



Metropolitan Cebu Water District
**Quality Management System
 Procedures Manual**

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Revision No.	0
Effective Date	Jan. 01,01

Section	Introduction
Subject	Title Page

MCWD Operations Manual (Procedures)

Vol 1
 Book 3 of 3

Procedures Manual Operations and Maintenance Processes



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 Reviewed: Rosita C. Lao
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Dulce M. Abanilla
 Approved: Dulce M. Abanilla
 Date:



Metropolitan Cebu Water District
**Quality Management System
 Procedures Manual**

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Section

User's Guide

Subject

Legend and Symbols

Effective Date

Jan. 01,01

This procedures Manual uses symbols and conventions to facilitate understanding of the flow of the work and such work performed in the process. Generally, process flow diagram symbols are used and where necessary brief explanations of such are provided in the "details" portion of the documents. Thus the following symbols;

Symbol

Meaning



Start Node



Work Flow



Process



Document



Multiple Document



Process Tag



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Metropolitan Cebu Water District
**Quality Management System
 Procedures Manual**

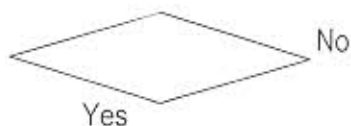
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Subject	Legend and Symbols

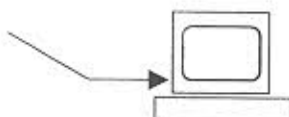
This procedures Manual uses symbols and conventions to facilitate understanding of the flow of the work and such work performed in the process. Generally, process flow diagram symbols are used and where necessary brief explanations of such are provided in the "details" portion of the documents. Thus the following symbols;

Symbol

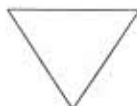
Meaning



Decision Box



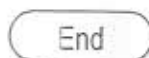
Computer Data In



Data Storage



Page Connector



End Node




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- OP – WQC/WSD – 001 Assessment of the Risks for Contaminants & Pollutants in Potential & Developed Water Source
- OP – WQC/WSD – 002 River Water & Surface Water Quality Assessment
- OP – WQC/WSD – 003 Potability Testing for Constructed & Rehabilitated Wells, Pipelines & Other Appurtenances

WATER PRODUCTION**OP-POP****PUMP OPERATIONS**

- OP – POP – 001 Pump Operation during Power Interruption and / or Breakdowns.
- OP – POP – 002 Pump Start-up (after Power Interruption & Breakdowns).
- OP – POP – 003 Pump Stoppage cause by Mechanical / Electrical Component Breakdown
- OP – POP – 004 Routine Work of a Treatment Plant Operator
- OP – POP – 005 Routine Work of a Pump Operator

OP-SMC**WATER SOURCES MONITORING and CONTROL**

- OP – SMC – 001 Soil Erosion Control
- OP – SMC – 002 Dam Monitoring
- OP – SMC – 003 Dam Perimeter Monitoring
- OP – SMC – 004 MPI Water Production Monitoring & Control
- OP – SMC – 005 Buhisan Valve Operations
- OP – SMC – 006 Preparation of Job Order at Buhisan Valve Operation
- OP – SMC – 007 Reduction Control of Flow from DAM to Tisa as per Request from EWRD Personnel

OP-SMC**WATER QUALITY MONITORING and CONTROL**

- OP – WQC/WPR – 001 Annual Reporting of the Complete Analytical Testing of Individual Water Production Sources.
- OP – WQC/WPR – 002 Special Monitoring of Water Sources with Critical Quality – Water Parameter
- OP – WQC/WPR – 003 Assessment & Monitoring the Saline Water Intrusion Levels on Production & Observation Wells.
- OP – WQC/WPR – 004 Assessing the Corrosivity of Ground & Surface Water Sources

