SOURCE WATER ASSESSMENT REPORT

AN EVALUATION OF THE SUSCEPTIBILITY OF PUBLIC DRINKING WATER SOURCES TO POTENTIAL CONTAMINATION

APA **119**

Regional Water Authority
North Cheshire Wellfield

The State of Connecticut Department of Public Health (DPH) in cooperation with the Department of Environmental Protection (DEP) recently completed an assessment of the North Cheshire Wellfield, which is a source of public drinking water that is maintained and operated by the Regional Water Authority. This one-time assessment is part of a nationwide effort mandated by Congress under the Safe Drinking Water Act Amendments of 1996 to evaluate the susceptibility of all public drinking water sources in Connecticut to potential sources of contamination. DPH began working in partnership with the DEP in 1997 to develop Connecticut's Source Water Assessment Program, which was approved by the U.S. Environmental Protection Agency in 1999. Sources of potential contamination that are of concern to public drinking water supplies here in Connecticut are generally associated with historic waste disposal or commercial, industrial, agricultural and residential properties that store or use hazardous materials like petroleum products, solvents or agricultural chemicals.

The assessment is intended to provide Regional Water Authority consumers with information about where their public drinking water comes from, sources of potential contamination that could impact it, and what can be done to help protect it. This assessment will also assist the public water supply system, regional planners, local government, public health officials and state agencies in evaluating the degree to which the North Cheshire Wellfield may be at risk from potential sources of contamination. The assessment can be used to target and implement enhanced source water protection measures such as routine inspections, protective land use regulations, acquisition of critical land, proper septic system maintenance, and public education. General sources of contamination with the potential to impact the North Cheshire Wellfield include properties with underground fuel storage tanks, improperly maintained on-site septic systems, improper waste disposal, or commercial/industrial sites that store or use chemicals or generate hazardous wastes.

North Cheshire Wellfield Source Water Assessment Summary

STRENGTHS

Local aquifer protection regulations adopted

Public Water System Source Protection Program

POTENTIAL RISK FACTORS

Potential contaminant sources in source water area

3 contaminant release points in source water area

Susceptibility Rating

Rating	Environmental Sensitivity	Potential Risk Factors	Source Protection Needs
Low			
Moderate	X	X	X
High			

Overall Susceptibility Rating: Moderate

This rating indicates susceptibility to potential sources of contamination that may be in the wellfield source water area and does not necessarily imply poor water quality.

Detailed information about the specific factors and information used in establishing this rating can be found in Table 1. Information about opportunities to improve protection in the North Cheshire Wellfield source water area is also presented in Table 2.

CONNECTICUT DEPARTMENT OF PUBLIC HEALTH

Keeping Connecticut Healthy

State of Connecticut Department of Public Health

Drinking Water Division

410 Capitol Avenue – MS# 51WAT

P.O. Box 340308 Hartford, CT 06134

(860) 509-7333

Produced With Funding Provided By The United States Environmental Protection Agency - May 2003

OVERVIEW - The North Cheshire Wellfield is located in an aquifer that is comprised largely of water-bearing sand and gravel deposits. The source water area is delineated by a final Level A aquifer protection mapping area, which encompasses some 2451.7 acres of land in Cheshire, Meriden and Southington. Vacant land and residential properties in the North Cheshire Wellfield source water area presently account for approximately 72.7 percent of the land cover. Commercial development at 11.1 percent and agricultural land use at 16.2 percent, account for the remainder of the land coverage's in the source water area. Information about drinking water quality and treatment is available in the Regional Water Authority's annual Consumer Confidence Report.

ASSESSMENT METHODS.

The drinking water source assessment methods used by the Department of Public Health Drinking Water Division to evaluate the susceptibility of public drinking water sources to contamination are based on criteria individually tailored to surface water and groundwater sources. The criteria are keyed to sanitary conditions in the source water area, the presence of potential or historic sources of contamination, existing land use coverage's, and the need for additional source protection measures within the source water area. Source-specific data for community and non-community systems were used to determine whether a particular criterion should be rated as low, moderate or high, relative to the risk of potential contamination at the drinking water source. Further, a ranking system was used to compute an average rank for each community drinking water source based on its environmental sensitivity, potential risk of contamination and source protection needs.

Wellfields rated as having a low, moderate or high susceptibility to potential sources of contamination generally exhibit the characteristics summarized in Table 1.

Table 1 – General Source Water Area Characteristics and Susceptibility Ratings

Susceptibility Rating	**General Characteristics of the Source Water Area***
Low	Low density of potential contaminant sources Lower intensity of land development
Moderate	Low to moderate density of potential contaminant sources Moderate intensity of land development
High	Moderate to high density of potential contaminant sources Higher intensity of land development No local aquifer protection regulations Detectable nitrates and/or volatile organic chemicals in the untreated source water during the past three years that are below the maximum contaminant levels allowed by state and federal drinking water regulations

**** Note: Not all characteristics may be present for a given susceptibility rating***

Readers of this assessment are encouraged to use the attached glossary to assist in the understanding of the terms and concepts used throughout this report.

Maps representing the location and features of the North Cheshire Wellfield source water area have not been included with this assessment report because of homeland security concerns

NORTH CHESHIRE WELLFIELD ASSESSMENT RESULTS.

Based on a combination of current wellfield and source water area conditions, existing potential contaminant sources, and the level of source protection measures currently in place, the source water assessment for this wellfield indicates that it has an overall Moderate risk of contamination from identified potential sources of contamination. It should be noted that this rating does not necessarily imply poor water quality or ongoing violations of the Connecticut Public Health Code. The assessment findings for the North Cheshire Wellfield are summarized in Table 2, which lists current conditions in the wellfield source water area and recommendations or opportunities to enhance protection of this public drinking water source. A listing of potential contaminant source types in the area can be found in Table 3. A summary of source water area features is shown in Table 4.

The assessment of this and other comparable wellfields throughout Connecticut generally finds that adopting recommendations similar to those presented in Table 2 could reduce the susceptibility of most groundwater sources to potential sources of contamination.

Table 2 **Source Water Assessment Findings and Source Protection Opportunities**

North Cheshire Wellfield

Assessment Category	Conditions Through June 2002	Recommendations and Source Protection Opportunities
Environmental Sensitivity Factors	All wells in the North Cheshire Wellfield are sited and constructed in accordance with DPH regulations and the most recent DPH sanitary survey of this wellfield indicates that it is free of deficiencies.	
Contaminants Detected in Untreated Source Water	Nitrate >1mg/L, Trichloroethylene, Tetrachloroethylene, Dichloropropane Except where noted above, any detected contaminants listed are below maximum contaminant levels (MCL) established by the federal government or guidance levels established by the Connecticut Department of Public Health. The presence of these contaminants, in general, indicates that this wellfield is sensitive to human activity. Click here to review EPA's current drinking water standardsT	Maintain monitoring levels specified in the Connecticut Public Health Code Section 19-13-B102 Encourage homeowners to adopt residential best management practices that minimize the use hazardous materials or generation of hazardous waste.
Potential Risk Factors	Potential contaminant sources in source water area 3 contaminant release points in source water area More than 30% of land for this source water area is undeveloped, which could present a risk if developed inappropriately. Ten percent or more of the source water area has been developed for commercial or industrial use	Periodically inspect SPCS sites and maintain a water quality monitoring program consistent with the level of potential risk Maintain an adequate level of surveillance around contaminant release point sites to insure that groundwater contamination is not occurring Proactively work with local officials and developers to insure that only low-risk development occurs within the source water area Monitor activities at commercial and industrial facilities to insure that best management practices are being followed Encourage residential property owners to conduct scheduled inspections and maintenance of underground fuel storage tanks and on-site septic systems.
Source Protection Needs Factors	Level A aquifer mapping completed Portions of the 200 foot sanitary radius around wellheads for this wellfield are not owned or controlled by the public water system. Local aquifer protection regulations exist for 98% of source water area Less than 10% of the land in the source water area exists as preserved open space	Where feasible, increase ownership or control of 200 foot sanitary radius around all wellheads for this wellfield Expand coverage of local aquifer protection regulations throughout entire source water area Support and encourage the acquisition of open space land within the source water area Support environmental awareness and education within the community.

Inventoried significant potential contaminant sources in the North Cheshire Wellfield source water area are listed in Table 3. While these facilities have the potential to cause groundwater contamination, there is no indication that they are doing so at this time.

Table 3 Summary of Significant Potential Contaminant Types in the North Cheshire Wellfield Source Water Area

Category	Subcategory	Number of SPCS Types
Waste Storage, Handling, Disposal	Hazardous Waste Facilities	2
	Solid Waste Facilities	1
	Miscellaneous	0
Bulk Chemical, Petroleum Storage	Underground Storage Tanks	19
	Tank Farms	2
	Warehouses	0
Industrial Manufacturing / Processing	Chemical & Allied Production	0
	Chemical Use Processing	9
	Miscellaneous	7
Commercial Trades and Services	Automotive and Related Services	25
	Chemical Use Services	3
	Miscellaneous	1
Agriculture and Related	Pesticide Storage, Handling or Application	0
Total Number of Contaminant Types		69

Prominent features of the North Cheshire Wellfield source water area are summarized in Table 4.

Table 4 Features of the *North Cheshire Wellfield* Source Water Area

Number and Type of Public Drinking Water Supply Wells	4 stratified drift wells
Source Water Area Delineation Method [a]	final Level A
DEP Groundwater Classification	GA-impaired or GAA-impaired- Groundwater that may not be meeting all standards with a goal to restore to drinking water quality
Size of Source Water Area	2451.7 acres
Location of Source Water Area	Cheshire, Meriden and Southington
Predominant Land Use and Land Cover in Source Water Area [b] -Urban - Commercial or Industrial -Urban - Residential -Agricultural -Undeveloped Land	 11.1 % 22.9 % 16.2 % 49.7 %
Preserved Land In Source Water Area [d]	225.0 acres
Significant Potential Contamination Sources -Number of inventoried facilities in source water area -Count of inventoried facilities per square mile -Number of contaminant sources within inventoried facilities	 35 9.14 per sq mile 69
Number of Contaminant Release Points Inventoried by CTDEP [c]	3

[a] Source water delineation method depends on data available for the wellfield

[b] Based on statewide data layer of land use and land cover developed by UCONN Dept of Natural Resource Management Engineering and Connecticut DEP satellite imagery.

[c] Sites or locations with documented accidental spills, leaks or discharges. While these sources, which are cataloged and tracked by the Connecticut DEP, may fall within a public drinking water supply source water area, they may or may not presently be discharging to the environment or causing contamination of a public drinking water source.

[d] Any combination of state forest and parklands and municipally or privately held land designated as open space.

SOURCE WATER ASSESSMENT REPORT

AN EVALUATION OF THE SUSCEPTIBILITY OF PUBLIC DRINKING WATER SOURCES TO POTENTIAL CONTAMINATION

APA **120**

Regional Water Authority
South Cheshire Wellfield

The State of Connecticut Department of Public Health (DPH) in cooperation with the Department of Environmental Protection (DEP) recently completed an assessment of the South Cheshire Wellfield, which is a source of public drinking water that is maintained and operated by the Regional Water Authority. This one-time assessment is part of a nationwide effort mandated by Congress under the Safe Drinking Water Act Amendments of 1996 to evaluate the susceptibility of all public drinking water sources in Connecticut to potential sources of contamination. DPH began working in partnership with the DEP in 1997 to develop Connecticut's Source Water Assessment Program, which was approved by the U.S. Environmental Protection Agency in 1999. Sources of potential contamination that are of concern to public drinking water supplies here in Connecticut are generally associated with historic waste disposal or commercial, industrial, agricultural and residential properties that store or use hazardous materials like petroleum products, solvents or agricultural chemicals.

