REGIONAL GROUND-WATER STUDY
TOWN OF DEERPARK
ORANGE COUNTY, NEW YORK

Prepared for

Orange County Water Authority

June 1994

Virogroup, Inc. - ETE Division

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TOWN OF DEERPARK
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EXECUTIVE SUMMARY

The Town of Deerpark does not have a municipal water supply system at the present time. There are, however, many private systems scattered throughout the Town. These systems are located primarily along the Neversink-Basherkill corridor. Data indicate that the Neversink-Basherkill sand and gravel aquifer may be one of the most prolific in the County. A study performed for the Federal Correctional Facility near Westbrookville indicates the potential yield of the aquifer in that vicinity may be in excess of 4.3 mgd. The well that was actually installed has a reported yield of 700 gpm (1.0 mgd), and the prison only uses approximately 20% under peak demand.

The City of Port Jervis appears to be self sufficient for the foreseeable future. The City's water supply needs have been constant for the last ten years and no significant increase is expected due to physical land constraints of the City's boundaries. The City's water needs are exclusively supplied by three existing reservoirs. The fact the City is water self sufficient and most of the private water supply systems are located in the prolific Neversink-Basherkill aquifer may actually delay the need and economic justification for a municipal system within the Town of Deerpark.

INTRODUCTION

ViroGroup, Inc., was retained by the Orange County Water Authority to conduct a regional ground water study for the Town of Deerpark. This report addresses ViroGroup's findings relating to:

- existing and proposed municipal and community water supplies within the Town of Deerpark;
- the adequacy of existing and proposed water supplies and their ability to meet present and future demands;
- zoning and land use; and
- existing and potential ground-water contamination problems within the Town which may affect existing and proposed water supplies.

The Town of Deerpark does not operate any municipal water systems; however, there are several community water systems with wells that meet the OCWA criteria. While the City of Port Jervis does operate a water system, the sole source is from three reservoirs.

EXISTING WATER SUPPLY SYSTEMS

City of Port Jervis Water District

Mr. Mel Decker, Water Superintendent for the City of Port Jervis, reported all of the water utilized for the City's system is from three reservoirs. The capacities of the three reservoirs are: Reservoir 1 - 6 million gallons, Reservoir 2 - 270 million gallons and Reservoir 3 - 360 million gallons. The capacity of the City water treatment plant is 3.0 mgd.

The City also has a pump station on the Neversink River with a pumping capability of 3 million gallons per day. In the mid-1960's it was used to supply 1.5 million gallons per day.

Mr. Decker stated that the City had investigated several bedrock wells over the years. However, none had significant yields which the City could use (Decker, 1993). C.W. Lauman & Co., the consultant that performed the investigations for the City, reported that bedrock in this area is solid and hard. "There are few, if any, fractured zones which would permit passage of a large supply of water," (Lauman, 1966).

Community Water Supply Systems

The Town of Deerpark does not currently own or operate any municipal water facilities. However, there are a number of community water supply systems located throughout the Town. Information about the community water systems was reported by the Orange County Department of Health (OCHD, 1992).

Painted Apron Village

Painted Apron Village has a private water supply for approximately 50 existing and proposed homes.

Well Supply in Service

Painted Apron Village currently operates two wells (Groundwater Inventory Map ["GIM"], Wells DP-1 and DP-2). Well 1 is the main well and supplies water on a daily basis. Well 1 and 2 are completed in a bedrock aquifer. The well data are presented in Tables 1 and 3.

Well Supply Not in Service

Well 3 is also completed in a bedrock aquifer and is not connected to the system (GIM, Well DP-3).

Fairlawn Mobile Village

Fairlawn Mobile Village has a small private water supply which services the trailer park.

Well Supply in Service

The water source for Fairlawn Mobile Village consists of one well which is screened in bedrock

Deerpark Manor

Deerpark Manor is a private water supply that services a subdivision.

Water Supply in Service

Two wells currently supply water for the Deerpark Manor subdivision (GIM, Well DP-9 and Well DP-10). Well 9 is in service but on a standby basis. Well 10 serves as the main water supply on a daily basis. Both wells are screened in sand and gravel. The well locations are shown on the Deerpark Plate, and well data are presented on Tables 1 and 3.

Huguenot Estates East

Huguenot Estates East has a private water supply system.

Well Supply in Service

Huguenot Estates East operates two wells completed in a bedrock aquifer. Both wells feed into the treatment building (GIM, Well DP-11 and Well DP-12). The well data are presented in Tables 1 and 3.

Maple Tree Mobile Homes

(GIM, Well DP-4). No other wells are listed for standby service. The well data are presented on Tables 1 and 3.

Pine Grove Mobile Home Manor

The Pine Grove Mobile Home Manor has a private water supply that services the mobile home park.

Well Supply in Service

Water is currently supplied to the mobile home park by two wells (GIM, Well DP-6 and Well DP-8). These wells are pumped simultaneously and supply a combined yield of approximately 64 gpm. Wells 6 and 8 are gravel pack. The data are presented on Tables 1 and 3.

