

Oliver Creek is...



STUCK IN THE MUD

An analysis of the General Storm Water permit as it is applied to construction sites in Tennessee.

By

Tennessee Clean Water Network

Public Employees for Environmental Responsibility

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Cover photo: Oliver Creek destroyed by excess sedimentation

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Introduction

Tennessee Clean Water Network (TCWN) and the Tennessee office of Public Employees for Environmental Responsibility (PEER) are conducting case studies in the three main regions of Tennessee – East, Middle, and West – to examine and expose examples of surface water pollution not being adequately addressed by regulatory programs under the Clean Water Act (CWA) and related state laws.

The West Tennessee case study focuses on the misuse of the construction storm water general permit and Tennessee Department of Environment and Conservation's (TDEC) lack of enforcement of water quality laws using the current situation at streams in the Lakeland, TN area with particular focus on Oliver Creek as an example. As the following report will describe, the general permit is often not an appropriate mechanism for authorizing discharges, especially to a stream already polluted with sediment. The use of the general permit and the continuing discharge of sediment to Oliver Creek are in violation of state and federal water quality regulations.

PEER and TCWN have recommended to TDEC to discontinue the use of the construction storm water general permit under certain circumstances outlined below, enforce against violations at construction sites that do not comply, create numeric limits for sediment, and accelerate the schedule for the Total Maximum Daily Load (TMDL) for Oliver Creek.

The Problem with Mud

Aside from just looking bad, mud or sediment is a serious pollution problem. As in other states, the TDEC consistently reports sediment to be the largest cause of pollution in Tennessee waters. This is according to the EPA-required 305(b) Report [named for section 305(b) of the CWA] released by TDEC every two years, and is the primary vehicle for informing Congress and the public about general water quality conditions in the United States. It shows that sediment pollution impacted 28% of Tennessee's streams and rivers in 2000 and 27.9% in 2002. The related cause of pollution due to habitat alteration runs a close second in each report. Sediment carried in water increases flooding, impacts water supplies and navigation, degrades aquatic habitat and transports chemicals. Below is a description of some of the adverse impacts of sediment:

Flooding

Flood plains filled with dirt to build up areas for new housing force water to cut new paths at high flows. This causes flooding in areas that were previously not in the flood plain. Without proper planning to account for increased flooding caused by new developments, farmland and areas with existing homes not originally built in flood plains experience flooding as a result. This creates liability for local governments who in effect allow this incremental change in the natural landscape and flow patterns to create these flooding problems.

Water supply

Water is taken from rivers and lakes for domestic, industrial, and agricultural uses. The presence of sediment in the water increases treatment needs and costs in order to make it fit for human consumption and other uses. Treating water for excessive sediment continually wears down

equipment in water treatment facilities, further increasing costs to provide quality water to customers.

Navigation & recreation

Deposition of sediment in streams, rivers, or lakes can decrease water depth, making navigation and recreation difficult or impossible. This can include small streams where canoe passage becomes restricted as the channel clogs with sediment. To ensure access in some cases, sediment may be dredged from the water body, resulting in increased costs to maintain navigational access, re-suspension and deposition of sediment, and the possible release of chemicals into the environment that can have an adverse effect on human or aquatic health.

Aquatic habitat

Sediment can smother the bottom of streams and lakes, filling in spaces between rocks and other substrate, and eliminating habitat and refugia for aquatic life. Sediment can also smother eggs and bottom dwelling organisms and clog the gills of fish and other gill-breathing organisms. Suspended sediment decreases the penetration of light into the water, affecting fish feeding and schooling practices and leading to reduced survival. Sediment particles also absorb warmth from the sun and thus can increase water temperature, leading to stress in some species.

Chemical transport

Sediment is made up of chemicals, which often include nutrients - nitrogen and phosphorous compounds – along with other chemical components of the local geology, as well as agricultural and urban contaminants that adhere to the sediment particles. As the organic content of sediment decomposes in the streambed, dissolved oxygen (DO) is consumed from the water, thus robbing oxygen from aquatic organisms that depend on DO for life. This consumption is referred to as Sediment Oxygen Demand (SOD). Other chemical components of sediment, such as iron, can also consume DO as natural decomposition reactions take place in the water.

While some sediment load in streams and lakes is natural and even beneficial, too much is detrimental. In the case of Oliver Creek and many other similar streams, there is too much – way too much.

Construction Storm Water Permitting: How does it work?

Discharges from construction activities are regulated under the National Pollutant Discharge Elimination System (NPDES). Mandated by Congress under the Clean Water Act, the NPDES program covers storm water under a two-phased national initiative for addressing non-agricultural sources. The program is supposed to use the NPDES permitting mechanism to require the implementation of controls designed to prevent pollutants, including sediment, from being washed by storm water runoff into local water bodies. After years of litigation, EPA and the states finally began addressing storm water in the early 1990's.

