DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

PREPARED IN COOPERATION WITH THE
NEW YORK STATE DEPARTMENT OF HEALTH

OPEN-FILE REPORT 82-110
(SHEET 1 OF 2)

SURFICIAL GEOLOGY

By

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INTRODUCTION

The mapping was undertaken to compile available information on the limits and characteristics of one of the principal aquifers in upstate New York, the valley-fill aquifer. The valley-fill aquifer in the Elmira area, underlies a 37-square-mile area in south-central New York along the Chemung River valley. It is a primary source of water for rural residents, industry, and community water systems in western Chemung County.

Findings relating to the aquifer are presented in this series of maps to provide water managers with current knowledge to aid in protecting and managing this prolific aquifer. The hydrologic data used in preparing these maps are available in the cited references and in the New York Subdistrict Office of the U.S. Geological Survey in Ithaca, New York.

Funding for the study was provided by the New York State Department of Health, Bureau of Public Water Supply, through a grant from the U.S. Environmental Protection Agency.

76°57'30" 76°55' 76°52'30" 76°50' 76°47'30"

42°10'

42°07'30"

42°05'

ADJOINS Y-Y' (CORNING MAP)

ADJOINS X-X' (CORNING MAP)

EXPLANATION

QUATERNARY	af	Artificial fill
	w	Open-water area
	pm	Peat, marl, muck, and clay; bog deposits of postglacial to recent age; low permeability
	alg	Alluvial sand and gravel; stream, fan, channel, and terrace deposits of postglacial to recent age; high permeability
	als	Alluvial silt and (or) very fine sand; floodplain deposits of postglacial to recent age; low permeability
	lss	Lake silt and fine sand; offshore deposits in proglacial or postglacial lakes; thin bedded to massive; low to moderate permeability
	osg	Outwash sand and gravel; meltwater deposits; stratified and well sorted; high permeability
	ksg	Kame and kame terrace sand and gravel; ice-contact deposits; some sorting and secondary calcite cementation; high permeability
	mt	Moraine till; generally stony with limited admixture of poorly sorted gravel deposited at edge of ice sheet; low permeability
	t/r	Till over bedrock (undifferentiated); glacial deposits of unstratified silt and sand, with occasional pebbles, cobbles, and boulders, generally less than 30 feet thick; low permeability
DEVONIAN	r	Bedrock (undifferentiated); shale and siltstone; low to moderate permeability in fractures and joints

GEOLOGIC CONTACT--dashed where approximately located

A ——— A' LINE OF SECTION--see sheet 2, "Geologic Sections"

AQUIFER BOUNDARY--dashed where full extent of aquifer is not shown; aquifer extends up some small valleys and up and down valley of principal stream. Aquifer is continuous with Corning aquifer to west

WELL SYMBOLS

○ 595 Well on which geologic sections, sheet 2, are based; numbered by Woodward-Clyde-Sherard and Assoc. (1967)

○ 36-31 Well on which geologic sections, sheet 2, are based; numbers are seconds of latitude-longitude by U.S. U.S. Geological Survey

REFERENCES CITED

Denny, C. S., and Lyford, W. H., 1963, Surficial geology and soils of the Elmira-Williamsport region, New York and Pennsylvania: U.S. Geological Survey Professional Paper 379, 60 p.

Randall, A. D., Unpublished field maps, U.S. Geological Survey, Albany, New York.

Woodward-Clyde-Sherard and Associates, 1967, Pleistocene and recent geology map: Clifton, New Jersey, 16 p. and 1 map.

DRAINAGE AREA TO AQUIFER

AQUIFER

INDEX MAP

SCALE 1:24000

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 MILE

1 KILOMETER

N

BASE FROM NEW YORK STATE DEPARTMENT OF TRANSPORTATION BIG FLATS, N.Y., 1978; ELMIRA, N.Y., 1978; SEELEY CREEK, N.Y., 1978; HORSEHEADS, N.Y., 1978. 1:24,000

GEOHYDROLOGY OF THE VALLEY-FILL AQUIFER IN THE ELMIRA AREA, CHEMUNG COUNTY, NEW YORK

1982

GEOLOGY MODIFIED FROM A. D. RANDALL, UNPUBLISHED DATA, C. S. DENNY AND W. H. LYFORD (1963), AND WOODWARD-CLYDE-SHERARD AND ASSOCIATES, IN PART (1967)