OP-FPO**FILTER PLANT OPERATIONS and MAINTENANCE**

- OP – FPO – 001 Declogging of the Slow Sand Filter Bed

OP-POM**PUMP MAINTENANCE**


- OP – POM – 001 Regular Pump Check-up & Monitoring
- OP – POM – 002 Regular Pump Check-up / Monitoring & Repair
- OP – POM – 003 Pump Corrective Maintenance
- OP – POM – 004 Pump Corrective Maintenance (Field Repair)
- OP – POM – 005 Electro-Mechanical Shop Services.
- OP – POM – 006 Electro-Mechanical Project Administration



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OP – WSM – 002	Well and Acquirer Performance Evaluation (Hydrogeology Investigation)
OP – WSM – 003	Request for Seedling Withdrawal
OP – WSM – 004	ISOCOLOR MAP Updating
OP – WSM – 005	Maintenance of Raw Water Main



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OP – PDM – 002	Planned Water Service Interruption Availment
OP – PDM – 003	Project Turn-over
OP – PDM – 004	Conforming a Fire Alarm
OP – PDM – 005	Responding a Fire Alarm
OP – PDM – 006	Operating the Booster Pump
OP – PDM – 007	Booster Station Shift Turn-over (And Turning Off Pump at the end of the Day's Operation)
OP – PDM – 008	Interrupting the Booster Pump Operation for a WSI
OP – PDM – 009	Addressing Booster Operation Problems
OP – PDM – 010	Addressing Water Supply Complaints

WATER TREATMENT**OP-WQC/WTR****WATER QUALITY MONITORING and CONTROL**

OP – WQC/WTR – 001	Backwashing Procedure of the Rapid Sand Filter
OP – WQC/WTR – 002	pH Adjustment & Treatment of Processed Surface Water
OP – WQC/WTR – 003	Designing & Installation of Automatic Chlorination System for Drinking Water Supply
OP – WQC/WTR – 004	Routine Check-up of pH, Turbidity & TDS of Raw, Processed, & Finished Water Products
OP – WQC/WTR – 005	Routine Chlorine Contents' Reading of the Finished Water Product at Tisa Filter Plant.
OP – WQC/WTR – 006	General Clarification & Purification Process of the Raw Water
OP – WQC/WTR – 007	Control and Preventive of Biological Foulants in Processed Surface Water

OP-CHL/WTR**CHLORINATION**

OP – CHL/WTR – 001	Chlorination for Direct-Supply Wells
OP – CHL/WTR – 002	Installation and Operation of Direct Supply Well Chlorination
OP – CHL/WTR – 003	Designing & Installation Process – Chlorination for Direct Supply Wells

WATER STORAGE**OP-PDM****WATER PRODUCTION and DISTRIBUTION MONITORING & CONTROL****OP-WQC/WST****WATER QUALITY MONITORING and CONTROL**

OP – WQC/WST – 001	Water Sampling of Reservoirs
OP – WQC/WST – 002	Disinfecting Reservoirs
OP – WQC/WST – 003	Biological growth Assessment in Water Tanks

MQMS
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 DATED 13 2006 BY *[Signature]*

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OP – RESERVOIR and MAINTENANCE**WATER DISTRIBUTION****OP-MMN METER MAINTENANCE**

- OP – MMN – 001 New Meter Testing
- OP – MMN – 002 Meter Testing (Pulled-out Meters)
- OP – MMN – 003 Meter Testing Complaint
- OP – MMN – 004 Meter Replacement (PM)
- OP – MMN – 005 Meter Accuracy Evaluation (Batch)
- OP – MMN – 006 Meter Replacement (CM)
- OP – MMN – 007 Request for Trace-up
- OP – MMN – 008 Water Levy Meter Installation (New)

OP-VOP VALVE OPERATIONS**OP- PMI PIPELINES MONITORING and INSPECTION**

- OP – PMI – 001 SC Leak Detection Works – North
- OP – PMI – 002 Water Service Monitoring and Inspection/ Water Pilferage Prosecution