Phase I implementation began in 1992, requiring NPDES permit coverage for storm water discharges from:

- medium and large municipal separate storm sewer systems (MS4s) located in incorporated places or counties with populations of 100,000 or more; and
- eleven categories of industrial activity, including construction activity that disturbs five or more acres of land.

Phase II of the program, in effect since 2003, requires additional NPDES permit coverage for storm water discharges from:

- certain regulated small MS4s; and
- **construction activity disturbing between 1 acre or more of land.**

Most construction sites found in the Oliver Creek watershed are over 1 acre of land and therefore fall under the NPDES permitting program. Currently, all permit coverage granted to developers along Oliver Creek and elsewhere in Tennessee are general stormwater permits.

General Stormwater Permitting: Where is it allowed and what is required?

All construction activities one acre or larger must obtain permit coverage from the Tennessee Department of Environment and Conservation, Division of Water Pollution Control (WPC). Construction activities less than one acre must also obtain coverage if they are part of a larger common plan of development or sale that totals at least one acre, or if TDEC determines the need for a permit due to potential impacts. TDEC generally authorizes discharges of runoff from construction sites under a statewide general permit (TCA 69-3-108 and Rule 1200-4-1), though an individual permit can be required. Site operators apply for coverage under the general permit by submitting a Notice of Intent (NOI). Upon approval of the NOI, the WPC issues a Notice of Coverage (NOC) to the operator.

In addition to the NOI, every operator is required to prepare a storm water pollution prevention plan (SWPPP). The purpose of the SWPPP is to describe and ensure the implementation of practices to reduce the pollutants in storm water discharges associated with construction activity at the site and to assure compliance with the terms and conditions of the general permit.

The general permit requires construction activities to be carried out in such a manner as will prevent violations of water quality criteria as stated in the regulation, but doesn't set a limit on what can actually be discharged. This includes, but is not limited to, the prevention of any discharge that causes a condition in which visible solids, bottom deposits, or turbidity impairs the usefulness of waters of the state for any of the uses designated for that water body. Water quality criteria also prohibit any distinctly visible floating scum, oil, or other matter contained in the storm water discharge. **Monitoring requirements do not include any testing or numeric limitations, only observations of the discharge, erosion control measures, and outfalls where discharges from the site enter streams or leave the site.**

Additional monitoring requirements (again, observation only) are in the general permit for:

- discharges to water bodies on the Tennessee 303(d) list for existing siltation (sediment) problems, or discharges upstream of waters impaired by siltation, that may affect the impaired waters, and
- discharges to waters identified by the State as high quality waters.

In these cases, the permittee must also:

- Submit the SWPPP to the local WPC field office prior to the start of construction.
- Perform additional visual inspections before anticipated storm events, and within 24 hours after the end of a storm event of 0.5 inches or greater, and at least once per week.
- Certify on a weekly basis that weekly inspections of erosion and sediment controls have been performed and whether or not all planned and designed erosion and sediment controls are installed and in working order.

(Tennessee General Permit No. TNR10-0000, Section III.F.)

Several types of discharges are **not** authorized by the general permit, including:

- Discharges threatening water quality – storm water discharges from construction sites that will cause, or have the reasonable potential to cause, violations of water quality standards.
- **Discharges causing or contributing to the impairment of a Section 303(d)-listed water – the State will not grant coverage under the general permit for discharges that are causing or contributing to the impairment of a Section 303(d) listed water or any water identified as impaired since promulgation of the latest 303(d) list.** [see Appendix regarding 303(d)list]

(Tennessee General Permit No. TNR10-0000, Section I.C.)

With respect to a discharge already permitted under the general permit which the Division determines is contributing to impairment of a waterbody, the permit states:

If the Division finds that a discharge is causing a violation of water quality standards or causing or contributing to the impairment of a 303(d) listed water, and finds that the discharger is in compliance with storm water pollution prevention plan requirements, the discharger will be notified by the Director in writing that the discharge is no longer eligible for coverage under the general permit and that continued discharges must be covered by an individual permit. To obtain the individual permit, the operator must file an individual permit application.

(Tennessee General Permit No. TNR10-0000, Section III.F.)

The problem is, TDEC ignores their responsibilities under the law and rarely, if ever, requires an individual permit for construction. Even under the previous version of the general permit, which did require sampling and reporting, dischargers ignored that requirement and WPC did not enforce it.

Best Management Practices (BMPs)

This term is often used – and much over used – to describe things that should be done to maintain a good, clean operation and acceptable discharge. It is too often used as an inappropriate substitute for permit limits or excuse to avoid them. Once a water body is on the 303(d) list, the definition of BMP should be restricted to the language in the CWA covering permits for such waters. Below is the

definition of BMP from the federal regulations [found at 40 CFR 130.2(m)] that applies to waters on the 303(d) list, and that are to be covered by permits under the associated TMDL program:

§ 130.2 Definitions. (m) Best Management Practice (BMP).