The assessment is intended to provide Regional Water Authority consumers with information about where their public drinking water comes from, sources of potential contamination that could impact it, and what can be done to help protect it. This assessment will also assist the public water supply system, regional planners, local government, public health officials and state agencies in evaluating the degree to which the South Cheshire Wellfield may be at risk from potential sources of contamination. The assessment can be used to target and implement enhanced source water protection measures such as routine inspections, protective land use regulations, acquisition of critical land, proper septic system maintenance, and public education. General sources of contamination with the potential to impact the South Cheshire Wellfield include properties with underground fuel storage tanks, improperly maintained on-site septic systems, improper waste disposal, or commercial/industrial sites that store or use chemicals or generate hazardous wastes.

South Cheshire Wellfield Source Water Assessment Summary

STRENGTHS

Local aquifer protection regulations adopted

Public Water System Source Protection Program

Less than 10% of this source water area is currently developed for commercial or industrial use

POTENTIAL RISK FACTORS

Potential contaminant sources in source water area

1 contaminant release point in source water area

Susceptibility Rating

Rating	Environmental Sensitivity	Potential Risk Factors	Source Protection Needs
Low		X	X
Moderate	X		
High			

Overall Susceptibility Rating: Low

This rating indicates susceptibility to potential sources of contamination that may be in the wellfield source water area and does not necessarily imply poor water quality.

Detailed information about the specific factors and information used in establishing this rating can be found in Table 1. Information about opportunities to improve protection in the South Cheshire Wellfield source water area is also presented in Table 2.

CONNECTICUT DEPARTMENT OF PUBLIC HEALTH

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State of Connecticut Department of Public Health

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Produced With Funding Provided By The United States Environmental Protection Agency - May 2003

OVERVIEW - The South Cheshire Wellfield is located in an aquifer that is comprised largely of water-bearing sand and gravel deposits. The source water area is delineated by a final Level A aquifer protection mapping area, which encompasses some 1626.6 acres of land in Cheshire. Vacant land and residential properties in the South Cheshire Wellfield source water area presently account for approximately 86.5 percent of the land cover. Commercial development at 4.5 percent and agricultural land use at 9.1 percent, account for the remainder of the land coverage's in the source water area. Information about drinking water quality and treatment is available in the Regional Water Authority's annual Consumer Confidence Report.

ASSESSMENT METHODS.

The drinking water source assessment methods used by the Department of Public Health Drinking Water Division to evaluate the susceptibility of public drinking water sources to contamination are based on criteria individually tailored to surface water and groundwater sources. The criteria are keyed to sanitary conditions in the source water area, the presence of potential or historic sources of contamination, existing land use coverage's, and the need for additional source protection measures within the source water area. Source-specific data for community and non-community systems were used to determine whether a particular criterion should be rated as low, moderate or high, relative to the risk of potential contamination at the drinking water source. Further, a ranking system was used to compute an average rank for each community drinking water source based on its environmental sensitivity, potential risk of contamination and source protection needs.

Wellfields rated as having a low, moderate or high susceptibility to potential sources of contamination generally exhibit the characteristics summarized in Table 1.

Table 1 – General Source Water Area Characteristics and Susceptibility Ratings

Susceptibility Rating	**General Characteristics of the Source Water Area***
Low	Low density of potential contaminant sources Lower intensity of land development
Moderate	Low to moderate density of potential contaminant sources Moderate intensity of land development
High	Moderate to high density of potential contaminant sources Higher intensity of land development No local aquifer protection regulations Detectable nitrates and/or volatile organic chemicals in the untreated source water during the past three years that are below the maximum contaminant levels allowed by state and federal drinking water regulations

****Note: Not all characteristics may be present for a given susceptibility rating***

Readers of this assessment are encouraged to use the attached glossary to assist in the understanding of the terms and concepts used throughout this report.

Maps representing the location and features of the South Cheshire Wellfield source water area have not been included with this assessment report because of homeland security concerns

SOUTH CHESHIRE WELLFIELD ASSESSMENT RESULTS.

Based on a combination of current wellfield and source water area conditions, existing potential contaminant sources, and the level of source protection measures currently in place, the source water assessment for this wellfield indicates that it has an overall Low risk of contamination from identified potential sources of contamination. It should be noted that this rating does not necessarily imply poor water quality or ongoing violations of the Connecticut Public Health Code. The assessment findings for the South Cheshire Wellfield are summarized in Table 2, which lists current conditions in the wellfield source water area and recommendations or opportunities to enhance protection of this public drinking water source. A listing of potential contaminant source types in the area can be found in Table 3. A summary of source water area features is shown in Table 4.

The assessment of this and other comparable wellfields throughout Connecticut generally finds that adopting recommendations similar to those presented in Table 2 could reduce the susceptibility of most groundwater sources to potential sources of contamination.

Table 2 **Source Water Assessment Findings and Source Protection Opportunities**

South Cheshire Wellfield

Assessment Category	Conditions Through June 2002	Recommendations and Source Protection Opportunities
Environmental Sensitivity Factors	All wells in the South Cheshire Wellfield are sited and constructed in accordance with DPH regulations and the most recent DPH sanitary survey of this wellfield indicates that it is free of deficiencies.	
Contaminants Detected in Untreated Source Water	Nitrate >1mg/L, Trichloroethylene Except where noted above, any detected contaminants listed are below maximum contaminant levels (MCL) established by the federal government or guidance levels established by the Connecticut Department of Public Health. The presence of these contaminants, in general, indicates that this wellfield is sensitive to human activity. Click here to review EPA's current drinking water standardsT	Maintain monitoring levels specified in the Connecticut Public Health Code Section 19-13-B102 Encourage homeowners to adopt residential best management practices that minimize the use hazardous materials or generation of hazardous waste.
Potential Risk Factors	Potential contaminant sources in source water area 1 contaminant release point in source water area More than 30% of land for this source water area is undeveloped, which could present a risk if developed inappropriately.	Periodically inspect SPCS sites and maintain a water quality monitoring program consistent with the level of potential risk Maintain an adequate level of surveillance around contaminant release point sites to insure that groundwater contamination is not occurring Proactively work with local officials and developers to insure that only low-risk development occurs within the source water area Encourage residential property owners to conduct scheduled inspections and maintenance of underground fuel storage tanks and on-site septic systems.
Source Protection Needs Factors	Level A aquifer mapping completed 100 percent ownership or control of sanitary radius around wellheads in wellfield. Aquifer protection regulations adopted for the entire source water area Less than 10% of the land in the source water area exists as preserved open space	Adhere to local aquifer protection regulations Support and encourage the acquisition of open space land within the source water area Support environmental awareness and education within the community.

Inventoried significant potential contaminant sources in the South Cheshire Wellfield source water area are listed in Table 3. While these facilities have the potential to cause groundwater contamination, there is no indication that they are doing so at this time.

Table 3 Summary of Significant Potential Contaminant Types in the South Cheshire Wellfield Source Water Area

Category	Subcategory	Number of SPCS Types
Waste Storage, Handling, Disposal	Hazardous Waste Facilities	1
	Solid Waste Facilities	0
	Miscellaneous	0
Bulk Chemical, Petroleum Storage	Underground Storage Tanks	7
	Tank Farms	0
	Warehouses	0
Industrial Manufacturing / Processing	Chemical & Allied Production	0
	Chemical Use Processing	2
	Miscellaneous	2
Commercial Trades and Services	Automotive and Related Services	5
	Chemical Use Services	1
	Miscellaneous	0
Agriculture and Related	Pesticide Storage, Handling or Application	0
Total Number of Contaminant Types		18

Prominent features of the South Cheshire Wellfield source water area are summarized in Table 4.

Table 4 Features of the *South Cheshire Wellfield* Source Water Area

Number and Type of Public Drinking Water Supply Wells	2 stratified drift wells
Source Water Area Delineation Method [a]	final Level A
DEP Groundwater Classification	GA-impaired or GAA-impaired- Groundwater that may not be meeting all standards with a goal to restore to drinking water quality
Size of Source Water Area	1626.6 acres
Location of Source Water Area	Cheshire
Predominant Land Use and Land Cover in Source Water Area [b] -Urban - Commercial or Industrial -Urban - Residential -Agricultural -Undeveloped Land	 4.5 % 44.6 % 9.1 % 41.8 %
Preserved Land In Source Water Area [d]	97.8 acres
Significant Potential Contamination Sources -Number of inventoried facilities in source water area -Count of inventoried facilities per square mile -Number of contaminant sources within inventoried facilities	 12 4.72 per sq mile 18
Number of Contaminant Release Points Inventoried by CTDEP [c]	1

[a] Source water delineation method depends on data available for the wellfield

[b] Based on statewide data layer of land use and land cover developed by UCONN Dept of Natural Resource Management Engineering and Connecticut DEP satellite imagery.

[c] Sites or locations with documented accidental spills, leaks or discharges. While these sources, which are cataloged and tracked by the Connecticut DEP, may fall within a public drinking water supply source water area, they may or may not presently be discharging to the environment or causing contamination of a public drinking water source.

[d] Any combination of state forest and parklands and municipally or privately held land designated as open space.

SOURCE WATER ASSESSMENT REPORT

AN EVALUATION OF THE SUSCEPTIBILITY OF PUBLIC DRINKING WATER SOURCES TO POTENTIAL CONTAMINATION

APA **122**

Regional Water Authority
South Sleeping Giant Wellfield

The State of Connecticut Department of Public Health (DPH) in cooperation with the Department of Environmental Protection (DEP) recently completed an assessment of the South Sleeping Giant Wellfield, which is a source of public drinking water that is maintained and operated by the Regional Water Authority. This one-time assessment is part of a nationwide effort mandated by Congress under the Safe Drinking Water Act Amendments of 1996 to evaluate the susceptibility of all public drinking water sources in Connecticut to potential sources of contamination. DPH began working in partnership with the DEP in 1997 to develop Connecticut's Source Water Assessment Program, which was approved by the U.S. Environmental Protection Agency in 1999. Sources of potential contamination that are of concern to public drinking water supplies here in Connecticut are generally associated with historic waste disposal or commercial, industrial, agricultural and residential properties that store or use hazardous materials like petroleum products, solvents or agricultural chemicals.

The assessment is intended to provide Regional Water Authority consumers with information about where their public drinking water comes from, sources of potential contamination that could impact it, and what can be done to help protect it. This assessment will also assist the public water supply system, regional planners, local government, public health officials and state agencies in evaluating the degree to which the South Sleeping Giant Wellfield may be at risk from potential sources of contamination. The assessment can be used to target and implement enhanced source water protection measures such as routine inspections, protective land use regulations, acquisition of critical land, proper septic system maintenance, and public education. General sources of contamination with the potential to impact the South Sleeping Giant Wellfield include properties with underground fuel storage tanks, improperly maintained on-site septic systems, improper waste disposal, or commercial/industrial sites that store or use chemicals or generate hazardous wastes.

South Sleeping Giant Wellfield Source Water Assessment Summary

STRENGTHS

Local aquifer protection regulations adopted

Public Water System Source Protection Program

Approximately 40 percent of the source water area is preserved as open space

Less than 10% of this source water area is currently developed for commercial or industrial use

POTENTIAL RISK FACTORS

Potential contaminant sources in source water area

Susceptibility Rating

Rating	Environmental Sensitivity	Potential Risk Factors	Source Protection Needs
Low	X	X	X
Moderate			
High			

Overall Susceptibility Rating: Low

This rating indicates susceptibility to potential sources of contamination that may be in the wellfield source water area and does not necessarily imply poor water quality.

Detailed information about the specific factors and information used in establishing this rating can be found in Table 1. Information about opportunities to improve protection in the South Sleeping Giant Wellfield source water area is also presented in Table 2.

