1.0 Purpose

The purpose of this procedure is to define the steps in testing liquid loads.

2.0 Scope

This procedure applies to all finished liquid loads.

3.0 Responsibility

Lab Personnel are responsible for liquid load testing.

4.0 Safety Considerations

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

- 500mL Beaker
- Magnetic Stirring Bar – 1” length
- Microwave
- De-ionized Water
- pH Meter System – VWR SB-20
- Magnetic Stirring Plate
- Weighing Balance – B440 Satorius
- 25mL Flask
- Aqua Tester Comparator
- 2 Aqua Tester Comparator Tubes with glass caps
- Calculator

6.0 Procedure

All liquid loads are to be tested for specific gravity, pH, and color.

Liquid Loads must be heated, using the microwave, to the temperature which it was loaded. Load temperature is provided by the Material Handler.

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A. pH - Temperature

Procedure:

1. Place liquid sample in 500ml beaker with stir bar.
2. Heat sample to temperature (loading temperature) with microwave (designated for lab samples)
3. Remove the protective cap from the probe tip
4. Rinse the tip with de-ionized water and wipe with Chem-wipe or paper towel.
5. Place the probe in the sample and turn on the pH meter.
6. Turn on the magnetic stirring plate and stir the sample to ensure an accurate reading.
7. Record the pH value and temperature when pH meter reads ready.
8. Record pH and temperature on *Final Product Liquid – Daily Quality Control Report (L12-FM-100-006).*
9. Remove probe, rinse with de-ionized water, dry the probe and replace the protective cap.

- **The instrument can be turned on and off with out losing its calibration. The meter should be calibrated daily and anytime the meter shows an obviously erroneous reading.**

B. Specific Gravity-

Procedure:

1. A dry 25 ml volumetric flask is placed on the weighing balance and tarred to zero.
2. 25 ml of subject sample is added to the volumetric flask and the weight recorded.
3. Specific gravity is determined using the following formula

$$\frac{\text{Weight of sample (g)}}{\text{Volume of sample (mL)}} = \text{Specific Gravity (g / mL)}$$

4. % MgSO4 is determined by using the Percent MgSO4 chart.(Chart is located in the cabinet drawer below the balance).
5. Record result on *Final Product Liquid – Daily Quality Control Report (L12-FM-100-006).*

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C. Color Test

Procedure:

1. Fill one of the tubes in the aqua tester comparator to the mark with sample.
2. Place the glass cap piece on the top of the tube.
3. Place the tube in the right hand side of the comparator tube holder.
4. Fill the other tube to the mark with de-ionized water.
5. Place the glass cap piece on the top of the tube.
6. Place the tube in the left hand side of the comparator tube holder.
7. Turn color dial until both tubes look the same color in the comparator.
8. Record result on liquid *Final Product Liquid – Daily Quality Control Report (L12-FM-100-006).*

7.0 Reference Documents

Final Product Liquid – Daily Quality Control Report (L12-FM-100-006)

8.0 Change Information

Updated using *SOP Template Instructions (Q12-PR-100-004)* and *Document Numbering (Q12-PR-100-003)*

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