CHAPTER 6

RESTORATION STRATEGIES IN THE SOUTH FORK CUMBERLAND RIVER WATERSHED

6.1. BACKGROUND.

The Watershed Water Quality Management Plan serves as a comprehensive inventory of resources and stressors in the watershed, a recommendation for control measures, and a guide for planning activities in the next five-year watershed cycle and beyond. Water quality improvement will be a result of implementing both regulatory and nonregulatory programs.

In addition to the NPDES program, some state and federal regulations, such as the TMDL and ARAP programs, address point and nonpoint issues. Construction and MS4 storm water rules (implemented under the NPDES program) have transitioned from Phase 1 to Phase 2. More information on storm water rules may be found at: http://www.state.tn.us/environment/wpc/stormh2o/.

This Chapter addresses point and nonpoint source approaches to water quality problems in the Tennessee portion of the South Fork Cumberland River Watershed.

6.2. COMMENTS FROM PUBLIC MEETINGS. Watershed meetings are open to the public, and most meetings were represented by citizens who live in the watershed, NPDES permitees, business people, farmers, and local river conservation interests. Locations for meetings were chosen after consulting with people who live and work in the watershed. Everyone with an interest in clean water is encouraged to be a part of the public meeting process. The times and locations of watershed meetings are posted at: http://www.state.tn.us/environment/wpc/watershed/public.shtml.

6.2.A. Year 1 Public Meeting. The first South Fork Cumberland River Watershed public meeting was held September 14, 1999 as a joint meeting with the Clear Fork of the Cumberland River Watershed at the York Institute in Jamestown. The goals of the meeting were to: (1) present, and review the objectives of, the Watershed Approach, (2) introduce local, state, and federal agency and nongovernmental organization partners, (3) review water quality monitoring strategies, and (4) solicit input from the public.

Major Concerns/Comments

- Logging in remote areas and its effect on rivers and steams (sediment)
- Effects of abandoned mines on water quality
- Recreational abuse
- Water quality impacts on water quality (from small impoundments)
- Loss of biodiversity (fish and mussels)
- Effects of urbanization (water supply, nonpoint sources of pollution, wastewater treatment plants)
- Brine from oil and gas wells

6.2.B. Year 3 Public Meeting. The second South Fork Cumberland River Watershed public meeting was held November 27, 2001 as a joint meeting with the Clear Fork of the Cumberland River Watershed at the York Institute in Jamestown. The goals of the meeting were to: (1) provide an overview of the watershed approach, (2) review the monitoring strategy, (3) summarize the most recent water quality assessment, (4) discuss the TMDL schedule and citizens' role in commenting on draft TMDLs, and (5) discuss BMPs and other nonpoint source tools available through the Tennessee Department of Agriculture 319 Program and NRCS conservation assistance programs.

Major Concerns/Comments

- Water quantity is also an issue. We need a plan that addresses that along with water quality
- Small steams at low flow cannot assimilate the load associated with discharges from other tributaries

6.2.C. Year 5 Public Meeting. The third scheduled South Fork Cumberland River Watershed public meeting was held October 4, 2007 at the York Institute in Jamestown. The meeting was held jointly with the Obey River and Clear Fork of the Cumberland River Watersheds and featured seven educational components:

- Overview of watershed approach flash video
- Benthic macroinvertebrate specimens and interpretation
- SmartBoard™ with interactive GIS maps
- "Is Your Stream Healthy" self-guided slide show
- "Why We Do Biological Sampling" self-guided slide show
- Water supply and ground water protection educational display
- Water quality and land use maps

In addition, citizens had the opportunity to make formal comments on the draft Watershed Water Quality Management Plan.

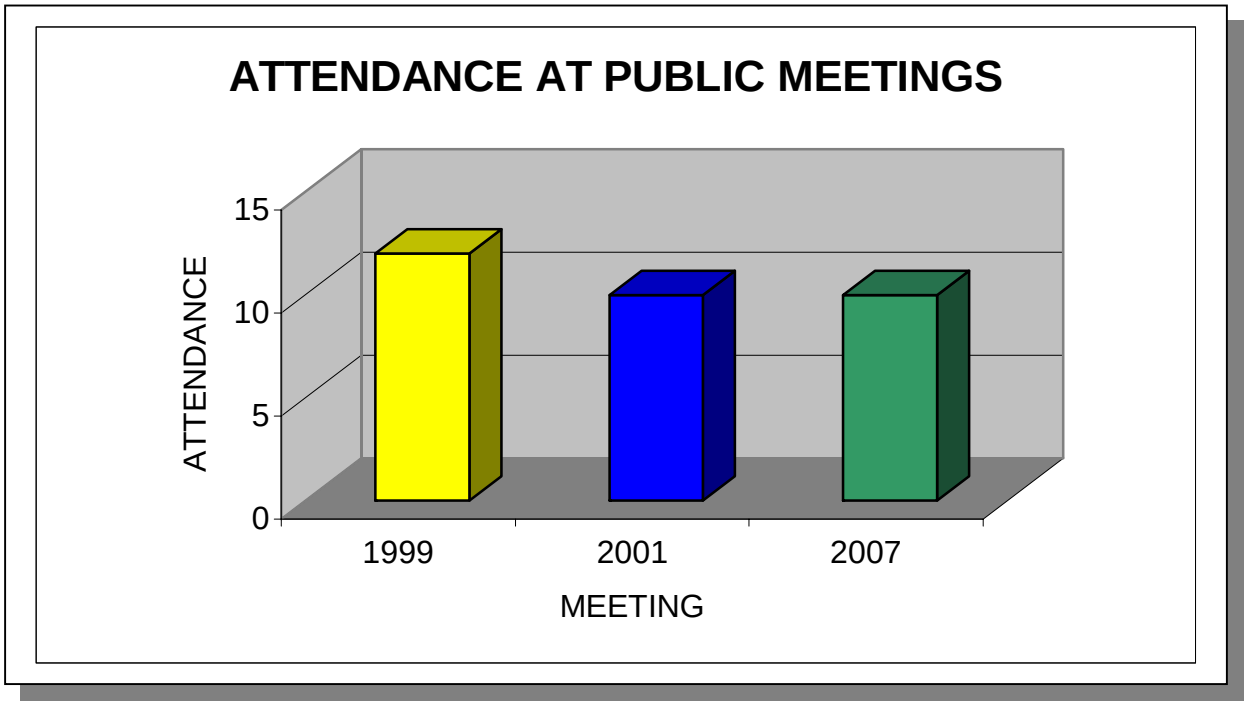

Figure 6-1. Attendance at the South Fork Cumberland Watershed Public Meetings. *Attendance numbers do not include TDEC personnel. Meetings in 1999 and 2001 represent South Fork Cumberland River and Clear Fork of the Cumberland River Watersheds joint public meetings. Meeting in 2007 represents South Fork Cumberland River, Obey River, and Clear Fork of the Cumberland River Watersheds joint public meeting.*

6.3. APPROACHES USED.

6.3.A. Point Sources. Point source contributions to stream impairment are primarily addressed by NPDES and ARAP permit requirements and compliance with the terms of the permits. Notices of NPDES and ARAP draft permits available for public comment can be viewed at http://www.state.tn.us/environment/wpc/wpcppo/. Discharge monitoring data submitted by NPDES-permitted facilities may be viewed at http://www.epa.gov/enviro/html/pcs/pcs_query_java.html.

