# Project assessment – prepare samples

**Assessment event 3 of 3**

## Criteria

### Unit code, name and release number

MSL953003 - Receive and prepare samples for testing (1)

### Qualification/Course code, name and release number

MSL40118 - Certificate IV in Laboratory Techniques (1)

MSL30118 - Certificate III in Laboratory Skills (1)

\*\*Amend the qualification box before distributing to the student. The information here should only contain the qualification the student is enrolled in\*\*

## Student details

### Student number

### Student name

## Assessment Declaration

* This assessment is my original work and no part of it has been copied from any other source except where due acknowledgement is made.
* No part of this assessment has been written for me by any other person except where such collaboration has been authorised by the assessor concerned.
* I understand that plagiarism is the presentation of the work, idea or creation of another person as though it is my own. Plagiarism occurs when the origin of the material used is not appropriately cited. No part of this assessment is plagiarised.

### Student signature and Date

Version: 1.0

Date created: 18/07/2019

Date modified: 12/02/2020

For queries, please contact:

Innovative Manufacturing, Robotics and Science SkillsPoint

Hamilton Campus

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This assessment can be found in the: [Learning Bank](https://share.tafensw.edu.au/share/access/searching.do?doc=%3Cxml%2F%3E&in=P7ac4831b-430a-4b8d-8b56-f7b32ed5b9cf&q=&type=standard&sort=rank&dr=AFTER)

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## Assessment instructions

Table 1 Assessment instructions

| Assessment details | Instructions |
| --- | --- |
| **Assessment overview** | The objective of this assessment is to assess your knowledge and performance as would be required to receive and prepare samples for testing. |
| **Assessment Event number** | 3 of 3 |
| **Instructions for this assessment** | This is a project based assessment and will be assessing you on your knowledge and performance of the unit.  This assessment is in 6 parts:   1. Receive samples for testing 2. Water sample preparation 3. Food sample preparation 4. Pathology sample preparation 5. Assessment Checklist 6. Assessment Feedback |
| **Submission instructions** | On completion of this assessment, you are required to upload it or hand it to your assessor for marking.  Ensure you have written your name at the bottom of each page of this assessment.  It is important that you keep a copy of all electronic and hardcopy assessments submitted to TAFE and complete the assessment declaration when submitting the assessment. |
| **What do I need to do to achieve a satisfactory result?** | To achieve a satisfactory result for this assessment all questions must be answered correctly.  Follow the specific task instructions below and complete all sections correctly and in full to achieve a satisfactory result. |
| **What do I need to provide?** | Pens, appropriate clothing and PPE for laboratory work including: enclosed shoes, long sleeves and pants and long hair tied back |
| **What the assessor will provide?** | This assessment task and all related documentation  A laboratory suitable for this assessment task |
| **Due date and time allowed** | 3 hours |
| **Assessment feedback, review or appeals** | In accordance with the TAFE NSW policy *Manage Assessment Appeals,* all students have the right to appeal an assessment decision in relation to how the assessment was conducted and the outcome of the assessment. Appeals must be lodged within **14 working days** of the formal notification of the result of the assessment.  If you would like to request a review of your results or if you have any concerns about your results, contact your Teacher or Head Teacher. If they are unavailable, contact the Student Administration Officer.  Contact your Head Teacher for the assessment appeals procedures at your college/campus. |

## Specific task instructions

The instructions and the criteria in the tasks and activities below will be used by the assessor to determine if you have satisfactorily completed this assessment event. Use these instructions as a guide to ensure you demonstrate the required knowledge.

Specific task instructions are listed under each Part.

## Part 1: Receive samples for testing

To complete this part of the assessment, you will be required to receive three different sample types and enter them into the LIMS spreadsheet.

Using the information below and the criteria listed on the assessment checklist you are required to complete the task below.

Once completed you will need to submit this assessment to your assessor for marking.

