

Ion Exchange Backwash Permit Procedures for Plumbers and Property Owners

1) What Is Ion Exchange Water Treatment?

- a) The ion exchange water softener is one of the most common tools of water treatment.
- b) Its function is to remove scale-forming calcium and magnesium ions from hard water.

2) The Purpose of Issuing an Ion Exchanger Permit

- a) This permit process is to protect the County's sewer system from potentially hazardous discharge content.
- b) It is also used to determine if the County's sewer system has the capability of handling the amount of the discharge and the rate of flow of the discharge.
- c) The calculations associated with this permit are used to determine the EDUs to be billed. An EDU (Equivalent Dwelling Unit) is the standard unit of measurement that we use for usage. It equates to a single-family home.

3) Steps Involved

- a) The initial step is for the applicant to request a copy of the Ion Exchange Permit along with Attachment A (questionnaire) & Attachment B (analysis requirements).
- b) Any administrative type questions that the applicant may have should be directed to the Utility Permits Division at 302-855-7719. Any technical questions should be directed to the Director of Environmental Services at 302-855-7730.
- c) The applicant should return the completed questionnaire and the analysis results to the Utility Permits Division, Sussex County Administrative Building, 3rd Floor, 2 The Circle, Georgetown, DE.
- d) The Utility Permits Division will notify the applicant if the request is approved or denied.
- e) If the application is approved, the Utility Permits Division will compute the fees due using the maximum average daily flow shown in item 2 of Attachment A and the 250 gallons per day equaling 1 EDU.
- f) The Utility Permits Division will advise the customer of the usage fees due. These fees could include the System Connection Charges computed above, the initial \$250.00 Ion Exchange Permit fee. A \$100.00 Connection Permit fee would also be due if the location where the Ion Exchange system is being used is not already connected to a Sussex County Sanitary Sewer System.
- g) This permit must be renewed annually. Sussex County Utility Permits will send a notification to the customer.

Attachment A / Ion Exchange Backwash Permit
Discharge Rate Information

Name of Applicant: _____ Telephone Number: _____

Community or Development Name: _____

1. Is this an existing or proposed discharge?

2. What is your maximum average daily discharge rate based on a 30-day period?

3. What is your maximum discharge rate?

4. What is your maximum backwash discharge frequency (i.e., times per day or week)?

5. What is your maximum discharge quantity per backwash cycle?

6. What is the maximum amount of time the backwash runs per cycle?

Notes:

1. This information will be used to determine if you meet the County's criteria for volume and flow rate. It will also be used to compute your EDU assessment.
2. For new facilities, information must be provided within 90 days.

This application or renewal has met the criteria for discharge rate, quantity, and content for issuance of an Ion Exchange Backwash Permit.

Director of Environmental Services - _____ Date - _____

Attachment B / Ion Exchange Backwash Permit
Wastewater Discharge Analysis Requirements

Analytical Requirements

All pollutant analyses shall be performed in accordance with the techniques prescribed in 40 CFR Part 136, unless otherwise specified in an applicable categorical pretreatment standard. If CFR Part 136 does not contain sampling or analytical techniques for the pollutant in question, analyses must be performed in accordance with procedures approved by the EPA.

Sampling Requirements

All sampling techniques shall be performed in accordance with the techniques prescribed in 40 CFR Part 136.

Grab samples must be used for PH, cyanide, total phenols, oil and grease, and volatile organic compounds. For all other pollutants, 24-hour composite samples must be obtained through flow proportional composite sampling techniques, unless time-proportional composite sampling or grab sampling is authorized by the County Engineer. The samples must be representative of the discharge.

Using protocols (including appropriate preservation) specified in 40 CFR Part 136 and appropriate EPA guidance, multiple grab samples collected during the sampling period may be composited prior to the analysis. For cyanide and total phenols, the samples may be composited in the laboratory.

The County Engineer may require additional information from the discharger beyond that required on the permit application form.

Due to the possibility of pollutants which will pass through the treatment system, after reviewing the results of the analyses of the waste discharge, consideration will be given as to the final disposal source.

Items to Be Sampled For

Arsenic as As	Phenol
Cadmium as Cd	BOD
Chromium (hexavalent) as Cr	COD
Cyanide as CN	FOG
Lead as Pb	Total Solids
Copper as Cu	Total Dissolved Solids
Mercury as Hg	Total Fixed Solids
Nickel as Ni	Total Suspended Solids Total Hardness
Zinc as Zn	Chloride
Iron	Sodium
pH	

Please attach the results of the sample to this permit application and return to the County's Utility Permits Division, 3rd floor, 2 The Circle, Georgetown, DE 19947.