

1. Procedure summary

This procedure describes how to collect carboy sample to test for pH.

1.1. Related Procedures

pH Probe Calibration

LC-01-003-013

1.2. Procedure impacts and concerns

Safety	Operators of this SOP must have taken the LCTS safety course prior to executing this SOP. Gloves and safety glasses are required to perform this SOP.
Quality	Maintaining proper pH ensures optimal culture health.
Delivery	NA
Environmental	NA
Cost	NA
Compliance	Compliance with OSHA's Hazardous Waste Operations and Response, and Hazardous Communication Standard in addition to the Sapphire Energy, Inc. Chemical Hygiene Plan is required. See 29 CFR 1910.120 and 1200. An authorized users list, MSDSs and label information will be available for easy reference in a binder in the administration building.

1.3. Responsibilities and owners

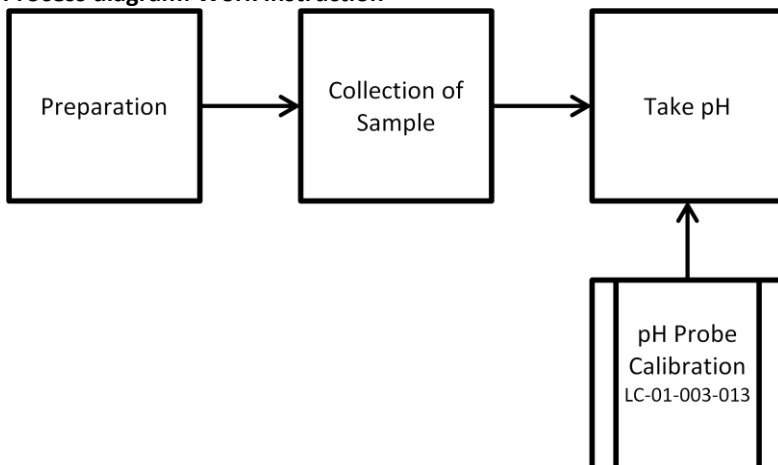
Document Owner	Manage content and distribution	Bruce Miles
Process Owner	Responsible for content and process validation	Alex Diffley
Site Manager	Responsible for implementation and conformance	Bryn Davis

2. Process

2.1. Process description

This process describes the collection and testing of PH in carboys.

2.2. Process diagram: Work Instruction



2.3. Process steps

2.3.1. Preparation.

2.3.1.1. Collect the following items 30ml syringe, 50ml falcon tube, PH probe,

beaker, tube rack, squeeze bottle of DI water.

2.3.2. Collection of sample

2.3.2.1. Remove autoclave tape, and aluminum foil from double check valve on lid of the carboy.

2.3.2.2. Take 30ml syringe out of packaging and screw on wide end of the double check valve that has threads

2.3.2.3. Make sure that the sample tube is in the culture then take sample of 20-30ml

2.3.2.4. Take a 50ml falcon tube to collect the sample make sure to label the 50ml tube with the carboy the sample is taken from.

2.3.2.5. Place 50ml falcon tube on the opposite side of the double check valve that the 30ml syringe is on.

2.3.2.6. Push the plunger on the 30ml syringe to collect from carboy into the 50ml falcon tube.

2.3.3. Taking PH reading from sample taken from carboy

2.3.3.1. Take Ph probe out of stock solution rinse with squeeze bottle of DI water into beaker.

2.3.3.2. Calibrate probe using the pH Probe Calibration SOP.

Turn ph probe on by pushing the on/off button then place Ph probe into 50ml falcon tube

2.3.3.3. Take ph reading from ph probe wait for ph probe reading to stabilize. Record then adjust co2 accordingly to strain of algae in carboy.

2.3.3.4. Remove ph probe from 50ml falcon tube rinse with DI water in squeeze bottle.

2.3.3.5. Place clean ph probe back into cap with ph stock solution.

2.3.3.6. Dispose of sample of 50ml falcon tube into beaker of bleach water

3. Required documents

3.1. Input documents

NA

3.2. Output documents

NA

4. Document control

4.1. Revision history

R0 – Initial Release – Bruce Miles

04-16-2012

R1 – Megan Allen

05-09-2012

4.2. Document approval

Robert McBride

05-09-2012

4.3. Document reviewers

Bruce Miles, Megan Allen, Alex Diffley

05-09-2012

5. Risk analysis

