## 1.0 Purpose

The purpose of this procedure is to ensure Giles Chemical is in compliance with North Carolina Department of Environment and Natural Resources permit NCG500000.

## 2.0 Scope

This facility's permit requires flow, temperature, and pH monitoring to be done semi-annually.

## 3.0 Responsibility

Laboratory Associate is responsible for performing the semi-annual creek check.

## 4.0 Safety Considerations

Steel toed shoes and safety glasses are required in the Manufacturing area.

Safety is a condition of employment. Employees are not authorized to work in an unsafe manner and are prohibited from harming the environment of the facility or community.

## 5.0 Materials/Equipment

- 8 Clean, plastic sample bottles with lids
- pH meter
- Hand actuated siphon pump
- thermometer

## 6.0 Procedure

All data collected is to be recorded on the *Monitoring of Creek Water Log (L12-PR-100-F037).*

### I. Flow of Effluent

1. The total flow rate of the effluent water into the creek will be estimated by the process engineer.
2. Once the flow rate has been estimated, the rate shall be recorded on *Monitoring of Creek Water Log* (*L12-PR-100-F037).*

### II. Collection of samples at creek

1. Obtain 2 sample bottles with lids and thermometer from lab.
2. At the upper bridge (upper bridge is located between Giles main plant and MgO house), collect sample directly from the creek.

3. Immediately check the temperature, with a thermometer. Water temperature should not exceed 29°C.
4. Record the temperature and the location (i.e. upper bridge) on the sample bottle.
5. Fill one sample bottle and place lid on tightly.
6. Go downstream (steps and path have been built outside side door to right of store room in production area) and collect second sample.
7. Immediately check temperature, with a thermometer. The temperature difference between the upper bridge sample and the downstream sample should be no greater than ± 2.8 °C.
8. Record the temperature and the location (i.e. downstream) on the sample container.
9. Transport sample bottles to the QA lab.
10. Using the pH meter, check the pH for both samples. The pH should be no less than 6.0 and no greater than 9.0 for either sample.
11. Record data on *Monitoring of Creek Water Log* (*L12-PR-100-F037).*

**III. Collection of samples at Hot Wells.**

The Hot Wells are located close to the north side of the manufacturing facility between the #4 crystallizer and the brine pumps. These wells are numbered 1, 2, and 3. The wells are responsible for the effluent noncontact cooling water exiting the building upstream of the primary metal bridge.

1. Label sample bottles as “Hot well #1”, “Hot Well #2”, “Hot Well #3”
2. Once at the Hot Well, utilize the siphon pump to transfer water from the well to the labeled sample bottle corresponding with the number located on the side of the well.
3. Immediately check temperature with thermometer and record on *Monitoring of Creek Water Log* (*L12-PR-100-F037).*
4. Bring the samples to the QA lab and test the pH of the sample bottles using a pH probe.
5. Record the data on *Monitoring of Creek Water Log* (*L12-PR-100-F037).*

**IV. Collection of sample at collection points downstream of primary metal bridge.**

The two discharge points located downstream from the bridge are discharged through a small diameter galvanized pipe and a large diameter PVC pipe. These points can be accessed by exiting the building through the outside door of the QA lab. Once outside go down the stairwell and travel upstream by the creek to the collection points.

1. With two sample bottles labeled "Galv. Pipe" and "PVC Pipe" approach discharge location.
2. Once at the appropriate location reach out with the corresponding bottle and collect sample at a point between the pipe and the creek.
3. Immediately check temperature with thermometer and record on *Monitoring of Creek Water Log* (*L12-PR-100-F037).*
4. Bring the samples to the QA lab and test the pH of the sample bottles using a pH probe.
5. Record the data on *Monitoring of Creek Water Log* (*L12-PR-100-F037).*

**V. Collecting water from the "Chiller"**

The chiller is used for cooling during the summer months and is located in the shed across from the manufacturing facility, beside the primary metal bridge. The discharge point is on the same side of the creek, under the bridge. There is a collection point located on the machine.

1. With a sample bottle labeled as "Chiller" go to the chiller shed.
2. With the bottle positioned under the valve, open the valve and collect water sample.
3. Immediately check temperature with thermometer and record on *Monitoring of Creek Water Log* (*L12-PR-100-F037).*
4. Bring the samples to the QA lab and test the pH of the sample bottles using a pH probe.
5. Record data on *Monitoring of Creek Water Log* (*L12-PR-100-F037).*

## 7.0 Reference Documents

*Monitoring of Creek Water Log* (*L12-PR-100-F037)*

## 8.0 Change Information

Added additional sampling points.