range from a few gallons per minute from clayey beds to several hundred gallons per minute from sand and gravel. Specific capacities range from 5 to 60 (gal/min)/ft. In places, an important aquifer.	>5,500

Figure 2b Geologic Units (from Whitehead, 1992)

EXPLANATION AND DESCRIPTION OF MAP UNITS

Age		Rock unit and map symbol	Physical characteristics and areal distribution	Water-yielding characteristics	Known thickness (ft)
TERTIARY	Pliocene and Miocene	**Older basalt** Tb	Flood-type basalt, dense, columnar jointing in many places; folded and faulted (except for the Banbury Basalt); may include some rhyolitic and andesitic rocks; some flows of vesicular olivine basalt (Banbury), interbedded locally with minor amounts of stream and lake deposits. Includes Columbia River Basalt Group or equivalent (Miocene) and the Banbury Basalt of the Idaho Group (Miocene).	Hydraulic conductivity variable, may be high in places. Locally yields small to moderate amounts of water to wells from fractures and faults; some interbedded zones of sand and silt yield good supplies of water under confined or unconfined conditions. Specific capacities range from 3 to 900 (gal/min)/ft. An important aquifer.	>7,000 (The Banbury Basalt is generally <1,000. The older basalt may be >7,000 in the western plain)
TERTIARY	Pliocene to Oligocene	**Older silicic volcanic rocks** Tsv	Rhyolitic, latitic, and andesitic rocks, massive and dense; jointing ranges from platy to columnar; occur as thick flows and blankets of welded tuff with associated fine- to coarse-grained ash and pumice beds (commonly reworked by flowing water) and as clay, silt, sand, and gravel; locally folded, tilted, and faulted. Include Idavada Volcanics.	Hydraulic conductivity highly variable. Joints and fault zones in flows and welded tuff and interstices in coarse-grained ash, sand, and gravel yield small to moderate, and rarely large, amounts of water to wells. Commonly contain thermal water under confined conditions. Specific capacities range from 1 to >2,000 (gal/min)/ft and are generally <400 (gal/min)/ft. An important aquifer.	>3,000
TERTIARY	Eocene and Paleocene	**Volcanic rocks, undifferentiated** Tcv	Extrusive rocks range in composition from rhyolite to basalt; include welded tuff, pyroclastic, tuffaceous, and other clastic and sedimentary rocks. Chiefly Challis Volcanics; mainly crop out in mountains and foothills north of the eastern plain; may include some intrusive rocks.	Hydraulic conductivity generally low. Little information available on yields to wells. May be an important aquifer locally for domestic and stock use.	>5,000
TERTIARY AND CRETACEOUS		**Sedimentary rocks, undifferentiated** TKs	Undifferentiated shale, siltstone, sandstone, and freshwater limestone of Tertiary and Cretaceous age. Younger rocks composed chiefly of breccia, conglomerate, and sandstone. Exposed in eastern part of basin. May include a few small outcrops of Jurassic age.	Hydraulic conductivity generally low. Little information available on yields to wells; weathered zones and fractures may yield moderate quantities of water to wells; large yields may be obtained in places. May be an important aquifer locally.	>10,000
TERTIARY AND CRETACEOUS		**Intrusive rocks** TKi	Chiefly granitic rocks of the Idaho batholith; include older and younger crystalline rocks; crop out in a few places south of Snake River in Idaho and northern Nevada.	Hydraulic conductivity generally low. Faults, fractures, and weathered zones may yield small quantities of water to wells. Not an important aquifer.	Unknown
PRE-CRETACEOUS		**Pre-Cretaceous rocks, undifferentiated** pK	Well-indurated sedimentary and metamorphic rocks that have been folded, faulted, and intruded by igneous rocks. Crop out in mountainous areas. Include extrusive rocks of Permian and Triassic age in western part of basin. May include Cretaceous or younger sedimentary rocks.	Hydraulic conductivity low. Faults, fractures, and weathered zones may yield small quantities of water to wells. Little information available on yields to wells. Not an important aquifer.	>12,000

Figure 2c Geologic Units (from Whitehead, 1992)



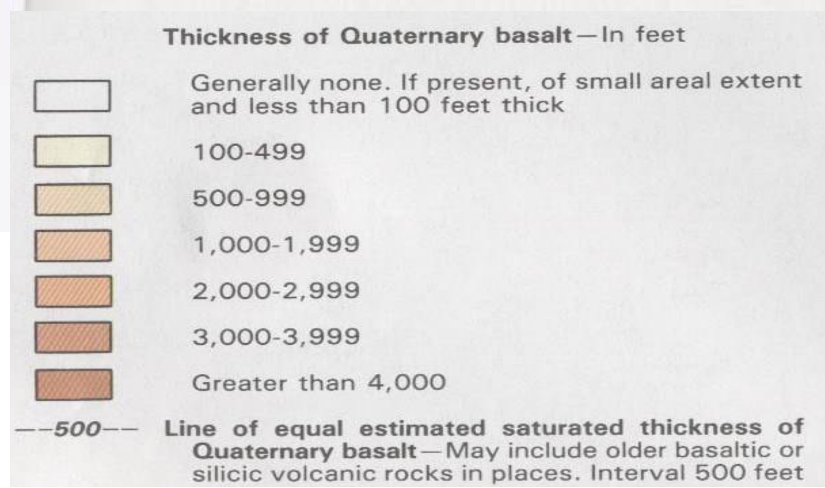


Figure 3 Thickness of Quaternary Basalt
(Whitehead, 1992)