The purpose of the TMDL program is to identify remaining sources of pollution and allocate pollution control needs in places where water quality goals are still not being achieved. TMDL studies are tools that allow for a better understanding of load reductions necessary for impaired streams to return to compliance with water quality standards. More information about Tennessee's TMDL program may be found at: http://www.state.tn.us/environment/wpc/tmdl/.

Approved TMDL:

Pine Creek. TMDL for E. coli in the South Fork Cumberland River Watershed, Scott County. Approved February 27, 2006.
http://www.state.tn.us/environment/wpc/tmdl/approvedtmdl/PineCreekEcoli.pdf

TMDLs are prioritized for development based on many factors.

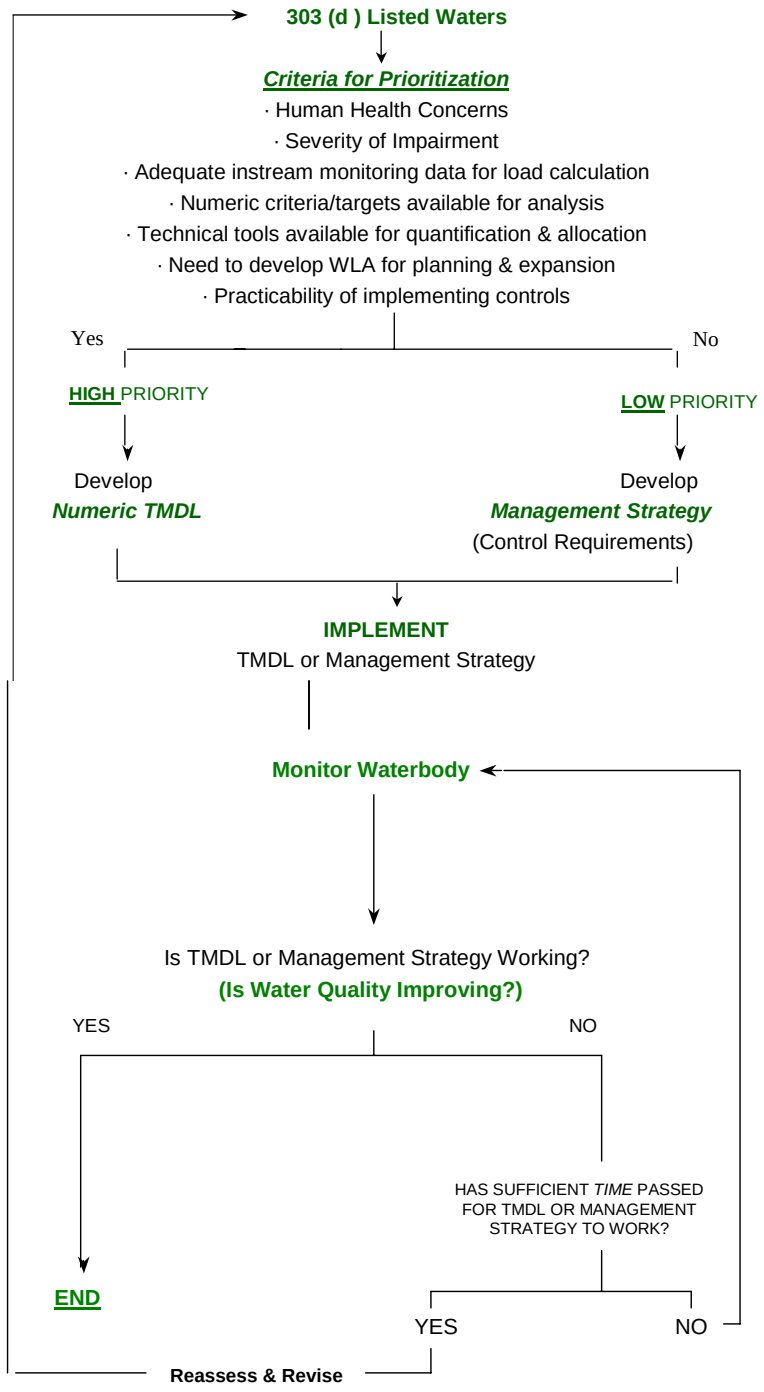

Figure 6-2. Prioritization Scheme for TMDL Development.

6.3.B. Nonpoint Sources

Common nonpoint sources of pollution in the South Fork Cumberland River Watershed include urban storm water runoff, riparian vegetation removal and other habitat alterations, as well as inappropriate land development, road construction, and agricultural practices. Since nonpoint pollution exists essentially everywhere rain falls, existing point source regulations can have only a limited effect. Other measures are, therefore, necessary.

There are several state and federal regulations that address contaminants impacting waters in the South Fork Cumberland River Watershed. Most of these are limited to point sources: a pipe or ditch. Often, controls of point sources are not sufficient to protect waters, so other measures are necessary. Some measures include efforts by landowners and volunteer groups and the possible implementation of new regulations. Many agencies, such as the Tennessee Department of Agriculture (TDA) and the Natural Resources Conservation Service (NRCS), offer financial assistance to landowners for corrective actions (like Best Management Practices) that may be sufficient for recovery of impacted streams. Many nonpoint problems will require an active civic involvement at the local level geared towards establishment of improved zoning guidelines, building codes, streamside buffer zones and greenways, and general landowner education.

The following text describes types of impairments, possible causes, and suggested improvement measures. Restoration efforts should not be limited to only those streams and measures suggested below.

6.3.B.i. Sedimentation.

6.3.B.i.a. From Construction Sites. Construction activities have historically been considered “nonpoint sources.” In the late 1980’s, EPA designated them as being subject to NPDES regulation if more than 5 acres were being disturbed. In the spring of 2003, that threshold became 1 acre. The general permit issued for such construction sites establishes conditions for maintenance of the sites to minimize pollution from storm water runoff, including requirements for installation and inspection of erosion prevention and sediment controls. Also, the general permit imposes more stringent inspection, design criteria, sediment control measures, and self-monitoring requirements on sites in the watershed of streams that are already impaired due to sedimentation or are considered high quality. Regardless of the size, no construction site is allowed to cause a condition of pollution. There are currently no waterbodies in the South Fork Cumberland River Watershed listed as impaired by sedimentation from construction activities.

