Figure 2.3-26— Change in the Chesapeake Bay Shoreline Position near the CCNPP Site Between 1848, 1942 and 1993

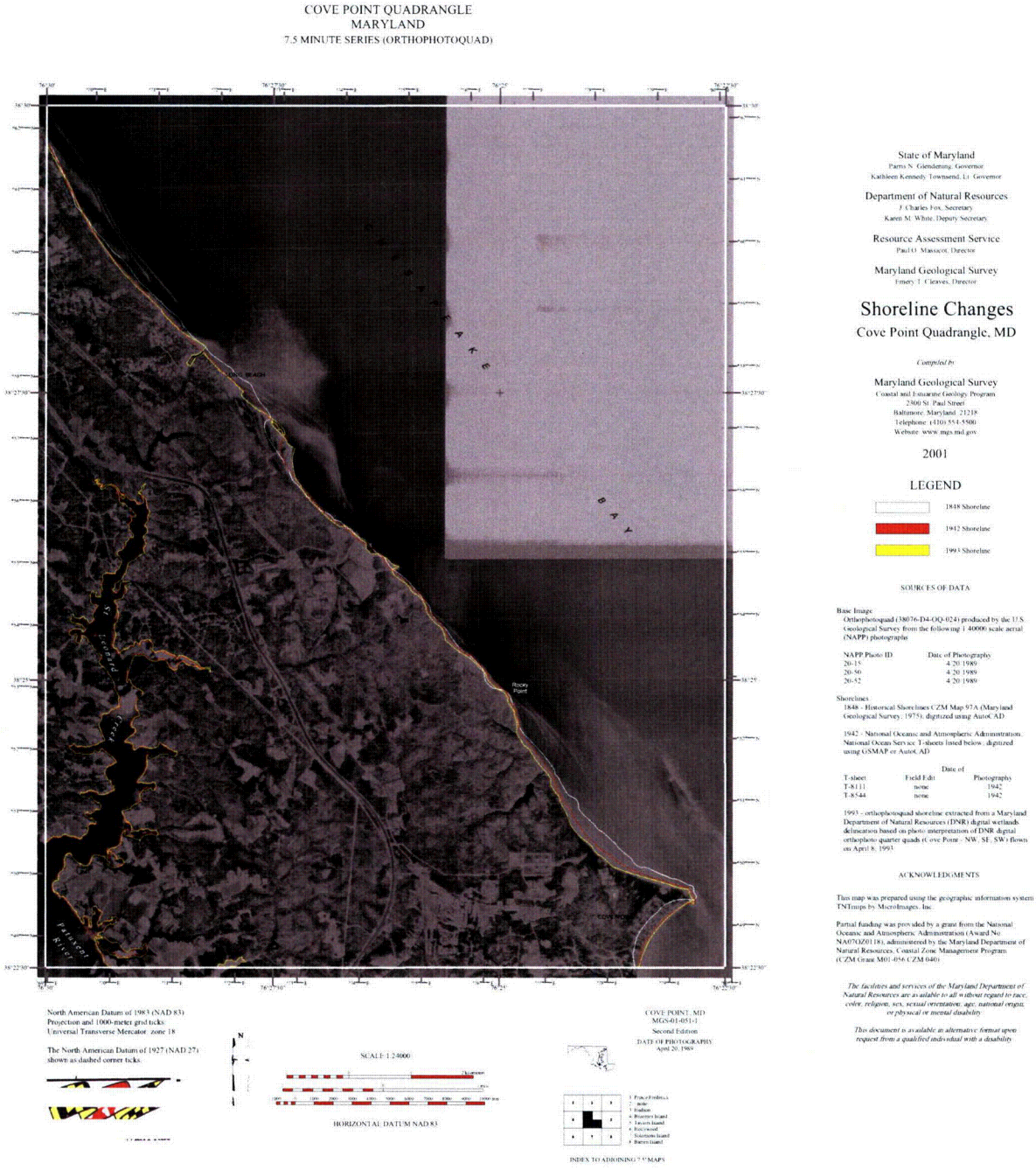
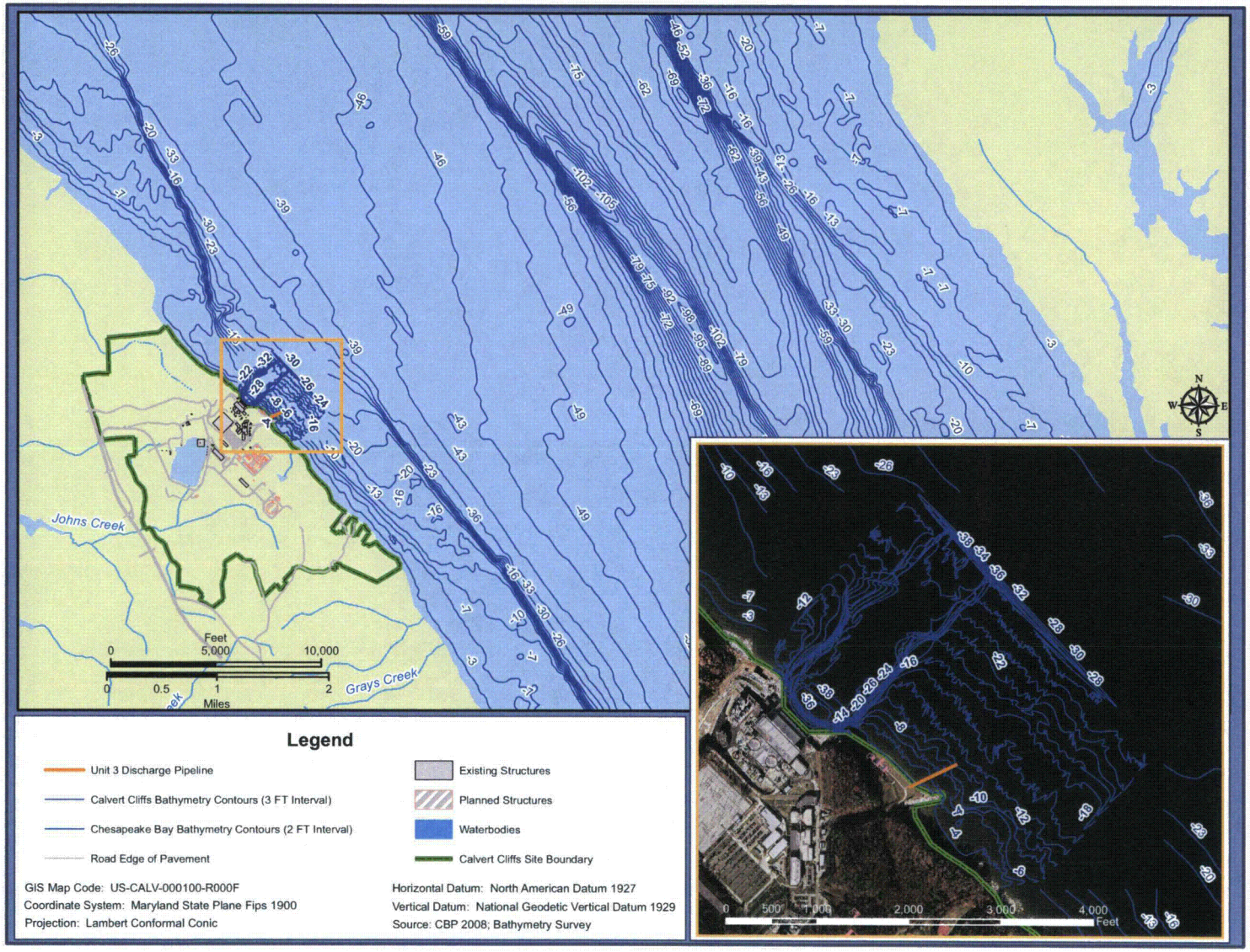


Figure 2.3-27— Chesapeake Bay Bathymetry Including the Existing CCNPP Units 1 and 2 Intake Channel



See Figure 2.1-1 and Figure 3.1-2 for Site and Powerblock layout

Figure 2.3-28— Location of CCNPP and 200 Mile Radius from the Plant Site

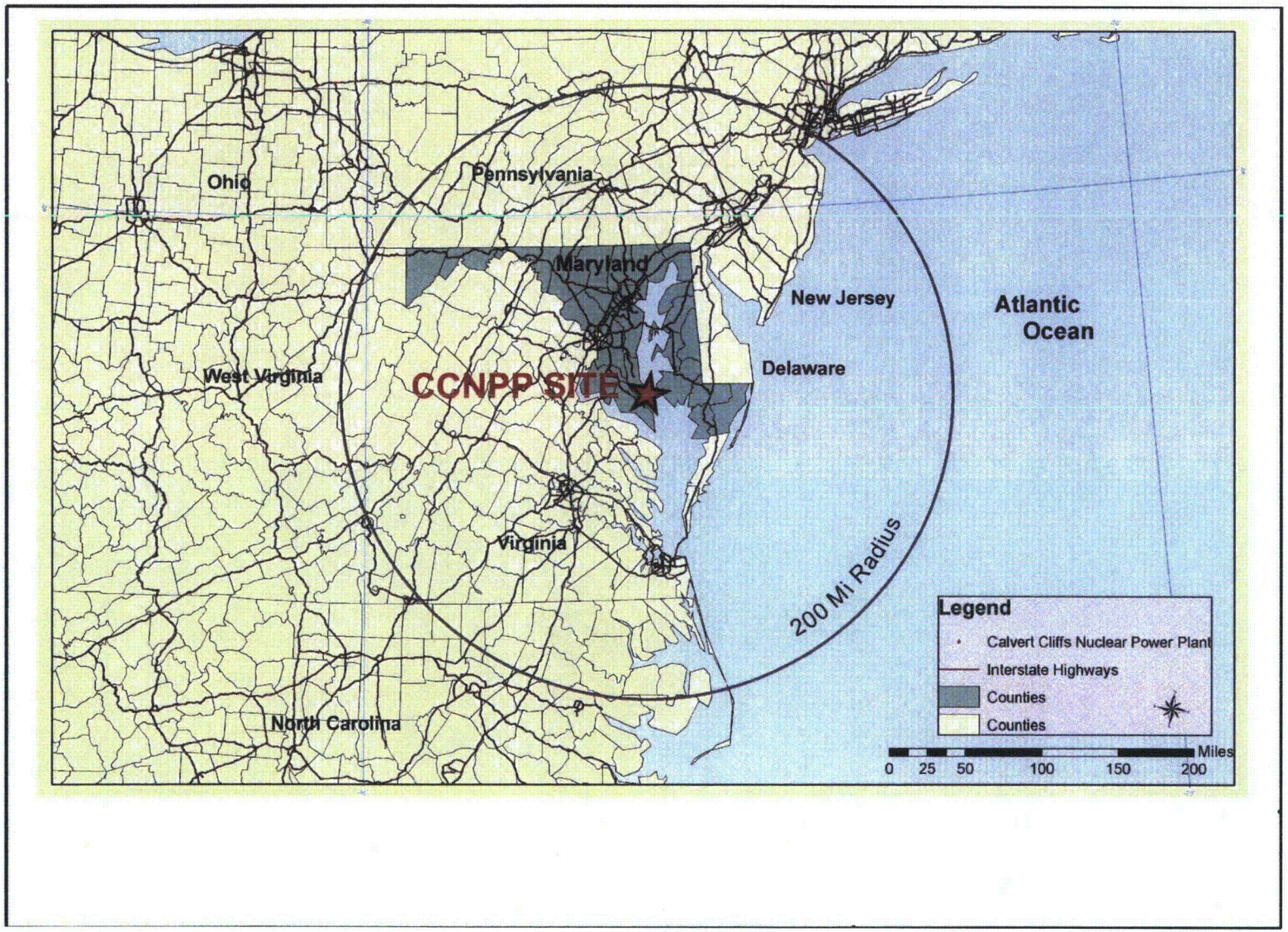
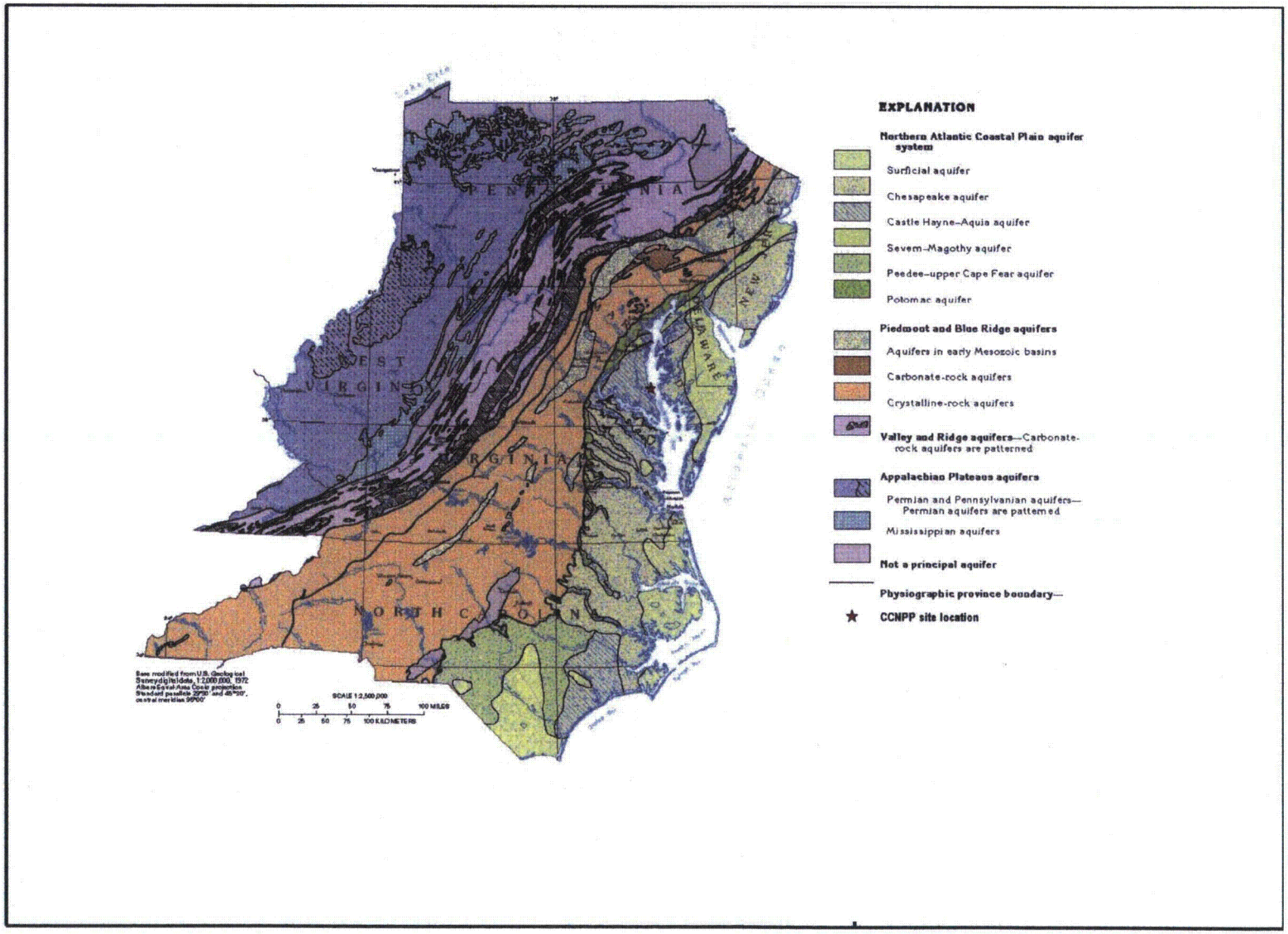


Figure 2.3-29— Mid-Atlantic Regional Physiographic Provinces and Hydrostratigraphic Units



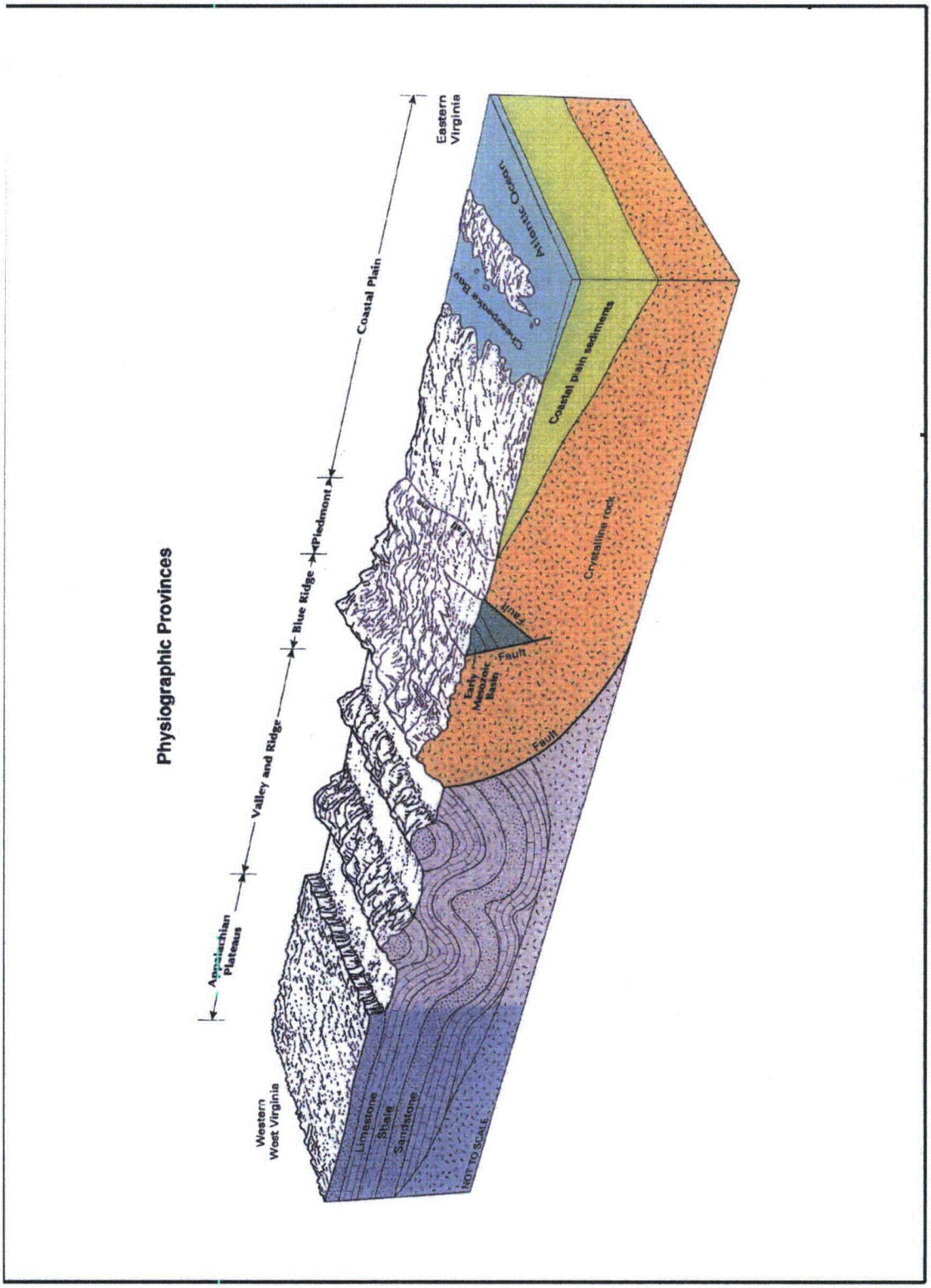


Figure 2.3-30— Schematic Geologic Cross Section through the Mid-Atlantic Region

Figure 2.3-31— Southern Maryland Schematic Hydrostratigraphic Section

ERATHEM	SYSTEM	SERIES	FORMATION		THICKNESS (feet)	LITHOLOGY	HYDROSTRATIGRAPHIC UNIT
CENOZOIC	QUATERNARY	Holocene & Pleistocene	Lowland deposits		0-150	Sand, gravel, sandy clay, and clay.	SURFICIAL AQUIFER
	NEOGENE	Pliocene	Upland deposits		0-85	Irregularly stratified cobbles, gravel, sand, and clay lenses.	
		Miocene	Chesapeake Group	St. Mary's Fm.	0-335	Sand, clayey sand, and sandy clay; fossiliferous and diatomaceous.	CHESAPEAKE CONFINING UNIT
				Choptank Fm.			
				Calvert Fm.			
	PALEOGENE	Oligocene		Unnamed Oligocene Beds	0-5	Patchy distribution; clayey, glauconitic sand.	PINEY POINT-NANJEMOY AQUIFER
		Eocene	Pamunkey Group	Piney Point Fm.	0-90	Sand, slightly glauconitic, with intercalated indurated layers; fossiliferous.	
				Nanjemoy Fm.	0-240	Glauconitic sand with clayey layers.	
		Paleocene		Marlboro Clay	0-30	Pink and grey clay.	NANJEMOY CONFINING UNIT
				Aquia Fm.	30-205	Glauconitic, greenish to brown sand with indurated layers; fossiliferous.	AQUIA AQUIFER
				Brightseat Fm.	0-40	Gray to dark-grey micaceous silty and sandy clay.	BRIGHTSEAT CONFINING UNIT
MESOZOIC	CRETACEOUS	Upper	Monmouth Group	Formations undifferentiated	20-105	Sandy clay and sand, dark gray to black, with minor glauconitic; fossiliferous.	
			Matawan Group				
			Magothy Fm.		0-230	Light gray to white sand and fine gravel with interbedded clay layers; contains pyrite and lignite. Includes two sand units in southern Anne Arundel County where the formation is the thickest.	MAGOTHY AQUIFER
		Lower	Potomac Group	Patapsco Fm.	0-1,200	Interbedded sand, clay, and sandy clay; color variegated, but chiefly hues of red, brown and gray; consists of several sandy intervals that function as separate aquifers.	Patapsco aquifer system: UPPER PATAPSCO CONFINING UNIT / UPPER PATAPSCO AQUIFER / MIDDLE PATAPSCO CONFINING UNIT / LOWER PATAPSCO AQUIFER
				Arundel Fm.	0-400	Red, brown, and gray clay; in places contains ironstone nodules, carbonaceous remains, and lignite.	ARUNDEL CONFINING UNIT
				Patuxent Fm.	100-600	Interbedded gray and yellow sand and clay; kaolinized feldspar and lignite common. Locally clay layers predominate.	PATUXENT AQUIFER
PALEOZOIC / PRECAMBRIAN	Undifferentiated pre-Cretaceous consolidated-rock basement				Unknown	Igneous and metamorphic rocks; sandstone and shale.	NOT RECOGNIZED

Figure 2.3-32— Schematic Cross Section of Southern Maryland Hydrostratigraphic Units

