

Exelon Nuclear  
Peach Bottom Atomic Power Station  
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Delta, PA 17314-9032

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May 18, 2006

Jaala Draper  
Pennsylvania Department of Environmental Protection  
909 Elmerton Avenue  
Harrisburg, PA 17110-8200

Subject: Peach Bottom Atomic Power Station, PWS 7670905  
Temporary Permit to Operate a Modified Treatment System

Dear Ms. Draper,

This letter is to request a Temporary Drinking Water Permit for Peach Bottom Atomic Power Station, PWS 7670905. Peach Bottom needs to remove the Domestic Water Polishing filters from service to perform maintenance to comply with SDWA Turbidity regulations. Maintenance work will include redirecting flow to the individual polishing effluent turbidimeters so that these meters have constant flow, thus eliminating flow perturbations. Also, adjustments will be made so that process flow will be reduced to the individual polishing filters to be more in alignment with the design of the polishing filters. To temporarily replace the Domestic Water Polishing Filters we are proposing to use a reverse osmosis unit to act as a final filter. The requested duration of this temporary permit is for two months from the date of approval.

The RO influent has been treated the same as the Polishing Filter influent. The RO effluent water quality is typically close to the values in the attachment. The RO effluent will be passed through a calcium carbonate bed to raise the pH to near neutral. The effluent of the calcium carbonate bed will be chlorinated as it enters the Domestic Water Storage Tank.

The Calcium Carbonate and Sodium Hypochlorite utilized in this process are both NSF approved. The piping utilized to transport the water will be NSF approved flexible fire hose.

Attached you will find a schematic of the proposed temporary treatment system, the typical water quality of the RO effluent, and the certification sheet for Calcium Carbonate. This configuration is the same as the temporary permit granted to Peach Bottom on November 9, 2004, permit number 6704516 MA.

If you need additional information, the points of contact are Francis Jordan {717} 456-3608, Art Arcilla {717} 456-4185 or Daniel Jordan {717} 456-4551.