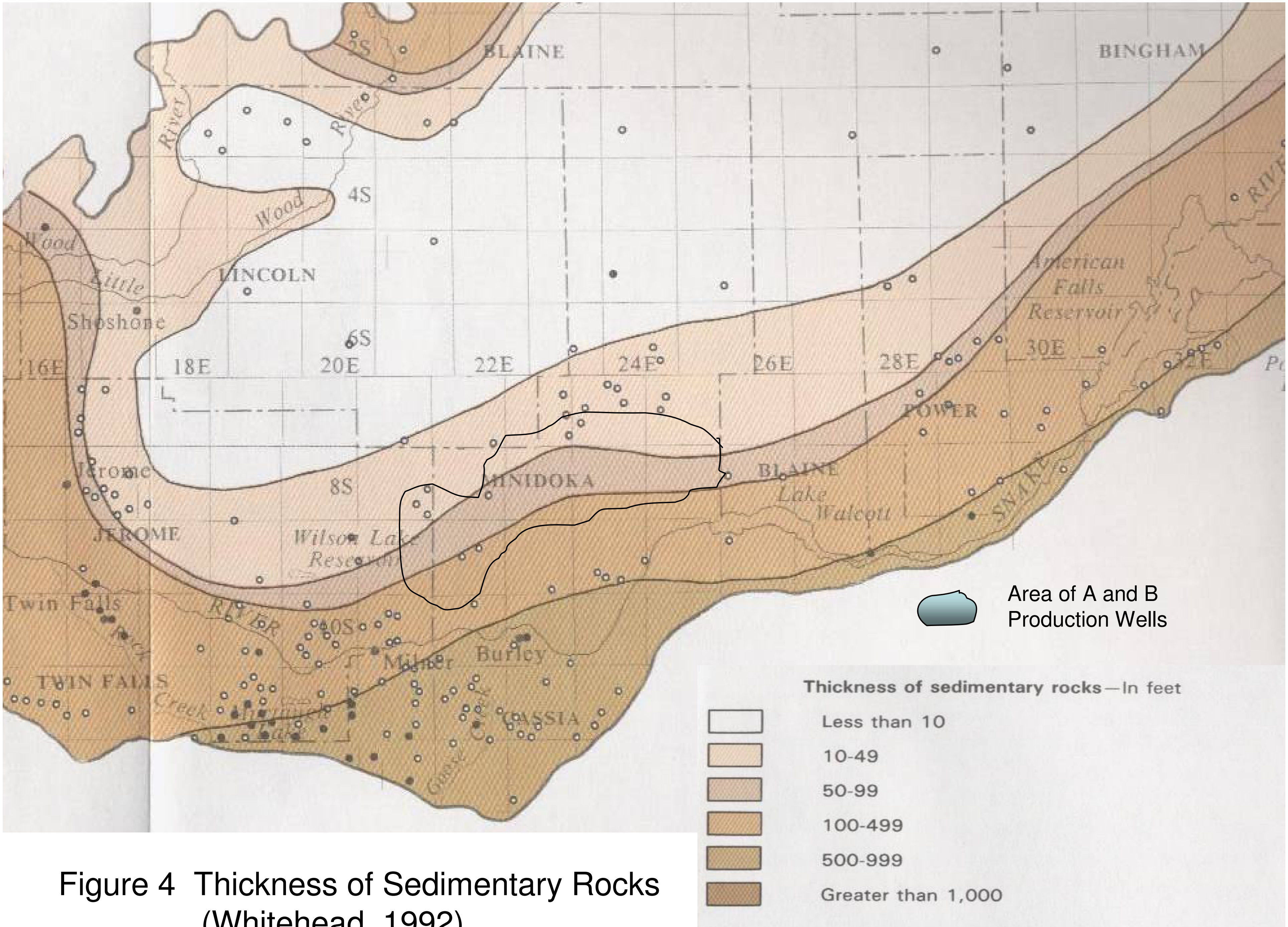


Figure 4 Thickness of Sedimentary Rocks (Whitehead, 1992)