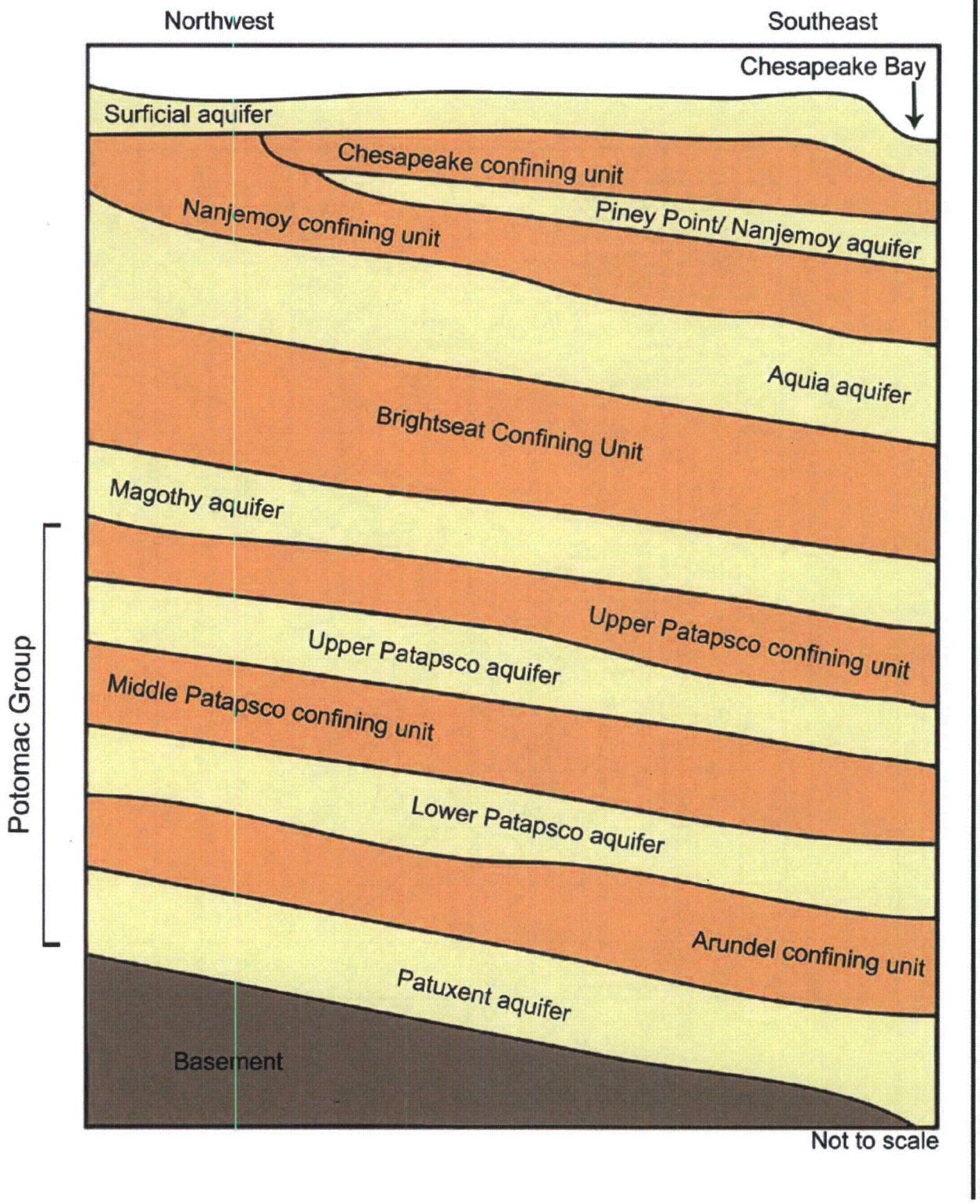


Figure 2.3-33— Potentiometric Surface of the Aquia Aquifer in Southern Maryland, September 2003

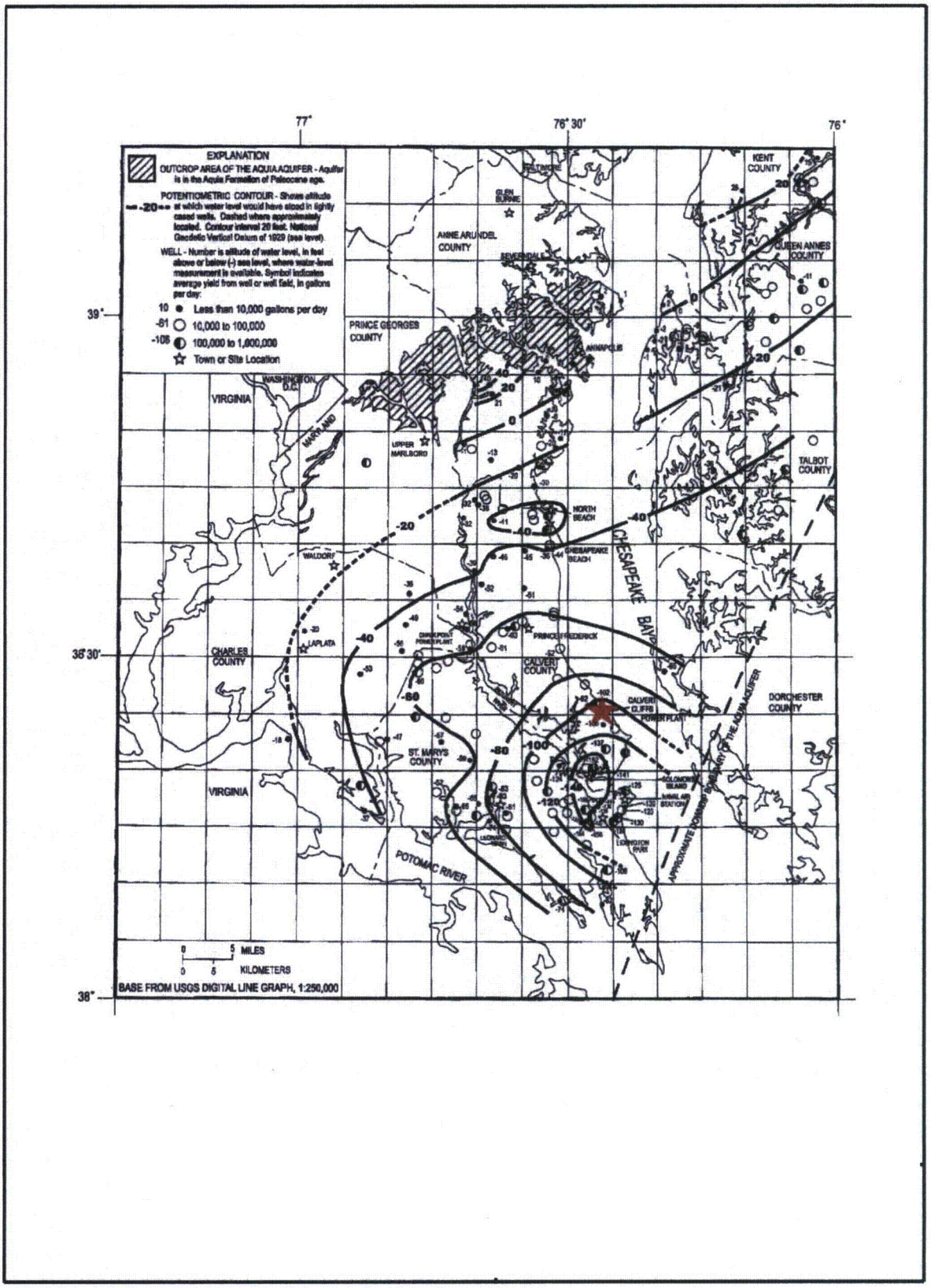


Figure 2.3-34— Potentiometric Surface of the Magothy Aquifer in Southern Maryland, September 2003

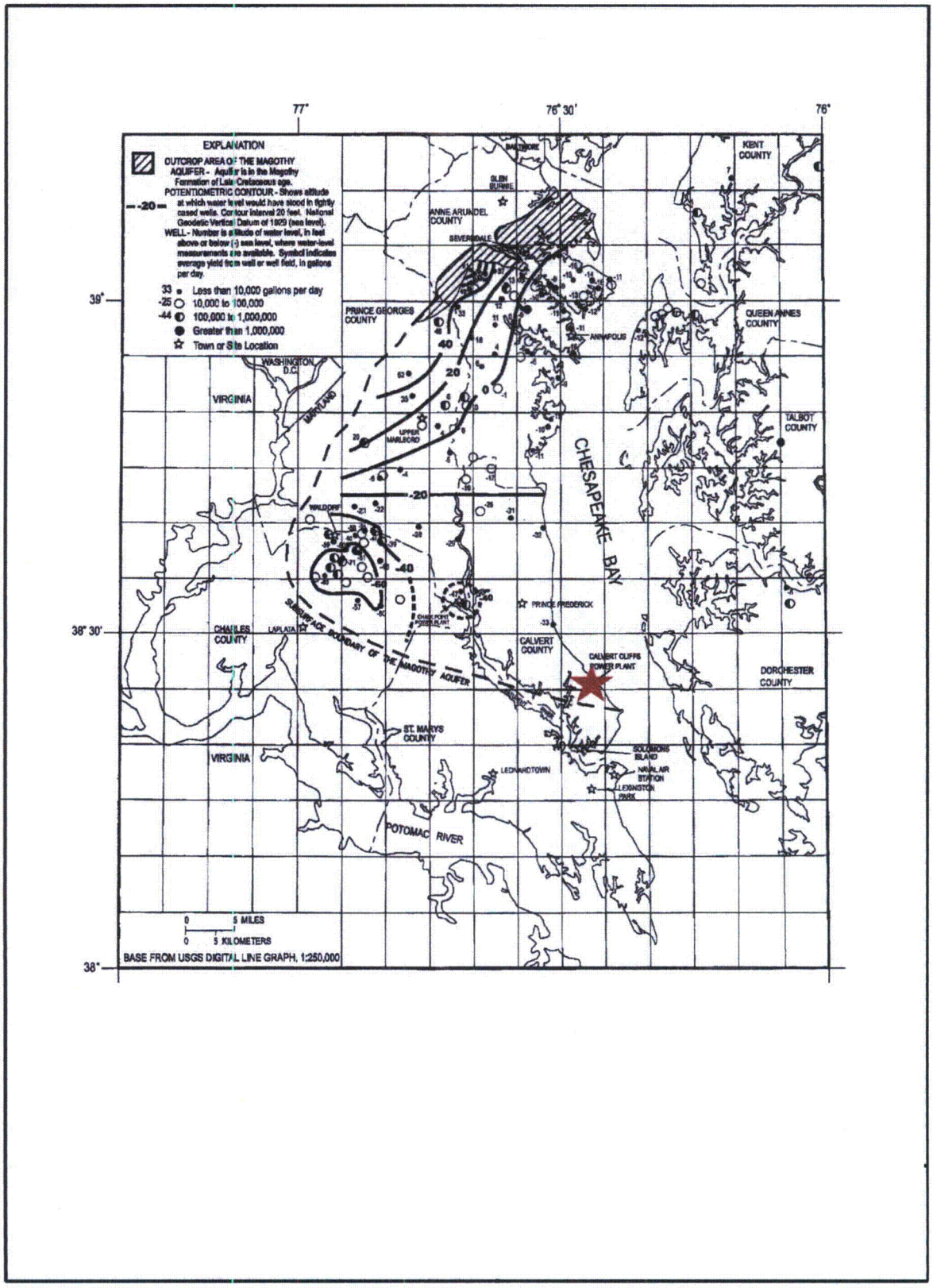


Figure 2.3-35— Potentiometric Surface of the Upper Patapsco Aquifer in Southern Maryland, September 2003

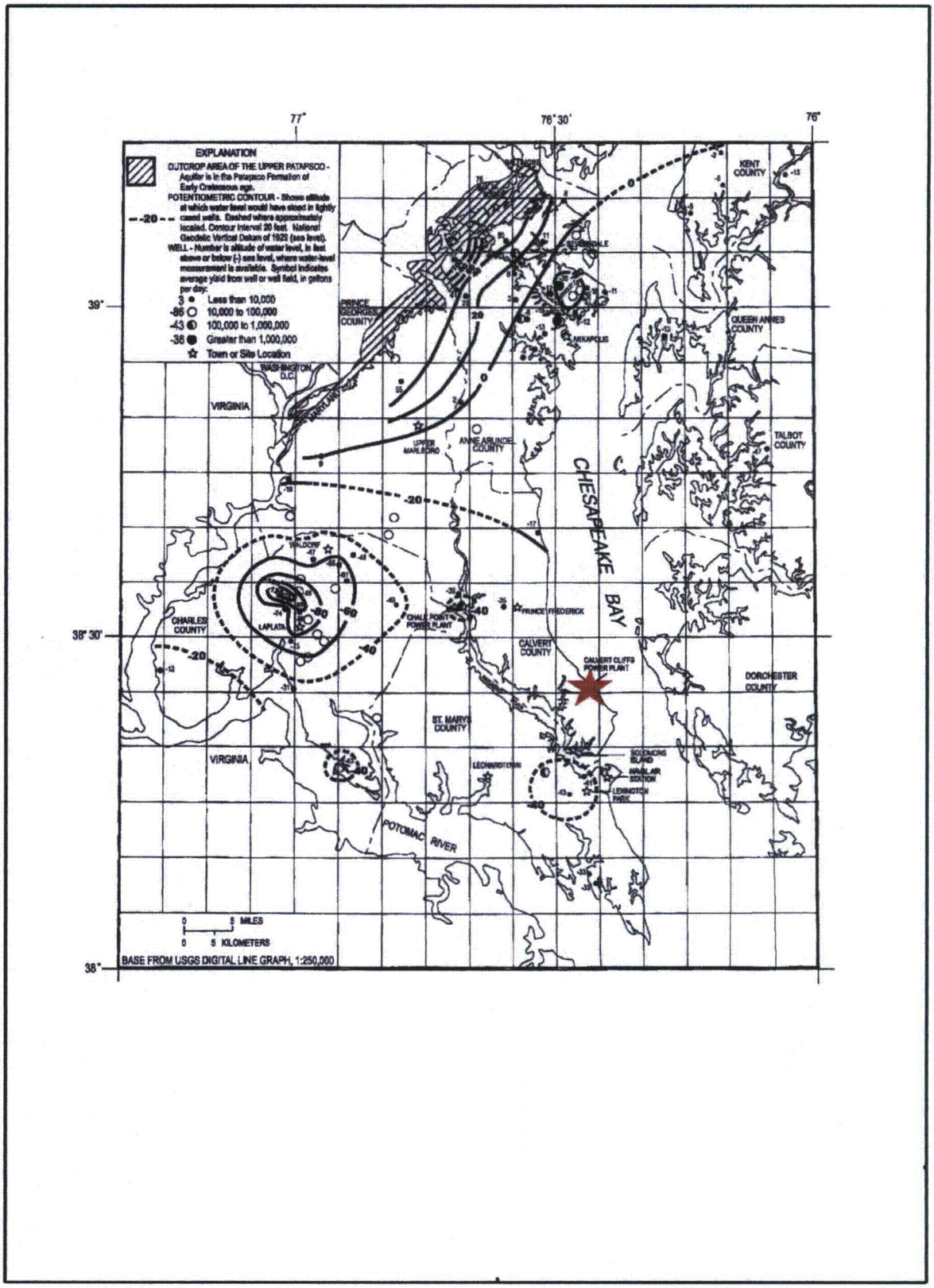


Figure 2.3-36— Potentiometric Surface of the Lower Patapsco Aquifer in Southern Maryland, September 2003

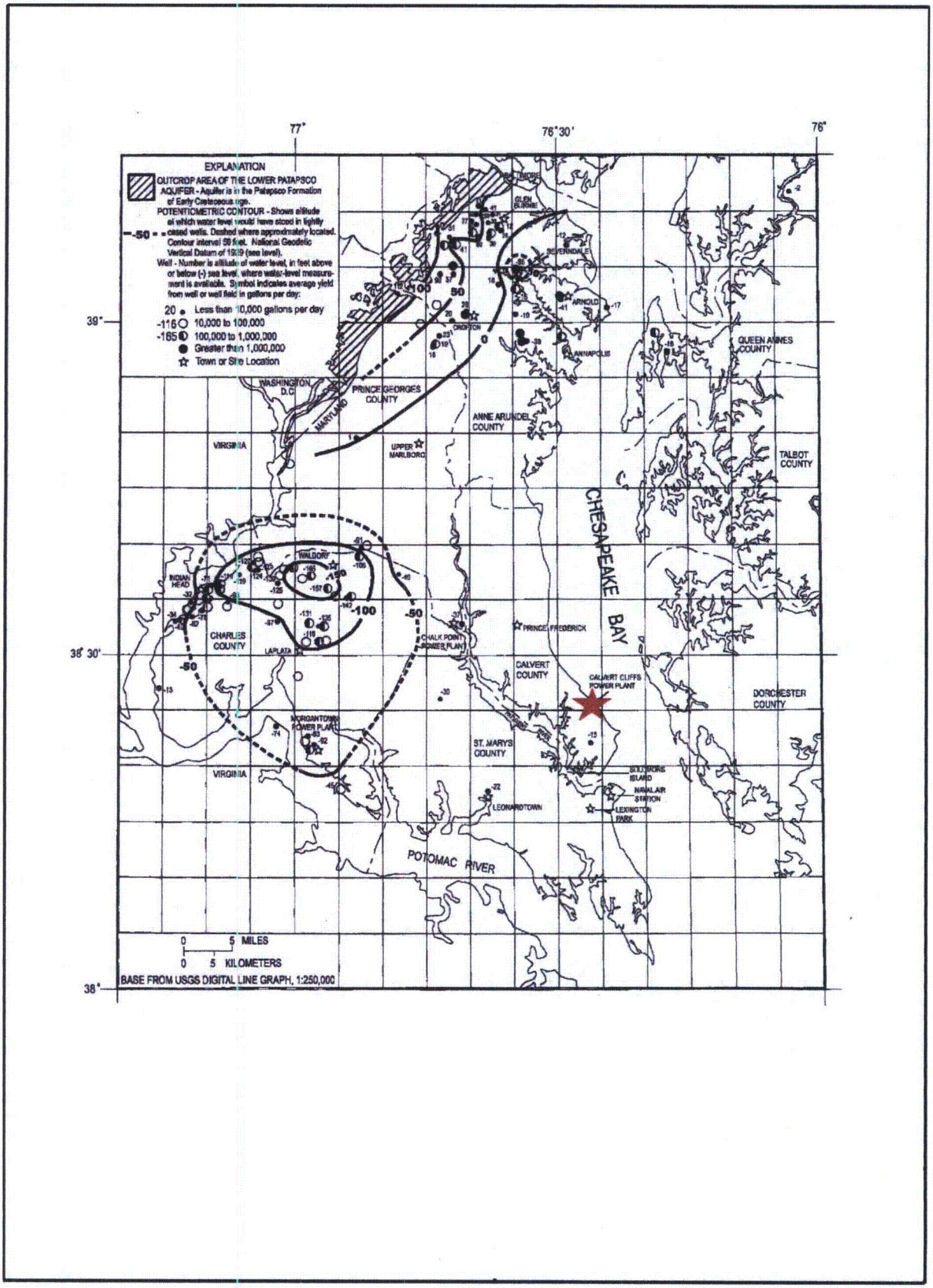
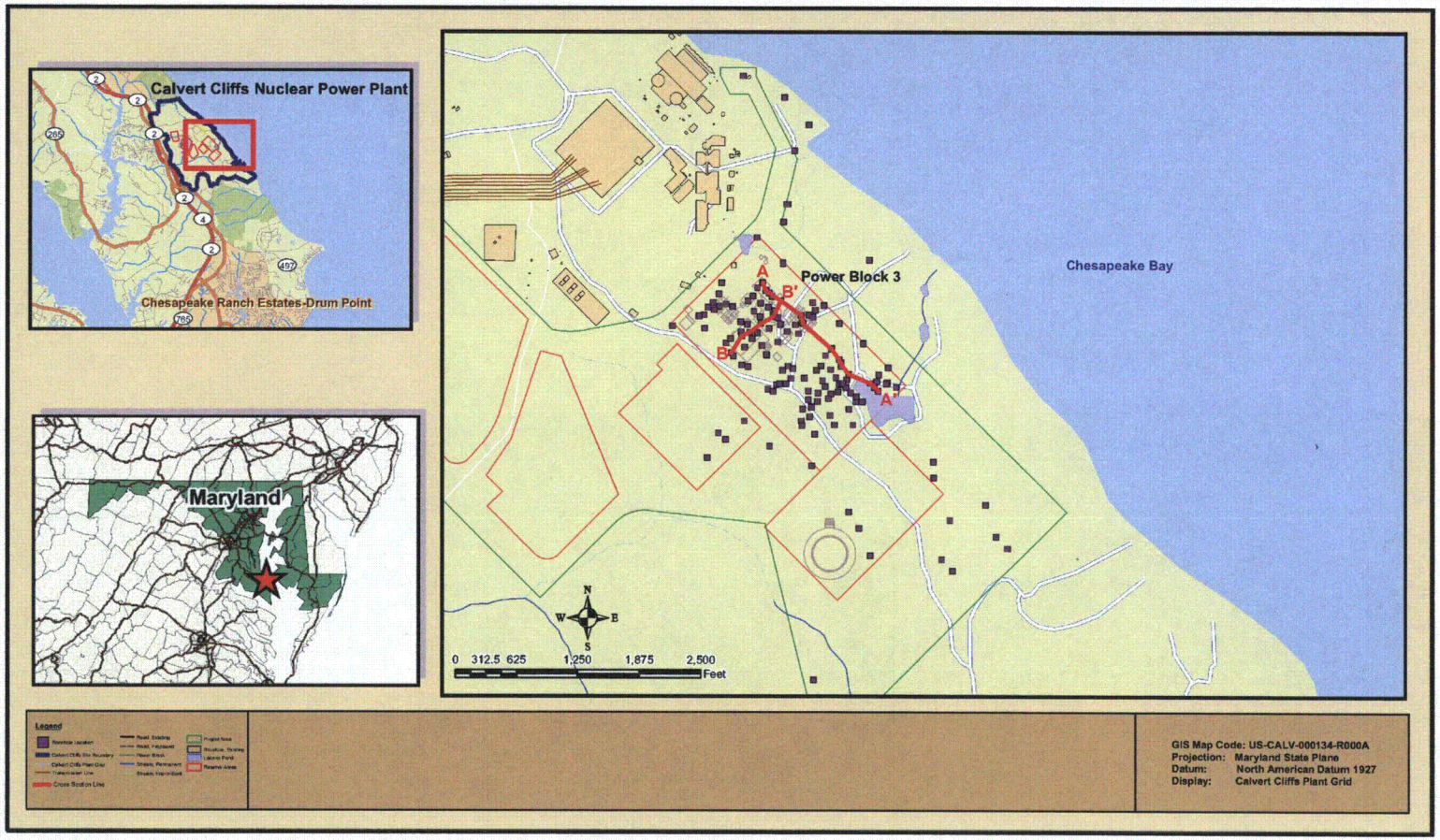


Figure 2.3-37— Cross Section and Soil Boring Locations in the Vicinity of CCNPP Unit 3