Well Supply Not in Service

Wells 5 and 7 (GIM, Wells DP-5 and DP-7) are completed in bedrock aquifer and were disconnected from the system in December 1989. The locations are shown on the GIM, and well data are presented in Table 1.

Maple Tree Mobile Homes has a private water supply for the mobile home park.

Well Supply in Service

The Maple Tree Mobile Home park operates two wells to supply water (GIM, Well DP-13 and Well DP-14). Well 14 is the best well and is utilized on a daily basis. Well 13 is in service but on a standby basis. The well data are shown on Tables 1 and 3.

Greenwood Mobile Home Court

Greenwood Mobile Home Court is a private water supply.

Well Supply in Service

The Greenwood Mobile Home Court operates one well completed in a bedrock aquifer (GIM, Well DP-15). The well data are presented on Table 1 and Table 3.

Federal Prison Well

This well is located in the Town of Deerpark and provides water for the Federal Prison in Otisville in the Town of Mount Hope. Information about these wells is presented in the Mount Hope report.

WATER SUPPLY DEMAND

City of Port Jervis Water District

The present supply meets the average daily demand of 1.5 mgd and the summer peak of 2.5 mgd with the existing reservoirs. Mr. Melvin Decker, Water Superintendent, reported these demands have been fairly constant over the last ten years. In addition, due to the physical constrains of the land area in the City of Port Jervis, it is anticipated that the demands will remain constant for the future. The City does maintain an emergency pump station on the Neversink River with a 3 mgd pumping capacity; however, the last time water was taken from the Neversink was during the 1965 drought (Decker, 1993). In addition, the new New York State Department of Health regulations would require that the water pumped from the Neversink River be filtered and disinfected before it is discharged into the City's distribution system.

Painted Apron Village

The present supply meets the average daily water demand of 7,200 gpd and maximum daily water demand of 33,200 gpd. Well 1 is the main supply well and is capable of meeting the average daily water demand and the maximum daily water demands. Well 3, though not in service, could supply another 36,000 gpd (OCHD, 1992).

Fairlawn Mobile Village

The present supply meets the estimated daily water demand of 7,500 gpd and estimated maximum daily water demand of 15,000 gpd. These estimates were arrived at using a flow of 300 gpd for each mobile home in the park since the system is not metered. The flow rate of 300 gpd appears to be representative of those private water supplies in the Town that are metered. This water supply has one

The present unmetered water supply meets the unmetered water demand. The reported yield for Well 14 is 200 gpm or 288,000 gpd.

Federal Prison Well

The present supply meets the average daily water demand of 160,000 gpd and maximum daily peak demand of 210,000 gpd. The reported yield for this 55 foot deep sand and gravel well is 700 gpm or 1.008 million gallons per day (Brock, 1993).

bedrock well with a yield of 50,400 gpd (OCHD, 1992).

Pine Grove Mobile Home Manor

The present unmetered water supply meets the estimated daily water demand of 19,050 gpd and estimated maximum daily water demand of 28,575 gpd. These estimates were arrived at based on information from the Park Manager. Well 6 and Well 8 pump simultaneously and provide a combined yield of 64 gpm or 92,160 gpd.

Deerpark Manor

The present supply meets the estimated daily consumption of 35,000 gpd and estimated daily maximum of 52,500 gpd. The main well (Well 10) provides a yield of 100 gpm or 144,000 gpd. Well 9 is the standby well with a reported yield of 50 gpm or 72,000 gpd (OCHD, 1992).

Huguenot Estates East

The present supply meets the reported average daily consumption of 41,000 gpd and maximum daily consumption of 72,300 gpd. Well 11 provides 56 gpm or 80,640 gpd and Well 12 provides 55 gpm or 79,200 gpd. These wells pump simultaneously into the system (OCHD, 1992).

Maple Tree Mobile Homes

The present unmetered water supply meets the current demand. Well 14 (main well) provides a yield of 50 gpm or 72,000 gpd. Well 13 is an emergency well for which no yield data is available (OCHD, 1992).

Greenwood Mobile Home Court

GEOLOGY

The Deerpark area is part of the Valley and Ridge physiographic province. Softer, less resistant shales and limestones have eroded into valleys, while harder, more resistant sandstones and conglomerates form the steep ridges (LBG, 1993).

The valleys of the Delaware River and the Neversink River were cut by glaciers and filled with sands and gravels. These thick permeable deposits are capable of storing large quantities of groundwater.

The ridge areas consist of hard and solid bedrock overlain by low permeability glacial till. Ground water occurs within the bedrock along bedding planes and fractures.

Neversink - Basherkill Aquifer

The Neversink - Basherkill Aquifer is the largest aquifer in the Town of Deerpark and the immediate area. The glacially derived sand and gravel deposits of this aquifer extends from Summitville, New York to Milford, Pennsylvania. The Neversink - Basherkill Aquifer is considered a principal aquifer. It was mapped by USGS (Frimpter, 1972).

The portion of the Neversink - Basherkill sand and gravel aquifer which lies within New York averages 0.5 miles in width and ranges in thickness from less than 10 feet to more than 150 feet; the average saturated thickness of the aquifer is 100 feet. Variability of the saturated thickness is due to the irregular surface of the underlying bedrock.