Sincerely,

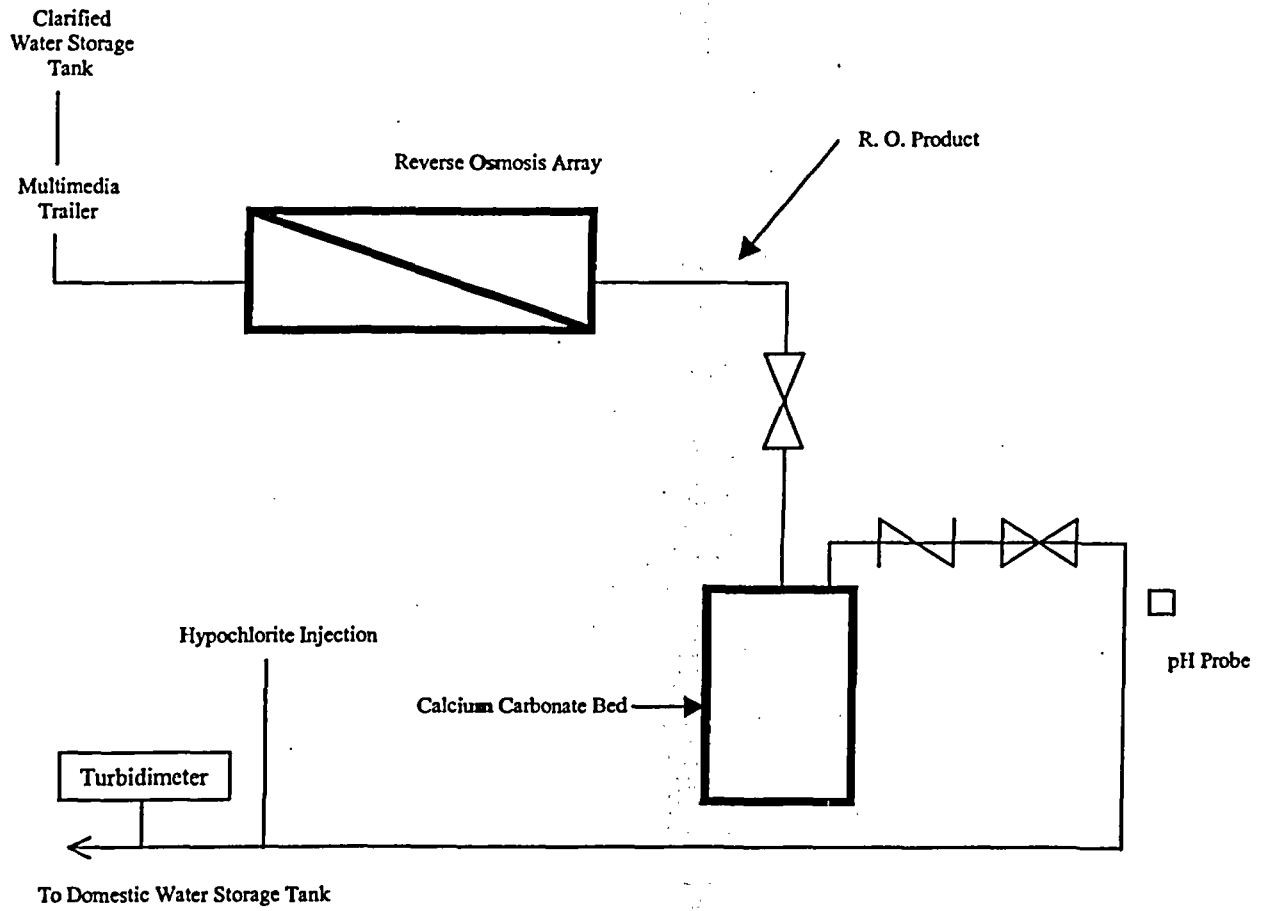


Joseph P. Grimes, Plant Manager  
Peach Bottom Atomic Power Station  
ccn 06-14038

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# FLOW DIAGRAM



## pH Correction Media

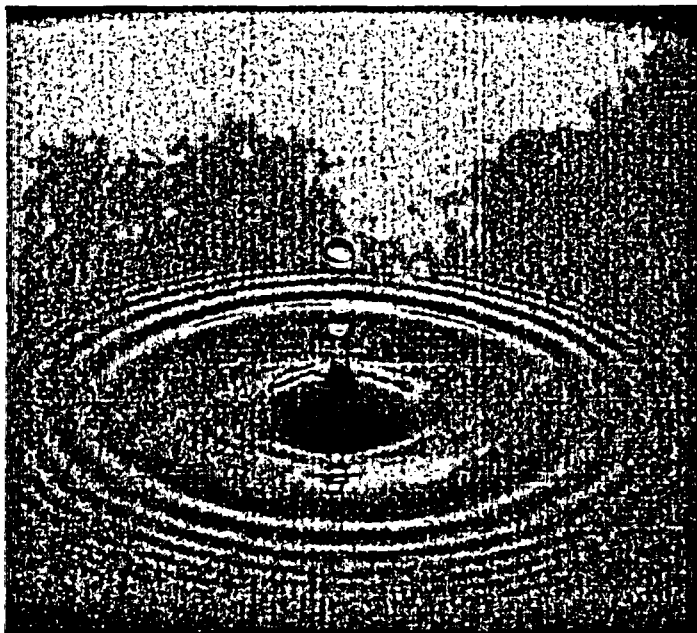
Calcite is a crushed and screened white marble media which can inexpensively be used to neutralize acidic or low pH waters to a neutral, less corrosive effluent.

# Calcite

Calcite is a naturally occurring calcium carbonate media. One of the advantages of Calcite is its self limiting property. When properly applied, it corrects pH only enough to reach a non-corrosive equilibrium. It does not overcorrect under normal conditions. Upon contact with Calcite, acidic waters slowly dissolve the calcium carbonate to raise the pH which reduces the potential leaching of copper, lead and other metals found in typical plumbing systems. Periodic backwashing will prevent packing, reclassify the bed and maintain high service rates. Depending on pH, water chemistry and service flow, the Calcite bed will have to be periodically replenished as the Calcite is depleted.