See Figure 2.1-1 and Figure 3.1-2 for Site and Powerblock layout

Figure 2.3-38— Cross Section A-A' through Proposed Unit 3 Power Block Area

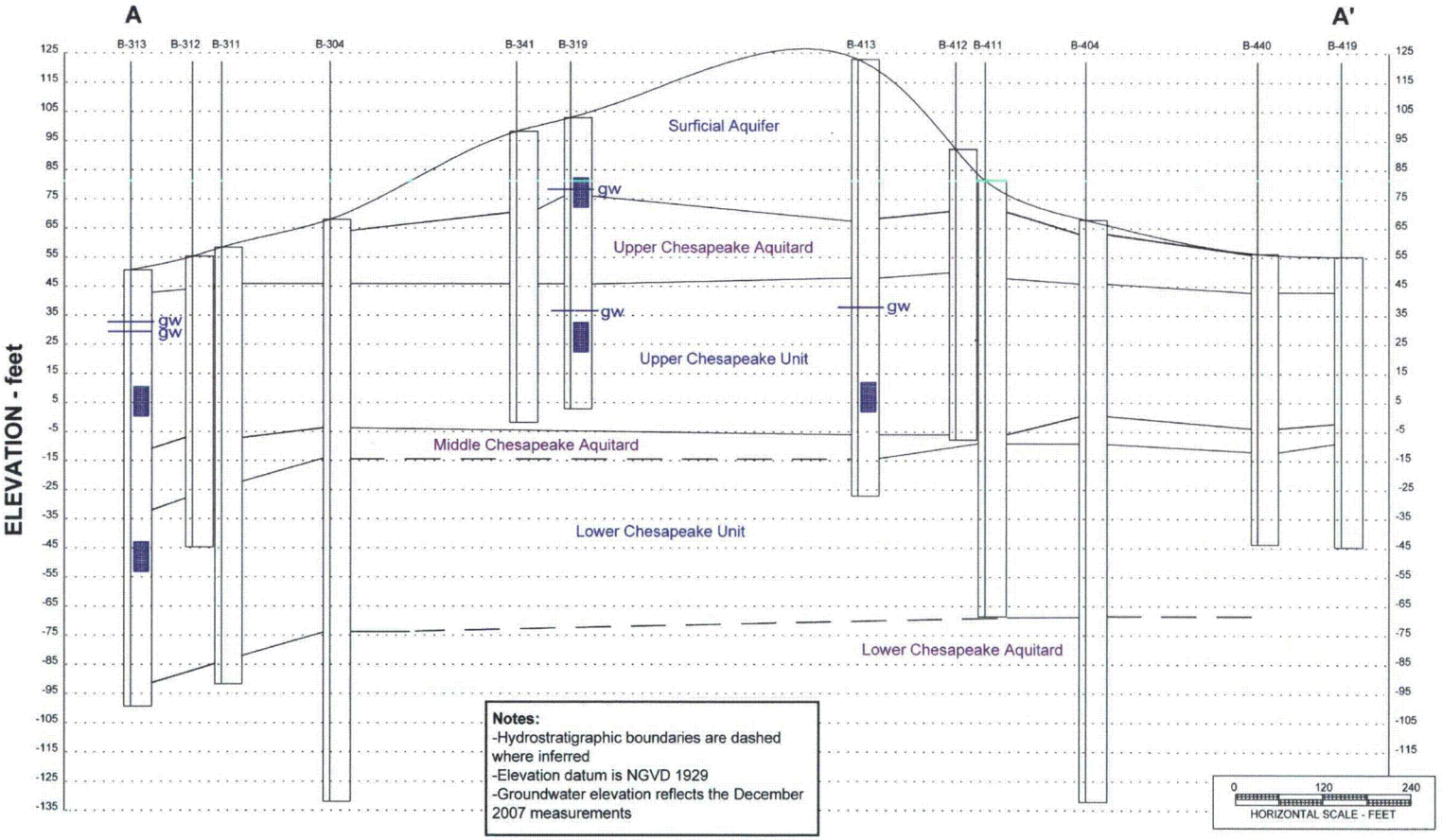


Figure 2.3-39— Cross Section B-B' through Proposed Unit 3 Power Block Area

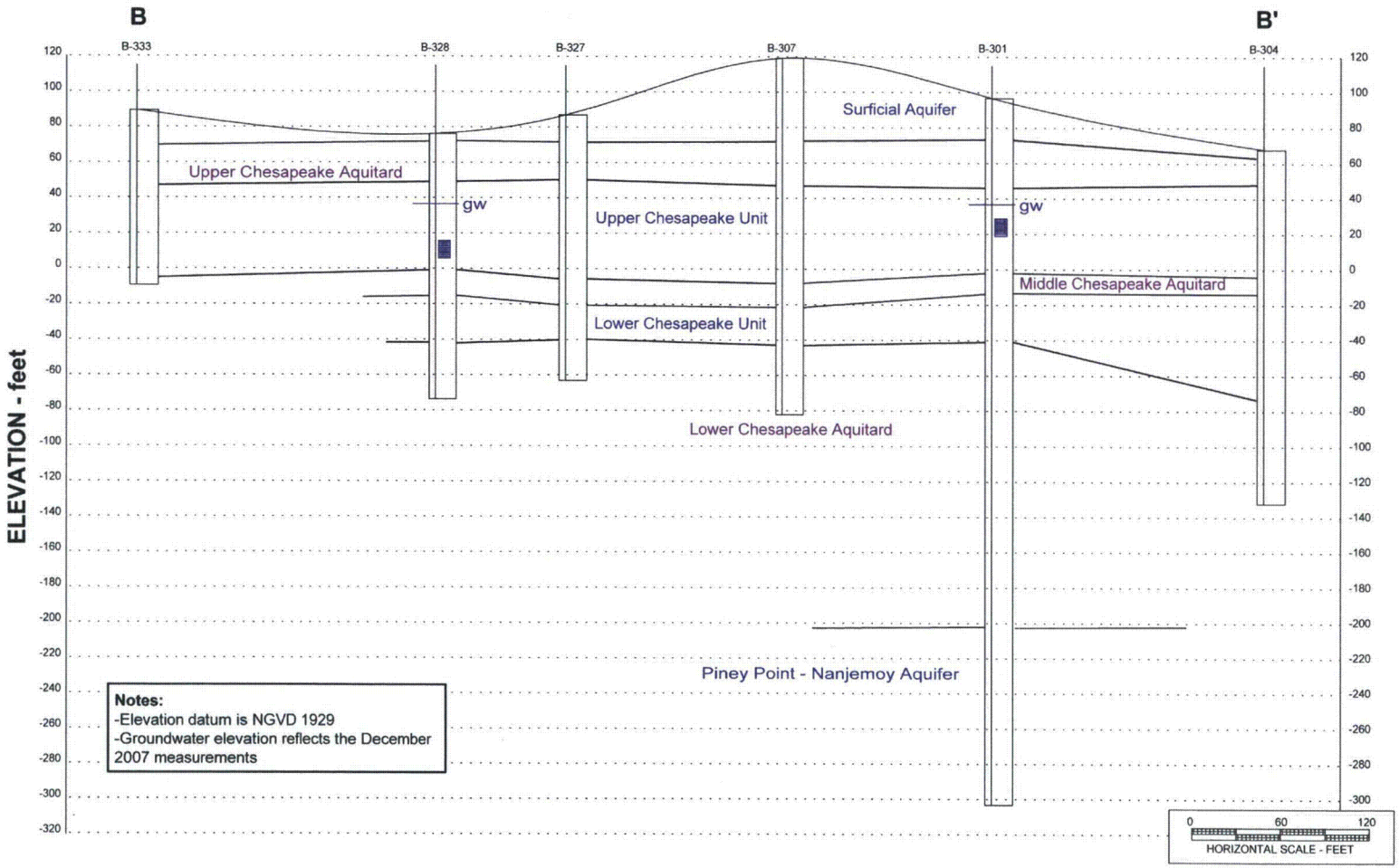
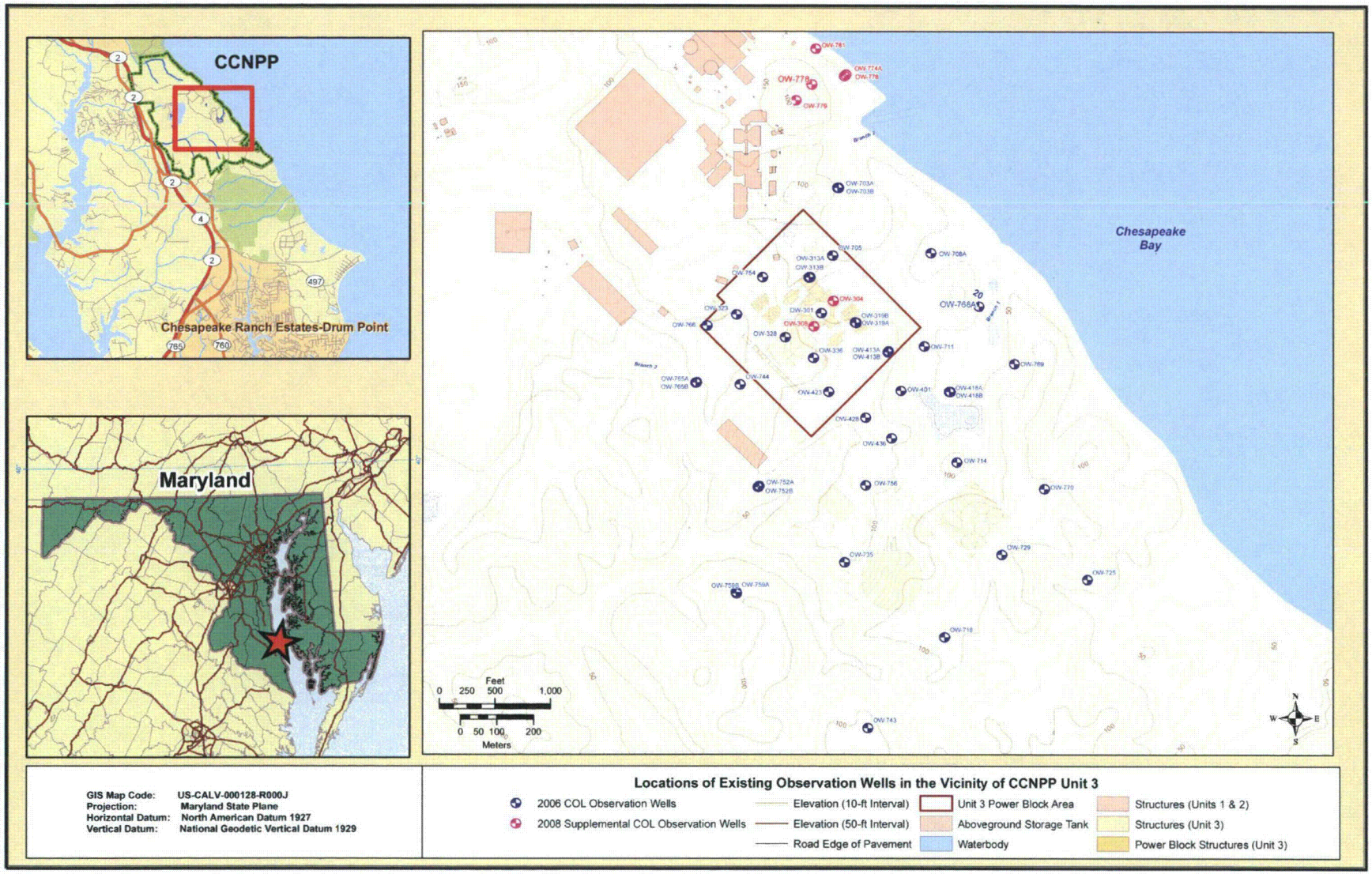


Figure 2.3-40— Groundwater Observation Wells ~~and Cross Section Locations~~ in the Vicinity of CCNPP Unit 3



See Figure 2.1-1 and Figure 3.1-2 for Site and Powerblock layout

Figure 2.3-41— Groundwater Elevations for the Surficial Aquifier, July 2006 through ~~March 2007~~October 2009

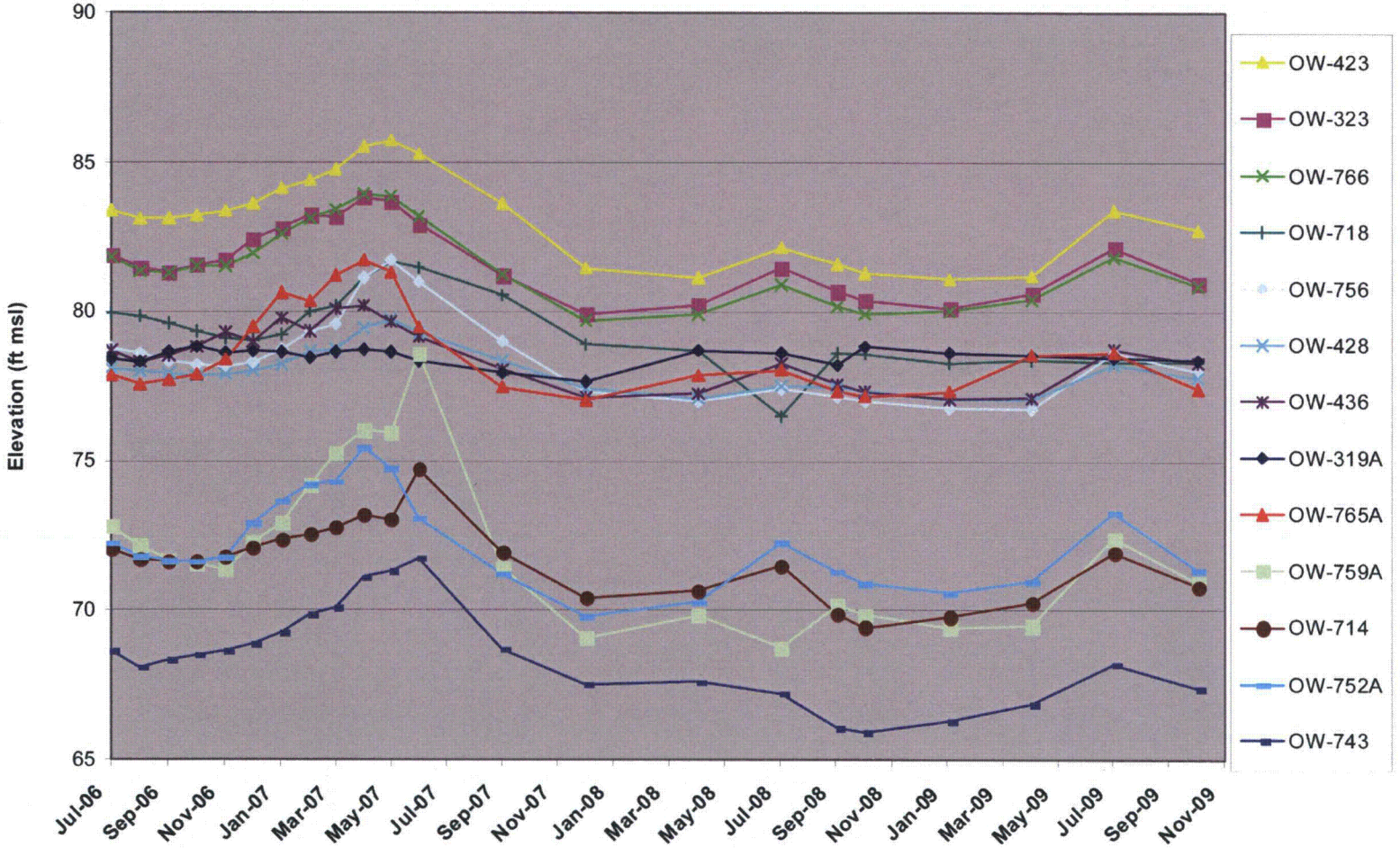
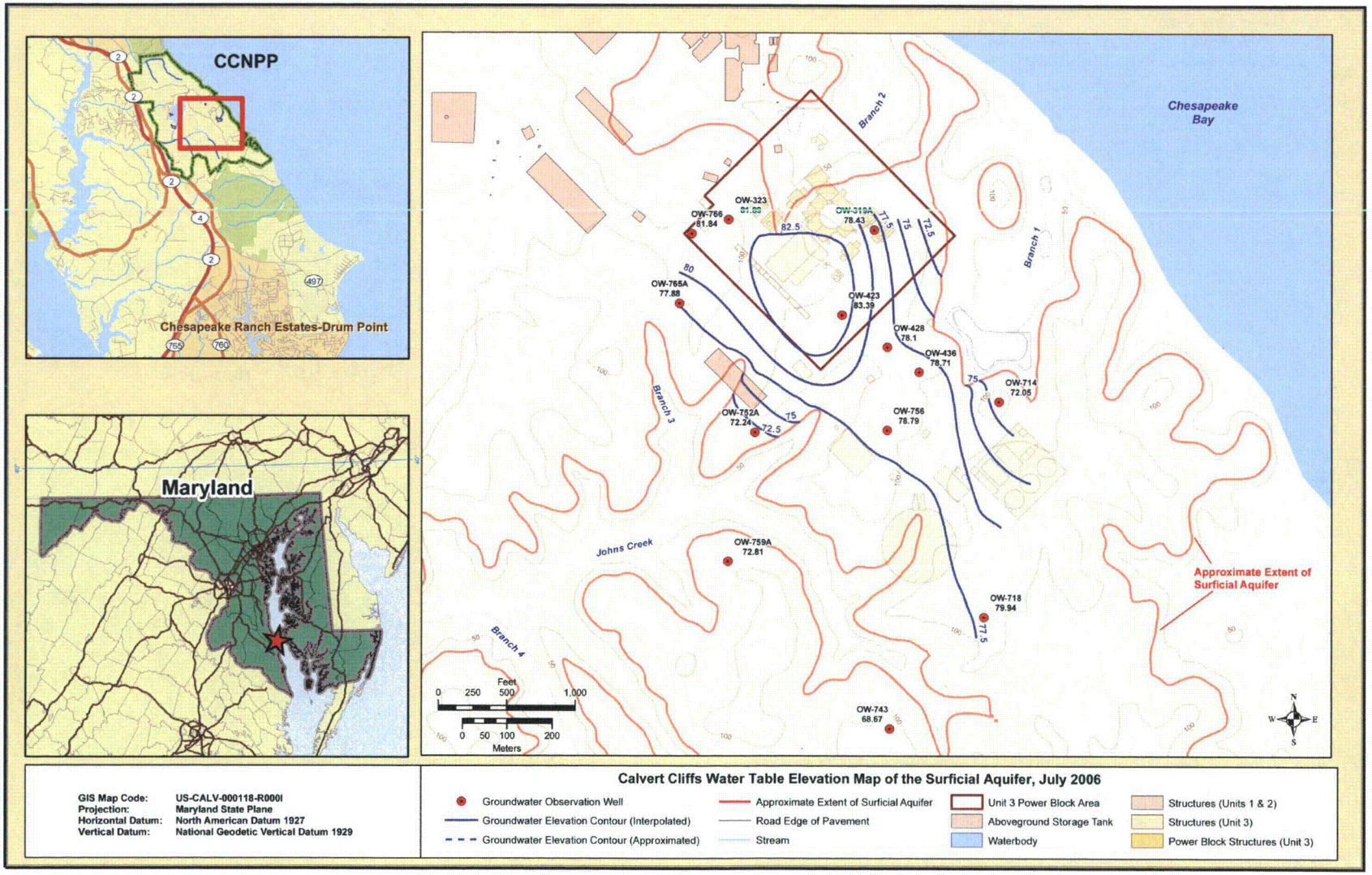
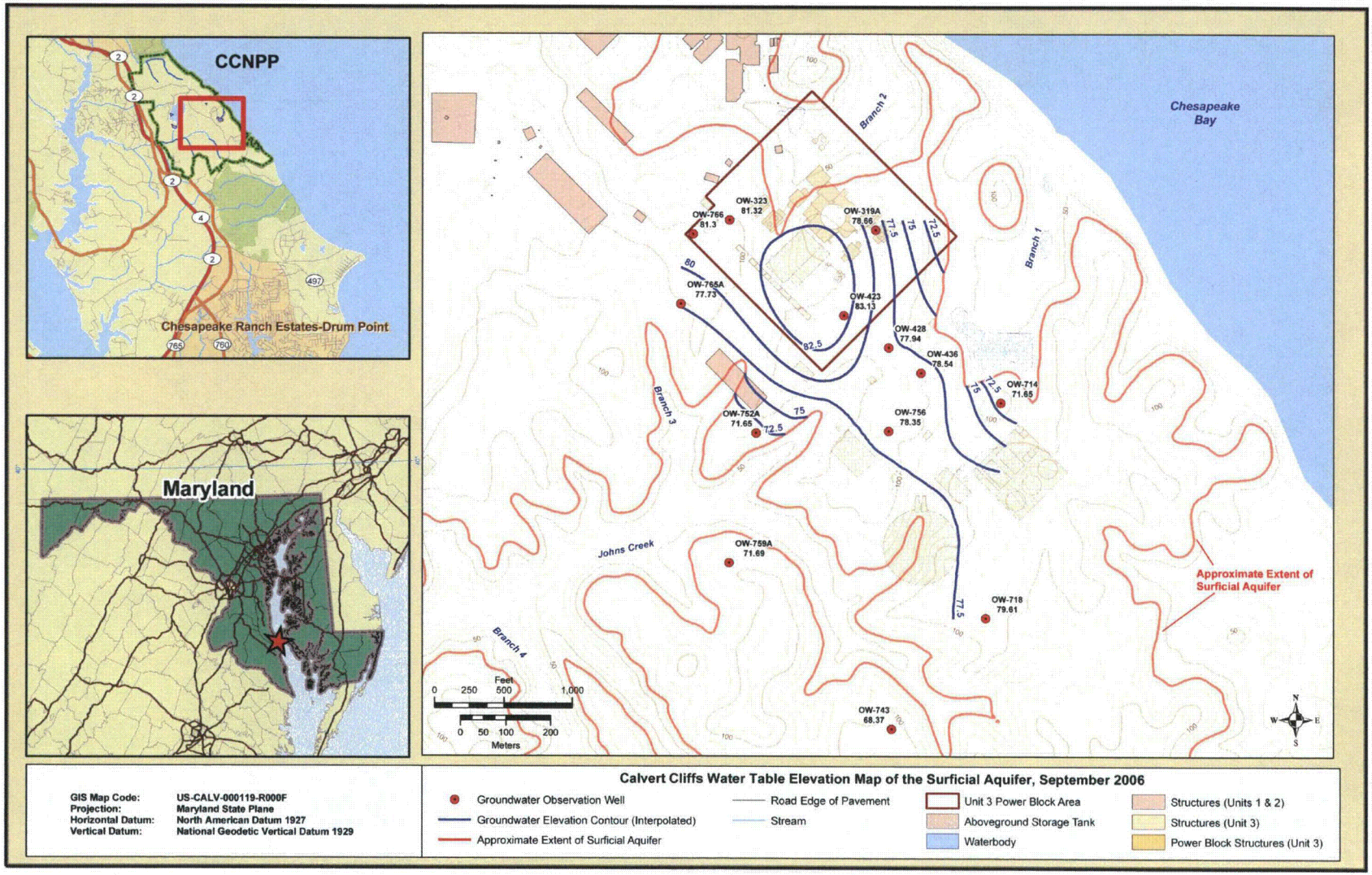


Figure 2.3-42— Water Table Elevation Map and Groundwater Flow Direction for the Surficial Aquifier, July 2006



