

## Water Discharge – Groundwater Discharge Permitting



The **Groundwater Discharge Program** regulates discharges to groundwater from any source, including, but not limited to, large septic systems, agricultural waste management systems, and all waste landfills. This program implements provisions of the federal Safe Drinking Act and Connecticut's water pollution control laws to meet the following key goals:

- Protect groundwaters from pollution; and
- Protect the public drinking water supply.

### A. Introduction

The groundwater discharge permitting program has its regulatory basis in the federal Safe Drinking Water Act, 42 U.S.C. 300f et seq., and CGS 22a-430, and RCSA 22a-430-8. Pursuant to these laws, DEP regulates subsurface sewage disposal systems with design flows of 5,000 gallons per day or greater, all community<sup>1</sup> sewerage systems regardless of size, and all alternative sewage technology treatment (AT)<sup>2</sup> systems.

Currently, the Groundwater Discharge Permitting Program has authorized discharges from approximately 224 permitted systems. About 25% of these permitted systems use AT to treat the discharge. There are approximately 210 groundwater discharge applications pending with DEP. Approximately 40% of the pending applications are permit renewal applications, as new permits are issued for five years and renewals can be and typically are issued for 30 years. The duration of a permit is governed by CGS 22a-430(i).

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<sup>1</sup> Community sewerage system means "any sewerage system serving two or more residences in separate structures which is not connected to a municipal sewerage system or which is connected to a municipal sewerage system as a distinct and separately managed district or segment of such system". (CGS7-245 (3))

<sup>2</sup> Alternative sewage treatment (AT) system means "a system serving one or more buildings on one property which utilizes a method of treatment other than a subsurface sewage disposal system and which involves a discharge to the groundwaters of the state.

The Subsurface Disposal and Agriculture Group of the Water Permitting and Enforcement Division is staffed by four sanitary engineers and supervised by a Supervising Sanitary Engineer. One of the engineers is also solely responsible for all the water permitting and compliance-related activities related to discharges from agricultural activities within the state. This engineer spends approximately 50 % of the time on subsurface discharge permitting and enforcement activities and 50% of the time on agriculture activities, including time in the field conducting inspections of farms and evaluating appropriate regulatory approaches and permitting mechanisms to deal with discharges from concentrated animal feeding operations (CAFOs) – a growing NPDES priority of the U.S. Environmental Protection Agency (EPA). In summary, the subsurface sewage disposal system workload of this group is distributed between only 3.5 FTEs.

There are many unique challenges facing the Groundwater Discharge Permitting Program. These challenges include confusing jurisdictional-distinctions and the various strategies used by applicants to avoid having to apply for a permit from the DEP<sup>3</sup>. Another challenge centers around the local decision-making process and land use policies. There are also technological challenges and technical issues related to the use of alternative treatment technologies. Lastly, there are timing issues reflective of the “boom or bust” nature of the housing market and new development. The permitting process runs more efficiently if a project moves forward without experiencing delays or substantial revisions. Sometimes projects lie dormant for years while developers work through local or financial issues. The permitting process cannot effectively meet expectations when the project scope continually changes.

The use of AT systems has been the subject of some controversy in recent years, given questions about their performance and concerns about their land-use implications. AT systems may make development possible on land that was previously deemed not suitable for development. There are approximately 58 AT systems in use in Connecticut. The uses of AT systems include: systems installed for repair or upgrade of existing conventional failing or malfunctioning systems, systems proposed or installed for new development, systems installed for municipal use, and systems used in “decentralized wastewater management districts” which would potentially include smaller AT systems for household and small commercial use. By statute, alternative on-site sewage treatment systems are prohibited in public water supply watersheds (CGS 22a-430) with some exceptions (i.e. schools, repairs). The types of facilities using AT systems in Connecticut include: residential communities, schools, restaurants, shopping plazas or malls, office buildings, marinas, grocery stores, hospitals, convalescent

