Water Sampling of Reservoirs



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Section	in suffic	Revis	ion No.	0
Subject	Water Sampling of Reservoirs	Effecti	ve Date	Jan 01 01

1.0 OBJECTIVE:

To establish and implement the standard procedures in water sampling at reservoirs.

2.) SCOPE:

This limits to the water sampling activity intended for reservoir only.

3.0 DEFINITION OF TERMS:

Reservoir Sampling Point - this refers to a faucet or a valve connecting from the discharge pipeline of the reservoir, wherein water can be collected for sampling purposes.

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Prepared: StoMol

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Metropolitan Cebu Water District Quality Management System Procedures Manual		Index No.	OP-WQC / WST - 001
		Page N	o. 2 of 2
		Issue N	0. 1
Section	vi er Storage	Revision N	0. 0
Subject	Water Sampling of Reservoirs	Effective Da	te .Tan 01 01

4.0 PROCEDURE PROCESS FLOW RESPONSIBILITY DETAILS / REFERENCES Start low data sheet of Reservoir Obtain fact data sheet of reservoir WQCD Staff Identify sampling point Identify sampling point (VP - 02 - 00)Flow data sheet Fact sheet used is filed. of Reservoir Collect Water Sample WQCSD Staff Collect water sample during the day for the different level/elevation of reservoir. Sample data labeling Data of the water sample shall be furnished by sample. Analyst Submit sample for 3 Submit sample for laboratory laboratory analysis analysis. LF-09 Document results for interpretation and 4 Analyst further actions Document results for interpretation and further actions. Sample data DATE: End Prepared: Reviewed: Approved:

Date:

Disinfecting Reservoirs

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		Page No. Issue No.	
Disinfecting Reservoirs	Effective Date		Jan 01,01
	y Management System Procedures Manual	ry Management System Procedures Manual Iss Revis	y Management System Procedures Manual Issue No. Revision No.

1.0 OBJECTIVE:

To establish and implement standard procedures in disinfecting constructed reservoirs.

2.0 SCOPE:

This applies to disinfection activity in all types of constructed reservoirs and tanks at MCWD.

3.0 DEFINITION OF TERMS:

Constructed Reservoir - refers to all large volume concrete water storages at MCWD

Scrub Solution

 refers to a solution of solid chlorine in water that is at least 20 milligrams per liter, which is used in scrubbing the surfaces of concrete reservoir for disinfecting purposes.



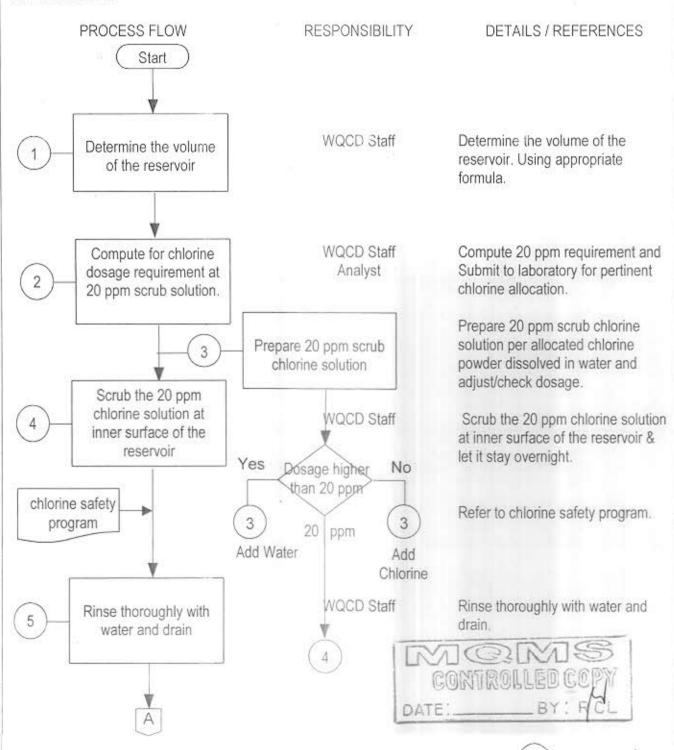
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		Page No. 2 Issue No.		2 of 3
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Section	-5- W -10	Revision I	No.	0
Subject	Disinfecting Reservoirs	Effective D	ate	Jan. 01,01

