**Drinking Water Operator Qualification Program**

# Operators of Groundwater Catchment Station Without Treatment

# Job P2

## Apprenticeship and Evaluation Booklet

EQ-5048-02A (04-2005)

**January 2004**

**Emploi-Québec, in collaboration with the *Comité sectoriel de main-d'œuvre de l'environnement*, has produced this guide in order to describe the skills required to qualify as an operator of a groundwater catchment station without treatment (P2).**

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NAME _____
ADDRESS _____
CITY _____ POSTAL CODE _____
PHONE (____) _____

**Emploi-Québec File #: _____**

**Note on the protection of personal information**

① The information collected in this guide is subject to the *Act respecting access to documents held by public bodies and the protection of personal information*.

② The information is being collected for the purposes of administering the Emploi-Québec Drinking Water Operator Qualification Program.

③ For any questions regarding access to documents and the protection of personal information, contact Emploi-Québec.

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# Introduction

This Apprenticeship and Evaluation Booklet is made up of modules for on-the-job training as an operator of a groundwater catchment station without treatment, Job P2.

Using this booklet, apprentices will learn all about the occupation under the supervision of experienced workers, called journeymen, and gain recognition of their new skills. The journeymen will evaluate their performance at each stage of the apprenticeship and ensure that their skills meet the prescribed standards.

The modules and tasks can be taught in the order deemed most appropriate at any given plant.

Suggestions and explanations on how to use this Apprenticeship and Evaluation Booklet are incorporated into the Journeyman's Guide.

Once the apprentice is deemed to have acquired the job skills in question, the journeyman is to sign the Apprenticeship and Evaluation Booklet in certification thereof.

**IMPORTANT**

**Apprentices are responsible for the safekeeping of this guide, as it is the only document recording the details of their apprenticeship.**

# Certificate of Qualification

Certificates of qualification are issued to those who have mastered the skills required to operate a groundwater catchment station without treatment (Job 2). They certify that the holder is qualified to practice the occupation.

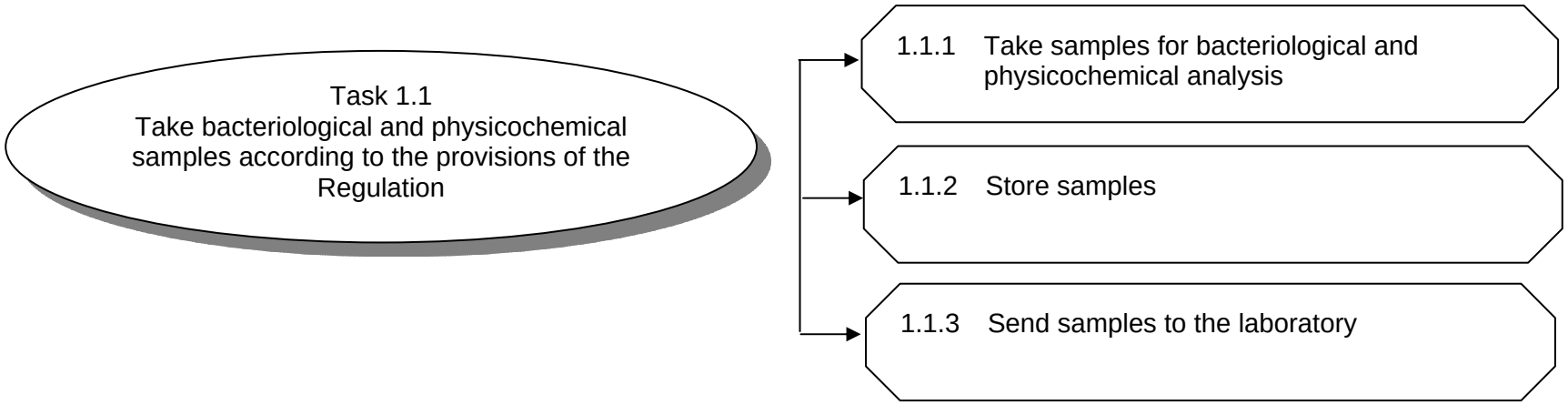
**Certification can be granted once the apprentice has fully mastered all steps of every task in each module and the journeyman has completed an assessment based on the performance indicators in the guide.**

Emploi-Québec issues certificates of qualification to individuals who have mastered the skills set out in this Apprenticeship and Evaluation Booklet.

# Module 1
# Taking Water Samples

**Job Skill:**

**Take water samples according to the provisions of the Regulation**



## (P2) Apprenticeship Context

**1. THE APPRENTICE HAS TAKEN SAMPLES IN THE FOLLOWING SITUATIONS. TICK OR SPECIFY:**

- Regulatory samples ☐
- Other _____
  _____
  _____
  _____

**2. REMARKS OR DETAILS:**

_____
_____
_____
_____
_____
_____

**Job Skill: Take water samples according to the provisions of the Regulation**

| | | |
|---|---|---|
| **Task 1.1 Take bacteriological and physiochemical samples according to the provisions of the Regulation** | | |
| **Steps** | | **References & Work Aids** |
| ✔ | **1.1.1 Take samples for bacteriological and physicochemical analysis** | |
| ☐ | At each faucet, let the water run for at least five minutes before taking a sample | **T** Methods for taking and preserving samples |
| ☐ | Ensure that the water is not pretreated by a watersoftener or filter (even at the faucet) | |
| ☐ | Take samples according to the sampling and sample conservation method set out in the Regulation | **T** Methods for taking and preserving samples<br>**R** Water sampling program |
| ✔ | **1.1.2 Store samples** | |
| ☐ | Explain proper storage and preservation conditions and how quickly the samples must be sent to the laboratory | **T** Methods for taking and preserving samples |
| ☐ | Store the samples according to the reference materials provided by the Ministère de l'Environnement (MENV) | |
| ✔ | **1.1.3 Send samples to the laboratory** | |
| ☐ | Complete the test request form(s) as per the established protocol | **R** Test request forms provided by an accredited laboratory |
| ☐ | Send the samples to an accredited laboratory by the time and as per the procedures set out in the Regulation | **T** Methods for taking and preserving samples |
| **Journeyman's initials:** | | **Apprentice's initials:** |