CONNECTICUT DEPARTMENT OF PUBLIC HEALTH

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Produced With Funding Provided By The United States Environmental Protection Agency - May 2003

OVERVIEW - The South Sleeping Giant Wellfield is located in an aquifer that is comprised largely of water-bearing sand and gravel deposits. The source water area is delineated by a final Level A aquifer protection mapping area, which encompasses some 755.0 acres of land in Hamden. Vacant land and residential properties in the South Sleeping Giant Wellfield source water area presently account for approximately 93.8 percent of the land cover. Commercial development at 2.5 percent and agricultural land use at 3.7 percent, account for the remainder of the land coverage's in the source water area. Information about drinking water quality and treatment is available in the Regional Water Authority's annual Consumer Confidence Report.

ASSESSMENT METHODS.

The drinking water source assessment methods used by the Department of Public Health Drinking Water Division to evaluate the susceptibility of public drinking water sources to contamination are based on criteria individually tailored to surface water and groundwater sources. The criteria are keyed to sanitary conditions in the source water area, the presence of potential or historic sources of contamination, existing land use coverage's, and the need for additional source protection measures within the source water area. Source-specific data for community and non-community systems were used to determine whether a particular criterion should be rated as low, moderate or high, relative to the risk of potential contamination at the drinking water source. Further, a ranking system was used to compute an average rank for each community drinking water source based on its environmental sensitivity, potential risk of contamination and source protection needs.

Wellfields rated as having a low, moderate or high susceptibility to potential sources of contamination generally exhibit the characteristics summarized in Table 1.

Table 1 – General Source Water Area Characteristics and Susceptibility Ratings

Susceptibility Rating	**General Characteristics of the Source Water Area***
Low	Low density of potential contaminant sources Lower intensity of land development
Moderate	Low to moderate density of potential contaminant sources Moderate intensity of land development
High	Moderate to high density of potential contaminant sources Higher intensity of land development No local aquifer protection regulations Detectable nitrates and/or volatile organic chemicals in the untreated source water during the past three years that are below the maximum contaminant levels allowed by state and federal drinking water regulations

****Note: Not all characteristics may be present for a given susceptibility rating***

Readers of this assessment are encouraged to use the attached glossary to assist in the understanding of the terms and concepts used throughout this report.

Maps representing the location and features of the South Sleeping Giant Wellfield source water area have not been included with this assessment report because of homeland security concerns

SOUTH SLEEPING GIANT WELLFIELD ASSESSMENT RESULTS.

Based on a combination of current wellfield and source water area conditions, existing potential contaminant sources, and the level of source protection measures currently in place, the source water assessment for this wellfield indicates that it has an overall Low risk of contamination from identified potential sources of contamination. The assessment findings for the South Sleeping Giant Wellfield are summarized in Table 2, which lists current conditions in the wellfield source water area and recommendations or opportunities to enhance protection of this public drinking water source. A listing of potential contaminant source types in the area can be found in Table 3. A summary of source water area features is shown in Table 4.

The assessment of this and other comparable wellfields throughout Connecticut generally finds that adopting recommendations similar to those presented in Table 2 could reduce the susceptibility of most groundwater sources to potential sources of contamination.

Table 2 **Source Water Assessment Findings and Source Protection Opportunities**

South Sleeping Giant Wellfield

Assessment Category	Conditions Through June 2002	Recommendations and Source Protection Opportunities
Environmental Sensitivity Factors	All wells in the South Sleeping Giant Wellfield are sited and constructed in accordance with DPH regulations and the most recent DPH sanitary survey of this wellfield indicates that it is free of deficiencies.	
Contaminants Detected in Untreated Source Water	Nitrate >1mg/L Except where noted above, any detected contaminants listed are below maximum contaminant levels (MCL) established by the federal government or guidance levels established by the Connecticut Department of Public Health. The presence of these contaminants, in general, indicates that this wellfield is sensitive to human activity. Click here to review EPA's current drinking water standardsT	Maintain monitoring levels specified in the Connecticut Public Health Code Section 19-13-B102 Encourage homeowners to adopt residential best management practices that minimize the use hazardous materials or generation of hazardous waste.
Potential Risk Factors	Potential contaminant sources in source water area More than 50% of land for this source water area is undeveloped, which could present a risk if developed inappropriately.	Periodically inspect SPCS sites and maintain a water quality monitoring program consistent with the level of potential risk Proactively work with local officials and developers to insure that only low-risk development occurs within the source water area Encourage residential property owners to conduct scheduled inspections and maintenance of underground fuel storage tanks and on-site septic systems.
Source Protection Needs Factors	Level A aquifer mapping completed Portions of the 200 foot sanitary radius around wellheads for this wellfield are not owned or controlled by the public water system. Aquifer protection regulations adopted for the entire source water area	Where feasible, increase ownership or control of 200 foot sanitary radius around all wellheads for this wellfield Adhere to local aquifer protection regulations Support environmental awareness and education within the community.

Inventoried significant potential contaminant sources in the South Sleeping Giant Wellfield source water area are listed in Table 3. While these facilities have the potential to cause groundwater contamination, there is no indication that they are doing so at this time.

Table 3 Summary of Significant Potential Contaminant Types in the South Sleeping Giant Wellfield Source Water Area

Category	Subcategory	Number of SPCS Types
Waste Storage, Handling, Disposal	Hazardous Waste Facilities	0
	Solid Waste Facilities	0
	Miscellaneous	0
Bulk Chemical, Petroleum Storage	Underground Storage Tanks	0
	Tank Farms	0
	Warehouses	0
Industrial Manufacturing / Processing	Chemical & Allied Production	0
	Chemical Use Processing	1
	Miscellaneous	0
Commercial Trades and Services	Automotive and Related Services	1
	Chemical Use Services	2
	Miscellaneous	0
Agriculture and Related	Pesticide Storage, Handling or Application	0
Total Number of Contaminant Types		4

Prominent features of the South Sleeping Giant Wellfield source water area are summarized in Table 4.

Table 4 Features of the *South Sleeping Giant Wellfield* Source Water Area

Number and Type of Public Drinking Water Supply Wells	1 stratified drift well
Source Water Area Delineation Method [a]	final Level A
DEP Groundwater Classification	GAA - Groundwater used as a public drinking water supply, presumed to be drinkable without treatment
Size of Source Water Area	755.0 acres
Location of Source Water Area	Hamden
Predominant Land Use and Land Cover in Source Water Area [b]	
-Urban - Commercial or Industrial	2.5 %
-Urban - Residential	22.9 %
-Agricultural	3.7 %
-Undeveloped Land	71.0 %
Preserved Land In Source Water Area [d]	300.6 acres
Significant Potential Contamination Sources	
-Number of inventoried facilities in source water area	3
-Count of inventoried facilities per square mile	2.54 per sq mile
-Number of contaminant sources within inventoried facilities	4
Number of Contaminant Release Points Inventoried by CTDEP [c]	0

[a] Source water delineation method depends on data available for the wellfield

[b] Based on statewide data layer of land use and land cover developed by UCONN Dept of Natural Resource Management Engineering and Connecticut DEP satellite imagery.

[c] Sites or locations with documented accidental spills, leaks or discharges. While these sources, which are cataloged and tracked by the Connecticut DEP, may fall within a public drinking water supply source water area, they may or may not presently be discharging to the environment or causing contamination of a public drinking water source.

[d] Any combination of state forest and parklands and municipally or privately held land designated as open space.

SOURCE WATER ASSESSMENT REPORT

AN EVALUATION OF THE SUSCEPTIBILITY OF PUBLIC DRINKING WATER SOURCES TO POTENTIAL CONTAMINATION

APA **121**

Regional Water Authority
North Sleeping Giant Wellfield

The State of Connecticut Department of Public Health (DPH) in cooperation with the Department of Environmental Protection (DEP) recently completed an assessment of the North Sleeping Giant Wellfield, which is a source of public drinking water that is maintained and operated by the Regional Water Authority. This one-time assessment is part of a nationwide effort mandated by Congress under the Safe Drinking Water Act Amendments of 1996 to evaluate the susceptibility of all public drinking water sources in Connecticut to potential sources of contamination. DPH began working in partnership with the DEP in 1997 to develop Connecticut's Source Water Assessment Program, which was approved by the U.S. Environmental Protection Agency in 1999. Sources of potential contamination that are of concern to public drinking water supplies here in Connecticut are generally associated with historic waste disposal or commercial, industrial, agricultural and residential properties that store or use hazardous materials like petroleum products, solvents or agricultural chemicals.

The assessment is intended to provide Regional Water Authority consumers with information about where their public drinking water comes from, sources of potential contamination that could impact it, and what can be done to help protect it. This assessment will also assist the public water supply system, regional planners, local government, public health officials and state agencies in evaluating the degree to which the North Sleeping Giant Wellfield may be at risk from potential sources of contamination. The assessment can be used to target and implement enhanced source water protection measures such as routine inspections, protective land use regulations, acquisition of critical land, proper septic system maintenance, and public education. General sources of contamination with the potential to impact the North Sleeping Giant Wellfield include properties with underground fuel storage tanks, improperly maintained on-site septic systems, improper waste disposal, or commercial/industrial sites that store or use chemicals or generate hazardous wastes.

North Sleeping Giant Wellfield Source Water Assessment Summary

STRENGTHS

Local aquifer protection regulations adopted

Public Water System Source Protection Program

Approximately 29 percent of the source water area is preserved as open space

Less than 10% of this source water area is currently developed for commercial or industrial use

POTENTIAL RISK FACTORS

Susceptibility Rating

Rating	Environmental Sensitivity	Potential Risk Factors	Source Protection Needs
Low	X	X	X
Moderate			
High			

Overall Susceptibility Rating: Low

This rating indicates susceptibility to potential sources of contamination that may be in the wellfield source water area and does not necessarily imply poor water quality.

Detailed information about the specific factors and information used in establishing this rating can be found in Table 1. Information about opportunities to improve protection in the North Sleeping Giant Wellfield source water area is also presented in Table 2.

CONNECTICUT DEPARTMENT OF PUBLIC HEALTH

Keeping Connecticut Healthy

State of Connecticut Department of Public Health

Drinking Water Division

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Produced With Funding Provided By The United States Environmental Protection Agency - May 2003

OVERVIEW - The North Sleeping Giant Wellfield is located in an aquifer that is comprised largely of water-bearing sand and gravel deposits. The source water area is delineated by a final Level A aquifer protection mapping area, which encompasses some 1498.9 acres of land in Cheshire and Hamden. Vacant land and residential properties in the North Sleeping Giant Wellfield source water area presently account for approximately 90.3 percent of the land cover. Commercial development at 1.4 percent and agricultural land use at 8.3 percent, account for the remainder of the land coverage's in the source water area. Information about drinking water quality and treatment is available in the Regional Water Authority's annual Consumer Confidence Report.

ASSESSMENT METHODS.

The drinking water source assessment methods used by the Department of Public Health Drinking Water Division to evaluate the susceptibility of public drinking water sources to contamination are based on criteria individually tailored to surface water and groundwater sources. The criteria are keyed to sanitary conditions in the source water area, the presence of potential or historic sources of contamination, existing land use coverage's, and the need for additional source protection measures within the source water area. Source-specific data for community and non-community systems were used to determine whether a particular criterion should be rated as low, moderate or high, relative to the risk of potential contamination at the drinking water source. Further, a ranking system was used to compute an average rank for each community drinking water source based on its environmental sensitivity, potential risk of contamination and source protection needs.

Wellfields rated as having a low, moderate or high susceptibility to potential sources of contamination generally exhibit the characteristics summarized in Table 1.