Beginning in 2003, the state began requiring some municipalities to obtain coverage under a permit designed to address nonpoint runoff issues: the General NPDES Municipal Separate Storm Sewer System Permit, commonly known as MS4. This permit requires the holder to develop a comprehensive storm water management program, including the adoption of local regulatory ordinances, regular inspection of construction sites and other discharges into their storm sewers, and a variety of educational,

mapping, and monitoring activities. The state audits and oversees these local MS4 programs.

6.3.B.i.b. From Channel and/or Bank Erosion. Many streams within the South Fork Cumberland River Watershed suffer from varying degrees of streambank erosion. When steam channels are altered, banks can become unstable and highly erodable. Heavy livestock traffic can also severely disturb banks. When large tracts of land are cleared of vegetation (especially trees) and replaced with impermeable surfaces like asphalt and rooftops, the large increases in the velocities and volumes of storm water runoff can also overwhelm channel and bank integrity because destabilized banks contribute to sediment loadings and to the loss of beneficial riparian vegetation.

Some inappropriate agricultural practices and overzealous land development have impacted the hydrology and morphology of stream channels in this watershed, although none severely enough to cause a loss of use impairment at this time.

Several agencies such as the NRCS and TDA, as well as citizen watershed groups, are working to stabilize portions of stream banks using bioengineering and other techniques. Many of the affected streams could benefit from these types of projects.

Some methods or controls that might be necessary to address common problems are:

Voluntary Activities

- Re-establish bank vegetation.
- Establish off-channel watering areas for livestock by moving watering troughs and feeders back from stream banks, or at least limit cattle access to restricted areas with armored bank entry.
- Limit cattle access to streams and bank vegetation.

Regulatory Strategies

- Require post-construction run-off rates to be no greater than pre-construction rates in order to avoid in-channel erosion.
- Implement additional restrictions on logging in streamside management zones.
- Restrict the use of off-highway vehicles on stream banks and in stream channels.
- Limit road and utility crossings of streams through better site design.

Additional Strategies

- Increase efforts in the Master Logger program to recognize impaired streams and require more effective management practices.
- Better community planning for the impacts of development on small streams, especially development in growing areas.
- Encourage or require strong local buffer ordinances.
- Limit clearing of stream and ditch banks or other alterations. *Note: Permits may be required for any work along streams.*

6.3.B.i.c. From Agriculture and Silviculture. The Water Quality Control Act exempts normal agricultural and silvicultural practices that do not result in a point source discharge. Nevertheless, efforts are being made to address impacts due to these exempted practices.

The Master Logger Program has been in place for several years to train loggers how to install Best Management Practices that lessen the impact of logging activities on streams. Recently, laws and regulations established the authority for the Commissioners of the Departments of Environment and Conservation and of Agriculture to stop the logging operation that, upon failing to install these BMPs, is causing impacts to streams.

Since the Dust Bowl era, the agriculture community has strived to protect the soil from wind and water erosion. Agencies such as the Natural resources Conservation Service (NRCS), the University of Tennessee Agricultural Extension Service, and the Tennessee Department of Agriculture are striving to identify better ways of farming, to educate the farmers, and to install the methods that address the sources of some of the impacts due to agriculture. Cost sharing is available for many of these measures.

Many sediment problems traceable to agricultural practices also involve riparian loss due to close row cropping or pasture clearing for grazing. Lack of vegetated buffers along stream corridors is a problem in some areas of the South Fork Cumberland River Watershed, due both to agricultural and residential/commercial land uses. Impacted streams that could benefit from the establishment of more extensive riparian buffer zones are portions of Pine Creek and Brimstone Creek.

6.3.B.ii. Pathogen Contamination.

Possible sources of pathogens in streams are inadequate or failing septic tank systems, overflows or breaks in public sewer collection systems, poorly disinfected discharges from sewage treatment plants, and fecal matter from pets, livestock and wildlife washed into streams and storm drains. When fecal bacterial levels are shown to be consistently elevated to dangerously high levels, especially in streams with high potential for recreational uses, the division must post signage along the creek warning the public to avoid contact. Once pathogen sources have been identified and corrected, and pathogen level reductions are documented, the posting is lifted.

Permits issued by the Division of Water Pollution Control regulate discharges from point sources and require adequate control for these sources. Individual homes are required to have subsurface, on-site treatment (i.e., septic tank and field lines) if public sewers are not available. The Division of Ground Water Protection within the Knoxville and Cookeville Environmental Field Offices and delegated county health departments regulate septic tanks and field lines. In addition to discharges to surface waters, businesses may employ subsurface treatment for domestic wastewater or surface discharge of treated process wastewater. The Division of Water Pollution Control regulates surface water discharges and near-surface land application of treated wastewater.

Currently, one stream system in the Tennessee portion of the South Fork Cumberland River Watershed is known to have excessive pathogen contamination. Pine Creek and its tributaries are impacted by urban areas, with contributions of bacterial contamination coming from storm water runoff and sewage collection system leaks.

Some measures that may be necessary to control pathogens are:

Voluntary Activities

- Clean up pet waste.
- Repair failed septic systems.
- Establish off-channel watering of livestock.
- Limit livestock access to streams and restrict stream crossings.
- Improve and educate on the proper management of animal waste from confined feeding operations.

Regulatory Strategies

- Strengthen enforcement of regulations governing on-site wastewater treatment.
- Determine timely and appropriate enforcement for non-complying sewage treatment plants, large and small, and their collection systems.
- Identify Concentrated Animal Feeding Operations not currently permitted.
- Develop and enforce leash laws and controls on pet fecal material.

Additional Strategies

- Develop intensive planning in areas where sewer is not available and treatment by subsurface disposal is not an option due to poor soils, floodplains, or high water tables.
- Greater efforts by sewer utilities to identify leaking lines or overflowing manholes.
- Review the pathogen limits in discharge permits to determine the need for further restriction.

6.3.B.iii. Excessive Nutrients and/or Dissolved Oxygen Depletion.

These two impacts are usually listed together because high nutrients often contribute to low dissolved oxygen within a stream. Since nutrients often have the same source as pathogens, the measures previously listed can also address many of these problems. Elevated nutrient loadings are also often associated with urban runoff from impervious surfaces, from fertilized lawns and croplands, and faulty sewage disposal processes. Nutrients are often transported with sediment, so many of the measures designed to reduce sediment runoff will also aid in preventing organic enrichment of streams and lakes.

