



STATE OF DELAWARE  
DEPARTMENT OF NATURAL RESOURCES &  
ENVIRONMENTAL CONTROL  
DIVISION OF WATER  
89 KINGS HIGHWAY  
DOVER, DELAWARE 19901

**First Class Mail, and  
CERTIFIED MAIL:**

March 18, 2016

**NOTICE OF VIOLATION  
W-16-GWD-01**

Sussex County Council  
Attention: Heather Sheridan  
Director of Environmental Services  
33711 South Coastal Lane  
Frankford, DE 19945

**Re: State Permit # LTS 5005-95-1  
Runoff from Spray Irrigation Field  
Wolfe Neck Regional Spray Irrigation Facility**

Dear Ms. Sheridan:

This Notice of Violation (NOV) is being issued to you for violation of 7 Del. C. § 6003(a)(2), and State Permit # LTS 5005-95-12 (Permit) as documented below.

**Violation**

On March 3, 2016 runoff was observed egressing the southern portion of Spray Irrigation Field 2 (Field 2) at the Wolfe Neck Regional Wastewater Treatment and Spray Irrigation Facility (Facility) by the Operator in Direct Responsible Charge (Operator) of the Facility and entering a marsh south of Field 2. Spray irrigation of treated wastewater onto Field 2 was halted on March 3, and has not occurred since. Runoff continued to egress Field 2 on March 4, 2016 and had ceased by March 6, 2016. The runoff was caused by a series of factors including a high water table, partially saturated soils, a drop in topography, spray irrigation of treated wastewater, and ruts and channels in the buffer of Field 2. Ruts and channels caused by field operations in the buffers around Field 2 allowed the runoff to egress Field 2, mix with storm water, and discharge to the marsh.

*Delaware's good nature depends on you!*

## **Background**

The Wolfe Neck wastewater treatment and spray irrigation facility (Facility) has been permitted to treat and spray irrigate treated wastewater onto 319 acres of agricultural land since October 1995. The Facility is permitted to treat up to 4.0 million gallons per day during summer months and 2.23 million gallons per day during winter months. Treatment consists of a bar screen, three treatment lagoons, one storage lagoon, a chlorine disinfection system and an irrigation pump station that discharges the treated wastewater to a 319 acre, five center pivot irrigation system. Since coming on line in 1995 the wastewater treatment system has consistently performed in accordance with design standards. However, in 2009-2010, due to abnormally high levels of precipitation and snowfall the Facility was forced to spray irrigated treated wastewater onto saturated soils in an effort to protect the integrity of the storage lagoon. Based on that event the Ground Water Discharges Section (GWDS) required the Facility to develop a corrective action plan which was approved and accepted by the GWDS in March 2011.

On Tuesday March 1, 2016 the Operator in Direct Responsible Charge (Operator) of the Facility measured depth-to-water at the monitoring well in Field 2, and all other monitoring wells at the Facility. Depth-to-water measurements in Field 2, and all other irrigation fields, exceeded two feet as required in the Permit, so the Operator began irrigating treated wastewater onto Field 2. Field 2 received effluent on March 1, 2 and 3, 2016. During those three days the Operator applied 1.04 inches of treated wastewater onto Field 2, which is below the allowed hydraulic loading rate of 2.5 inches per week cited in the Permit. On March 4, 2016 the Operator notified GWDS staff that runoff had egressed the southern portion of Field 2. No runoff was observed during a follow up inspection performed by GWDS staff on March 9, 2016.

On March 4, 2016, after all spray irrigation activities had ceased, the Operator observed runoff egressing the southern corner of Field 2 towards the marsh south of Field 2. Samples of the runoff were collected and analyzed by County staff. On March 5, 2016 the Operator observed runoff continuing to egress Field 2 towards the marsh. The Operator collected a sample of the runoff for analysis. Copies of analyses of the runoff for both days are included herein as Exhibit 1. No runoff was observed on March 6, or thereafter.