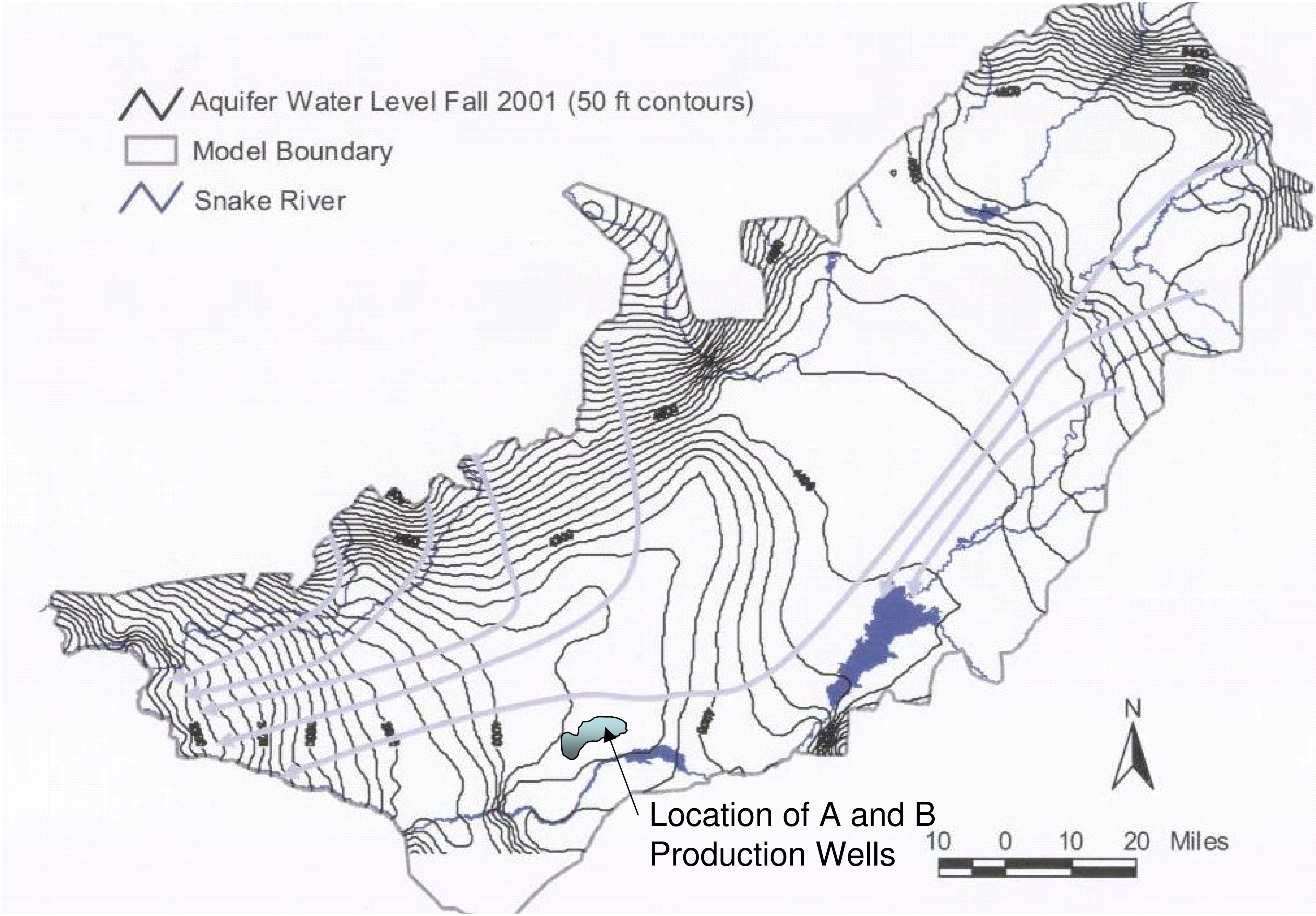


Figure 5 Water-Level Contours (from Cosgrove and others, 2006)

