SUSQUEHANNA RIVER BASIN COMMISSION
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# Surface Water Withdrawal Application
# Codorus Creek
# & Consumptive Use Application
# Project Summary

**SRBC Pending No.:** 2019-077

This summary is only a portion of the application materials and is meant to provide general information about the proposed project.

## Project Sponsor

| | | | |
|---|---|---|---|
| **Company Name:** | Pixelle Specialty Solutions LLC | | |
| **Address:** | 228 South Main Street | | |
| | | **State:** | PA |
| **City:** | Spring Grove | **Zip Code:** | 17362 |
| **Contact Person:** | Bradley Martin | **Title:** | EHS Manager |
| **Telephone:** | 717-225-4711 | **Fax:** | 717-225-7394 |
| **Mobile:** | | **Email:** | Bradley.Martin@pixelle.com |

## Requested Surface Water Withdrawal Quantity

| | |
|---|---|
| **Projected Design Year:** | 2034 |
| **Existing Withdrawal Quantity:** | 16.69(mgd) |
| **Requested Withdrawal Quantity:** | 19.8(mgd) |
| **Maximum Instantaneous Withdrawal Rate:** | 16667(gpm) |
| **Estimated Daily Operation:** | 24(hours/day) |

## Requested Consumptive Use Quantity - Yes

| | |
|---|---|
| **Existing Consumptive Use:** | 3.61(mgd) |
| **Requested Consumptive Use:** | 3.65(gpm) |
| **Pre-Compact/Grandfathered CU:** | 0 |

## Facility Location

**Street Address:** 228 South Main Street
**State:** PA
**County:** York
**Municipality:** Spring Grove Borough
**Zip Code:** 17362

## Surface Water Withdrawal Source Information

**Source Name:** Codorus Creek
**Source Type:** stream
**Subbasin:** Lower Susquehanna

# 2.1 FACILITY DESCRIPTION

**Facility Description**

Pixelle Specialty Solutions LLC (Pixelle) owns and operates an integrated kraft pulp and paper mill at 228 South Main Street, Spring Grove, Pennsylvania. The facility is located near the boundaries of three contiguous municipalities, with portions of the facility located in Spring Grove Borough, Jackson Township, and North Codorus Township, which are all within York County. The facility had been previously owned and operated by the P. H. Glatfelter Company from 1864 until October 31, 2018. The mill uses the kraft pulping process to produce pulp that is processed into a variety of fine engineered papers. These papers are used in end products such as books, postage stamps, envelopes, labels, wallpaper, food packaging, inkjet paper, casting paper, and release liners.

The Spring Grove mill operates both softwood (pine) and hardwood fiberlines. Softwood and hardwood chips are chemically digested, then the pulp formed is washed and directed to the oxygen delignification process. Next, the pine and hardwood pulps are bleached and sent to the paper machines. The paper machines form the pulp into a continuous web, which is then de-watered, pressed, dried, and wound into large rolls of finished products. Pixelle's products are converted into final products for the consumer market by others, not at the Spring Grove mill.

The primary components of the Spring Grove paper mill include steam generating units, pulp digesters and washers, a recovery boiler, a bleach plant, and paper machines. Black liquor, which is extracted from the pulp during the pulping process, is concentrated and burned in the recovery boiler. The recovery boiler and the steam generation units produce the steam that is required for pulp digesting, oxygen delignification, bleaching, pulp washing, and paper drying. Steam is also used to drive turbines to generate electricity for mill operations.

**Water Use Overview**

Water is withdrawn from the Mill Pond, which is along the course of the Codorus Creek. Figure 1.0 presents a schematic of the points of withdraw from the Mill Pond and summarizes the average withdrawals, flows, and docketed consumptive uses. There are a total of four intakes and two discharge outfalls.