**R: Reference materials provided by the plant manager/apprentice; general apprenticeship documents from MENV**

**T: Training aids provided as part of earlier training**

**W: Work aids provided by the journeyman or trainer**

## (P2) Confirmation of Skills Acquired

**We, the undersigned, hereby certify that the Apprentice has mastered Module 1,**

# "Taking Water Samples"

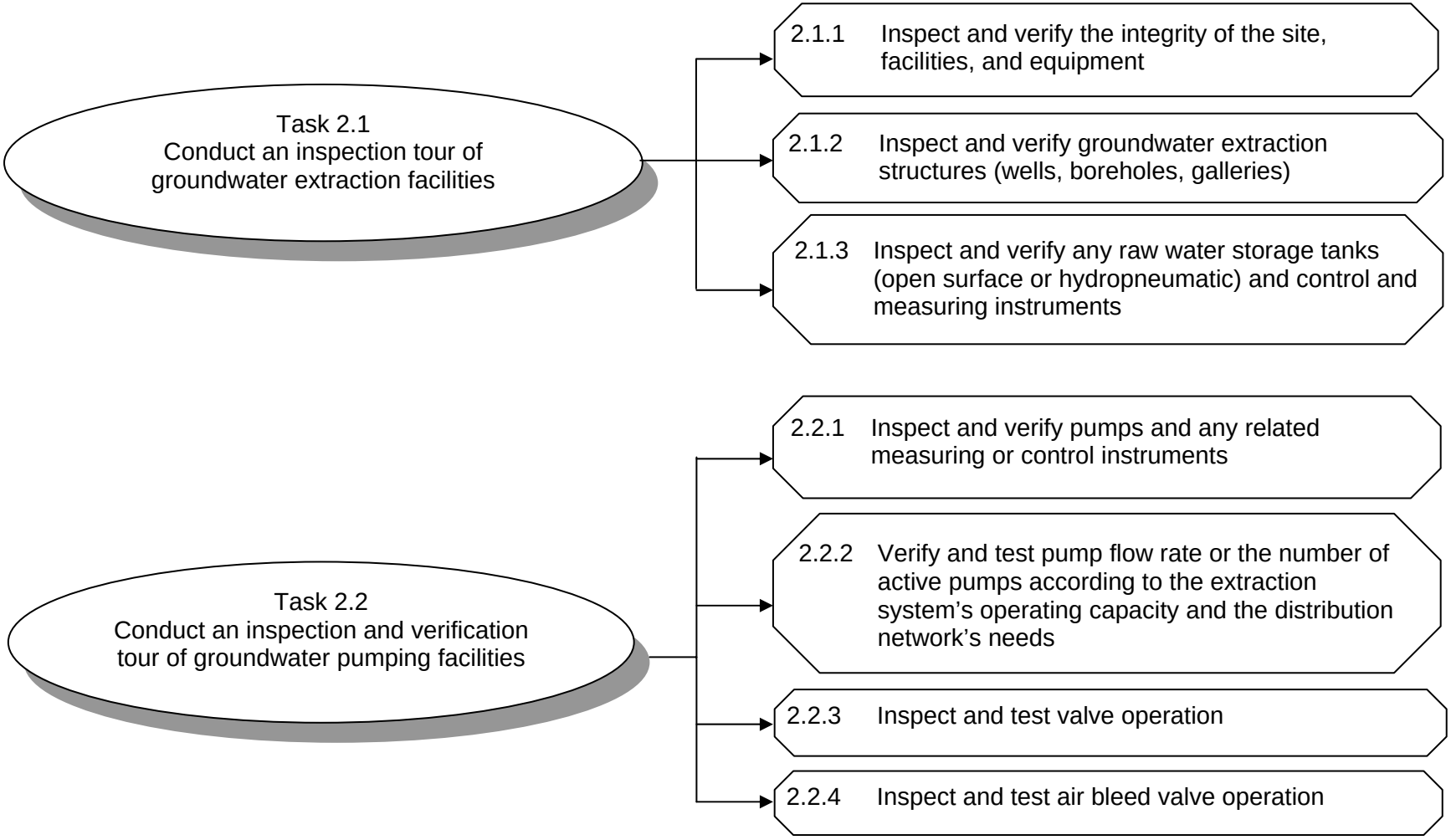
**Signature of the Apprentice** _____

**Signature of the Journeyman** _____

**Date** _____ **Signature of the Employer** _____

# Module 2
# Groundwater Extraction and Pumping System

**Job Skill:**
**Operate the groundwater extraction and pumping system**



**1. THE APPRENTICE HAS WORKED WITH THE FOLLOWING TYPES OF EQUIPMENT. TICK OR SPECIFY:**

| PUMPS | STORAGE TANKS | VALVES (main valves in use, e.g., guillotine, pressure release, self-regulating, etc.) |
|---|---|---|
| **Submersible:** | **Open surface:** | |
| **Dry well:** | **Hydropneumatic:** | |
| | | |
| | | |
| | | |
| | | |

**2. THE APPRENTICE HAS LEARNED TO USE THE FOLLOWING INSTRUMENTS. TICK OR SPECIFY:**

- Piezometer ☐
- Flow indicator ☐
- Pressure indicator ☐
- Water level alarm or float ☐
- Water level measuring devices ☐
- Other _____

_____

**3. REMARKS OR DETAILS CONCERNING FACILITIES AND INSTRUMENTS:**

_____

_____

**Job Skill: Operate the groundwater extraction and pumping system**

| | Steps | References & Work Aids |
|---|---|---|
| **Task 2.1 Conduct an inspection tour of groundwater extraction facilities** | | |
| **2.1.1 Inspect and verify the integrity of the site, facilities, and equipment** | | |
| ✔ | **A- Verify the integrity of groundwater extraction sites and facilities** | |
| ☐ | Describe how the groundwater extraction and pumping system works | |
| ☐ | Locate the groundwater extraction sites on the network map | **R** Network and facility map |
| ☐ | Explain the routing, means of replenishment, and ways to protect groundwater resources | |
| ☐ | Identify the boundaries of the regulatory catchment site | **R** Regulation respecting groundwater catchment |
| ☐ | Identify any potential risks of contamination that may affect groundwater extraction facilities, explain the means of detecting these risks, and list the routine checks required | **W** Groundwater Extraction Facilities<br>**R** Regulation respecting groundwater catchment |
| ☐ | Thoroughly describe the inspection tour procedure, including frequency, route, and order of verifications | **R** Inspection Manual or Tour Report |
| ☐ | Conduct an inspection tour of the sites; observe and identify all abnormalities or critical situations | **R** Inspection Manual or Tour Report |
| ☐ | Draw conclusions from your observations and take any corrective measures required | **W** Groundwater Extraction Facilities |
| ✔ | **B- Appropriately assess what corrective measures must be taken to address potential risks** | |
| ☐ | Identify abnormalities that may pose a risk, analyze the possible causes, diagnose the problem, and take the appropriate corrective measures | **W** Groundwater Extraction Facilities |

| | | | |
|---|---|---|---|
| **Journeyman's initials:** | | **Apprentice's initials**: | |