4.0 PROCEDURE



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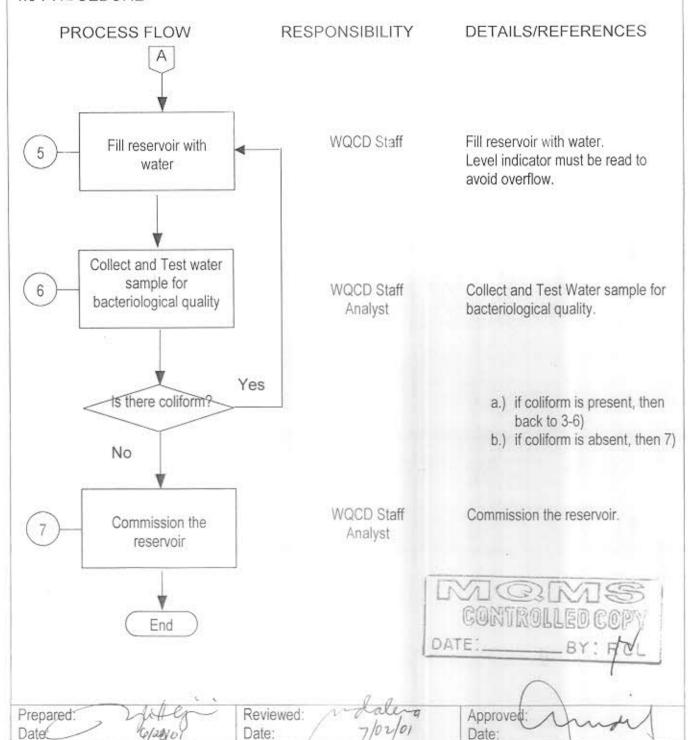
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Disinfecting Reservoirs



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Quality Management System Procedures Manual Section		Page No.	3 of 3
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Subject	Disinfecting Reservoirs	Effective Date	Jan. 01,01

4.0 PROCEDURE





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		Page No. Issue No.		1 Of 3	
				1	
Section		Revision No.		0	
Subject	Biological Growth Assessment in Water Tanks	Effectiv	ve Date	Jan. 01,01	

1.0 OBJECTIVE:

To develop and implement procedures on assessing the biological growth in all the water tanks of MCWD.

2.0 SCOPE:

This entails all biological growth assessment on all constructed water tanks of MCWD, including concreted reservoir, metal tanks, water truck tanks and chambers.

3.0 DEFINITION OF TERMS:

Algae Microscopy	 Refers to analytical method employed for the study and identification of different water algae exhibited by its morphological structures through a microscope.
Microscope	 Refers to a laboratory equipment that magnifies minute objects such as the living cell so that it can be readily seen by the naked human eye.
Morphology	- A branch in biology that studies the organization and structures of cells and tissues in

Water Tanks

- This refer to all constructed water tanks of MCWD including concrete reservoirs. metal, tanks, open tanks, water truck tanks and processed water chambers.

Note: Refer to procedure II P - 05 - 00 for the definition of algae growth.

living organism.

Reviewed: Date:

7/02/01

Approved Date:



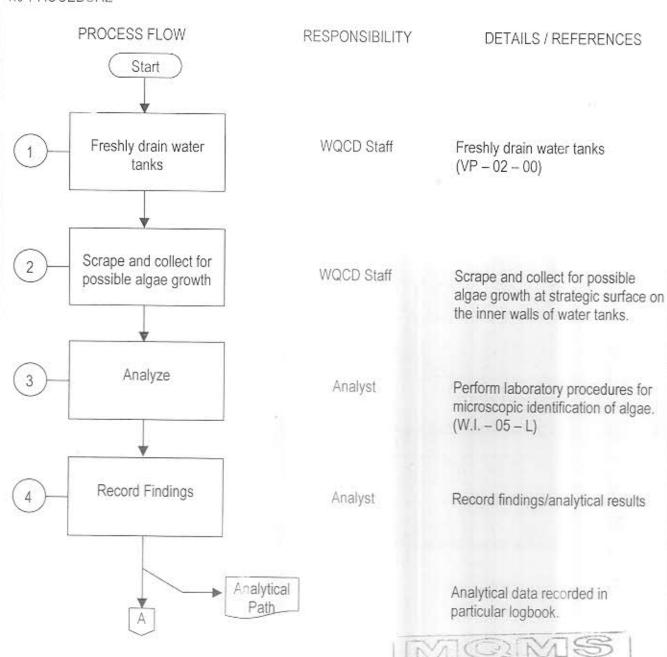
Index No.	OP-WQC/WST-003
Page No.	2 Of 3
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Subject	Biological Growth Assessment in Water Tanks

Effective Date Jan. 01,01

4.0 PROCEDURE

Section



Prepared Puffer Date: Voltagoi

Reviewed: Date: 7/02/01

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Approved: Date:



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 Index No.
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 Page No.
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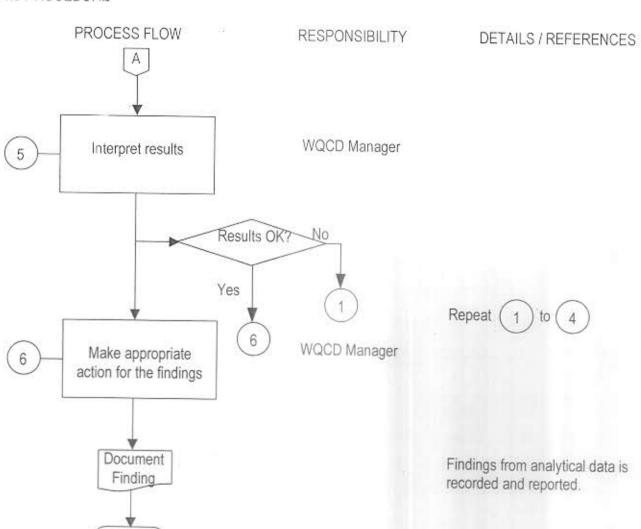
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Subject Biological Growth Assessment in Water Tanks