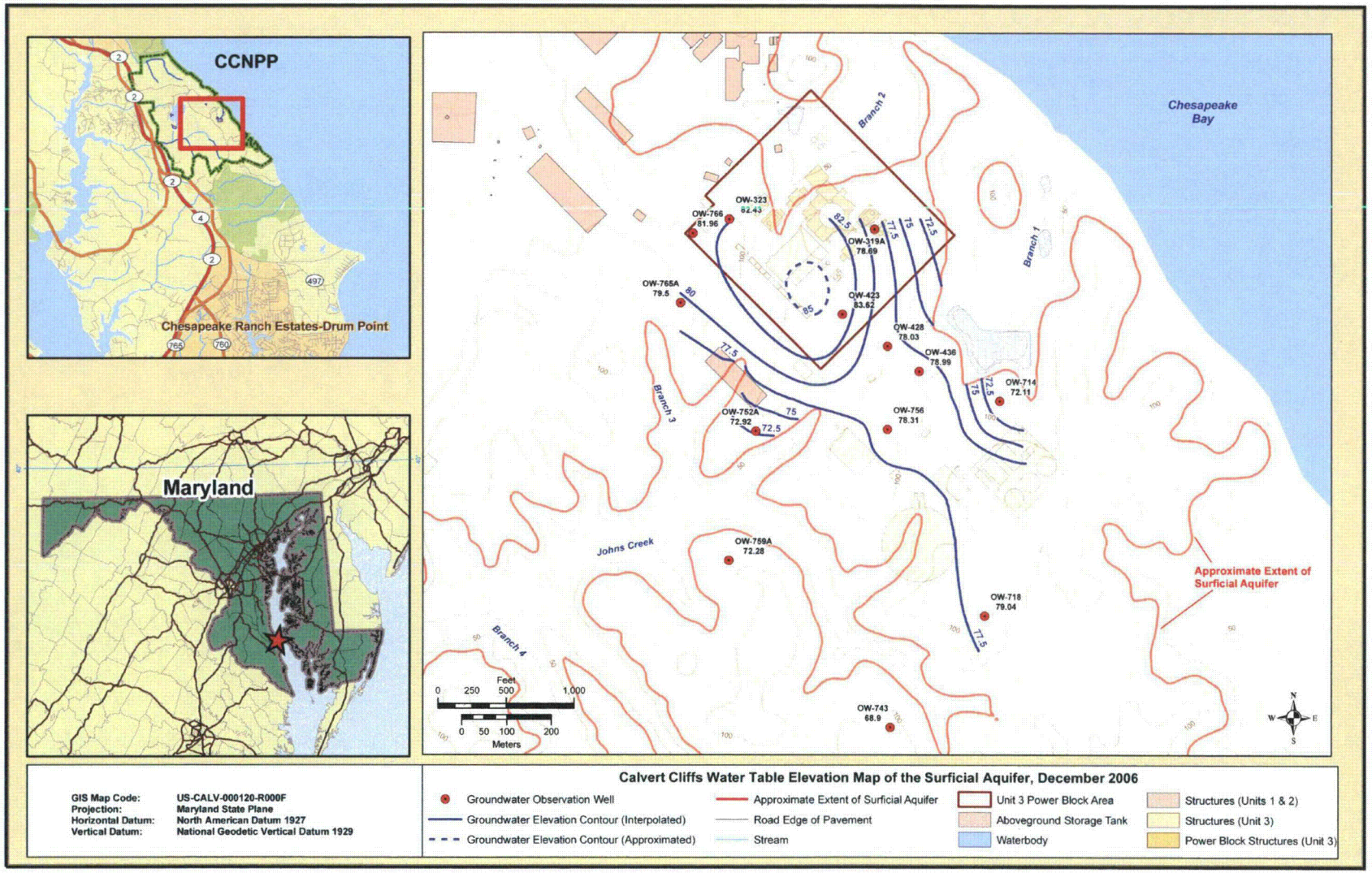
See Figure 2.1-1 and Figure 3.1-2 for Site and Powerblock layout

Figure 2.3-43— Water Table Elevation Map and Groundwater Flow Direction for the Surficial Aquifier, September 2006



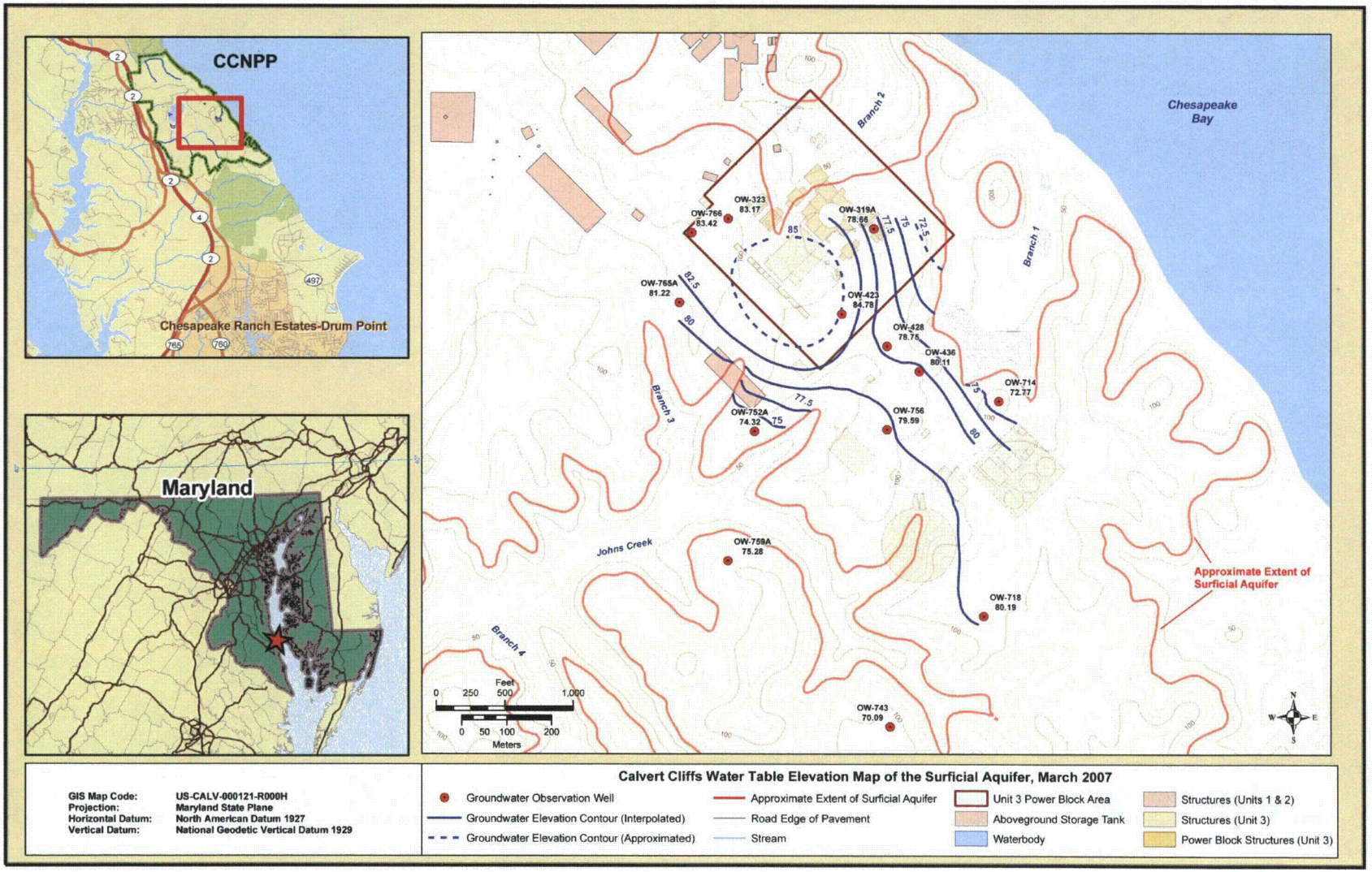
See Figure 2.1-1 and Figure 3.1-2 for Site and Powerblock layout

Figure 2.3-44— Water Table Elevation Map and Groundwater Flow Direction for the Surficial Aquifer, December 2006



See Figure 2.1-1 and Figure 3.1-2 for Site and Powerblock layout

Figure 2.3-45— Water Table Elevation Map and Groundwater Flow Direction for the Surficial Aquifier, March 2007



See Figure 2.1-1 and Figure 3.1-2 for Site and Powerblock layout

Figure 2.3-46— Groundwater Elevations for the Upper Chesapeake Unit, July 2006 through ~~March 2007~~October 2009

(Page 1 of 2)

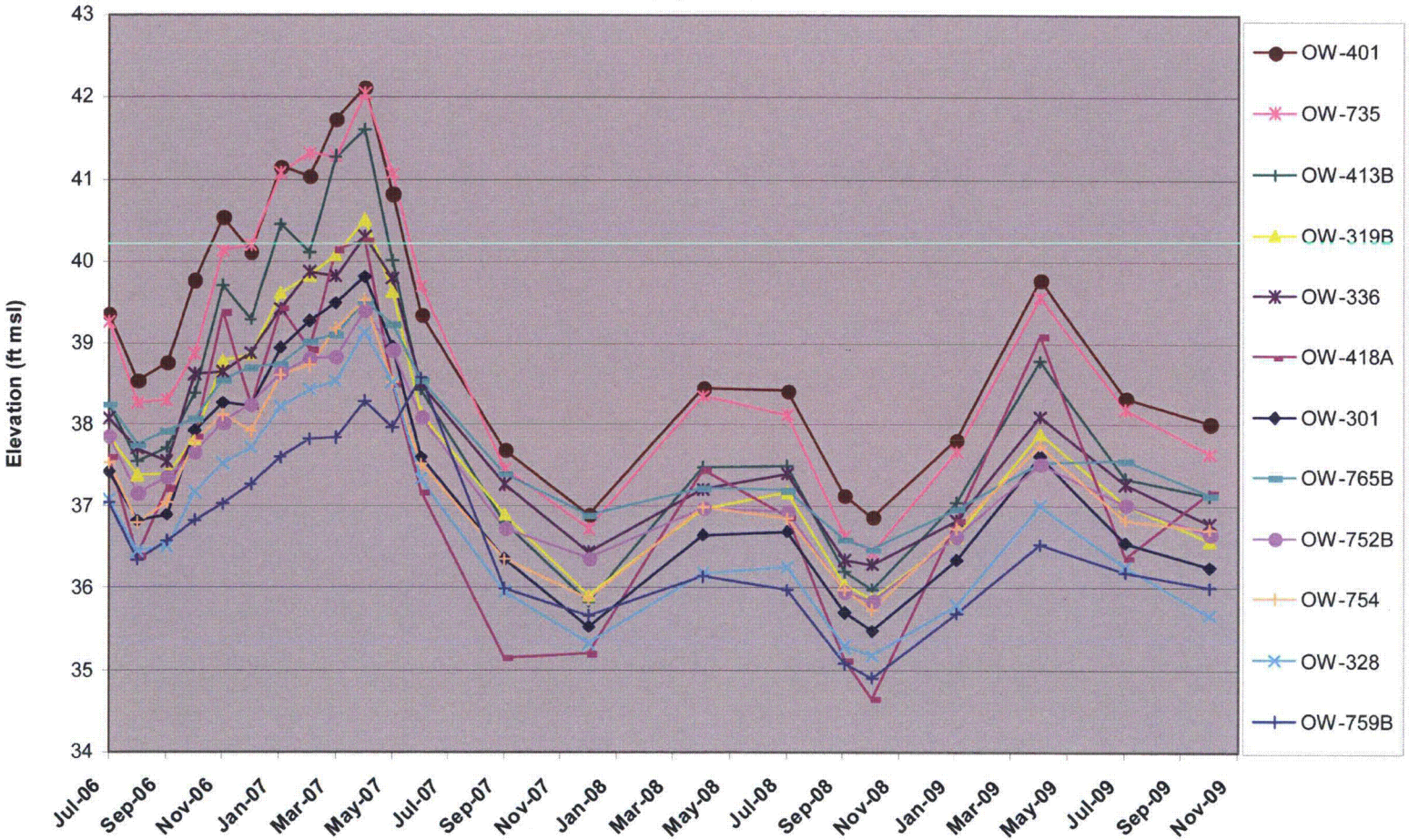


Figure 2.3-46— Groundwater Elevations for the Upper Chesapeake Unit, July 2006 through ~~March 2007~~October 2009

(Page 2 of 2)

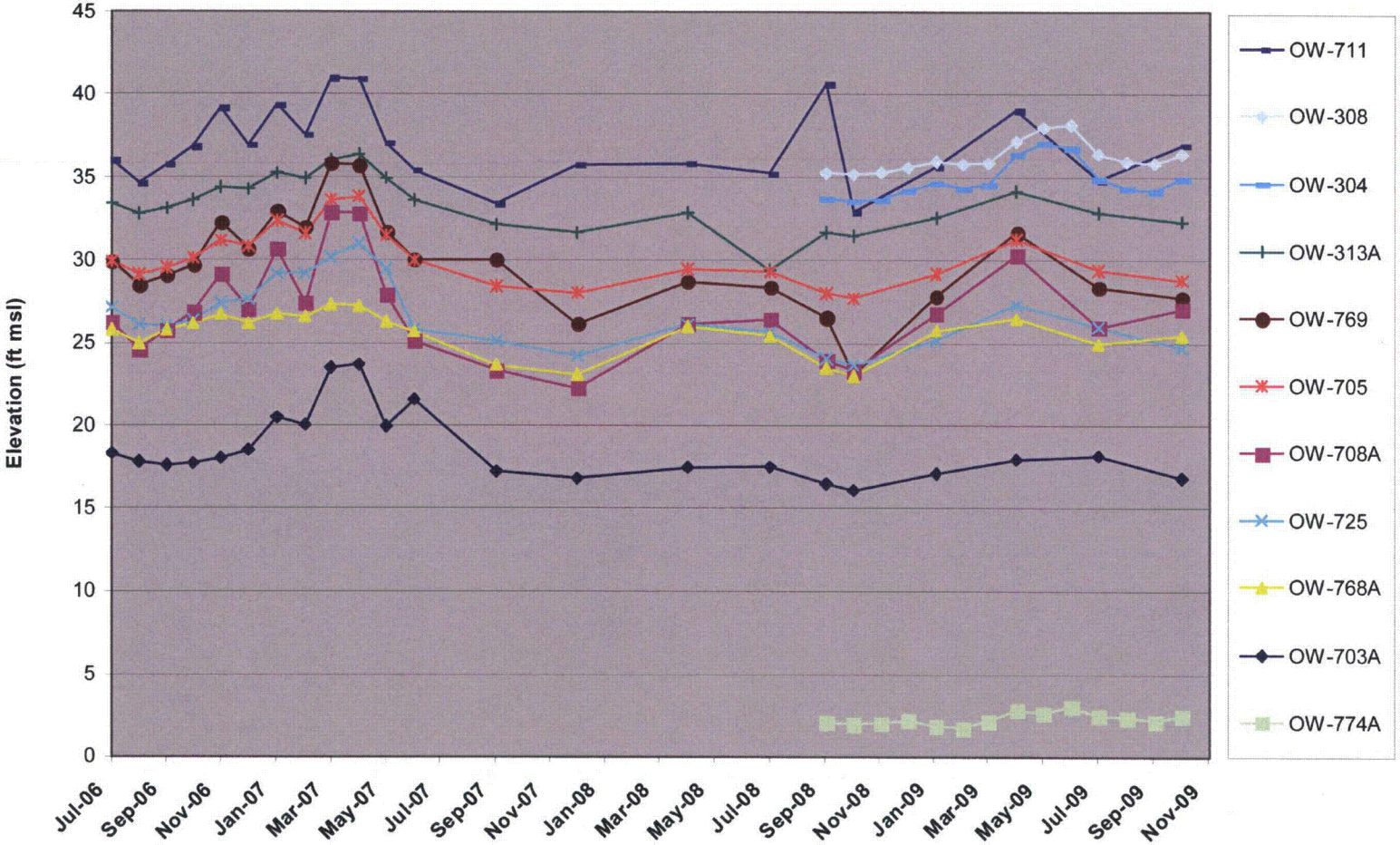
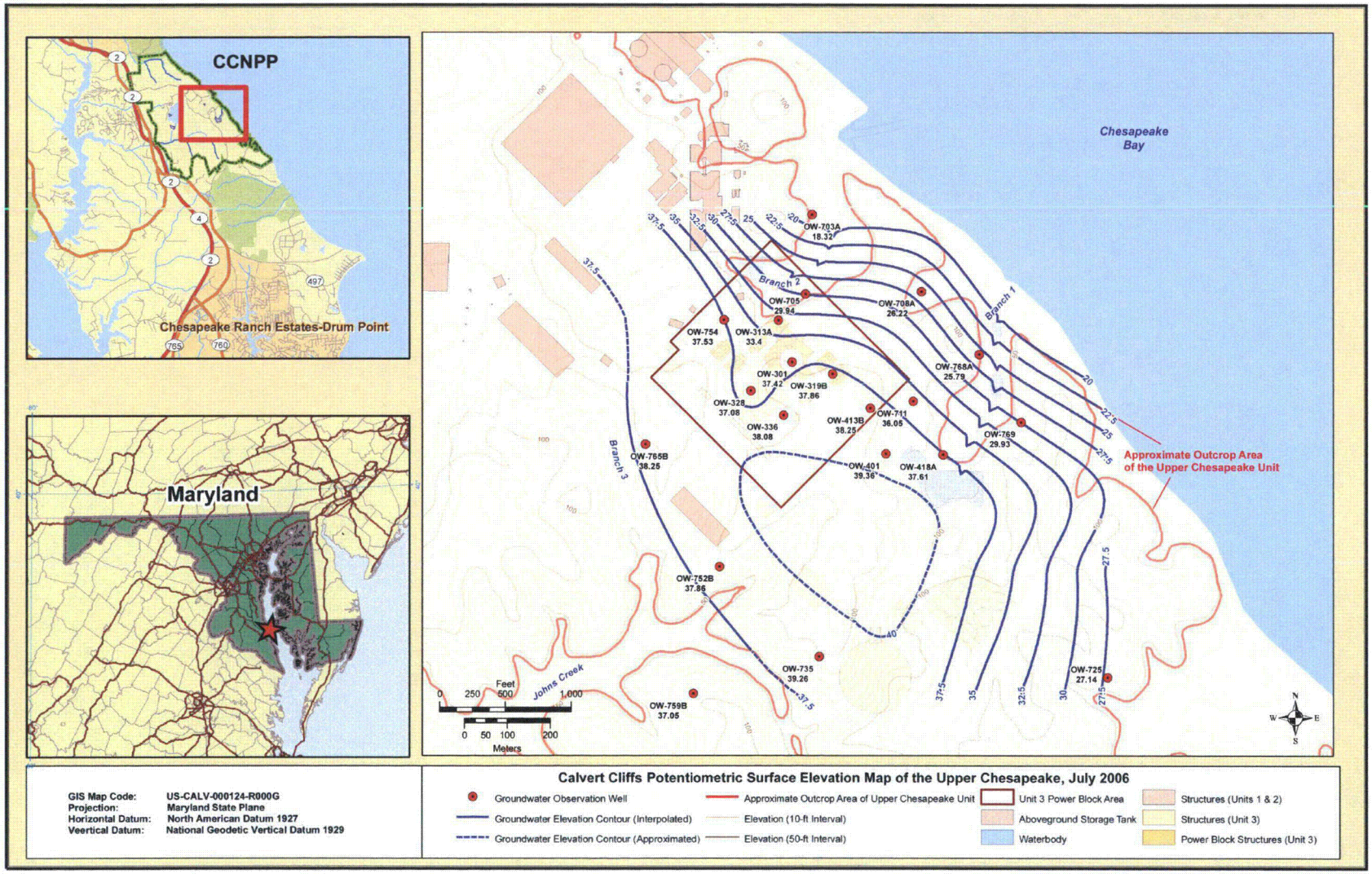
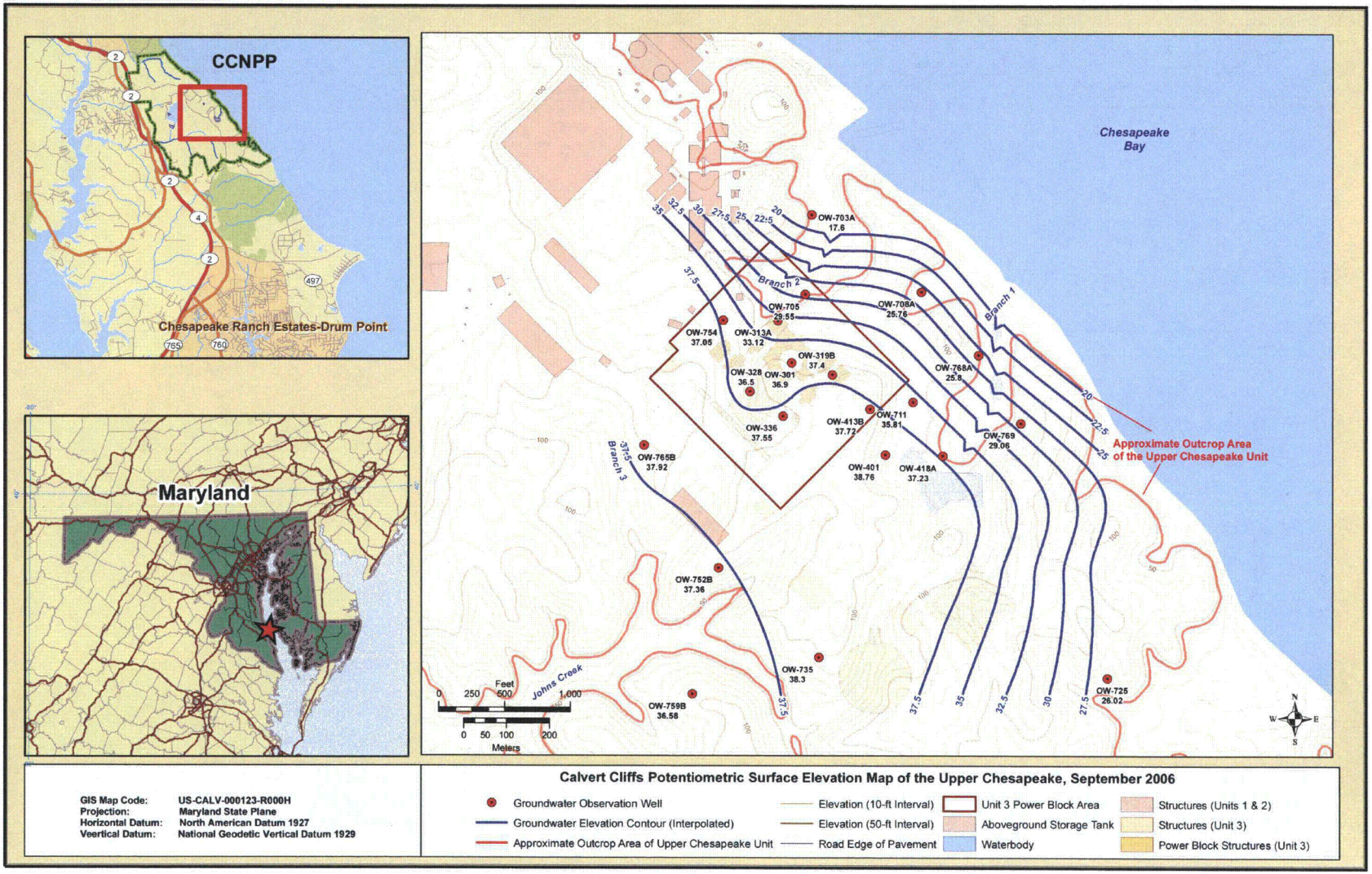


Figure 2.3-47— Potentiometric Surface Elevation Map and Groundwater Flow Directions for the Upper Chesapeake Unit, July 2006