**R: Reference materials provided by the plant manager/apprentice; general apprenticeship documents from MENV**

**T: Training aids provided during the prerequisite training**

**W: Work aids provided by the journeyman or trainer**

| | Steps | References & Work Aids |
|---|---|---|
| **2.1.2** | **Inspect and verify groundwater extraction structures (wells, boreholes, galleries)** | |
| ✔ | **A- Inspect groundwater extraction structures (wells, boreholes, galleries)** | |
| ☐ | Describe the types of extraction structures and explain how they work | |
| ☐ | Locate extraction structures on the map of groundwater extraction facilities | **R** Map of groundwater extraction facilities |
| ☐ | Describe the factors or indications of a structure's deterioration and the consequences of leakage | **W** Groundwater Extraction Facilities |
| ☐ | Visually inspect extraction structures | |
| ☐ | Take readings from all instruments | **W** Measuring Instruments |
| ☐ | Take a raw water sample if applicable | **W** Raw Water Sampling<br>**T** Methods for taking and preserving samples |
| ☐ | Draw conclusions from your observations and take any corrective measures required | **W** Groundwater Extraction Facilities |
| ✔ | **B- Appropriately assess what corrective measures must be taken to address potential risks** | |
| ☐ | Identify abnormalities that may pose a risk, analyze the possible causes, diagnose the problem, and take the appropriate corrective measures | **W** Groundwater Extraction Facilities |
| ✔ | **C- Record any noteworthy information on extraction structures** | |
| ☐ | Provide a detailed, accurate, and legible listing of all noteworthy data on the condition of extraction structures | **W** Groundwater Extraction Facilities<br>**R** Daily Log or Tour Report |

| | | | |
|---|---|---|---|
| **Journeyman's initials:** | | **Apprentice's initials:** | |

**R:** **Reference materials provided by the plant manager/apprentice; general apprenticeship documents from MENV**

**T:** **Training aids provided during the prerequisite training**

**W:** **Work aids provided by the journeyman or trainer**

| | Steps | References & Work Aids |
|---|---|---|
| **2.1.3** | **Inspect and examine any raw water storage tanks (open surface hydropneumatic) and control and measuring instruments** | |
| ✔ | **A- Verify that water storage tanks meet the proscribed standards** | |
| ☐ | Locate storage tanks on the map of groundwater extraction facilities | **R** Map of groundwater extraction facilities |
| ☐ | Identify possible causes of the physical deterioration of raw water storage tanks and explain the potential risk of contamination and its effect on water quality | **W** Tanks |
| ☐ | Verify the physical integrity of the storage tanks, draw conclusions from your findings, and take any corrective measures required as per established procedures | **W** Tanks<br>**R** OHS Confined Spaces Regulation |
| ☐ | Make a list of all measuring and control instruments used and explain the role of each in the drinking water production process | **W** Measuring Instruments |
| ☐ | Periodically ensure that measuring and control instruments are working properly and take any corrective action required | **R** Manufacturer's manual |
| ☐ | Take readings from measuring and control instruments in raw water storage tanks and verify that the results are within established critical water levels | **W** Measuring Instruments |
| ☐ | Adjust the flow rate accordingly | |
| ✔ | **B- Appropriately assess what corrective measures must be taken to address potential risks** | |
| ☐ | Identify abnormalities that may pose a risk, analyze the possible causes, diagnose the problem, and take the appropriate corrective measures | **W** Tanks |
| ✔ | **C- Record any noteworthy information on raw water storage tanks** | |
| ☐ | Provide a detailed, accurate, and legible listing of all noteworthy data on water levels in the raw water storage tanks | **R** Daily Log or Tour Report |
| **Journeyman's initials:** | | **Apprentice's initials:** |

**R:** **Reference materials provided by the plant manager/apprentice; general apprenticeship documents from MENV**

**T:** **Training aids provided during the prerequisite training**

**W:** **Work aids provided by the journeyman or trainer**

| Task 2.2 Conduct an inspection and verification tour of groundwater pumping facilities | | |
|---|---|---|
| **Steps** | | **References & Work Aids** |
| **2.2.1 Inspect and verify pumps and any related measuring or control instruments** | | |
| ✔ | **A- Test pumps** | |
| ☐ | Locate groundwater pumping facilities on the network map | **R** Map of distribution network<br>**R** Map of groundwater extraction facilities |
| ☐ | Describe the types of pumps and their main components | |
| ☐ | Explain normal pump operation (capacity and range) and the consequences of malfunction | |
| ☐ | Determine the measuring and control instruments associated with the pumps and explain their basic operating principles | **W** Measuring Instruments |
| ☐ | Take readings from measuring and control instruments and compare the results with reference values | **R** Manufacturer's manual (pump curve) |
| ☐ | Evaluate the production and electromechanical process parameters for each pump | **W** Raw Water Extraction Pumps |
| ☐ | Assess pump operation based on process parameters and take any corrective measures required according to established procedures | **W** Raw Water Extraction Pumps<br>**R** Manufacturer's manual |
| ✔ | **B- Appropriately assess what preventive and corrective measures must be taken to ensure the pumps operate properly** | |
| ☐ | Describe the preventive maintenance needed to identify potential problems with the pumps | **W** Maintenance Chart (Module 2)<br>**R** Manufacturer's manual |
| ☐ | Identify potential pump malfunctions, explain the possible causes, diagnose the problem, and take the appropriate corrective measures | **W** Raw Water Extraction Pumps<br>**R** Manufacturer's manual |
| ✔ | **C- Record any noteworthy information on pump operating parameters** | |
| ☐ | Provide a detailed, accurate, and legible listing of all noteworthy data on pump operations | **R** Daily Log or Tour Report<br>**W** Raw Water Extraction Pumps |

| **Journeyman's initials:** | | **Apprentice's initials:** | |
|---|---|---|---|