Dissolved oxygen depletion can also be due to the discharge of other biodegradable materials. These are limited in NPDES permits as ammonia and as either Biological Oxygen Demand (BOD) or Carbonaceous Oxygen Demand (CBOD).

Some sources of nutrients can be addressed by:

Voluntary Activities

- Educate homeowners and lawn care companies in the proper application of fertilizers.
- Encourage landowners, developers, and builders to leave stream buffer zones. Streamside vegetation can filter out many nutrients and other pollutants before they reach the stream. These riparian buffers are also vital along livestock pastures.
- Use grassed drainage ways that can remove fertilizer before it enters streams.
- Use native plants for landscaping since they don't require as much fertilizer and water.
- Develop better overall storm water management in urban and residential areas, including retrofitting existing commercial lots, homes, and roadways with storm water quality and quantity BMPs. This would especially improve the urban streams and lakes currently polluted by excessive nutrient inputs.

Physical changes to streams can prevent them from providing enough oxygen to biodegrade the materials that are naturally present. A few additional actions can address this problem:

- Maintain shade over a stream. Cooler water can hold more oxygen and retard the growth of algae. As a general rule, all stream channels suffer from some canopy removal. An intact riparian zone also acts as a buffer to filter out nutrient loads before they enter the water.
- Discourage impoundments. Ponds and lakes do not aerate water. *Note: Permits may be required for any work on a stream, including impoundments.*

Regulatory Strategies.

- Strengthen enforcement of regulations governing on-site wastewater treatment.
- Impose more stringent permit limits for nutrients discharged from sewage treatment plants.
- Impose timely and appropriate enforcement for noncomplying sewage treatment plants, large and small, and their collection systems.
- Encourage TDA- and NRCS-sponsored educational programs targeted to agricultural landowners and aimed at better nutrient management, as well as information on technology-based application tools.
- Identify Concentrated Animal Feeding Operations (CAFO) not currently permitted.
- Identify any Animal Feeding Operations (AFO) that contribute to stream impacts and declare them as a CAFO requiring a permit.
- Require nutrient management plans for all golf courses.

6.3.B.iv. Toxins and Other Materials.

Although some toxic substances are discharged directly into waters of the state from a point source, much of these materials are washed in during rainfalls from an upland location, or via improper waste disposal that contaminates groundwater. In the Tennessee portion of the South Fork Cumberland River Watershed, a relatively small number of streams are damaged by storm water runoff from industrial facilities or urban areas. More stringent inspection and regulation of permitted industrial facilities, and local storm water quality initiatives and regulations, could help reduce the amount of contaminated runoff reaching state waters. Examples of streams that could benefit from these measures include Pine Creek and its tributaries

Individuals may also cause contaminants to enter streams by activities that may be attributed to apathy or the lack of knowledge or civility. Litter in roadside ditches, garbage bags tossed over bridge railings, paint brushes washed off over storm drains, and oil drained into ditches are all blatant examples of pollution in streams. To lessen the future impact to the waters of the state, each community can strive to raise its awareness for better conservation practices and prosecution of violators.

Some of these problems can be addressed by:

Voluntary Activities

- Provide public education.
- Paint warnings on storm drains that connect to a stream.
- Sponsor community clean-up days.
- Landscape public areas.
- Encourage public surveillance of their streams and reporting of dumping activities to their local authorities.

Regulatory Strategies

- Continue to prohibit illicit discharges to storm drains and to search them out.
- Strengthen litter law enforcement at the local level.
- Increase the restrictions on storm water runoff from industrial facilities.

6.3.B.v. Habitat Alteration.

The alteration of the habitat within a stream can have severe consequences. Whether it is the removal of the vegetation providing a root system network for holding soil particles together, the release of sediment, which increases the bed load and covers benthic life and fish eggs, the removal of gravel bars, “cleaning out” creeks with heavy equipment, or the impounding of the water in ponds and lakes, many alterations impair the use of the stream for designated uses. Habitat alteration also includes the draining or filling of wetlands.

Although large-scale public projects such as highway construction can alter significant portions of streams, individual landowners and developers are responsible for the vast

majority of stream alterations. Some measures that can help address these problems are:

Voluntary Activities

- Sponsor litter pickup days to remove litter that might enter streams
- Organize stream cleanups removing trash, limbs and debris before they cause blockage.
- Avoid use of heavy equipment to “clean out” streams. Instream work other than debris removal will require an Aquatic Resource Alteration Permit (ARAP).
- Plant native vegetation along streams to stabilize banks and provide habitat.
- Encourage developers to avoid extensive use of culverts in streams.

Regulatory Strategies

- Restrict modification of streams by means such as culverting, lining, or impounding.
- Require mitigation for impacts to streams and wetlands when modifications are allowed.
- Require permitting of all rock harvesting operations.
- Increased enforcement may be needed when violations of current regulations occur, especially for illicit gravel dredging.

6.3.B.vi. Tennessee Land Reclamation.

Abandoned Coal Mines pose serious threats to public health, safety, and welfare as well as degrade the environment. The programs of Tennessee Land reclamation Section accomplish three important things: (1) They remove dangerous health and safety hazards that threaten the citizens of Tennessee, (2) They improve the environment, and (3) They restore resources to make them available for economic development, recreation, and other uses. Problems typically addressed by the Land reclamation Section include open or improperly filled mine shafts, dilapidated mine buildings and equipment, toxic mine refuse and drainage, landslides, mine fires, highwalls, and subsidence.

Projects on the ground:

- New River Water Line. A project to extend water lines to communities where domestic water supplies have been impacted by past mining.
- New River Mussel Survey.
- High Point Landslide. Tree planting and hand seeding a 20-acre landslide.

6.3.B.vi. Storm Water.

MS4 discharges are regulated through the Phase I or II NPDES-MS4 permits. These permits require the development and implementation of a Storm Water Management Program (SWMP) that will reduce the discharge of pollutants to the maximum extent practicable and not cause or contribute to violations of state water quality standards. The NPDES General Permit for Discharges from Phase I and II MSF facilities can be found at:

http://www.state.tn.us/environment/wpc/stormh2o/.

For discharges into impaired waters, the MS4 General Permit requires that SWMPs include a section describing how discharges of pollutants of concern will be controlled to ensure that they do not cause or contribute to instream exceedances of water quality standards. Specific measurements and BMPs to control pollutants of concern must also be identified. In addition, MS4s must implement the proposed waste load allocation provisions of an applicable TMDL (i.e., siltation/habitat alteration, pathogens) and describe methods to evaluate whether storm water controls are adequate to meet the waste load allocation. In order to evaluate SWMP effectiveness and demonstrate compliance with specified waste load allocations, MS4s must develop and implement appropriate monitoring programs.