Effective Date Jan. 01,01

4.0 PROCEDURE

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Date: Reviewed: Tale a Approved: 7/20/01

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Chlorination Procedure for Reservoirs and Tanks

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		Page No. Issue No.		1 of 5
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Section	A. 11-102	Revision No.		0
Subject	Chlorination Procedure for Reservoir and Tanks	Effectiv	e Date	Jan.01,01

1.0 OBJECTIVE:

To establish standard procedures in the design of automatic chlorination system for reservoirs and tanks and to maintain the chlorination system for effective treatment of stored water.

2.0 SCOPE:

This limits to the standard procedures made in the design of an automatic chlorination system that is applicable for reservoirs and tanks and the operation and maintenance activities entailed with this treatment facility.

3.0 DEFINITION OF TERMS:

Elevation

- refers to the height of water level in the reservoir where it is stored.

Flow Rate

- refers to the volume of water flowing out from the reservoir at a period of time.

Equipment

Personal Protective - refers to safety devices and gadgets used during handling operation of chlorine gas (e.g. gas mask, respirator, gloves, etc.)

Reservoir

- this refers to the concrete tank installation at major MCWD well fields (e.g. Casili Reservoir).

Weighing Scale

- refers to a heavy-duty weighing device used in monitoring the weight of chlorine that is continuously dispensed from a 1 ton cylinder.

Prepared: Date:/

Reviewed: Date:

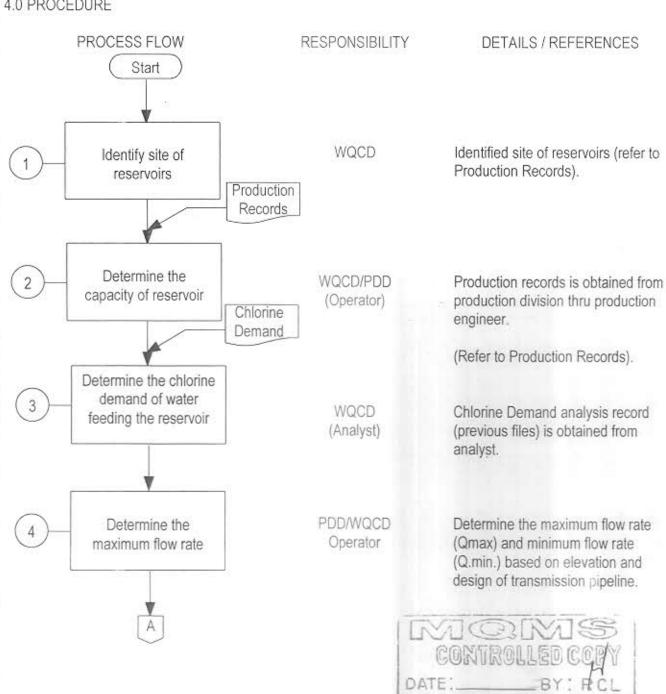
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Chlorination Procedure for Reservoirs and Tanks

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Section	CAMPAGE TIPS STREET	Revision 1	Vo.	0
Subject	Chlorination Procedure for Reservoir and Tanks	Effective D	ate	Jan. 01,01

4.0 PROCEDURE



Prepared: Date: / @/20101

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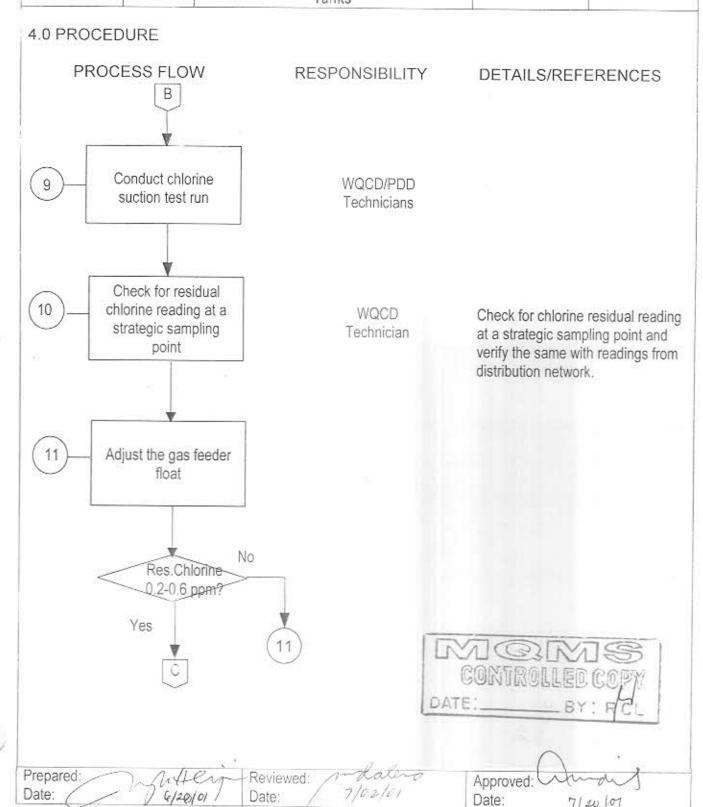
Jalero 7/02/01

