South Carolina Department of Health and Environmental Control

Trident Capacity Use Area Update

Bureau of Water
Groundwater Use and Reporting Act
Legislative Declaration of Policy

“The General Assembly declares that the general welfare and public interest require that the groundwater resources of the State be put to beneficial use to the fullest extent to which they are capable, subject to reasonable regulation, in order to conserve and protect these resources, prevent waste, and to provide and maintain conditions which are conducive to the development and use of water resources.”
In the State where excessive groundwater withdrawal presents potential adverse effects to the natural resources or poses a threat to public health, safety, or economic welfare or where conditions pose a significant threat to the long-term integrity of a groundwater source, including salt water intrusion, the board, after notice and public hearing, in accordance with the Administrative Procedures Act, shall designate a capacity use area.
After notice and public hearing, the department shall coordinate the affected governing bodies and groundwater withdrawers to develop a groundwater management plan to achieve goals and objectives stated in [Legislative Declaration of Policy].

In those areas where the affected governing bodies and withdrawers are unable to develop a plan, the department shall take action to develop the plan.
Once the board approves the groundwater management plan for a designated capacity use area, each withdrawer shall make application for a groundwater withdrawal permit. The department shall issue groundwater withdrawal permits in accordance with the approved plan.
Trident Capacity Use Area

Timeline

2004  Designation of Trident Capacity Area
2004-2006 Development of GWMP attempted
2017  Using the shell of the previous plan and with input from two stakeholder meetings the Trident Area GWMP was developed and Approved by the DHEC Board
2018  Trident Area Groundwater Evaluation was released
Groundwater Management Plan

Strategies

**Strategy #1:** Identify areas where a leveling and/or reduction in pumping is appropriate.

**Strategy #2:** Review of permit applications based on demonstrated reasonable use.

**Strategy #3:** Establish a comprehensive groundwater monitoring program.

**Strategy #4:** Establish a conservation educational plan for the general public & existing withdrawers.

**Strategy #5:** Regulation and Planning
Strategy #1: Identify areas where a leveling and/or reduction in pumping is appropriate.

Prior to each permit renewal cycle, SCDHEC will consider the best available information on the geologic and hydrogeologic characteristics of the aquifer(s) and groundwater withdrawals of the area to protect against or abate unreasonable, or potentially unreasonable, adverse effects on the aquifer(s) and water users of the Trident Area.
Trident Groundwater Evaluation

Stress on the McQueen Branch/Charleston aquifer in the Mt. Pleasant, South Carolina portion of the aquifer needs to be mitigated in the Trident Capacity Use Area. Reducing withdrawals in this aquifer may be necessary to allow recovery of groundwater-levels within the cone of depression.
Land Subsidence

Withdrawing groundwater may be a contributing factor in lowering of surface elevations. As the land sinks, this can lead to negative impacts such as a permanent reduction in the water storage capacity of aquifers, or damage to infrastructure.

Land subsidence in low-lying coastal communities, where rising oceans are also a threat, may experience increases in flooding and a relatively faster rate of sea-level rise because of increased groundwater withdrawals.
Strategy #2: Review of permit applications based on demonstrated reasonable use.

Proposed withdrawals will be evaluated considering reasonableness of use and need, aquifer(s) being utilized, potential adverse effects on adjacent groundwater withdrawers, previous reported water use, anticipated demand for the proposed activities, availability of alternate water sources and reported water use at facilities with similar activities. Applications for groundwater withdrawal will incorporate a “Water Use Plan” or a “Best Management Strategy” detailing actual or proposed water use activities and all conservation techniques for site specific
Strategy #3: Establish a comprehensive groundwater monitoring program.

SCDHEC will pursue partnerships with local entities, groundwater users and other agencies (both Federal and State) to facilitate the most effective use of resources in designing and maintaining a monitoring network for the Trident Area.
Strategy #4: Establish a conservation educational plan for the general public & existing withdrawers.

Water conservation has increasingly become a cornerstone to the development of water management strategies. An effective, viable water conservation program should incorporate the following:

• Provide public education and outreach programs;
• Determine and enhance water use efficiency;
• Determine water losses and establish corrective actions;
• Prepare for water shortages and provide appropriate responses.
Strategy #5: Regulation and Planning

As the results of the modeling effort and the updates to the State Water Plan become available, they will help inform potential regulatory and policy changes and will be incorporated into this Groundwater Management Plan.
Mount Pleasant Water Works

- Current Permit Limit: 3,953 MGY
- Applied for Limit: 3,953 MGY
- Draft Permit Limit: 1,679 MGY
MPWW GW Use Impact on CHN-14 WL


Series 1

USE
Scenario 4
Minimize future drawdown at CHN-14

• Mount Pleasant Withdrawals Limited to 4.99 MGD (1.821 MGY)
  • Sill show declines at CHN-14
Incremental Supply Increase 2023 through Buildout Provided from CWS based on Maximum Day Capacity Needed

MPW Projected Average Day Water Demands and Supply Capacity

Figure 3-1
Figure 3-1. MPW Projected Average Day Water Demands and Supply Capacity

- Historical Average Day Demand
- Predicted Average Day Demand
- Historical Average Day Supply Capacity
- Proposed Average Day Supply Capacity

Key Points:
- **Total ADD Supply (RO + CWS)**
- **RO WTP Supply**
- **CWS Supply**
- **RO WTP 3 (Deep Well 5 & Membranes, 0.65 mgd)**
- **RO WTP 3 Additional Treatment Train (0.6 mgd)**
- **RO WTP 4 Additional Treatment Train (0.7 mgd)**
- **Incremental CWS Purchases or Other Sources (2.5 mgd, needed for Max Day Demands)**
Maguro Enterprises (Google)

- Current Permit Limit: 182.5 MGY
- Applied for Limit: 549 MGY
- Draft Permit Limit: 549 MGY
Maguro Application Notes

Agrees to Fund establishment of Additional Monitoring Wells in Berkley County (Strategy 3)

Based on Water Supply alternative analysis; potable water is top candidate for future expansions but is not available at this time.
The applicant should make all efforts to reduce the regular demand on groundwater; reserve the groundwater for peak demand times or as a backup water supply; and, develop other alternative water sources. The Department will evaluate all available data at the time of a requested renewal in order to conserve and protect these resources, prevent waste, and to provide and maintain conditions which are conducive to the development and use of water resources.