1. Procedure summary

Sample preparation for analytical analysis of harvest samples by centrifugation using 50mL conical tubes.

1 Related Procedures

1 Procedure impacts and concerns

Safety	Gloves should be worn at all times while performing this procedure.
Quality	Each sample requires a certain volume. May vary.
Delivery	Each week of a harvest.
Environmental	Local policies and procedures should be followed as determined by the site leadership.
Cost	<Cost impacts>
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).

1 Responsibilities and owners

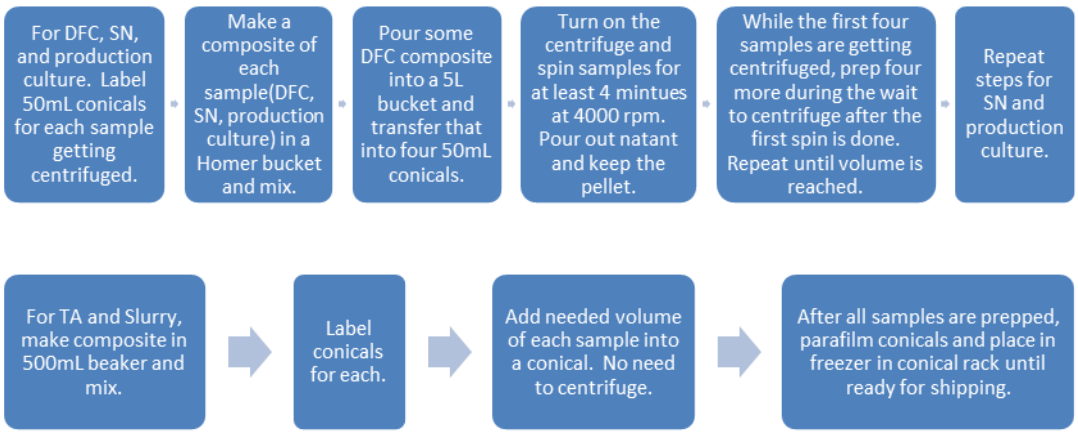
Document Owner	Manage content and distribution	Kari Mikkelson
Process Owner	Responsible for content and process validation	Rebecca White
Site Manager	Responsible for implementation and conformance	Rebecca White

2. Process

2 Process description

Centrifuging enough volume from harvest samples to ship for analytical analysis. Each sample preparation will consist of a composite.

2 Process diagram: Work Instruction



Equipment and supplies

-50mL conicals
-50mL conical rack
-Sharpie pen
-Centrifuge with 50mL holders
-Homer bucket
-5L bucket
-500 mL beaker
-Parafilm
-Freezer
-Serological pipette/spatula for mixing culture
-Waste bucket

2 Process steps

1. Label 50mL conicals: DFC, SN, production culture, TA, Slurry.
2. Make a composite of each in a Homer bucket: DFC, SN, and production culture.
3. Pour a composite into a 5L bucket and transfer culture into four 50mL conicals.
4. Place 50mL conicals into centrifuge and spin for at least 4 minutes at 4000 rpm.
5. While waiting for the centrifuge to finish, prep four more of the same sample to place in centrifuge right away after first spin is done.
6. When centrifuge is done, pour our natent in waste bucket and keep pellet.
7. Place the four other conicals that were prepped during the wait into the centrifuge and spin down.
8. When volume of pellet is almost reached, use spatula to scoop out pellets from the other conicals and transfer them into one main conical unless shipping to two sites, two conicals.
9. Prep composite of TA and Slurry into a 500mL beaker
10. Repeat with SN and production culture until volume of sample pellet is reached.
11. Place each composite into a labeled 50mL conical. No need to centrifuge TA and Slurry.
12. When preparation of all samples are complete, parafilm conicals and place into freezer until ready for shipping.

3. Required documents

3 Input documents

<Input document and storage instructions>	<Input document number>

3 Output documents

<Output document and storage instructions>	<Output document number>

4. Document control

4 Revision history

R0 – Initial Release – Cheng Fang	12/2013
R1 – <Editor name>	<Date>

4 Document approval

<Name> <Approval date>

4. **Document reviewers**

<Name>	<Last reviewed date>
<Name>	<Last reviewed date>

5. **Risk analysis**

<Risk name>	<Mitigation plan>	<Owner>	<RPN>