**R:** **Reference materials provided by the plant manager/apprentice; general apprenticeship documents from MENV**

**T:** **Training aids provided during the prerequisite training**

**W:** **Work aids provided by the journeyman or trainer**

| | Steps | References & Work Aids |
|---|---|---|
| **2.2.2** | **Verify and test pump flow rate or the number of active pumps according to the extraction system's operating capacity and the distribution network's needs** | |
| ✔ | **A- Verify the output and pressure of raw water pumping units** | |
| ☐ | Describe the extraction system's operating capacity and the output rate needed to meet the distribution network's needs | |
| ☐ | Explain the consequences of malfunction at a raw water pumping facility | |
| ☐ | Either onsite or by remote sensing, identify which pumps are active and which are inactive | **R** Network and groundwater pumping facility maps |
| ☐ | Assess the flow rate and pressure according to the extraction system's operating capacity and the distribution network's needs | **W** System of Units |
| ☐ | Verify whether the number of active pumps is sufficient for the extraction system's operating capacity and the distribution network's needs | |
| ☐ | Verify that pumps can be activated and de-activated to meet the pumping system's operating capacity and the distribution network's needs | |
| ☐ | Draw conclusions from the data collected, analyze the effect on drinking water production volumes, and take any corrective measures required | **W** Raw Water Extraction Pumps |
| ✔ | **B- Appropriately assess what corrective measures must be taken to address situations affecting pump flow rate** | |
| ☐ | Identify potential problems that may affect drinking water production volumes, explain the possible causes, diagnose the problem, and take the appropriate corrective action | **W** Raw Water Extraction Pumps |
| ✔ | **C- Record any noteworthy information on pump operating capacity** | |
| ☐ | Provide a detailed, accurate, and legible listing of all noteworthy data on pump operating capacity | **R** Daily Log or Tour Report<br>**W** Raw Water Extraction Pumps |

| **Journeyman's initials:** | | **Apprentice's initials:** | |
|---|---|---|---|

**R:** **Reference materials provided by the plant manager/apprentice; general apprenticeship documents from MENV**

**T:** **Training aids provided during the prerequisite training**

**W:** **Work aids provided by the journeyman or trainer**

| | Steps | References & Work Aids |
|---|---|---|
| **2.2.3** | **Inspect and test valve operation** | |
| ✔ | **A- Verify valve functioning** | |
| ☐ | Locate groundwater extraction system valves on the map of the water distribution network | **R** Map of the water distribution network |
| ☐ | Describe how valve-related devices work and explain the optimum operating conditions | **W** Valves<br>**R** Manufacturers' manuals |
| ☐ | Ascertain that the valves are properly positioned for the pressure and flow rate requirements at the time of inspection | **R** Manufacturer's manual |
| ☐ | Examine the condition of the valves (maneuverability, pressure required, seal, noise) | **R** Manufacturer's manual |
| ☐ | Verify and adjust self-regulating valves, if any, to obtain the required pressure or flow rate | **R** Manufacturer's manual |
| ☐ | Draw conclusions from the data collected and consequences noted and take any corrective measures required | **W** Valves |
| ✔ | **B- Appropriately assess what preventive and corrective measures must be taken to ensure proper valve operation** | |
| ☐ | Describe the preventive maintenance needed to identify potential problems with the valves | **W** Maintenance Chart (Module 2)<br>**R** Manufacturer's manual |
| ☐ | Identify valve malfunctions that may affect drinking water production volumes, explain the possible causes, make a diagnosis, and take the appropriate corrective measures | **W** Valves |
| **Journeyman's initials:** | | **Apprentice's initials:** |

**R:** **Reference materials provided by the plant manager/apprentice; general apprenticeship documents from MENV**

**T:** **Training aids provided during the prerequisite training**

**W:** **Work aids provided by the journeyman or trainer**

| | Steps | References & Work Aids |
|---|---|---|
| **2.2.4** | **Inspect and test air bleed valve operation** | |
| ✔ | **A- Verify that air bleed valves are working properly** | |
| ☐ | Locate air bleed valves on the map of groundwater extraction facilities | **R** Map of groundwater facilities |
| ☐ | Explain how air bleed valves work and describe their role in the process | |
| ☐ | Explain how the presence of air affects pumps and conduits | |
| ☐ | Describe the annual preventive maintenance required to eliminate potential problems with air bleed valves | |
| ☐ | Record any noteworthy information after inspecting air bleed valves | **R** Tour Report |

| **Journeyman's initials:** | | **Apprentice's initials:** | |
|---|---|---|---|