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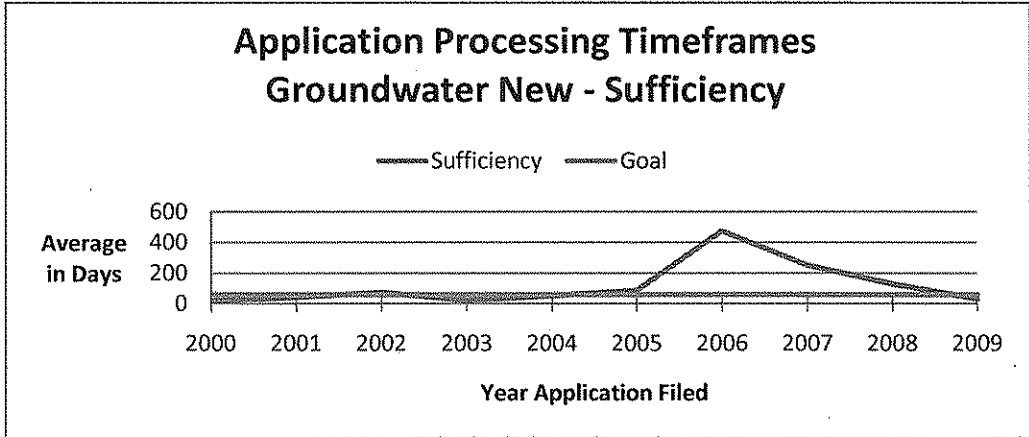
<sup>3</sup> Systems on lots of separate ownership under 5,000 gallons per day are regulated by either the Department of Public Health or the local health departments. Jurisdictional issues have arisen when there are smaller systems and separate ownership arrangements.

homes, assisted living units, hotels, and recreational facilities. AT systems are used in various ways to treat domestic sewage in difficult areas where a conventional system would not work.

**B. Analysis and Findings**

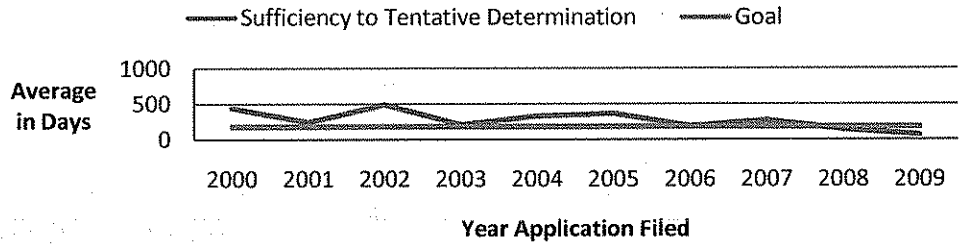
The graphs below depict the trends for new, renewal and modification applications for groundwater discharge permits. There is a substantial number of pending permit applications. DEP is not meeting either of the timeframe goals for renewal applications in this program<sup>4</sup>. However, as the graphs below show, DEP is currently meeting the timeframe goals for applications for new permits and modification requests for both the sufficiency review and the notice of tentative determination. The graphs below also include information on the total number of new permit applications, and applications for renewal and modification of permits received by the program. Also, the data presented for the Groundwater Discharge Permitting Program is not entirely accurate since this data set includes some permit applications that are processed by another program. Groundwater remediation permit applications are tracked by the Department's electronic permit application management system as belonging to the Groundwater Discharge Permitting Program. DEP is currently working toward rectifying this data tracking issue. However, at this time, there is no separate data available from the two programs.