Specifically, the aquifer within Orange County extends southerly from the Sullivan County line, along the valleys of the Neversink River and the Basherkill to the New Jersey State line near Port Jervis. The potential yield within this aquifer alone is estimated to be 100 million gallons per day.

The single largest source of recharge of the Neversink - Basherkill Aquifer is the Neversink River. According to Frimpter, infiltration from the Neversink to the aquifer is estimated at 6 mgd per mile or a total of 48 mgd between Godeffroy and Port Jervis (dependent on river flow available for infiltration). A significant recharge to the aquifer also comes from the Basherkill and its numerous tributaries. Further recharge is from precipitation directly infiltrating the aquifer. The Neversink - Basherkill Aquifer is considered to be one of the County's largest potential ground-water sources.

Individual wells completed in the unconsolidated (sand and gravel) aquifer of the Lower Neversink River and Basherkill valleys are estimated to yield between 300 and 1000 gallons per minute (gpm) (Frimpter, 1970). Presently, local ground water supplies meet public drinking water standards. A study performed by Wehran Engineering in 1983 at Westbrookville, for the Federal Correctional Facility in Otisville, indicated the nearby presence of a highly prolific, good quality ground water source. The potential yield of the aquifer in that vicinity was estimated to be in excess of 3,000 gpm or 4.3 mgd (Chazen, April 1993).

The aquifer is located within the geographic boundary of the Delaware River Basin. Ground-water use is subject to the regulation and control of the Delaware River Basin Commission (DRBC), an interstate agency responsible for planning and regulating use of the resources of the Delaware River Basin.

Bedrock Aquifers

The bedrock map titled "Geologic Map of New York, Lower Hudson Sheet" (Fisher et. al., 1970) shows that the Neversink River - Basher Kill valley is underlain by the Onondaga Limestone and undifferentiated Hamilton Group consisting of shale and siltstone. Wells are usually terminated above these formations in the prolific sand and gravel aquifers.

The Oneonta Formation underlies the ridge areas to the northwest. The Oneonta Formation consists of shales and sandstones. The Onondaga Limestone and Roundout Formation, consisting of dolostone and limestone, underlie the ridge at the northeast of the valley. R.E. Wright Associates (1982) states that the median yield of wells in the formation is 40 gpm. Data reported by Leggette, Brashears & Graham show average well yields of 20 gpm (LBG, 1993).

LAND USE

The majority of the Town is open space, and most of this land consists of land used for parks and recreation. The majority of the remaining land use is residential. In addition to the City of Port Jervis, there are four unincorporated hamlets where the residential populations are concentrated. These hamlets include: Sparrowbush, Huguenot, Cuddebackville and Godeffroy. Commercial land use is present along Route 84 in the southern portion of the Town and within hamlet and the City of Port Jervis (Space Track, 1993).

A majority of existing water supply systems are located adjacent to residential use areas within the Neversink River-Basherkill corridor. This fact may actually delay the need for a townwide municipal system due to the readily available supply of water in the local areas.

ALTERNATE COUNTY LANDFILL CANDIDATE AREAS

Orange County has targeted several potential candidate areas for possible landfill development. Candidate areas L1 & L2 are located in the Town of Deerpark. Both of these areas are generally wooded and sparsely developed. The L2 site is part of a proposed 1,578-unit Planned Residential Retirement Community that is currently being reviewed by Deerpark's Planning Board.

Although the well monitoring data which were reviewed as part of this inventory did not report iron and manganese, iron and manganese are commonly found at levels which exceed maximum permissible limits in bedrock aquifers throughout Orange County. Wells with high iron and/or manganese levels would require treatment.

INVENTORY OF GROUND-WATER CONTAMINATION PROBLEMS

Existing Ground-Water Contamination Problems

ViroGroup reviewed existing known ground-water contamination sites, including New York State Department of Environmental Conservation (NYSDEC) inactive hazardous waste sites, remediation projects (NYSDEC Spill Response) solid waste sites, and RCRA sites for the Town of Deerpark. The information was provided by Lawler, Matusky and Skelly Engineers (LMS) and gathered from a Freedom of Information Law (FOIL) request from the NYSDEC (LMS, 1993). Additional information was provided by Mr. Robert Honders, Chairman of the Town of Deerpark, Environmental Commission (Honders, 1994).

Brim Recyclers

Active car crushing operation. Cars are crushed without a catchment basin for crushed out fluids. Oil and antifreeze have been observed to be spilling and seeping into the ground over the Basher Kill aquifer and within 500 feet of the wetlands. The site is located near the corner of Route 211 and Route 209 in Cuddebackville (Honders, 1994).

No ground-water sources are known to exist in the candidate areas. Extensive onsite exploratory testing would be necessary to determine the suitability of these areas for landfill activities.

WATER QUALITY

Water developed from both the sand and gravel aquifer and bedrock aquifer in the Town is of good quality. The sand and gravel well developed for the Federal prison system, which is by far the largest single use of ground-water in the Town, requires no treatment other than chlorination. This also appears to be the case with the other private water systems.