Methods, measures or practices selected by an agency to meet its nonpoint source control needs. BMPs include but are not limited to structural and nonstructural controls and operation and maintenance procedures. BMPs can be applied before, during and after pollution-producing activities to reduce or eliminate the introduction of pollutants into receiving waters.

-40 CFR 130.2(m)

Note that this definition of BMP applies to nonpoint sources, not point sources. Construction sites of one acre or more are now defined as point sources. The State offers trainings to developers, construction companies, and others so that they can better understand how to contain sediment that runs off from their sites. However many developers take the short course and then promptly refuse to apply what they've learned. TDEC incorrectly allows BMPs to substitute for permit limits for all construction stormwater dischargers, and then inadequately enforce the use of BMPs, resulting in the increased siltation of streams. The Oliver Creek case study is just one of hundreds of rivers, streams and lakes in Tennessee that are impacted daily by sedimentation to the detriment of human and aquatic health.

Bad management practice in subdivision on Oliver Creek (March 2004)



Construction at tributary to nearby Scotts Creek east of Oliver Creek. (March 2004)

More construction at tributary to nearby
Scotts Creek east of Oliver Creek.
(March 2004)



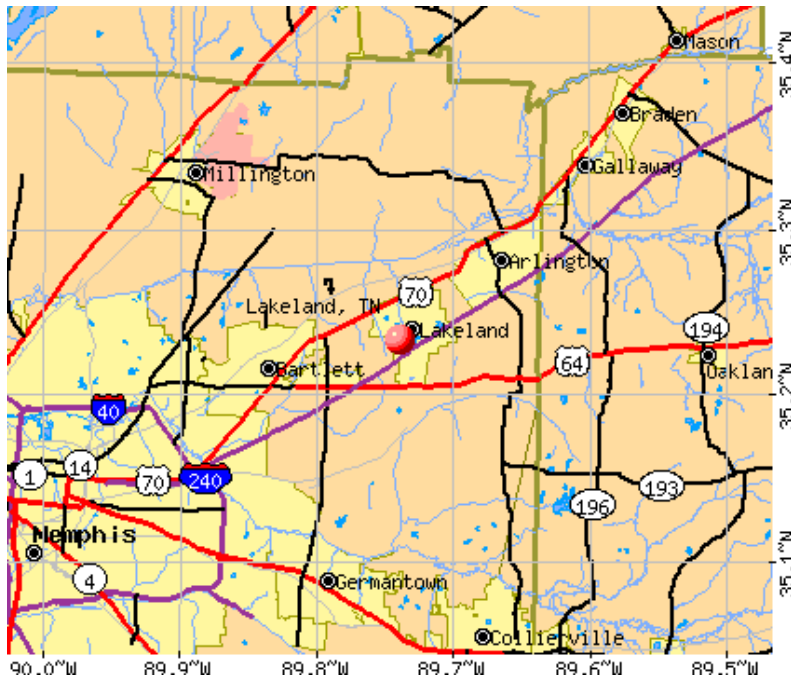
The Situation at Oliver Creek

Oliver Creek is a tributary of the Loosahatchie River in West Tennessee. The stream flows to the north through a mixture of rural and suburban settings in northeast Shelby County, just outside of Memphis.



The headwaters of the creek are located near I-40 and the City of Lakeland, with a portion of the stream flowing through the city limits. Lakeland is a rapidly growing residential area with an estimated population of approximately 6,862 and a projected population of 8,500 by 2005. Numerous subdivisions have been completed in recent years and several more are currently underway. Construction activities are extensive throughout Oliver Creek and other area watersheds.

The examples described in this report are along Oliver Creek some along Scotts Creek and their tributaries. It should be noted that while all sites discussed are in the Lakeland area, some are outside the boundaries of this jurisdiction and are in the town of Brunswick or Shelby County. All are under the jurisdiction of the state.



Map of Lakeland and its proximity to Memphis

Oliver Creek and the 303(d) List

According to Tennessee’s 2002 303(d) list and 2004 draft list, 7.4 miles of Oliver Creek do not meet the stream’s designated uses due to sediment pollution. The source of this pollution is given as sediment runoff from land development. So far, a TMDL (water quality management plan) has not been done for Oliver Creek. According to both the 2002 and 2004 lists, the priority for developing the TMDL is low – meaning that “tools are not currently available to produce the TMDL and the stream is not in a watershed being studied in the next two years.” This is despite claims of *completed* sediment TMDLs for streams elsewhere in the state. However one might argue that those really aren’t TMDLs because there is an unwillingness to address the real issues of identifying dischargers, allocating amounts, and turning down permit requests for unacceptable sediment loads. TDEC suggests that the TMDL for Oliver Creek will be produced sometime in the **next twelve years**, with land development meanwhile continuing apace.