**67% of groundwater discharge permit applications received in 2008 met PA10-158 goal of 180 days to reach tentative determination after sufficiency review.**

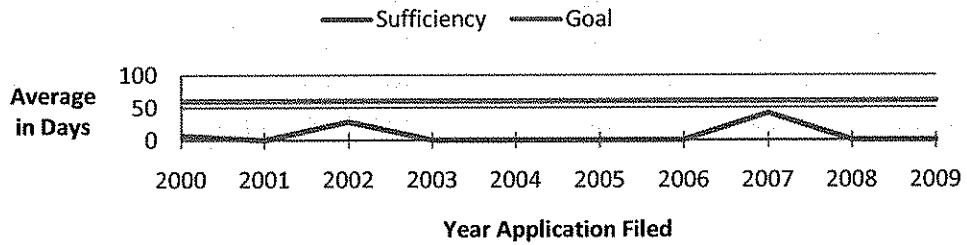


<sup>4</sup> There are no renewal applications in the data set for 2009.

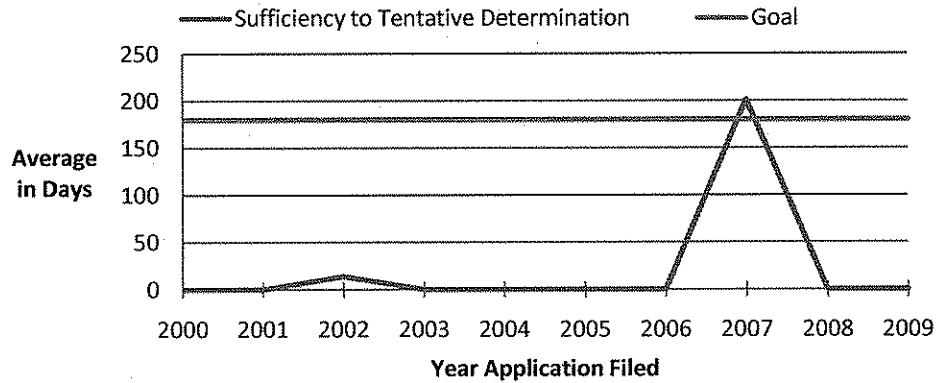
### Application Processing Timeframes Groundwater New - Tentative Determination