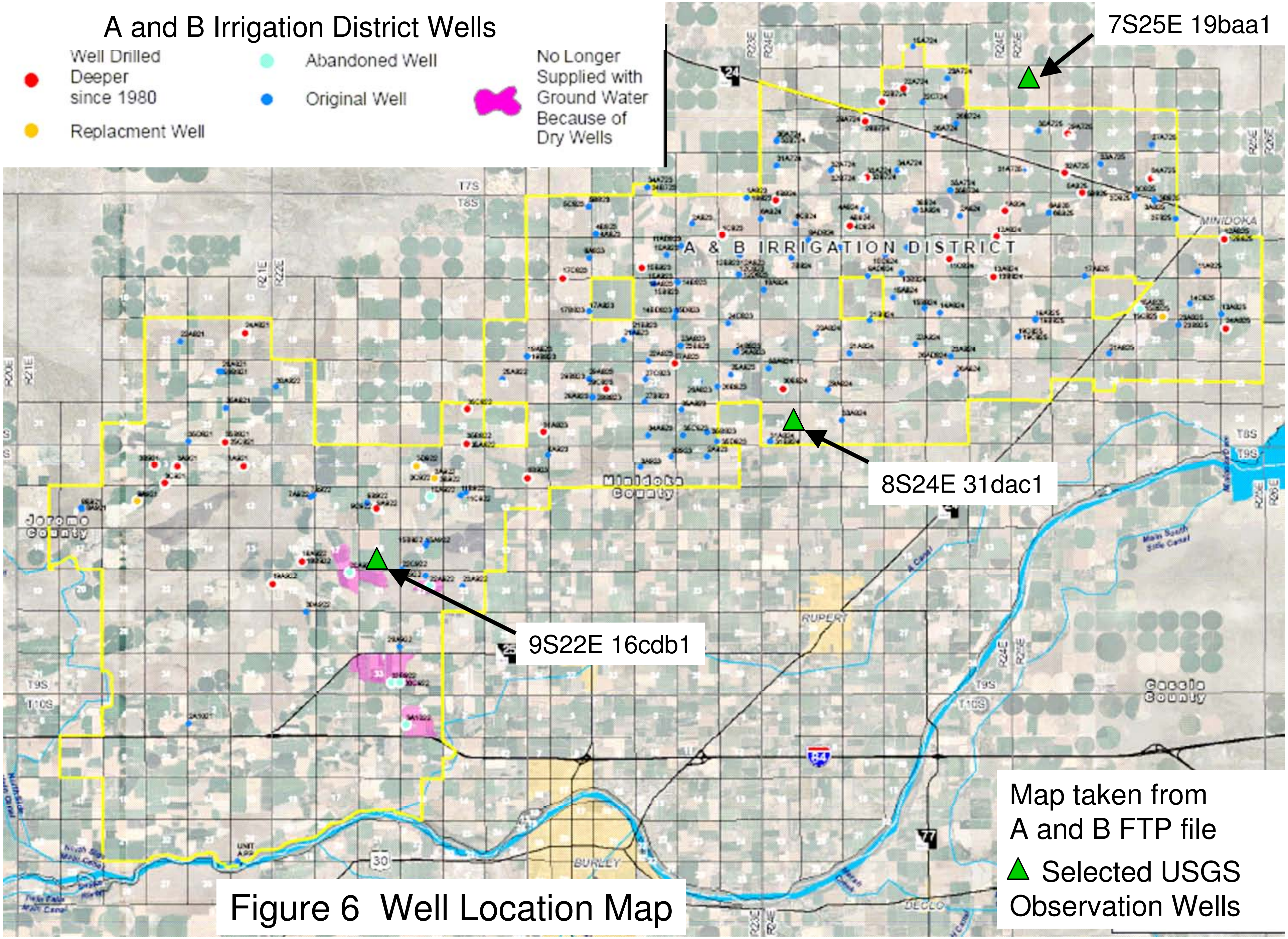


Figure 6 Well Location Map

Figure 7 Hydrograph for Well 7S25E 19baa1

