

Legislative
Assembly
of Ontario



Assemblée
législative
de l'Ontario

STANDING COMMITTEE ON PUBLIC ACCOUNTS

GROUNDWATER PROGRAM
(Section 3.05, 2004 Annual Report of the Provincial Auditor)

2nd Session, 38th Parliament
55 Elizabeth II

Legislative
Assembly
of Ontario



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législative
de l'Ontario

The Honourable Michael A. Brown, MPP
Speaker of the Legislative Assembly

Sir,

Your Standing Committee on Public Accounts has the honour to present its Report and commends it to the House.

Norman Sterling, MPP
Chair

Queen's Park
February 2006

STANDING COMMITTEE ON PUBLIC ACCOUNTS

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PREAMBLE

The Standing Committee on Public Accounts held hearings on the Auditor General's¹ report on the Ministry of the Environment's Groundwater Program (Section 3.05 of the *2004 Annual Report*) on April 7, 2005. The Committee endorsed the Auditor General's findings and recommendations.

The Standing Committee on Public Accounts would like to thank the Deputy Minister, Ministry of the Environment (MOE) and staff for their attendance at these hearings, and providing supplementary information on a timely basis. The Committee acknowledges the assistance provided by the Office of the Auditor General (the Auditor), the Clerk of the Committee, and the Research Officer from the Ontario Legislative Library's Research and Information Services Branch at the hearings and during subsequent deliberations.

The format of this Committee report includes introductory information in each section based *directly* on the Auditor's report, and an overview of the hearings with additional recommendations. The Committee noted that the *Clean Water Act, 2005* received First Reading on December 5, 2005, as this report was being finalized. A list of the Committee's recommendations is reproduced in the final section of this report.

Response to Committee Report

The Committee requests that the Ministry of the Environment provide the Committee Clerk with a comprehensive response to this report within *120 days* of the date of tabling with the Speaker of the Legislative Assembly of Ontario. Under certain circumstances, the Committee may conclude that additional time is warranted for a response; therefore an alternative timeframe would be indicated.

1. BACKGROUND

The Ministry of the Environment's groundwater² responsibilities are to manage and protect this resource and to promote its sustainable use. The Ministry estimated that, for the 2003/04 fiscal year, approximately \$18 million was spent on such activities. Approximately 200 municipalities have groundwater-based drinking water systems and approximately 500,000 private wells provide most of rural Ontario with water for drinking, irrigation, and other uses.

The Ministry is also responsible for acting on the recommendations of the Walkerton Inquiry, which include the development of drinking-water-source

¹ Auditor General - formerly the Provincial Auditor.

² The two main sources of drinking water are groundwater and surface water. Groundwater is defined as water located below the water table that fills the porous spaces between sand, gravel and fractures in rock that may supply water to wells or springs. Groundwater recharges rivers and streams and is a major source of surface water, (i.e., lakes, rivers and reservoirs).

protection plans, the setting of water quality standards, and the monitoring of water treatment and distribution systems. MOE administers various pieces of legislation associated with groundwater, which include the *Ontario Water Resources Act*, and the *Nutrient Management Act*.

1.1. Audit Objectives

The audit objectives were to assess whether the Ministry had adequate procedures in place to:

- manage the resource for sustainability;
- ensure compliance with related legislation and Ministry policies; and
- measure and report on the program's effectiveness in restoring, protecting, and enhancing the resource to ensure public health.

The audit fieldwork was substantially completed by March 2004.

1.2. Overall Audit Conclusions

The Auditor General concluded that the Ministry lacked a comprehensive understanding of provincial groundwater resources, and therefore it could not determine whether the protection and long-term sustainability of Ontario's groundwater resources was being achieved. Furthermore, procedures were inadequate to restore, protect, and enhance groundwater resources. Several related issues were identified in the audit report:

- the Ministry did not have **watershed management plans** to ensure the protection of groundwater resources. The Ministry estimated that its latest attempt to have conservation authorities develop watershed-based source protection plans will result in six of 36 plans being put in place by the 2007/08 fiscal year;
- Ontario's 1,200 largest farms are required to have **nutrient (agricultural waste) management plans** in place by July 1, 2005, and plans for an additional 28,500 farms are to be developed and phased in by 2008;
- the Ministry contends that established **water treatment methods** will remove dangerous substances from groundwater used for drinking purposes. However, as noted by Justice O'Connor in his Walkerton Inquiry Report, given that "some contaminants are not effectively removed by using standard treatment methods" and some rural residents do not have access to treated water, it is extremely important that source water be protected to provide safe drinking water;
- the Ministry has had little assurance that **drinking-water wells** are properly installed and maintained following the discontinuation of its water well inspection program in 1997;
- the Ministry's assessment and evaluation of applications for **groundwater-taking permits** were inadequate, and the Ministry did not monitor

compliance. The cumulative impact of water takings on the sustainability of groundwater was not being adequately monitored; and

- in response to the Auditor's 1996 audit of the Ministry's Environmental Sciences and Standards Division, the Ministry committed to develop a **groundwater management strategy**, but this strategy had still not been completed at the time of the 2004 audit.

Ministry's Response (2004)

Many of the Auditor's recommendations were being addressed in 2004 through the province-wide watershed-based source protection program, source protection legislation and the improved management of water takings. MOE's strategy entails the following components:

- the development of a program to ensure that **source protection plans** are developed and implemented locally in watersheds throughout Ontario;
- the establishment of two **multi-stakeholder advisory committees** responsible for providing advice to the government on the implementation and technical aspects of source protection (completion date/fall 2004);
- the advisory committee's recommendations will provide a basis for the development of the implementation provisions of **source protection legislation**;
- new rules are proposed for **water-takings** with the objective of protecting the supply of drinking water as part of the overall water strategy; and
- the overall water strategy entails moving to a **watershed-based approach** to guide planning and the use of water resources.

DETAILED AUDIT OBSERVATIONS

2. PLANNING FOR GROUNDWATER MANAGEMENT

The Ministry has committed to implementing the recommendations of the Walkerton Inquiry on Ontario's water system. A total of 22 recommendations which relate to source water and groundwater have been identified and MOE is focusing on remedial measures, such as the development and approval of watershed protection plans.

The objective of groundwater management planning is to mitigate the potential for the contamination of groundwater resources. Management and protection strategies are important to ensure the future sustainability of this resource. The Auditor focused on watershed-based planning, groundwater management studies, the mapping of aquifers, nutrient management plans, and contaminated groundwater.

2.1. Watershed-based Source Protection Planning

Watershed-based planning promotes the protection of groundwater, lakes, streams, and wetlands within a watershed from pollution. Conservation authorities were first established in Ontario in 1946, with jurisdiction over natural areas based on watersheds. There are now 36 conservation authorities in the province governed and financed by local municipalities. Since conservation authorities were established, there have been many attempts to implement watershed-based protection plans. For example, in 1993 MOE and the Ministry of Natural Resources released three guidance documents on the development of watershed protection plans. In April 2002, a report was issued by MOE, the Ministry of Natural Resources, and Conservation Ontario that updated watershed management processes and provided a summary of the status of watershed planning in Ontario. The Auditor noted that MOE did not know the number of plans that had been completed and it has not reviewed or monitored the implementation of the plans.

In 2003, based on policy advice from MOE's Advisory Committee on Watershed-Based Source Protection Planning, the Ministry initiated a review of source protection. MOE planned to undertake further public consultations in response to its 2004 White Paper on *Watershed-based Source Protection Planning* that is expected to lead to the refinement of policy and a legislative framework for source protection planning. MOE is focusing on the following initiatives to be completed by the 2007/08 fiscal year:

- completion of source protection plans for six of the 36 conservation authorities; and
- establishment of interim strategies for the remaining 30 conservation authorities.

These plans and interim alternatives are required to provide direction for development projects and other activities, while protecting, preserving, and restoring groundwater resources.

The Auditor noted that a 1993 study on watershed management reported that water management has traditionally been issue-driven and segmented among jurisdictions, making it difficult, costly, and not particularly effective. Also, as protection efforts were still undertaken on a voluntary basis by municipalities and conservation authorities, there is a question as to whether these measures will be sufficient to protect groundwater resources. The Auditor felt that the Ministry needed to assume a more proactive role in developing a province-wide groundwater protection strategy.