Table 1 – General Source Water Area Characteristics and Susceptibility Ratings

Susceptibility Rating	**General Characteristics of the Source Water Area***
Low	Low density of potential contaminant sources Lower intensity of land development
Moderate	Low to moderate density of potential contaminant sources Moderate intensity of land development
High	Moderate to high density of potential contaminant sources Higher intensity of land development No local aquifer protection regulations Detectable nitrates and/or volatile organic chemicals in the untreated source water during the past three years that are below the maximum contaminant levels allowed by state and federal drinking water regulations

**** Note: Not all characteristics may be present for a given susceptibility rating***

Readers of this assessment are encouraged to use the attached glossary to assist in the understanding of the terms and concepts used throughout this report.

Maps representing the location and features of the North Sleeping Giant Wellfield source water area have not been included with this assessment report because of homeland security concerns

NORTH SLEEPING GIANT WELLFIELD ASSESSMENT RESULTS.

Based on a combination of current wellfield and source water area conditions, existing potential contaminant sources, and the level of source protection measures currently in place, the source water assessment for this wellfield indicates that it has an overall Low risk of contamination from identified potential sources of contamination. The assessment findings for the North Sleeping Giant Wellfield are summarized in Table 2, which lists current conditions in the wellfield source water area and recommendations or opportunities to enhance protection of this public drinking water source. A listing of potential contaminant source types in the area can be found in Table 3. A summary of source water area features is shown in Table 4.

The assessment of this and other comparable wellfields throughout Connecticut generally finds that adopting recommendations similar to those presented in Table 2 could reduce the susceptibility of most groundwater sources to potential sources of contamination.

Table 2 **Source Water Assessment Findings and Source Protection Opportunities**

North Sleeping Giant Wellfield

Assessment Category	Conditions Through June 2002	Recommendations and Source Protection Opportunities
Environmental Sensitivity Factors	All wells in the North Sleeping Giant Wellfield are sited and constructed in accordance with DPH regulations and the most recent DPH sanitary survey of this wellfield indicates that it is free of deficiencies.	
Contaminants Detected in Untreated Source Water	Nitrate >1mg/L Except where noted above, any detected contaminants listed are below maximum contaminant levels (MCL) established by the federal government or guidance levels established by the Connecticut Department of Public Health. The presence of these contaminants, in general, indicates that this wellfield is sensitive to human activity. Click here to review EPA's current drinking water standardsT	Maintain monitoring levels specified in the Connecticut Public Health Code Section 19-13-B102 Encourage homeowners to adopt residential best management practices that minimize the use hazardous materials or generation of hazardous waste.
Potential Risk Factors	More than 50% of land for this source water area is undeveloped, which could present a risk if developed inappropriately.	Proactively work with local officials and developers to insure that only low-risk development occurs within the source water area Encourage residential property owners to conduct scheduled inspections and maintenance of underground fuel storage tanks and on-site septic systems.
Source Protection Needs Factors	Level A aquifer mapping completed 100 percent ownership or control of sanitary radius around wellheads in wellfield. Aquifer protection regulations adopted for the entire source water area	Adhere to local aquifer protection regulations Support environmental awareness and education within the community.

Inventoried significant potential contaminant sources in the North Sleeping Giant Wellfield source water area are listed in Table 3. While these facilities have the potential to cause groundwater contamination, there is no indication that they are doing so at this time.

Table 3 Summary of Significant Potential Contaminant Types in the North Sleeping Giant Wellfield Source Water Area

Category	Subcategory	Number of SPCS Types
Waste Storage, Handling, Disposal	Hazardous Waste Facilities	0
	Solid Waste Facilities	0
	Miscellaneous	0
Bulk Chemical, Petroleum Storage	Underground Storage Tanks	0
	Tank Farms	0
	Warehouses	0
Industrial Manufacturing / Processing	Chemical & Allied Production	0
	Chemical Use Processing	0
	Miscellaneous	0
Commercial Trades and Services	Automotive and Related Services	0
	Chemical Use Services	0
	Miscellaneous	0
Agriculture and Related	Pesticide Storage, Handling or Application	0
Total Number of Contaminant Types		0

Prominent features of the North Sleeping Giant Wellfield source water area are summarized in Table 4.

Table 4 Features of the *North Sleeping Giant Wellfield* Source Water Area

Number and Type of Public Drinking Water Supply Wells	3 stratified drift wells
Source Water Area Delineation Method [a]	final Level A
DEP Groundwater Classification	GAA - Groundwater used as a public drinking water supply, presumed to be drinkable without treatment
Size of Source Water Area	1498.9 acres
Location of Source Water Area	Cheshire and Hamden
Predominant Land Use and Land Cover in Source Water Area [b] -Urban - Commercial or Industrial -Urban - Residential -Agricultural -Undeveloped Land	 1.4 % 18.1 % 8.3 % 72.2 %
Preserved Land In Source Water Area [d]	440.9 acres
Significant Potential Contamination Sources -Number of inventoried facilities in source water area -Count of inventoried facilities per square mile -Number of contaminant sources within inventoried facilities	 0 0.00 per sq mile 0
Number of Contaminant Release Points Inventoried by CTDEP [c]	0

[a] Source water delineation method depends on data available for the wellfield

[b] Based on statewide data layer of land use and land cover developed by UCONN Dept of Natural Resource Management Engineering and Connecticut DEP satellite imagery.

[c] Sites or locations with documented accidental spills, leaks or discharges. While these sources, which are cataloged and tracked by the Connecticut DEP, may fall within a public drinking water supply source water area, they may or may not presently be discharging to the environment or causing contamination of a public drinking water source.

[d] Any combination of state forest and parklands and municipally or privately held land designated as open space.

SOURCE WATER ASSESSMENT REPORT

AN EVALUATION OF THE SUSCEPTIBILITY OF PUBLIC DRINKING WATER SOURCES TO POTENTIAL CONTAMINATION

APA **123**

Regional Water Authority
Mount Carmel Wellfield

The State of Connecticut Department of Public Health (DPH) in cooperation with the Department of Environmental Protection (DEP) recently completed an assessment of the Mount Carmel Wellfield, which is a source of public drinking water that is maintained and operated by the Regional Water Authority. This one-time assessment is part of a nationwide effort mandated by Congress under the Safe Drinking Water Act Amendments of 1996 to evaluate the susceptibility of all public drinking water sources in Connecticut to potential sources of contamination. DPH began working in partnership with the DEP in 1997 to develop Connecticut's Source Water Assessment Program, which was approved by the U.S. Environmental Protection Agency in 1999. Sources of potential contamination that are of concern to public drinking water supplies here in Connecticut are generally associated with historic waste disposal or commercial, industrial, agricultural and residential properties that store or use hazardous materials like petroleum products, solvents or agricultural chemicals.

The assessment is intended to provide Regional Water Authority consumers with information about where their public drinking water comes from, sources of potential contamination that could impact it, and what can be done to help protect it. This assessment will also assist the public water supply system, regional planners, local government, public health officials and state agencies in evaluating the degree to which the Mount Carmel Wellfield may be at risk from potential sources of contamination. The assessment can be used to target and implement enhanced source water protection measures such as routine inspections, protective land use regulations, acquisition of critical land, proper septic system maintenance, and public education. General sources of contamination with the potential to impact the Mount Carmel Wellfield include properties with underground fuel storage tanks, improperly maintained on-site septic systems, improper waste disposal, or commercial/industrial sites that store or use chemicals or generate hazardous wastes.

Mount Carmel Wellfield Source Water Assessment Summary

STRENGTHS

Local aquifer protection regulations adopted

Public Water System Source Protection Program

Approximately 31 percent of the source water area is preserved as open space

POTENTIAL RISK FACTORS

Potential contaminant sources in source water area

1 contaminant release point in source water area

Susceptibility Rating

Rating	Environmental Sensitivity	Potential Risk Factors	Source Protection Needs
Low	X	X	X
Moderate			
High			

Overall Susceptibility Rating: Low

This rating indicates susceptibility to potential sources of contamination that may be in the wellfield source water area and does not necessarily imply poor water quality.

Detailed information about the specific factors and information used in establishing this rating can be found in Table 1. Information about opportunities to improve protection in the Mount Carmel Wellfield source water area is also presented in Table 2.

CONNECTICUT DEPARTMENT OF PUBLIC HEALTH

Keeping Connecticut Healthy

State of Connecticut Department of Public Health

Drinking Water Division

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Produced With Funding Provided By The United States Environmental Protection Agency - May 2003

OVERVIEW - The Mount Carmel Wellfield is located in an aquifer that is comprised largely of water-bearing sand and gravel deposits. The source water area is delineated by a final Level A aquifer protection mapping area, which encompasses some 1113.3 acres of land in Hamden and North Haven. Vacant land and residential properties in the Mount Carmel Wellfield source water area presently account for approximately 79.5 percent of the land cover. Commercial development at 10.5 percent and agricultural land use at 9.9 percent, account for the remainder of the land coverage's in the source water area. Information about drinking water quality and treatment is available in the Regional Water Authority's annual Consumer Confidence Report.

ASSESSMENT METHODS.

The drinking water source assessment methods used by the Department of Public Health Drinking Water Division to evaluate the susceptibility of public drinking water sources to contamination are based on criteria individually tailored to surface water and groundwater sources. The criteria are keyed to sanitary conditions in the source water area, the presence of potential or historic sources of contamination, existing land use coverage's, and the need for additional source protection measures within the source water area. Source-specific data for community and non-community systems were used to determine whether a particular criterion should be rated as low, moderate or high, relative to the risk of potential contamination at the drinking water source. Further, a ranking system was used to compute an average rank for each community drinking water source based on its environmental sensitivity, potential risk of contamination and source protection needs.

Wellfields rated as having a low, moderate or high susceptibility to potential sources of contamination generally exhibit the characteristics summarized in Table 1.

Table 1 – General Source Water Area Characteristics and Susceptibility Ratings

Susceptibility Rating	**General Characteristics of the Source Water Area***
Low	Low density of potential contaminant sources Lower intensity of land development
Moderate	Low to moderate density of potential contaminant sources Moderate intensity of land development
High	Moderate to high density of potential contaminant sources Higher intensity of land development No local aquifer protection regulations Detectable nitrates and/or volatile organic chemicals in the untreated source water during the past three years that are below the maximum contaminant levels allowed by state and federal drinking water regulations

****Note: Not all characteristics may be present for a given susceptibility rating***

Readers of this assessment are encouraged to use the attached glossary to assist in the understanding of the terms and concepts used throughout this report.

Maps representing the location and features of the Mount Carmel Wellfield source water area have not been included with this assessment report because of homeland security concerns

MOUNT CARMEL WELLFIELD ASSESSMENT RESULTS.

Based on a combination of current wellfield and source water area conditions, existing potential contaminant sources, and the level of source protection measures currently in place, the source water assessment for this wellfield indicates that it has an overall Low risk of contamination from identified potential sources of contamination. The assessment findings for the Mount Carmel Wellfield are summarized in Table 2, which lists current conditions in the wellfield source water area and recommendations or opportunities to enhance protection of this public drinking water source. A listing of potential contaminant source types in the area can be found in Table 3. A summary of source water area features is shown in Table 4.

The assessment of this and other comparable wellfields throughout Connecticut generally finds that adopting recommendations similar to those presented in Table 2 could reduce the susceptibility of most groundwater sources to potential sources of contamination.