**R:** **Reference materials provided by the plant manager/apprentice; general apprenticeship documents from MENV**

**T:** **Training aids provided during the prerequisite training**

**W:** **Work aids provided by the journeyman or trainer**

## (P2) Confirmation of Skills Acquired

**We, the undersigned, hereby certify that the Apprentice has mastered Module 2**

# "Groundwater Extraction and Pumping System"

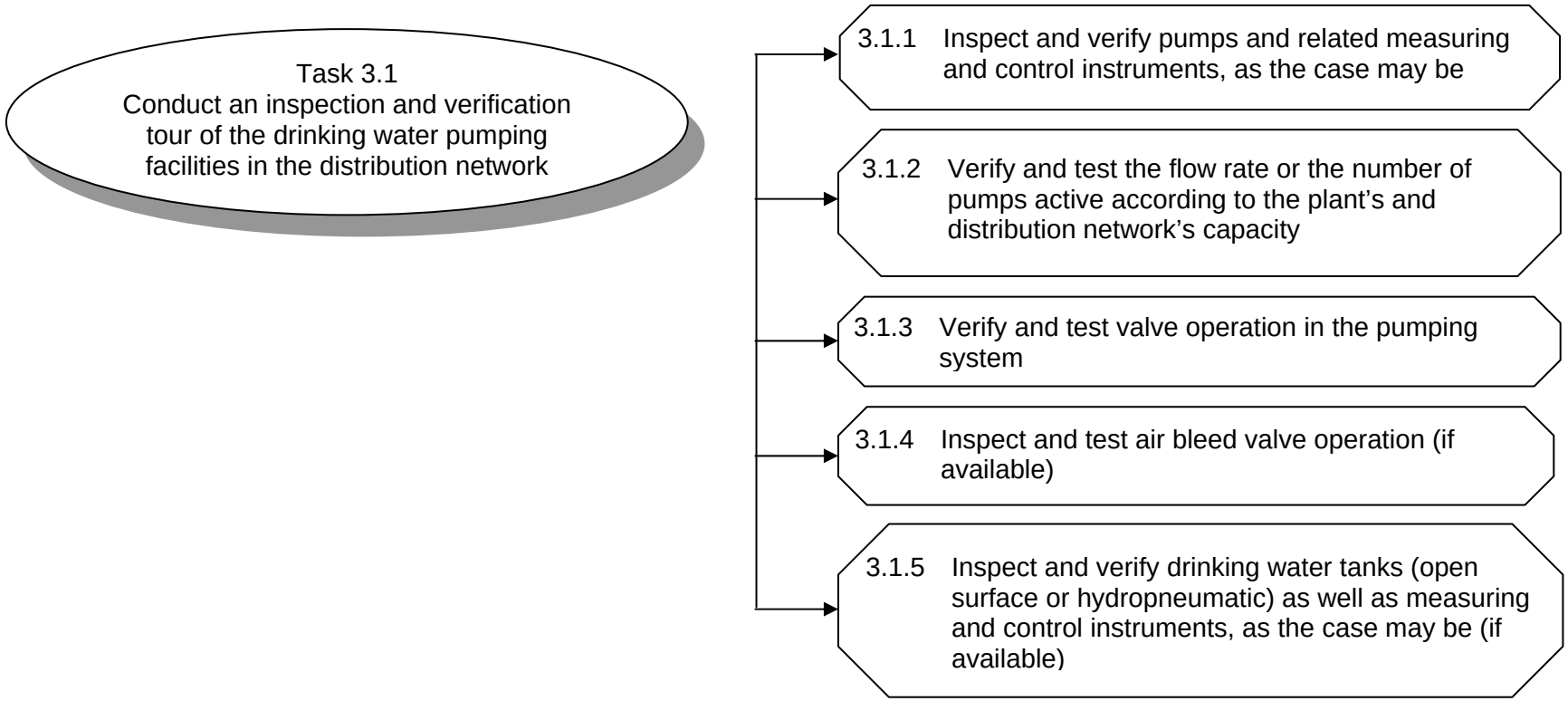
**Signature of the Apprentice** _____

**Signature of the Journeyman** _____

**Date** _____ **Signature of the Employer:** _____

# Module 3
# Pumping Drinking water into the Distribution Network

**Job Skill**
**Operate the pumping system that feeds drinking waterinto the distribution network**



## (P2) Context of the Apprenticeship

**1. THE APPRENTICE HAS WORKED WITH THE FOLLOWING TYPES OF EQUIPMENT. TICK OR SPECIFY:**

| PUMPS | STORAGE TANKS | VALVES (main valves used, e.g., guillotines, pressure release, self-regulating, etc.) | AIR BLEED VALVE |
|---|---|---|---|
| **Submersible:** | **Open surface:** | | |
| **Dry well:** | **Hydropneumatic** | | |
| | | | |
| | | | |

**2. THE APPRENTICE HAS LEARNED TO USE THE FOLLOWING INSTRUMENTS. TICK OR SPECIFY:**

- Flow indicator ☐
- Pressure indicator ☐
- Water level alarm ☐
- Water level measuring devices ☐
- Other _____

_____

_____

**3. REMARKS OR DETAILS CONCERNING FACILITIES AND INSTRUMENTS:**

_____

_____

_____

**Job Skill: Operate the pumping system that feeds drinking water into the distribution network**

| | | |
|---|---|---|
| **Task 3.1** | **Conduct an inspection and verification tour of the drinking water pumping facilities in the distribution network** | |
| | **Steps** | **References & Work Aids** |
| **3.1.1** | **Inspect and verify pumps and related measuring and control instruments, as the case may be** | |
| ✔ | **A- Verify pumps** | |
| ☐ | Locate drinking water pumping facilities on the network map | **R** Map of the water distribution network |
| ☐ | Describe the types of pumps and their main components | |
| ☐ | Explain the normal operating conditions of the pumps (capacity and range) and the consequences of malfunction | |
| ☐ | Identify the measuring and control instruments used for the pumps and describe how they work | **W** Measuring Instruments |
| ☐ | Take readings from the measuring and control instruments and compare the results with reference values to verify that the pumps are working properly | **R** Manufacturer's manual (pump curve) |
| ☐ | Verify the production and electromechanical process parameters of each pump | **W** Drinking water Pumps |
| ☐ | Rate pump operation according to the operating parameters and take any necessary corrective measures as per established procedures | **W** Drinking water Pumps<br>**R** Manufacturer's manual |
| ✔ | **B- Appropriately assess what preventive and corrective measures must be taken to ensure the pumps work properly** | |
| ☐ | Describe the preventive maintenance needed to identify potential problems with the drinking water pumps | **W** Maintenance Chart (Module 4)<br>**R** Manufacturer's manual |
| ☐ | Identify situations that could cause pump malfunction, explain the possible causes, make a diagnosis, and take the appropriate corrective measures | **W** Drinking water Pumps<br>**R** Manufacturer's manual |
| ✔ | **C- Record any noteworthy information on pump operating parameters** | |
| ☐ | Provide a detailed, accurate, and legible listing of all noteworthy data on pump operation | **R** Daily Log or Tour Report<br>**W** Drinking water Pumps |
| **Journeyman's initials:** | | **Apprentice's initials:** |