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- OP – WQC/WDI – 002 Assessment of Water Sample Viability for Microbiological and Chemical Analysis
- OP – WQC/WDI – 003 Microbiological and Chemical Analysis of Water Sample from Designated Area
- OP – WQC/WDI – 004 On-Site Chlorine Residual, pH, & Conductivity Testing at the Water Distribution Network
- OP – WQC/WDI – 005 Intralaboratory Quality Assurance Implementation and Assessment
- OP – WQC/WDI – 006 Evaluation, Interpretation and Documentation of Analytical Results
- OP – WQC/WDI – 007 Isolating an Area affected by Microbiological Contamination
- OP – WQC/WDI – 008 Handling Internal WQCD Job Order with History Cards at Distribution Sampling Point
- OP – WQC/WDI – 009 Handling External WQCD Job Order for Rehabilitation Activity at Distribution Sampling Point
- OP – WQC/WDI – 010 Strategic Hydrant / Blow-off Valve Flushing Activity
- OP – WQC/WDI – 011 Re-assessment of Contaminated Distribution Networks After Rehab

OP-SCI**SERVICE CONNECTIONS INSTALLATION**

- OP – SCI – 001 Processing of Application of New Service Connection
- OP – SCI – 002 Applying for Reconnection
- OP – SCI – 003 Installation of New Service Connection
- OP – SCI – 004 Temporary Disconnection Due to Delinquency
- OP – SCI – 005 Reconnection
- OP – SCI – 006 Un-accomplished Reconnection JO
- OP – SCI – 007 Permanent Disconnection
- OP – SCI – 008 Permanent Mainline Disconnection
- OP – SCI – 009 Tapping
- OP – SCI – 010 Change in Customer Service Requirement
- OP – SCI – 011 Processing of Application for Change of Consumer's Name
- OP – SCI – 012 Pre-Service Orientation

Op-SCI-013 - New Service Connection plotted to GIS Map

OP-PRH**PIPELINES REHABILITATION**

- OP – PRH – 001 Service Connection Rehabilitation
- OP – PRH – 002 Service Connection Rehab (Job Order) – North
- OP – PRH – 003 Preparation of JO for Walk-in Complaint
- OP – PRH – 004 Preparation of MAC Job Order (External)

OP-PMN**PIPELINES MAINTENANCE**

- OP – PMN – 001 Leak Repair Procedure
- OP – PMN – 002 Pipelines Repair Procedure

OP-PRR**PAVEMENT RESTORATION**


- OP – PRR – 001 Road Restoration Procedure – PMD South
- OP – PRR – 002 Road Restoration Procedure – PMD North

MOQMS
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Subject	Water Sampling at Designated Points/Sites of the Production Sources and the Distribution Network.		Effective Date	Jan. 01, 01

1.0 OBJECTIVE:

To implement the different water sampling techniques employed in assessing the water quality of designated points and sites of production sources and distribution network.

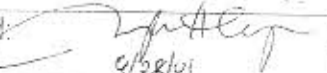
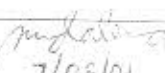
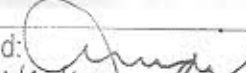
2.0 SCOPE:


This entails all water sampling activities and techniques employed at raw water sources, surface water, reservoir, distribution pipelines, hydrants & stub-outs, artesian wells, domestic sampling faucets, observation wells, and waste water lines.