Some storm sewer discharges are not regulated through the NPDES MS4 program. Strategies to address runoff from in these urban areas include adapting Tennessee Growth Readiness Program (TGRP) educational materials to the watershed. TGRP is a statewide program built on existing best management practices from the Nonpoint Education for Municipal Officials program and the Center for Watershed Protection. TGRP developed the program to provide communities and counties with tools to design economically viable and watershed friendly developments. The program assists community leaders in reviewing current land use practices, determining impacts of imperviousness on watershed functions, and allowing them to understand the economics of good watershed management and site design.

6.3.C. Special Projects.

Several agencies are working together to address the impacts from inappropriate logging and mining practices in the New River Subwatershed (0513010401). The New River Watershed drains the southeast portion of the South Fork of the Cumberland River Watershed. The New River and the Clear Fork join to form the South Fork of the Cumberland River.

The Tennessee Department of Environment and Conservation and the U.S. Geological Survey convened an initial meeting on October 26, 2007 in Knoxville. In attendance were the following agencies:

> Federal: U.S. Geological Survey, National Park Service, Tennessee Valley Authority, Office of Surface Mining, and U.S. Fish and Wildlife Service

State: Tennessee Department of Environment and Conservation, Tennessee Wildlife Resources Agency, and Tennessee division of Forestry

NGO: The Nature Conservancy and National Parks Conservation Association

Academic: University of Tennessee

The agencies agreed to improve scientific understanding of the New River Watershed and to involve grass-roots local groups in discussions about the future of the New River Watershed.

A Memorandum of Understanding will be drafted to guide agencies' activities in coordinating efforts and enhancing communication. Through coordination and communication the signatories can provide for more efficient use of resources, reduce costs, and reduce the time required to take appropriate action to protect and preserve the rivers.

The tasks to be accomplished include scientific research, coordinating activities and sharing information in regard to the New River. Further scientific research needs to be done on the pollutants from the different sources, the way in which they impact aquatic life, and the best methods of treating the pollutants or preventing them from entering the rivers.

The signatories agree to establish a Technical Advisory Committee to coordinate actions of the signatories in regard to the New River. These include, but are not be limited to:

(a) Sharing existing information and data;
(b) Identifying most impacted sub-watersheds;
(c) Identifying potential for episodic, high risk events from different categories of sources;
(d) Analyzing available models, developing model specifications, and overseeing modeling studies;
(e) Identifying data sets relating land use to environmental quality and facilitating the sharing of these data;
(f) Developing protocols for hydrologic and biologic monitoring networks;
(g) Determining available spatial information, identifying spatial data sets to be collected, establishing time lines and approaches for collecting and maintaining the data;
(h) Developing an integrated assessment of pollutant sources and responses of the biological communities;
(i) Developing specifications for data clearing house and web site and identifying appropriate facility to host them; and
(j) Establishing ad hoc working groups for coordinating efforts on issues of concern to some or all of the signatories, as the need arises, including but not limited to, Abandoned Mine Lands issues or addressing observed impacts to the New River or its tributaries.

6.4. PERMIT REISSUANCE PLANNING

Under the *Tennessee Water Quality Control Act*, municipal, industrial and other dischargers of wastewater must obtain a permit from the Division. Approximately 1,700 permits have been issued in Tennessee under the federally delegated National Pollutant Discharge Elimination System (NPDES). These permits establish pollution control and monitoring requirements based on protection of designated uses through implementation of water quality standards and other applicable state and federal rules.

The following three sections provide specific information on municipal, industrial, and water treatment plant active permit holders in the South Fork Cumberland River Watershed. Compliance information was obtained from EPA's Permit Compliance System (PCS). All data was queried for a five-year period between August 1, 2002 and July 31, 2007. PCS can be accessed publicly through EPA's Envirofacts website. This website provides access to several EPA databases to provide the public with information about environmental activities that may affect air, water, and land anywhere in the United States:

http://www.epa.gov/enviro/html/ef_overview.html

Stream Segment information, including designated uses and impairments, are described in detail in Chapter 3, *Water Quality Assessment of the South Fork Cumberland River Watershed.*

6.4.A. Municipal Permits

TN0061603 Bandy Creek Campground

Discharger rating: Minor
City: Oneida
County: Scott
EFO Name: Knoxville
Issuance Date: 1/1/05
Expiration Date: 11/30/09
Receiving Stream(s): Unnamed tributary at mile 0.2 to Bandy Creek at mile 3.3
HUC-12: 051301040401
Effluent Summary: Treated domestic wastewater from Outfall 001
Treatment system: Two biological lagoons in series, lined sand filter and chlorination

Segment	TN05130104013_0300
Name	Bandy Creek
Size	8.3
Unit	Miles
First Year on 303(d) List	-
Designated Uses	Fish and Aquatic Life (Not Assessed), Recreation (Not Assessed), Irrigation (Not Assessed), Livestock Watering and Wildlife (Not Assessed)
Causes	N/A
Sources	N/A

Table 6-1. Stream Segment Information for Bandy Creek Campground.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	Summer	4	mg/L	DMax Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	Summer	2	mg/L	MAvg Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	Winter	10	mg/L	DMax Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	Winter	5	mg/L	MAvg Conc	2/Month	Grab	Effluent
CBOD5	All Year	25	mg/L	DMax Conc	2/Month	Grab	Effluent
CBOD5	All Year	15	mg/L	MAvg Conc	2/Month	Grab	Effluent
D.O.	All Year	6	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Ari Mean	2/Month	Grab	Effluent
Fecal Coliform	All Year	1000	#/100mL	DMax Conc	2/Month	Grab	Effluent
Fecal Coliform	All Year	200	#/100mL	MAvg Geo Mean	2/Month	Grab	Effluent
Flow	All Year		MGD	DMax Load	Weekdays	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	Weekdays	Instantaneous	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	0.5	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent
pH	All Year	6.5	SU	DMin Conc	2/Week	Grab	Effluent

Table 6-2. Permit Limits for Bandy Creek Campground.