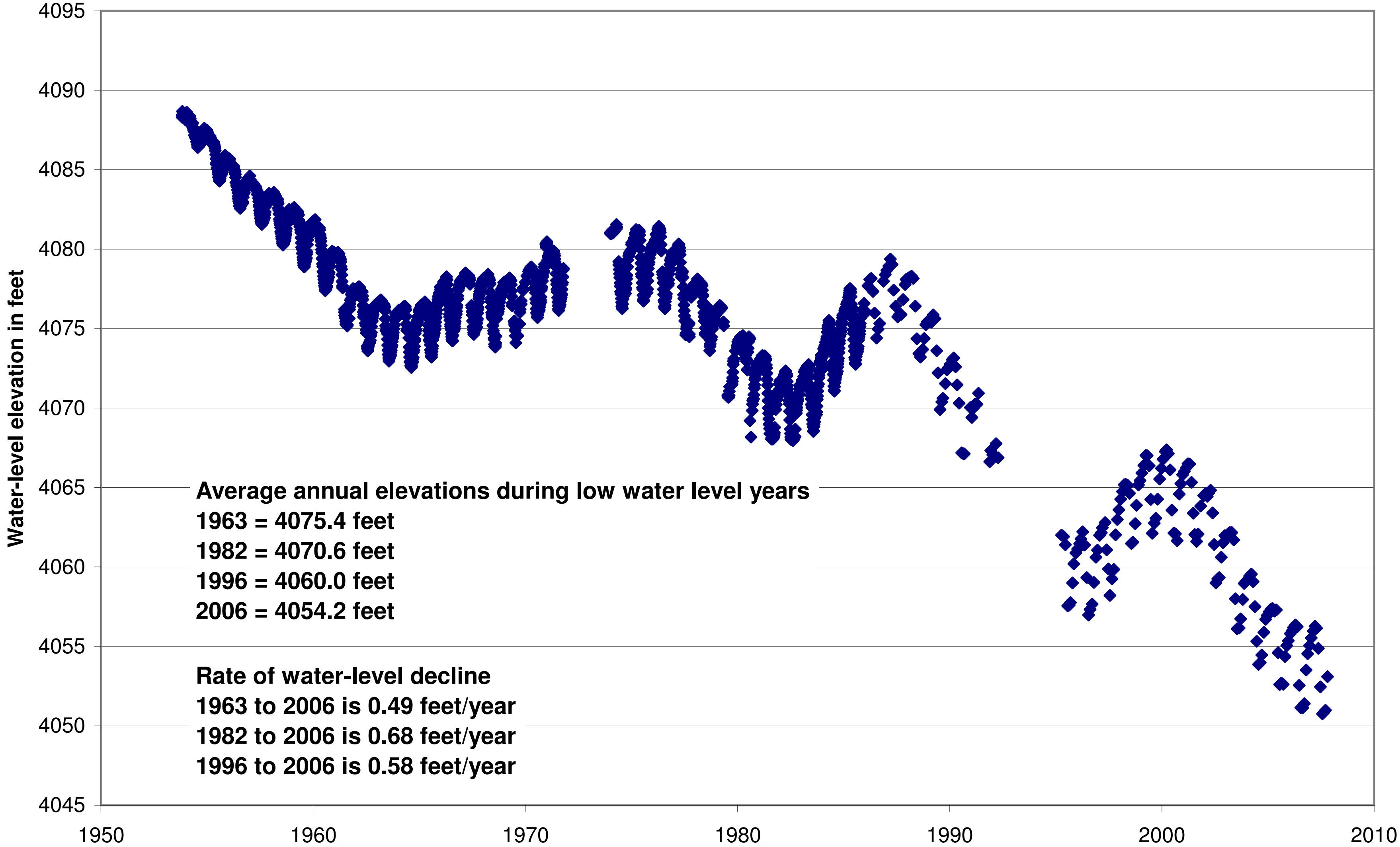


Figure 8 Hydrograph for Well 8S24E 31dac1

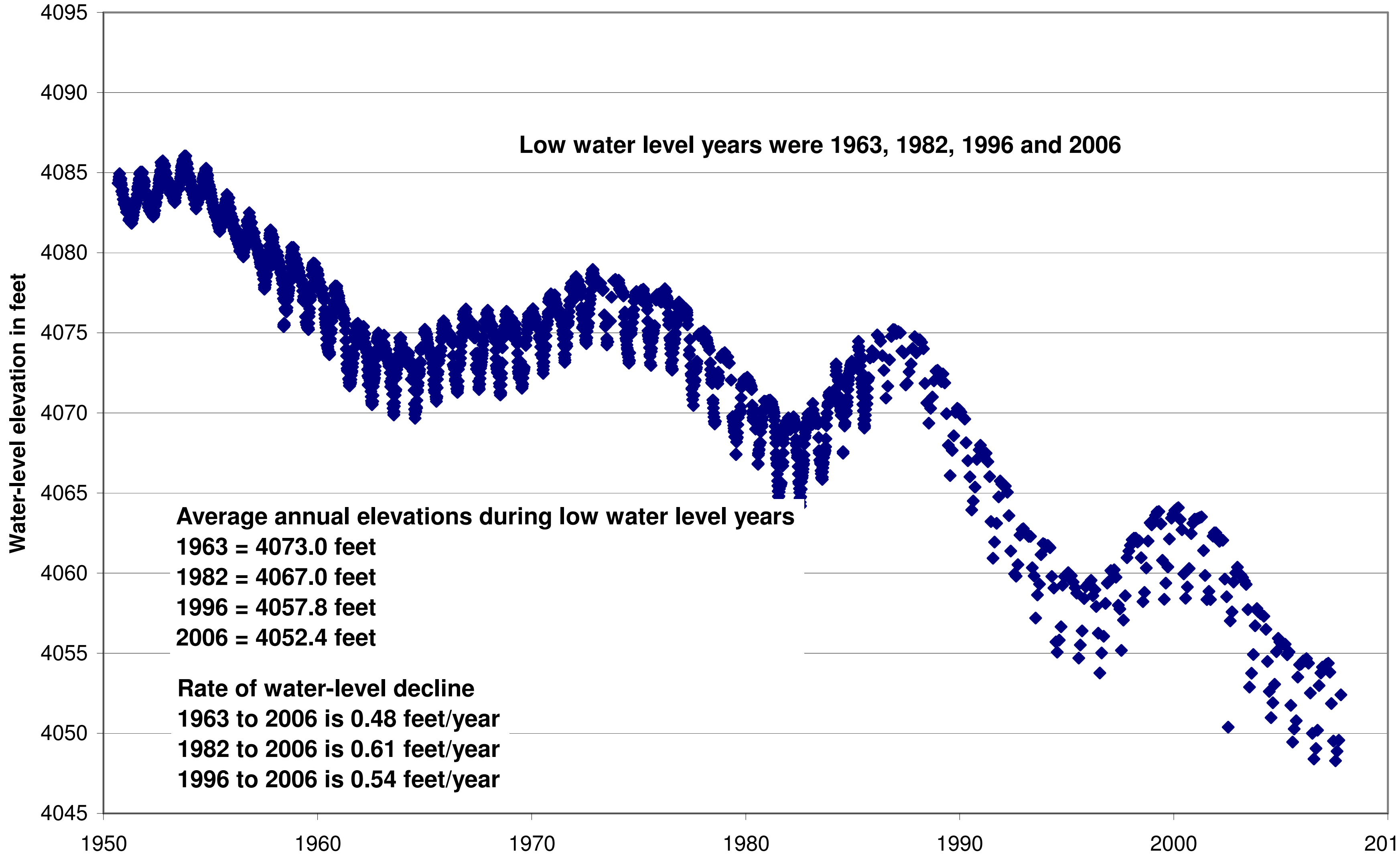