Committee Hearings

Planning Context

In February 2005, the province released a White Paper on watershed-based source protection addressing permits to take water and charging for water.¹ In the future, MOE will function within this watershed-based source protection framework, and

therefore individual Ministry programs that have been operated as stand-alone initiatives will have to be integrated into the framework.²

This planning context will require capacity-building in communities and providing conservation authorities with a significant role in source protection planning. Gradually phasing in a number of planned initiatives is important as conservation authorities develop the capacity to implement the necessary programs for source protection.³ For example, permits to take water must be closely linked to source protection, and to other linkages such as nutrient management.⁴ The speed of implementation depends on various factors including community capacity. Also, it requires various players working together at a watershed-based level (e.g., industry sectors, municipalities, conservation authorities and agriculture).⁵

According to MOE, it will take between 18 months to three years to implement source water protection plans across the province, given that they are undertaken on a voluntary basis by municipalities and conservation authorities.⁶ A community-based process will be used, working in concert with other offices and stakeholders to assess water and land uses in the broader planning context.⁷

Conservation Authorities' Planning Role

Conservation authorities have a central role in provincial watershed planning. Initially the Ministry's strategy was to have the authorities initiate source protection; however, following the 2004 White Paper a revised approach was developed to group conservation authorities, enabling the Ministry to assist more conservation authorities with a broad approach.⁸ The location of each of these authorities was identified; areas in southern Ontario requiring additional coverage were noted, and lead conservation authorities with the capacity to assist other areas were selected.⁹

The Ministry was asked about the feasibility of having larger conservation authorities with broader assessment bases to better sustain planning functions. The Ministry explained that it is aware of the capacity of conservation authorities to address this challenge, and recognizes the need for resources for the authorities to assist in developing the capacity. It also acknowledged the need to consolidate authorities to improve capacity for source water protection planning and implementation.¹⁰ The ongoing planning process has entailed:¹¹

- negotiations with Conservation Ontario (province-wide organization that supports conservation authorities) to explain the importance of capacity-building, and the possible need for MOE to work with organizations bigger than individual conservation authorities;
- conservation authorities working with the Ministry to create the watershed-based planning areas and to address partnerships;
- negotiations were held among conservation authority members on the partnership approach, by which conservation authorities would provide leadership for a specific areas, based on formalized agreements; and

- in December 2004, MOE and MNR announced funding for conservation authorities to initiate the capacity-building and technical needs for watershed-based source protection. A memorandum of understanding between MNR and Conservation Ontario governs the funding arrangement.¹²

Funding for Protection Plans

The Committee noted the increasing role of conservation authorities in the protection of source water, and questioned the ability of authorities to meet these new responsibilities under reduced budgets. The concern is whether current funding levels will permit the full implementation of watershed-based source protection plans.¹³

Committee Recommendation

Conservation Areas (Plans and Interim Strategies)

Following from the 2004 White Paper on Watershed-based Source Protection Planning the plan was to refine the policy and legislative framework for source protection planning. MOE's focus shifted from the completion of source protection plans for six of the 36 conservation authorities by the 2007/08 fiscal year with interim strategies for the other authorities, to a broader approach to help conservation authorities build some capacity to move forward faster across all of southern Ontario.

The Committee therefore recommends that:

- 1. The Ministry of the Environment report to the Standing Committee on Public Accounts on the status of grouping conservation authorities together to help develop source protection plans. Given the conservation authorities' new funding (2004) to undertake the capacity-building and provide the technical means for watershed-based source protection, the Ministry should establish a timeframe for the completion of these plans. Finally, these plans should be published in a user-friendly format (e.g., plain language text).**

The Committee requests that a written response to this recommendation be provided to the Committee Clerk within 120 days of the date of tabling this report in the Legislature.

2.2. Groundwater Management Studies

Management studies are used to collect data for an information base on groundwater conditions and potential environmental risks. In 1998 MOE began providing funding for these studies. As of March 31, 2004, it had provided \$19.3 million to assist municipalities in conducting local studies on the use and protection of groundwater resources, which will contribute to the development of source protection plans.

The Auditor noted that while 97 groundwater management studies had been funded, only 44 had been submitted to the Ministry. The Ministry indicated that the outstanding reports were expected by December 2004. Ministry review and interpretation of the reports received identified problems due to inconsistencies in both the information and the level of detail. Such inconsistencies have made it difficult to input relevant information and determine the impact of contaminants on groundwater resources.

Committee Recommendation

Source Protection Information

MOE indicated that the intent of groundwater management studies is to provide communities with the necessary information to protect groundwater sources.¹⁴ As part of this process the Ministry has committed to strengthening external partnerships for the purpose of managing and providing access to critical information needed to support local and regional decision-making on source protection.¹⁵

The Committee therefore recommends that:

2. The Ministry of the Environment report to the Standing Committee on Public Accounts on the progress made to provide access to source protection information for municipal and conservation authority decision-making on groundwater management. The report should provide an update on the 53 outstanding groundwater management studies, funded by the Ministry, which were due by December 2004.

The Committee requests that a written response to this recommendation be provided to the Committee Clerk within 120 days of the date of tabling this report in the Legislature.

2.3. Groundwater Aquifer Mapping

The proper development, management, and protection of groundwater resources, is largely dependent on detailed three-dimensional maps. These maps indicate the exact parameters of aquifers and include information such as the location of wells, and geological characteristics. Mapping helps to determine the amount of water that can be taken safely while maintaining the aquifers sustainability. At the time of the audit, the aquifer maps, which date back to the 1970s, covered only parts of eastern and central Ontario.

The information on other Ministry maps, such as those used for evaluating development proposals or reviewing applications for a gravel quarry, are site specific and do not include aquifer-wide information.

The Ministry of Northern Development and Mines started an aquifer-mapping program in 2001 to characterize aquifers and assemble information on groundwater resources (e.g., the location, sustainable water yield, and recharge and discharge areas). Such mapping can help identify the level of management and protection required. The Auditor noted that there is no timetable for completing this aquifer-mapping program and was informed that it could take decades.

Committee Hearings

Aquifer Mapping Program

MOE is working with the Ministry of Northern Development and Mines, and agencies and groups to assemble information to feed into its aquifer mapping program and enhance its overall understanding of groundwater quality and quantity.¹⁶ At the time of the hearings, there were draft aquifer maps for 36 conservation authorities and 10 municipalities.¹⁷ Ten have been finalized and are available on the on MOE Web site, and there are plans to have the remaining maps completed in 2005 or early 2006.¹⁸ Completed studies include the Hydrogeology of Southern Ontario, and an assessment of the groundwater resources of southern Ontario.¹⁹

MOE Update (Following the Hearings)

Following the hearings the Ministry provided the following update on the timing for completion of the aquifer maps with estimated costs. MOE has made a commitment to make this information available by April 2006.²⁰

“The Ministry of the Environment anticipates making available to Conservation Authorities, Municipalities and other Ministries, two-dimensional and not three dimensional groundwater information maps for 36 watersheds by April 2006. These two-dimensional maps will be based on geological and groundwater information that was used in the selection of groundwater monitoring sites for the Provincial Groundwater Monitoring Network (PGMN), as well as, some information that has been collected under the PGMN Program over the past year (groundwater levels and chemistry) and other pertinent information. Where possible, cross sections (e.g., geologic formations below the surface) will be prepared to accompany the maps. . . .

In 2001, the Ministry had posted 10 “working level” groundwater information maps used in the design of the PGMN, in the past on the Ministry’s website. These maps will be up-dated with additional information and all of the prepared maps will be posted on the Ministry’s web site by April 2006.

The total cost to update the existing 10 “working level” groundwater information maps and to finalize the 36 remaining groundwater information maps is anticipated to be approximately \$100,000.00.”

Committee Recommendation

Groundwater Mapping

The Committee noted various initiatives as reported in the supplementary information provided by the Ministry:

- MOE plans to provide conservation authorities, municipalities and ministries with two-dimensional (not three-dimensional) groundwater information maps for the 36 watersheds by April 2006; and
- the Ministry posted 10 “working level” groundwater information maps on its MOE website. These maps are to be up-dated with new information, and posted on the web site by April 2006.

The Committee is encouraged by the Ministry’s initiatives in groundwater information mapping; however, it is of the opinion that three-dimensional groundwater information maps are necessary for these watersheds.

The Committee therefore recommends that:

3. The Ministry of the Environment report to the Standing Committee on Public Accounts on the feasibility of preparing three-dimensional groundwater information maps for the 36 watersheds, with a priority ranking for each with a completion timeframe. This material should be published on a timely basis, identifying patterns and trends in the level of stability in aquifers, and indicating immediate and potential long-term environmental concerns.

The Committee requests that a written response to this recommendation be provided to the Committee Clerk within 120 days of the date of tabling this report in the Legislature.

2.4. Nutrient Management Plans

Excessive use of chemical fertilizers or the improper treatment of human and animal waste can result in environmental imbalances including the pollution of wells. The intent of nutrient management is to minimize such adverse impacts. The *Nutrient Management Act, 2002* was introduced to promote nutrient management, specifically source protection. The Ministry of Agriculture and Food has responsibility for the approval of the nutrient management plans submitted by farmers, and MOE has responsibility for the enforcement of the Act.

Farm operations with significant amounts of animal waste are required to have a nutrient management plan. This requirement applies to approximately 50% of all farms in the province. The 1,200 largest farms are required to have a plan in place by July 1, 2005, and MOE and the Ministry of Agriculture and Food are to phase in nutrient management planning by 2008 for the remaining 28,500 farms that require a plan.

At the time of the audit, only 32 of the 1,200 large farms had submitted a nutrient management plan, and only five plans had been approved. The Ministry also had not developed risk-based enforcement procedures for the periodic review of compliance with approved farm nutrient management plans and for monitoring those farms not required to have a plan until 2008.

Committee Hearings

Agricultural Land Uses

The Committee questioned the impact of certain land uses in the broader planning context, specifically large livestock operators. New and expanding farms are now regulated, while the large category farms have been regulated since September 30, 2003.²¹

The objective is to ensure that groundwater pollution sources are identified on a timely basis to permit remedial action to avoid serious contamination.²² The accountability framework consists of the following:

- Regulatory Framework - Regulation 267 requires that farms submit nutrient management strategies and plans at prescribed times. New farms and large farms producing 300 nutrient units³ or more are required to submit plans, and existing large farms are required to submit strategies by July 2005 and plans by December 2005. The remaining farms have not yet been phased in under the Regulation.
- Incident Response - MOE conducts "incident response" for all farms (e.g., complaint response, spill response and advice or mediation on legislated and regulatory requirements). This follow-up is independent of whether or not farms require nutrient management plans or strategies.
- MOE officers are initiating planned inspections at farms currently subject to the legislative requirements.