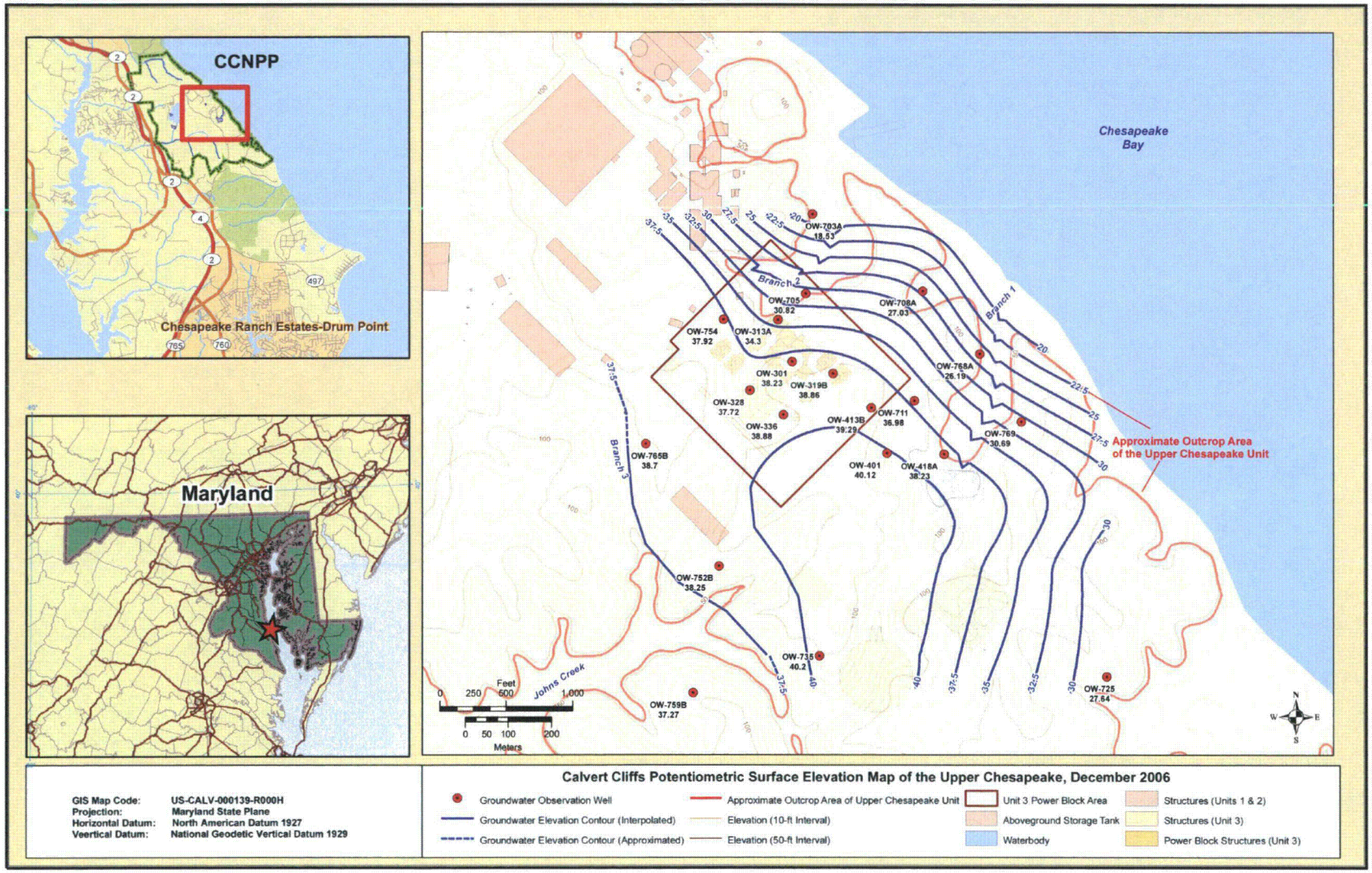
See Figure 2.1-1 and Figure 3.1-2 for Site and Powerblock layout

Figure 2.3-48— Potentiometric Surface Elevation Map and Groundwater Flow Directions for the Upper Chesapeake Unit, September 2006



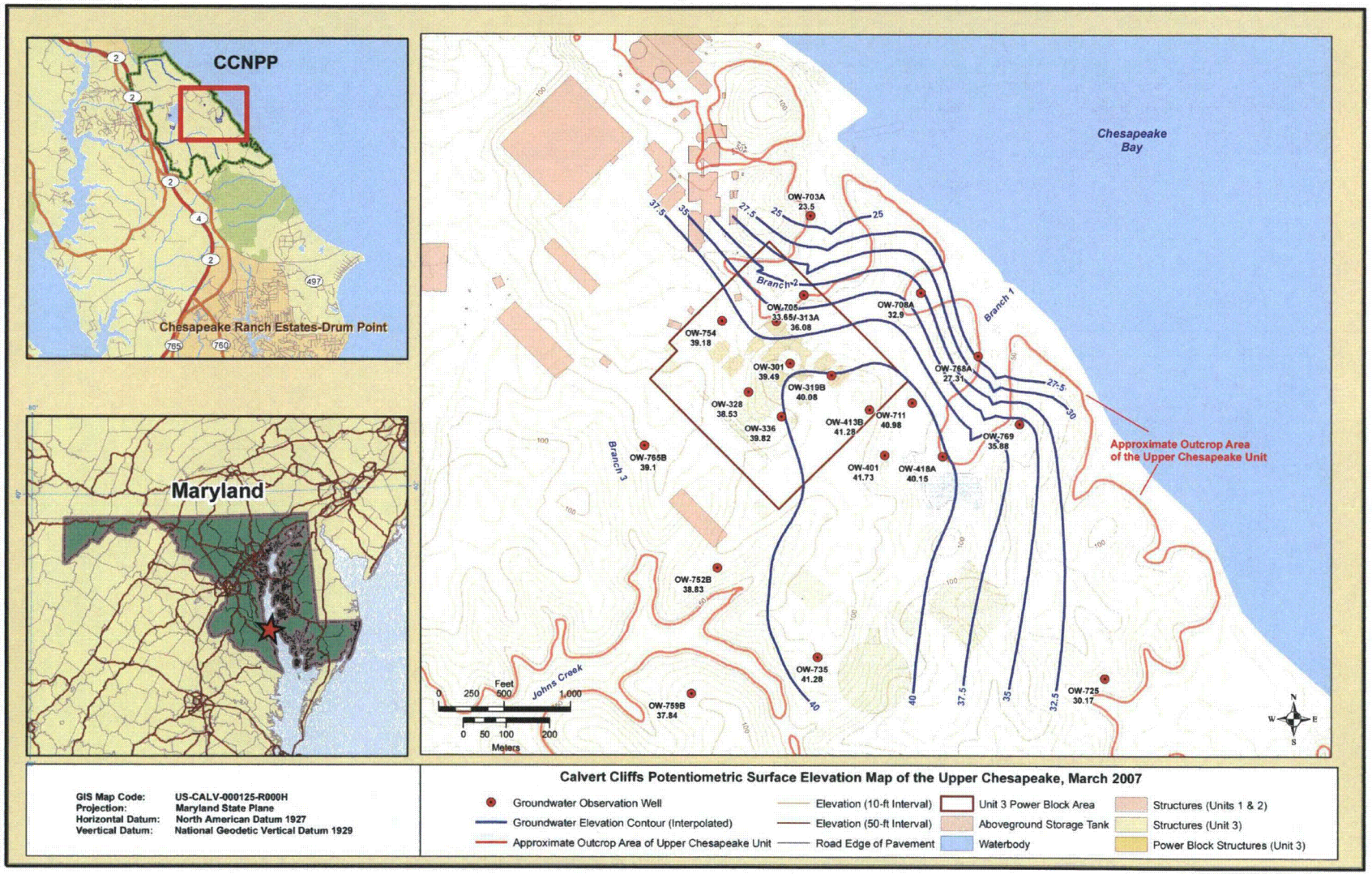
See Figure 2.1-1 and Figure 3.1-2 for Site and Powerblock layout

Figure 2.3-49— Potentiometric Surface Elevation Map and Groundwater Flow Directions for the Upper Chesapeake Unit, December 2006



See Figure 2.1-1 and Figure 3.1-2 for Site and Powerblock layout

Figure 2.3-50— Potentiometric Surface Elevation Map and Groundwater Flow Directions for the Upper Chesapeake Unit, March 2007



See Figure 2.1-1 and Figure 3.1-2 for Site and Powerblock layout

Figure 2.3-51— Groundwater Elevations for the Lower Chesapeake Unit, July 2006 through ~~March 2007~~October 2009

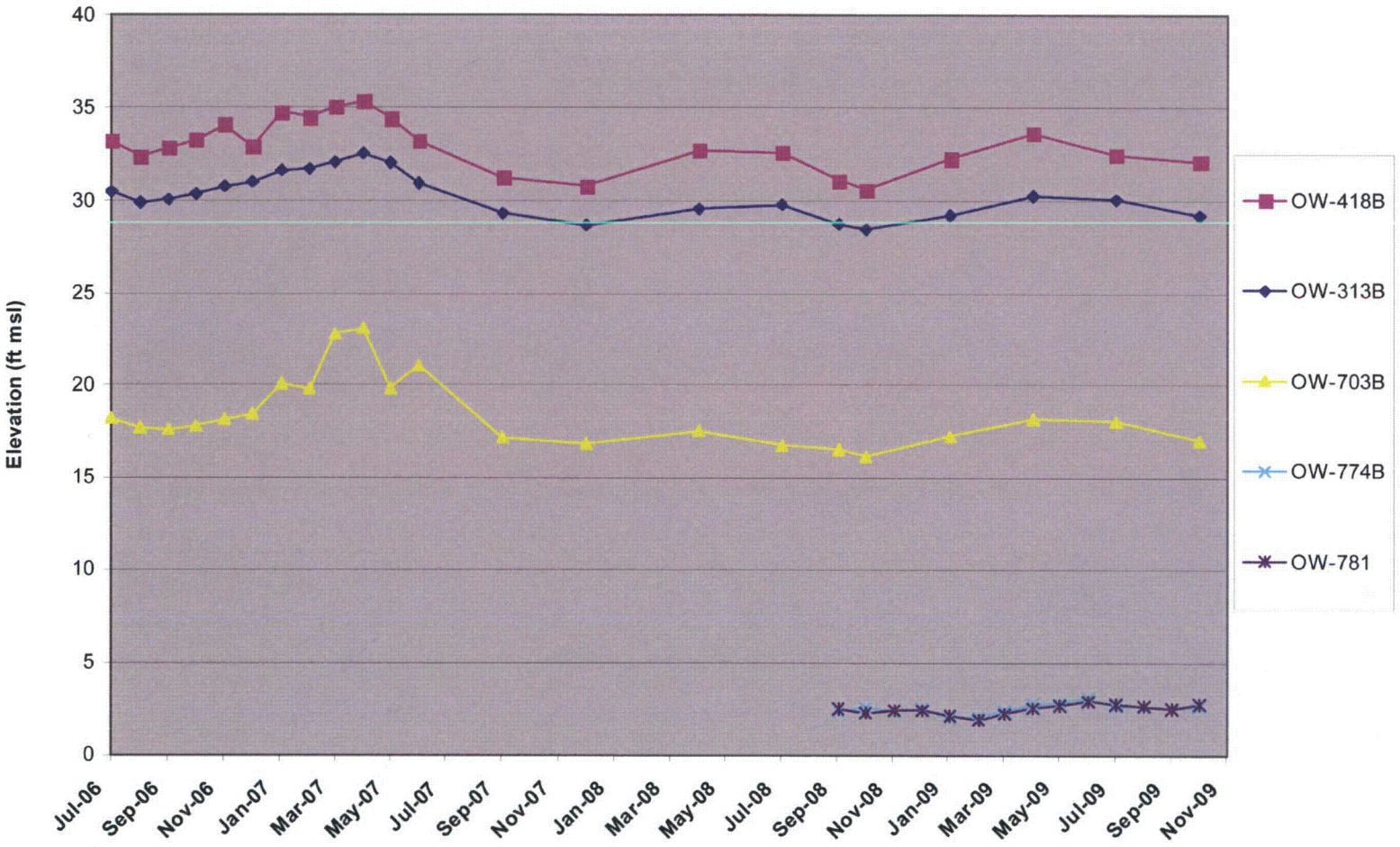
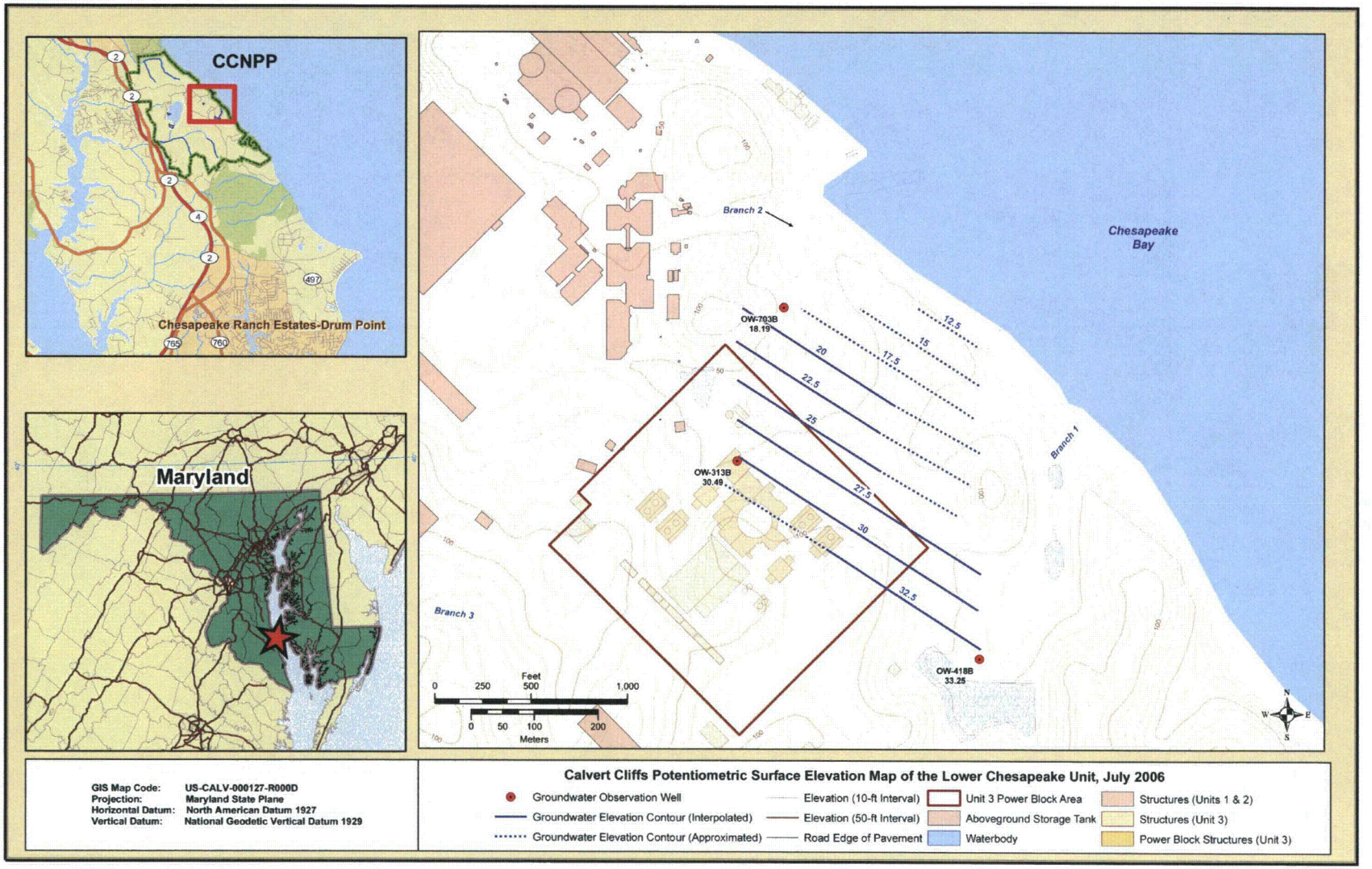
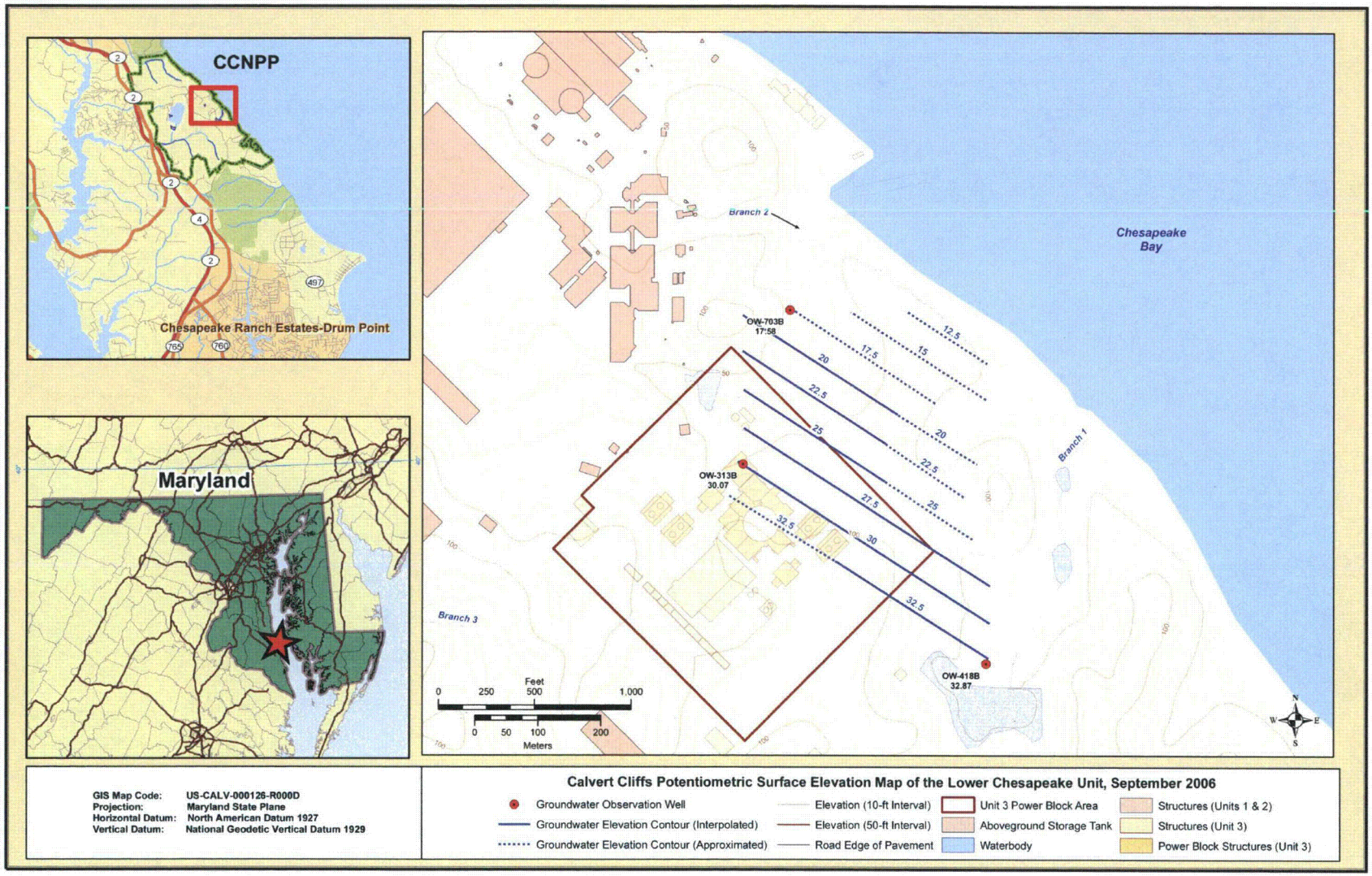


Figure 2.3-52— Potentiometric Surface Elevation Map and Groundwater Flow Directions for the Lower Chesapeake Unit, July 2006



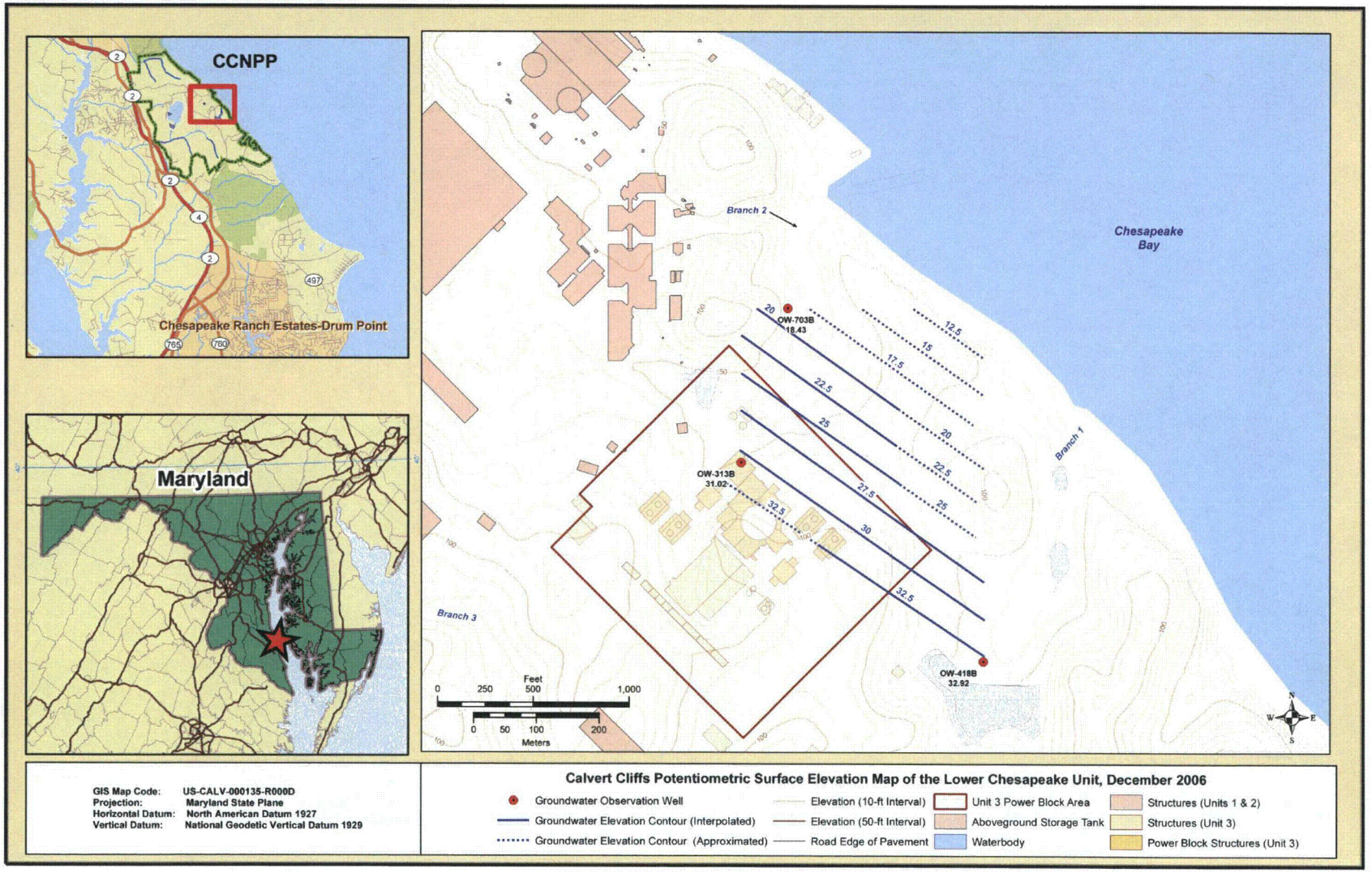
See Figure 2.1-1 and Figure 3.1-2 for Site and Powerblock layout

Figure 2.3-53— Potentiometric Surface Elevation Map and Groundwater Flow Directions for the Lower Chesapeake Unit, September 2006