Figure 9 Hydrograph for Well 9S 22E 16cdb1

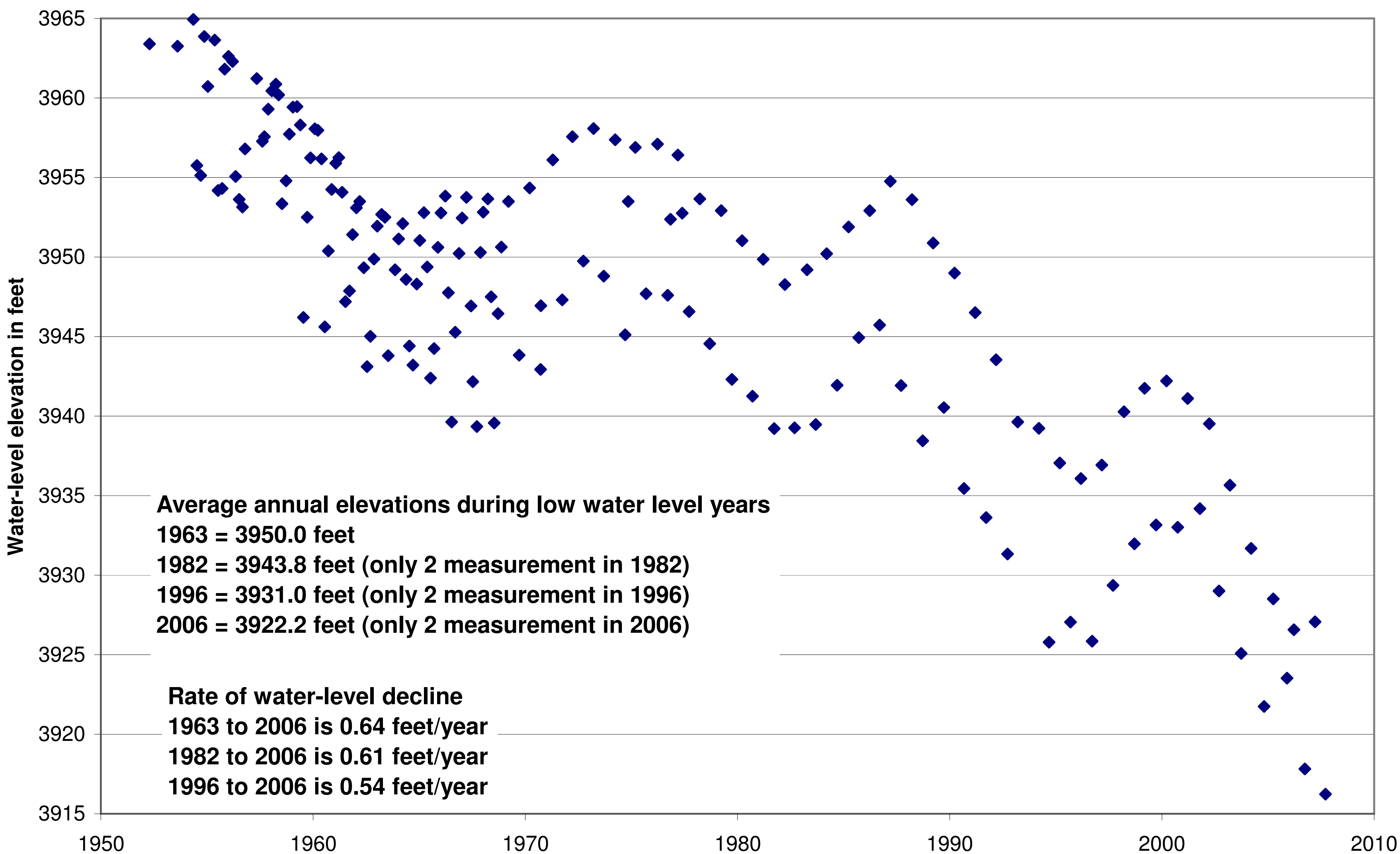


Figure 10 Temporal Pattern of Pumping From Selected Wells