Management of Septage

The Committee considered agricultural land uses and the application of nutrients, specifically the use of septage as an agricultural fertilizer. Presently septage may be used as fertilizer in an agricultural operation, provided that certain conditions are met, and that the operation is in compliance with the *Nutrient Management Act*, and the *Environmental Protection Act*.

At issue are the potential implications for groundwater and in turn the health and safety of residents on or near farming operations. A supplementary request for information was made to MOE to explain the following:

³ Nutrients are fertilizers, organic materials, biosolids, compost, manure, septage, pulp and paper sludge, and other material applied to land for the purpose of improving the growing of agricultural crops or for the purpose of a prescribed use (Source: The *Nutrient Management Act*). A nutrient unit is the amount of nutrients that give the fertilizer replacement value of the lower of 43 kilograms of nitrogen or 55 kilograms of phosphate as nutrient as established by reference to the Nutrient Management Protocol.

- legislative and regulatory context, and practices (permit requirements) governing the use of septage (treated and untreated) for agricultural purposes under the *Environmental Protection Act*, the *Nutrient Management Act*; and
- planned amendments governing the use of septage with the timetable for implementation.

The Ministry provided the following explanatory information:

Land Application of Biosolids and Septage (Land Application of Biosolids)

“Biosolids are the semi-solid nutrient rich organic matter generated by sewage treatment plants, paper mills or food processing operations. These materials have been processed to reduce pathogens and foreign objects. Municipalities enforce sewer use bylaws to control the amount of metals in sewage biosolids.

Biosolids are valued as fertilizers and soil conditioners due to their nutrient content which includes nitrogen, phosphorous and potassium, minerals such as zinc and copper, and organic matter which improves soil quality and increases crop growth.

Land application of biosolids and other non-agricultural wastes, including sewage biosolids and pulp and paper biosolids, is regulated by the Ministry of the Environment under Regulation 347. Land applicators require an Organic Soil Conditioning Site Certificate of Approval, issued under Part V of the Environmental Protection Act, to land apply these materials. The Ministry has been approving the land application of biosolids for over 25 years with no documented health or environmental impacts when requirements were followed.

Each application is reviewed on a case-by-case basis prior to issuing a Certificate of Approval, to ensure that it meets strict requirements for the protection of the environment and human health. The Certificates of Approval contain specific requirements controlling all aspects of the materials shipment and application to land, including separation distances from groundwater and surface water, quality of the biosolids and application rates.

The land application of biosolids and other wastes (Non-Agricultural Source Materials) is also subject to the following Nutrient Management Regulation (O. Reg. 267/03) requirements including:

- *Ban on winter spreading of sewage biosolids from December 1 to March 31, and at any time outside those dates when the ground is frozen or snow-covered;*
- *Ban on the use of high trajectory guns for the spraying of liquid non-agricultural source nutrients; and*
- *Requirement for a minimum 20 m setback from surface water for all non-agricultural source materials.*

The Nutrient Management regulation phases in requirements for preparation of a Nutrient Management Strategy for generators of non-agricultural materials which land apply their materials based on the following schedule:

- *2005 - Large Sewage Treatment Plants (STPs)
- 19 Nutrient Management Strategies (NMS) have been approved; others do not require a NMS*
- *2007 - Medium STPs/Approximately 70 plants*
- *2008 - Small STPs/Approximately 100 plants*
- *2007 - Any other non-agricultural source material*
- *2008 - Pulp and paper biosolids*

Land Application of Septage

Septage is defined as hauled sewage in Ontario Regulation 347, General Waste Management Regulation under the Environmental Protection Act. Septage varies in quality, and includes septic tank solids and holding tank wastes from residential, commercial and industrial sources, including wastes from portable toilets.

Unlike biosolids which are considered Processed Organic Waste and land applied under an Organic Soil Conditioning Site Certificate of Approval, septage haulers require a Hauled Sewage Waste Disposal Site Certificate of Approval, also issued under Part V of the Environmental Protection Act to land apply. O. Reg. 326/03, which was filed on August 1, 2003, banned the land application of untreated portable toilet waste, effective October 30, 2003.

The government remains committed to taking action by 2007 to end the practice of spreading untreated septage to protect and maintain safe, clean, liveable communities for all Ontarians. In order to successfully end the practice of spreading untreated septage, there must be capacity to treat septage. That capacity does not exist across the province, especially in rural areas where the use of septic and holding tanks to manage sewage predominates.

The government is working in a number of different ways to promote and expand septage treatment by:

- *developing science-based standards for treated septage;*
- *ensuring that municipalities can qualify for funding for construction of septage treatment under the Canada-Ontario Municipal Rural Infrastructure Fund (COMRIF);*
- *through the March 1, 2005 Provincial Policy Statement [under the Planning Act], ensuring that new building lots that will be serviced by septic or holding tanks will be permitted only if the capacity to treat their septage exists; and*
- *ensuring that winter spreading of untreated septage will soon be ended completely.*

The government will continue with such initiatives to promote septage treatment expansion until all septage that is generated in Ontario can be treated."²³

Rural Residential Development and Septage Management

In the case of residential development in rural municipalities certain conditions apply governing the management of septage. Of concern to the Committee was whether residential development approval would be subject specifically to the availability of sewage treatment plant capacity in the host municipality or in another jurisdiction.

The general requirements for the handling and treatment of subdivision septage are set out in S. 1.6.4. "Sewage and Water" of the Provincial Policy Statement (2005). This Statement is sanctioned under the *Planning Act*, under the authority of the Ministry of Municipal Affairs and Housing, and as approved by Cabinet effective March 1, 2005. The Ministry noted that under the 2005 Provincial Policy Statement, new residential lots serviced by septic or holding tanks require the capacity to treat septage.

The Ministry provided the following context:

"Septage may be treated in a receiving municipality with their concurrence, or through other treatment options. According to MOE a determination of treatment capacity for hauled sewage (septage) is based on a consideration of any MOE approved site to receive treated septage. . . .

*However, in the consideration of a specific development proposal, including a residential subdivision, the specific planning requirements of the host municipality must be met as specified in the local official plan, zoning by-law or other local planning documents."*²⁴

Committee Recommendations

Nutrient Management Planning

The Committee noted that at the time of the audit only a small percentage of the 1,200 large farms in Ontario had submitted a nutrient management plan and received approval. The Committee also noted that all existing large farms were to have nutrient management strategies in place by July 2005 and nutrient management plans were to be submitted by December 1, 2005.

The Committee therefore recommends that:

- 4. The Ministry of the Environment report to the Standing Committee on Public Accounts on the extent of compliance with the requirements for the 1,200 large farms to submit nutrient management strategies and plans, and report on the number of plans that have been reviewed and approved.**

The Committee requests that a written response to this recommendation be provided to the Committee Clerk within 120 days of the date of tabling this report in the Legislature.

Agricultural Compliance and Threat Assessment Reporting

The Committee noted in the Ministry's 2004 response that as of July 2005 ministry compliance officers were to monitor large livestock operations based on approved nutrient management plans.

The Committee therefore recommends that:

5. The Ministry of the Environment report to the Standing Committee on Public Accounts on the establishment of the process to monitor large livestock operations based on approved nutrient management plans and any general concerns noted to date.

The Committee requests that a written response to this recommendation be provided to the Committee Clerk within 120 days of the date of tabling this report in the Legislature.

2.5. Groundwater Contamination

In 1985, the Environmental Clean-up Fund was established to deal with the environmental and health risks associated with 250 contaminated sites. Approximately half of these sites relate to groundwater sources.

Efforts to clean up contaminated groundwater sites have generally been ineffective, and in spite of the significant funding, many groundwater resources in the province have been lost due to contamination. Some cases have resulted in a dependence on bottled water or piping in water across large distances.

The Ministry's efforts are largely reactive in response to complaints and attending to spills. The costs incurred to clean up groundwater resources that have been contaminated may far exceed those incurred to implement preventative measures. Preventive measures can only be effectively implemented if the key risks and potential threats to groundwater contamination are known and remedial strategies are appropriately planned and implemented.

Committee Hearings

Source Protection Framework

The Ministry will be identifying groundwater pollution sources and risks to sources of municipal drinking water, including groundwater using a provincially established threat assessment process.²⁵ The advisory committees addressing implementation and technical aspects of source protection developed the requirements for preparing an assessment report, for example, standards for assessing both the quality/quantity of groundwater.²⁶ MOE plans to function

within the watershed-based source protection framework, and therefore individual programs that the Ministry has operated as stand-alone programs will have to be integrated into the framework.²⁷

Source protection is being addressed through various avenues; for example, initiatives have been undertaken on the technical aspects of watershed-based source protection planning, and more specifically through the following:²⁸

- Legislation – preparation of draft legislation (*Drinking Water Source Protection Act*, June 2004) to establish a framework for undertaking plan development (see below);
- Risk Assessment - the Ministry plans to establish specific risk assessment reporting criteria to be applied under the regulations of the proposed legislation, as part of the planning process (the assessment of groundwater quality/risk identification are key components in the source protection planning framework);
- Threat Assessment - a threat assessment process is under development, which will be supported by technical guidance documents (preparation by MOE and the Ministry of Natural Resources); and
- Monitoring/Public Accountability - the source protection program is to include a monitoring and public accountability component focusing on high-risk areas including groundwater supplies.