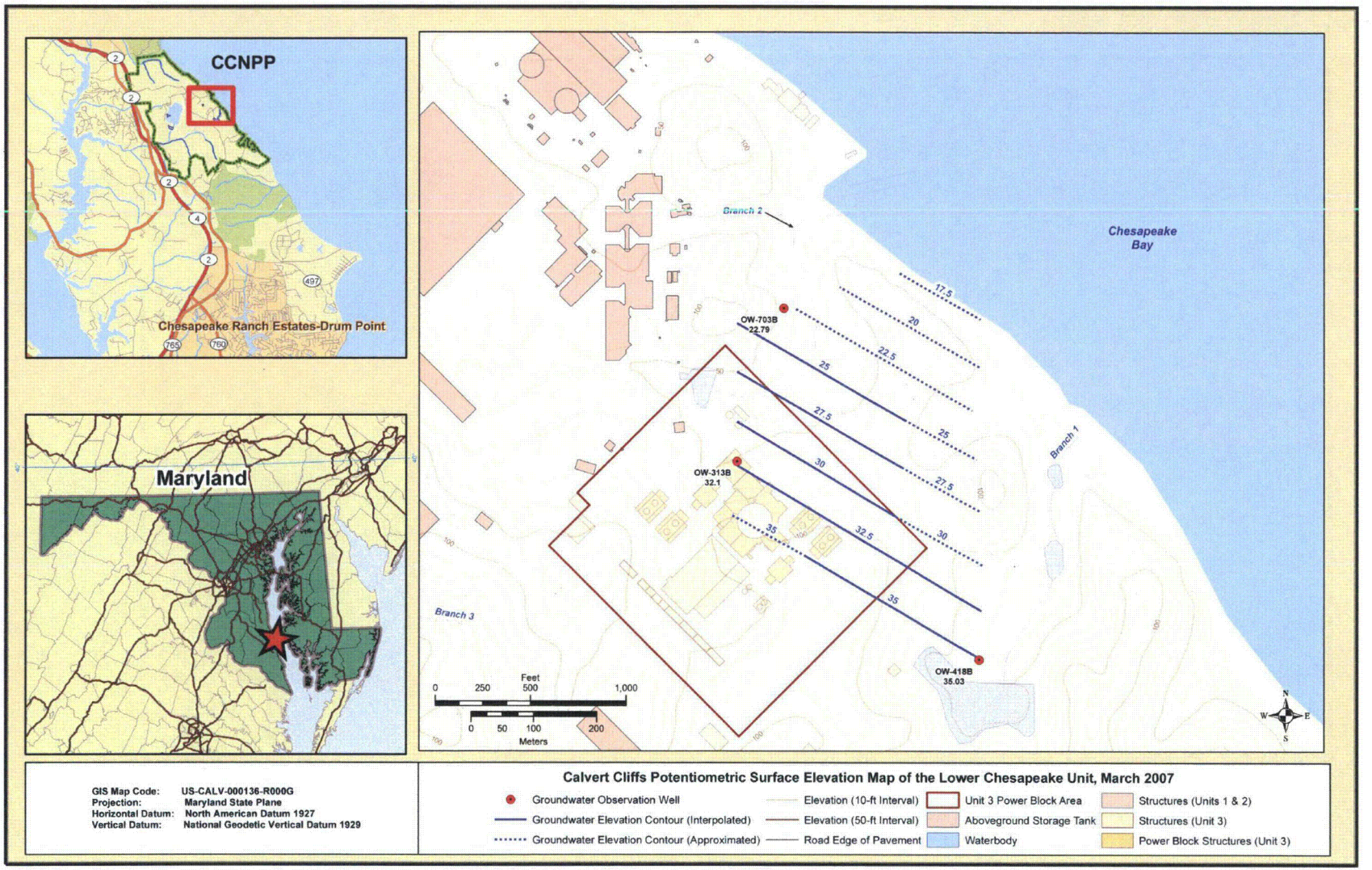
See Figure 2.1-1 and Figure 3.1-2 for Site and Powerblock layout

Figure 2.3-54— Potentiometric Surface Elevation Map and Groundwater Flow Directions for the Lower Chesapeake Unit, December 2006



See Figure 2.1-1 and Figure 3.1-2 for Site and Powerblock layout

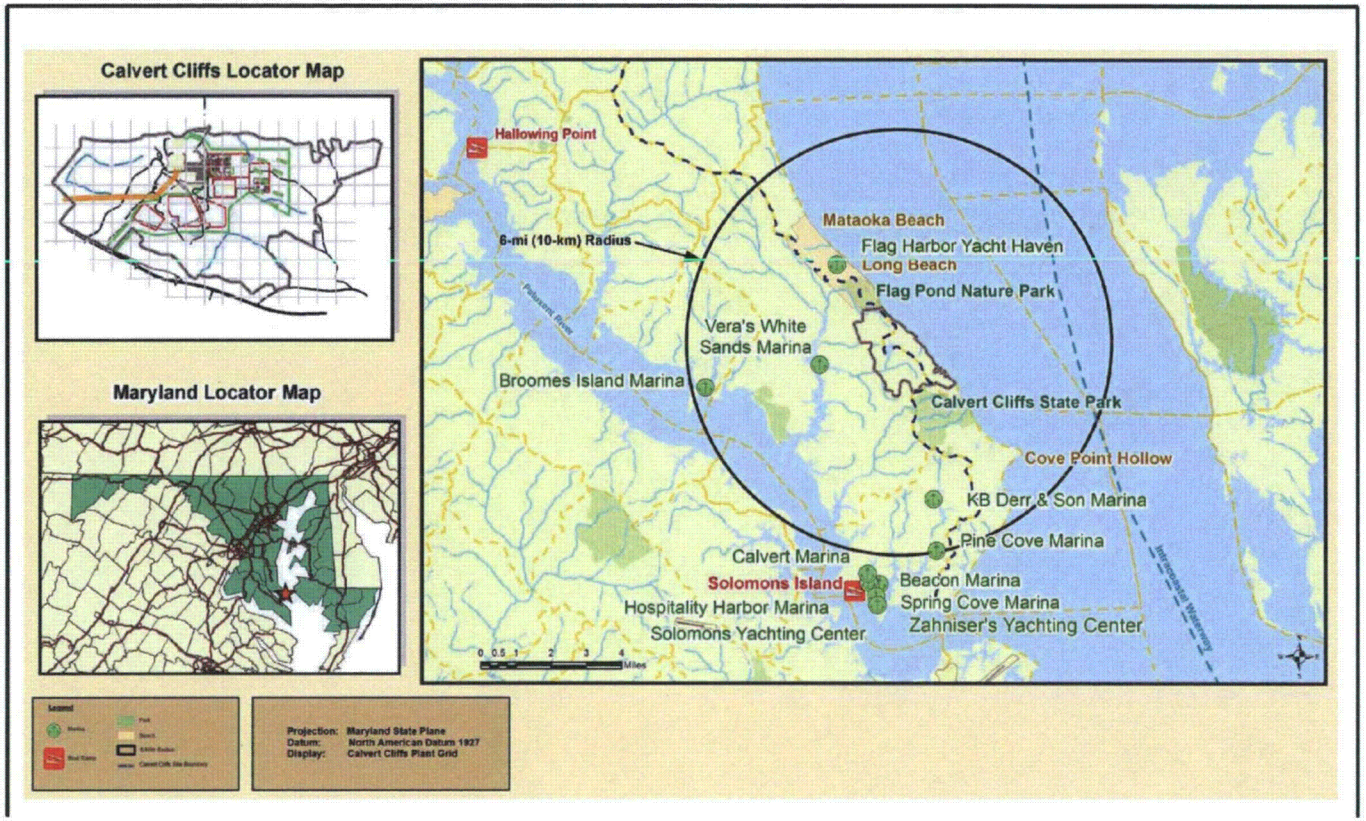
Figure 2.3-55— Potentiometric Surface Elevation Map and Groundwater Flow Directions for the Lower Chesapeake Unit, March 2007



See Figure 2.1-1 and Figure 3.1-2 for Site and Powerblock layout

Figure 2.3-56— Hydrological System of the CCNPP Unit 3 Site Including Consumptive Surface Water Use Information

Figure 2.3-57— Non-Consumptive Surface Water Use Information



~~Figure 2.3-58—Schematic Cross Section of Southern Maryland Hydrostratigraphic Units~~

~~Figure 2.3-59—Groundwater Observation Wells and Cross Section Locations in the Vicinity of CCNP Unit 3~~

~~Figure 2.3-60—Northwest-Southeast Cross Section A-A' through Proposed Unit 3 Power Block Area~~

~~Figure 2.3-61—Northwest-Southeast Cross Section B-B' through Proposed Unit 3 Power Block Area~~

~~**Figure 2.3-62— Potentiometric Surface of the Aquia Aquifer in Southern Maryland, September 2003**~~

~~**Figure 2.3-63—Potentiometric Surface of the Magothy Aquifier in Southern Maryland, September 2003**~~

~~**Figure 2.3-64 — Potentiometric Surface of the Upper Patapsco Aquifier in Southern Maryland, September 2003**~~

~~**Figure 2.3-65— Potentiometric Surface of the Lower Patapsco Aquifer in Southern Maryland, September 2003**~~

Figure 2.3-66— US EPA Region 3 Sole Source Aquifiers

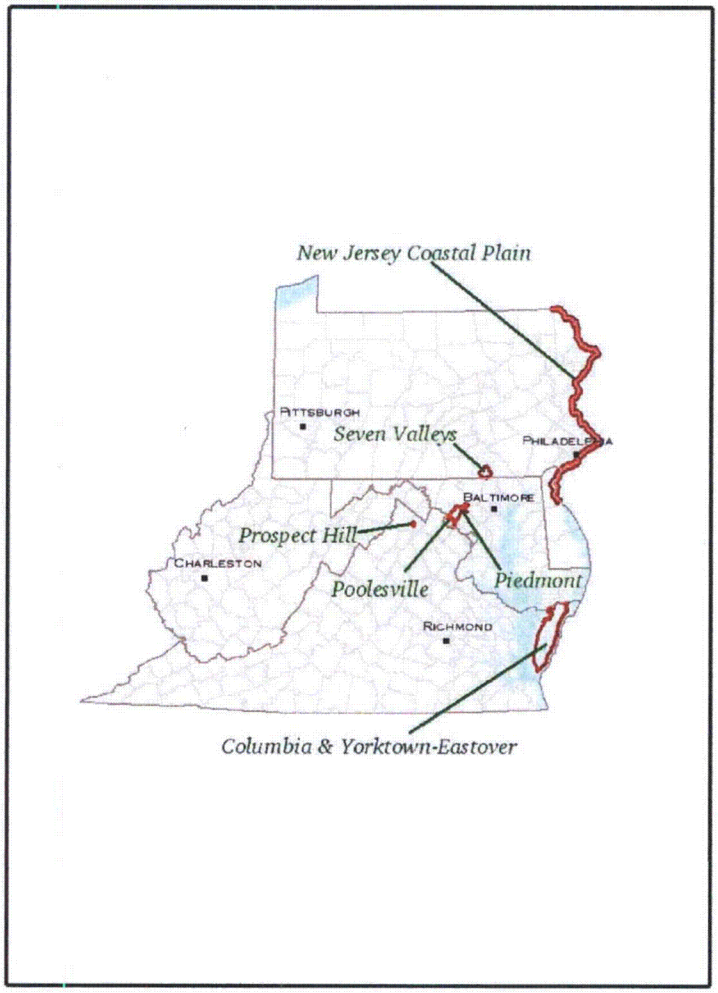
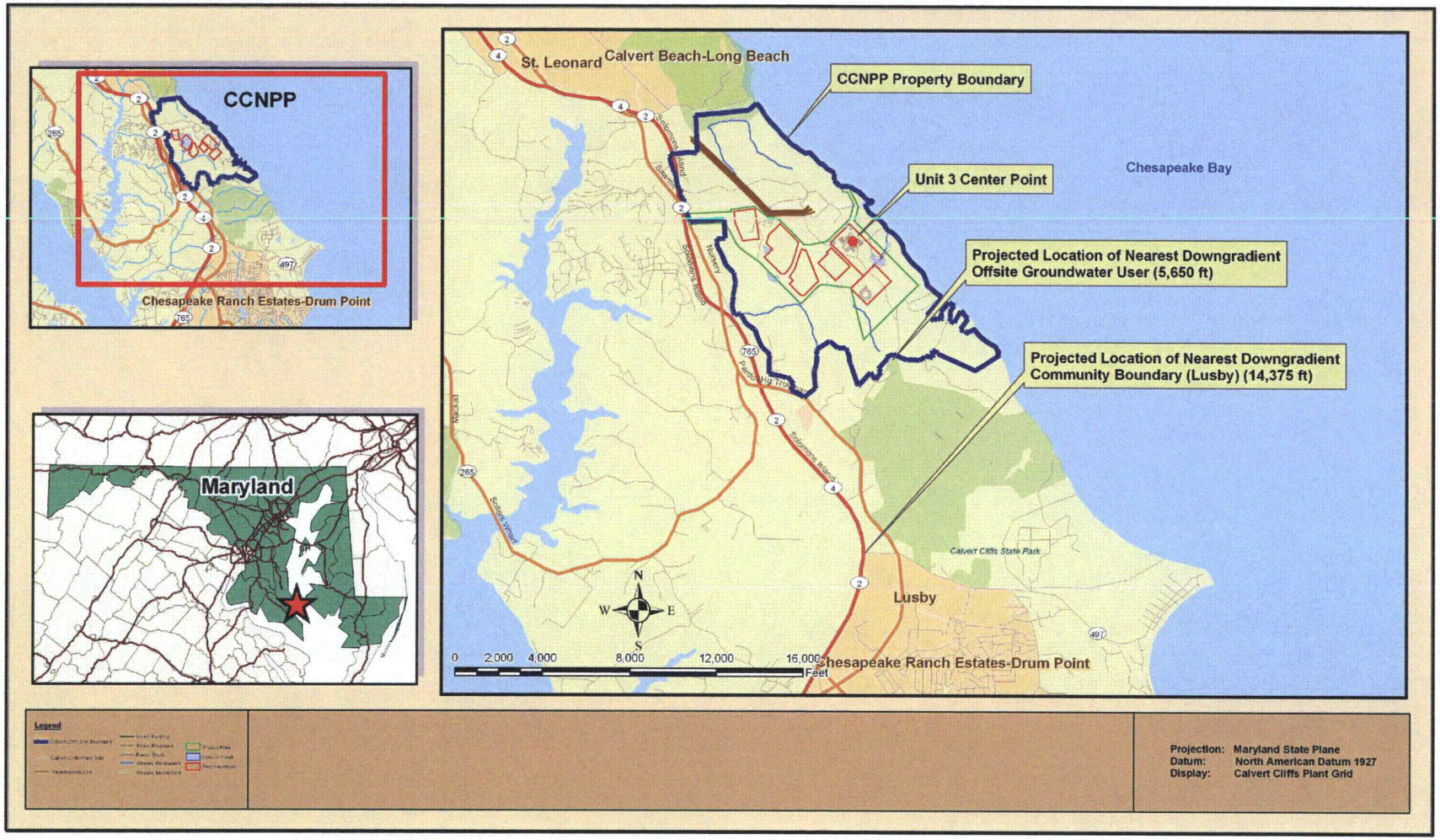
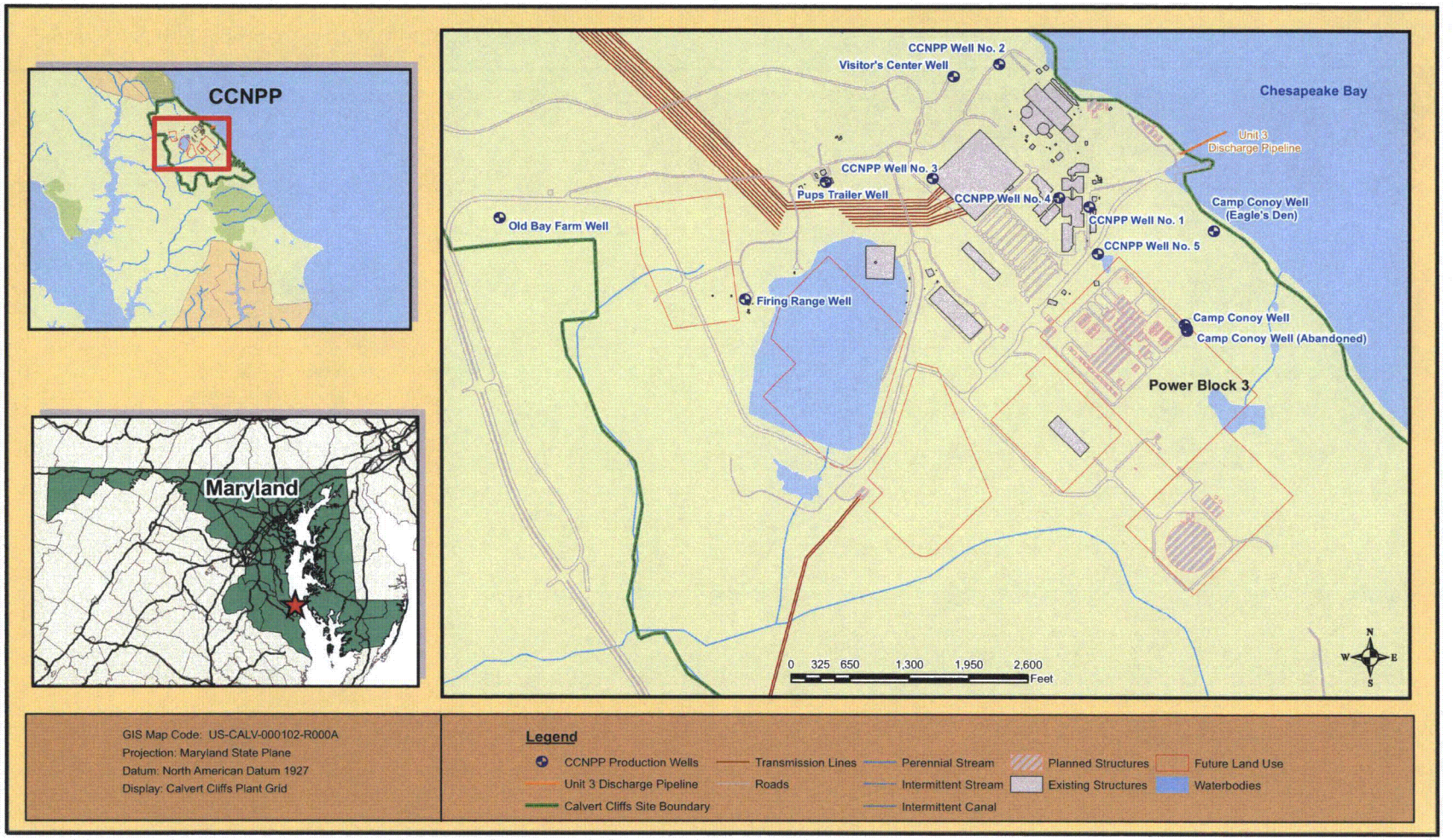


Figure 2.3-67— Projected Location of Nearest Offsite Groundwater Well and Community Water Supply System



See Figure 2.1-1 and Figure 3.1-2 for Site and Powerblock layout

Figure 2.3-68— CCNPP Water Production Wells



See Figure 2.1-1 and Figure 3.1-2 for Site and Powerblock layout

Figure 2.3-69— The Difference Between the Potentiometric Surfaces of the Aquia Aquifer, September 1982 and September 2003, in Southern Maryland

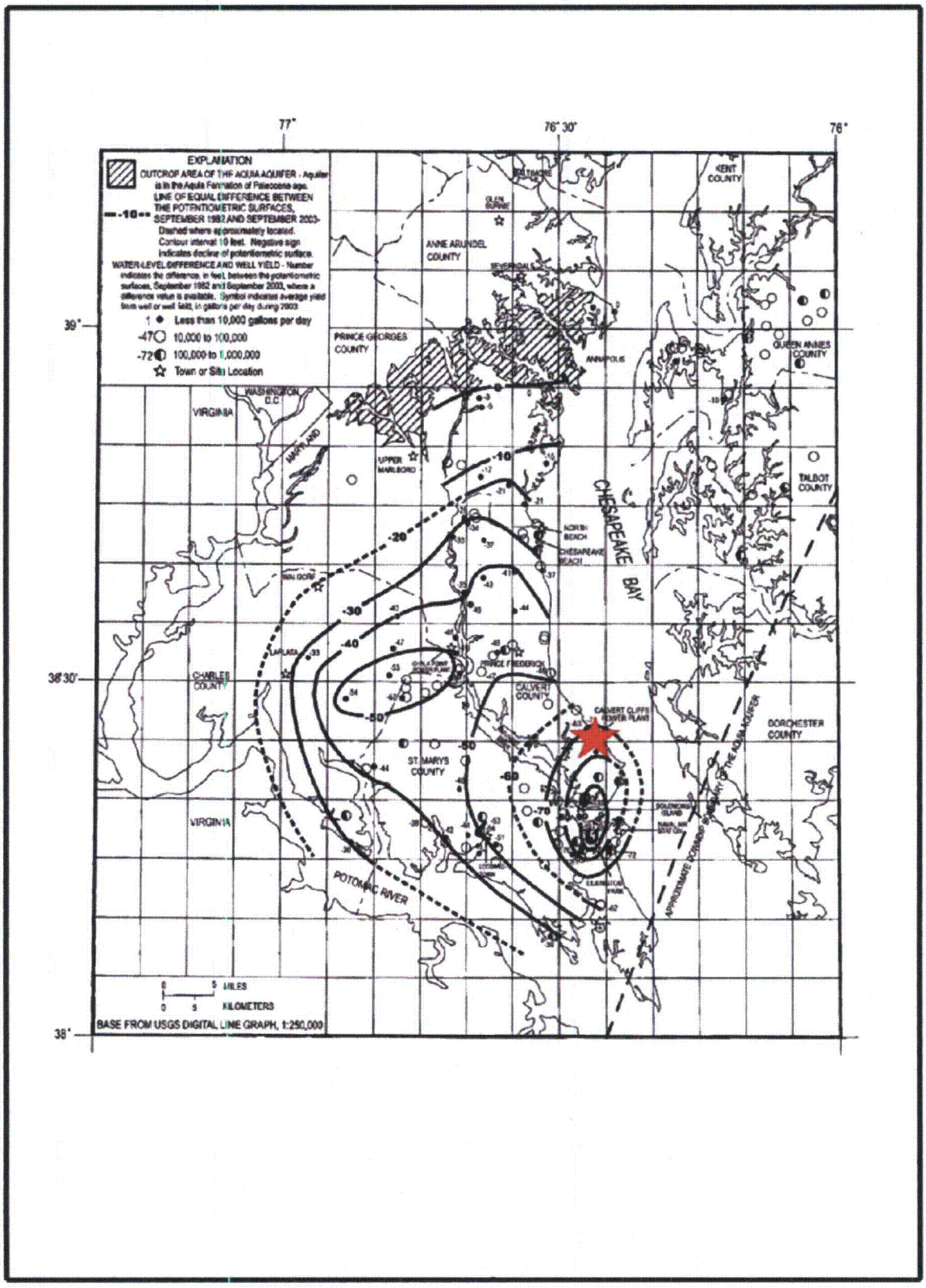


Figure 2.3-70— The Difference Between the Potentiometric Surfaces of the Magothy Aquifier, September 1975 and September 2003, in Southern Maryland