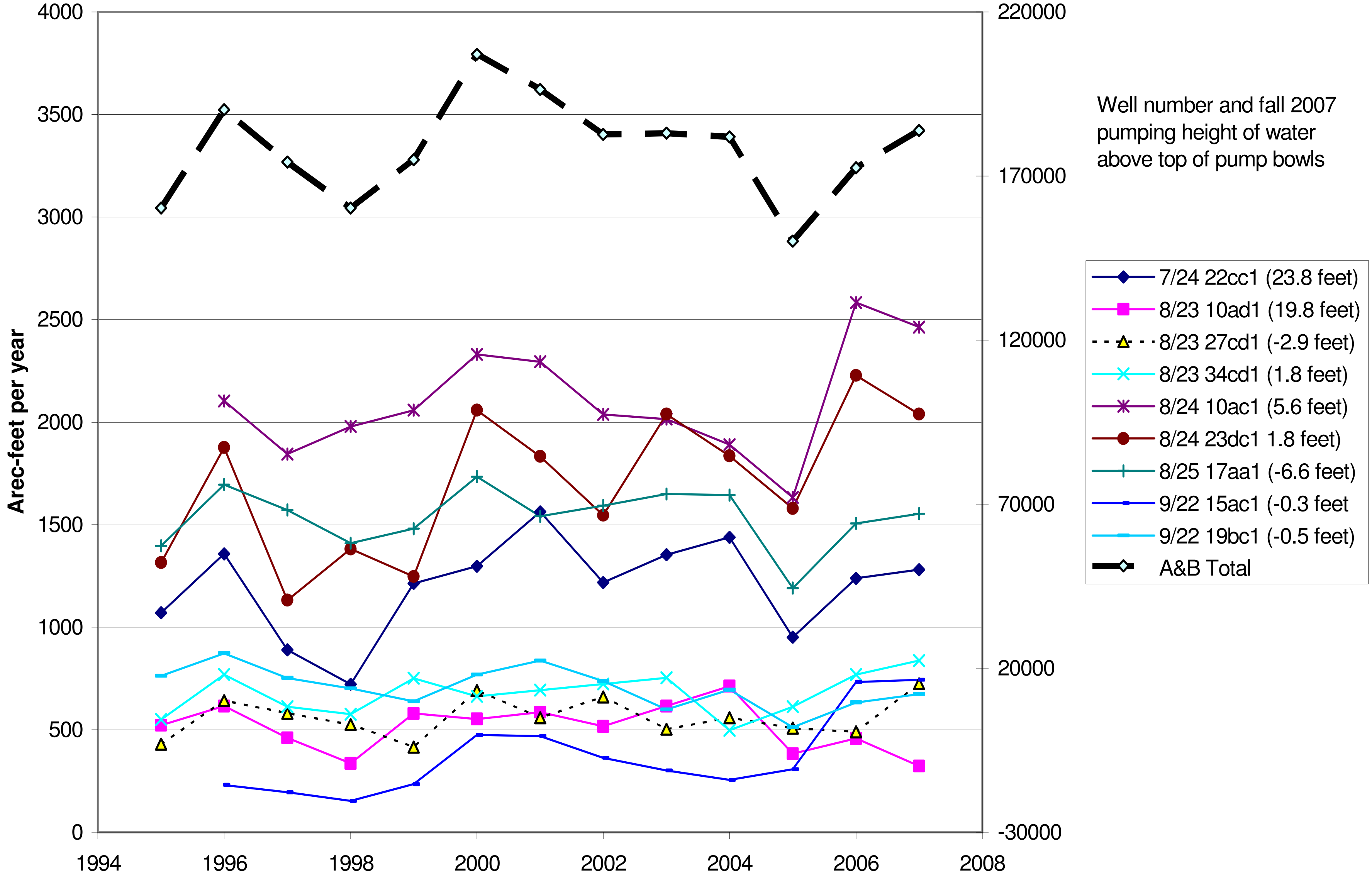


Figure 11A Average High and Low Discharge Rates from Wells in T7S and R23E, R24E and R25E