Legislation on Source Protection

The Ministry has been working with other ministries, including the Ministry of Natural Resources and the Ministry of Municipal Affairs and Housing, to address Commissioner O'Connor's recommendation that source protection legislation be paramount as the province moves forward on policy.²⁹ MOE's policy work focuses on source protection to address human health and environmental matters.³⁰ The Ministry noted that on matters related to human health and the environment, the *Places to Grow Act, 2005*, by inference gives primacy to future source protection legislation.³¹

3. MONITORING GROUNDWATER QUALITY

Approximately 3 million Ontario residents rely on groundwater for drinking water from private wells and municipal groundwater-based systems. At the time of the audit, the Ministry did not have data on the illnesses caused annually by contaminated groundwater.

3.1. Drinking-water Wells

There are approximately 500,000 private and public wells in the province. To help address the problem of contamination, Regulation 903 under the *Ontario Water Resources Act*, established minimum standards for construction and maintenance of wells. This Regulation requires that Ministry-licensed well contractors be hired to install wells, and that a water well record be submitted when a new well is

installed. Nevertheless, the audit report noted the Ministry does not inspect new wells to ensure that wells are properly constructed by a licensed well contractor.

The maintenance of wells is critical for preventing contaminants from entering the water supply. Unless there is a formal complaint, the Ministry may not be aware of pollution problems. Ministry well inspectors were required, prior to 1997, to inspect abandoned well sites to ensure that well abandonment procedures were followed. This practice was discontinued, and consequently the Ministry has little assurance that abandoned wells are properly sealed.

Committee Hearings

Well Installation Standards (Educational Component)

The Ministry described current provisions under Regulation 903 and noted that the standards for well construction, maintenance and abandonment now meet or exceed other leading jurisdictions in North America.

The Ministry has clarified the regulatory requirements to help ensure they are effective at protecting drinking water for private well owners. For example, fact sheets on well construction are issued and information sessions for well drillers provide the necessary educational component.³² Additional information on this regulation is to be prepared using plain-language. According to the Ministry, the purpose of the regulation governing well construction is to ensure that the industry provides the highest level of integrity of the water.³³

3.2. Groundwater from Municipal Waterworks

According to the Ministry, well water has shown a pattern of declining quality over time. However, following the Walkerton Inquiry, steps were taken to address this problem through water-monitoring programs, annual inspections of municipal water systems, and requiring laboratories to report their water test results to the Ministry. Ontario's drinking-water standards require that there be no E. coli or other fecal coliform bacteria present in drinking water.

The Ministry's Drinking Water Information System monitors raw and treated water samples from municipal systems. However, as noted by Justice O'Connor in Part Two of the *Report on the Walkerton Inquiry*, the protection of source water is the first step in providing safe drinking water. As such, it is extremely important because "some contaminants are not effectively removed by using standard treatments" and some rural residents who do not have access to treated water rely on untreated groundwater from wells for drinking.

Committee Hearings

Comparative Jurisdictions

The Ministry has looked at other jurisdictions, including New Zealand, Australia, Ireland and the United States, and found that their experiences are not always applicable to Ontario.³⁴ Through planning they have focused on sensitive water supplies, including surface water sources, but mostly groundwater.³⁵ The U.S.

approach is similar to MOE's approach, focusing on the municipal wellheads and recharge areas. An integrated or phased approach is common in these jurisdictions. According to MOE, municipal groundwater supplies should be the priority for protection at the initial planning phase.³⁶

Wellhead Source Protection

The wellhead source protection strategy is as follows:³⁷

- planning process to focus on 17 plans in southern Ontario with lead conservation authorities providing direction;
- phasing in the work over time to address municipal wellhead areas initially and vulnerable recharge areas; and
- expanding in the future to provide Ministry assistance in other high-risk areas to establish protection zones that focus on the protection of watershed sources that serve the biggest part of the population.

Wellhead – Northern Communities

The Committee noted that environmental restrictions can have an impact on economic development in northern Ontario.³⁸ MOE is using a phased approach beginning with municipal wellhead areas, looking at a 100-metre radius around these sites.³⁹ Northern Ontario has fewer conservation authorities, and takes a municipal approach, taking into account the needs around municipal wellheads and municipal intakes.⁴⁰ The Ministry explained that some of the interjurisdictional research and research of Ontario communities on source protection planning has had a very limited impact on economic development in those communities.⁴¹

3.3. Groundwater from Private Wells

The Ministry inspects municipal drinking-water facilities; however, it does not routinely inspect rural private wells, which are the responsibility of the owner. The only major federal-provincial research on the quality of private wells was a 1992 study of 1,300 Ontario farm wells indicating that approximately 40% of the wells contained one or more contaminants (e.g., fecal coliform bacteria and pesticides). This research has not been updated, and the study is still used when referring to groundwater quality in rural agricultural areas.

The Auditor noted that MOE did not have a process for informing private-well users of high concentrations of *E. coli* and other bacteria in untreated water at nearby municipal wells.

Committee Hearings

Wells in rural areas are to be constructed by licensed well drillers. Overseeing wells can entail a shared jurisdictional approach involving federal, provincial and municipal governments within a joint regulatory framework.⁴² The City of Ottawa, for example, conducts inspections to ensure that wells are installed by a licensed well contractor.⁴³

The Ministry has extended such partnerships to Oxford on the Rideau and North Grenville designating building and bylaw enforcement staff as officers under provincial legislation. Furthermore, the Ministry is considering the expansion of formal partnering relationships with other municipalities in the future.⁴⁴ Partnering would entail working with associations such as the Ontario Ground Water Association to reach all licensed well drillers and assist with the public distribution of educational information on the regulations.⁴⁵

Committee Recommendation

Standards for Private Wells

The Committee is encouraged by the Ministry's commitment to partner with eastern Ontario municipalities and other organizations to help ensure that private wells are installed and maintained properly.

The Committee therefore recommends that:

6. The Ministry of the Environment report to the Standing Committee on Public Accounts on the results of the project in the Ottawa area and other initiatives to develop an overall compliance strategy to help ensure that private wells are properly installed and maintained.

The Committee requests that a written response to this recommendation be provided to the Committee Clerk within 120 days of the date of tabling this report in the Legislature.

Committee Hearings (cont'd)

Pesticides Usage

Pesticides are a threat to water quality, specifically to groundwater.⁴⁶ The Committee enquired about a strategy to reduce the use of pesticides through a risk-based approach.⁴⁷ According to the Ministry, the division of responsibilities on this matter is as follows:⁴⁸

- MOE has levels of responsibility for the storage and application of pesticides; and
- the federal government is responsible for the classification of pesticides, based on health and safety criteria.

Committee Recommendation

Management of Dangerous Substances

The Committee noted the problems resulting from dangerous substances, particularly pesticides, leaching into wells. The management of pesticides needs to be reviewed to address continuing contamination of wells in agricultural areas, beginning with the coordination of government management responsibilities and oversight functions.

The Committee therefore recommends that:

7. The Ministry of the Environment report to the Standing Committee on Public Accounts on action taken to manage the storage and use of pesticides and any strategy to coordinate the responsibilities of the federal, provincial and municipal governments.

The Committee requests that a written response to this recommendation be provided to the Committee Clerk within 120 days of the date of tabling this report in the Legislature.

3.4. The Provincial Groundwater Monitoring Network

The Provincial Groundwater Monitoring Network was established in 2000 at a cost of \$6.3 million to collect baseline data on groundwater quality from approximately 380 wells for use in tracking water quality over time. The Ministry intends to test samples for chemical parameters every six months in high-risk areas and annually in other areas. At the completion of the audit in March 2004, the Ministry had results from 177 of the 380 monitoring wells, with samples from the remaining wells either at the Ministry's laboratory for testing or still being collected. The Ministry indicated that a report on the test results would be released in late 2004 (see status report below).

Committee Hearings

The Committee enquired about the Ministry's expectations on monitoring over the next five to 10 years.⁴⁹ Monitoring includes, for example, the identification of phosphates and nitrates permeating into the groundwater.⁵⁰ The Ministry indicated the complex linkage between surface water and aquifers, noting that a long-term approach is necessary to protect the integrity of aquifers, and the immediate goal is to protect the surface water permeating into aquifers.⁵¹

The groundwater monitoring network records changes in water quantity measured on a real-time basis, and samples will be taken twice a year to assess water quality. The Ministry has plans to add approximately 32 new wells in the next year, primarily in northern Ontario.⁵² The Ministry also plans to include a sample of private wells in high-risk areas and inform potential users of any adverse raw water test results:⁵³

MOE also plans to review the current monitoring network with partner municipalities and conservation authorities to identify areas possibly subject to stress and potential water quality problems.