Approved Date:

Chlorination Procedure for Reservoirs and Tanks



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Subject	Chlorination Procedure for Reservoir and	Effective D	ate	Jan. 01,01





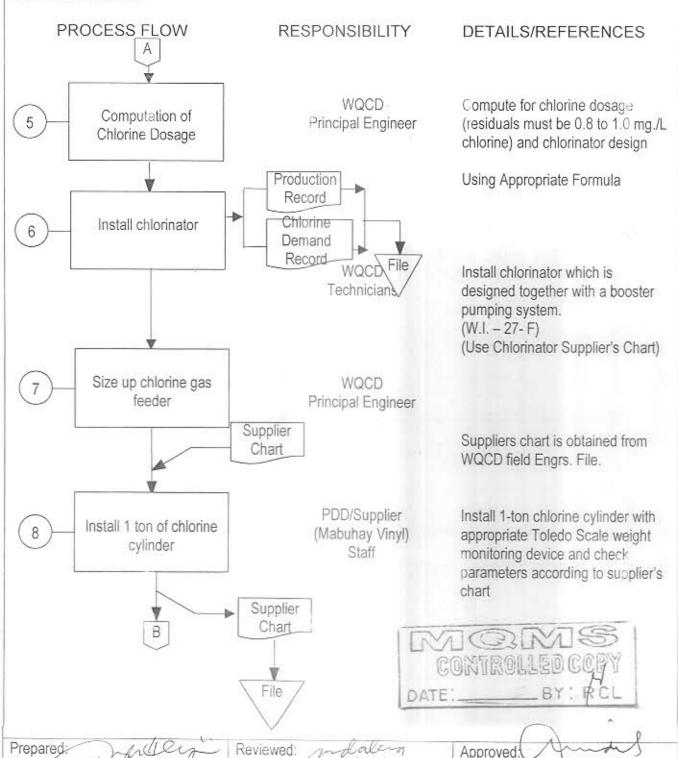
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Section		Revision	No.	0
Subject	Chlorination Procedure for Reservoir and	Effective D	ate	Jan. 01,01

4.0 PROCEDURE

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Section	Last toplayers	Revision N	No.	0
Subject	Chlorination Procedure for Reservoir and	Effective D	ate	Jan. 01,01

4.0 PROCEDURE PROCESS FLOW RESPONSIBILITY DETAILS/REFERENCES WQCD Technician Maintain the gas feeder float 12 Maintain gas feeder indicator for the desire chlorine float dosage. Give 0.2-0.6 pm residual at strategic site. WQCD / PDD Do routine check up and record 13 Do Routine Check-Up technician / Operator chlorination for performance. Validate chlorine WOCD Validate chlorine dosage through 14 dosage through Division Manager bacteriological testing of water bacteriological testing sample from reservoir. Bacte. Result No O.K.? DATE: Yes WQCD/PDD Keep a good maintenance record 15 Maintenance Record Technician/Operator for the reservoir 's chlorination system. (Use appropriate protective equipment and safety gadgets in handling chlorine gas) (Chlorine Safety Program) (WP-01) Prepared. Reviewed: Approved 7/02/01 Date: 7/20/07

Date:

Date:

New Meter Accuracy Testing



Metropolitan Cebu Water District Quality Management System		Index No.	OP-	MMN-001
		Page No.		1 of 2
V-S	Procedures Manual	Issu	ue No.	1
Section	Meter Maintenance	Revision No. 0		0
Subject	New Meter Accuracy Testing	Effective Date Jan, (Jan. 01.01

1.0 OBJECTIVE:

A procedure in carrying out accuracy testing of newly purchased water meters.

2.0 SCOPE:

From receipt of newly purchased water meters from warehouse clerk to endorsement of the meters back to warehouse clerk.

3.0 DEFINITION OF TERMS:

W.I. - Work Instruction

PITC - Precision Instrument Tech. Chief

GONTROLLED GORY
DATE: BY: RC

Prepared: Juan Antonio Martinez

Date: 7/17/201

Reviewed: Date:

Serome A. Peralta

Approved: Adoracion B. Rodil

Date: 1/20/01



Metropolitan Cebu Water District		Index No.	OP-MMN-001
Quality Management System		Page No.	2 of 2
	Procedures Manual	Issue No.	1
Section	Meter Maintenance	Revision No.	0
Subject	New Meter Accuracy Testing	Effective Date	Jan. 01,01

4.0 PROCEDURE PROCESS FLOW RESPONSIBILITY DETAILS / REFERENCES Start Receipt Meters Meter Testers Meters from warehouse clerk. Meter Test Sheet Testing of Water Meter Testers See W.I. Meters MTS Test Sheet to be filed by PITC Passed of No Failed? Failed Meters are either recalibrated or endorsed back to End warehouse clerk. Yes 3 Meters Endorsed Meter Testers Passed Meters are endorsed back to warehouse clerk. End DATE!