M&S Sanitary Sewage Disposal

Inactive private septic disposal site. Waste was reported to be disposed of in holding lagoons. The Town of Deerpark Environmental Commission has documented complaints from neighbors that their wells are polluted with the chemicals used to deodorize portable toilets. The site is located between Port Orange Road and Route 211 on the south side of NYS Route 209 (LMS, 1993) (Honders, 1994).

Port ,Jervis, Mobil Service Station

This site is located on 1 Kingston Avenue and Main Street in the City of Port Jervis. Mobil performed a site assessment and found BTEX contamination in soil borings (LMS, 1993).

Potential Ground-Water Contamination Problems

Information about potential ground-water contamination sites was obtained from:

- FOIL request to NYSDEC (LMS, 1993); and
- Land use data from the Orange County, New York Real Property Tax Assessment data base (Space Track, 1993).

The following summarizes the potential ground-water contamination sites, including the NYSDEC's potential inactive hazardous waste sites and solid waste facility from the FOIL request from the NYSDEC. In addition, a list of possible ground-water contamination sites has been developed by ViroGroup in conjunction with Town personnel (Wilson, 1993).

Cejwin Camps Landfill

No specific information is available. The site is located on the southwest side of Martin Lake off the north side of NYS Route 209 (LMS, 1993).

C&D Power Systems (C&D Batteries)

No specific information is available. The site is located on the south side of NYS Route 209 next to Town Hall (LMS, 1993).

Carroll and Dubies

Inactive septage lagoons. The site is located at the end of upper Canal Street outside the City of Port Jervis near the Orange County Transfer Station (LMS, 1993).

City of Port Jervis Landfill

Inactive City of Port Jervis landfill for sanitary waste. The site is located at the end of Canal Street (LMS, 1993).

Otisville Dump

Inactive waste disposal site. The site is located at the intersection of Route 211 and Otisville Road (Wilson, 1993).

Town Salt Storage

Town Highway Department salt storage location. The salt storage area is located in Huguenot behind the Town Highway Garage (Wilson, 1993).

Port Jervis Transfer Station

Site is active Orange County transfer station. Site is located at end of Canal Street.

Each property in Orange County has a land use code number. Properties with land use code numbers associated with potential contamination of ground water were identified through analysis of the Real Property Tax Assessment data base by Space Track, Inc. The types of land uses in the potential contamination category include:

- industrial facilities;
- gas stations;
- dry cleaners, and
- auto repair facilities.

Where possible, approximate locations of these sites are shown as triangles on the GIM.

Petroleum Bulk Storage Facilities

The FOIL request from NYSDEC inventoried Petroleum Bulk Storage Facilities, which are presented on Table 5.

The above sites are listed as potential ground-water contamination sites. Further investigations would be required to determine if contamination exists at the respective locations.

CONCLUSIONS

The Town of Deerpark's present and future water supply consists primarily of individual wells. According to the Town's Master Plan, which was adopted in 1989, 80% of the residents rely on wells. Most of the remaining residents rely on private systems in trailer parks or subdivisions where the number of dwelling units are limited by regulatory approvals. It appears that the private systems which were inventoried will adequately handle the demands of their individual communities as future water demands are limited by permit.

Although the Town has no plans presently to construct a municipal water supply system, data indicate that the Neversink - Basherkill Aquifer could easily provide water for the residents of Deerpark. The well which was installed in this aquifer to provide water for the Federal Correctional Facility in Otisville currently has a reported unused excess yield capacity of 0.8 mgd. This aquifer remains largely untapped.

The City of Port Jervis appears to be self-sufficient for the foreseeable future. According to the City Water Superintendent, the average daily demand of 1.5 millions gallons has been fairly constant over the last ten years. Due to the physical constraints of the City's land area, the City anticipates minimal increase in water demand for the future. Further, the City has not had to utilize its emergency water supply from the Neversink River since 1965.

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TABLE 1

REGIONAL GROUND-WATER STUDY
TOWN OF DEERPARK
Summary of Available Well Data

Well ------ Water District	Tax Map Municipality ------ Section ---- Block ---- Lot	Map Location ------- I.D. #	Well Status	Reported Yield (gpm) Original ------ Present	Depth of Well (feet)	Well Diameter (inches)	Length of Casing (feet)	Well Screen Length (feet) ------ Setting Interval (feet)	Aquifer	Date Drilled	Comments
Well 1 ---------- Painted Apron Village	Deerpark 61 --- 4 --- 1	DP -------- #1	In service -------- active	22 ----- N/A	286	6	70		Bedrock	1970	Main Well
Well 2 ---------- Painted Apron Village	Deerpark 61 --- 4 --- 1	DP -------- #2	In service -------- stand by	N/A ----- N/A	N/A	N/A	N/A		Bedrock	1969	Auxilliary
Well 3 ---------- Painted Apron Village	Deerpark 61 --- 4 --- 1	DP ------- #3	Inactive -------- equipped	25 ----- N/A	112	N/A	40.5	72.5	Bedrock Weathered Sandstone	1975	Not Connected
Well 1 ---------- Fairlawn Mobile Village	Deerpark 31 --- 1 ---	DP ------- #4	In service -------- active	35 ----- N/A	283	6	N/A		Bedrock	1962	Unmetered Production