3.0 DEFINITION OF TERMS:

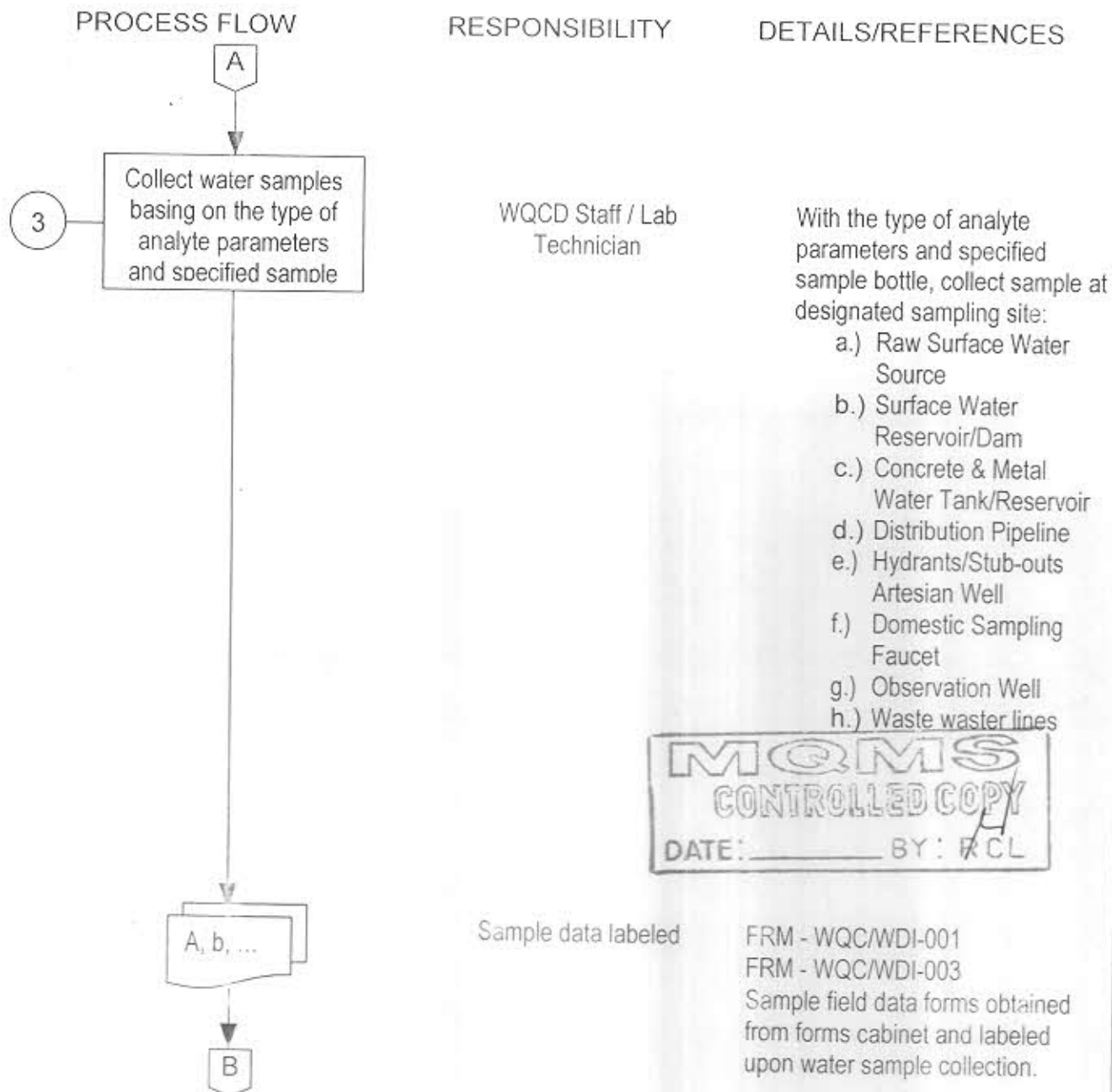
- Distribution Network** - refers to the interconnected pipelines and fittings and appurtenances that carry and convey drinking water from the source into the different water concessionaires.
- Domestic Sampling Facilities** - refer to household service line faucets, wherein water can be accessible for sampling.
- Observation Well** - refers to a constructed well either MCWD erected or privately-owned which is used for assessing the quality in comparison with the existing quality exhibited by production well sources.
- Stub-outs** - refer to a 1" to 2" pipe tapped to a distribution pipeline which will serve as an access for water service line connections to consumers.



