a sample impracticable (drought, extended frozen conditions, etc.).

(5) EPA realizes that if a facility is inactive and unstaffed it may be difficult to collect storm water discharge samples when a qualifying event occurs. Today's final permit has been revised so that inactive, unstaffed facilities can exercise a waiver of the requirement to conduct quarterly visual examination.

B. Storm Water Discharges Associated With Industrial Activity From Paper and Allied Products Manufacturing Facilities

1. Discharges Covered Under This Section

On November 16, 1990 (55 FR 47990), EPA promulgated the regulatory definition of "storm water discharges associated with industrial activity.³ This definition included point source discharges of storm water from 11 categories of facilities, including paper and allied product manufacturing facilities that are commonly identified by Standard Industrial Classification (SIC) Major Group 26. Today's permit establishes special conditions for the storm water discharges associated with industrial activities at paper and allied product manufacturing facilities. Based on an evaluation of part 1 and part 2 group application data, these facilities were determined to perform similar operations, use similar raw materials, and employ similar material handling and storage practices. In light of the available information, it was determined that the storm water discharge characteristics would be similar for facilities covered by this section.

When an industrial facility, described by the above coverage provisions of this section, has industrial activities being conducted onsite that meet the description(s) of industrial activities in another section(s), that industrial facility shall comply with any and all applicable monitoring and pollution prevention plan requirements of the other section(s) in addition to all applicable requirements in this section. The monitoring and pollution prevention plan terms and conditions of this multi-sector permit are additive for industrial activities being conducted at the same industrial facility (co-located industrial activities). The operator of the facility shall determine which other monitoring and pollution prevention plan section(s) of this permit (if any) are applicable to the facility.

2. Industry Profile

SIC Major Group 26, the production of pulp, paper, and paperboard, is a highly diversified industry group which manufactures a variety of products. Products include newsprint, printing and writing papers, bleached and unbleached packaging paper, glassine, tissue papers, vegetable parchment, greaseproof papers, bleached and unbleached paperboard, special industrial papers, and pulp. Pulp, paper, and paperboard is produced from wood and nonwood products such as jute, hemp, rags, cotton linters, bagasse, and esparto. Secondary fibers, or wastepaper, is also used to produce paper and paperboard.

Four standard manufacturing processes are involved in the production of pulp, paper, and paperboard: (1) Raw material preparation, (2) pulping, (3) bleaching, and (4) papermaking.

a. Raw Material Preparation. Wood is the most widely used raw material for manufacturing pulp and paper products. Wood must be prepared for pulping by log washing, bark removal, and chipping/sawing. These activities are usually conducted outdoors and produce large amounts of wood chips, sawdust, and other wood debris. If exposed to storm water, these activities may contribute TSS and BOD₅ to the storm water discharge.

b. Pulping. Pulping involves reducing a cellulosic raw material into a form that may be further processed to produce paper or paperboard, or into a form that may be chemically converted. Two pulping methods are used to reduce the raw material: mechanical pulping and chemical pulping.

Mechanical pulping, also known as groundwood pulping, uses two processes to produce pulp, stone groundwood and refiner groundwood. Stone groundwood uses a grindstone to tear fiber from the side of short logs. Refiner groundwood passes wood chips through a disc refiner. In both processes, wood may be softened with chemicals or heat to reduce the amount of energy required for grinding. Mechanical pulp is very suitable for use in newspapers, catalogs, tissues, and one-time publications.

Chemical pulping, using cooking chemicals under controlled conditions, produces a variety of pulps for multipurposes. This process generally produces high quality paper products. Three types of chemical pulping are used: alkaline, sulfite, and semichemical.

Alkaline pulping, more commonly known as the kraft process, produces a very strong pulp and is adaptable to almost all wood species. The pulp is formed by boiling wood chips in an alkaline solution usually containing sodium sulfate. Alkaline pulping also provides for the successful recovery of chemicals used in the process. This pulping technique is the most highly used pulping process worldwide.

Sulfite pulps are generally prepared from softwoods and produce various types of paper including tissue paper and writing paper. Wood chips are boiled with calcium-based chemicals, magnesium-based chemicals, or ammonia-based chemicals. Calcium was the original sulfite liquor base, however, the spent liquor from this base was difficult and expensive to recover. Many sulfite mills have now been converted to the kraft process or have been shut down because of the problems of chemical recovery and the reduced availability of softwoods.

Semichemical pulping involves the cooking of wood chips from hardwoods with a neutral or slightly alkaline sodium sulfite solution. Both sodium and ammonia-based chemicals are used in this process. Pulps produced from semichemical pulping are used in the manufacture of corrugated paperboard. Semichemical pulping mills practice chemical recovery from the waste liquor by balancing the pH of the waste liquor. Spent liquor is then burned in a furnace.

Some facilities use secondary fibers to produce the paper products. Secondary fibers are wastepapers and may be used with little or no preparation depending on their condition. The wastepaper may be blended directly with the virgin pulps or may have to be screened and filtered to remove dirt before being added to the pulp.

Some secondary fibers must be deinked before use. In order to reclaim a useful pulp, all noncellulosic materials, such as ink, fillers, and coatings, must be removed. This process uses detergents and solvents to remove these materials. The detergents and solvents may be stored in an area exposed to storm water.

c. Bleaching. After pulping, the pulp is brown or deeply colored. The color results from the presence of lignins and resins or residue from spent cooking liquor. The pulp must be bleached to produce a light colored or white product.

A brightness scale ranging up to 100 (the brightest) is used to determine the degree of bleaching needed. For example, newspaper and food containers do not need a high degree of brightness so semibleached pulps are used. For white paper products, fullybleached pulps are used. A bleaching sequence is followed in which specific chemicals are sequentially added. The following sequence may be used in bleaching: chlorination and washing; alkaline extraction and washing;