**R: Reference materials provided by the plant manager/apprentice; general apprenticeship documents from MENV**

**T: Training aids provided during the prerequisite training**

**W: Work aids provided by the journeyman or trainer**

| | Steps | References & Work Aids |
|---|---|---|
| 3.**1.2** | **Verify and test the pump flow rate or the number of active pumps according to the plant's and distribution network's capacity** | |
| ✔ | **A- Verify the flow rate and pressure at drinking water pumping facilities** | |
| ☐ | Describe the production capacity and flow rate required to meet the distribution network's needs | |
| ☐ | Explain the consequences of malfunction at a drinking water pumping facility | |
| ☐ | Either onsite or by remote sensing, identify which pumps are active and which are inactive | **R** Map of the water distribution network |
| ☐ | Assess the flow rate and pressure according to the extraction system's operating capacity and the distribution network's needs | **W** System of Units |
| ☐ | Verify whether the number of active pumps is sufficient for the extraction system's operating capacity and the distribution network's needs | |
| ☐ | Verify that pumps can be activated and de-activated to meet the pumping system's operating capacity and the distribution network's needs | |
| ☐ | Draw conclusions from the data collected, analyze the effect on drinking water production volumes, and take any corrective measures required | **W** Drinking water Pumps |
| ✔ | **B- Appropriately assess what corrective measures must be taken to address situations affecting pump flow rates** | |
| ☐ | Identify potential problems that may affect drinking water production volumes, explain the possible causes, diagnose the problem, and take the appropriate corrective action | **W** Drinking water Pumps |
| ✔ | **C- Record any noteworthy information on pump operating capacity** | |
| ☐ | Provide a detailed, accurate, and legible listing of all noteworthy data on pump operating capacity | **R** Daily Log or Tour Report<br>**W** Drinking water Pumps |

| **Journeyman's initials:** | | **Apprentice's initials:** | |
|---|---|---|---|

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| | Steps | References & Work Aids |
|---|---|---|
| **3.1.3** | **Verify and test valve operation in the pumping system (if available)** | |
| ✔ | **A- Verify valve operation in the pumping system** | |
| ☐ | Locate drinking water pumping valves on the map of the water distribution network | **R** Map of the water distribution network |
| ☐ | Describe how valve-related devices work and explain their optimum operating conditions | **W** Valves<br>**R** Manufacturers' manuals |
| ☐ | Ascertain that the valves are properly positioned for the pressure and flow rate requirements at the time of inspection | **R** Manufacturer's manual |
| ☐ | Examine the condition of the valves (maneuverability, pressure required, seal, noise) | |
| ☐ | Verify and adjust self-regulating valves, if any, to obtain the required pressure or flow rate | |
| ☐ | Draw conclusions from the data collected and consequences noted and take any corrective measures required | **W** Valves |
| ✔ | **B- Appropriately assess what preventive and corrective measures must be taken to ensure proper valve operation** | |
| ☐ | Describe the preventive maintenance needed to identify potential problems with the valves | **W** Maintenance Chart (Module 4)<br>**R** Manufacturer's manual |
| ☐ | Identify valve malfunctions that may affect drinking water production volumes, explain the possible causes, make a diagnosis, and take the appropriate corrective measures | **W** Valves |
| **Journeyman's initials:** | | **Apprentice's initials:** |

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**T:** **Training aids provided during the prerequisite training**

**W:** **Work aids provided by the journeyman or trainer**

| | Steps | References & Work Aids |
|---|---|---|
| **3.1.4** | **Inspect and test air bleed valve operation (if available)** | |
| ✔ | **A- Verify that air bleed valves are working properly** | |
| ☐ | Locate air bleed valves on the map of drinking water pumping facilities | **R** Map of groundwater facilities |
| ☐ | Explain how air bleed valves work and describe their role in the process | |
| ☐ | Explain how the presence of air affects pumps and conduits | |
| ☐ | Describe the annual preventive maintenance needed to eliminate potential problems with air bleed valves | |
| ☐ | Record any noteworthy information after inspecting air bleed valves | **R** Tour Report |

| **Journeyman's initials:** | | **Apprentice's initials:** | |
|---|---|---|---|

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**T:** **Training aids provided during the prerequisite training**

**W:** **Work aids provided by the journeyman or trainer**

| | Steps | References & Work Aids |
|---|---|---|
| **3.1.5 Inspect and verify drinking water tanks (open surface or hydropneumatic) as well as measuring and control instruments, as the case may be** | | |
| ✔ | **A- Verify water storage tanks as per established procedures** | |
| ☐ | Locate water tanks on the map of the water distribution network | **R** Map of the water distribution network |
| ☐ | Check for signs of physical deterioration of drinking water storage tanks and explain the potential risk of contamination and its effect on water quality | **W** Storage Tanks |
| ☐ | Verify the physical integrity of the tanks, draw conclusions from your findings, and take any corrective measures required as per established procedures | **W** Storage Tanks<br>**R** OHS Confined Spaces Regulation |
| ☐ | Make a list of the measuring and control instruments used and explain their role in the drinking water production process | **W** Measuring Instruments |
| ☐ | Periodically verify that the measuring and control instruments are working properly and take any appropriate corrective action | **R** Manufacturer's manual |
| ☐ | Take readings from measuring and control instruments in storage tanks and verify that the results are within established critical water levels | **W** Measuring Instruments |
| ☐ | Adjust the flow rate accordingly | |
| ✔ | **B- Appropriately assess what corrective measures must be taken to address potential risks** | |
| ☐ | Identify abnormalities that may pose a risk, analyze the possible causes, diagnose the problem, and take the appropriate corrective measures as per the established procedure | **W** Water Tanks |
| ✔ | **C- Record any noteworthy information on drinking water storage tanks** | |
| ☐ | Provide a detailed, accurate, and legible listing of all noteworthy data on water levels in the drinking water storage tanks | **R** Daily Log or Tour Report |

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|---|---|---|---|

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**W:** **Work aids provided by the journeyman or trainer**