In the introduction to the draft 2004 list, TDEC states, “*If a stream is on the 303(d) list, the Division cannot authorize additional loadings of the same pollutant(s). In extreme cases, it may mean that dischargers will not be allowed to expand or locate on 303(d)-listed streams until the sources of pollution have been controlled.*” Aside from the offending phrase (“in extreme cases...”), this statement is consistent with federal regulations [40 CFR 122.4 (i)] that prohibit new discharges of a pollutant that will “cause or contribute to the violation of water quality standards.” However, in practice, TDEC, with EPA’s support, **is** allowing additional loadings of sediment into Oliver Creek and other similar waters by authorizing new construction sites under the general permit, along with previously permitted ones. How can that be?

TDEC's Logic

Best management practices (BMPs) required by the general permit will prevent the discharge of sediment into the stream, and the general permit further says they must prevent pollution. Therefore, TDEC is not “authorizing” any additional pollutant loadings.

Real Reason

TDEC is afraid to say “no” to new construction or to set real, enforceable numeric limits.

Observations and stream sampling indicate that construction sites in the Lakeland area are contributing to the violation of water quality standards in Oliver Creek and other surrounding streams. Recently collected evidence demonstrates that construction sites authorized under the general permit are, indeed, contributing additional pollutant loadings to a 303(d) listed stream. On a site visit in March 2004, TCWN and PEER found numerous sites with inadequate or no sediment controls in place.

It is the opinion of TCWN and PEER that the General Storm Water Permit is inappropriate for the many of development projects in Tennessee. As you will see in the samples and photos we have collected on Oliver Creek and other surrounding streams, the sediment controls used are largely ineffective. In most places, sediment controls are not used and TDEC is not enforcing the requirement to install and maintain adequate controls to curb the discharge of sediment.

Oliver Creek's Illustrious Water Quality History

As Memphis began growing to the east, development came to the Oliver Creek valley. Lakeland was built in 1959 as an amusement park centered on the 387-acre Lake Garner. With close access to I-40, it gradually grew into a bedroom community for Memphis, incorporating as a city in 1977. By the 1990's the area experienced rapid development and environmental impacts became severe. Despite the capacity of the sewage treatment plant (STP) on Oliver Creek becoming used up, development continued and Oliver Creek became polluted by inadequately treated sewage. The state issued orders to require corrective action and to prohibit the addition of houses to the sewage system, but problems continued and more homes were added in violation of the orders. At least four administrative Commissioner's Orders were issued by TDEC before the problem ended with the building of a new larger STP further downstream on the Loosahatchie River near the mouth of nearby Scotts Creek.

As the sewage problems mounted and the Commissioner's Orders came and went, one local family – the Jones family – grew tired of the problem with a polluted section of Oliver Creek flowing along their farm a short distance downstream from the STP lagoon. Dissatisfied by the State's efforts, they intervened in the State's action but were vigorously opposed by TDEC. Meanwhile they decided to file their own federal Citizen Suit under the Clean Water Act, and after several years of efforts, finally won a favorable decision in 1999.

By this time the new STP was in operation and a new menace was taking over Oliver Creek. With the bigger STP, construction of subdivisions escalated. The site of the old sewage lagoon on Oliver

Creek was sold to a developer and filled in. A massive subdivision was started with sewage sludge apparently never removed and buried in place under the future dream home sites of unsuspecting buyers. This development was a textbook case of inadequate sediment controls for the very erodible soils found in this watershed (see cover photo). Oliver Creek was again becoming impaired, this time by sediment. The Jones family again filed complaints and the State issued orders and fines against the developer, but the problems continued. TDEC continued to allow all developers to operate under the general storm water permit as we've pointed out before - a permit with no limits.

Meanwhile across Oliver Creek on the west side, other developers started construction on massive subdivisions with elegant names, but poor erosion controls and continued filling of the flood plain added to the stream's sediment load. TDEC continued to allow all these projects to operate under the general storm water permit, despite regulations to the contrary and Oliver Creek's placement on the State's 303(d) list for excess sediment problems. One developer decided to dam a tributary to Oliver Creek and use it for a sediment pond! Again the Jones family intervened and even went to a hearing before the State Water Quality Control Board, but in the end their concerns were dismissed and the practice was allowed. Though this effort was unsuccessful, it did help create a record of the problems at that time, including a March 1999 survey of Oliver Creek and some of the area developments, to document some of the many problems.