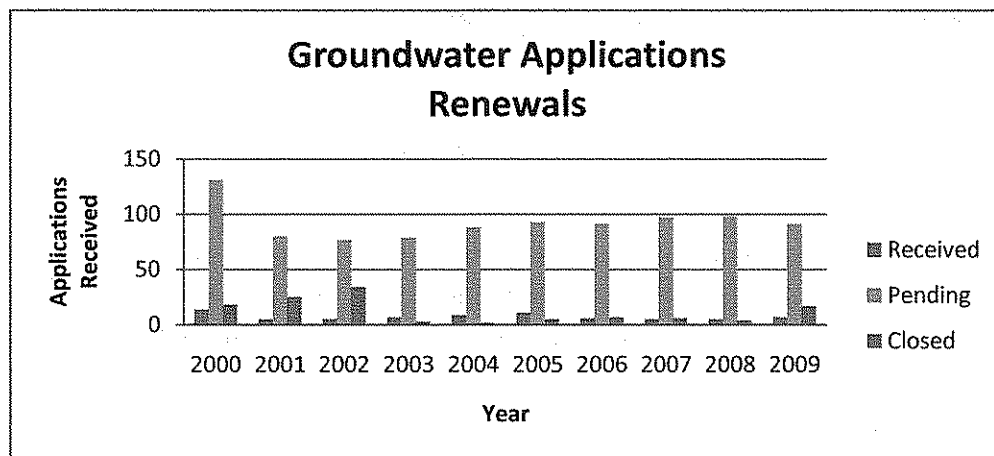
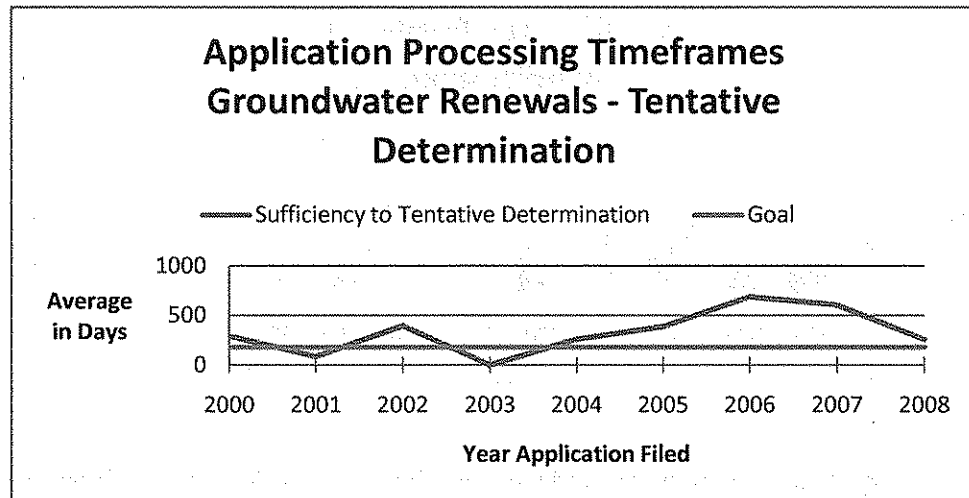
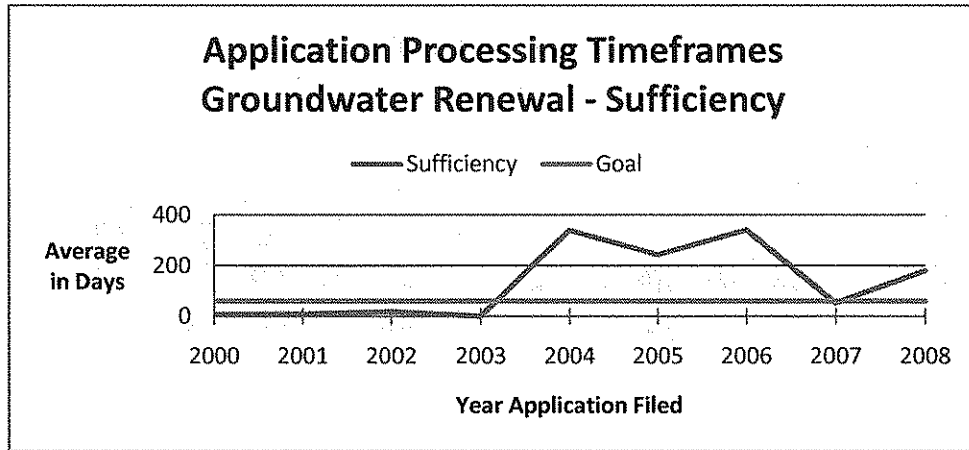