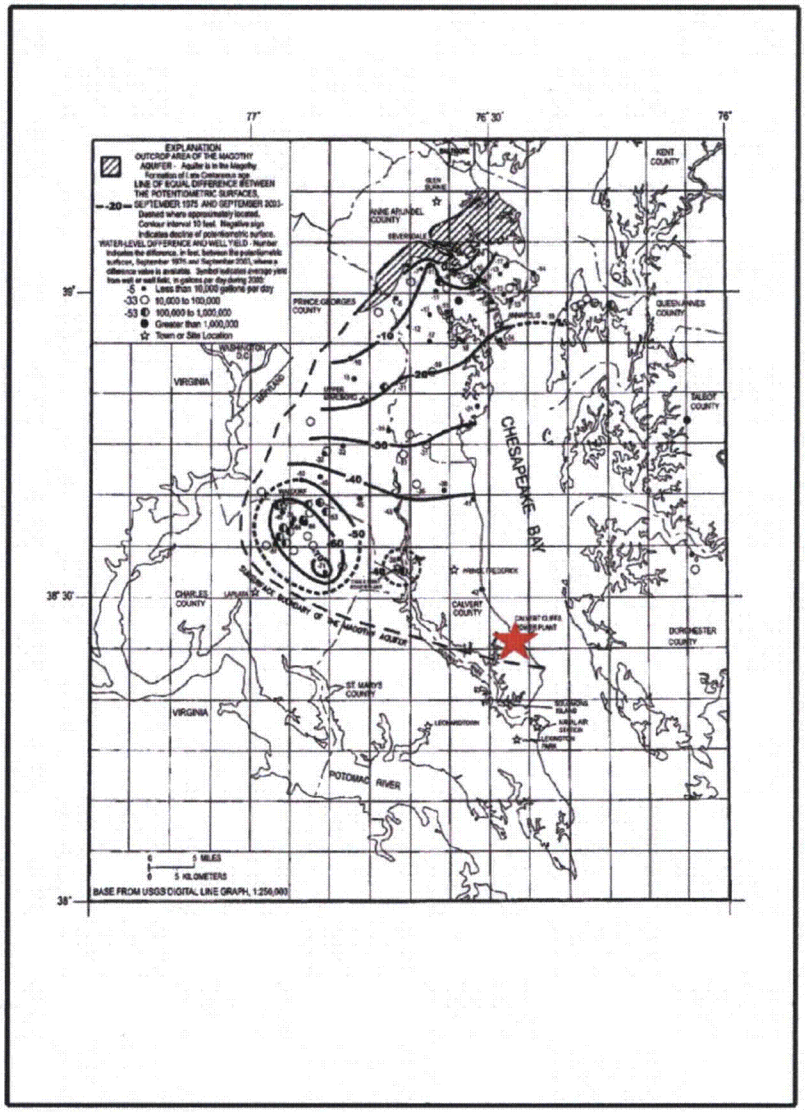


Figure 2.3-71— The Difference Between the Potentiometric Surfaces of the Upper Patapsco Aquifer, September 1990 and September 2003, in Southern Maryland

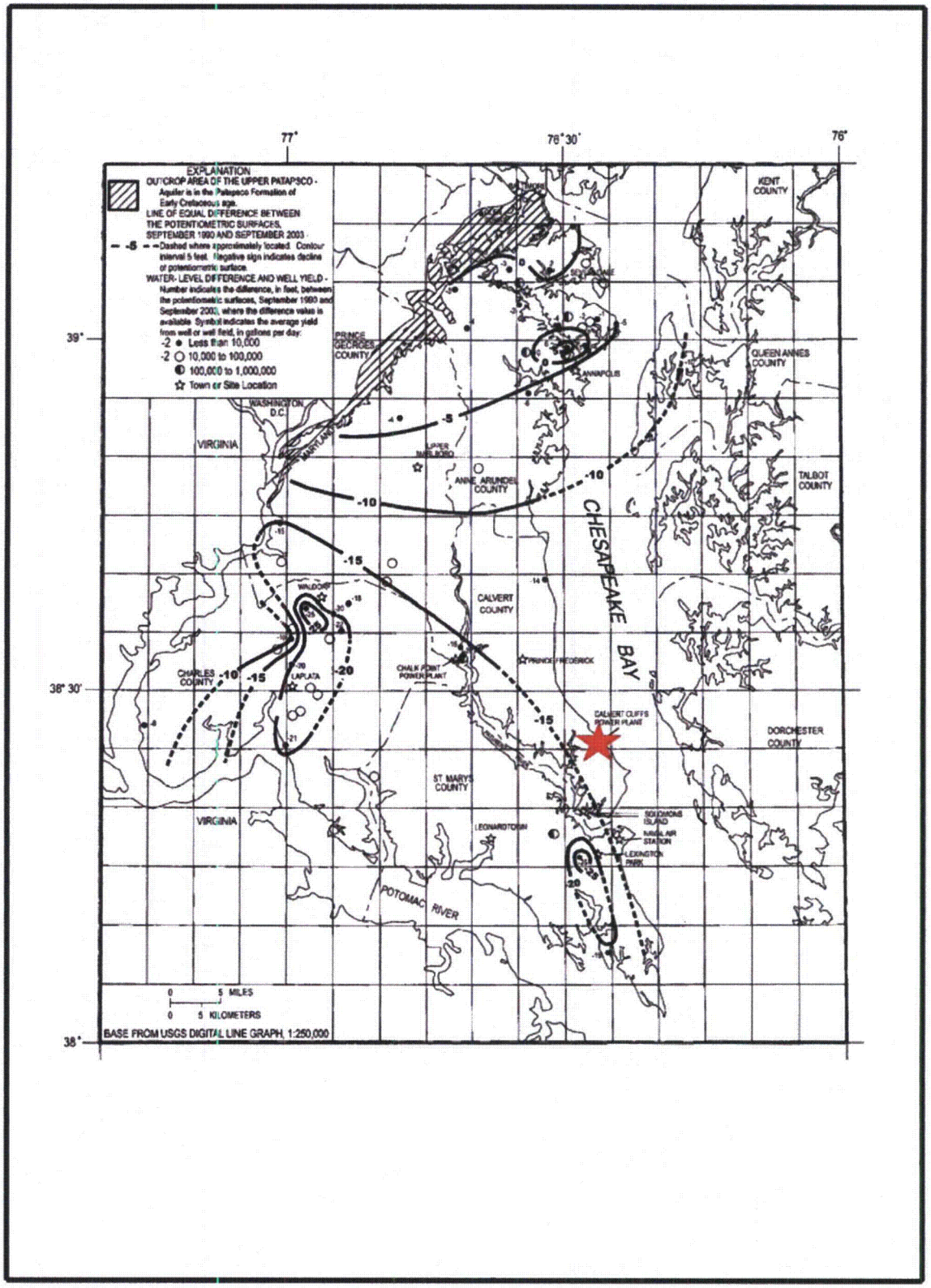


Figure 2.3-72— The Difference Between the Potentiometric Surfaces of the Lower Patapsco Aquifer, September 1990 and September 2003, in Southern Maryland

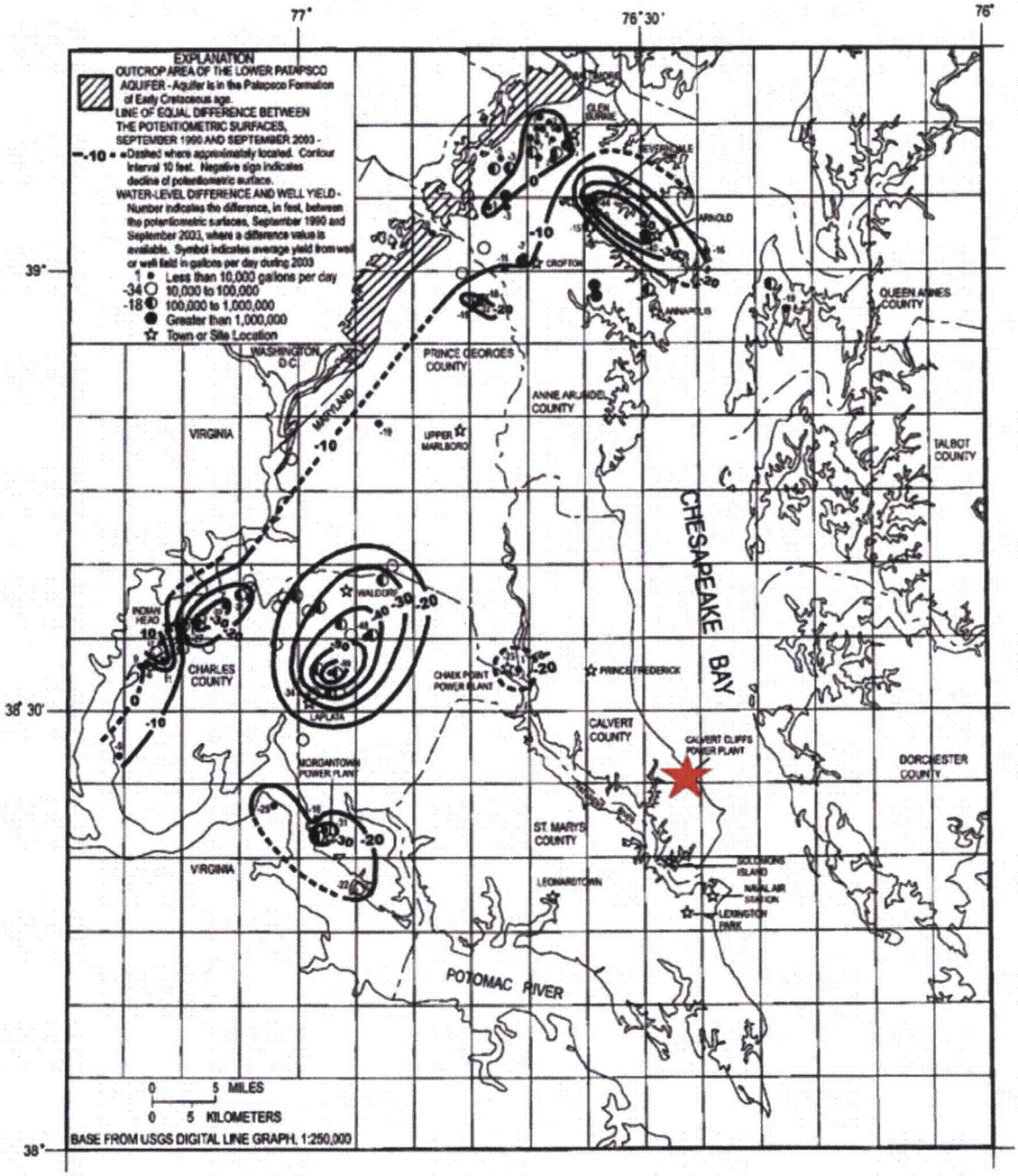


Figure 2.3-73— Calvert County Grouped-Water-Level Monitoring Network, Location of Selected Water Level Monitoring Wells

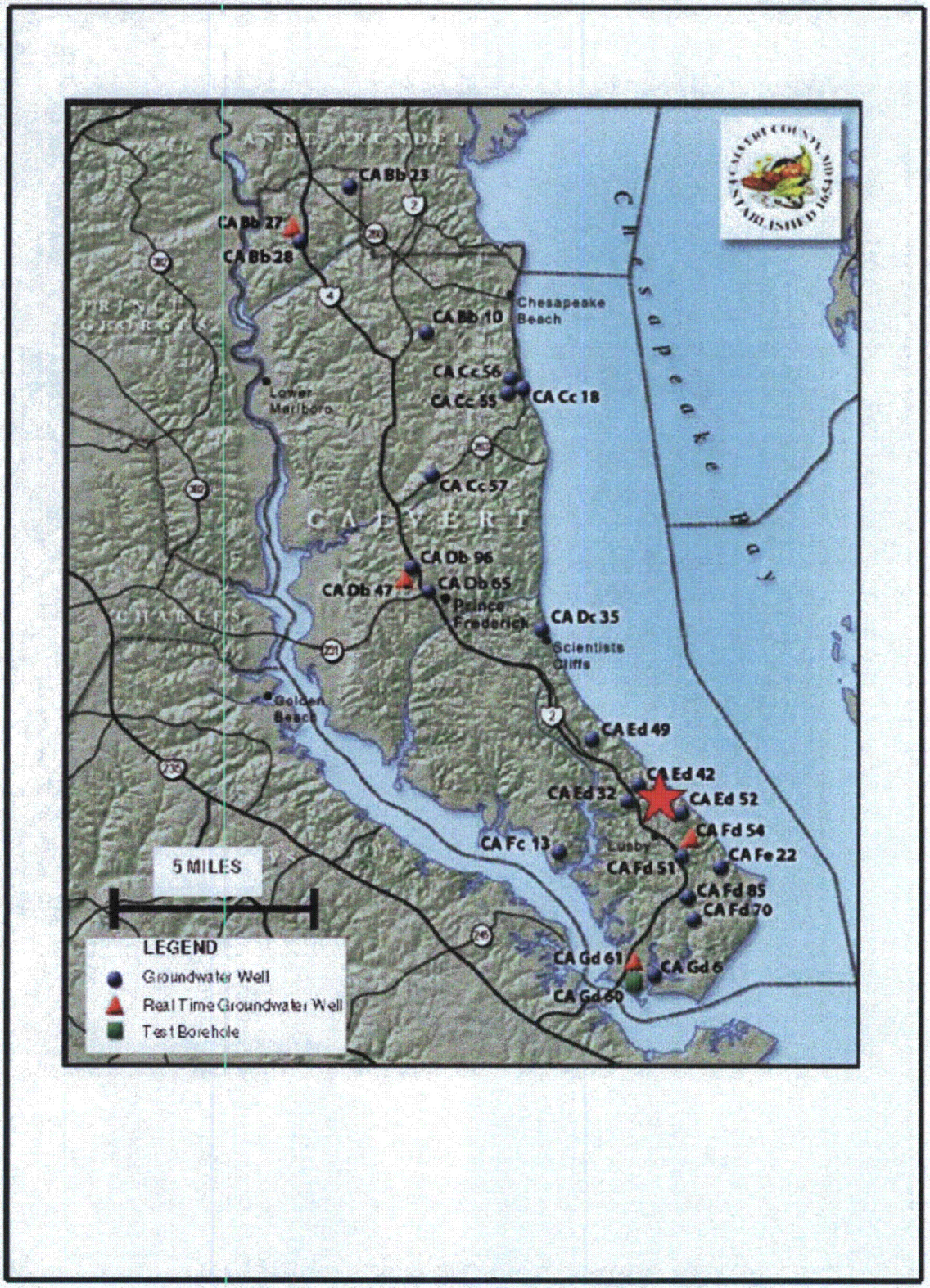


Figure 2.3-74— Well Hydrograph for Monitoring Well CA Fd 51 Screened in the Piney Point – Nanjemoy Aquifier at Calvert Cliffs State Park

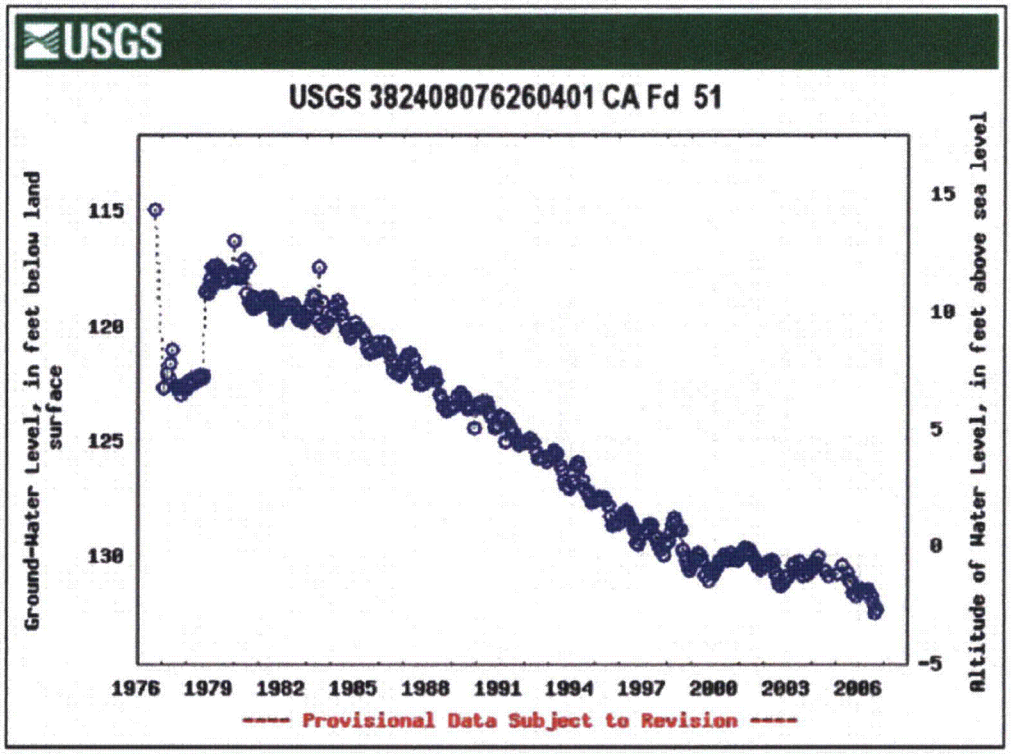


Figure 2.3-75— Well Hydrograph Hydrograph for Monitoring Well CA Ed 42 Screened in the Aquia Aquifer at Calvert Cliffs Nuclear Power Plant

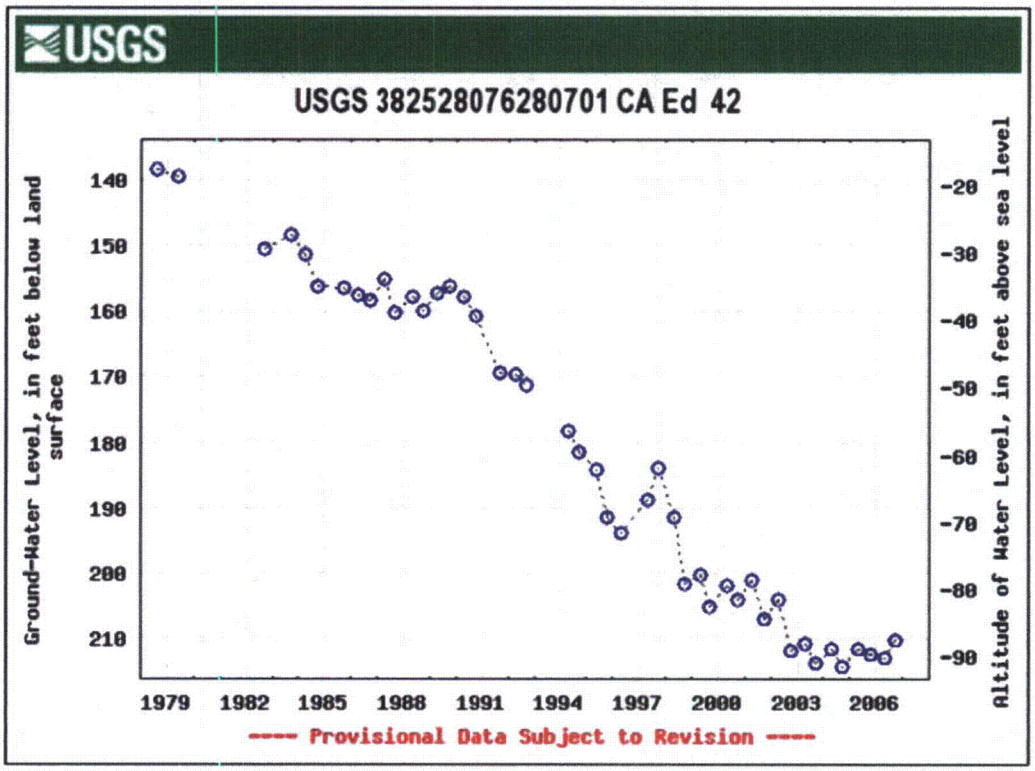


Figure 2.3-76— Well Hydrograph Hydrograph for Monitoring Well CA Dc 35 Screened in the Magothy Aquifier at Scientits Cliffs

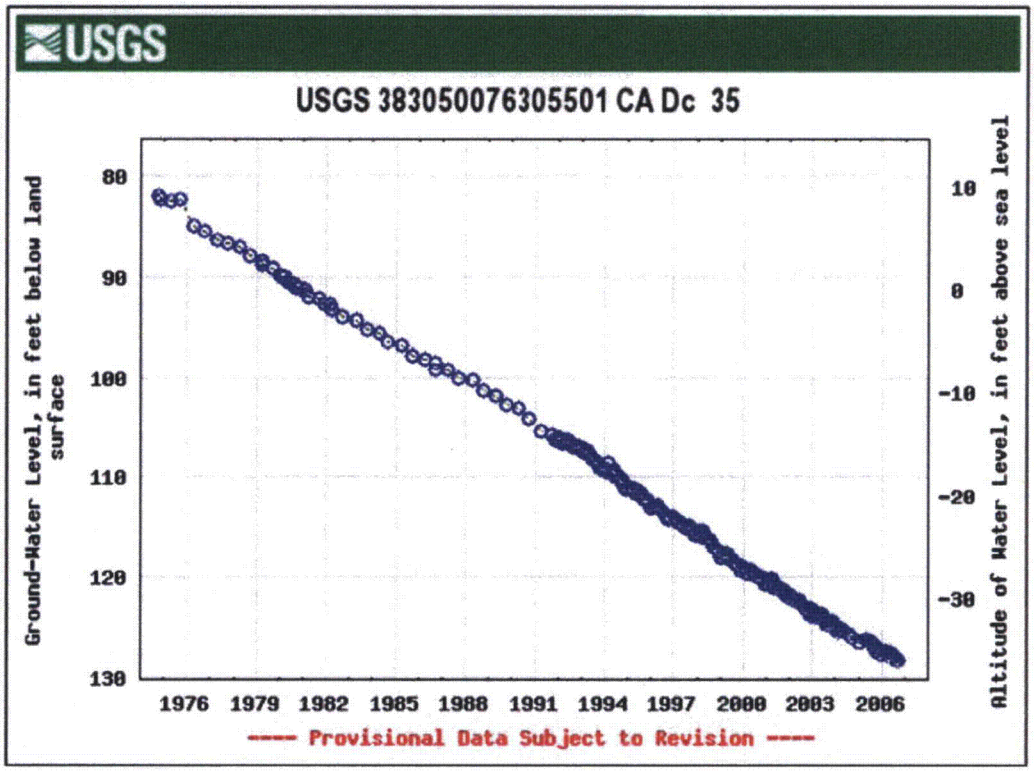


Figure 2.3-77— Well Hydrograph Hydrograph for Monitoring Well CA Db 96 Screened in the Upper Patapsco Aquifier at Prince Frederick