FROM 1999 SURVEY



Former tributary to Oliver Creek

Oliver Creek along subdivision





Stormwater discharge point at Oliver Creek

These developments resulted in hundreds of acres of highly erodible soil being loosened, scraped, and dumped to alter the landscape for housing sites. With increased and continued construction and very poor erosion controls and planning, tons of sediment are going into Oliver Creek and its tributaries. To compound the problem, much of the building and filling was taking place in the natural flood plain, thus causing or greatly exaggerating the impacts of flood events. Oliver Creek waters were forced to flow and flood into new areas, such as the undeveloped, unaltered lands – including the large Jones farm – thus transferring the burden of flooding to those who had no part in causing the problem. This flooding caused additional erosion of the natural creek banks, adding even more tons of sediment to Oliver Creek.



Filling of flood plain at Oliver Creek
(December 1999)

Filling of flood plain (March 2004)





Massive flood plain development along Oliver Creek (background trees) with no sediment controls visible.
(March 2004)

For years, construction activities caused significant degradation of Oliver Creek. Poor construction practices continue to result in the discharge of tremendous amounts of sediment into the stream. The same family that sued over the sewage problems found itself faced with muddy flows in Oliver Creek along their farm, and began trying to take on some of the construction problems. Numerous complaints and legal actions met mostly with resistance from the State and developers. Though some corrective actions were taken and small fines assessed, TDEC continued to allow developers to fill in more of the flood plain (as no agency seems to really regulate this) and operate under the general permit. Since these permits have no discharge limitations, they allow the discharge of unlimited additional sediment and alteration of area streams by turning them into sediment basins or bulldozing over their headwaters.

Current Survey of Oliver Creek

When TCWN and PEER decided to do this report in 2004, we weren't sure what we would find. We first contacted the Jones family to see if problems continued. We were assured that not much had changed, but they had grown tired of trying to fight the system. Though construction in many areas had been completed and the land was healing, new areas of the same developments were still under construction and inadequate sediment controls were still the norm. Even though it had been five years since our last look, these were massive developments with build-out spanning many years – perhaps a decade or more.

To begin our efforts, we first gathered information about construction projects in the Oliver Creek watershed currently covered by the general storm water permit. According to TDEC records, as of March 4, 2004 there were eighteen construction sites discharging to Oliver Creek authorized by the general permit. As we will describe below, the continuing coverage of new construction sites under the general permit violates federal and state regulations and contributes to the ongoing degradation of an “impaired” stream.

We met with the Jones family and other knowledgeable local people for a briefing on March 23, 2004. Following our meeting at the Jones farm we inspected the area. What we found was not pretty.



Construction along Oliver Creek (March 2004)

Construction in tributary to Oliver Creek (March 2004)



Water line construction near Lakeland City Hall
(March 2004)



Poorly placed silt fence along water line construction
along Hwy 70/79, near Lakeland City Hall
(March 2004)

Discharge from water line construction adding sediment
load to Scotts Creek. (March 2004)



