<table>
<thead>
<tr>
<th>DCN NO.</th>
<th>REV NO.</th>
<th>IMPLEMENTATION DATE</th>
<th>REVISION HISTORY</th>
<th>ORIGINATED BY</th>
<th>CHECKED BY</th>
<th>APPROVED BY</th>
<th>PAGE REVISED</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016-030</td>
<td>00</td>
<td>09/06/2016</td>
<td>INITIAL RELEASE</td>
<td>EDGARDO F. AMBULO</td>
<td>ENGR. ALBERTO L. RESURRECCION</td>
<td>BONIFACIO B. DELA CRUZ</td>
<td>NONE</td>
</tr>
</tbody>
</table>
1.0 PURPOSE
To maintain performance, function and durability of equipment and carry out effective operations.

2.0 SCOPE
This procedure provides the guidelines for preventive maintenance of all SWD Water Systems Maintenance Division’s equipment.

3.0 DEFINITION OF TERMS
3.1 Equipment - tools needed for special purpose

4.0 REFERENCE DOCUMENTS
4.1 Diesel Engine Manual
   4.1.1 M.C. Kawasaki
   4.1.2 Atlas Copco

5.0 SAFETY REQUIREMENTS
5.1 Wear Applicable Personal Protective Equipment
   - Wearing of impact resistant eye protection with side protection
   - Wearing of protective gloves, safety shoes,

6.0 EQUIPMENT AND MATERIALS
6.1 Set of Wrenches
7.0 PROCESS FLOW

7.1 For Equipment Preventive Maintenance Procedure

RESPONSIBLE | FLOW CHART | REFERENCE
---|---|---
SWUMO | Prepares and Submit to EOD Manager for approval of Equipment Preventive Maintenance Schedule | Equipment Preventive Maintenance Schedule
Utility Worker A or B | Identifies the Equipment | Equipment Preventive Maintenance Schedule
Utility Worker A or B | Performs Equipment Checks and Records | Equipment Preventive Maintenance Log Sheet
Utility Worker A or B | Conducts Equipment Test | Equipment Preventive Maintenance Log Sheet
Utility Worker A or B | Submits Preventive Maintenance Report | Accomplished Equipment Preventive Maintenance Data
Clerk Processor B | Files Preventive Maintenance Report | Accomplished Equipment Preventive Maintenance Data

This document is a property of Silang Water District (SWD) and the content are treated confidential. Unauthorized reproduction is strictly prohibited unless otherwise, permitted by SWD Management
8.0 PROCEDURE

8.1 For Equipment Preventive Maintenance Procedure

8.1.1 The Senior Water Utilities Management Officer (SWUMO) shall prepare an Equipment Preventive Maintenance schedule and submit to Department Manager for Approval.

8.1.2 With the Equipment Preventive Maintenance schedule as reference, the Utility Worker A or B shall determine the equipment due for check-up.

8.1.3 The Utility Worker A or B shall check the physical condition of the equipment engine, air hose, claw coupling, fuel filter, piston ring, etc.)

8.1.4 The Utility Worker shall test run the equipment. Observe if there are any oil leakages, looses nut/claw coupling etc.

8.1.5 The Utility Worker A or B shall report to SWUMO/Maintenance Foreman any irregular condition of the equipment. (if the irregular condition can be repaired immediate repair shall be done and if necessary, request parts from the accredited supplier.)

8.1.5.1 for any equipment for repair that goes beyond the personnel capabilities, it shall be endorsed for outsourcing thru the procurement procedure.

8.1.9 The Utility Worker A or B shall fill-up the Equipment Preventive Maintenance Log sheet and submit to SWUMO.

8.1.10 The Clerk Processor B shall file the Equipment Preventive Maintenance Log sheet.

8.2 Corrective Maintenance

8.1.1 For Corrective maintenance of equipment, the Utility Worker A and B shall fill up the Job Order Sheet after the repair work had been accomplished, and submit it to Senior Water Utilities Management for approval.

8.1.2 The Clerk Processor B shall file the Job Order Sheet.

9.0 FORMS ATTACHED

9.1 Equipment Preventive Maintenance Schedule
9.2 Equipment Preventive Maintenance Log sheet
9.3 Job Order Sheet
<table>
<thead>
<tr>
<th>DCN NO.</th>
<th>REV NO.</th>
<th>IMPLEMENTATION DATE</th>
<th>REVISION HISTORY</th>
<th>ORIGINATED BY</th>
<th>CHECKED BY</th>
<th>APPROVED BY</th>
<th>PAGE REVISED</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016-026</td>
<td>00</td>
<td>09/06/2016</td>
<td>INITIAL RELEASE</td>
<td>EDGARDO F. AMBULO</td>
<td>ENGR. ALBERTO L. RESURRECCION</td>
<td>BONIFACIO B. DELA CRUZ</td>
<td>NONE</td>
</tr>
</tbody>
</table>
1.0 PURPOSE

To implement standard practices for installation of new service connection and repair of distribution and service lines.