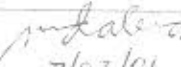
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Date: 6/28/01	Date: 7/05/01	Date: 7/20/01

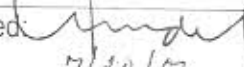
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			Effective Date	Jan. 01, 01


4.0 PROCEDURE



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Approved: 
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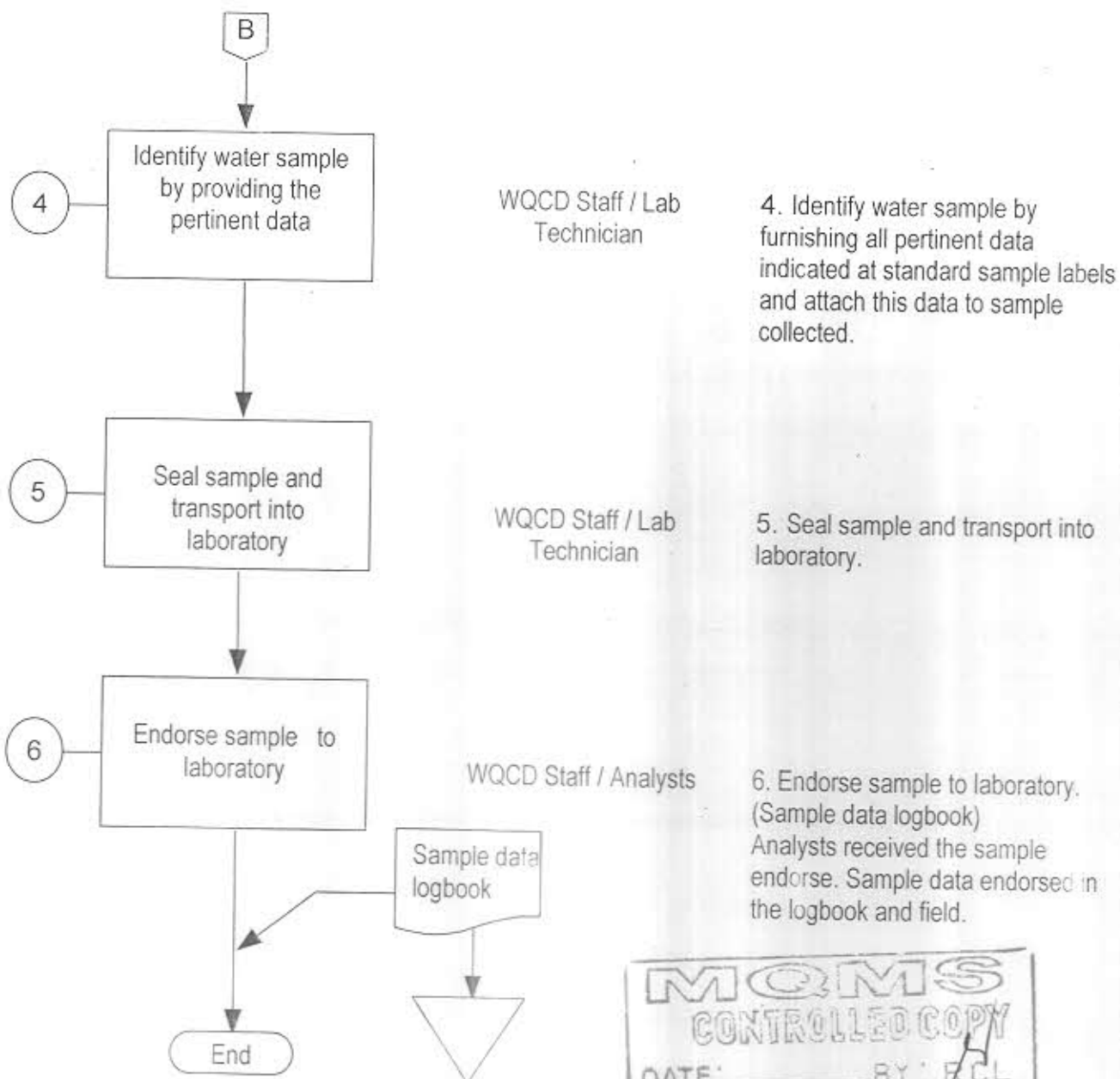
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4.0 PROCEDURE