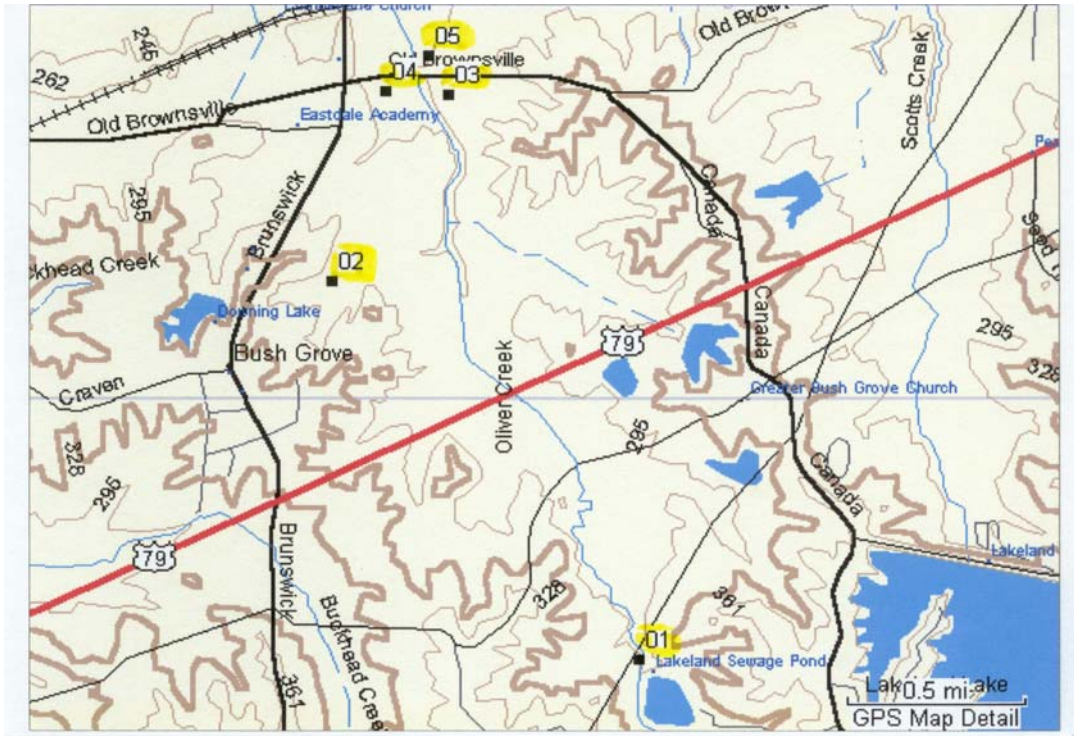
Stream Impacts – Sampling

TCWN and PEER inspected the area to see what progress had been made, took photographs, and collected samples from Oliver Creek and tributary streams on March 23, 2004. Samples were collected on a dry day from five sampling locations:

- 01: Oliver Creek, near small Lakeland city park and pump station, within Plantation Hills subdivision across from former city sewage lagoon site
- 02: tributary to Oliver Creek, in Brunswick Farms subdivision, on the west side of Oliver Creek, flowing through active construction area

- 03: tributary to Oliver Creek, flowing from east side of creek off of undeveloped Jones Family land near Old Brownsville Road bridge
- 04: discharge/tributary to Oliver Creek on west side from pipe at NE corner of The Valley at Brunswick subdivision, at Old Brownsville Road bridge
- 05: Oliver Creek, downstream of The Valley at Brunswick subdivision, at Old Brownsville Road bridge

[Note stations numbers on map are GPS waypoints marked in the field. Also note that the Lakeland Sewage Pond is now filled and a subdivision on the former pond is under construction]



**Oliver Creek
Stream Sampling – Dry Weather
March 23, 2004**

Parameter	Location 01	Location 02	Location 03	Location 04	Location 05
Turbidity	5.5 NTU	220 NTU	18 NTU	23 NTU	15 NTU
Suspended Solids	3.5 mg/L	88 mg/L	9.8 mg/L	13 mg/L	11 mg/L
Settleable Solids	BDL	BDL	BDL	BDL	BDL

NTU = nephelometric turbidity units
BDL = below detection limit

While one would expect to find clear water flowing on a day with no rain, the data above show something else. Note Location 02. While at the other locations we found clear water with relatively low readings of turbidity and solids, at this location heavy equipment was actively “improving” the land to expand the subdivision. They had some interesting structures in place that at first appeared to be separating the work area from the stream. Upon closer inspection we found that above where they had marked the headwater of the tributary, was the upper reach of the stream itself, and as a result they were digging in the small flowing stream. And they had actually set up their silt fences to direct sediment into the creek. See photos below.



Upper end of Oliver Creek tributary destroyed (March 2004)

Same tributary downstream of construction. Muddy flow on dry day (sample location 02) (March 2004)



This is similar to other areas we found. Developers often don't properly identify locations of streams, springs, and wetlands. This presumably is so as to increase the available construction area. Not only does this result in the upper areas of small streams and wetlands not getting protection from sediment flows, they are destroyed. Destroying streams and wetlands requires a permit from the Army Corps of Engineers and TDEC, but these sites often do not have the required permits. So even on days with no rain, construction in and through flowing streams results in polluted, muddy flows downstream as we found on this occasion.

In addition to taking samples and photos at Location 02, we decided to actually do something about it – or at least try. We called the Memphis office of WPC and reported the violations. The next day we heard back from the friendly WPC inspector who said they had visited the site and concurred with our finding. They told the developer they were in violation of the general permit and the state Water Quality Control Act and had to make corrections. What exactly this amounted to, we aren't sure

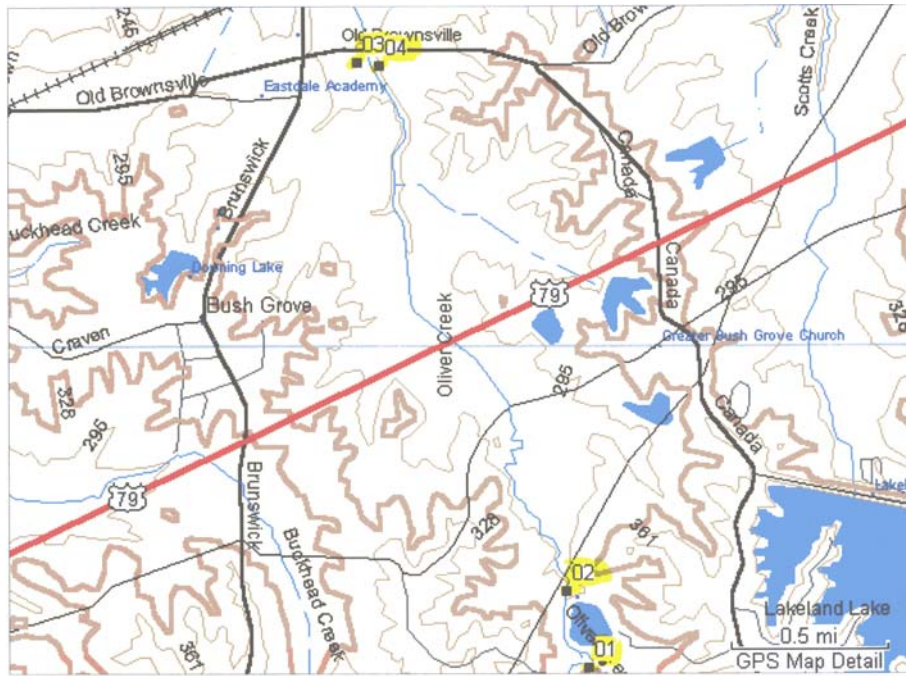
since the stream was already partially destroyed. Perhaps at least muddy flows from this area on a dry day might stop. We suggested to the inspector that TDEC ought to be more restrictive on pre-construction identification of streams, and by the way deny permits – at least use of the general permit – in the Oliver Creek area. The inspector did not disagree but said that was not likely to happen and referred us to upper management in Nashville.