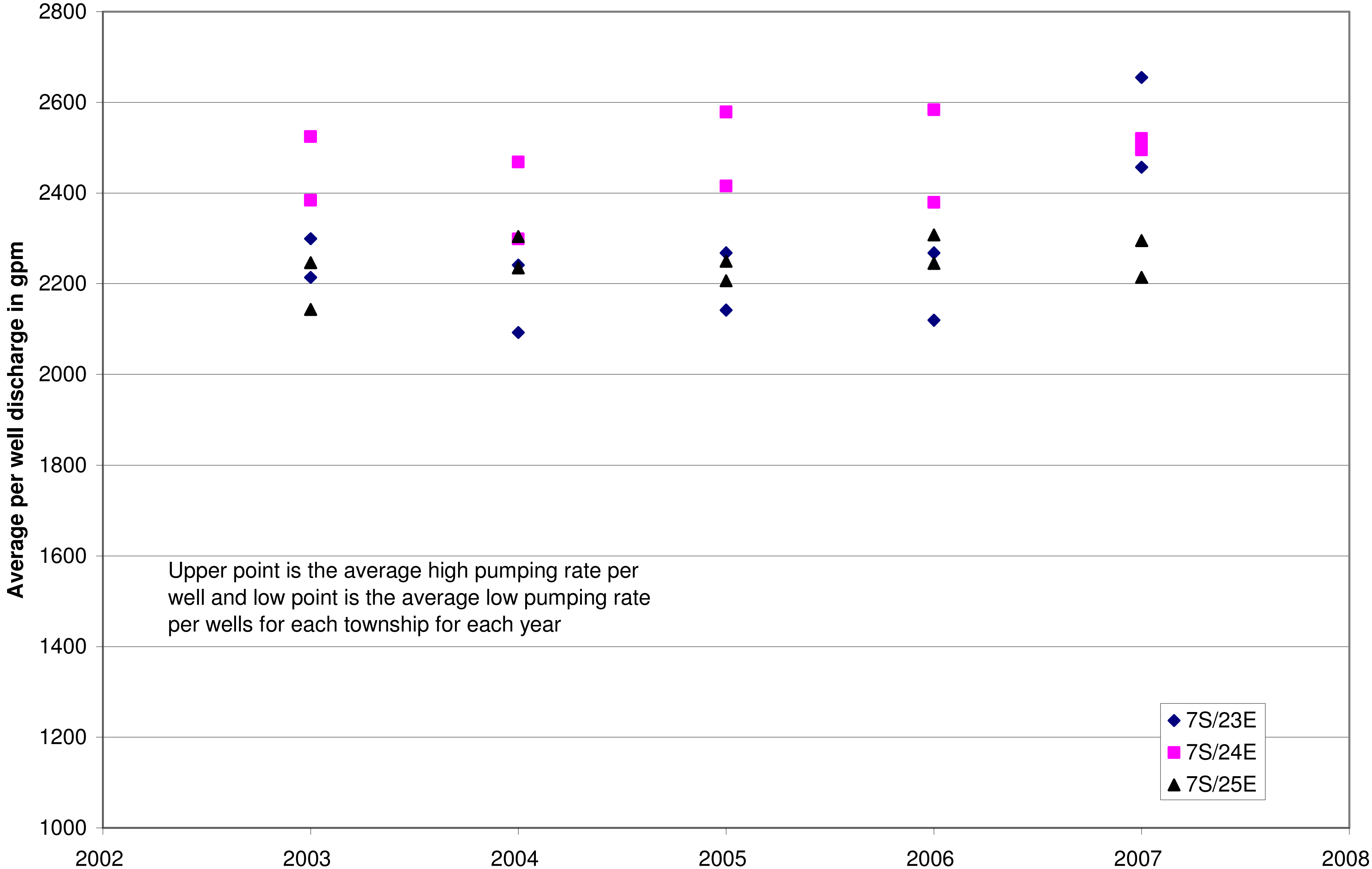


Figure 11B Average High and Low Discharge Rates from Wells in T8S and R21E, R22E, R23E, R24E and R25E

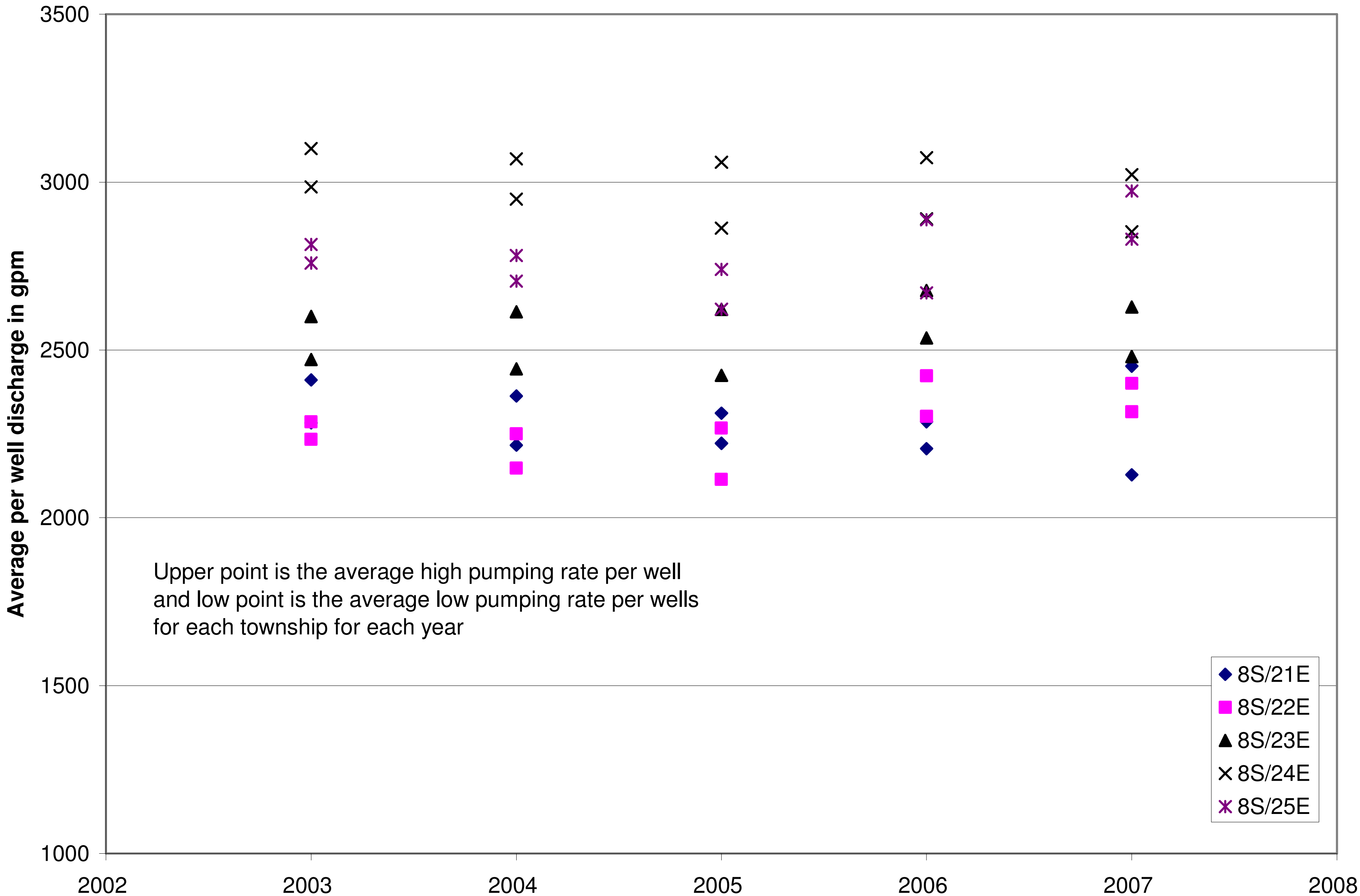


Figure 11C Average High and Low Discharge Rates from Wells in T9S and R21E, R22E and R23E and T10S and R21E