Information on the quality/quantity of surface and groundwater is to be made public.⁵⁴ Therefore, landowners with private wells in sensitive areas will benefit from source protection planning and implementation measures.⁵⁵

Supplementary Information - Monitoring Wells

The Ministry provided the following statement on the status of the monitoring wells:

“Since the release of the Auditor’s report, the Ministry has completed its Provincial Groundwater Monitoring Information System (PGMIS) which provides program partners [Conservation Authorities (CA) and municipalities] direct access to water level and chemistry information on groundwater monitoring data. PGMIS is designed to capture water quality and quantity information from the Provincial Groundwater Monitoring Network (PGMN) program wells and provide access to the Ministry of the Environment and program partners. As of March 2005, partners can obtain groundwater chemistry data from PGMN water quality sampling. Consequently, a report outlining the PGMN test results is no longer necessary.”⁵⁶

Committee Recommendation

Collection of Baseline Data (Provincial Groundwater Monitoring Network)

The Provincial Groundwater Monitoring Network collects baseline data on groundwater quality from wells for use in tracking water quality. The Committee noted that in March 2004, MOE had results from only 177 of the 380 monitoring wells, and information from the remaining wells was not yet available. The Ministry committed to release a report on these test results in late 2004.

The Committee therefore recommends that:

8. The Ministry of the Environment report to the Standing Committee on Public Accounts on the collection of baseline data on groundwater from wells, and the water quality results under the Provincial Groundwater Monitoring Network. The report should address trends identified during monitoring activities (e.g., quality and quantity of water, and recharge capability) and plans to use baseline data in the identification of future trends. Data from the Provincial Groundwater Monitoring Information System should be made public on a timely basis each year.

The Committee requests that a written response to this recommendation be provided to the Committee Clerk within 120 days of the date of tabling this report in the Legislature.

4. MANAGING GROUNDWATER FOR SUSTAINABILITY

The demand for groundwater continues to increase, placing pressures on the management of this resource to ensure access to a clean and sustainable supply. The sustainability of groundwater can be threatened by various factors and the development of a management strategy is the first step in the protection of this resource.

After the Auditor's 1996 audit, the Ministry committed to a review to develop an overall groundwater management strategy within established principles to be accompanied by a definition of the roles and responsibilities of provincial agencies and governmental and non-governmental entities. At the time of the Auditor's 1998 follow-up, a groundwater strategy had not been finalized. The Auditor noted in the 2004 audit report that the groundwater management strategy still had not been finalized.

4.1. Permits to Take Water

The *Ontario Water Resources Act* and its regulations govern water takings. A Ministry-issued permit to take water is required (above an established quantity) for purposes such as municipal drinking water and agricultural irrigation. The permit system addresses a broad range of issues, such as fair sharing, the protection of ecosystems, and the Ministry's planning and management responsibilities. At the time of the audit, the Ministry had issued approximately 2,800 groundwater permits.

A moratorium on new permits for certain types of manufacturing was introduced in December 2003. Existing permits could be renewed, provided that the maximum amount of water allowed to be taken was not increased.

The Auditor concluded that Ministry policies and regulatory requirements were inadequate to ensure the protection and future sustainability of groundwater resources within the terms of the permit system. One major weakness was that the Ministry lacked the information required to properly assess total water takings by all permit holders. Although individual permit holders are required to maintain records of the volume of water taken, they do not need to submit this information to the Ministry. Information on the volumes extracted would help in the management of groundwater resources and help to determine the cumulative impact of groundwater takings.

Committee Hearings

The Committee pointed to the insufficient monitoring of water-taking permits, for example, the absence of follow-up with permit holders to obtain hydrological reports on the impact of the proposed water-taking on the groundwater supplies and systems.⁵⁷ The Ministry agrees that water consumption is a major concern and that it is not being managed properly.⁵⁸ MOE acknowledged that taking large volumes of groundwater has very real consequences and in response it has outlined several initiatives to address water usage.

Improved Permit System

MOE is engaged in planning, and cooperative efforts with conservation authorities and municipalities on the issuance of permits. The new rules require an ecosystem-based approach which entails consideration of water supply, water demand and various other environmental factors.⁵⁹ A cumulative impact analysis entails input from surface water specialists and hydrogeologists before the issuance of permits that may include restrictive terms and conditions.⁶⁰

In addition, other land uses have an impact on groundwater such as industrial land uses, fire safety requirements, and irrigation for agriculture.⁶¹ The Ministry concluded that through the provincial groundwater monitoring network, it will be able to better understand the cumulative impacts.⁶² In turn, this data will assist with the integration of programs, and MOE will begin to improve its understanding of how to address issues that may become apparent from the monitoring network.⁶³

MOE Follow-up – Fees for Permits to Take Water

The Ministry provided the following supplementary information on fees for permits to take water.⁶⁴

“On December 23, 2004, the Minister announced Permit to Take Water administrative fees, effective April 1, 2005. The fees apply to applications received on or after April 1, 2005. Legislative authority for the fees exists under section 96 of the Ontario Water Resources Act.

The fee is a cost-recovery mechanism for the government. It will cover the costs to process, review and issue permits. The costs to be recovered include the coordination and administration required to receive, acknowledge and log applications; consultation with applicants; review time by technical staff; director’s decision and fee collection.

Sectors who currently take water include: agricultural, industrial, commercial, recreational, municipal (drinking water supply), construction, and institutional. The agricultural sector is exempt from the fees. This exemption applies to water takings for irrigation and frost protection for agricultural uses and includes vegetable crops, fruit orchards, flowers, nurseries, tree and sod farms, tender fruit and aquaculture.

The fee exemption does not apply to agribusiness and food processing operations such as vegetable and fruit canning, processing, pickling and beverage manufacturing, wineries and bottled water, which require a permit.”

A new service standard is in effect to process the majority of permit applications in 90 days.⁶⁵

Regulatory Amendments

The Ministry has taken action to assess the cumulative impact of taking groundwater on the ecosystem and enhanced the evaluation process for issuing

permits to take water. For example, actual water takings are to be reported to the Ministry and the Ministry will enhance notification to municipalities and conservation authorities of water taking.⁶⁶

Individuals are required to track their usage and report to MOE in phases, effective July 2005.⁶⁷ Municipalities and water bottlers begin tracking, and reporting starting March 2006. There is a phase-in period, as follows:⁶⁸

- Phase #1 - municipal drinking water systems, major industrial dischargers, and water-takers (start monitoring July 1, 2005, and reporting by March 31, 2006);
- Phase #2 - other industrial/commercial sectors and wildlife conservation (start monitoring on January 1, 2006, with reports by March 31, 2007); and
- Phase #3 - agricultural and others (start monitoring in January 2007 and reporting by March 2008)

This approach will provide data on the actual use of groundwater, rather than on the accumulation of permitted amounts.⁶⁹

Committee Recommendation

Expired Permits

The new water-taking and transfer regulation requires annual reporting to MOE in a more formal way.⁷⁰ MOE has adopted a risk-based approach for inspections, and a project was undertaken applying this approach, which included an assessment of expired permits.⁷¹ The Committee noted that timeliness is critical to the proper management of permits to ensure compliance with applicable conditions, most notably expiry dates.

The Committee therefore recommends that:

9. The Ministry of the Environment report to the Standing Committee on Public Accounts on the results to date of the new water taking and transfer regulation requirement for annual reporting to MOE on consumption, and the process to review expired permits to guard against unauthorized water taking by former permit holders.

The report should include an overview of data to be submitted by individual license holders through self-tracking requirements, with an explanation of how the Ministry will use the information submitted to manage groundwater takings.

The Committee requests that a written response to this recommendation be provided to the Committee Clerk within 120 days of the date of tabling this report in the Legislature.

4.2. Groundwater Sustainability

Permission to take groundwater is generally given based on an indication of sustainability and the protection of the resource for existing groundwater users. The maintenance of this equilibrium is necessary to protect the aquifer. The Ministry does not allow the mining or drawing down of aquifers; however, current practices may place a direct strain on groundwater resources, resulting in a drop in water levels below the natural recharge capability. This situation could affect wells, streams and sensitive ecosystems in the environs.

In two cases identified in the audit, major aquifers had declining water levels. In one instance, permits were renewed with allowable takings being increased although the aquifer had a decreasing water level. It was of concern to the Auditor that the Ministry had not assessed the impact of these new permits on the sustainability of the aquifer.

Committee Hearings

Aquifer Recharge Initiative

The Committee focused on the groundwater database, Ministry interfacing, and monitoring capacity.⁷² At the centre of this debate is knowing the replenishment factor of groundwater and the quality. MOE recognizes the importance of education and outreach, given the number of players involved and the complexity of the subject, as well as the need to raise awareness about the fragility of these systems.⁷³

MOE's technical experts committee addressed source protection in 2004, and recommended that MOE place a priority on protection policies for groundwater to which the Ministry has responded under the Source Protection Program highlighting groundwater areas that are sensitive or vulnerable and preparing protection policies and plans.⁷⁴ To date, the following initiatives have been taken:⁷⁵

- Education/Outreach – Conservation Ontario produced a brochure on source protection, referencing both surface water and groundwater. In addition it is doing more outreach in local communities.
- Source Protection Planning – MOE is proceeding with source protection planning, providing resources to conservation authorities to hire scientific expertise to address the linkages between surface water and groundwater. In addition, the Ministry and Pollution Probe prepared a primer on source protection for broad circulation.

The Ministry has also undertaken the following initiatives to address aquifer recharging:

- MOE has launched a comprehensive water budget development program in co-operation with the Ministry of Natural Resources and conservation authorities (a determination of the amount of recharge into the groundwater taking such factors as landscaping into account); and

- information will be provided to the source protection planning process to protect recharge areas ensuring aquifer sustainability. This data will be used for permits to take-water program.⁷⁶

Committee Recommendation

Groundwater Management Strategy

The Committee noted that following the Auditor's 1996 audit, MOE committed to the development of a comprehensive provincial groundwater management strategy. The Auditor reported that the strategy was incomplete at the time of the 1998 follow-up and subsequently for the 2004 audit report.