Barry Sulkin taking water samples (March 2004)

A month later on April 23, 2004, additional samples were collected from four locations on a wet day. Note that all the locations and location numbers are not the same as previous sampling. These as shown on the following map samples were taken from:

- 01: Oliver Creek, connection road bridge in Plantation Hills subdivision upstream of pump station and small city park
- 02: Oliver Creek, 100 yards downstream of Lakeland pump station (same as 01 on previous sampling)
- 03: discharge/tributary from pipe at NE corner of The Valley at Brunswick subdivision, at Old Brownsville Road bridge (same as 04 on previous sampling)
- 04: Oliver Creek at Old Brownsville Rd. Bridge (same as 05 on previous sampling)



**Oliver Creek
Stream Sampling – Wet Weather
April 23, 2004**

Parameter	Location 01	Location 02	Location 03	Location 04
Turbidity	45 NTU	260 NTU	34 NTU	560 NTU
Suspended Solids	33 mg/L	860 mg/L	31 mg/L	1700 mg/L
Settleable Solids	BDL	0.80 ml/L	BDL	1.2 ml/L

NTU = nephelometric turbidity units

BDL = below detection limit

Results from the sampling events demonstrate the continuing pollution and failure of erosion controls. Now let's look a bit closer. Note that the Settleable Solids values are below detection limits for two locations, and quite low even for the muddier ones. This indicates that the sediment particles in this soil do not settle very easily, meaning that they are hard to control on site and more sediment is flowing down the creek.

Location 01 is in an older, finished portion of the Plantation Hills subdivision, and upstream of most of the current area construction activity. Though not a pristine location, it does give an idea of a reasonable background value for Oliver Creek on a rainy day, even with some amount of sediment input. Location 02 is in the middle of an on-going development, and though erosion in the immediate area is not as bad as a few years ago (the roads, utilities, and many of the homes are finished being built), the sample values are still really bad. This is pollution.

The last two locations of 03 and 04 contain interesting findings. Location 03 is flow out of a drainpipe carrying what appears to have once been a small stream plus storm water from along Old Brownsville Road in an area draining an older part of the community, and perhaps a portion of the Village of Brunswick subdivision where construction is mostly completed. This flow forms a visible clear water plume in the very muddy waters of Oliver Creek at this bridge where sediment from all the upstream construction flows, and the sample values are horribly high for Turbidity and Suspended Solids. This is bad pollution.



Clear water entering into Oliver Creek at location 03 (April 2004)

What does this mean?

The operators of the construction sites are in violation of the general permit if sediment controls are not in conformity with a suitable SWPPP and sediment is not kept on site. If streams are being physically destroyed there are additional violations of the CWA. In such instances, fines should be issued, and if any permits are allowed, they should only be in the form of individual permits with actual discharge limits set based on what the stream can safely handle. The State says they don't know how to do that, and don't have to. We disagree and as we point out below, the federal regulations they are required to enforce say otherwise. Even though Tennessee has refused to establish numeric criteria for sediment, the State standards do contain an enforceable narrative prohibition against excessive sediment. Here's what the federal regulations say in 40 CFR 122 – and note that sediment, like all things, is made up of chemicals:

§ 122.44 Establishing limitations, standards, and other permit conditions (applicable to State NPDES programs, see § 123.25).

(vi) Where a State has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits using one or more of the following options:

Note the use of the word “must” in the above regulation. *It’s not just a good idea, it’s the law.* The State, with help from EPA, continues to say establishing numeric water quality-based permit limits for sediment can’t be done and doesn’t have to be done. They are wrong. As a result, developers are allowed to continue to operate under general permits with no limits and little fear of penalty or being made to cease. All new developments are approved, again under the same general permit and not much changes. Oliver Creek, like many other creeks in Tennessee, stays polluted.