Prepared: Juan Antonio Martinez
Date: 7/19/19401

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Reviewed: Verome A. Peralta Date: 4/19/07 Approved: Adoracion B. Rodill Date: 7/20/01 Meter Testing (Pulled-out Meters)

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Section		Revisio	n No.	0
Subject	Meter Testing (Pulled-out Meters)	Effective	Date	Jan. 01,01

1.0 OBJECTIVE:

A procedure to carryout testing of meters pulled-out under corrective preventive meter maintenance.

2.0 SCOPE:

Testing of incoming meters under preventive corrective meter maintenance.

3.0 DEFINITION OF TERMS:

JO - Replacement Job Orders

PITC - Precision Instrument Technician Chief

Sr. IT - Senior Instrument Technician

PEO - Plant Equipment Operator

- Maintenance Aide MA

MMDC - Meter Maintenance Plumber Assigned as clerk.

DATE:_

Prepared: Juán Antonio Martinez

Reviewed: Date:

erome A. Perafta

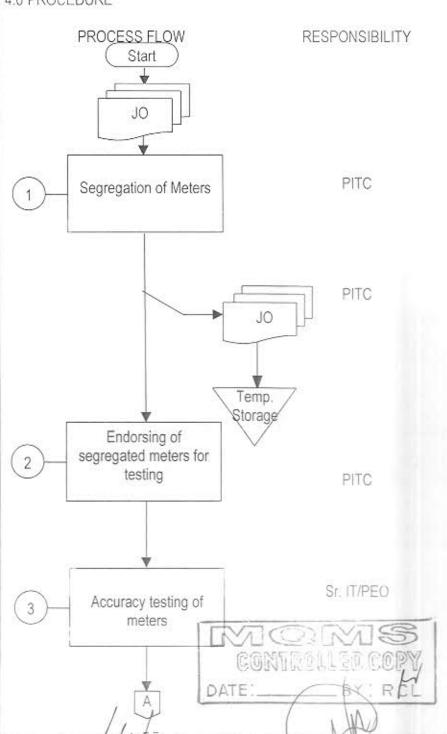
Approved: Adoracion B. Rodil Date:

Meter Testing (Pulled-out Meters)

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Subject	Meter Testing (Pulled-out Meters)	Effective Date	e Jan. 01,01

4.0 PROCEDURE



1.1 Meters are segregated for fulltest & intermediate flow only

DETAILS / REFERENCES

- a.) Meters needing full test are as follows.
- Meters with high consumption complaints.
- Meters under ii.) preventive maintenance.
- All large meters for 11/2" iii.)
- b.) Meters needing intermediate flow test.
- All meters not included i.) in (a) above.
- 2.1 Segregated meters endorsed for testing to Sr. IT or PEO.
- 2.2 Meters 3" to 8" are endorsed to PEO meters 1/2" to 2" are endorsed to Sr. IT.

See Meter Test Procedures.

- 3.1 Test Results from JO test form are transcribed to JO.
- 3.2 Tested Meters are opened by MAX and register given to PITC for inspection & transaction to JOs

Prepared: Juan Antonio Martinez

Date: 7/17/2001 Date:

Reviewed: Jerome A Peralta 7/18/07

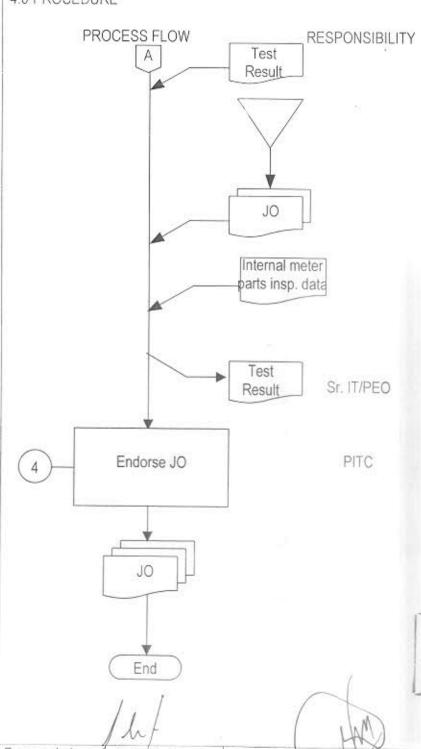
Approved: Adoracion B. Rodil

Date: 7/20/01 Meter Testing (Pulled-out Meters)



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Subject	Meter Testing (Pulled-out Meters)	. Effective Dat	e Jan. 01,01

4.0 PROCEDURE



DETAILS / REFERENCES

Test results are filed by Sr. IT for sizes 1/2" to 2", while 3" to 6" are filed by PEO.

