

**PENNSYLVANIA CHAMBER OF BUSINESS & INDUSTRY
COMMENTS ON PROPOSED WATER RESOURCES PLANNING – WATER USE
REGISTRATION, MONITORING AND REPORTING REGULATIONS**

December 27, 2006

The Pennsylvania Chamber of Business and Industry, on behalf of its thousands of members statewide representing the spectrum of Pennsylvania industries, business and commercial enterprises, appreciates the opportunity to submit these comments to the Environmental Quality Board concerning the proposed Water Resources Planning water withdrawal and use registration, monitoring and reporting regulations (25 Pa. Code Chapters 109 and 110), as published at 36 Pa. Bulletin 7260 (December 2, 2006).

As the Department and many members of the Environmental Quality Board are aware, the Chamber (along with a coalition of many other interested organizations) was actively involved in the development of, and strongly supported, the passage of the Water Resources Planning Act (Act 220 of 2002). We believe that a cogent and comprehensive water resources planning process is essential for Pennsylvania's economic and environmental future. We recognize that an essential part of that process is the collection of reasonably reliable data regarding the nature, location and amount of significant water withdrawals and uses across the Commonwealth, in order to lay the groundwork for assessment of current and future needs. One element of that data collection effort involves the water use registration and reporting system envisioned in §3118 of Act 220; and during the process of drafting and negotiating the language in the bill that ultimately became Act 220, a good deal of thought was given to the scope and direction of that aspect of the program. It is with that perspective that we offer the following comments.

1. Registration and reporting by users without direct withdrawals

(a) *Comments on the Concept*

Section 110.201(3) of the proposed rules would require registration and reporting by not only those who make direct withdrawals of water from surface or ground water sources in amounts greater than 10,000 gpd, but also by any entity that is connected to a public water supply system who engages in a consumptive use (such as evaporative air conditioning) where the average consumptive amount is more than 100,000 gpd. This proposal represents a significant departure from the initial registration program, where those connected to public water systems were exempted.

The Chamber seriously questions both the need for imposing this requirement, and the effectiveness of such a requirement in terms of garnering the information sought. If one thinks for a moment about any of the major metropolitan area water systems (such as those serving southeastern Pennsylvania or the Pittsburgh area), this provision would affect, we believe, literally hundreds of enterprises and commercial buildings connected to the public systems. Virtually every high-rise building with air conditioning units would be required to register, but very few of those facilities have the monitoring devices to actually calculate their individual consumptive uses.

In terms of measuring what we are really concerned about for purposes of water resource planning and watershed budgeting – that is, the location of where water is withdrawn and the amount withdrawn, and where it is returned and the amount returned – the registration and reporting by individual users within a public system is not likely to add much in terms of either accuracy or completeness. The best data on water withdrawals and return flows will come from public water supply agencies and related sewage system operators. We suspect that the rate of actual compliance by customers of those public systems will be troublesome; and the data provided will be far less accurate than the information provided by the public system operators. As a result, the Department’s data base may face considerable inaccuracies, which is counterproductive to the purpose of this program.

If there is a concern regarding the projection of the amount of water withdrawn by public systems that is put to consumptive use, we believe there may be alternative (and better) methods to garner this information. For example, a water use survey could be targeted based on information supplied by the public water supply system operators as to significant customers, in order to gain data on such factors as the incidence of water cooled air conditioning units. Alternatively, survey requirements could be targeted at those systems where there are obviously high portions of industrial water use that may result in overall system consumptive use rates of greater than that “rule-of-thumb” 10% ratio.

(b) Wording of the Regulation

The wording of §110.201(3) is difficult to understand, and when read together with §§110.2 and 110.3 bound to lead to confusion and misunderstanding. This confusion is abetting, rather than aided, by the definition of “withdrawal use or use” in §110.1.

Sections 110.2 and 110.3 both reference a purpose and scope imposing obligations on a person whose “total withdrawal or withdrawal use from a point of withdrawal” exceeds a rate of 10,000 gpd in any 30-day period. Likewise, the beginning of §110.201(3) refers to a requirement imposed on a person whose “total withdrawal or withdrawal use from a point of withdrawal” exceeds certain rates. Department personnel argue that the term “withdrawal use” as defined in 27 Pa.C.S. §3102 includes both consumptive and non-consumptive use. However, reference to a “withdrawal or withdrawal use *from a point of withdrawal*” (emphasis added) would imply to the reader that the rule is talking about those who directly draw their water *from a point of withdrawal* – e.g., a well or a surface water intake. A person who does not own or operate a point of withdrawal, but who is only connected to a public water supply system, would probably read §§110.2, 110.3 and the beginning of §110.201(3) and conclude they were excluded from its coverage.