Comments: None

TN0060186 Helenwood STP

Discharger rating: Minor
City: Helenwood
County: Scott
EFO Name: Knoxville
Issuance Date: 11/1/05
Expiration Date: 9/30/09
Receiving Stream(s): Phillips Creek Mile 4.1
HUC-12: 051301040108
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: Land application

Segment	TN05130104037_0100
Name	Phillips Branch
Size	15.6
Unit	Miles
First Year on 303(d) List	-
Designated Uses	Recreation (Supporting), Irrigation (Supporting), Fish and Aquatic Life (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	N/A
Sources	N/A

Table 6-3. Stream Segment Information for Helenwood STP.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	Summer	3	mg/L	DMax Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	3	lb/day	DMax Load	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	1.5	mg/L	MAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	1	mg/L	WAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	2	lb/day	MAvg Load	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	5	mg/L	DMax Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	4	lb/day	MAvg Load	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	6	lb/day	DMax Load	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	2.5	mg/L	WAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	3.75	mg/L	MAvg Conc	3/Week	Composite	Effluent
CBOD % Removal	All Year	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
CBOD % Removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
CBOD5	Summer	20	mg/L	DMax Conc	3/Week	Composite	Effluent
CBOD5	Summer	25	lb/day	DMax Load	3/Week	Composite	Effluent
CBOD5	Summer	10	mg/L	DMin Conc	3/Week	Composite	Effluent
CBOD5	Summer	17	lb/day	MAvg Load	3/Week	Composite	Effluent
CBOD5	Summer	15	mg/L	MAvg Conc	3/Week	Composite	Effluent
CBOD5	Winter	46	mg/L	DMax Conc	3/Week	Composite	Effluent
CBOD5	Winter	38	lb/day	MAvg Load	3/Week	Composite	Effluent
CBOD5	Winter	55	lb/day	DMax Load	3/Week	Composite	Effluent
CBOD5	Winter	34.5	mg/L	MAvg Conc	3/Week	Composite	Effluent
CBOD5	Winter	23	mg/L	DMin Conc	3/Week	Composite	Effluent
D.O.	All Year	6	mg/L	DMin Conc	Weekdays	Grab	Effluent
Fecal Coliform	All Year	1000	#/100mL	DMax Conc	3/Week	Grab	Effluent
Fecal Coliform	All Year	200	#/100mL	MAvg Geo Mean	3/Week	Grab	Effluent
IC25 7day Ceriodaphnia dubia	All Year	100	Percent	DMin Conc	Monthly	Composite	Effluent
IC25 7day Fathead Minnows	All Year	100	Percent	DMin Conc	Monthly	Composite	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	Weekdays	Composite	Effluent
TSS	All Year	45	mg/L	DMax Conc	3/Week	Composite	Effluent
TSS	All Year	67	lb/day	DMax Load	3/Week	Composite	Effluent
TSS	All Year	30	mg/L	WAvg Conc	3/Week	Composite	Effluent

Table 6-4. Permit Limits for Helenwood STP.

Compliance History:
The following numbers of exceedences were noted in PCS:

36 Overflows
3 Bypasses
3 Total Suspended Solids
2 Ammonia
2 Settleable Solids
1 Carbonaceous Oxygen Demand
1 Carbonaceous Biological Oxygen Demand
1 Dissolved Oxygen

***Comments (TN0060186 Helenwood STP)**:*
1/26/07 Compliance Evaluation Inspection: In compliance.

TN0020753 Huntsville STP

Discharger rating: Minor
City: Huntsville
County: Scott
EFO Name: Knoxville
Issuance Date: 5/1/05
Expiration Date: 3/31/09
Receiving Stream(s): New River at mile 14.8
HUC-12: 051301040106
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: Treatment consists of screening, biological treatment, membrane filtration, and ultraviolet disinfection.

Segment	TN05130104037_1000
Name	New River
Size	22.5
Unit	Miles
First Year on 303(d) List	-
Designated Uses	Fish and Aquatic Life (Supporting), Recreation (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	N/A
Sources	N/A

Table 6-5. Stream Segment Information for Huntsville STP.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	All Year	3	mg/L	DMax Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	All Year	1.5	mg/L	MAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	All Year	1.8	mg/L	WAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	All Year	3.8	lb/day	MAvg Load	3/Week	Composite	Effluent
Ammonia as N (Total)	All Year	4.5	lb/day	WAvg Load	3/Week	Composite	Effluent
CBOD % Removal	All Year	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
CBOD % Removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
CBOD5	All Year		mg/L	DMax Conc	3/Week	Composite	Influent (Raw Sewage)
CBOD5	All Year		mg/L	MAvg Conc	3/Week	Composite	Influent (Raw Sewage)
CBOD5	Summer	8	mg/L	DMax Conc	3/Week	Composite	Effluent
CBOD5	Summer	15	lb/day	WAvg Load	3/Week	Composite	Effluent
CBOD5	Summer	6	mg/L	WAvg Conc	3/Week	Composite	Effluent
CBOD5	Summer	4	mg/L	MAvg Conc	3/Week	Composite	Effluent
CBOD5	Summer	10	lb/day	MAvg Load	3/Week	Composite	Effluent
CBOD5	Winter	25	lb/day	MAvg Load	3/Week	Composite	Effluent
CBOD5	Winter	10	mg/L	MAvg Conc	3/Week	Composite	Effluent
CBOD5	Winter	20	mg/L	DMax Conc	3/Week	Composite	Effluent
CBOD5	Winter	15	mg/L	WAvg Conc	3/Week	Composite	Effluent
CBOD5	Winter	38	lb/day	WAvg Load	3/Week	Composite	Effluent
D.O.	All Year	6	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	941	#/100mL	DMax Conc	3/Week	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	3/Week	Grab	Effluent
Flow	All Year		MGD	DMax Load	Daily	Continuous	Effluent
Flow	All Year		MGD	DMax Load	Daily	Continuous	Influent (Raw Sewage)
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Influent (Raw Sewage)
Settleable Solids	All Year	1	mL/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	3/Week	Composite	Effluent
TSS	All Year		mg/L	DMax Conc	3/Week	Composite	Influent (Raw Sewage)
TSS	All Year	30	mg/L	MAvg Conc	3/Week	Composite	Effluent
TSS	All Year	75	lb/day	MAvg Load	3/Week	Composite	Effluent
TSS	All Year	100	lb/day	WAvg Load	3/Week	Composite	Effluent
TSS	All Year	40	mg/L	WAvg Conc	3/Week	Composite	Effluent
TSS	All Year		mg/L	MAvg Conc	3/Week	Composite	Influent (Raw Sewage)
TSS % Removal	All Year	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
TSS % Removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
pH	All Year	9	SU	DMax Conc	Weekdays	Grab	Effluent
pH	All Year	6.5	SU	DMin Conc	Weekdays	Grab	Effluent

Table 6-6. Permit Limits for Huntsville STP.

Compliance History:
The following numbers of exceedences were noted in PCS:

67 Overflows
8 Ammonia
4 Total Suspended Solids
4 Dissolved Oxygen
3 Total Chlorine
3 Carbonaceous Biological Oxygen Demand
1 Carbonaceous Oxygen Demand
2 pH
2 Settleable Solids

Enforcement:
2/1/06 Director's Order 06-0002 for operating the WWTP and collection system without a certified operator.