Intakes

Pixelle's four surface water withdrawal intakes include the Powerhouse Intake, the New Filter Plant Intake, the Old Filter Plant Intake, and the Kessler Pond Intake. The approximate maximum withdrawals from these intakes are 16 million gallons per day (mgd), 18 mgd, intermittently 6 mgd, and intermittently 0.75 mgd, respectively. Of the four intakes, only the Powerhouse Intake has an SRBC docket (Docket No. 20170609). The P.H. Glatfelter Company (Glatfelter) registered for grandfathering of the remaining three intakes in June 2018, but that application became abandoned when the facility was sold to Pixelle. All surface water intakes were in use prior to SRBC's surface water withdrawal grandfathering date of November 11, 1995.

The two primary intakes, the Powerhouse Intake and the New Filter Plant Intake, are both located on the Mill Pond, which is a manmade pool feature located along the course of Codorus Creek formed when the Mill Dam was constructed in 1863. Process water required for the various pulp and paper production processes and make-up water for the Pulpmill cooling tower is withdrawn from the New Filter Plant Intake. The Old Filter Plant Intake, also located on the Mill Pond, is used intermittently as a back-up to the New Filter Plant Intake when the New Filter Plant Intake is off-line for maintenance or potentially when operating at partial capacity. Water withdrawn from the Powerhouse Intake is used for non-contact cooling tower water, boiler water make-up and Co-Generation Cooling Tower make-up.

The Kessler Pond Intake is located on Kessler Pond, which is a manmade pool feature along the final segment of an unnamed tributary (UNT) to Codorus Creek (also known as Powder Mill Run), located at the confluence with Mill Pond along Codorus Creek. The Kessler Pond Intake is only used intermittently and withdraws water at lower rates than the two primary intakes on Mill Pond. The powerhouse has withdrawn water from the Kessler Pond Intake to be processed for boiler water make-up. Kessler Pond is only used intermittently, on days when the conductivity concentration in the Mill Pond is high enough to make it unsuitable for boiler water make-up. It should be noted that because the Kessler Pond Intake is located adjacent to and immediately upstream of Mill Pond, any potential downstream flow impacts from the Kessler Pond Intake withdrawal would be primarily at the downstream Mill Pond/Codorus Creek, and not on the smaller unnamed tributary upstream of Kessler Pond.

Additionally, there are four fire pumping stations at the mill. They are located at the New Filter Plant Intake, the Old Filter Plant, the Powerhouse Intake, and at Outfall 002. These pumps are available to provide water in the event of a fire emergency.

During a recent internal audit, Pixelle identified a groundwater withdrawal at the remote secondary waste treatment facility that is used for polymer make-down. The existence of the wells was known, but the usage had not been quantified. Pixelle will work with the Commission to address this issue.

Consumptive Use

There are three SRBC-approved consumptive uses at the Spring Grove mill. A consumptive use rate of 0.900 mgd is approved for the Co-Gen Cooling Tower under SRBC Docket No. 20170609. A consumptive use rate of 0.67 mgd is approved for the Pulp Mill Cooling Tower and Co-Gen Cooling Tower under SRBC Docket No. 19930510. A consumptive use rate of 0.46 mgd is approved for the treated wastewater cooling basins under SRBC Docket No. 20100608. This application addresses the remainder of current and reasonably anticipated future consumptive uses that are not covered by existing dockets including Recovery Boiler Operations, Calciner Operations, Waste Treatment Plant Operations, Paper Machine Operations, and other Miscellaneous Operations.

Discharges

The majority of water withdrawn by Pixelle is returned to Codorus Creek, the same stream it is withdrawn from, via two outfalls. These include NPDES Outfall 001 located 1.4 miles downstream of the intakes, and NPDES Outfall 002 located slightly upstream of the intakes in Mill Pond. A total maximum consumptive use limit of 2.03 mgd is approved by SRBC under its current three dockets. An approximate effluent of <14 mgd of non-contact cooling water is discharged back into the upstream end of Mill Pond via Outfall 002. Water that is no longer suitable for reuse is sent to the wastewater treatment plant where physical, chemical and biological processes are used to remove solids, oxygen demand and nutrients from the water before it is discharged to the Codorus Creek at Outfall 001. Prior to discharge at Outfall 001, the temperature of the treated wastewater is further reduced by cooling basins. An average of 13.7 mgd of treated wastewater is discharged back into the stream at Outfall 001.