The Committee therefore recommends that:

10. The Ministry of the Environment report to the Standing Committee on Public Accounts on the commitment to prepare a comprehensive provincial groundwater management strategy. The report should identify the components of this initiative, indicating those that have been finalized as well as those that are outstanding. MOE's timetable for completion and implementation is required.

The Committee requests that a written response to this recommendation be provided to the Committee Clerk within 120 days of the date of tabling this report in the Legislature.

5. ENFORCING COMPLIANCE WITH LEGISLATION

Under the inspection and enforcement powers of the *Environmental Protection Act* and the *Ontario Water Resources Act*, MOE endeavours to ensure compliance with respect to control, prevention, reduction, and the elimination of pollution. An environmental officer can seek an offender's compliance, and if the offender does not comply, a referral report is prepared, which may initiate further investigation and enforcement action including prosecution.

5.1. Inspections

Environmental officers are assigned to MOE district offices to carry out inspections of facilities that either the public has complained about or the Ministry has proactively selected. In addition, since September 2000 the Ministry has used an Environmental SWAT Team to increase its inspection coverage. SWAT focuses on proactive inspections in priority areas where compliance by industries or companies is a major concern. During the 2003/04 fiscal year, the Ministry performed 4,700 district and SWAT inspections.

District offices are to conduct proactive inspections, based on known or anticipated human health impacts, environmental impairments and non-

compliance with legislation. The Auditor noted that in the case of the three district offices selected, documentation had not been maintained to demonstrate that the selection criteria were used to identify facilities for inspections. At these three district offices non-compliance issues of an administrative nature were identified in half of the inspections reviewed and threats to the environment or human health were identified at 5% of these sites. In contrast, SWAT inspectors, using a risk-based selection approach, found non-compliance in 95% of the facilities inspected, and threats to the environment or human health in almost 25% of these sites.

The Ministry has attempted to use a number of risk-based assessment models since 2000 to select candidates for inspection. The Auditor concluded, however, that based on the results of the pilot test, the latest model may not be effectively identifying high-risk facilities.

Committee Hearings

Proactive Inspections Initiative

The Auditor had recommended a review of the results of the proactive inspections with the objective of determining why they were less effective than the environmental SWAT team inspections.⁷⁷ MOE has taken the following steps:

- conducted a district risk assessment pilot in 2003 to establish the best approach to introducing a risk-based approach for proactive district inspections;
- MOE's operations division (using the pilot results) introduced a risk-based district inspection framework with a community-based approach; and
- the framework is to identify for inspection areas and organizations that may pose a threat to the environment and human health.

The Auditor recommended the development of a more effective risk-based model for its proactive inspection program (focusing on environmentally sensitive areas).⁷⁸ The results of the pilot in 2003 were assessed to determine the best approach to implementing a risk-based approach for proactive district inspections. Using the lessons learned from this pilot, the Ministry has introduced a risk-based framework for inspections performed by its district offices. The Ministry also informed the Committee that it plans to establish a database that will further enhance the risk-based inspection framework.

Committee Recommendation

Risk-Based Inspection Framework

The Auditor General recommended that the Ministry develop and implement a more effective risk-based model for inspections performed by its district offices to target areas that have the greatest risk of detrimental environmental impacts. In contrast to the district offices, the SWAT inspectors' risk-based selection model has been effective in identifying a high level of non-compliance, reporting that almost 25% of the cases constituted serious threats to the environment or human

health. The Committee noted that although district inspectors provide sound services, the methodology for district inspections needs to be addressed.

Using the results of a district risk assessment pilot conducted in 2003, the Ministry developed a risk-based framework to help select the sites for its district offices to inspect with the highest risk of negative environmental impacts.

The Committee therefore recommends that:

11. The Ministry of the Environment report to the Standing Committee on Public Accounts providing a description of the model introduced and the results achieved to date from the implementation of its risk-based framework for district office inspections. These results should be expressed in terms of the ability to identify incidents that constitute serious threats to the environment and human health.

The Committee requests that a written response to this recommendation be provided to the Committee Clerk within 30 days of the date of tabling this report in the Legislature.

5.2. Investigations and Prosecutions

If an inspection does not result in compliance, a referral report is sent to the Ministry's Investigations and Enforcement Branch. An investigation may then be warranted to determine whether charges will be laid. Approximately 1,100 investigations were initiated during the 2002/03 fiscal year, and 900 cases were referred for prosecution (see status report below).

The Auditor identified a number of concerns with the investigation and enforcement process. For example, in a number of cases files were not promptly assigned for investigation and some investigations were not completed on a timely basis.

Committee Hearings

Investigations and Prosecutions Update

The Auditor's recommendation pointed to the need to review procedures for forwarding referral reports to the Investigations and Enforcement Branch.⁷⁹ The timely disposition of cases involving serious environmental violations is a priority, and the Branch has completed a review of current incident referral procedures.⁸⁰ For example, training for field staff was initiated, providing assistance on cases needing referral to the Branch, which has assisted the Branch in managing its workload more effectively.⁸¹

In addition, the following initiatives have been undertaken:⁸²

- the implementation of an advance warning system with triggers indicating where the Ministry is in terms of the two-year window for investigations;

- resources may be deployed to ensure that an important file is not stopped by the statute of limitations (streamlining investigations); and
- the Investigations and Enforcement Branch has instituted a case management workload system (assigning priority rankings to certain matters that are referred from the field on a risk basis).

Charges must be laid and proceedings started within the two-year time frame.⁸³ MOE has introduced procedures and the Branch has completed a review with the intent of expediting the laying of charges for serious environmental offences.⁸⁴

Supplementary Information - Investigations and Prosecutions

The Ministry provided supplementary information on investigations initiated during the 2002/03 fiscal year, and cases referred for prosecution.

“The Ministry of the Environment Investigations and Enforcement Branch (IEB) investigations and subsequent prosecutions are only initiated after a number of factors are considered to identify current or potential serious implications to health and the environment.

The following is the current status for the investigations and prosecutions reported in the 2004 Annual Report:

From 1,133 new IEB investigations started in 2002/2003:

- *145 Court Cases (prosecutions) were initiated;*
 - *129 of these cases resulted in convictions;*
 - *6 of these cases are still before the courts;*
 - *6 of these cases were withdrawn (4 of these cases were dismissed by the court);*
 - *971 investigations were closed without a prosecution;*
 - *17 investigations were closed and incorporated as part of other investigations; and*
 - *Total Fines levied by the courts for these cases is \$1,671,650 (to date).*

From 905 Court Cases recommended for prosecution during fiscal year 2002/2003:

- *773 of these cases resulted in convictions;*
- *4 of these cases are still before the courts;*
- *75 of these cases were withdrawn;*
- *53 of these cases were dismissed by the court; and*
- *Total Fines levied by the courts for these cases is \$2,143,565 (to date).*

The 905 court cases referred to above is a combination of 686 Provincial Offences Act tickets that went to trial and 219 IEB investigations. The IEB prosecutions are the result of investigations completed in 2002/2003 that may have started up to two years earlier. . . .

*The Ministry has completed its review of the incident referral procedures and operational procedures to ensure timely disposition of cases and to expedite the laying of charges of serious environmental offences. The recommendations from these reviews have been implemented and are being used by all Ministry staff.*⁸⁵

Committee Recommendations

Incident Referral and Operational Procedures

Following up on the serious inspection cases noted in S. 5.1., the Committee is interested in the 25% of cases posing serious threats to the environment or human health, rather than minor infractions. Therefore, the regulatory framework must focus Ministry resources on the most severe cases.

The Committee noted additional MOE commitments made in 2004 with a planned completion date of January 2005:

- the Investigations and Enforcement Branch committed to undertake a review of the current incident referral procedures; and
- the Investigations and Enforcement Branch initiated a review of operational procedures to expedite the laying of charges for serious environmental offences.

The Committee therefore recommends that:

12. The Ministry of the Environment report to the Standing Committee on Public Accounts on the following undertakings by the Investigations and Enforcement Branch:

- **the results of the review of current incident referral procedures;**
and

- **the results of the review of operational procedures to expedite the laying of charges for serious offences that are a threat to human health and the environment.**

The Committee requests that a written response to this recommendation be provided to the Committee Clerk within 120 days of the date of tabling this report in the Legislature.

Collection of Fines

The Committee noted the total fines levied in 2002/2003, as follows:

- 1,133 new IEB investigations were started in 2002/2003, with total fines levied by the courts of \$1,671,650; and
- 905 court cases recommended for prosecution during fiscal year 2002/2003 had total fines levied of \$2,143,565.

The Committee is interested in the actual fines collected.

The Committee therefore recommends that:

13. The Ministry of the Environment report to the Standing Committee on Public Accounts on the actual fines collected of the total levied in fiscal 2002/2003.

The Committee requests that a written response to this recommendation be provided to the Committee Clerk within 120 days of the date of tabling this report in the Legislature.

6. MEASURING AND REPORTING ON PROGRAM EFFECTIVENESS

The Auditor concluded that the Ministry needs to establish a framework for tracking the results of its initiatives with respect to improving the quality of groundwater, with attention to sustainability, and corrective actions. A framework requires defined outcomes, performance measures, and technically sound data.