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gpm - Gallons per minute. Well Status:
NA - Not available. In service - active; Inactive - not equipped
In service - stand by Abandoned Inactive - equipped

TABLE 1
(Continued)
REGIONAL GROUND-WATER STUDY
TOWN OF DEERPARK
Summary of Available Well Data

Well ------ Water District	Tax Map Municipality ------ Section ---- Block ---- Lot	Map Location ------- I.D. #	Well Status	Reported Yield (gpm) Original ------ Present	Depth of Well (feet)	Well Diameter (inches)	Length of Casing (feet)	Well Screen Length (feet) ------ Setting Interval (feet)	Aquifer	Date Drilled	Comments
Well 1 --------- Pine Grove Manor	Deerpark 20 --- 1 --- 40.3	DP ------ #5	Inactive ------ equipped	3-5	250	6	110		Bedrock	1985	Disconnected 12/89
Well 2 --------- Pine Grove Manor	Deerpark 20 --- 1 --- 40.3	DP ------ #6	In service ------ active	26 ----- N/A	85	6	85	N/A ---- N/A	Sand & Gravel	11/73	Pumps simultaneously with Well #4
Well 3 ----------- Pine Grove Manor	Deer-park20 --- 1 --- 40.3	DP -------- #7	Inactive -------- equipped	5 ----- N/A	240	6	N/A		Bedrock	1979	Disconnected
Well 4 ----------- Pine Grove Manor	Deer-park20 --- 1 --- 40.3	DP ------- #8	In service -------- active	38 ----- N/A	95	6	N/A	N/A	Sand & gravel	1988	Pumps simultaneously with Well #2

gpm - Gallons per minute. Well Status:
NA - Not available. In service - active Abandoned

In service - stand by
Inactive - equipped
Inactive - not equipped

TABLE 1
(Continued)
REGIONAL GROUND-WATER STUDY
TOWN OF DEERPARK
Summary of Available Well Data

Well ------ Water District	Tax Map Municipality ------ Section ---- Block ---- Lot	Map Location ------- I.D. #	Well Status	Reported Yield (gpm) Original ------ Present	Depth of Well (feet)	Well Diameter (inches)	Length of Casing (feet)	Well Screen Length (feet) ------ Setting Interval (feet)	Aquifer	Date Drilled	Comments
Well 1 ---------- Deerpark Manor	Deer-park10 --- 2 --- 1	DP ------- #9	In service -------- stand by	50 ----- N/A	60	6	40	N/A	Sand & gravel	N/A	Stand by well
Well 2 ---------- Deerpark Manor	Deer-park10 --- 2 --- 1	DP ------ #10	In service -------- active	100 ----- N/A	60	10	40	N/A	Sand & gravel	N/A	Main well
Well 1 ---------- Huguenot Estates	Deer-park50 --- 1 --- 40.11	DP -------- #11	In service -------- active	120 ----- 56	65	8	50	15 ----- N/A	N/A	N/A	
Well 2 ---------- Huguenot Estates	Deer-park50 --- 1 --- 40.11	DP -------- #12	In service -------- active	N/A ----- 55	75	6	N/A	N/A -----	N/A	N/A	

gpm - Gallons per minute.
NA - Not available.

Well Status:
In service - active
Abandoned
In service - stand by

Inactive - equipped
Inactive - not equipped

TABLE 1
(Continued)
REGIONAL GROUND-WATER STUDY
TOWN OF DEERPARK
Summary of Available Well Data

WELL ------ WATER DISTRICT	TAX MAP MU-NICI-PAL-ITY ------ SEC-TION ---- BLOC K ---- LOT	Map Loca-tion ------- I.D. #	Well Status	Reported Yield (gpm) Original ------ Present	Depth of Well (feet)	Well Diameter (inches)	Length of Casing (feet)	Well Screen Length (feet) ------ Setting Interval (feet)	Aquifer	Date Drilled	Comments
Well 1 ----- Maple Tree Mo-bile Homes	Deerpa rk 60 --- 2 --- 1.1	DP ----- #13	In service -------- stand by	N/A	165	6	N/A		Bedrock	N/A	Emergency lo-cated in base-ment of office
Well 2 --------- Maple Tree Mo-bile Homes	Deerpa rk 60 --- 2 --- 1.1	DP ----- #14	In service -------- active	110 ---- 50	450	6	119		Bedrock	1973	Main well
Well 1 ---------- Greenwood Mo-bile Home Court	Deerpa rk 11 --- 1 --- 15	DP ----- #15	In service ----- active	200 ----- N/A	140	6	50		Bedrock	1965	Unmetered
Well 1 ----------- Federal Well	Deer-park9 --- 2 ---	DP -------- #16	In service -------- active	360 ----- 350	60	12	42	10 ----- 42-52	Sand & gravel	1984	Federal prison well