**Your task**

You have received a set of three samples that require some form of pre-treatment prior to testing. Each of the three samples are to be entered into the LIMS, labelled, preserved and sub-sampled.

***To complete this task, you will be provided:***

* 2 separate chain of custody forms
* 1 pathology request form
* 3 separate sample types – water, food and pathology
* Access to the Excel file *F100: Laboratory Information Management System*
* Access to the laboratory computer/s
* Access to the printer

***Step 1: WHS***

1. Ensure you are wearing appropriate PPE for this task

***Step 2: Preparation***

1. Read all documentation thoroughly
2. Make sure the food sample match the food chain of custody form
3. Make sure the water sample match the water chain of custody form
4. Make sure the pathology sample match the pathology request form
5. Sign and date the chain of custody / pathology forms

***Step 3: Log samples***

1. Open the Excel file *F100: Laboratory Information Management System* and follow the instructions on the following sheet: *1. Log samples*. This is the only sheet you are required to use for this assessment task

*Remember to make adjustments to the due date for any urgent samples to ensure they are processed within an acceptable timeframe*

1. Print out the sheet: *1. Log samples* and write your name, sign and date it

***Step 4: Housekeeping***

1. Place the water sample and pathology samples back into the fridge
2. Keep the food sample out for Part 2
3. Wipe down your workstation so that it is clean and tidy, including cleaning up any splashes and spills before commencing Part 2

**Physical evidence required:**

1. **Chain of custody / Pathology request forms**
   1. Forms signed and dated
2. ***F100: Laboratory information management system*:**
   1. Sheet *1. Log samples* completed and printed
   2. Student’s name, signature and date completed
3. **Samples:**
   1. Water and pathology samples have been refrigerated
4. **Housekeeping:**
   1. Bench has been wiped down
   2. Rubbish has been placed into the waste bin, recycling, or hazardous waste containers, as required

## Part 2: Food sample preparation

To complete this part of the assessment, you will be required to perform a pre-testing task on your food sample from Part 1.

Using the information below and the criteria listed on the assessment checklist you are required to complete the task below.

Once completed you will need to submit this assessment to your assessor for marking.

**Your task:**

To collect your food sample and matching chain of custody from Part 1 and prepare it for testing.

***To complete this task, you will be provided:***

* Food sample and chain of custody from Part 1
* Standard operating procedure *M133: Determination of calcium in dry foods*
* Blank labels
* Access to fridge
* Sample jars or bags
* Access to digital scales

***Step 1: Sub-sampling***

* + - 1. Follow the workplace procedure below to sub-sample this sample for all tests required
      2. Place the sub-sample for pH in the fridge
      3. Place the sub-samples for moisture and ash at the moisture and ash stations in the laboratory
      4. Keep the sub-sample for calcium with you for the next step

**WORKPLACE PROCEDURES – SUB-SAMPLING SOLIDS**

1. Collect the following items:
   1. Four 250mL jars
   2. Food sample
   3. Blank labels
2. Write the sample information on each label:
   1. Date
   2. Student name
   3. Job ID
   4. Sample ID (followed by -1, -2, -3… for each sub-sample)
   5. Sample name
   6. Test required
   7. Sample mass
3. Stick the labels on the jars
4. Collect the food sample and separate it into four equal masses (+/- 0.1 gram), using the 4-decimal place digital scales in your laboratory
5. Weigh the sample and divide the total by 4. This is the mass you want in each bag
6. Unscrew the first jar and place on the scale. Tare the scale and pour in the sample until you reach the desired mass (+/- 0.1 gram). Write the mass on the container and in the mass register, Table 2, below
7. Repeat step 6 for the remaining sub-samples

**Table 2: Sample masses**

Table 2 sample masses

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Original sample mass: |  |  | Original sample mass / 4 = | |  |
|  |  |  | | |  |
| **Sample ID:** |  |  | |  |  |
| **Sub-sample mass:** |  |  | |  |  |