4.1 Endorse JO to MMDC for encoding.

DATE:

Prepared: Juan Antonio Martinez

Date: 1001 Date:

Reviewed: Verome A. Peralta

Approved: Adoracion B. Rodli Date: 7/20/07

Meter Testing ((omplaint)



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Quali	ty Management System	Page No. 1 o		1 of 3
	Procedures Manual	Iss	ue No.	1
Section		Revisi	on No.	0
Subject	Meter Testing (Complaint)	Effectiv	e Date	Jan. 01,01

1.0 OBJECTIVE:

To establish A procedure to carryout meter testing. Subject meters are those from concessionaire with complaints of high consumption.

2.0 SCOPE:

All meters coming from preventive maintenance program and corrective maintenance.

3.0 DEFINITION OF TERMS:

MAC MCWD Action Center

MMD Meter Maintenance Division

Maintenance Support Service Department MSSD

PIT Precision Instrument Technician

WMMB Water Maintenance Man B

Prepared: Juan Antonio J. Martinez

Date:

7/17/2001

Date:

Reviewed: Jarome A. Péralta

DATE:

Approved: Adoracion B. Rodil 7/20/01 Date:

Prepared: Juan/Antonio J. Martinez

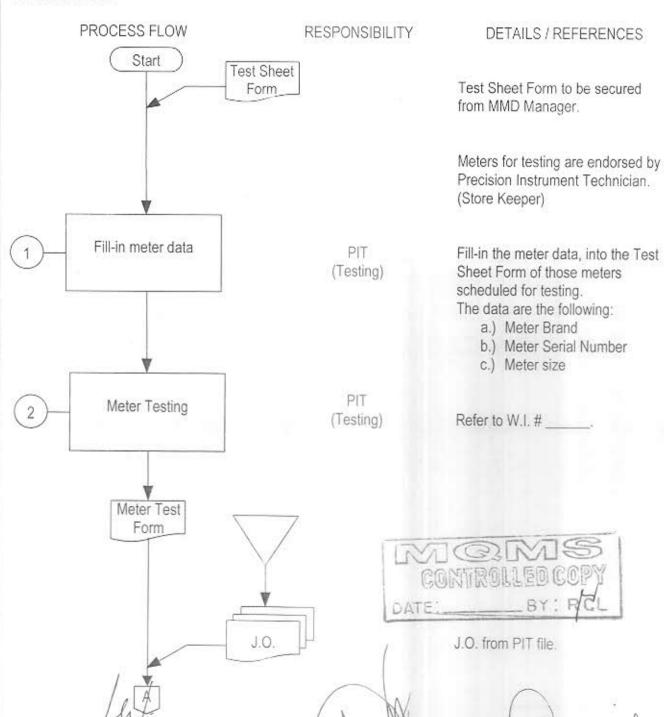
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Section		Revision N	lo.	0
Subject	Meter Testing (Complaint)	Effective Da	ate	Jan. 01,01

4.0 PROCEDURE



Reviewed: Jerome A. Peralta

Date:

Approved: Adoracion B. Rodil

7/20/07

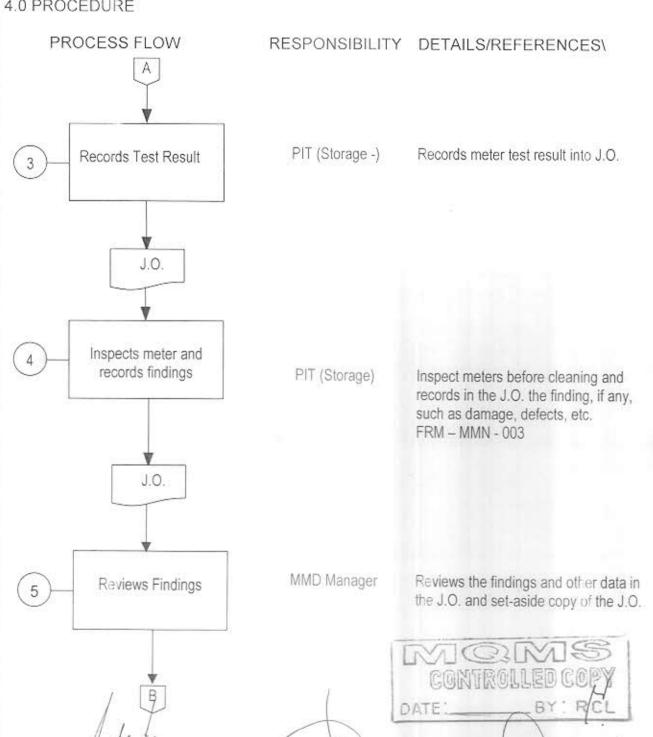
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Meter Testing (Complaint)



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Section		Revision N	lo.	0
Subject	Meter Testing (Complaint)	Effective Da	ate	Jan. 01,01

4.0 PROCEDURE



Prepared Juan Antonio J. Martinez Date:

7/17/201

Date:

Reviewed: Jerome a Peralta 7/12/01

Date:

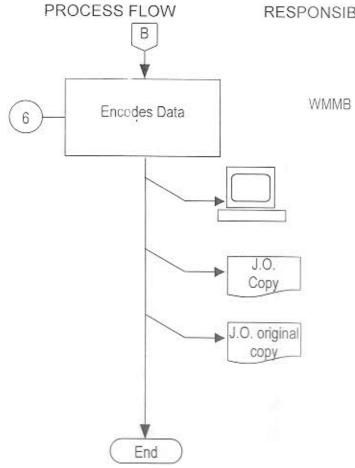
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Meter Testing (Complaint)



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Subject	Meter Testing (Complaint)	Effective Da	ate	Jan 01,01

4.0 PROCEDURE



RESPONSIBILITY DETAILS/REFERENCES

Encodes meter data and all other information found in the J.O.