	3										

gpm - Gallons per minute. Well Status:
NA - Not available. In service - active Abandoned
In service - stand by Inactive - not equipped Inactive - equipped

TABLE 1
(Continued)
REGIONAL GROUND-WATER STUDY
TOWN OF DEERPARK
Summary of Available Well Data

WELL ------ WATER DISTRICT	TAX MAP MU-NICI-PAL-ITY ------ SEC-TION ---- BLOC K ---- LOT	Map Loca-tion ------- I.D. #	Well Status	Reported Yield (gpm) Original ------ Present	Depth of Well (feet)	Well Diameter (inches)	Length of Casing (feet)	Well Screen Length (feet) ------ Setting Interval (feet)	Aquifer	Date Drilled	Comments
Well 2 Federal Well	Deerpa rk 9 --- 2 --- 3	DP -------- #17	In service --------- active	360 --------- 350	60	12	42	10 --------- 42-52	Sand & gravel	1984	Federal prison well
Emergency Well	Deerpa rk 9 --- 2 --- 3	DP -------- - #18	Emergency --------- Equipped	N/A --------- 400	60	8	42	10 --------- 42-52	Sand & gravel	1984	Non-chlorinat-ed emergency source

gpm - Gallons per minute.
NA - Not available.

Well Status:
In service - active
In service - stand by
Inactive - equipped
Abandoned
Inactive - not equipped

TABLE 2A

REGIONAL GROUND-WATER STUDY
TOWN OF DEERPARK

Summary of Well Yield Capacities
Painted Apron Village

Well **-----** **Water District**	**WSA No.** **-----** **Permitted Yield** **(gpm)**	**Average Yield Capacity** **(gpm)** **-----** **(gpd)**	**Maximum Yield Capacity** **(gpm)** **-----** **(gpd)**	**Comments**
Well 1 ---------- Painted Apron Village	5680 ------- N/A	22 -------- 31,680	22 ------- 31,680	Main Well
Well 2 ---------- Painted Apron Village	N/A	N/A	N/A	Auxilliary
Well 3 ---------- Painted Apron Village	6239 -------- N/A	25 -------- 36,000	25 ------- 36,000	Not Connected
TOTALS	**(Total Permitted Yield)** **N/A**	**(Total Yield Capacity)** **31,680 gpd**	**(Total Maximum Yield Capacity)** **31,680 gpd**	

gpm - Gallons per minute. WSA No. - Water Supply Application Number.
gpd - Gallons per day.

TABLE 2B

REGIONAL GROUND-WATER STUDY
TOWN OF DEERPARK

Summary of Well Yield Capacities
Fairlawn Mobile Village

Well **-----** **Water District**	**WSA No.** **-----** **Permitted Yield** **(gpm)**	**Average Yield Capacity** **(gpm)** **-----** **(gpd)**	**Maximum Yield Capacity** **(gpm)** **-----** **(gpd)**	**Comments**
Well 1 ---------- Fairlawn Mobile Village	N/A ------- 35	35 -------- 50,400	35 ------- 50,400	
TOTALS	**(Total Permitted Yield)** **N/A**	**(Total Yield Capacity)** **35** **-----** **50,400**	**(Total Maximum Yield Capacity)** **35** **------** **50,400**	

gpm - Gallons per minute. WSA No. - Water Supply Application Number.
gpd - Gallons per day.

TABLE 2C

REGIONAL GROUND-WATER STUDY
TOWN OF DEERPARK

Summary of Well Yield Capacities
Pine Grove Mobile Homes

Well **-----** **Water District**	**WSA No.** **-----** **Permitted Yield (gpm)**	**Average Yield Capacity (gpm)** **-----** **(gpd)**	**Maximum Yield Capacity (gpm)** **-----** **(gpd)**	**Comments**
Well 2 ---------- Pine Grove Mobile Home Manor	N/A ------- N/A	26 gpm -------- 37,440	26 gpm ------- 37,440	Pump simultaneously with Well #4
Well 4 ---------- Pine Grove Mobile Home Manor	N/A -------- N/A	38 gpm --------- 54,720	38 gpm ------- 54,720	Pump simultaneously with Well #2
TOTALS	**(Total Permitted Yield)** **N/A**	**(Total Yield Capacity)** **64** **-------** **92,160**	**(Total Maximum Yield Capacity)** **64** **--------** **92,160**	

gpm - Gallons per minute. WSA No. - Water Supply Application Number.
gpd - Gallons per day.

TABLE 2D

REGIONAL GROUND-WATER STUDY
TOWN OF DEERPARK

Summary of Well Yield Capacities
Deerpark Manor

Well **-----** **Water District**	**WSA No.** **-----** **Permitted Yield** **(gpm)**	**Average Yield Capacity** **(gpm)** **-----** **(gpd)**	**Maximum Yield Capacity** **(gpm)** **-----** **(gpd)**	**Comments**
Well 2 ---------- Deerpark Manor	N/A ------- 100	100 -------- 35,000	100 ------- 144,000	Main well
Well 1 ---------- Deerpark Manor Manor	N/A -------- 50	50 --------- 72,000	50 -------- 72,000	Stand by
TOTALS	**(Total Permitted Yield)** **N/A**	**(Total Yield Capacity)** **100** **--------** **35,000**	**(Total Maximum Yield Capacity)** **100** **--------** **144,000**	

gpm - Gallons per minute. WSA No. - Water Supply Application Number.
gpd - Gallons per day.