Table 2 **Source Water Assessment Findings and Source Protection Opportunities**

Mount Carmel Wellfield

Assessment Category	Conditions Through June 2002	Recommendations and Source Protection Opportunities
Environmental Sensitivity Factors	All wells in the Mount Carmel Wellfield are sited and constructed in accordance with DPH regulations and the most recent DPH sanitary survey of this wellfield indicates that it is free of deficiencies.	
Contaminants Detected in Untreated Source Water	Nitrate >1mg/L Except where noted above, any detected contaminants listed are below maximum contaminant levels (MCL) established by the federal government or guidance levels established by the Connecticut Department of Public Health. The presence of these contaminants, in general, indicates that this wellfield is sensitive to human activity. Click here to review EPA's current drinking water standardsT	Maintain monitoring levels specified in the Connecticut Public Health Code Section 19-13-B102 Encourage homeowners to adopt residential best management practices that minimize the use hazardous materials or generation of hazardous waste.
Potential Risk Factors	Potential contaminant sources in source water area 1 contaminant release point in source water area More than 50% of land for this source water area is undeveloped, which could present a risk if developed inappropriately. Ten percent or more of the source water area has been developed for commercial or industrial use	Periodically inspect SPCS sites and maintain a water quality monitoring program consistent with the level of potential risk Maintain an adequate level of surveillance around contaminant release point sites to insure that groundwater contamination is not occurring Proactively work with local officials and developers to insure that only low-risk development occurs within the source water area Monitor activities at commercial and industrial facilities to insure that best management practices are being followed Encourage residential property owners to conduct scheduled inspections and maintenance of underground fuel storage tanks and on-site septic systems.
Source Protection Needs Factors	Level A aquifer mapping completed 100 percent ownership or control of sanitary radius around wellheads in wellfield. Aquifer protection regulations adopted for the entire source water area	Adhere to local aquifer protection regulations Support environmental awareness and education within the community.

Inventoried significant potential contaminant sources in the Mount Carmel Wellfield source water area are listed in Table 3. While these facilities have the potential to cause groundwater contamination, there is no indication that they are doing so at this time.

Table 3 Summary of Significant Potential Contaminant Types in the Mount Carmel Wellfield Source Water Area

Category	Subcategory	Number of SPCS Types
Waste Storage, Handling, Disposal	Hazardous Waste Facilities	1
	Solid Waste Facilities	0
	Miscellaneous	0
Bulk Chemical, Petroleum Storage	Underground Storage Tanks	2
	Tank Farms	0
	Warehouses	0
Industrial Manufacturing / Processing	Chemical & Allied Production	0
	Chemical Use Processing	0
	Miscellaneous	0
Commercial Trades and Services	Automotive and Related Services	0
	Chemical Use Services	1
	Miscellaneous	3
Agriculture and Related	Pesticide Storage, Handling or Application	0
Total Number of Contaminant Types		7

Prominent features of the Mount Carmel Wellfield source water area are summarized in Table 4.

Table 4 Features of the *Mount Carmel Wellfield* Source Water Area

Number and Type of Public Drinking Water Supply Wells	2 stratified drift wells
Source Water Area Delineation Method [a]	final Level A
DEP Groundwater Classification	GA-impaired or GAA-impaired- Groundwater that may not be meeting all standards with a goal to restore to drinking water quality
Size of Source Water Area	1113.3 acres
Location of Source Water Area	Hamden and North Haven
Predominant Land Use and Land Cover in Source Water Area [b] -Urban - Commercial or Industrial -Urban - Residential -Agricultural -Undeveloped Land	 10.5 % 13.2 % 9.9 % 66.3 %
Preserved Land In Source Water Area [d]	340.9 acres
Significant Potential Contamination Sources -Number of inventoried facilities in source water area -Count of inventoried facilities per square mile -Number of contaminant sources within inventoried facilities	 5 2.87 per sq mile 7
Number of Contaminant Release Points Inventoried by CTDEP [c]	1

[a] Source water delineation method depends on data available for the wellfield

[b] Based on statewide data layer of land use and land cover developed by UCONN Dept of Natural Resource Management Engineering and Connecticut DEP satellite imagery.

[c] Sites or locations with documented accidental spills, leaks or discharges. While these sources, which are cataloged and tracked by the Connecticut DEP, may fall within a public drinking water supply source water area, they may or may not presently be discharging to the environment or causing contamination of a public drinking water source.

[d] Any combination of state forest and parklands and municipally or privately held land designated as open space.

SOURCE WATER ASSESSMENT REPORT

AN EVALUATION OF THE SUSCEPTIBILITY OF PUBLIC DRINKING WATER SOURCES TO POTENTIAL CONTAMINATION

CT0930011

Regional Water Authority
Mill River Reservoir System

The State of Connecticut Department of Public Health (DPH) in cooperation with the Department of Environmental Protection (DEP) recently completed an initial assessment of the Mill River Reservoir System, which is a source of public drinking water that is maintained and operated by the Regional Water Authority. This one-time assessment is part of a nationwide effort mandated by Congress under the Safe Drinking Water Act Amendments of 1996 to evaluate the susceptibility of all public drinking water sources in Connecticut to potential sources of contamination. DPH began working in partnership with the DEP in 1997 to develop Connecticut's Source Water Assessment Program, which was approved by the U.S. Environmental Protection Agency in 1999. Sources of potential contamination that are of concern to public drinking water supplies here in Connecticut are generally associated with historic waste disposal or commercial, industrial, agricultural and residential properties that store or use hazardous materials like petroleum products, solvents or agricultural chemicals.

The assessment is intended to provide Regional Water Authority consumers with information about where their public drinking water comes from, sources of potential contamination that could impact it, and what can be done to help protect it. This initial assessment complete will also assist the public water supply system, regional planners, local government, public health officials and state agencies in evaluating the degree to which the Mill River Reservoir System may be at risk from potential sources of contamination. The assessment can be used to target and implement enhanced source water protection measures such as routine inspections, protective land use regulations, acquisition of critical land, proper septic system maintenance, and public education. General sources of contamination with the potential to impact the Mill River Reservoir System include properties with underground fuel storage tanks, improperly maintained on-site septic systems, improper waste disposal, or commercial/industrial sites that store or use chemicals or generate hazardous wastes.

Mill River Reservoir System Source Water Assessment Summary

STRENGTHS

Point source pollution discharge points not present in this watershed area

Public water system has a comprehensive source protection program.

POTENTIAL RISK FACTORS

Potential contaminant sources present in the watershed including nonpoint source pollution from impervious surfaces assocaited with intense development in the watershed

Less than 10% of watershed area owned by public water system

Susceptibility Rating

Rating	Environmental Sensitivity	Potential Risk Factors	Source Protection Needs
Low			
Moderate			
High	X	X	X

Overall Susceptibility Rating: High

This rating indicates susceptibility to potential sources of contamination that may be in the source water area and does not necessarily imply poor water quality.

Detailed information about the specific factors and information used in establishing this rating can be found in Table 2. Information about opportunities to improve protection in the Mill River Reservoir System is also presented in Table 2.

CONNECTICUT DEPARTMENT OF PUBLIC HEALTH

Keeping Connecticut Healthy

State of Connecticut Department of Public Health

Drinking Water Division

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Produced With Funding Provided By The United States Environmental Protection Agency - May 2003

OVERVIEW - The Mill River Reservoir System watershed encompasses some 23,300 acres of land in Bethany, Cheshire, Hamden, New Haven, North Haven, Prospect and Wallingford. Approximately 5.4% of this watershed is owned by the Regional Water Authority. Public drinking water sources in this system include Lake Whitney. State-wide satellite imagery developed by the University of Connecticut indicates that undeveloped land and residential properties presently account for approximately 86.0% percent of the land cover in the Mill River Reservoir System. Commercial development at 6.0% and agricultural land use at 8.0% account for the remainder of the land coverage in the source water area. Approximately 17.7% of the land in the watershed area is preserved including all watershed land owned by the Regional Water Authority, state forest and parklands, and municipally or privately held land designated as open space. Information about drinking water quality and treatment is available in the Regional Water Authority's annual Consumer Confidence Report.

ASSESSMENT METHODS.

The drinking water source assessment methods used by the Department of Public Health Drinking Water Division to evaluate the susceptibility of public drinking water sources to contamination are based on criteria individually tailored to surface water and groundwater sources. The criteria are keyed to sanitary conditions in the source water area, the presence of potential or historic sources of contamination, existing land use coverage's, and the need for additional source protection measures within the source water area. Source-specific data for community and non-community systems were used to determine whether a particular criterion should be rated as low, moderate or high, relative to the risk of potential contamination at the drinking water source. Further, a ranking system was used to compute an average rank for each community drinking water source based on its environmental sensitivity, potential risk of contamination and source protection needs. Watersheds and reservoirs rated as having a low, moderate or high susceptibility to potential sources of contamination generally exhibit the characteristics summarized in Table 1.

Table 1 – General Watershed Area Characteristics and Susceptibility Ratings

Susceptibility Rating	**General Characteristics of the Watershed Area***
Low	Low density of potential contaminant sources Lower intensity of land development
Moderate	Low to moderate density of potential contaminant sources Moderate intensity of land development
High	Moderate to high density of potential contaminant sources Higher intensity of land development No local watershed protection regulations Detectable nitrates and/or volatile organic chemicals in the untreated source water during the past three years that are below the maximum contaminant levels allowed by state and federal drinking water regulations

****Note: Not all characteristics may be present for a given susceptibility rating***

Readers of this assessment are encouraged to use the attached glossary to assist in the understanding of the terms and concepts used throughout this report.

Maps representing the location and features of the Mill River Reservoir System source water area have not been included with this assessment report because of homeland security concerns.

MILL RIVER RESERVOIR SYSTEM ASSESSMENT RESULTS.

Based on a combination of current reservoir and watershed area conditions, existing potential contaminant sources, and the level of source protection measures currently in place, the source water assessment for this watershed system indicates that it has an overall High risk of contamination from any identified potential sources of contamination. The assessment findings for the Mill River Reservoir System are summarized in Table 2, which lists current conditions in the source water area and recommendations or opportunities to enhance protection of this public drinking water source. A listing of potential contaminant source types in the area, if present, can be found in Table 3. A summary of source water area features is shown in Table 4. It should be noted that this rating does not necessarily imply poor water quality or ongoing violations of the Connecticut Public Health Code.

The assessment of this and other comparable watershed areas throughout Connecticut generally finds that adopting recommendations similar to those presented in Table 2 could reduce the susceptibility of most surface water sources to potential sources of contamination.

Table 2 Source Water Assessment Findings and Source Protection Opportunities For the Mill River Reservoir System

Assessment Category	Conditions as of June 2002	Recommendations and Source Protection Opportunities
Environmental Sensitivity Factors	Predominant watershed topography characterized by moderate slopes	Monitor runoff during heavy precipitation events
	Reservoirs have high capacity to support excessive growths of algae and plankton	Monitor reservoir nutrient levels for source waters classified as eutrophic or mesotrophic.
Contaminants Detected in Untreated Source Water	Nitrate below MCL	
	Click here to review EPA's current drinking water standards	Encourage homeowners to adopt residential best management practices that minimize the use of hazardous materials or generation of hazardous waste in the watershed.
Potential Risk Factors	Potential contaminant sources present in the watershed including nonpoint source pollution from impervious surfaces assocaited with intense development in the watershed	Periodically inspect these sites and maintain a water quality monitoring program consistent with the level of potential risk
	More than 30% of land for this source water area is undeveloped and unprotected, which could present a risk if developed inappropriately.	Proactively work with local officials and developers to insure that only low-risk development occurs within the watershed area
	Major state or interstate roadways present in the watershed	Monitor road salt and herbicide usage along these roadways and address potential for hazardous material spills resulting from vehicular accidents
	Known contaminant release points present in the watershed	Maintain an adequate level of surveillance around contaminant release point sites to insure that surface water contamination is not occurring
		Encourage residential property owners to inspect and regularly cleanout onsite septic systems and replace underground fuel storage tanks with above ground tanks.
Source Protection Needs Factors	Less than 10% of watershed area owned by public water system	Increase ownership or control of watershed area whenever land becomes available for purchase or support land acquisition by public or private conservation/preservation organizations
	Less than 20% of the land in the source water area exists as preserved open space	Support and encourage the acquisition of open space land within the watershed area
		Continue to enhance local governmental plans and policies that favor the protection of public drinking water sources
	Point source pollution discharge points not present in this watershed area	
		Support environmental awareness and education within the community.