2.0 SCOPE

This procedure is applicable for the implementation of standard practices for installation of new service connection and repair of distribution and service lines.

3.0 DEFINITION OF TERMS

3.1 Job Order- refers to order for installation of new service connection.

3.2 Service Request Form - refers to request for repair of distribution and service line

3.3 Maintenance Order (MO)- refers to request of Customer Accounts Division for replacement, transfer, reconnection and voluntary disconnection and calibration of water meter.

3.4 Restoration Crew- group of people doing restoration works.

3.5 Leak- an occurrence in which water passes through a hole in a surface

3.6 Mainline- refers to the water distribution pipes

3.7 Fittings- refer to various materials used in installation of new service connection and repair of distribution and service line.

3.8 Database- a collection of pieces of information that is organized and used on a computer.

4.0 REFERENCE DOCUMENTS

4.1 Job Order for New Service Connection
4.2 Service Request Form
4.3 Maintenance Order

5.0 SAFETY REQUIREMENTS

5.1 Wear Applicable Personal Protective Equipment ( Hard hat, Long sleeve shirt, Safety Shoes, Reflectorized vest, impact resistance eye protector with side protection, gloves, ear muffs, rain boots, raincoat)

5.2 Installation of Warning device and barricades
5.3 Installation of Steel plates for drive ways

This document is a property of Silang Water District (SWD) and the content are treated confidential. Unauthorized reproduction is strictly prohibited unless otherwise, permitted by SWD Management
6.0 EQUIPMENT AND MATERIALS

6.1 Various materials for new service connection (See Attachment 1)
6.2 Plumbing tools (Tapping Tools, Flaring tools, Pipe Threader, Hacksaw, Adjustable wrench, vise grip etc.)
6.3 Shovel
6.4 Crowbar
6.5 Pneumatic Jackhammer and Compressor
6.6 Concrete Cutter
6.7 Jetting Tools
6.8 Concrete Mixer
6.9 Rammer or Compactor
7.0 PROCESS FLOW

RESponsible | FLOW CHART | REFERENCE
---|---|---
Receives Job Order | Installation of New Service Connection | Job Order for New Service Connection (COM-CSD-F004) and Service Request Form (COM-CSD-F007/COM-CSD-F009 (manual)) or MO (COM-CSD-F006/COM-CSD-F008 (manual))
| Repair of Distribution (main line) and Service Line | Records | Records
| SWUMO/SWMMMA/WMMA | Assigns to Water Maintenance Man | Job Order for New Service Connection (COM-CSD-F004) and Service Request Form (COM-CSD-F007/COM-CSD-F009 (manual)) or MO (COM-CSD-F006/COM-CSD-F008 (manual))
| Water Maintenance Man A,B and C | Withdraws materials | Proceed to Location | Job Order for New Service Connection (COM-CSD-F004) and Service Request Form (COM-CSD-F007/COM-CSD-F009 (manual)) or MO (COM-CSD-F006/COM-CSD-F008 (manual))
| Water Maintenance Man A,B and C | Proceed to Location | List down needed materials for withdrawal | Job Order for New Service Connection (COM-CSD-F004) and Service Request Form (COM-CSD-F007/COM-CSD-F009 (manual)) or MO (COM-CSD-F006/COM-CSD-F008 (manual)) and Requisition and Issued Slip (RIS)

This document is a property of Silang Water District (SWD) and the content are treated confidential. Unauthorized reproduction is strictly prohibited unless otherwise, permitted by SWD Management.
RESponsible

A

Performs necessary service connection (tapping, excavation, cutting and jetting)

B

Proceed back to location for repair

C

Returns the accomplished Job Order for Post Investigation

RESPONSIBLE

Water Maintenance Man A, B and C

Restoration Crew

Water Maintenance Man A, B and C

Water Maintenance Man A, B, C

FLOWCHART

PERFORMS RESTORATION WORKS

Performs Restoration works

Secures Concessionaires signatures

REFERENCE

Job Order for New Service Connection (COM-CSD-F004) and Service Request Form (COM-CSD-F007/COM-CSD-F009 (manual)) or MO (COM-CSD-F006/COM-CSD-F008 (manual))

Job Order for New Service Connection (COM-CSD-F004) and Service Request Form (COM-CSD-F007/COM-CSD-F009 (manual)) or MO (COM-CSD-F006/COM-CSD-F008 (manual))