## **Statutory/Permit Authority**

Sussex County Council is in violation of:

1. 7 Del C. §6003(a)(2) which states  
*“No person shall, without first having obtained a permit from the Secretary, undertake any activity in a way which may cause or contribute to discharge of any pollutant into any surface or ground water.”*

2. State Permit # LTS 5005-95-12, Part III.A.1.b which states

*“The spray fields shall be maintained in such a manner as to prevent wastewater pooling and/or discharge of wastewater to any surface waters. Should pooled areas become evident, no spraying shall be conducted in those areas until saturated conditions no longer exist.”*

3. State Permit # LTS 5005-95-12, Part III.A.1.d which states  
*“The spray irrigation fields shall be managed to assure at a minimum that: Erosion controls are employed to prevent wastewater runoff from the spray irrigation fields. The permittee must notify the Department immediately if any wastewater runoff occurs.”*

### **REQUIRED ACTION**

1. **Immediately upon receipt of this NOV**, the permittee shall adjust the Center pivot controls and irrigation end gun to avoid irrigation near the southern portion of Field 2 where runoff was observed until the Ground Water Discharges Section provides written authorization after determining sufficient erosion and runoff control practices are implemented in the buffer area to eliminate any further discharges to the marsh.
2. **Immediately upon receipt of this NOV**, the permittee shall initiate repairs to the buffer area to eliminate ruts, channels and erosion spots that may channel runoff from Field 2 towards the marsh. The permittee shall submit weekly reports to the Ground Water Discharges Section listing any repairs to Field 2 or the buffers adjacent to Field 2. Weekly reports shall be submitted each Wednesday, detailing activities performed during the previous week. The weekly reports shall be submitted to: Ground Water Discharges Section, 89 Kings Highway, Dover, DE 19904.
3. **By June 1, 2016**, the permittee shall submit an Erosion and Runoff Control Plan to address long term management of the spray irrigation fields and buffers for the Department's review and approval.

The Ground Water Discharges Section is attempting to gain voluntary compliance in accordance with 7 Del. C. § 6019. Failure to comply with the above Required Action items will result in enforcement action in accordance with 7 Del. C. §6005.

If you have any questions or concerns, please feel free to contact me at (302) 739-9948.

Sincerely,



Ronald E. Graeber  
Environmental Program Manager I  
Ground Water Discharges Section

I Attachment: Exhibit I

cc: Dave Schepens, Program Manager II  
Marlene Baust, P. E.; Engineer IV

# EXHIBIT 1

Runoff from Field # 2 sampled 3/4/2016

analysed in Wolfe Neck Facility's laboratory by John Johnson, Laboratory Technician II

testing performed on March 5, 2016

sample	ammonia, mg/l	nitrite, mg/l	nitrate, mg/l	organic N, mg/l	TKN, mg/l	TN, mg/l
#1	2.52	0.094	2.49	3.25	5.77	8.35
#2	1.96	0.093	2.61	2.91	4.87	6.92
#3	1.71	0.096	2.69	2.55	4.26	6.07



51 Clark St. Harrington, DE 19952  
PH: 302.398.4313 FX: 302.398.4312  
ANALYTICAL SERVICES: NPDES, RCRA, GROUND WATER MONITORING

### ANALYTICAL RESULTS

Wolfe Neck Regional WW Treatment Facility  
36160 Wolfe Neck Road  
Rehoboth Beach, DE 19971  
Attention: Gordon Serman

Lab ID: 202439 Matrix: Waste Water Sample Start: 3/5/16 9:30  
Description: Site: R/g 2 Run off Sample End:  
Type: Grab Date Received: 3/5/16 11:11

Parameters	Units	Results	Analyzed	By	Method
<b>Nutrient</b>					
Ammonia as N	mg/L	3.99	3/7/16 13:19	CC	SM4500-NH3-G
Nitrate+Nitrite as N	mg/L	2.26	3/7/16 13:28	CC	SM4500-NO3-H
Organic Nitrogen as N	mg/L	1.60	3/7/16 18:11	ERB	Calc
Total Kjeldahl Nitrogen	mg/L	5.59	3/7/16 15:57	CC	SM4500-Norg-C

ND = Not Detected  
\* = Above Specified Limit  
\*\* = Above Client Limit

Printed: Mar 7 2016 6:12PM