PROCESS FLOW

RESPONSIBILITY

DETAILS/REFERENCES



Prepared: *[Signature]*
Date: 5/20/01

Reviewed: *[Signature]*
Date: 7/03/01

Approved: *[Signature]*
Date: 7/20/01

Assessment of Water Sample Viability for Microbiological & Chemical Analysis



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Section

Subject

Assessment of Water Sample Viability for
Microbiological & Chemical Analysis

1.0 OBJECTIVE:

To Assess the viability and integrity of the water sample submitted for microbiological and chemical analysis in compliance with the requirements for accuracy of result.

2.0 SCOPE:

All water samples from private clients, production sources, random and fixed sampling points, potability samples, special samples, and samples from the water – levied companies or individuals.

3.0 DEFINITION OF TERMS:

VIABILITY – the condition of the water sample that makes it truly representative of the state of the points from which it is taken, at the time it is collected, and complies with the minimum requirements for analysis.

FIXED SAMPLING POINT - a strategically located concessionaire whose domestic water line is in designated as representative sample, the sampling of which is done twice a month to monitor the water quality of the area.

RANDOM SAMPLING POINT – a randomly selected domestic line and sampled twice a month to monitor any sudden upsurge of contamination.

PRIVATE SAMPLES - a sample from a privately owned deep well or pump, tested to monitor the quality of their water.

Accuracy – combination of bias and precision of an analytical procedure, which reflects the closeness of a measured value to a true value.

POTABILITY SAMPLES – the sample collected from newly installed pipeline to determine the efficiency of disinfection.

PRODUCTION SAMPLES - the sample collected from production wells routinely analyzed for water quality.

SPECIAL SAMPLES - the samples collected before and after water meter to pinpoint the source of contamination in an already identified contaminated area.



Prepared:

Date:

Reviewed:

Date:

Approved:

Date:

6/28/01

7/03/01

7/20/01

Assessment of Water Sample Viability for Microbiological & Chemical Analysis



Metropolitan Cebu Water District Quality Management System Procedures Manual

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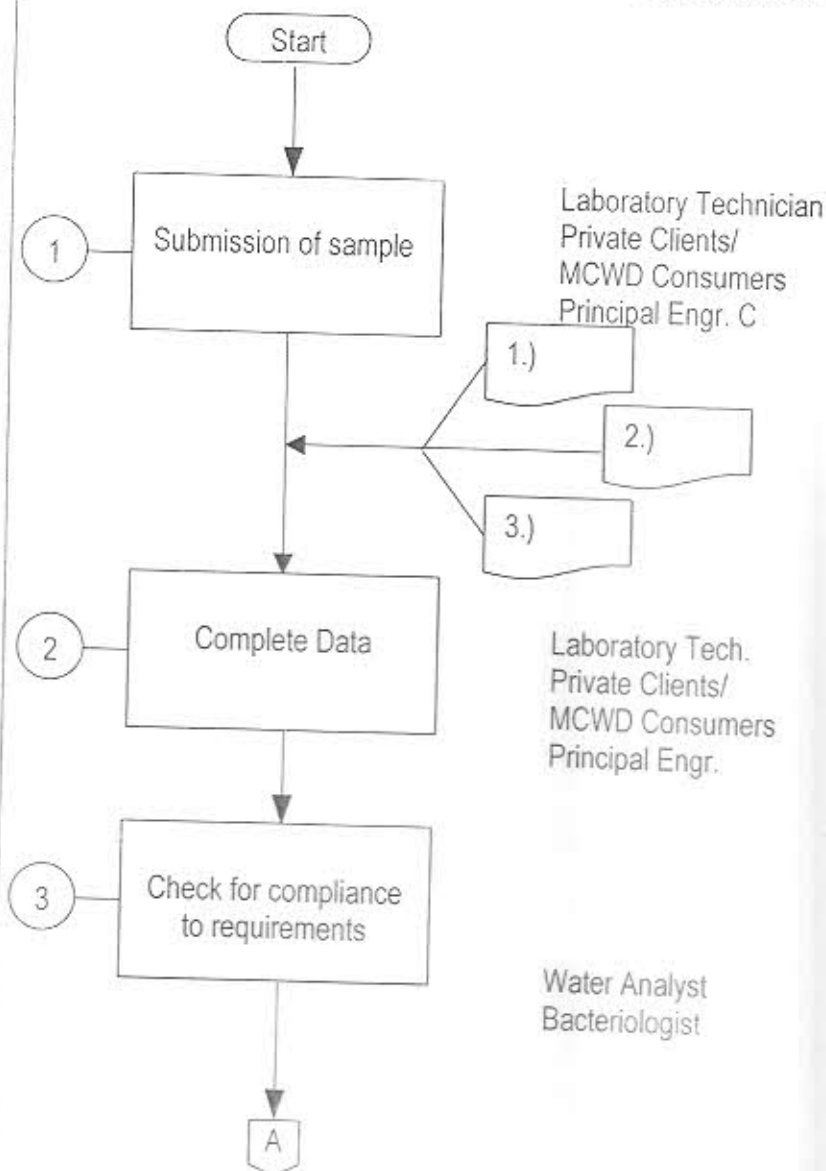
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4.0 PROCEDURE