TABLE 2E

REGIONAL GROUND-WATER STUDY
TOWN OF DEERPARK

Summary of Well Yield Capacities
Huguenot Estates East

Well **-----** **Water District**	**WSA No.** **-----** **Permitted Yield** **(gpm)**	**Average Yield Capacity** **(gpm)** **-----** **(gpd)**	**Maximum Yield Capacity** **(gpm)** **-----** **(gpd)**	**Comments**
Well 1 ---------- Huguenot Estates East	N/A ------- 120 gpm	56 -------- 80,640	120 gpm ------- 172,800	
Well 2 ---------- Huguenot Estates East	N/A -------- N/A	55 --------- 79200	55 -------- 79200	
TOTALS	**(Total Permitted Yield)** **N/A**	**(Total Yield Capacity)** **111** **--------** **41,000**	**(Total Maximum Yield Capacity)** **175** **--------** **252,000**	

gpm - Gallons per minute. WSA No. - Water Supply Application Number.
gpd - Gallons per day.

Comment:
- Average daily water demand used to determine total yield capacity.

TABLE 2F

REGIONAL GROUND-WATER STUDY
TOWN OF DEERPARK

Summary of Well Yield Capacities
Maple Tree Mobile Homes

Well **-----** **Water District**	**WSA No.** **-----** **Permitted Yield** **(gpm)**	**Average Yield Capacity** **(gpm)** **-----** **(gpd)**	**Maximum Yield Capacity** **(gpm)** **-----** **(gpd)**	**Comments**
Well 1 ---------- Maple Tree Mobile Homes	N/A _____ N/A	N/A	N/A	Emergency
Well 2 ---------- Maple Tree Mobile Homes	N/A -------- 110	50 --------- 72,000	100 -------- 144,000	Main well
TOTALS	**(Total Permitted Yield)** **N/A**	**(Total Yield Capacity)** **50** **------** **72,000**	**(Total Maximum Yield Capacity)** **100** **-----** **144,000**	

gpm - Gallons per minute. WSA No. - Water Supply Application Number.
gpd - Gallons per day.

TABLE 2G

REGIONAL GROUND-WATER STUDY
TOWN OF DEERPARK

Summary of Well Yield Capacities
Greenwood Mobile Home Court

Well **-----** **Water District**	**WSA No.** **-----** **Permitted Yield (gpm)**	**Average Yield Capacity (gpm)** **-----** **(gpd)**	**Maximum Yield Capacity (gpm)** **-----** **(gpd)**	**Comments**
Well 1 ---------- Greenwood Mobile Home Court	N/A ------- 200	200 -------- 288,000	200 ------- 288,000	
TOTALS	**(Total Permitted Yield)** **N/A**	**(Total Yield Capacity)** **200** **-----** **288,000**	**(Total Maximum Yield Capacity)** **200** **------** **288,000**	

gpm - Gallons per minute. WSA No. - Water Supply Application Number.
gpd - Gallons per day.

TABLE 2H

REGIONAL GROUND-WATER STUDY
TOWN OF DEERPARK

Summary of Well Yield Capacities
Federal Correctional Facility

Well **-----** **Water District**	**WSA No.** **-----** **Permitted Yield** **(gpm)**	**Average Yield Capacity** **(gpm)** **-----** **(gpd)**	**Maximum Yield Capacity** **(gpm)** **-----** **(gpd)**	**Comments**
Well 1 ---------- Federal Correctional Facility	N/A ------- 700	111 -------- 160,000	700 ------- 1,008,000	
TOTALS	**(Total Permitted Yield)** **N/A**	**(Total Yield Capacity)** **111** **-------** **160,000**	**(Total Maximum Yield Capacity)** **700** **-------** **1,008,000**	

gpm - Gallons per minute. WSA No. - Water Supply Application Number.
gpd - Gallons per day.

TABLE 4

REGIONAL GROUND-WATER STUDY
CITY OF PORT JERVIS

Projected Water Demand
1993 - 2020
(mgd)

Water District	Current Maximum Yield Capacity (mgd)	Current and Proposed* Maximum Yield Capacity (mgd)	1993 Projected Water Demand ----- Water-Supply Adequacy**	2000 Projected Water Demand ----- Water-Supply Adequacy** or ***	2010 Projected Water Demand ----- Water-Supply Adequacy** or ***	2020 Projected Water Demand ----- Water-Supply Adequacy** or ***
#1	3.0	3.0	1.5 --------- 1.5**	1.5 -------- 1.5**	1.5 ------- 1.5**	1.5 --------- 1.5**
			---------	---------	--------	---------
TOTAL	**3.0**	**3.0**	**1.5** **---------** **1.5****	**1.5** **---------** **1.5****	**1.5** **--------** **1.5****	**1.5** **---------** **1.5****

mgd - Million gallons per day.
* Combined yield capacity of both current and proposed water supply(s).
** Calculated by current maximum yield capacity minus projected water demands.