Comments (TN0020753 Huntsville STP)*:*
Permit reissuance with expanded design capacity. STP expansion is from 0.15 MGD to 0.3 MGD and initiated operation on 11/11/04

3/28/07 Compliance Evaluation Inspection: In compliance
Comments from visit:

1. The treatment plant consists of screening, biological treatment, membrane filtration, and ultraviolet disinfection. The wastes from the digester go through a filter press then the sludge is disposed in the permitted county landfill.

2. According to the operator, the mixed liquor suspended solids (MLSS) under normal operations ranges between 15,000 and 18,000 mg/l. Considering the manufacturer's recommendations for this facility, this range far exceeds the design limit. The consequences of this practice could be that the expected length of service for the system is rapidly depleted. Furthermore, there is no back up system in the event of a system failure. Therefore, the division strongly recommends that Huntsville review the Operations and Maintenance Manual, discuss this matter with their consultant, and take appropriate action to bring the mixed liquor suspended solids under 15,000 mg/l.

3. Huntsville WWTP presently operates with the supervision of a Certified Operator, Grade III. The addition of this operator and his achieving certification has proved beneficial to the WWTP. The plant is still undermanned according to the manufacturer's recommendations and good operating practice. Huntsville must give serious consideration to providing an assistant technician who might also be trained to cover in the event of the operator's illness or vacation.

4. The sludge generated from this facility is disposed in the permitted county landfill. Based on visual observations, the filtering system does not appear to be providing adequate dewatering of the sludge. The system appears to be operating adequately, but may need some adjustment to bring the percent of solids up to 20%. By observations, there appears to be only 12% or less solids.

Having overly wet sludge may cause problems for the landfill including excessive leachate and may also cause a violation of the Special Waste Permit for the facility. Another consideration might be to construct a roof around the filter press to facilitate all-season, all-weather use.

5. Access for maintenance or recovery cleaning is currently limited. The operator has to uncouple hoses by physically hanging from a platform above the hoses or balancing on the piping to pull the filter modules for cleaning. This safety hazard was also noted in our December 29, 2005, inspection. You are strongly urged to arrive at a plan of action and implementation to provide safe access for the operator in all seasons for maintenance or recovery.

6. Huntsville WWTP uses ultraviolet lights for disinfection, and as we inspected the facility, it was noted that some of the lights were out of service. Having all lights functioning and having some on-hand for back up is crucial to this operation.

7. Based on our review of the files, some of the problems over years past have begun to be addressed. Overflows, bypasses, breakdowns, and all other items required by the permit are now reported in a timely manner. Huntsville WWTP reported two bypass events in February and May 2006.

TN0064424 Oneida STP

Discharger rating: Minor
City: Oneida
County: Scott
EFO Name: Knoxville
Issuance Date: 2/1/05
Expiration Date: 12/31/09
Receiving Stream(s): Pine Creek at mile 7.2
HUC-12: 051301040402
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: Oxidation ditch preceded by screening and grit removal and followed by chlorine disinfecting and cascade aeration. Sludge is dewatered on beds using polymers.

Segment	TN05130104048_2000
Name	Pine Creek
Size	4.1
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Livestock Watering and Wildlife (Supporting), Irrigation (Supporting), Recreation (Non-Supporting), Fish and Aquatic Life (Non-Supporting), Domestic Water Supply (Non-Supporting)
Causes	Creosote, Alteration in stream-side or littoral vegetative covers, Dissolved Oxygen, Nitrates, Escherichia coli, Sedimentation/Siltation
Sources	Contaminated Sediments, Municipal Point Source Discharges, Channelization, On-site Treatment Systems (Septic Systems and Similar Decencentralized Systems), Sanitary Sewer Overflows (Collection System Failures)

Table 6-7. Stream Segment Information for Oneida STP.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	Summer	2.4	mg/L	DMax Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	1.2	mg/L	MAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	1.8	mg/L	WAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Summer	15	lb/day	WAvg Load	3/Week	Calculated	Effluent
Ammonia as N (Total)	Summer	10	lb/day	MAvg Load	3/Week	Calculated	Effluent
Ammonia as N (Total)	Winter	3.8	mg/L	DMax Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	16	lb/day	MAvg Load	3/Week	Calculated	Effluent
Ammonia as N (Total)	Winter	23	lb/day	WAvg Load	3/Week	Calculated	Effluent
Ammonia as N (Total)	Winter	2.8	mg/L	WAvg Conc	3/Week	Composite	Effluent
Ammonia as N (Total)	Winter	1.9	mg/L	MAvg Conc	3/Week	Composite	Effluent
Bypass of Treatment (occurrences)	All Year		Occurrences/Month	MAvg Load	Continuous	Visual	Wet Weather
CBOD % Removal	All Year	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
CBOD % Removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
CBOD5	All Year	30	mg/L	DMax Conc	3/Week	Composite	Effluent
CBOD5	All Year		mg/L	MAvg Conc	3/Week	Composite	Influent(Raw Sewage)
CBOD5	All Year	163	lb/day	MAvg Load	3/Week	Calculated	Effluent
CBOD5	All Year	20	mg/L	MAvg Conc	3/Week	Composite	Effluent
CBOD5	All Year		mg/L	DMax Conc	3/Week	Composite	Influent (Raw Sewage)
CBOD5	All Year	25	mg/L	WAvg Conc	3/Week	Composite	Effluent
CBOD5	All Year	204	lb/day	WAvg Load	3/Week	Calculated	Effluent
Cyanide, Total (CN-)	All Year	0.005	mg/L	MAvg Conc	Quarterly	Grab	Effluent
Cyanide, Total (CN-)	All Year	0.038	lb/day	MAvg Load	Quarterly	Calculated	Effluent
D.O.	All Year	6	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	941	#/100mL	DMax Conc	3/Week	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Conc	3/Week	Grab	Effluent
Flow	All Year		MGD	DMax Conc	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Conc	Daily	Continuous	Influent (Raw Sewage)
Flow	All Year		MGD	DMax Conc	Daily	Continuous	Influent (Raw Sewage)
Flow	All Year		MGD	MAvg Conc	Daily	Continuous	Effluent
IC25 7day Ceriodaphnia dubia	All Year	100	Percent	DMin Conc	Annually	Composite	Effluent
IC25 7day Fathead Minnows	All Year	100	Percent	DMin Conc	Annually	Composite	Effluent
Nitrite + Nitrate Total (as N)	All Year		mg/L	MAvg Conc	Monthly	Composite	Effluent
Overflow Use Occurrences	All Year	0	Occurrences/ Month	MAvg Load	Continuous	Visual	Non Wet Weather
Overflow Use Occurrences	All Year	0	Occurrences/ Month	MAvg Load	Continuous	Visual	Wet Weather
Phosphorus Total	All Year		mg/L	MAvg Conc	Monthly	Composite	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	3/Week	Grab	Effluent
TRC	All Year	0.02	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	3/Week	Composite	Effluent
TSS	All Year		mg/L	DMax Conc	3/Week	Composite	Influent (Raw Sewage)
TSS	All Year		mg/L	MAvg Conc	3/Week	Composite	Influent (Raw Sewage)
TSS	All Year	40	mg/L	WAvg Conc	3/Week	Composite	Effluent
TSS	All Year	327	mg/L	WAvg Load	3/Week	Calculated	Effluent
TSS	All Year	245	lb/day	MAvg Load	3/Week	Calculated	Effluent