The following data are encoded into the MMD computer.

- a.) date tested
- b.) test results

J.O. copy endorsed top MAC FRM-MMN-003

Original copy of J.O. submitted to Meter Reading Division. FRM-MMN-003

DATE:

Prepared: Juan Ántonio J. Martinez

Date: 1005 Reviewed: Date:

Jerome A. Peralta 7/12/01

Approved: Adoracion B. Rodil

Date:



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Page No.	1 of 5	
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Revision No.	0	
Effective Date	Jan. 01,01	

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Section	Meter Maintenance	
Subject	Meter Maintenance (P.M.)	

1.0 OBJECTIVE:

A procedure on how to carry out meter replacement per meters under preventive maintenance.

2.0 SCOPE:

From generation of nieter list under preventive maintenance to furnishing of JO to meter reader of replacement.

3.0 DEFINITION OF TERMS:

JO – Replacement Job Order

MML - Meter Master List

PM - Preventive Maintenance

MMDC - Meter Maintenance Division Plumber Assigned as Clerk.

MMDM - Meter Maintenance Division Manager

WI – Work Instruction

MAC - MCWD Action Center

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DATE: BY: FCL

Prepared: Juan Apotnio J. Martinez

Date: / 1/17/20

Reviewed: Jerome A. Peralta
Date: 1/1/167

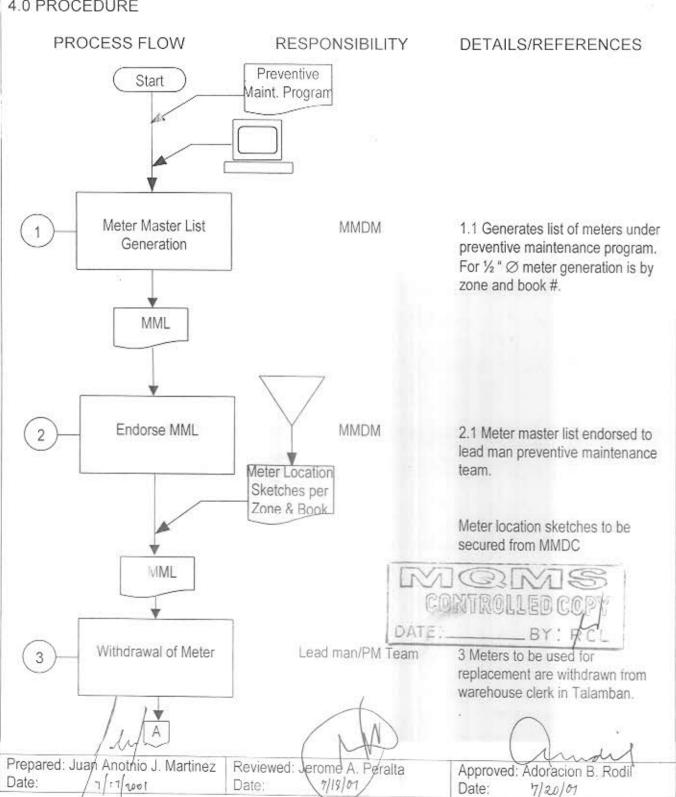
Approved: Adoracion B. Rodil

Date: 7/20/01



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Quality Management System	Page No	. 2 of 5	
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Section	Meter Maintenance	Revision No	. 0
Subject	Meter Maintenance (P.M.)	Effective Date	e Jan. 01,01

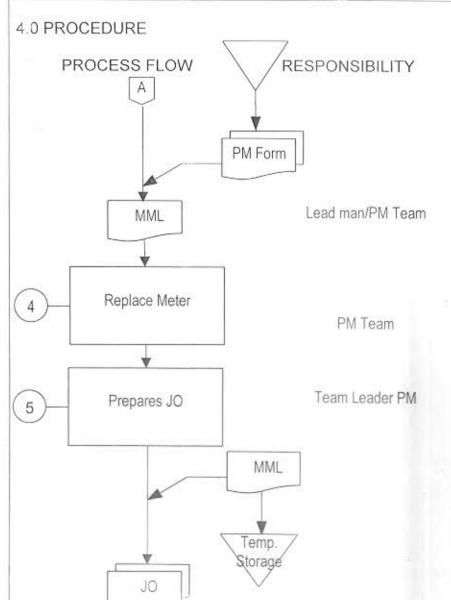
4.0 PROCEDURE





Section Meter Maintenance Subject Meter Maintenance (P.M.)