The Ministry did not have desired outcomes or performance measures for the groundwater program in mid 2004. These measures would help to determine whether policies and management practices for groundwater resources are succeeding. The Auditor noted that an understanding of what is being measured is required, and furthermore, that the Ministry lacked a clear understanding of groundwater resources in Ontario as a whole.

To help promote accountability, the Auditor recommended that the Ministry identify desired outcomes for its groundwater program and develop performance measures that would enable it to assess the extent to which program outcomes are being met. These outcomes would also support the Ministry to be more effective

in ensuring the restoration, protection, and sustainability of groundwater resources.

Committee Hearings

Broad Scale Program Measurement

The Committee was interested in the effectiveness of measurement and reporting criteria, and how to benchmark progress.⁸⁶ The Ministry pointed out that it is necessary to not only quantify its efforts, but to actually make a difference to the environment.⁸⁷ MOE has 14 measures across the Ministry (e.g., four measures were associated with water, three with drinking water quality, and one for surface water quality).⁸⁸ Consideration is being given to introducing five measures specifically for reporting on water in 2005-06.⁸⁹ The objective is to identify the results within broad objectives, and to track program effectiveness against established measures.⁹⁰

The Ministry's initiatives on performance measures for groundwater were incomplete as of April 2005.⁹¹ The Ministry attributed the delay to ongoing interjurisdictional research to ensure that MOE practices and measures are aligned with issues in other jurisdictions, and the internal policy development process.⁹²

Nutrient Management

MOE performance measures will target, for example, the nutrient management program.⁹³ Inspection results will become a report card for the farms visited, benchmarking MOE's findings on a county or a regional basis.⁹⁴ The Ministry will implement inspections on farms, and farmers will be able to see their rating against commodity producers in the same area on a regional or county basis, and provincially.⁹⁵

*MOE Update (Following the Hearings)*⁹⁶

Following the hearings the Ministry provided supplementary information in response to a Committee enquiry about the identification of desired outcomes for the groundwater program and the development of performance measures. The Committee's concern was with the extent to which program outcomes are being met and the overall restoration, protection and sustainability of groundwater resources.

"As part of the Ministry's commitment to protecting the environment and providing the public with meaningful environmental information, the Ministry continually reviews and refines performance measures that track the effectiveness of our programs. In developing these measures, one of the primary considerations is that they are relevant to key Ministry activities and technically capable of measuring effectiveness, while providing simple and meaningful information that is understandable to the public. Over the past year MOE has developed new performance measures for all Ministry programs, including 5 key measures for water.

One water measure has been reported publicly in the "Getting Results for Ontario" report and tracks the effectiveness of our clean water and source protection programs. The measure relates to the government's commitment to "Protect drinking water by implementing recommendations from the Walkerton Inquiry". This measure defines the government's progress in implementing the 121 Inquiry recommendations to ensure clean and safe drinking water. Twenty-two of the Walkerton Inquiry recommendations relate specifically to source protection, including groundwater. Since October 2003, the government had implemented 24 of the Inquiry recommendations. As of February 2005, a total of 55 recommendations have been implemented, 35 are currently underway and 31 will be implemented through legislation.

In addition to this public measure, the Ministry has begun reporting on an additional 22 performance measures for air, water and waste programs, as part of a new government-wide process.

The remaining four internal water performance measures are:

- Percentage of treated drinking water test for microbiological (Total Coliforms, Faecal Coliforms and E.Coli) parameters by municipal residential drinking water systems that meet Ontario drinking water quality standards in place June 1, 2003.*
- Percentage of Provincial lead commitments fulfilled under the Canada Ontario Agreement Respecting the Great Lakes Basin Ecosystem (COA).*
- Total land-applied agricultural and non-agricultural source materials covered by approved Nutrient Management Plans and Strategies.*
- Percentage of source protection priority components completed, including local committees established, local work plans, watershed assessments, and plans submitted for Ministry approval.*

The 'desired outcomes' of a safe and sustainable groundwater resource are embedded within the programs supporting these performance measures, in particular those for nutrient management and source protection. Nutrient Management Plans and Strategies will ensure applications are consistent with the agronomic index (nutrient requirements for the crops) so that no excessive nutrients penetrate to the aquifer. Within the source protection program, local groups will develop protection and remediation programs based upon assessment reports for the ground-water supplies used for drinking water (integrating all available information). The recommendations from expert committees being considered by the Ministry included ensuring these resources are managed sustainably through such local as well as provincial initiatives. These local source protection programs are anticipated to include municipal plans that protect water supplies as well as complementing the Ministries monitoring network to identify potentially unsustainable practices. As a component of their assessment programs the Ministry anticipates local committees will identify milestones for planning and where necessary restoration of groundwaters used for drinking water that will be tracked by the Ministry. The Ministry will continue to track and report on its performance measures to assist in improving its

programs and monitoring its results for the protection of groundwater. As part of a continuous improvement process, the Ministry will also be reviewing and developing new measures where necessary.”

Committee Observation

Enhanced Performance Measures

The Committee noted that the Ministry has committed to track and report on groundwater performance measures with the objective of improving programs and monitoring results. This process will entail ongoing reviews and the development of new measures, which in the opinion of the Committee, would have to be a management priority. The Committee concluded that it would be beneficial to consider the level of success achieved in this regard.

As a component of their assessment programs, the Ministry anticipates local committee's will identify milestones for planning and where necessary restoration of groundwaters used for drinking water that will be tracked by the Ministry. The following explanatory note provides an update on how this matter will be managed:

“The Ministry has been working to develop a provincial process to be used under Source Protection Planning, to identify and assess threats to drinking water. The final report of the Technical Experts Committee (TEC) was provided to the Minister for consideration in November 2004, and was subsequently posted to the EBR Environmental Registry for public comment for a two month period ending February 15, 2005.

The TEC Report makes recommendations on how to identify, assess and determine appropriate risks management for threats to drinking water sources. The committee recommended a risk-based approach for assessing threats to drinking water that considers both the nature of the threat and local circumstances – including the natural vulnerability of the water source to contamination.

The risk assessment model recommended is applicable to current and future threats to both quality and quantity of drinking water sources. The Ministry has reviewed the recommendations of the committee as well as the comments received through the EBR consultation, and has been working to amend the draft legislation released in the Summer of 2004 and initiate the development of regulations needed to guide source protection planning.

Regulations will outline requirements for Assessment reports, which will include the requirements for a risk-based assessment of threats:

- An inventory of issues and threats to drinking water sources;*
- An identification of areas vulnerable to threats to drinking water quality and quantity; and*

- *An assessment and categorization of the risks posed by threats to drinking water sources.*

Guidelines will be issued by MOE outlining the technical approaches to be used to carry out the risk-based threat assessment in compliance with the regulations.

The assessment of risks from threats to drinking water will enable the development of source protection plans that are effective and appropriate for the level of risk posed by a threat to drinking water sources."⁹⁷

Committee Recommendation

Guidelines for Risk-Based Assessments

The Committee noted the Ministry's commitment to issue guidelines on the technical approaches to be used for risk-based threat assessments.

The Committee therefore recommends that:

14. The Ministry of the Environment report to the Standing Committee on Public Accounts on the proposed timeframe for the release of its guidelines for conducting risk-based threat assessments in compliance with the regulations.

The Committee requests that a written response to this recommendation be provided to the Committee Clerk within 120 days of the date of tabling this report in the Legislature.

7. LIST OF COMMITTEE'S RECOMMENDATIONS

The Committee requests that reports on the following recommendations be provided to the Committee Clerk within 120 days of the date of tabling this report in the Legislature, unless otherwise specified.

1. The Ministry of the Environment report to the Standing Committee on Public Accounts on the status of grouping conservation authorities together to help develop source protection plans. Given the conservation authorities' new funding (2004) to undertake the capacity-building and provide the technical means for watershed-based source protection, the Ministry should establish a timeframe for the completion of these plans. Finally, these plans should be published in a user-friendly format (e.g., plain language text).

The Committee requests that a written response to this recommendation be provided to the Committee Clerk within 120 days of the date of tabling this report in the Legislature.

2. The Ministry of the Environment report to the Standing Committee on Public Accounts on the progress made to provide access to source protection information for municipal and conservation authority decision-making on groundwater management. The report should provide an update on the 53 outstanding groundwater management studies, funded by the Ministry, which were due by December 2004.

The Committee requests that a written response to this recommendation be provided to the Committee Clerk within 120 days of the date of tabling this report in the Legislature.

3. The Ministry of the Environment report to the Standing Committee on Public Accounts on the feasibility of preparing three-dimensional groundwater information maps for the 36 watersheds, with a priority ranking for each with a completion timeframe. This material should be published on a timely basis, identifying patterns and trends in the level of stability in aquifers, and indicating immediate and potential long-term environmental concerns.

The Committee requests that a written response to this recommendation be provided to the Committee Clerk within 120 days of the date of tabling this report in the Legislature.

4. The Ministry of the Environment report to the Standing Committee on Public Accounts on the extent of compliance with the requirements for the 1,200 large farms to submit nutrient management strategies and plans, and report on the number of plans that have been reviewed and approved.

The Committee requests that a written response to this recommendation be provided to the Committee Clerk within 120 days of the date of tabling this report in the Legislature.

5. The Ministry of the Environment report to the Standing Committee on Public Accounts on the establishment of the process to monitor large livestock operations based on approved nutrient management plans and any general concerns noted to date.

The Committee requests that a written response to this recommendation be provided to the Committee Clerk within 120 days of the date of tabling this report in the Legislature.