Inventoried significant potential contaminant sources present in the Mill River Reservoir System source water area are listed in Table 3. While these facilities, if present, have the potential to cause surface water contamination; there is no indication that they are doing so at this time.

Table 3 – Summary of Significant Potential Contaminant Types in the Mill River Reservoir System Source Water Area

Category	Subcategory	Number of SPCS Types
Waste Storage, Handling, Disposal	Hazardous Waste Facilities	25
	Solid Waste Facilities	0
	Miscellaneous	0
Bulk Chemical, Petroleum Storage	Underground Storage Tanks	43
	Tank Farms	2
	Warehouses	1
Industrial Manufacturing / Processing	Chemical & Allied Production	1
	Chemical Use Processing	6
	Miscellaneous	0
Commercial Trades and Services	Automotive and Related Services	21
	Chemical Use Services	0
	Miscellaneous	3
Miscellaneous	No Identifiable SPCS Type	9
Agricultural Operations	Animal or Livestock Waste Handling	1
	Pesticide Storage or Application	3
Total Number of Contaminant Types		115

Prominent features of the Mill River Reservoir System source water area are summarized in Table 4.

Table 4 - Features of the Mill River Reservoir System

Location of Watershed Area	Bethany, Cheshire, Hamden, New Haven, North Haven, Prospect and Wallingford
Name of Reservoir(s) and Diversion(s)	Lake Whitney
Number and Type of Public Drinking Water Reservoirs or Diversions in the Watershed	1 Distribution
Trophic Status of Reservoir(s)	Eutrophic
DEP Surface Water Classification	B/AA
Watershed Area (total acreage)	23,300 acres
Preserved Land in the Watershed [a]	4,146 acres
Predominant Watershed Topography	moderate slopes
General Land Use and Land Cover in the Watershed [b] -Urban - Commercial or Industrial -Urban - Residential -Agricultural -Undeveloped Land	 6.0% 31.0% 8.0% 55.0%
Significant Potential Contamination Sources -Number of inventoried facilities in source water area [c] -Count of inventoried facilities per square mile -Number of contaminant types within inventoried facilities	 103 2.83 per sq mile 115
Number of Contaminant Release Points Inventoried by CTDEP [d]	7

[a] Preserved land includes any combination of land owned by the public water supply, state forest and parklands, and municipally or privately held land designated as open space.

[b] Based on statewide data layer of land use and land cover developed by UCONN Dept of Natural Resource Management Engineering and Connecticut DEP satellite imagery averaged across the entire watershed.

[c] Inventoried facilities reflect the actual number of SPCS sites present in the source water area, which may have more than 1 type of contaminant present at the facility.

[d] Sites or locations with documented accidental spills, leaks or discharges. While these sources, which are cataloged and tracked by the Connecticut DEP, may fall within a public drinking water supply source water area, they may or may not presently be discharging to the environment or causing contamination of a public drinking water source.

SOURCE WATER ASSESSMENT REPORT
AN EVALUATION OF THE SUSCEPTIBILITY OF PUBLIC DRINKING WATER SOURCES TO POTENTIAL CONTAMINATION

CT0930011

Regional Water Authority
North Branford Reservoir System

The State of Connecticut Department of Public Health (DPH) in cooperation with the Department of Environmental Protection (DEP) recently completed an initial assessment of the North Branford Reservoir System, which is a source of public drinking water that is maintained and operated by the Regional Water Authority. This one-time assessment is part of a nationwide effort mandated by Congress under the Safe Drinking Water Act Amendments of 1996 to evaluate the susceptibility of all public drinking water sources in Connecticut to potential sources of contamination. DPH began working in partnership with the DEP in 1997 to develop Connecticut's Source Water Assessment Program, which was approved by the U.S. Environmental Protection Agency in 1999. Sources of potential contamination that are of concern to public drinking water supplies here in Connecticut are generally associated with historic waste disposal or commercial, industrial, agricultural and residential properties that store or use hazardous materials like petroleum products, solvents or agricultural chemicals.

The assessment is intended to provide Regional Water Authority consumers with information about where their public drinking water comes from, sources of potential contamination that could impact it, and what can be done to help protect it. This initial assessment complete will also assist the public water supply system, regional planners, local government, public health officials and state agencies in evaluating the degree to which the North Branford Reservoir System may be at risk from potential sources of contamination. The assessment can be used to target and implement enhanced source water protection measures such as routine inspections, protective land use regulations, acquisition of critical land, proper septic system maintenance, and public education. General sources of contamination with the potential to impact the North Branford Reservoir System include properties with underground fuel storage tanks, improperly maintained on-site septic systems, improper waste disposal, or commercial/industrial sites that store or use chemicals or generate hazardous wastes.

North Branford Reservoir System Source Water Assessment Summary

STRENGTHS

Point source pollution discharge points not present in this watershed area

More than 40% of the watershed area is owned by the public water system

More than 50% of the land in the watershed area exists as preserved open space

Public water system has a comprehensive source protection program.

POTENTIAL RISK FACTORS

Potential contaminant sources present in the watershed

Susceptibility Rating

Rating	Environmental Sensitivity	Potential Risk Factors	Source Protection Needs
Low	X	X	X
Moderate			
High			

Overall Susceptibility Rating: Low

This rating indicates susceptibility to potential sources of contamination that may be in the source water area and does not necessarily imply poor water quality.

Detailed information about the specific factors and information used in establishing this rating can be found in Table 2. Information about opportunities to improve protection in the North Branford Reservoir System is also presented in Table 2.

CONNECTICUT DEPARTMENT OF PUBLIC HEALTH

Keeping Connecticut Healthy

State of Connecticut Department of Public Health
Drinking Water Division
410 Capitol Avenue – MS# 51WAT
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OVERVIEW - The North Branford Reservoir System watershed encompasses some 24,975 acres of land in Durham, Guilford, Haddam, Killingworth, Madison, North Branford and Wallingford. Approximately 47.5% of this watershed is owned by the Regional Water Authority. Public drinking water sources in this system include Lakes Gaillard, Hammonasset and Menunkatuck and the Big Gulph, Iron Works Stream, Little Gulph, Little Meadow, Lumpack, Northford and Round Hill diversions. State-wide satellite imagery developed by the University of Connecticut indicates that undeveloped land and residential properties presently account for approximately 95.3% percent of the land cover in the North Branford Reservoir System. Commercial development at 0.4% and agricultural land use at 4.4% account for the remainder of the land coverage in the source water area. Approximately 63.0% of the land in the watershed area is preserved including all watershed land owned by the Regional Water Authority, state forest and parklands, and municipally or privately held land designated as open space. Information about drinking water quality and treatment is available in the Regional Water Authority's annual Consumer Confidence Report.

ASSESSMENT METHODS.

The drinking water source assessment methods used by the Department of Public Health Drinking Water Division to evaluate the susceptibility of public drinking water sources to contamination are based on criteria individually tailored to surface water and groundwater sources. The criteria are keyed to sanitary conditions in the source water area, the presence of potential or historic sources of contamination, existing land use coverage's, and the need for additional source protection measures within the source water area. Source-specific data for community and non-community systems were used to determine whether a particular criterion should be rated as low, moderate or high, relative to the risk of potential contamination at the drinking water source. Further, a ranking system was used to compute an average rank for each community drinking water source based on its environmental sensitivity, potential risk of contamination and source protection needs. Watersheds and reservoirs rated as having a low, moderate or high susceptibility to potential sources of contamination generally exhibit the characteristics summarized in Table 1.

Table 1 – General Watershed Area Characteristics and Susceptibility Ratings

Susceptibility Rating	**General Characteristics of the Watershed Area***
Low	Low density of potential contaminant sources Lower intensity of land development
Moderate	Low to moderate density of potential contaminant sources Moderate intensity of land development
High	Moderate to high density of potential contaminant sources Higher intensity of land development No local watershed protection regulations Detectable nitrates and/or volatile organic chemicals in the untreated source water during the past three years that are below the maximum contaminant levels allowed by state and federal drinking water regulations

** **Note: Not all characteristics may be present for a given susceptibility rating***

Readers of this assessment are encouraged to use the attached glossary to assist in the understanding of the terms and concepts used throughout this report.

Maps representing the location and features of the North Branford Reservoir System source water area have not been included with this assessment report because of homeland security concerns.

NORTH BRANFORD RESERVOIR SYSTEM ASSESSMENT RESULTS.

Based on a combination of current reservoir and watershed area conditions, existing potential contaminant sources, and the level of source protection measures currently in place, the source water assessment for this watershed system indicates that it has an overall Low risk of contamination from any identified potential sources of contamination. The assessment findings for the North Branford Reservoir System are summarized in Table 2, which lists current conditions in the source water area and recommendations or opportunities to enhance protection of this public drinking water source. A listing of potential contaminant source types in the area, if present, can be found in Table 3. A summary of source water area features is shown in Table 4.

The assessment of this and other comparable watershed areas throughout Connecticut generally finds that adopting recommendations similar to those presented in Table 2 could reduce the susceptibility of most surface water sources to potential sources of contamination.

Table 2 Source Water Assessment Findings and Source Protection Opportunities For the North Branford Reservoir System

Assessment Category	Conditions as of June 2002	Recommendations and Source Protection Opportunities
Environmental Sensitivity Factors	Predominant watershed topography characterized by moderate slopes Reservoirs have moderate capacity to support excessive growths of algae and plankton	Monitor runoff during heavy precipitation events Monitor reservoir nutrient levels for source waters classified as eutrophic or mesotrophic.
Contaminants Detected in Untreated Source Water	None Click here to review EPA's current drinking water standards	Encourage homeowners to adopt residential best management practices that minimize the use of hazardous materials or generation of hazardous waste in the watershed.
Potential Risk Factors	Potential contaminant sources present in the watershed More than 25% of land for this source water area is undeveloped and unprotected, which could present a risk if developed inappropriately. Major state or interstate roadways present in the watershed Known contaminant release points present in the watershed	Periodically inspect these sites and maintain a water quality monitoring program consistent with the level of potential risk Proactively work with local officials and developers to insure that only low-risk development occurs within the watershed area Monitor road salt and herbicide usage along these roadways and address potential for hazardous material spills resulting from vehicular accidents Maintain an adequate level of surveillance around contaminant release point sites to insure that surface water contamination is not occurring Encourage residential property owners to inspect and regularly cleanout onsite septic systems and replace underground fuel storage tanks with above ground tanks.
Source Protection Needs Factors	More than 40% of the watershed area is owned by the public water system Point source pollution discharge points not present in this watershed area	Support environmental awareness and education within the community.

Inventoried significant potential contaminant sources present in the North Branford Reservoir System source water area are listed in Table 3. While these facilities, if present, have the potential to cause surface water contamination; there is no indication that they are doing so at this time.

Table 3 – Summary of Significant Potential Contaminant Types in the North Branford Reservoir System Source Water Area

Category	Subcategory	Number of SPCS Types
Waste Storage, Handling, Disposal	Hazardous Waste Facilities	1
	Solid Waste Facilities	1
	Miscellaneous	0
Bulk Chemical, Petroleum Storage	Underground Storage Tanks	3
	Tank Farms	0
	Warehouses	0
Industrial Manufacturing / Processing	Chemical & Allied Production	0
	Chemical Use Processing	0
	Miscellaneous	0
Commercial Trades and Services	Automotive and Related Services	2
	Chemical Use Services	0
	Miscellaneous	0
Miscellaneous	No Identifiable SPCS Type	0
Agricultural Operations	Animal or Livestock Waste Handling	0
	Pesticide Storage or Application	0
Total Number of Contaminant Types		7

Prominent features of the North Branford Reservoir System source water area are summarized in Table 4.