Job Order for New Service Connection (COM-CSD-F004) and Service Request Form (COM-CSD-F007/COM-CSD-F009 (manual)) or MO (COM-CSD-F006/COM-CSD-F008 (manual))

Accomplished JobOrder for New Service Connection (COM-CSD-F004) and Accomplished Service Request Form (COM-CSD-F007/COM-CSD-F009 (manual)) or MO (COM-CSD-F006/COM-CSD-F008 (manual))
INSTALLATION OF NEW WATER SERVICE CONNECTION AND REPAIR OF DISTRIBUTION (MAIN LINE) AND SERVICE LINE

RESPONSIBLE

Water Maintenance Foreman/SWMMB/ WMMA

Evaluates job performed

Submits and Records

Encodes to database

Submits Report to Customer Accounts Division for Installed New Service Connection

Submits Report to Customer Service Division for Repair of Distribution (main line) and service line

Clerk Processor B

Clerk Processor B

C

FLOWCHART

REFERENCE

Accomplished Job Order for New Service Connection (COM- CSD-F004) and Accomplished Service Request Form (COM-CSD-F007/COM-CSD-F009 (manual)) or MO (COM-CSD-F006/COM-CSD-F008 (manual)) and Accomplished Post Investigation Slip

Accomplished Job Order for New Service Connection (COM- CSD-F004) and Accomplished Service Request Form (COM-CSD-F007/COM-CSD-F009 (manual)) or MO (COM-CSD-F006/COM-CSD-F008 (manual)) and Accomplished Post Investigation Slip

Accomplished Job Order for New Service Connection (COM- CSD-F004) and Accomplished Service Request Form (COM-CSD-F007/COM-CSD-F009 (manual)) or MO (COM-CSD-F006/COM-CSD-F008 (manual))

Transmittal of Installed New Service Connection (EOD-WSM- F001) and Summary of Accomplished Service Request (EOD-WSM-F002) or Accomplished MO Logbook

This document is a property of Silang Water District (SWD) and the content are treated confidential. Unauthorized reproduction is strictly prohibited unless otherwise, permitted by SWD Management
8.0 PROCEDURE

8.1 For Installation of New Service Connection

An approved job order form for new service connection coming from Customer Service Division together with a letter of transmittal is routed to Water Systems Maintenance by the Warehouse personnel for acknowledgement.

8.1.1 The Senior Water Utilities Management Officer (SWUMO), SWMMA, WMMA shall accept the approved job order for new service connection (COM-CSD-F004) from Warehouse personnel.

8.1.2 The SWUMO, SWMMA, WMMA shall record the above-mentioned job order in the New Service Connection Monitoring logbook.

8.1.3 The SWUMO/SWMMA/SWMMB/WMMA shall assign job order for new service connection (COM-CSD-F004) to Water Maintenance Man.

8.1.4 The Water Maintenance Man shall withdraw materials needed for new service connection at Warehouse.

8.1.5 The Water Maintenance Man shall proceed to the concessionaire’s address/location as indicated in the job order for new service connection (COM-CSD-F004).

8.1.6 The Water Maintenance Man shall perform the necessary new service connection works with the following options.
   a. Tapping
   b. with Excavation
   c. with Cutting
   d. with Jetting

8.1.7 The Restoration crew shall do the restoration works.

8.1.8 The Water Maintenance Man shall secure signature of concessionaires acknowledging that the installation is already completed.

8.1.9 The accomplished job order for new service connection (COM-CSD-F004) shall be returned to Senior Water Maintenance Man for post investigation.

8.1.10 The Maintenance Foreman/SWMMB/WMMA shall evaluate the job performed by accomplishing the post investigation slip and sign the job order for new service connection certifying that the job performed is already completed.

(if the result of post investigation is not satisfactorily completed, the Maintenance Foreman/SWMMB/WMMA shall put a remarks on the post investigation slip and shall relayed to Water Maintenance Man; the Water Maintenance Man shall do the procedure again; the same will be rechecked by the Maintenance Foreman/SWMMB/WMMA.)
8.1.11 The Maintenance Foreman/SWMMB/WMMA shall submit the accomplished job order for new service connection (COM-CSD-F004) to SWUMO/SWMMA/WMMA for recording and forward to Clerk Processor B for encoding on the New Service Connection database.

8.1.12 The Clerk Processor B shall prepare Transmittal of Installed New Service Connection (EOD-WSM-F001) and forward to Customer Accounts Division together with copies of accomplished new service connection job order(COM-CSD-F001) in weekly basis.

(For Unit Offices the Senior Water Maintenance Man A and Water Maintenance Man A shall prepare Transmittal of Installed New Service Connection(EOD-WSM-F001) and Forward to Customer Accounts together with the copies of new service connection job order.)