6. The Ministry of the Environment report to the Standing Committee on Public Accounts on the results of the project in the Ottawa area and other initiatives to develop an overall compliance strategy to help ensure that private wells are properly installed and maintained.

The Committee requests that a written response to this recommendation be provided to the Committee Clerk within 120 days of the date of tabling this report in the Legislature.

7. The Ministry of the Environment report to the Standing Committee on Public Accounts on action taken to manage the storage and use of pesticides and any strategy to coordinate the responsibilities of the federal, provincial and municipal governments.

The Committee requests that a written response to this recommendation be provided to the Committee Clerk within 120 days of the date of tabling this report in the Legislature.

8. The Ministry of the Environment report to the Standing Committee on Public Accounts on the collection of baseline data on groundwater from wells, and the water quality results under the Provincial Groundwater Monitoring Network. The report should address trends identified during monitoring activities (e.g., quality and quantity of water, and recharge capability) and plans to use baseline data in the identification of future trends. Data from the Provincial Groundwater Monitoring Information System should be made public on a timely basis each year.

The Committee requests that a written response to this recommendation be provided to the Committee Clerk within 120 days of the date of tabling this report in the Legislature.

9. The Ministry of the Environment report to the Standing Committee on Public Accounts on the results to date of the new water taking and transfer regulation requirement for annual reporting to MOE on consumption, and the process to review expired permits to guard against unauthorized water taking by former permit holders.

The report should include an overview of data to be submitted by individual license holders through self-tracking requirements, with an explanation of how the Ministry will use the information submitted to manage groundwater takings.

The Committee requests that a written response to this recommendation be provided to the Committee Clerk within 120 days of the date of tabling this report in the Legislature.

10. The Ministry of the Environment report to the Standing Committee on Public Accounts on the commitment to prepare a comprehensive provincial groundwater management strategy. The report should identify the components of this initiative, indicating those that have been finalized as well as those that are outstanding. MOE's timetable for completion and implementation is required.

The Committee requests that a written response to this recommendation be provided to the Committee Clerk within 120 days of the date of tabling this report in the Legislature.

11. The Ministry of the Environment report to the Standing Committee on Public Accounts providing a description of the model introduced and the results achieved to date from the implementation of its risk-based framework for district office inspections. These results should be expressed in terms of the ability to identify incidents that constitute serious threats to the environment and human health.

The Committee requests that a written response to this recommendation be provided to the Committee Clerk within 30 days of the date of tabling this report in the Legislature.

12. The Ministry of the Environment report to the Standing Committee on Public Accounts on the following undertakings by the Investigations and Enforcement Branch:

- the results of the review of current incident referral procedures; and
- the results of the review of operational procedures to expedite the laying of charges for serious offences that are a threat to human health and the environment.

The Committee requests that a written response to this recommendation be provided to the Committee Clerk within 120 days of the date of tabling this report in the Legislature.

13. The Ministry of the Environment report to the Standing Committee on Public Accounts on the actual fines collected of the total levied in fiscal 2002/2003.

The Committee requests that a written response to this recommendation be provided to the Committee Clerk within 120 days of the date of tabling this report in the Legislature.

14. The Ministry of the Environment report to the Standing Committee on Public Accounts on the proposed timeframe for the release of its guidelines for conducting risk-based threat assessments in compliance with the regulations.

The Committee requests that a written response to this recommendation be provided to the Committee Clerk within 120 days of the date of tabling this report in the Legislature.

NOTES

¹ Ontario, Legislative Assembly of Ontario, Standing Committee on Public Accounts, *Hansard: Official Report of Debates*, 38th Parliament, 1st Session (7 April 2005): P-356.

² *Ibid.*

³ *Ibid.*

⁴ *Ibid.*

⁵ *Ibid.*

⁶ *Ibid.*, P-360.

⁷ *Ibid.*

⁸ *Ibid.*, P-357.

⁹ *Ibid.*, P-361.

¹⁰ *Ibid.*, P-360.

¹¹ *Ibid.*, P-361.

¹² *Ibid.*

¹³ *Ibid.*, P-362 and P-363.

¹⁴ *Ibid.*, P-345.

¹⁵ *Ibid.*

¹⁶ *Ibid.*, P-348.

¹⁷ *Ibid.*

¹⁸ *Ibid.*

¹⁹ *Ibid.*, P-348 and P-349.

²⁰ Supplementary information sent to the Clerk of the Standing Committee on Public Accounts by the Deputy Minister, Ministry of the Environment, in a letter dated April 27, 2005.

²¹ Ontario, Legislative Assembly of Ontario, Standing Committee on Public Accounts, *Hansard: Official Report of Debates*, 38th Parliament, 1st Session (7 April 2005): P-363.

²² *Ibid.*, P-346.

²³ Supplementary information provided by the Business and Fiscal Planning Branch (Performance Improvement Unit), Ministry of the Environment to Legislative Research and Information Services, e-mail dated December 2, 2005.

²⁴ Letter to Ms S. Sourial, Clerk, Standing Committee on Public Accounts from Ms V. West, Deputy Minister, Ministry of the Environment, dated April 13, 2005.

²⁵ Ontario, Legislative Assembly of Ontario, Standing Committee on Public Accounts, *Hansard: Official Report of Debates*, 38th Parliament, 1st Session (7 April 2005): P-346.

²⁶ *Ibid.*

²⁷ *Ibid.*, P-356.

²⁸ *Ibid.*, P-345.

²⁹ *Ibid.*, P-354.

³⁰ *Ibid.*

³¹ *Ibid.*, P-358.

³² *Ibid.*, P-346.

³³ *Ibid.*, P-351.

³⁴ *Ibid.*, P-358.

³⁵ *Ibid.*

³⁶ *Ibid.*, P-358.

³⁷ *Ibid.*, P-357.

³⁸ *Ibid.*, P-365.

³⁹ *Ibid.*

⁴⁰ *Ibid.*

⁴¹ *Ibid.*

⁴² *Ibid.*, P-348.

⁴³ *Ibid.*

⁴⁴ *Ibid.*

⁴⁵ *Ibid.*

⁴⁶ *Ibid.*, P-363.

- ⁴⁷ Ibid.
- ⁴⁸ Ibid.
- ⁴⁹ Ibid., P-351.
- ⁵⁰ Ibid.
- ⁵¹ Ibid.
- ⁵² Ibid., P-349.
- ⁵³ Ibid., P-346.
- ⁵⁴ Ibid., P-346 and P-347.
- ⁵⁵ Ibid., P-346.
- ⁵⁶ Supplementary information provided by the Business and Fiscal Planning Branch (Performance Improvement Unit), Ministry of the Environment to Legislative Research and Information Services, e-mail dated December 2, 2005.
- ⁵⁷ Ontario, Legislative Assembly of Ontario, Standing Committee on Public Accounts, *Hansard: Official Report of Debates*, 38th Parliament, 1st Session (7 April 2005): P-358.
- ⁵⁸ Ibid., P-353.
- ⁵⁹ Ibid., P-357.
- ⁶⁰ Ibid.
- ⁶¹ Ibid.
- ⁶² Ibid.
- ⁶³ Ibid.
- ⁶⁴ Supplementary information sent to the Clerk of the Standing Committee on Public Accounts by the Deputy Minister, Ministry of the Environment, in a letter dated April 27, 2005.
- ⁶⁵ Ontario, Legislative Assembly of Ontario, Standing Committee on Public Accounts, *Hansard: Official Report of Debates*, 38th Parliament, 1st Session (7 April 2005): P-359.
- ⁶⁶ Ibid., P-347.
- ⁶⁷ Ibid., P-353.
- ⁶⁸ Ibid.
- ⁶⁹ Ibid.
- ⁷⁰ Ibid., P-347.
- ⁷¹ Ibid.
- ⁷² Ibid., P-348.
- ⁷³ Ibid., P-350 and P-350.
- ⁷⁴ Ibid., P-351.
- ⁷⁵ Ibid., P-350.
- ⁷⁶ Ibid., P-349 and P-350.
- ⁷⁷ Ibid., P-347.
- ⁷⁸ Ibid.
- ⁷⁹ Ibid.
- ⁸⁰ Ibid.
- ⁸¹ Ibid., P-361 and P-362.
- ⁸² Ibid., P-361.
- ⁸³ Ibid., P-347.
- ⁸⁴ Ibid.
- ⁸⁵ Supplementary information provided by the Business and Fiscal Planning Branch (Performance Improvement Unit), Ministry of the Environment to Legislative Research and Information Services, e-mail dated December 2, 2005.
- ⁸⁶ Ontario, Legislative Assembly of Ontario, Standing Committee on Public Accounts, *Hansard: Official Report of Debates*, 38th Parliament, 1st Session (7 April 2005): P-362.
- ⁸⁷ Ibid.
- ⁸⁸ Ibid.
- ⁸⁹ Ibid.
- ⁹⁰ Ibid.
- ⁹¹ Ibid.
- ⁹² Ibid.
- ⁹³ Ibid.
- ⁹⁴ Ibid.
- ⁹⁵ Ibid.

⁹⁶ Supplementary information sent to the Clerk of the Standing Committee on Public Accounts by the Deputy Minister , Ministry of the Environment, in a letter dated April 27, 2005.

⁹⁷ Supplementary information provided by the Business and Fiscal Planning Branch (Performance Improvement Unit), Ministry of the Environment to Legislative Research and Information Services, e-mail dated December 2, 2005.