It is only via the “except” clause at the end of §110.201(3) that one obtains a contrary hint. However, that is expressed in the negative, stating that those persons who have a withdrawal or withdrawal use *from a point of withdrawal* do not need to register if water is supplied by a public water supply agency and the average consumptive use is less than 100,000 gpd.

Those in the regulated community should not need to analyze such negative syntax to figure out whether they are or are not required to register, monitor and report their water

withdrawals and use. If a policy decision is made to require some or all customers of a public water system who have consumptive uses greater than a particular value to register and report (*which the Chamber strongly questions*), then the requirement should be stated in a clear declaratory fashion – and that requirement should also be signaled in the purposes and general requirements sections (§§110.2 and 110.3).

2. Data Required for Registration

Section 110.203 is not clear with respect to the level of detail required in providing information on certain items, such as consumptive and non-consumptive use, and water returned. As noted by some Chamber members, if this means that each user must identify the location and amount of each consumptive and non-consumptive use, that would become incredibly burdensome – especially for complex industrial sites.

The wording of §110.203 also highlights the problem of bringing into the registration program those who are customers of public water systems. As currently worded, §110.203(2) requires each registrant to identify the source of the water, as well where it is returned to the water resources of the Commonwealth. Even a sophisticated public water supply system customer will not usually know the identity of all the sources used by that system to supply their particular location (and it's often a changing mix of sources).

Similarly, this would require that registering parties also identify their point of return flow. For those who do not have their own wastewater systems, but rather are connected to public sewers, this would ostensibly require each registered user to identify where the public sewer system discharges its treated wastewater and how much is disposed at that location. Requiring such information from users connected to public systems is redundant and burdensome, particularly given the fact that the same information is more readily available from the sewage system operators (who are already required to report location and flow information to DEP under their respective NPDES permits).

3. User-Specific Contents of Annual Reports

Section 110.305 is extremely vague in describing what information is required to be submitted as part of annual reports for various sectors. This section provides little or no guidance to a water user as to what information they need to compile and maintain. It would be extremely unfortunate if users found out what was expected only when DEP finally publishes “forms” for collection of this information.

For example:

- For a public water supply agency, what data do “connections and water transfers” encompass? Does a public system need to compile a list of every customer, or only provide numbers of total connections? Is there to be a breakdown of connection data by type of customers? If so, by what categories? What are “water transfers” – provision of water to another public system through an interconnection, or something else?

- What “employment” data must a manufacturing industry maintain and submit? Is it a general number of employees at a site, or some breakdown of employment during the year?
- What is “storage information”?

The bottom line is that the information required to be submitted really needs to be fleshed out, in an open dialogue with stakeholders from these various sectors, to assure that the data collection is both practical and meaningful. The applicable draft forms¹ need to be developed and shared with industry, with clear provision for public comment.

4. Monitoring and Measuring Requirements

(a) *Accuracy of Consumptive Use Estimates vs. Withdrawal Data*

It is unclear from the wording of Section 110.501 whether this section requires commercial and industrial users to measure or calculate **both** their withdrawals **and** their consumptive and non-consumptive uses via a continuous-recording device or flow meter or other method, accurate to within $\pm 5\%$ of actual flow; or whether this requirement is to be read as only requiring one or the other to be measured/estimated within this accuracy range.

Based on real world experience, the Chamber would suggest that a clear distinction should be made between monitoring and measurement of **withdrawals**, and the monitoring and measurement of **consumptive use** and **non-consumptive use**. The measurement or calculation of withdrawal volumes is usually a more direct and straightforward process, where data can be collected by meters or calculated by alternative methods (such as pump curves and runtimes). However, quantification of consumptive use presents a much greater challenge, particularly in industrial, power plant, and mineral extraction settings where there are multiple “loops” of water use, with complex inputs and outputs (most of which are not susceptible to metering or direct measurement).