Table 6.8a.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
TSS	All Year	30	mg/L	MAvg Conc	3/Week	Composite	Effluent
TSS % Removal	All Year	40	Percent	DMin % Removal	3/Week	Calculated	% Removal
TSS % Removal	All Year	85	Percent	MAvg % Removal	3/Week	Calculated	% Removal
pH	All Year	9	SU	DMax Conc	Weekdays	Grab	Effluent
pH	All Year	6.5	SU	DMin Conc	Weekdays	Grab	Effluent

Table 6-8b.

Tables 6-8a-b. Permit Limits for Oneida STP.

Compliance History:
The following numbers of exceedences were noted in PCS:

1 Bypass
2 Carbonaceous Biological Oxygen Demand
4 Suspended Solids % Removal
3 Ammonia
1 Total Suspended Solids
1 Settleable Solids

Comments (TN0064424 Oneida STP)*:*
12/12/06 Compliance Evaluation Inspection – Satisfactory

Comments from 12/21/06 letter:

At the time of the division's inspection, the division noted some small floating material in the dechlorination chamber. This should not be discharged in the effluent. This material and larger plastics are not being removed by the bar screens and grit removal system currently in use. Allowing this material to move all the way through the WWTP can damage pumps and cause blockages. The headworks are old and an outdated removal system. Oneida should consider upgrading to a newer, more efficient grit removal system.

On March 10, 2006, the total suspended solids limit was violated because approximately 400,000 gallons bypassed from 1:00 AM to 8:00 AM due to heavy rainfall. Also, broken check valves contributed to these violations. In June 2006 Oneida STP reported three violations of ammonia, nitrogen due to heavy loading (two loads of 9000 gallons) of leachate from the landfill. Awareness of the source of these problems will avoid a repeat in the future.

A copy of the permit was available for review. All documents, laboratory reports, and monitoring reports were available for review and appear to be in line with the requirements and conditions of the permit. The inspectors found no visible sheen, scum, or other visible material contained in the outfall area.

TN0023035 Sunbright STP

Discharger rating: Minor
City: Sunbright
County: Morgan
EFO Name: Knoxville
Issuance Date: 6/1/04
Expiration Date: 4/30/09
Receiving Stream(s): White Oak Creek at mile 20.0
HUC-12: 051301040301
Effluent Summary: Treated domestic wastewater from Outfall 001
Treatment system: Activated sludge

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Ammonia as N (Total)	Summer	4	mg/L	DMax Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	Summer	2	mg/L	MAvg Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	Winter	10	mg/L	DMax Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	Winter	5	mg/L	MAvg Conc	2/Month	Grab	Effluent
CBOD5	All Year	20	mg/L	DMax Conc	2/Month	Grab	Effluent
CBOD5	All Year	10	mg/L	MAvg Conc	2/Month	Grab	Effluent
D.O.	All Year	6	mg/L	DMin Conc	Weekdays	Grab	Effluent
Fecal Coliform	All Year	1000	#/100mL	DMax Conc	2/Month	Grab	Effluent
Fecal Coliform	All Year	200	#/100mL	MAvg Geo Mean	2/Month	Grab	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	0.5	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
pH	All Year	8.5	SU	DMax Conc	2/Week	Grab	Effluent
pH	All Year	6.5	SU	DMin Conc	2/Week	Grab	Effluent

Table 6-9. Permit Limits for Sunbright STP.

Enforcement:
9/26/06 Notice of Violation (Please see below)

Comments (TN0023035 Sunbright STP)*:*
9/10/07 Comments from Knoxville EFO: Sunbright is in the process of getting better. They are looking to become a drip irrigation system.

9/19/06 Compliance Evaluation Inspection: Not in Compliance
Comments from 9/26/06 NOV:

On the day of the inspection the wastewater treatment plant (WWTP) appeared to be barely operational. The clarifier at the front of the tertiary sand filters was washing solids out the discharge to White Oak Creek. The tertiary sand filters were not in operation and have not been in operation for years. The tube settlers that were originally installed with the treatment plant no longer are part of the treatment process. This only leaves the clarifier in front of the sand filters. During this inspection, the division witnessed the effluent leaving the plant, which had a very objectionable color contrast and appeared to have a significant amount of solids in it. This is a violation of the NPDES Permit TN0023035 Part I Section A. stating that wastewater discharge must not cause an objectionable color contrast in the receiving stream.

The City of Sunbright has not reported effluent violations on the monthly operational report during calendar 2005.

The City of Sunbright received a community block grant of $500,000. This money has been designated to upgrade the current WWTP. Sunbright is in the preliminary stage of putting together an engineering report and alternatives analysis.

6.4.B. Industrial Permits:

TN0025712 HBD Industries, Inc.

Discharger rating: Minor
City: Oneida
County: Scott
EFO Name: Knoxville
Issuance Date: 2/1/05
Expiration Date: 12/30/09
Receiving Stream(s): Litton Fork Pine Creek at mile 0.1
HUC-12: 051301040402
Effluent Summary: Contact and non-contact cooling water, and floor drainage water from Outfall 001
Treatment system: Settling Basin

Segment	TN05130104048_0300
Name	Litton Fork Pine Creek
Size	2.5
Unit	Miles
First Year on 303(d) List	1998
Designated Uses	Livestock Watering and Wildlife (Supporting), Fish and Aquatic Life (Not Assessed), Recreation (Non-Supporting), Irrigation (Supporting)
Causes	Escherichia coli
Sources	On-site Treatment Systems (Septic Systems and Similar Decencentralized Systems), Sanitary Sewer Overflows (Collection System Failures)

Table 6-10. Stream Segment Information for HBD Industries, Inc.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Flow	All Year		MGD	DMax Load	Monthly	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	Monthly	Instantaneous	Effluent
Oil and Grease (Freon EM)	All Year	15	mg/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	40	mg/L	DMax Conc	Monthly	Grab	Effluent
Temperature (°C)	All Year		°C	DMax Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Monthly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Monthly	Grab	Effluent

Table 6-11. Permit Limits for HBD Industries, Inc.

Compliance History:
The following numbers of exceedences were noted in PCS:

2 Oil & Grease

Comments:
Manufacturing of Rubber and Plastics Hose and Belting.