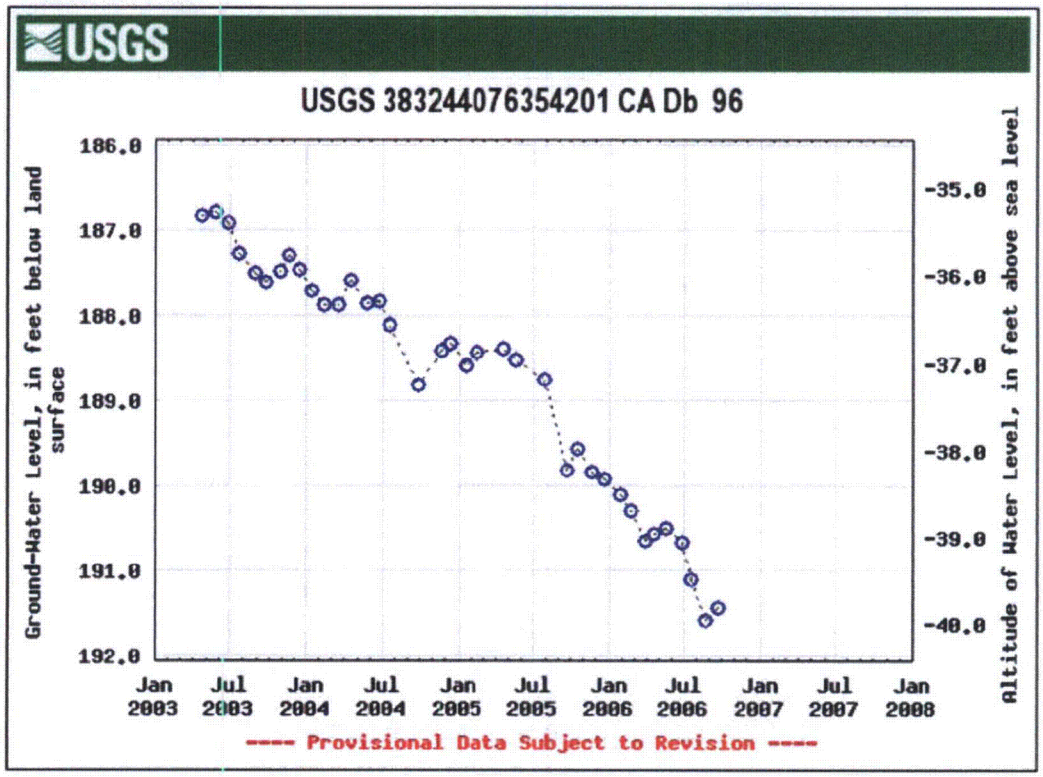


Figure 2.3-78— Well Hydrograph Hydrograph for Monitoring Well CA Fd 85 Screened in the Lower Patapsco Aquifier at Chesapeake Ranch Estates

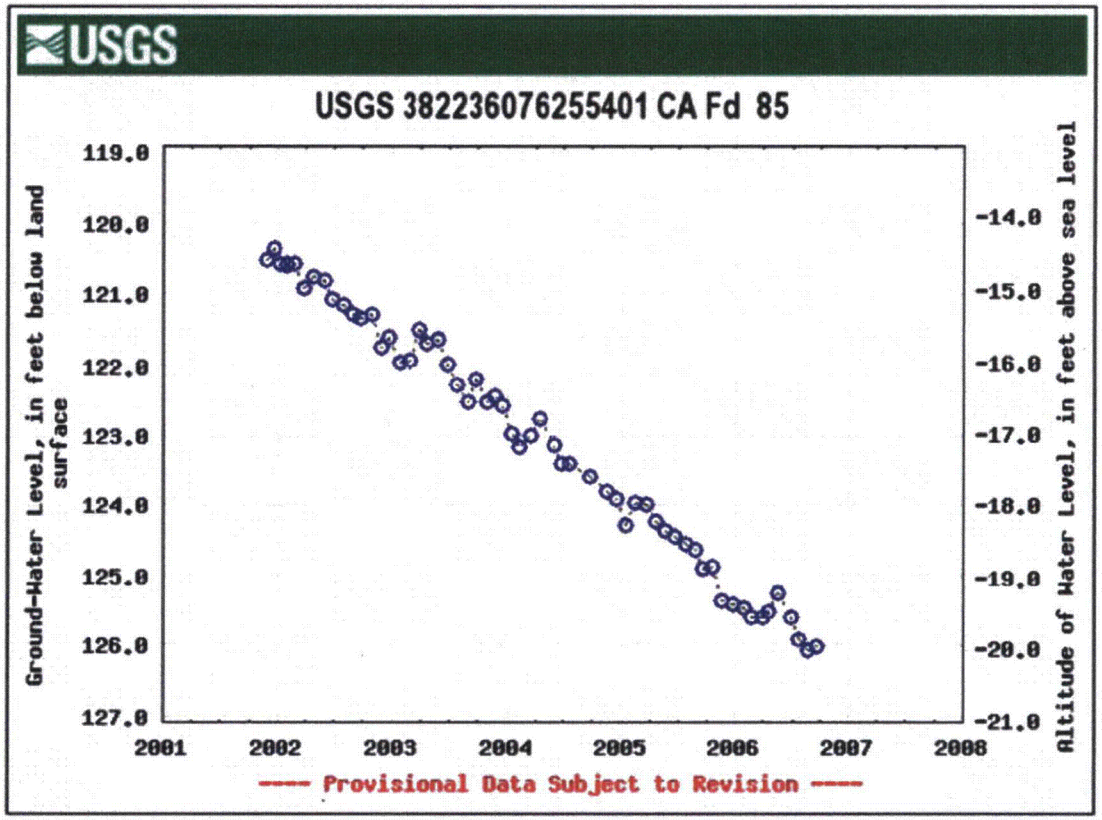


Figure 2.3-79— Modeled Post-Construction Depth to ~~Surficial Aquifer~~ the Water Table Around the Unit 3 Power Block ~~3~~ Area

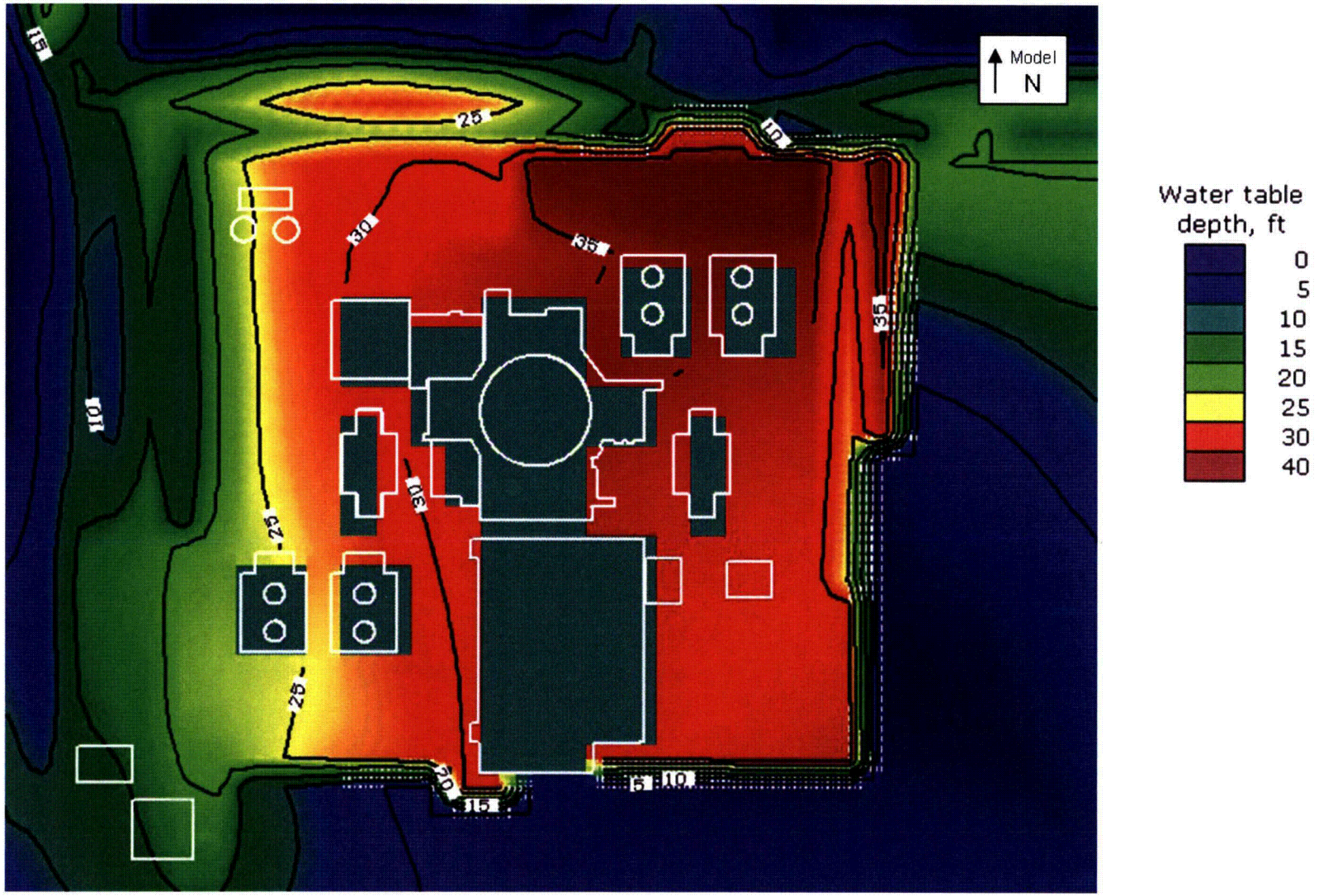


Figure 2.3-80— Modeled Post-Construction Elevation ~~to Surficial Aquifer~~ of the Water Table Around the Unit 3 Power Block ~~3~~Area

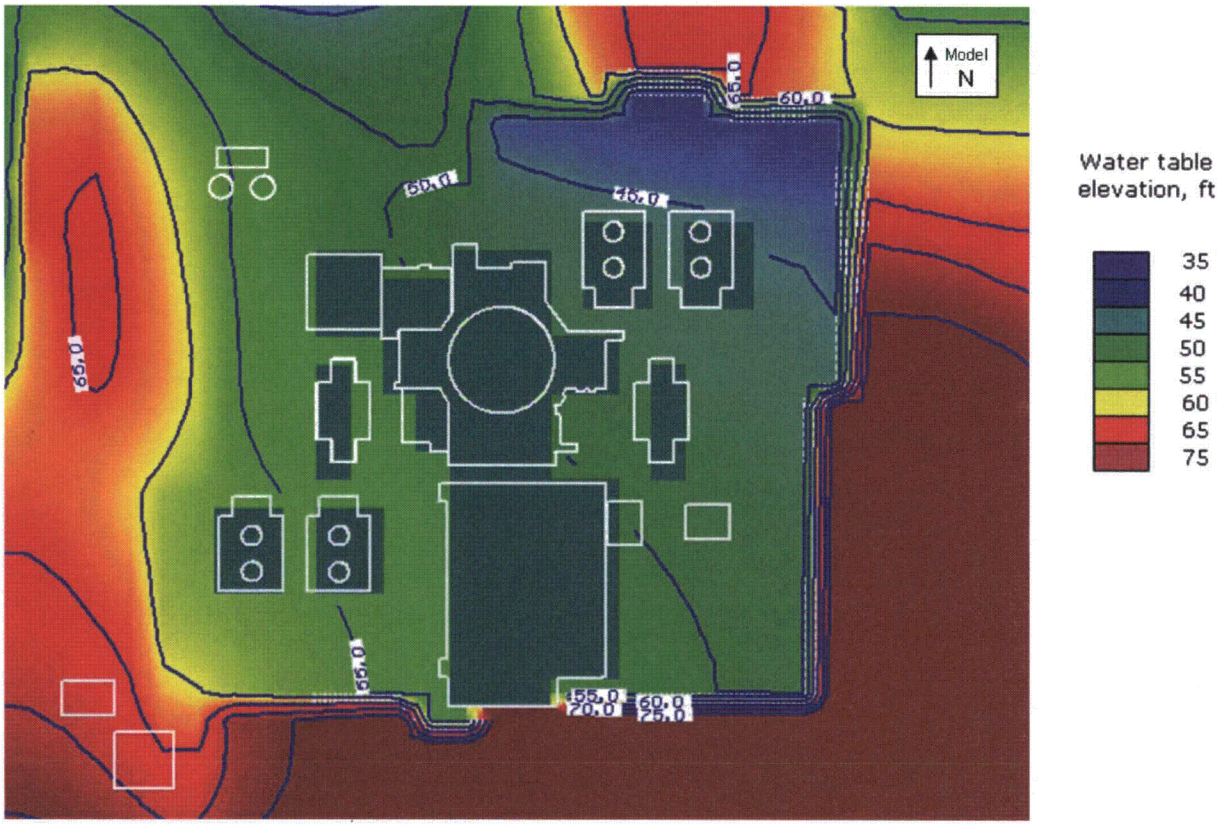


Figure 2.3-81— Chesapeake Bay WQ Monitoring Stations

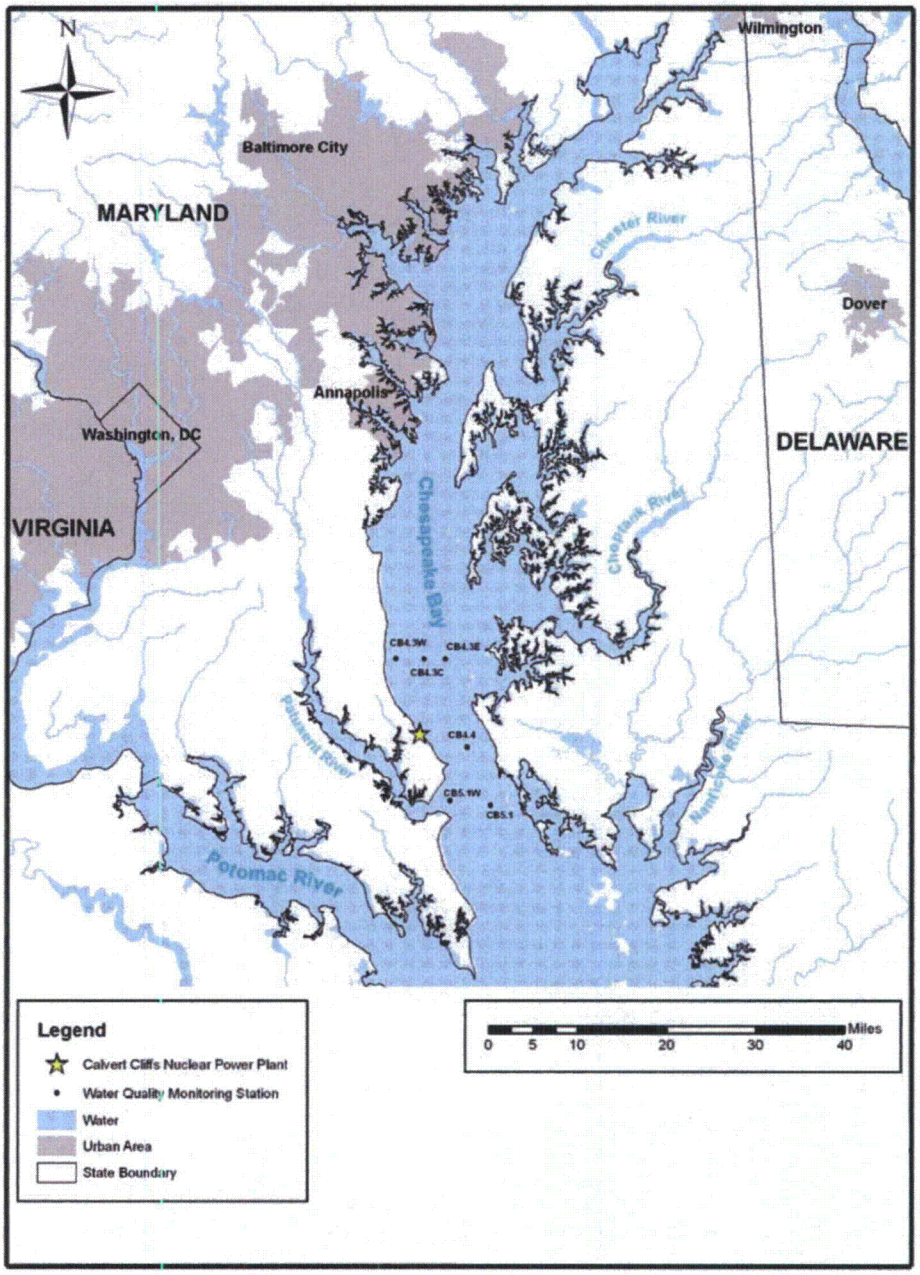


Figure 2.3-82— Location of Segments Used for Calculation of Inflow to Chesapeake Bay

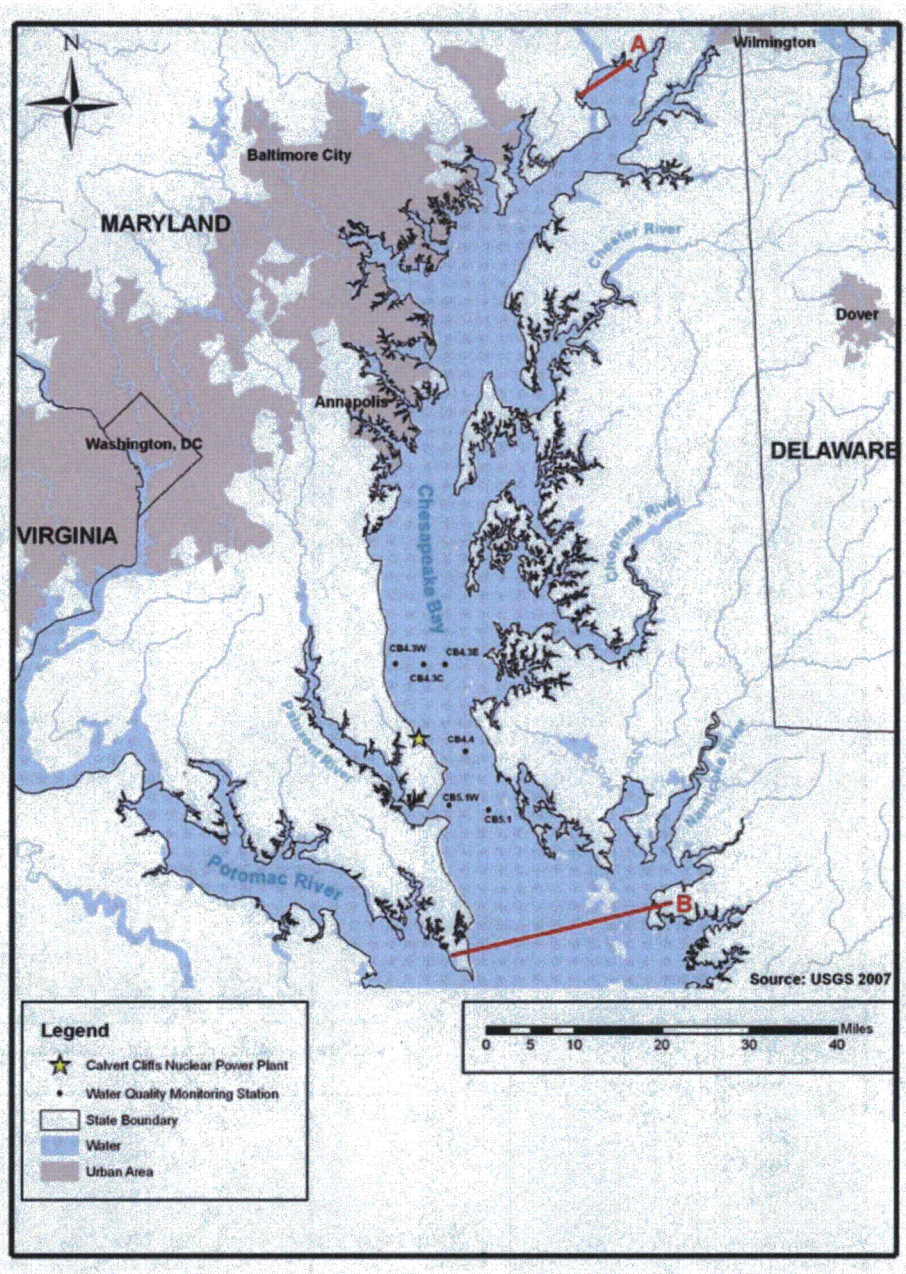


Figure 2.3-83— CNPP Shoreline

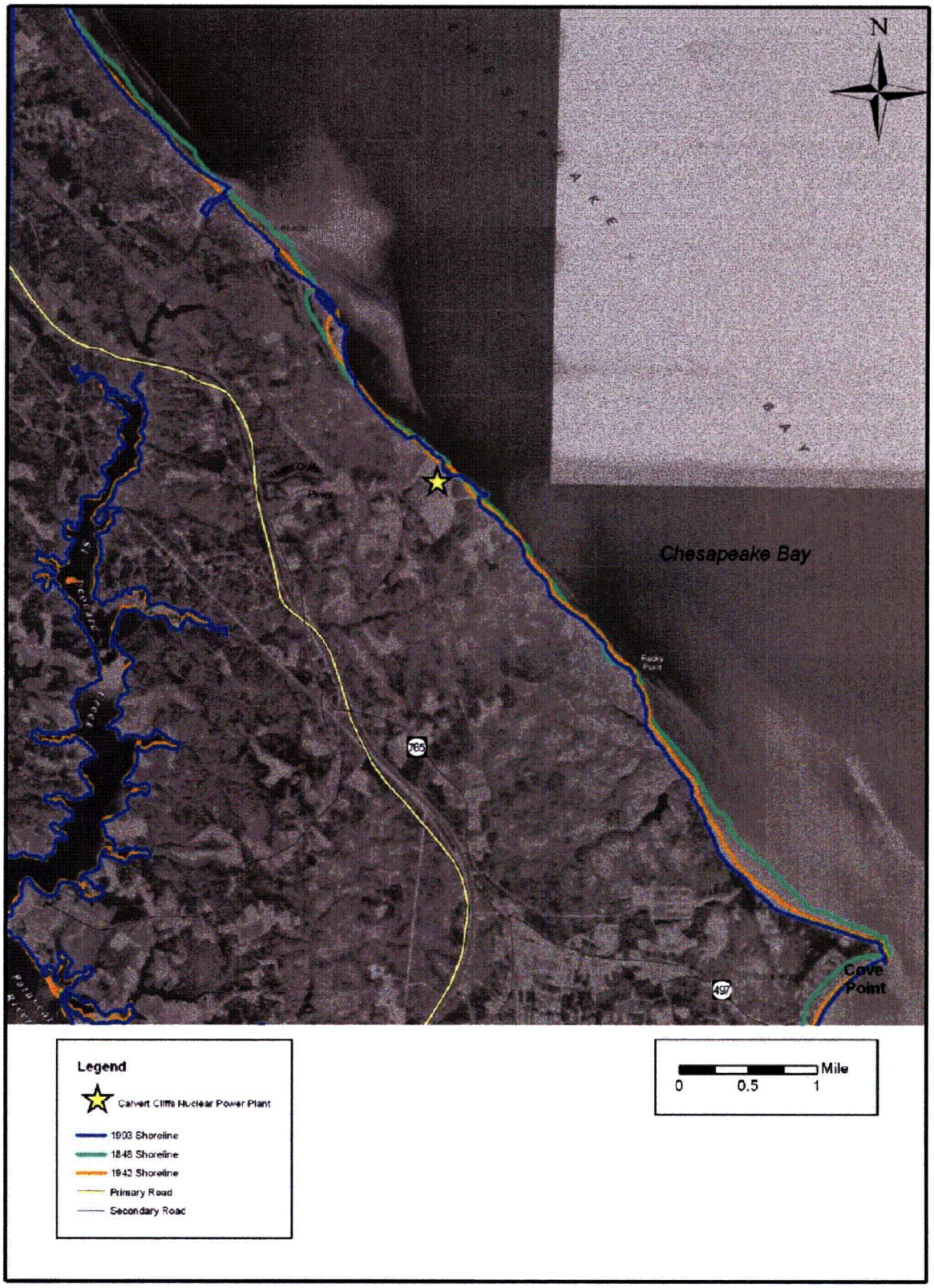


Figure 2.3-84— Sediment Sampling Locations in the Chesapeake Bay Near the CCNPP Barge Slip, September 2006