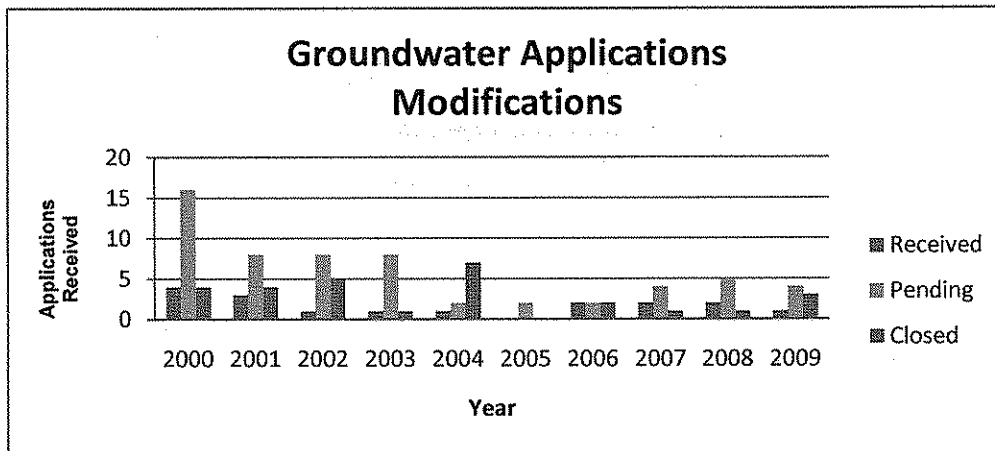
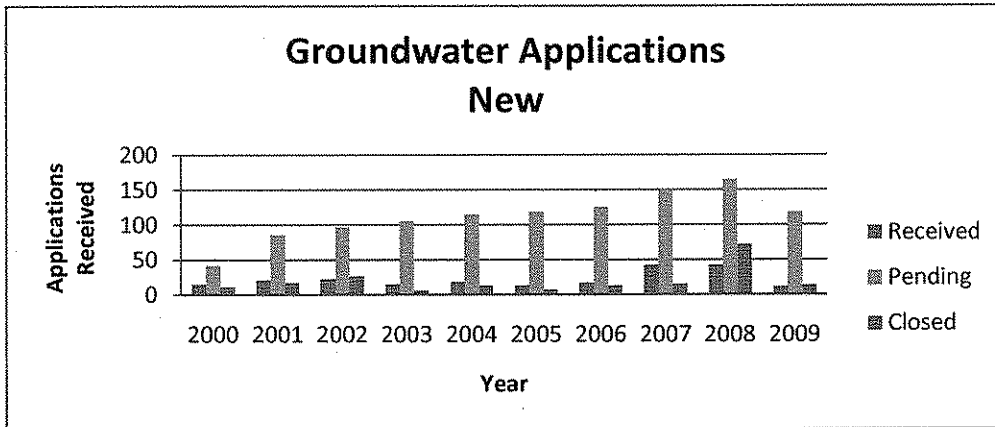
### Application Processing Timeframes Groundwater Modifications - Sufficiency



### Application Processing Timeframes Groundwater Modification - Tentative Determination







Historically, the backlog of pending groundwater discharge permit applications were for systems that either could not be permitted due to technical issues or environmental concerns, or were never constructed for any number of reasons. In order to prevent applications from being stalled due to technical issues and environmental concerns, DEP now conducts pre-application site evaluations. The pre-application steps include engaging in preliminary discussions with prospective applicants and conducting site evaluations. These were steps DEP staff had previously conducted only after an application was submitted to the Department.

The administrative permitting process begins with the pre-application preliminary review, discussion with the applicant and the applicant's consultant, and a site evaluation by DEP. The next step is the submittal of the application by the applicant, including the conceptual design of the treatment system. DEP then reviews the application and supporting information and the terms and condition of a permit maybe drafted by DEP's engineers.

There are complicating factors that have hindered the day-to-day workflow of this group. The most overarching impediment was the loss of the group's supervisor and more than 40% of the group's staff to retirement in 2009. The supervisory position has recently been re-filled after a twelve month hiring process. The second obstacle was the significant increase in the number of requests for authorization to perform repairs and/or upgrades to existing unpermitted subsurface sewage disposal systems. DEP recognized the need to improve both the methodology and the timeliness associated with these requests and that repair and upgrade applications could benefit tremendously from DEP's LEAN efforts.

**Streamlining and LEAN Efforts To-Date**

As part of DEP's overall LEAN efforts, in October, 2009 a team was established to conduct a week-long LEAN event on the Groundwater Discharge Permitting. The focus of this LEAN event was the review and approval process used for on-site wastewater disposal system repairs and upgrades. The recommendations from this event include the development of a new general permit designed to improve both the method and the timeliness associated with requests for authorization to perform repairs and/or upgrades to existing unpermitted subsurface sewage disposal systems. The types of subsurface sewage disposal systems that would benefit from this general permit include: existing seasonal cottages and campgrounds, lake and other waterfront communities, manufactured home communities (aka mobile home parks), schools, commercial properties, residential institutions, and residential communities with existing inadequate systems.