\+ Surplus water supply, mgd.
\- Water supply deficiency (mgd).

COMMENTS:

TABLE 3A

REGIONAL GROUND-WATER STUDY
TOWN OF DEERPARK
MUNICIPALITY: City of Port Jervis

Summary of Water-Supply Sources

Existing Source

The City of Port Jervis supplies water from three surface water reservoirs and a water treatment plant with a capacity of 3.0 mgd.

	Surface Water (mgd)	**Ground Water (mgd)**
Current Average Daily Water Demand	1.5	n/a
Current Maximum Daily Water Demand	2.5	n/a
Maximum Yield Capacity	3.0	n/a
Average Yield Capacity	1.5	n/a
Proposed Sources (Average Day)	n/a	n/a
***TOTAL MAXIMUM YIELD CAPACITY (MGD)**		**3.0**
----------		**---------**
***CURRENT MAXIMUM DAILY USE (MGD)**		**2.5**

mgd - Million gallons per day.
* Combine surface water and ground-water sources.

TABLE 5

REGIONAL GROUND-WATER STUDY
TOWN OF DEERPARK
ORANGE COUNTY, NEW YORK

Petroleum Bulk Storage Facilities

Facility Name	Location	Municipality
Baker's General Store	Box 86	Cuddebackville
D&H Canal Store	RR1, Box 5, Oakland Valley Road	Cuddebackville
Hamilton Bicentennial School	Route 209	Cuddebackville
Sullivan LaFarge	Routes 209 & 211	Cuddebackville
Hazen	Route #6	Deerpark
Lewis' County Market	Rt. 209N, P.O. Box 187	Huguenot
R&R Packaging Corp.	323 Route 209	Huguenot
Somarelli Trucking	Box 125 Martin & Wood Rd.	Huguenot
Town of Deerpark Highway Dept.	Route 209	Huguenot
Town of Deerpark Highway Dept.	Route 209, Drawer A	Huguenot
A&W Products Co., Inc.	Gardner Street	Port Jervis
Barrier Industries	200 East Main Street	Port Jervis
City of Port Jervis DPW	1 Franklin Street	Port Jervis
CTC of New York, Inc.	RD 1 Route 6	Port Jervis
Dairy Mart 6680	3 Main Street	Port Jervis
Delaware Valley Cement Block C	23 Ryan Street	Port Jervis
Ed Smith Chevy Olds, Inc.	131 Kingston Avenue	Port Jervis

TABLE 5 (Continued)

REGIONAL GROUND-WATER STUDY
TOWN OF DEERPARK
ORANGE COUNTY, NEW YORK

Petroleum Bulk Storage Facilities

Facility Name	Location	Municipality
Gillinder Brothers, Inc.	Erie & Liberty Streets	Port Jervis
GTE New York	164 Pike Street	Port Jervis
Jersey Ave. Handi-Stop, Inc.	168 Jersey Avenue	Port Jervis
Kolmar Lab-King Division	King Street	Port Jervis
Kolmar Laboratories	Neversink Avenue	Port Jervis
Kolmar Laboratories - S Division	Skyline Drive	Port Jervis
Lewis Vending, Inc.	233-237 Jersey Avenue	Port Jervis
Lloyd's Gas & Service, Inc.	Fowler & Jersey	Port Jervis
Machackemach Village	230 Jersey Avenue	Port Jervis
Mercy Community Hospital	160 East Main Street	Port Jervis
Mobil S/S 06FG2	1 Kingston Avenue	Port Jervis
NYSDOT	Route 6	Port Jervis
Port Jervis Facility	108 East Main Street	Port Jervis
Port Jervis Middle School	118 East Main Street	Port Jervis
Port Jervis Operating Center	16 Pike Street	Port Jervis
Port Jervis Sewage Treatment	RFD #3 Box 413	Port Jervis
Post Office	20 Sussex Street	Port Jervis
Route 209 Complex	Route 209	Port Jervis

TABLE 5 (Continued)

REGIONAL GROUND-WATER STUDY
TOWN OF DEERPARK
ORANGE COUNTY, NEW YORK

Petroleum Bulk Storage Facilities

Facility Name	Location	Municipality
Skydyne Div. AAR, Brooks+Prkns	River Road	Port Jervis
Spangenberg Wilbert Vault Co.	40 Hamilton Street	Port Jervis
Sullivan Avenue School	Sullivan Avenue	Port Jervis
The Town & Country Convenience	32 Culvert Street	Port Jervis
Town/Greenville Highway Dept.	65 Orange County Rt. 55	Port Jervis
Woodruff Builders & Supply, Inc.	40 Mechanic Street	Port Jervis
Advance Fuel Inc.	P.O. Box 339	Sparrowbush
Agway Energy Products	River Road	Sparrowbush
E&M Convenience Store	Main Street	Sparrowbush
Port Jervis Field Office	Old Cahoonzie Road	Sparrowbush
Sparrowbush Oil Service, Inc.	P.O. Box 335	Sparrowbush