

1. Procedure summary

A composite sample must be made of each sample set taken during a harvest run. Composites are used to track the number of metric tons harvested at a given locations throughout the harvest process. Data compiled from composite directly relates to harvest productivity.

1.1. Related Procedures**1.2. Procedure impacts and concerns**

Safety	Gloves and safety glasses should be worn at all times while performing this procedure.
Quality	Composites are made with each harvest sample set. QAQC needs to quality check sample submission form against samples turned in by Operation before compiling composites. Samples must be placed in the fridge to stop algae growth.
Delivery	Composites are to be made when all samples have been collected from a given 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).

1.3. 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**2.1. Process description**

A composite sample must be made for each harvest sample set taken throughout a harvest run. A sample submission sheet needs to be submitted to QAQC when samples are brought to Lab by Operations for processing. If samples match sample submission sheet begin processing samples. Process one sample set at a time. Two types of composites can be made a large composite in 5 gallon "Homer" bucket or a smaller composite in a container of your choice.

2.2. Process diagram:

NA

Equipment and Supplies

- 50mL conical tubes
- 500mL beakers
- Graduated cylinder

-spoon
-parafilm
-analytical scale

2.3. Process steps

- 2.3.1 Arrange each sample set in chronological order and group according to sample name. For example all DFP samples together and so forth.
- 2.3.2 Check samples against Samples submission sheet turned in by Operations.
 - 2.3.2.1 If samples are not identical to sample submission sheet report by e-mail to QAQC supervisor and Operations supervisor immediately. Do not process samples.
 - 2.3.2.2 If samples match samples submission sheet proceed in processing.
- 2.3.3 Identify which type of composite is needed. A Large composite in 5 gal. "Homer" bucket or small composite. See QAQC supervisor if you are unclear on what type of composite is required.
- 2.3.4 If large composite is need Follow steps in section 2.3.4.
 - 2.3.4.1 Begin with specific sample set for instance start with DFP samples.
 - 2.3.4.2 Samples should be in chronological order and grouped according to sample name.
 - 2.3.4.3 Inspect all samples and identify sample with least amount of volume in give sample set. You will begin composite with this sample.
 - 2.3.4.4 Invert sample several times. Then pour all of sample in graduated cylinder leaving at least 100mL in original sample container.
 - 2.3.4.5 Note the volume in graduated cylinder. For example graduated cylinder was filled to 800mL with sample. This is very important, because you need to take the same volume amount from each of the additional samples in sample set.
 - 2.3.4.6 After volume of sample has been noted pour sample in 5 gal. "Homer" bucket. Label Homer bucket appropriately.
 - 2.3.4.7 Continue to process rest of samples in sample set. Ensure that same volume from 2.3.4.4 of every sample is taken precisely and distributed into same "Homer" bucket.
 - 2.3.4.8 After all samples have been processed in given sample set put lid on "Homer" bucket and store in Deli.
- 2.3.5 Compiling small composite. Follow instruction listed in section 2.3.5 if small composite is required for a given sample set.
 - 2.3.5.1 Begin with specific sample set, for instance start with DFP samples.
 - 2.3.5.2 Samples should be in chronological order and

- grouped according to sample name.
- 2.3.5.3 Invert first sample several times.
- 2.3.5.4 Pour sample into 50mL conical tube than pour into 500mL beaker. Make sure to label beaker appropriately.
- 2.3.5.5 Repeat step 2.3.5.3-2.3.5.4 for all samples in a given sample set.
- 2.3.5.6 If samples cannot be poured into 50mL conical tube follow steps below.
- 2.3.5.6.1 Weight out the sample by scooping a volume out of the sample bottle with a spoon. Weigh sample taken out of original sample on a weigh dish on an analytical scale, i.e. Slurry (5g) and place into beaker.
- 2.3.5.6.1 Repeat above step for rest of sample set. Ensure that same weight is taken from every sample in sample set.
- 2.3.5. Once all samples have been in dispensed into 500mL beaker cover beaker with parafilm and store in Deli.

3. Required documents

3.1. Input documents

Harvest Sample Sheet

3.2. Output documents

Dry Weight-Valve
 Harvest Dry Weights.

4. Document control

4.1. Revision history

R0 – Initial Release – Cheng Fang	11/2013
R1 – Miguel Montoya	03/2015

4.2. Document approval

<Name>

<Approval date>

4.3. Document reviewers

<Name>

<Last reviewed date>

<Name>

<Last reviewed date>

5. Risk analysis

<Risk name>

<Mitigation plan>

<Owner>

<RPN>