## (P2) Confirmation of Skills Acquired

**We, the undersigned, hereby certify that the Apprentice has mastered Module 3**

**“Pumping Drinking water into the Distribution Network”**

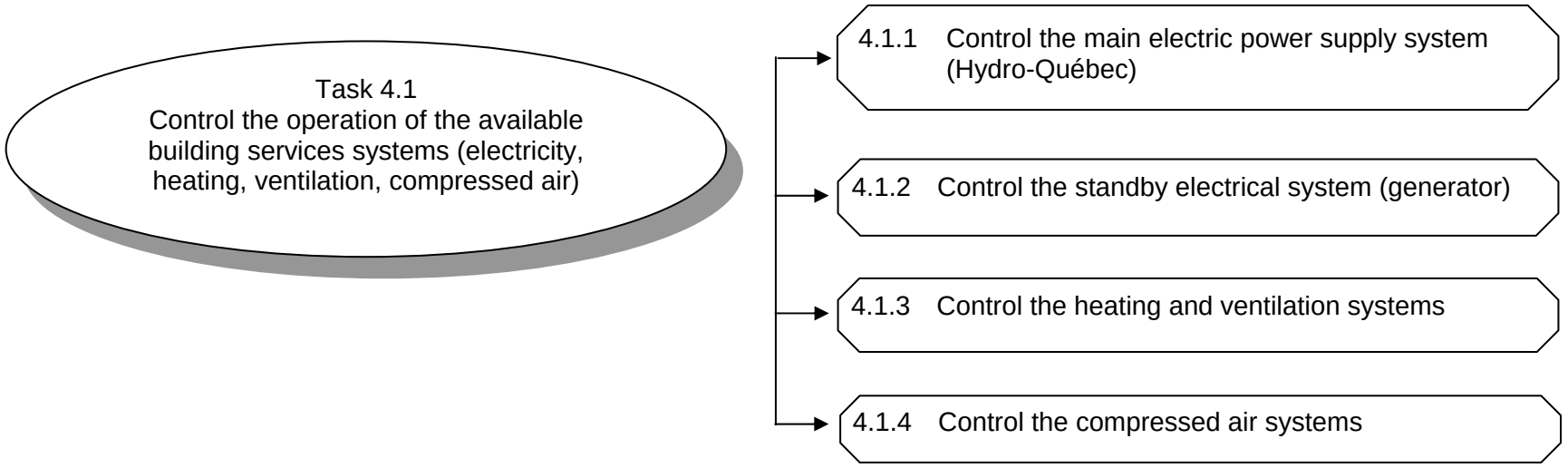
**Signature of the Apprentice** _____

**Signature of the Journeyman** _____

**Date** _____ **Signature of the Employer:**_____

# Module 4
# Building Services Systems

**Job Skill:**
**Operate building services systems**



**1. THE APPRENTICE HAS TAKEN SAMPLES IN THE FOLLOWING SITUATIONS. TICK OR SPECIFY**

- ☐ Main electric power supply system (Hydro-Québec)
- ☐ Standby electrical system (generator)
- ☐ Heating system
- ☐ Ventilation system
- ☐ Compressed air system

**2. COMMENTS OR DETAILS ON THE SYSTEMS USED:**

_____

_____

_____

_____

_____

**Job Skill: Operate building services systems**

| **Task 4.1 Control the operation of the available building services systems (electricity, heating, ventilation, compressed air)** | | |
|---|---|---|
| **Steps** | | **References & Work Aids** |
| **4.1.1 Control the main electric power supply system (Hydro-Québec)** | | |
| ☐ | Describe the operation of the station's main electric power supply system | |
| ☐ | Use the various indicators (phase, amperage, voltage) to ensure that the main electric power supply system operates properly | |
| ☐ | Periodically check the condition of the main electric power supply system components, if applicable | |
| ☐ | If possible, describe and apply the electric power supply start/stop procedure | **R** Electrical safety standards |
| ☐ | Describe the measures needed and the safety procedure that must be complied with to insulate equipment to be repaired from the power supply system | |
| **Journeyman's initials:** | | **Apprentice's initials:** |
| **4.1.2 Control the standby electrical system (generator)** | | |
| ☐ | Name the equipment connected to the generator and explain the consequences of a power failure | |
| ☐ | Describe the start/stop procedure (simulate a power failure) of the standby electrical system (generator) in case of power failure | **R** Generator start/stop procedure according to manufacturer's manual<br>**R** Electrical safety standards |
| ☐ | Take readings from the generator's instruments and on/off indicators and take appropriate corrective action | **R** Manufacturer's manual |
| ☐ | Describe the preventive maintenance required for the generator | **W** Maintenance chart (Module 3)<br>**R** Manufacturer's manual |
| **Journeyman's initials:** | | **Apprentice's initials:** |

**R: Reference materials provided by the plant manager/apprentice; general apprenticeship documents from MENV**

**T: Training aids provided as part of earlier training**

**W: Work aids provided by the journeyman or trainer**

| Steps | | References & Work Aids |
|---|---|---|
| **4.1.3 Control the heating and ventilation systems** | | |
| ☐ | Ensure that the heating and ventilation systems work properly and take appropriate corrective action | **R** Manufacturer's manual<br>**W** Maintenance chart (Module 3) |
| ☐ | Explain the consequences of defective operation or failure of these systems | |
| ☐ | Check the condition of the filters and take appropriate corrective action | |
| ☐ | Describe the preventive maintenance required for the heating and ventilation systems | |
| **Journeyman's initials:** | | **Apprentice's initials:** |
| **4.1.4 Control the compressed air systems** | | |
| ☐ | Describe the operation of the compressed air network and its components | **R** Manufacturer's manual |
| ☐ | Name the equipment connected to the compressed air system | |
| ☐ | Explain the consequences and causes of a malfunction of these systems | |
| ☐ | Flush the air storage tank of the compressor and the network air bleed valve, if applicable | |
| ☐ | Describe the preventive maintenance required for the compressed air system | **W** Maintenance chart (Module 3) |
| **Journeyman's initials:** | | **Apprentice's initials:** |

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**T: Training aids provided as part of earlier training**