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Page No.	3 of 5
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Revision No.	0
Effective Date	Jan. 01,01



DETAILS/REFERENCES

PM form are secured from MMDC

3.1 Meters to be used for replacement are withdrawn or from warehouse clerk in Talamban. PM Form are secured from MMDC.

Refer to W.I #

- 5. Prepares JO records of data for meters that were replaced; the following data:
- a.) Concessionaire's name
- b.) Old meter data; brand, size, serial # and last reading.
- c.) New meter data; brand, size, serial # and initial reading.
- d.) Date replaced.
- e.) Name of team leader
- f.) Remarks on meter condition with replaced.

Keeps records for at least 1 year.

Concessionaire Representative

Team Leader PM

Coossible.

DATE:

Approved: Adoracion B. Rodil Date: 7/20/07

Prepared: Juan Anothio J. Martinez 7/17/2001 Date:

6

Signs JO

Reviewed Jerome Al Peralta Date: 7/18/07



Issue No. Meter Maintenance Revision No. Meter Maintenance (P.M.) Effective Date

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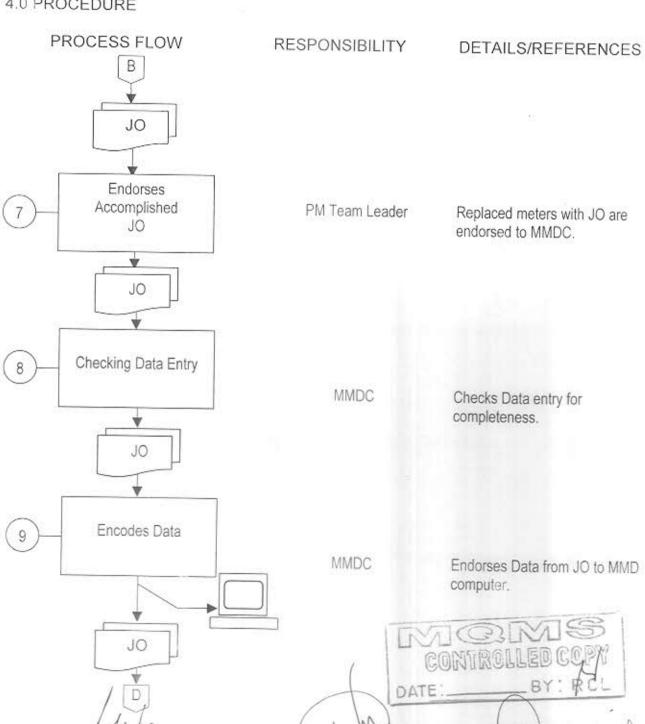
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Jan. 01,01

4.0 PROCEDURE

Section

Subject



Prepared: Juan/Anotnio J. Martinez Date:

Date:

Reviewed: Jerome A. Peralta 7/18/201

Approved: Adoracion B. Rodil Date: 7/20/01



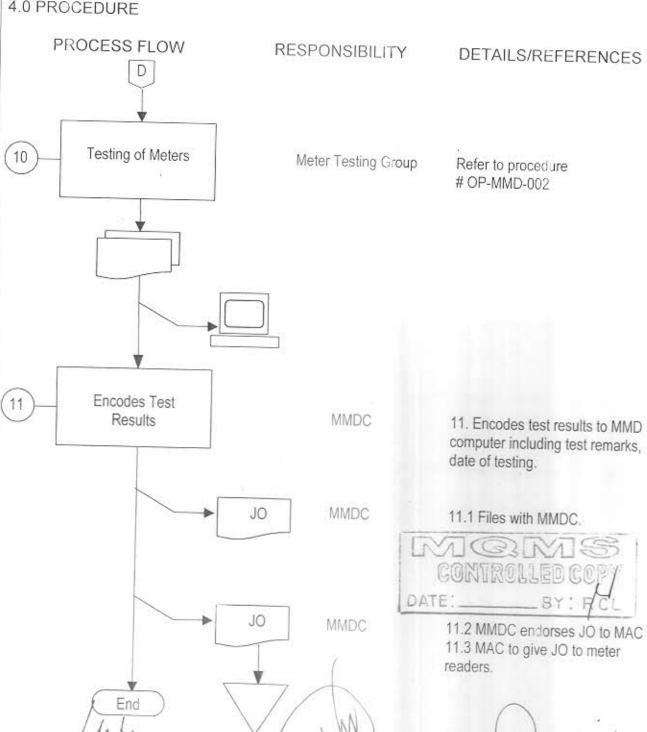
Meter Maintenance Meter Maintenance (P.M.)

Index No.	OP-MMN-004
Page No	5 of 5
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Revision No	0.
Effective Date	e Jan 01.01

4.0 PROCEDURE

Section

Subject



Prepared: Juah Anothio J. Martinez

Date:

Reviewed! Jerome A. Peralta Date: 7/18/01

Approved: Adoracion B. Rodil Date: 7/20/07