Table 4 - Features of the North Branford Reservoir System

Location of Watershed Area	Durham, Guilford, Haddam, Killingworth, Madison, North Branford and Wallingford
Name of Reservoir(s) and Diversion(s)	Lakes Gaillard, Hammonasset and Menunkatuck and the Big Gulph, Iron Works Stream, Little Gulph, Little Meadow, Lumpack, Northford and Round Hill diversions
Number and Type of Public Drinking Water Reservoirs or Diversions in the Watershed	1 Distribution, 2 Storage, and 7 Transfer
Trophic Status of Reservoir(s)	3 Mesotrophic
DEP Surface Water Classification	AA
Watershed Area (total acreage)	24,975 acres
Preserved Land in the Watershed [a]	15,648 acres
Predominant Watershed Topography	moderate slopes
General Land Use and Land Cover in the Watershed [b] -Urban - Commercial or Industrial -Urban - Residential -Agricultural -Undeveloped Land	 0.4% 3.0% 4.4% 92.2%
Significant Potential Contamination Sources -Number of inventoried facilities in source water area [c] -Count of inventoried facilities per square mile -Number of contaminant types within inventoried facilities	 5 0.13 per sq mile 7
Number of Contaminant Release Points Inventoried by CTDEP [d]	4

[a] Preserved land includes any combination of land owned by the public water supply, state forest and parklands, and municipally or privately held land designated as open space.

[b] Based on statewide data layer of land use and land cover developed by UCONN Dept of Natural Resource Management Engineering and Connecticut DEP satellite imagery averaged across the entire watershed.

[c] Inventoried facilities reflect the actual number of SPCS sites present in the source water area, which may have more than 1 type of contaminant present at the facility.

[d] Sites or locations with documented accidental spills, leaks or discharges. While these sources, which are cataloged and tracked by the Connecticut DEP, may fall within a public drinking water supply source water area, they may or may not presently be discharging to the environment or causing contamination of a public drinking water source.

SOURCE WATER ASSESSMENT REPORT

AN EVALUATION OF THE SUSCEPTIBILITY OF PUBLIC DRINKING WATER SOURCES TO POTENTIAL CONTAMINATION

CT0930011

Regional Water Authority
Saltonstall Reservoir System

The State of Connecticut Department of Public Health (DPH) in cooperation with the Department of Environmental Protection (DEP) recently completed an initial assessment of the Saltonstall Reservoir System, which is a source of public drinking water that is maintained and operated by the Regional Water Authority. This one-time assessment is part of a nationwide effort mandated by Congress under the Safe Drinking Water Act Amendments of 1996 to evaluate the susceptibility of all public drinking water sources in Connecticut to potential sources of contamination. DPH began working in partnership with the DEP in 1997 to develop Connecticut's Source Water Assessment Program, which was approved by the U.S. Environmental Protection Agency in 1999. Sources of potential contamination that are of concern to public drinking water supplies here in Connecticut are generally associated with historic waste disposal or commercial, industrial, agricultural and residential properties that store or use hazardous materials like petroleum products, solvents or agricultural chemicals.

The assessment is intended to provide Regional Water Authority consumers with information about where their public drinking water comes from, sources of potential contamination that could impact it, and what can be done to help protect it. This initial assessment complete will also assist the public water supply system, regional planners, local government, public health officials and state agencies in evaluating the degree to which the Saltonstall Reservoir System may be at risk from potential sources of contamination. The assessment can be used to target and implement enhanced source water protection measures such as routine inspections, protective land use regulations, acquisition of critical land, proper septic system maintenance, and public education. General sources of contamination with the potential to impact the Saltonstall Reservoir System include properties with underground fuel storage tanks, improperly maintained on-site septic systems, improper waste disposal, or commercial/industrial sites that store or use chemicals or generate hazardous wastes.

Saltonstall Reservoir System Source Water Assessment Summary

STRENGTHS

Point source pollution discharge points not present in this watershed area

More than 20% of the watershed area is owned by the public water system

Public water system has a comprehensive source protection program.

POTENTIAL RISK FACTORS

Potential contaminant sources present in the watershed including nonpoint source pollution associated with agricultural and mining operations in the Farm River watershed

Susceptibility Rating

Rating	Environmental Sensitivity	Potential Risk Factors	Source Protection Needs
Low	X		X
Moderate		X	
High			

Overall Susceptibility Rating: Moderate

This rating indicates susceptibility to potential sources of contamination that may be in the source water area and does not necessarily imply poor water quality.

Detailed information about the specific factors and information used in establishing this rating can be found in Table 2. Information about opportunities to improve protection in the Saltonstall Reservoir System is also presented in Table 2.

State of Connecticut Department of Public Health

Drinking Water Division

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Keeping Connecticut Healthy

Produced With Funding Provided By The United States Environmental Protection Agency - May 2003

OVERVIEW - The Saltonstall Reservoir System watershed encompasses some 9,661 acres of land in Branford, East Haven, North Branford, North Haven and Wallingford. Approximately 23.4% of this watershed is owned by the Regional Water Authority. Public drinking water sources in this system include Lake Saltonstall and the Farm River Diversion. State-wide satellite imagery developed by the University of Connecticut indicates that undeveloped land and residential properties presently account for approximately 77.2% percent of the land cover in the Saltonstall Reservoir System. Commercial development at 5.2% and agricultural land use at 17.7% account for the remainder of the land coverage in the source water area. Approximately 25.4% of the land in the watershed area is preserved including all watershed land owned by the Regional Water Authority, state forest and parklands, and municipally or privately held land designated as open space. Information about drinking water quality and treatment is available in the Regional Water Authority's annual Consumer Confidence Report.

ASSESSMENT METHODS.

The drinking water source assessment methods used by the Department of Public Health Drinking Water Division to evaluate the susceptibility of public drinking water sources to contamination are based on criteria individually tailored to surface water and groundwater sources. The criteria are keyed to sanitary conditions in the source water area, the presence of potential or historic sources of contamination, existing land use coverage's, and the need for additional source protection measures within the source water area. Source-specific data for community and non-community systems were used to determine whether a particular criterion should be rated as low, moderate or high, relative to the risk of potential contamination at the drinking water source. Further, a ranking system was used to compute an average rank for each community drinking water source based on its environmental sensitivity, potential risk of contamination and source protection needs. Watersheds and reservoirs rated as having a low, moderate or high susceptibility to potential sources of contamination generally exhibit the characteristics summarized in Table 1.

Table 1 – General Watershed Area Characteristics and Susceptibility Ratings

Susceptibility Rating	**General Characteristics of the Watershed Area***
Low	Low density of potential contaminant sources Lower intensity of land development
Moderate	Low to moderate density of potential contaminant sources Moderate intensity of land development
High	Moderate to high density of potential contaminant sources Higher intensity of land development No local watershed protection regulations Detectable nitrates and/or volatile organic chemicals in the untreated source water during the past three years that are below the maximum contaminant levels allowed by state and federal drinking water regulations

**** Note: Not all characteristics may be present for a given susceptibility rating***

Readers of this assessment are encouraged to use the attached glossary to assist in the understanding of the terms and concepts used throughout this report.

Maps representing the location and features of the Saltonstall Reservoir System source water area have not been included with this assessment report because of homeland security concerns.

SALTONSTALL RESERVOIR SYSTEM ASSESSMENT RESULTS.

Based on a combination of current reservoir and watershed area conditions, existing potential contaminant sources, and the level of source protection measures currently in place, the source water assessment for this watershed system indicates that it has an overall Moderate risk of contamination from any identified potential sources of contamination. The assessment findings for the Saltonstall Reservoir System are summarized in Table 2, which lists current conditions in the source water area and recommendations or opportunities to enhance protection of this public drinking water source. A listing of potential contaminant source types in the area, if present, can be found in Table 3. A summary of source water area features is shown in Table 4. It should be noted that this rating does not necessarily imply poor water quality or ongoing violations of the Connecticut Public Health Code.

The assessment of this and other comparable watershed areas throughout Connecticut generally finds that adopting recommendations similar to those presented in Table 2 could reduce the susceptibility of most surface water sources to potential sources of contamination.

Table 2 Source Water Assessment Findings and Source Protection Opportunities For the Saltonstall Reservoir System

Assessment Category	Conditions as of June 2002	Recommendations and Source Protection Opportunities
Environmental Sensitivity Factors	Predominant watershed topography characterized by moderate slopes	Monitor runoff during heavy precipitation events
	Reservoirs have high capacity to support excessive growths of algae and plankton	Monitor reservoir nutrient levels for source waters classified as eutrophic or mesotrophic.
Contaminants Detected in Untreated Source Water	None	
	Click here to review EPA's current drinking water standards	Encourage homeowners to adopt residential best management practices that minimize the use of hazardous materials or generation of hazardous waste in the watershed.
Potential Risk Factors	Potential contaminant sources present in the watershed including nonpoint source pollution associated with agricultural and mining operations in the Farm River watershed	Periodically inspect these sites and maintain a water quality monitoring program consistent with the level of potential risk
	More than 30% of land for this source water area is undeveloped and unprotected, which could present a risk if developed inappropriately.	Proactively work with local officials and developers to insure that only low-risk development occurs within the watershed area
	Major state or interstate roadways present in the watershed	Monitor road salt and herbicide usage along these roadways and address potential for hazardous material spills resulting from vehicular accidents
	Known contaminant release points present in the watershed	Maintain an adequate level of surveillance around contaminant release point sites to insure that surface water contamination is not occurring
		Encourage residential property owners to inspect and regularly cleanout onsite septic systems and replace underground fuel storage tanks with above ground tanks.
Source Protection Needs Factors	More than 20% of the watershed area is owned by the public water system	Increase ownership or control of watershed area whenever land becomes available for purchase or support land acquisition by public or private conservation/preservation organizations
	Less than 25% of the land in the source water area exists as preserved open space	Support and encourage the acquisition of open space land within the watershed area
	Point source pollution discharge points not present in this watershed area	Support environmental awareness and education within the community.

Inventoried significant potential contaminant sources present in the Saltonstall Reservoir System source water area are listed in Table 3. While these facilities, if present, have the potential to cause surface water contamination; there is no indication that they are doing so at this time.

Table 3 – Summary of Significant Potential Contaminant Types in the Saltonstall Reservoir System Source Water Area

Category	Subcategory	Number of SPCS Types
Waste Storage, Handling, Disposal	Hazardous Waste Facilities	7
	Solid Waste Facilities	2
	Miscellaneous	0
Bulk Chemical, Petroleum Storage	Underground Storage Tanks	20
	Tank Farms	0
	Warehouses	1
Industrial Manufacturing / Processing	Chemical & Allied Production	0
	Chemical Use Processing	0
	Miscellaneous	0
Commercial Trades and Services	Automotive and Related Services	1
	Chemical Use Services	0
	Miscellaneous	0
Miscellaneous	No Identifiable SPCS Type	0
Agricultural Operations	Animal or Livestock Waste Handling	2
	Pesticide Storage or Application	0
Total Number of Contaminant Types		33

Prominent features of the Saltonstall Reservoir System source water area are summarized in Table 4.