**W: Work aids provided by the journeyman or trainer**

## (P2) Confirmation of Skills Acquired

**We, the undersigned, hereby certify that the Apprentice has mastered Module 4**

## "Building Services Systems"

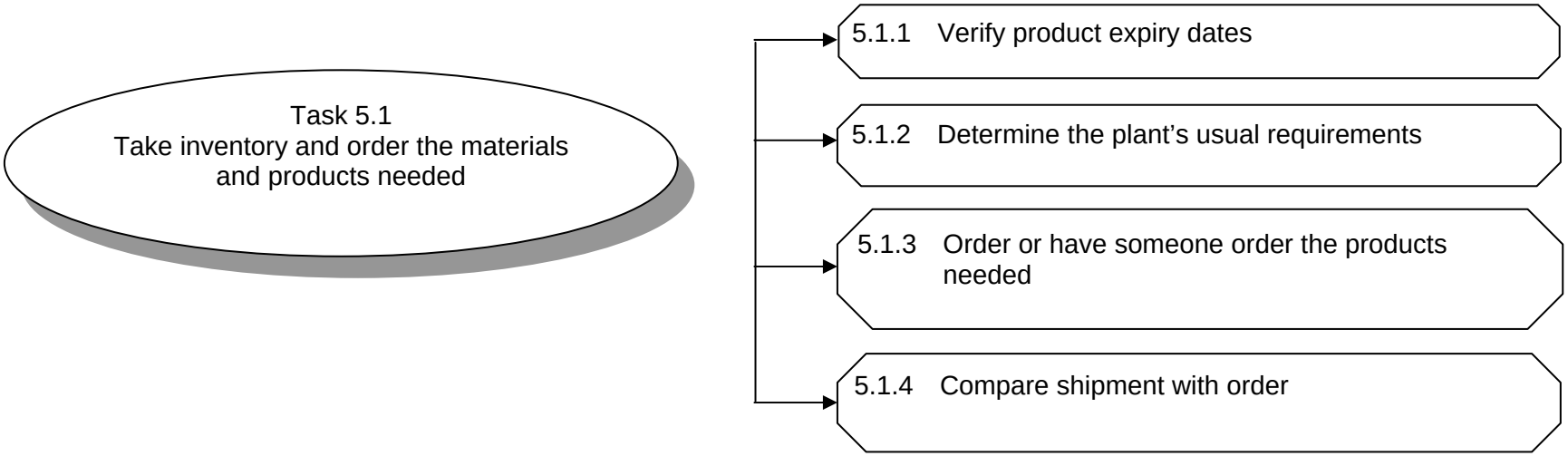
**Signature of the Apprentice** _____

**Signature of the Journeyman** _____

**Date** _____ **Signature of the Employer**

# Module 5
# Stock Management

**Job Skill:**
**Manage inventory**



**Job Skill: Manage inventory**

| | | |
|---|---|---|
| **Task 5.1 Take inventory and order the materials and products needed** | | |
| | **Steps** | **References & Work Aids** |
| ✔ | **5.1.1 Verify product expiry dates** | |
| ☐ | Explain the consequences of treating drinking water with expired products | **R** Technical spec sheets provided with the products |
| ☐ | Ensure that products are classified and stored according to expiry datesand in adequate storage conditions | |
| ✔ | **5.1.2 Determine the plant's usual requirements** | |
| ☐ | Make a list of the materials needed for daily operations: equipment, essential parts, chemicals, testing products, measuring and control instruments | |
| ☐ | Explain the basic principles of taking inventory | |
| ☐ | Determine the plant's needs and keep the inventory current by verifying stock levels | |
| ✔ | **5.1.3 Order or have someone order the products needed** | |
| ☐ | Explain how to prepare a purchase requisition and an order form | |
| ☐ | Prepare or have someone prepare an order according to the procedures in effect | **R** Internal procedures in effect |
| ✔ | **5.1.4 Compare shipment with order** | |
| ☐ | Verify the quantity and quality of the products received against the order form and invoice | |
| ☐ | Ensure stock rotation | |
| **Journeyman's initials:** | | **Apprentice's initials:** |

**R: Reference materials provided by the plant manager/apprentice; general apprenticeship documents from MENV**

**T: Training aids provided during the prerequisite training**

**W: Work aids provided by the journeyman or trainer**

## (P2) Confirmation of Skills Acquired

**We, the undersigned, hereby certify that the Apprentice has mastered Module 5**

# "STOCK MANAGEMENT"

**Signature of the Apprentice** _____

**Signature of the Journeyman** _____

**Date** _____ **Signature of the Employer** _____

# TABLES

**SUMMARY TABLE (P2)**

| **JOB SKILL** | STEPS | | | | | |
|---|---|---|---|---|---|---|
| 1.<br>Take water samples according to the provisions of the Regulation | 1.1<br>Take bacteriological and physicochemical samples according to the provisions of the Regulation | | | | | |
| 2.<br>Operate the groundwater extraction and pumping system | 2.1<br>Conduct an inspection tour of groundwater extraction facilities | 2.2<br>Conduct an inspection and verification tour of groundwater pumping facilities | | | | |

**SUMMARY TABLE (P2)**

| Job Skill | STEPS | | | | | |
|---|---|---|---|---|---|---|
| 3.<br>Operate the pumping system that feeds drinking water into the distribution network | 3.1<br>Conduct an inspection and verification tour of the drinking water pumping facilities in the distribution network | | | | | |
| 4.<br>Operate building services systems | 4.1<br>Control the operation of the available building services systems (electricity, heating, ventilation, compressed air) | | | | | |
| 5.<br>Manage inventory | 5.1<br>Take inventory and order the materials and products needed | | | | | |

## (P2) APPRENTICESHIP REPORT

| **Name of Apprentice:** | **Emploi-Québec File #:** |
|---|---|

**WORKPLACE APPRENTICESHIP PROGRAM**

| **Module** | | | | | |
|---|---|---|---|---|---|
| | To Acquire | To Be Assessed | Signature of Emploi-Québec Representative | Date | Agreement # |
| Taking Water Samples | | | | | |
| Groundwater Extracting and Pumping System | | | | | |
| Pumping Drinking water into the Distribution Network | | | | | |
| Building Services Systems | | | | | |
| Stock Management | | | | | |

| EMPLOYER | | |
|---|---|---|
| **Name** | | |
| **Address** | | |
| **City** | **Postal Code** | **Phone** |
| **Name of Journeyman** | | |
| **Agreement** | **Start Date** | **End Date** |

| EMPLOYER | | |
|---|---|---|
| **Name** | | |
| **Address** | | |
| **City** | **Postal Code** | **Phone** |
| **Name of Journeyman** | | |
| **Agreement** | **Start Date** | **End Date** |