***Step 2: Chemical separation of sample***

1. Open *M133: Determination of calcium in dry foods* and read through section 7. You are now preparing a sample for testing via chemical separation
2. Collect the materials and equipment you need for the task
3. Follow *M133: Determination of calcium in dry foods* section 7 and complete the task

***Step 3: Housekeeping***

1. Wipe down your workstation so that it is clean and tidy before commencing Part 3
2. Collect the water sample for Part 3

**Physical evidence required:**

1. **Labels and sub-samples:**
   1. A correctly written label applied to each sub-sample
2. **Sub-samples:**
   1. pH sub-sample in fridge
   2. Moisture and ash sub-samples at the ash station in the laboratory
   3. Calcium sub-sample
3. **Housekeeping:**
   1. Bench has been wiped down and clean up any splashes and spills
   2. Rubbish has been placed into the waste bin, recycling, or hazardous waste containers, as required

## Part 3: Water sample preparation

To complete this part of the assessment, you will be required to perform a pre-testing task on your water sample from Part 1.

Using the information below and the criteria listed on the assessment checklist you are required to complete the task below.

Once completed you will need to submit this assessment to your assessor for marking.

**Your task**

You will need to prepare the sample for sub-sampling, preservation and transport.

***To complete this task, you will be provided:***

* The water sample and chain of custody from part 1
* Blank labels
* Blank chain of custody
* 3 x 100mL plastic bottles
* Measuring cylinder
* Esky
* Ice bricks

***Step 1: WHS***

1. Make sure you are wearing appropriate PPE for this task

***Step 2: Procedure***

* + - 1. Follow the workplace procedure below to sub-sample this sample for all tests required
      2. Place the sub-samples for pH and conductivity into an esky with some ice bricks and close the lid
      3. Complete the blank chain of custody to send these samples to another laboratory for testing (the customer and laboratory information have been completed for you)
      4. Place your turbidity samples at the turbidity station in the laboratory
      5. Wipe down your workstation in preparation for Part 4

**WORKPLACE PROCEDURES – SUB-SAMPLING LIQUIDS**

1. Collect the following items:
   1. Water sample and chain of custody from Part 1
   2. Three 100mL clean and dry sample bottles
   3. 100mL clean and dry measuring cylinder
   4. Small clean and dry funnel
   5. Blank labels
2. Write the sample information on each label:
   1. Date
   2. Student name
   3. Job ID
   4. Sample ID
   5. Sample name
   6. Test required
3. Stick the labels on the bottles
4. Unscrew each bottle lid, but leave the lid on
5. Collect the water sample and invert the bottle a few times to gently homogenise
6. Pour 100mL of the water sample into the measuring cylinder, close the sample and take the lid off the first sub-sample bottle. Place a small funnel into the neck of the bottle and pour the contents of the measuring cylinder into the bottle
7. Repeat steps 5 and 6 for the next two sub-samples

**Physical evidence required:**

1. **Chain of custody:**
   1. Correctly completed chain of custody for transport of pH and conductivity samples
2. **Labels:**
   1. A correctly written label applied to each sub-sample
3. **Sub-samples:**
   1. pH and conductivity sub-samples in esky with ice bricks
   2. Turbidity sub-sample in tray at turbidity workstation
4. **Housekeeping:**
   1. Bench has been wiped down and samples are neatly in order

## Part 4: Pathology sample preparation

To complete this part of the assessment, you will be required to complete a sub-sampling and separation of the pathology sample from Part 1.

Using the information below and the criteria listed on the assessment checklist you are required to complete the task below.

Once completed you will need to submit this assessment to your assessor for marking.

**Your task:**

You will need to prepare the sample for analysis by separating it in a centrifuge.