The general permit is expected to reduce the number of steps in the authorization process for a repair of a failing system by 87%. The table below depicts the number of steps in the process and the minimization of the 'no value', 'transportation' and 'waiting' steps in the new process.

Type of Step In Process	No. of Steps In Current Process	No. of Steps in Future Process
Value Added	10	3
No Value Added	13	1
No Value Added but Necessary	36	5
Waiting	18	1
Transport	16	2
Total Steps in the Process	93	12
<b>REDUCTION IN THE NUMBER OF TOTAL NUMBER OF STEPS = 87%</b>		

Staff is in the process of preparing the proposed general permit for public review and has shared early versions of the draft with various stakeholders, including, but not limited to, the Connecticut Environmental Health Association (CEHA), CT Rivers Alliance, CT Fund for the Environment, CT Homebuilders Association, and state and local health departments through the Department of Public Health's (DPH) Code Advisory Council. DEP anticipates going to public notice and issuing the general permit in the next few months.

## **C. Recommendations**

### **1. Process Improvements**

- DEP plans to develop fact sheets for property owners, homeowners, local health departments, and building officials in order to provide consistent direction and clarification concerning the groundwater discharge permitting process. DEP plans to clarify what information is needed and in what format the information should be presented when submitted to DEP. DEP plans to revise and enhance the instructions for filling out its groundwater discharge permit application.
- DEP will be addressing the performance of AT systems. DEP recognizes that AT systems need more oversight and until recently, DEP did not have an efficient system to track the performance of all systems, including AT systems. The new eDMR system is a web-based database that was developed to track all permitted subsurface sewage treatment and disposal system monitoring and maintenance data. DEP's eDMR system is up and running as of October 2009 and DEP will continue to implement the use of this system to monitor compliance.
- In the future, DEP plans to re-evaluate the information available regarding large scale on-site wastewater renovations systems.

### **2. Programmatic Changes**

As part of the implementation of LEAN ideas generated in October 2009, DEP plans to propose issuance of a General Permit to Discharge from Subsurface Sewage Disposal Systems Serving Existing Facilities. This general permit should help address and improve the methodology and the timeliness associated with requests for authorization to perform repairs and/or upgrades to existing unpermitted subsurface sewage disposal systems. The draft general permit has been shared with several stakeholders. DEP has received many favorable comments and helpful feedback has been incorporated into the draft general permit. DEP anticipates that the general permit will be issued in late December 2010.

### 3. Staffing Needs

Permit Program	Technical & Administrative Permit Processing Staff	Program Development, Enhancement & Applicant Assistance Staff
Groundwater Discharge	3	

In order to meet the timeframe goals set forth in Public Act 10-158, DEP will need three (3) additional FTEs in the Subsurface Disposal and Agriculture Group to assist in handling the heavy work load, reducing the number of pending permits and meeting the target timeframes. An 86% increase (3 FTEs) in the number of staff will reduce the caseload per engineer by 46%. Increasing staffing, The redistribution of cases, in addition to the ability to handle some cases by a general permit registration rather than an individual permit issuance, is expected to enable DEP to achieve the permitting timeframe goals established by Public Act 10-158.

### 4. Additional Resources

State authority for regulating sewage systems is handled by two state agencies and the local directors of health, creating potential uncertainty as to authority, accountability and responsibility. DEP and DPH use different legal authorities, regulations, design standards and administrative processes, adding to the confusion. DEP is interested hiring a contractor to look comprehensively at Connecticut's system and consider recommendations for improvements to ensure that the regulation of on-site wastewater management systems is accomplished efficiently and effectively in a manner that: (1) protects the environment; (2) protects public health, including drinking water quality; (3) promotes abatement and prevention of community and non-point source pollution; (4) promotes wise land use decisions; and (5) encourages comprehensive and consistent regulation of on-site wastewater management systems. In addition to contractor support, this effort would necessitate resources from the subsurface program and DPH to assist in any such contractor.