Table 4 - Features of the Saltonstall Reservoir System

Location of Watershed Area	Branford, East Haven, North Branford, North Haven and Wallingford
Name of Reservoir(s) and Diversion(s)	Lake Saltonstall and the Farm River Diversion
Number and Type of Public Drinking Water Reservoirs or Diversions in the Watershed	1 Distribution and 1 Transfer
Trophic Status of Reservoir(s)	Eutrophic
DEP Surface Water Classification	AA
Watershed Area (total acreage)	9,661 acres
Preserved Land in the Watershed [a]	2,445 acres
Predominant Watershed Topography	moderate slopes
General Land Use and Land Cover in the Watershed [b]	
-Urban - Commercial or Industrial	5.2%
-Urban - Residential	16.9%
-Agricultural	17.7%
-Undeveloped Land	60.2%
Significant Potential Contamination Sources	
-Number of inventoried facilities in source water area [c]	30
-Count of inventoried facilities per square mile	1.99 per sq mile
-Number of contaminant types within inventoried facilities	33
Number of Contaminant Release Points Inventoried by CTDEP [d]	3

[a] Preserved land includes any combination of land owned by the public water supply, state forest and parklands, and municipally or privately held land designated as open space.

[b] Based on statewide data layer of land use and land cover developed by UCONN Dept of Natural Resource Management Engineering and Connecticut DEP satellite imagery averaged across the entire watershed.

[c] Inventoried facilities reflect the actual number of SPCS sites present in the source water area, which may have more than 1 type of contaminant present at the facility.

[d] Sites or locations with documented accidental spills, leaks or discharges. While these sources, which are cataloged and tracked by the Connecticut DEP, may fall within a public drinking water supply source water area, they may or may not presently be discharging to the environment or causing contamination of a public drinking water source.

SOURCE WATER ASSESSMENT REPORT

AN EVALUATION OF THE SUSCEPTIBILITY OF PUBLIC DRINKING WATER SOURCES TO POTENTIAL CONTAMINATION

CT0930011

Regional Water Authority
West River Reservoir System

The State of Connecticut Department of Public Health (DPH) in cooperation with the Department of Environmental Protection (DEP) recently completed an initial assessment of the West River Reservoir System, which is a source of public drinking water that is maintained and operated by the Regional Water Authority. This one-time assessment is part of a nationwide effort mandated by Congress under the Safe Drinking Water Act Amendments of 1996 to evaluate the susceptibility of all public drinking water sources in Connecticut to potential sources of contamination. DPH began working in partnership with the DEP in 1997 to develop Connecticut's Source Water Assessment Program, which was approved by the U.S. Environmental Protection Agency in 1999. Sources of potential contamination that are of concern to public drinking water supplies here in Connecticut are generally associated with historic waste disposal or commercial, industrial, agricultural and residential properties that store or use hazardous materials like petroleum products, solvents or agricultural chemicals.

The assessment is intended to provide Regional Water Authority consumers with information about where their public drinking water comes from, sources of potential contamination that could impact it, and what can be done to help protect it. This initial assessment complete will also assist the public water supply system, regional planners, local government, public health officials and state agencies in evaluating the degree to which the West River Reservoir System may be at risk from potential sources of contamination. The assessment can be used to target and implement enhanced source water protection measures such as routine inspections, protective land use regulations, acquisition of critical land, proper septic system maintenance, and public education. General sources of contamination with the potential to impact the West River Reservoir System include properties with underground fuel storage tanks, improperly maintained on-site septic systems, improper waste disposal, or commercial/industrial sites that store or use chemicals or generate hazardous wastes.

West River Reservoir System Source Water Assessment Summary

STRENGTHS

Point source pollution discharge points not present in this watershed area

More than 50% of the watershed area is owned by the public water system

More than 50% of the land in the watershed area exists as preserved open space

Public water system has a comprehensive source protection program.

POTENTIAL RISK FACTORS

Potential contaminant sources present in the watershed

Susceptibility Rating

Rating	Environmental Sensitivity	Potential Risk Factors	Source Protection Needs
Low	X		X
Moderate			
High		X	

Overall Susceptibility Rating: Moderate

This rating indicates susceptibility to potential sources of contamination that may be in the source water area and does not necessarily imply poor water quality.

Detailed information about the specific factors and information used in establishing this rating can be found in Table 2. Information about opportunities to improve protection in the West River Reservoir System is also presented in Table 2.

CONNECTICUT DEPARTMENT OF PUBLIC HEALTH

Keeping Connecticut Healthy

State of Connecticut Department of Public Health

Drinking Water Division

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OVERVIEW - The West River Reservoir System watershed encompasses some 8,850 acres of land in Bethany, Hamden, Prospect and Woodbridge. Approximately 53.7% of this watershed is owned by the Regional Water Authority. Public drinking water sources in this system include Lakes Bethany, Chamberlain, Dawson, Glen and Watrous. State-wide satellite imagery developed by the University of Connecticut indicates that undeveloped land and residential properties presently account for approximately 88.7% percent of the land cover in the West River Reservoir System. Commercial development at 1.2% and agricultural land use at 10.1% account for the remainder of the land coverage in the source water area. Approximately 55.1% of the land in the watershed area is preserved including all watershed land owned by the Regional Water Authority, state forest and parklands, and municipally or privately held land designated as open space. Information about drinking water quality and treatment is available in the Regional Water Authority's annual Consumer Confidence Report.

ASSESSMENT METHODS.

The drinking water source assessment methods used by the Department of Public Health Drinking Water Division to evaluate the susceptibility of public drinking water sources to contamination are based on criteria individually tailored to surface water and groundwater sources. The criteria are keyed to sanitary conditions in the source water area, the presence of potential or historic sources of contamination, existing land use coverage's, and the need for additional source protection measures within the source water area. Source-specific data for community and non-community systems were used to determine whether a particular criterion should be rated as low, moderate or high, relative to the risk of potential contamination at the drinking water source. Further, a ranking system was used to compute an average rank for each community drinking water source based on its environmental sensitivity, potential risk of contamination and source protection needs. Watersheds and reservoirs rated as having a low, moderate or high susceptibility to potential sources of contamination generally exhibit the characteristics summarized in Table 1.

Table 1 – General Watershed Area Characteristics and Susceptibility Ratings

Susceptibility Rating	**General Characteristics of the Watershed Area***
Low	Low density of potential contaminant sources Lower intensity of land development
Moderate	Low to moderate density of potential contaminant sources Moderate intensity of land development
High	Moderate to high density of potential contaminant sources Higher intensity of land development No local watershed protection regulations Detectable nitrates and/or volatile organic chemicals in the untreated source water during the past three years that are below the maximum contaminant levels allowed by state and federal drinking water regulations

****Note: Not all characteristics may be present for a given susceptibility rating***

Readers of this assessment are encouraged to use the attached glossary to assist in the understanding of the terms and concepts used throughout this report.

Maps representing the location and features of the West River Reservoir System source water area have not been included with this assessment report because of homeland security concerns.

WEST RIVER RESERVOIR SYSTEM ASSESSMENT RESULTS.

Based on a combination of current reservoir and watershed area conditions, existing potential contaminant sources, and the level of source protection measures currently in place, the source water assessment for this watershed system indicates that it has an overall Moderate risk of contamination from any identified potential sources of contamination. The assessment findings for the West River Reservoir System are summarized in Table 2, which lists current conditions in the source water area and recommendations or opportunities to enhance protection of this public drinking water source. A listing of potential contaminant source types in the area, if present, can be found in Table 3. A summary of source water area features is shown in Table 4. It should be noted that this rating does not necessarily imply poor water quality or ongoing violations of the Connecticut Public Health Code.

The assessment of this and other comparable watershed areas throughout Connecticut generally finds that adopting recommendations similar to those presented in Table 2 could reduce the susceptibility of most surface water sources to potential sources of contamination.

Table 2 Source Water Assessment Findings and Source Protection Opportunities For the West River Reservoir System

Assessment Category	Conditions as of June 2002	Recommendations and Source Protection Opportunities
Environmental Sensitivity Factors	Predominant watershed topography characterized by moderate slopes Reservoirs have moderate capacity to support excessive growths of algae and plankton	Monitor runoff during heavy precipitation events Monitor reservoir nutrient levels for source waters classified as eutrophic or mesotrophic.
Contaminants Detected in Untreated Source Water	None Click here to review EPA's current drinking water standards	Encourage homeowners to adopt residential best management practices that minimize the use of hazardous materials or generation of hazardous waste in the watershed.
Potential Risk Factors	Potential contaminant sources present in the watershed More than 25% of land for this source water area is undeveloped and unprotected, which could present a risk if developed inappropriately. Major state or interstate roadways present in the watershed Known contaminant release points present in the watershed	Periodically inspect these sites and maintain a water quality monitoring program consistent with the level of potential risk Proactively work with local officials and developers to insure that only low-risk development occurs within the watershed area Monitor road salt and herbicide usage along these roadways and address potential for hazardous material spills resulting from vehicular accidents Maintain an adequate level of surveillance around contaminant release point sites to insure that surface water contamination is not occurring Encourage residential property owners to inspect and regularly cleanout onsite septic systems and replace underground fuel storage tanks with above ground tanks.
Source Protection Needs Factors	More than 50% of the watershed area is owned by the public water system Point source pollution discharge points not present in this watershed area	Support environmental awareness and education within the community.

Inventoried significant potential contaminant sources present in the West River Reservoir System source water area are listed in Table 3. While these facilities, if present, have the potential to cause surface water contamination; there is no indication that they are doing so at this time.

Table 3 – Summary of Significant Potential Contaminant Types in the West River Reservoir System Source Water Area

Category	Subcategory	Number of SPCS Types
Waste Storage, Handling, Disposal	Hazardous Waste Facilities	2
	Solid Waste Facilities	0
	Miscellaneous	1
Bulk Chemical, Petroleum Storage	Underground Storage Tanks	11
	Tank Farms	0
	Warehouses	1
Industrial Manufacturing / Processing	Chemical & Allied Production	0
	Chemical Use Processing	0
	Miscellaneous	0
Commercial Trades and Services	Automotive and Related Services	4
	Chemical Use Services	0
	Miscellaneous	0
Miscellaneous	No Identifiable SPCS Type	0
Agricultural Operations	Animal or Livestock Waste Handling	1
	Pesticide Storage or Application	0
Total Number of Contaminant Types		20

Prominent features of the West River Reservoir System source water area are summarized in Table 4.

Table 4 - Features of the West River Reservoir System

Location of Watershed Area	Bethany, Hamden, Prospect and Woodbridge
Name of Reservoir(s) and Diversion(s)	Lakes Bethany, Chamberlain, Dawson, Glen and Watrous
Number and Type of Public Drinking Water Reservoirs or Diversions in the Watershed	2 Distribution, and 2 Distribution and Storage
Trophic Status of Reservoir(s)	5 Mesotrophic
DEP Surface Water Classification	AA
Watershed Area (total acreage)	8,850 acres
Preserved Land in the Watershed [a]	4,873 acres
Predominant Watershed Topography	moderate slopes
General Land Use and Land Cover in the Watershed [b] -Urban - Commercial or Industrial -Urban - Residential -Agricultural -Undeveloped Land	 1.2% 4.0% 10.1% 84.7%
Significant Potential Contamination Sources -Number of inventoried facilities in source water area [c] -Count of inventoried facilities per square mile -Number of contaminant types within inventoried facilities	 14 1.01 per sq mile 20
Number of Contaminant Release Points Inventoried by CTDEP [d]	2

[a] Preserved land includes any combination of land owned by the public water supply, state forest and parklands, and municipally or privately held land designated as open space.

[b] Based on statewide data layer of land use and land cover developed by UCONN Dept of Natural Resource Management Engineering and Connecticut DEP satellite imagery averaged across the entire watershed.

[c] Inventoried facilities reflect the actual number of SPCS sites present in the source water area, which may have more than 1 type of contaminant present at the facility.

[d] Sites or locations with documented accidental spills, leaks or discharges. While these sources, which are cataloged and tracked by the Connecticut DEP, may fall within a public drinking water supply source water area, they may or may not presently be discharging to the environment or causing contamination of a public drinking water source.