***To complete this task, you will be provided:***

* The pathology sample and pathology request form from Part 1
* Blank labels
* Sterile sample vials

***Step 1: WHS***

You will be working with biological samples for this assessment task. Consider what additional precautions you may need to take to ensure your and your workmates’ work health and safety requirements.

1. Ensure you are wearing the correct PPE
2. Keep your workstation clean at all times
3. Dispose of all biological samples in the appropriate receptacle

***Step 2: Sub-sampling and preservation***

1. Collect 2 sterile centrifuge tubes and label them
2. Collect a sterile 2mL pipette tip
3. Extract 2mL of sample using an automatic pipette and the sterile tip and place it into the first centrifuge tube
4. Repeat this for the second tube
5. Ask your assessor to run the centrifuge
6. Remove your samples when the program has completed and draw a picture of the sample showing the layers now present
7. If you know the names of the layers, write them in the correct location. If you do not, write the colour of each layer next to the drawing

**Separated sample:**

**Physical evidence required:**

1. **Sub-samples**
   1. Two correctly labelled sub-samples separated by centrifuge
   2. Drawing of separated sample in space above

## Part 5: Assessment Checklist

The following checklist will be used by your assessor to mark your performance against the assessment criteria of your submitted/presented project. Use this checklist to understand what skills and/or knowledge you need to demonstrate in your submission/presentation. All the criteria described in the Assessment Checklist must be met. The assessor may ask questions while the submission/presentation is taking place or if appropriate directly after the task/activity has been submitted/completed.

Table 3 marking guide

| Task # | Marking Criteria | S | U/S | Assessor Comments |
| --- | --- | --- | --- | --- |
| **1** | **Receive samples for testing:**   1. Appropriate PPE for laboratory has been chosen 2. Samples have been checked and matched with request forms and two chain of custody and one pathology form signed off 3. Traceability requirements have been met 4. Urgent tests have been processed 5. Request forms have been distributed for entry of sample details into LIMS 6. LIMS sheet *1. Log samples* has been completed correctly and printed, named, signed and dated |  |  |  |
| **2** | **Food sample:**   1. Original sample has been sub-sampled as per testing requirements 2. Samples have been preserved to maintain sample integrity 3. Samples have been placed at workstations to maintain sample integrity 4. Sub-sample has been chemically separated |  |  |  |
| **3** | **Water sample:**   1. Original sample has been sub-sampled as per testing requirements 2. Chain of custody has been completed 3. Samples have been placed in transport media 4. Samples have been physically separated, according to testing requirements; and placed at workstations to maintain sample integrity |  |  |  |
| **4** | **Pathology sample:**   1. 2 sub-samples have been centrifuged 2. A drawing of the separated sample has been completed in the space above |  |  |  |
| **5** | **Labelling:**   1. All sub-samples have labels handwritten by student and containing sample details for traceability   Food sub-samples  Water sub-samples  Pathology sub-samples |  |  |  |
| **6** | **Housekeeping:**   1. Workstation has been cleaned between each part of the assessment event to ensure work health and safety of self and others 2. All wastes, including any hazardous materials have been safely disposed as per workplace requirements 3. All splashes and spills have been promptly cleaned up with appropriate materials, while wearing PPE 4. All documentation and samples have been provided to assessor, and student confirmed everything was complete |  |  |  |

## Part 6: Assessment Feedback

*NOTE: This section* ***must*** *have the assessor signature and student signature to complete the feedback.*

### Assessment outcome

Satisfactory

Unsatisfactory

### Assessor Feedback

Was the assessment event successfully completed?

If no, was the resubmission/re-assessment successfully completed?

Was reasonable adjustment in place for this assessment event?  
*If yes, ensure it is detailed on the assessment document.*

Comments:

### Assessor name, signature and date:

### Student acknowledgement of assessment outcome

Would you like to make any comments about this assessment?

### Student name, signature and date

***NOTE: Make sure you have written your name at the bottom of each page of your submission before attaching the cover sheet and submitting to your assessor for marking.***