The attached schematic of a typical quarry and mineral processing operation highlights the challenge. Multiple sources are tapped at various points in the site (including pumping from sumps in the quarry pit, and wells used for makeup water in the processing plants). Water drawn from the quarry is treated in open settling ponds, which also received stormwater runoff from the entire site. Water from the settling ponds is drawn for use in cement production and sand and aggregate sizing/washing operations. Much of that water is reclaimed and flows back to the settling ponds for treatment and reuse. Part of the water is retained in the sand and aggregate, which are stored in piles. A portion of the water in the sand and aggregate drains off, back to the settling ponds, while (depending on weather conditions) some portion will evaporate from the product piles. Eventually, moisture retained in the final product will leave the site as the product is shipped to consumers. In the real world of such a facility, there are literally scores, if not

¹ We note that certain forms were posted on the Department’s website in late 2005 and early 2006, but the rule preamble does not reference the forms or indicate whether these earlier forms or something else is contemplated.

hundreds, of pipelines and points of use, and many of the water uses or potential points of consumptive use are not directly measurable (*e.g.*, evaporation from storage and settling ponds). Moreover, given the complexity of the system, it would be impractical and exorbitantly expensive to meter all the points where water flows in order to obtain an accurate accounting of stormwater inflows, reclaimed water return flows, transfers between settling ponds, etc. – as might be used to obtain a high degree of precision in calculating consumptive use at various points of the system.

Similarly, a good number of industrial and manufacturing facilities have literally scores of buildings and processes which use and reuse water in a variety of manners. Moreover, many facilities have flows of stormwater that are directed to and treated via their wastewater treatment facilities (adding to discharge volumes), as well as have inputs of water from precipitation falling on wastewater treatment lagoons and basins. In these settings, the simplistic equation (Withdrawal Amount – Wastewater Discharge Amount = Consumptive Use) does not work, and it is impractical to calculate these flows to within $\pm 5\%$.

The same challenge is faced in a myriad of other industries, from paper to power plants. The paradigm of a simple calculation (*consumptive use = source withdrawal – return flow*) is simply not applicable to most modern industrial enterprises, where water is used and reused many times. Most of the consumptive use evaluations for large facilities are based on water balance calculations that involve approximated factors and engineering judgments, not meter-like precision. This data is the best that is practically available, and it should be more than sufficient for water planning purposes at this stage of the State Water Plan.

The ability to measure or calculate consumptive use within $\pm 5\%$ is more the exception than the rule. The proposal that DEP provide “exceptions” via §110.501(d) is really not a solution. If users are reasonably candid and diligent, the Department will be inundated with requests for exceptions. It would be preferable to recognize the distraction between consumptive use evaluations and withdrawal reporting, rather than create an elaborate system of applying for and obtaining exceptions.

(b) Recording Frequency

Proposed §110.502 would require that public water supply systems record both withdrawal amounts and consumptive uses on a daily basis, while most industries would be required to record both withdrawals and consumptive uses on a weekly basis. Once again, we believe that a distinction should be made between recordkeeping for withdrawals and recordkeeping for consumptive uses.

In general, the concept of recording water withdrawal information on a weekly basis for industries is probably acceptable. However, given the difficulty of calculating consumptive uses, requiring that these calculations be performed weekly is incredibly burdensome. At most, we would suggest that consumptive use estimates be on a monthly basis.

(c) Facility & System vs. Source Reporting

The example provided above underscores a second point, and that is that annual reporting for non-consumptive and consumptive use must be on a system or facility basis, not source-by-

source. The current DEP forms² demand that all information be submitted source-by-source (with forms for each well and each surface water intake), and likewise require users to report their consumptive uses on a source-based form.

The fact is that most facilities operate as integrated systems, not with particular production processes dedicated to using just one source. Hence, if a manufacturing facility has five wells and a surface water intake that together provide 500,000 gpd, and consumes through product incorporation and evaporative cooling a total of 100,000 gpd, how much of that consumptive use should be ascribed to each source? DEP's current data collection forms call for mythical allocations of consumptive use to particular sources, or alternatively invite double reporting of consumptive use values.

The Chamber strongly recommends that the Department shift from the current source-by-source reporting format to a facility/system report form, where all sources are identified and their withdrawals records, but the attendant facility/system consumptive uses are reported in the aggregate.

Conclusion

The Chamber appreciates the efforts undertaken by the Department and the Statewide Water Resources Committee to move forward the process of preparing the updated State Water Plan under Act 220. It is our hope that these comments will help to focus and refine the related water withdrawal registration, monitoring and reporting system. The key objective is and must remain to gather, in an efficient and practicable manner, the level of information reasonably required to obtain a decent picture of our current and projected water needs, while avoiding burdensome and impractical mandates. We believe that the proposed rules warrant some refinement in that regard, to achieve a proper balance between desires for scientific precision, and the practical concerns of compiling such information in the regulated community. We have provided some thoughts on some of those refinements, and stand ready to work with the Department and the Statewide Committee in addressing those issues.

² DEP Form # 3920-FM-WM0291 and 3920-FM-WM0289.

Conceptual Schematic of a Quarry, Aggregate and Cement Plant