PROCESS FLOW

RESPONSIBILITY

DETAILS / REFERENCES



Submit samples taken from:

- 1.) Fixed Sampling Points
- 2.) Random Samples
- 3.) Production Wells
- 4.) Private
- 5.) Special Samples
- 6.) Potability
- 7.) Water Levy

Type of forms filled up according; requesting party.

Fill-up the required forms

- 1.) FRM-WQC/WDI-001
- 2.) FRM-WQC/WDI-002
- 3.) FRM-WQC/WDI-003

Check for compliance to requirements of sample viability:

- 1.) Allowable time limit
- 2.) Proper collection technique
- 3.) Correct entry of data



Prepared: *[Signature]*
Date: 7/20/01

Reviewed: *[Signature]*
Date: 7/23/01

Approved: *[Signature]*
Date: 7/20/01

Assessment of Water Sample Viability for Microbiological & Chemical Analysis



Metropolitan Cebu Water District Quality Management System Procedures Manual

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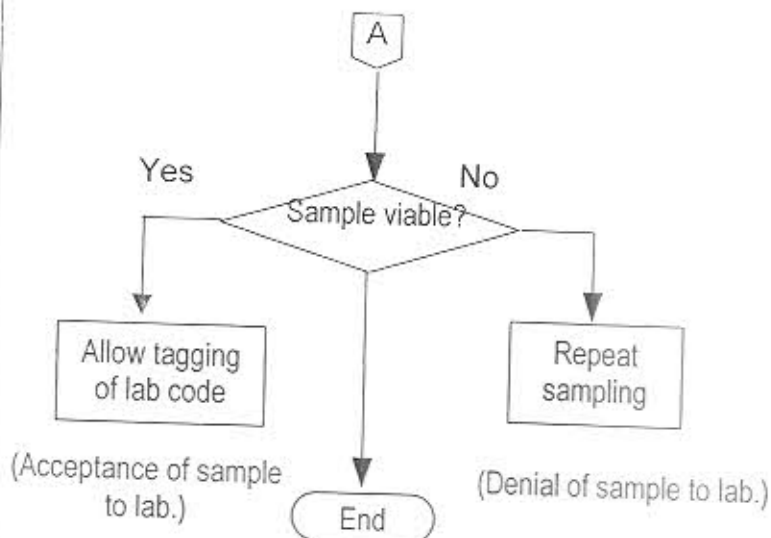
Assessment of Water Sample Viability for
Microbiological & Chemical Analysis

4.0 PROCEDURE

PROCESS FLOW

RESPONSIBILITY

DETAILS/REFERENCES



Repeat sampling is suggested to requesting party.



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6/26/01

7/03/01

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