Recommendations

The situation described in this report is not unique to Oliver Creek, but is being presented as an example of the problem. The abuse and misapplication of the general permit as well as the lack of enforcement of permits is prevalent across the state, as well as across the country. Applications for additional permits to discharge more sediment should be denied. At a minimum, they should be covered by a permit that places numeric limits on the amounts of discharges so as to not exceed the capacity of the waters. When either of those two options fails, TDEC must step in to enforce the permit, require monitoring to determine the extent of the damage, fine the violators and require that they fix the problem.

So as not to be accused of pointing out the problem without helping with a solution, TCWN and PEER have developed these recommendations:

- 1) Stop allowing coverage under the general stormwater permit for construction activities with discharge to any waters statewide that are on the 303(d) list, high quality waters (Tier 2 and 3), or waters with rare species. This doesn’t mean denying all permits for such waters, just individual permits if they are to be issued, with appropriate numeric limits in keeping with federal regulations under the Clean Water Act;
- 2) Enforce against violations. Fine violators at an amount to make it less expensive to do things right rather than pollute and possibly pay a relatively small fine;
- 3) Require individual permits that set enforceable, numeric limits at least based on background conditions such as shown through our recent sampling. We recommend as a starting point, and allowing some leeway for the discharger:
 - 50 NTU Turbidity
 - 50 mg/L Suspended Solidsset as daily maximum permit limits; and

- 4) Raise the TMDL priority on Oliver Creek to High and perform a legitimate TMDL; not just a report with generalities, but one that determines the carrying capacity of Oliver Creek. This would only allow permits with numeric limits based on allocations of available portions of the total capacity through individual permits according to 40 CFR 130.2(i).

As always we are willing to work with the staff at the State to implement these suggestions, improve the program, and maybe get things unstuck.

Appendix

For further clarification on some of the concepts and regulations at issue in this case, we offer additional information below.

303(d) List: What does this mean?

Section 303(d) of the Clean Water Act calls on each state to list its “water quality limited” water bodies and develop a plan – known as a Total Maximum Daily Load or TMDL – for their clean up or protection. At least every two years, states are required to update their list of such waters and submit it to EPA. According to federal regulations, *water quality limited* means water bodies that do not meet or are not expected to meet the state’s water quality standards without implementation of pollution controls beyond established minimum requirements. This so called 303(d) list is supposed to include waters that are already polluted (or impaired as some like to call them), waters that are “threatened” (waters that might become impaired in the near future based on current trends or expected changes such as proposed development), as well as clean waters with limited ability to handle wastes, such as small streams and sensitive or high quality waters [see EPA regulations at 40 CFR 130.7(b)(5)(i) & (ii)]. However, WPC and many in EPA take a ridiculously unprotective narrow view and only consider a portion of already polluted waters for inclusion on the list, despite the regulations.

Once a water body is placed on the list, proposals for new and increased discharges are supposed to be denied, or at least receive greater scrutiny. In fact, Clean Water Act regulations prohibit new discharges that “will cause or contribute to the violation of water quality standards” [40 CFR 122.4] *unless* the State has performed a “pollutants load allocation” for the pollutant to be discharged and there is available capacity for additional loads without causing pollution. The Tennessee Water Quality Control Act also prohibits issuance of permits that will cause or contribute to a condition of pollution [TCA 69-3-108(e)] – but these provisions are routinely ignored or circumvented by vague bureaucratic justifications.

Once a water body is placed on the 303(d) list, it becomes one of many in line for the TMDL process, as required by the Clean Water Act. This process is intended to specify problems, identify pollution sources, set pollution reductions needed to solve the problems, assign responsibilities for needed actions, and/or prevent pollution in the first place. What should not happen is to allow existing and unlimited new dischargers of the same pollutant already causing a problem, such as sediment, to continue to be added under a general permit that doesn’t even have permit limits.



What is pollution?

A brief explanation of “pollution” seems in order here. Like most other states, TDEC has avoided setting numeric standards (or criteria) for sediment-related parameters to make it easier to avoid the issue. However the state standards do apply to sediment through what are called narrative criteria, found in several places in Tennessee regulations at Chapter 1200-4-3-.03. This is what it says for protection of fish and aquatic life, as applies to all stream including Oliver Creek:

(3) Fish and Aquatic Life.

(c) Solids, Floating Materials and Deposits - There shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character that may be detrimental to fish and aquatic life.

(d) Turbidity or Color - There shall be no turbidity or color in such amounts or of such character that will materially affect fish and aquatic life.

(h) Other Pollutants - The waters shall not contain other pollutants that will be detrimental to fish or aquatic life.

That covers sediment, and obviously what we find in Oliver Creek is in violation of this.