These two discharges provide significant return flows and replenish water availability to Codorus Creek. This, in conjunction with the proximity of the discharges to the withdrawal locations, greatly minimizes Pixelle's net withdrawal of flow from Codorus Creek.

Water Resources, Dam Releases and Existing Passby Flow Requirements

Pixelle controls the releases from two large upstream dammed reservoirs, including the 1,275-acre Lake Marburg located 4.3 miles southwest of the intakes, and the 137-acre Lake PaHaGaCo located 1.5 miles northwest of the intakes. Both lakes were formed by dams constructed by Glatfelter, and water from both lakes flows downstream to the intakes. Lake Marburg was created through a cooperative venture between the Commonwealth of Pennsylvania and the P.H. Glatfelter Company. The "Articles of Agreement" between the Department of Waters of the Commonwealth of Pennsylvania and the P.H. Glatfelter Company were signed on May 2, 1966. This agreement defines the ownership of the Lake Marburg property and facilities, the responsibility for their maintenance and operation, and the requirements for water releases. This State agreement commits the State to allow the release of 32.4 mgd of water from Lake Marburg, with the condition that 2.4 mgd of flow passby the intake. It also provides Pixelle permission to lower the lake level by as much as 23 feet from full pool, providing access to 8 billion gallons of storage (from full pool conditions).

Pixelle's National Pollutant Discharge Elimination System (NPDES) water discharge permit requires 7-day average passby flows of 13.7 mgd during May through October and flows of 10.2 mgd during November through April, as measured at the USGS gage on Codorus Creek at Spring Grove, PA (Station No. 01574500). Additionally, current SRBC dockets require a passby flow of 4.9 mgd on the stream, and 5.1 mgd at the USGS gage. Pixelle meets these NPDES and SRBC stream flow requirements by controlling and adjusting the release from Lake Marburg's storage as needed. Pixelle's control of the upstream lake and dam releases, and their ability to adjust the releases, are significant additional factors that reduce the potential impacts to stream flows from the net loss from Pixelle's withdrawals.

## Water Management

### Flood Control

The Spring Grove mill was inundated during the Hurricane Agnes flood in 1972, when the Codorus Creek crested at 98 inches above the Mill Dam, and during the Hurricane Eloise flood in 1975, when the Codorus Creek crested at 72 inches above the Mill Dam. Pixelle has a Flood Management Plan to minimize the risks that arise from flooding. During Tropical Storm Lee (2011) and Hurricane Sandy (2012), Lake Marburg levels were managed, and the Flood Management Plan was implemented. Pixelle monitors the Codorus Creek water level and communicates critical creek levels to local emergency response personnel and US Army Corps of Engineers.

### Drought Control

During periods of drought, the Spring Grove mill implements the mill's drought plan. Water use is closely monitored, and water conservation strategies are re-evaluated in an effort to improve water conservation techniques. Water levels in Lakes Marburg and PaHaGaCo are always carefully monitored throughout the year.

### Trout Fishery

The releases from Lake Marburg flow through outlets located below the thermocline of the lake, providing cold water supplementation to the Codorus Creek. These cold-water releases have enabled the establishment of a self-sustaining brown trout fishery downstream from Lake Marburg. This fishery provides additional recreational opportunities and has led to the formation of a local chapter of Trout Unlimited. Maintaining the appropriate water temperatures in the segment of Codorus Creek classified as a cold-water fishery by the DEP is vital to the fishery.

### Nutrient Control

The Spring Grove mill's wastewater treatment plant utilizes the activated sludge process to remove nutrients from the effluent. Water quality data indicate that the wastewater treatment

plant reduces nitrogen loading and maintains phosphorus loading to the Codorus Creek relative to the mill's intake water.

Effluent Water Quality

Effluent produced by the digesting, pulping, bleaching and paper-making processes at the Spring Grove mill is treated prior to its discharge to the Codorus Creek. Both the EPA and DEP have established water quality standards for the Pulp and Paper Industry and the Spring Grove mill's effluent is subject to a comprehensive NDPES water discharge permit. Of all the kraft pulp and paper mills in the United States, the Pixelle Spring Grove mill is an industry leader in terms of mill effluent treatment effectiveness.