As the Calcite's calcium carbonate neutralizes the water, it will increase hardness and a softener may become necessary after the neutralizing filter.

Calcite can be effectively combined with Clark Consox to combine the high flow neutralization properties of Consox, along with the slower reacting low flow properties of Calcite, increasing the ability to correct low pH.



### ADVANTAGES

- Naturally occurring material
- Low uniformity coefficient for maximum contact for controlled pH correction
- Slower reacting for controlled pH correction
- Inexpensive

### PHYSICAL PROPERTIES

- Color: Near white
- Bulk Density: 90 lbs./cu. ft.
- Mesh Size: 16 x 40
- Specific Gravity: 2.7
- Effective Size: 0.4 mm
- Uniformity Coefficient: 1.5
- Hardness: 3.0 (Mohs scale)
- Composition:  $\text{CaCO}_3$ , 95% min.  
 $\text{MgCO}_3$ , 3.0% max.

### CONDITIONS FOR OPERATION

- A gravel support bed is recommended
- Water pH range: 5.0-7.0
- Bed depth: 24-30 in.
- Freeboard: 50% of bed depth (min.)
- Backwash rate: 8-12 gpm/sq. ft.
- Backwash Bed Expansion: 35% of bed depth
- Service flow rate: 3-6 gpm/sq. ft. but may be modified to adapt to local conditions

## Typical Water Quality of RO Effluent

Capacity: 100gpm to 125gpm

Pressure: 40psig to 50psig at delivery point

### Typical Chemistry Analysis:

Conductivity – 2.72 us/cm

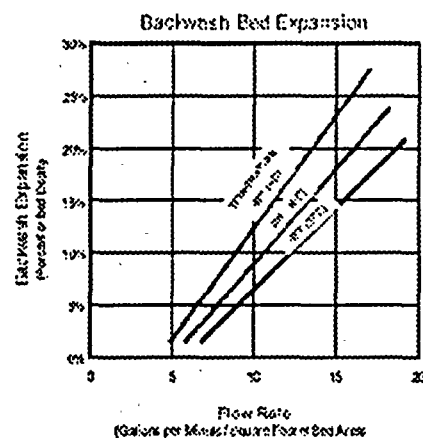
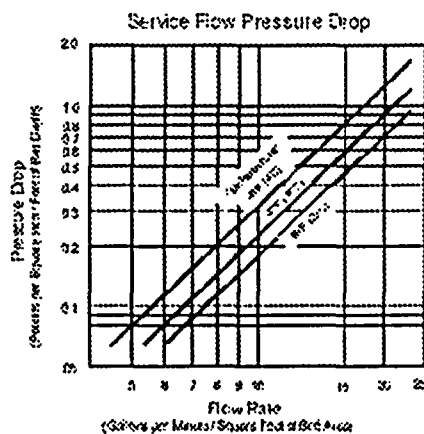
Total Fe - <0.001 mg/l

Hardness – 0.147 mg/l

Reactive SiO<sub>2</sub> – 0.0426 mg/l

TOC – 0.0817 mg/l

PH – 5.66



Complies with ANSI/NSF Standard 61

Caliform Carbonate 0272A0030-50-RS-200 is manufactured by Ingersoll Rand Inc.  
Maximum usage is 650 mg/L

#### ORDER INFORMATION

Part No.	Description	CU. FT./Bag	Wt./CU. FT.	Bags/Pallet	Weight/Pallet	Pallet Dimensions
A3921-01	Calicle	55.510 Bsc.	90 B.S.	30	2550 lbs.	48" x 36" x 48"

\*Weight per cubic foot is approximate.

## Clack Corporation

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The filter media listed in this brochure do not remove or kill bacteria. Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

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