8.2 Repair of Distribution (Mainline) and Service Line

All Service Request and Maintenance Order generated by the Customer Service Division are forwarded to Water Systems Maintenance for immediate assignment to Water Maintenance Men.

8.2.1 The Senior Water Utilities Management Officer (SWUMO) shall acknowledge the receipt of Service Request form (COM-CSD-F007) or Maintenance Order (MO)(COM-CSD-F006) from Customer Service Division.

(For Unit Offices the SWMMA/WMMA shall acknowledge the receipt of Service Request Manual form (COM- CSD F009) or Maintenance Order Manual form ( COM-CSD- F008)from Customer Service Division.

8.2.2 The Senior Water Utilities Management Officer (SWUMO)/SWMMA/WMMA shall record the Service Request and MO in the Service Request and Maintenance Order Monitoring Logbook and forward to Senior Water Maintenance Man.

8.2.3 The Senior Water Maintenance Man shall arrange request as to order of priority (urgency of job), and give service request or MO form to Water Maintenance Man.

8.2.4 The Water Maintenance Man shall proceed to the location for checking and advise the concessionaires that there will be a repair work.

8.2.5 Upon checking, the Water Maintenance Man shall list down the needed materials (if there are any) that will be used in the performance of the request as indicated in the Service Request Form or MO.

8.2.6 The Water Maintenance Man shall prepare a duly accomplished Requisition and Issue Slip for withdrawal of materials.

8.2.7 The Water Maintenance Man shall go back to the location to do the repair.

8.2.8 The Water Maintenance Man shall ensure that the water leak is already gone.
8.2.9 The Restoration Crew shall do the restoration works.

8.2.10 The Water Maintenance Man shall secure signatures of concessionaires acknowledging that the repair is already completed through the Service Request Form.

8.2.11 The Water Maintenance Man shall return the accomplished Service Request Form or MO to Senior Water Maintenance Man for post investigation.

8.2.12 The Senior Water Maintenance Man shall evaluate the job performed by accomplishing the post investigation slip and sign the Service Request Form certifying that the job is satisfactorily completed.

(if the result of post investigation is not satisfactorily completed, the Maintenance Foreman/SWMMB/WMMA shall put a remarks on the post investigation slip and shall relayed to Water Maintenance Man; the Water Maintenance Man shall do the procedure again ;the same will be rechecked by the Maintenance Foreman/SWMMB/WMMA.)

8.2.13 The Senior Water Maintenance shall submit the Service Request form and MO to Senior Water Utilities Management Officer /SWMMA/WMMA for recording to Service Request and MO Monitoring logbook.

8.2.14 The Senior Water Utilities Management Officer shall forward the Service Request and MO to Clerk Processor B for encoding on the Service Request and MO database and generate Summary of Accomplished Service Request and log on to the Accomplished MO Logbook to be submitted to Customer Service Representative of Customer Service Division in weekly basis.

(For Unit Offices the Senior Water Maintenance Man A and Water Maintenance Man A shall prepare Transmittal of Installed New Service Connection and Forward to Customer Service together with the copies of new service connection job order.)

9.0 FORMS ATTACHED

9.1 Transmittal of Installed New Service Connection –EOD – WSM –F001
9.2 Summary of Accomplished Service Request - EOD – WSM – F002
9.3 Post investigation Slip
9.4 New Service Connection Monitoring Logbook
9.5 Service Request and Maintenance Order Monitoring Logbook
9.6 Accomplished Maintenance Order Logbook
# INSTALLATION OF WATER DISTRIBUTION PIPES (MAIN LINE)
(by administration)

<table>
<thead>
<tr>
<th>DCN NO.</th>
<th>REV NO.</th>
<th>IMPLEMENTATION DATE</th>
<th>REVISION HISTORY</th>
<th>ORIGINATED BY</th>
<th>CHECKED BY</th>
<th>APPROVED BY</th>
<th>PAGE REVISED</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016-027</td>
<td>00</td>
<td>09/06/2016</td>
<td>INITIAL RELEASE</td>
<td>EDGARDO F. AMBULO</td>
<td>ENGR. ALBERTO L. RESURRECCION</td>
<td>BONIFACIO B. DELA CRUZ</td>
<td>NONE</td>
</tr>
</tbody>
</table>

This document is a property of Silang Water District (SWD) and the content are treated confidential. Unauthorized reproduction is strictly prohibited unless otherwise, permitted by SWD Management.
1.0 PURPOSE

To implement the installation of water distribution pipes (main line) in accordance with the approved Construction Plan.

2.0 SCOPE

This procedure is applicable to the implementation of installation of water distribution pipes (mainline).

3.0 DEFINITION OF TERMS

3.1 Program of Work- estimates of the work items, quantities and cost and a PERT/CPM network of the project activities.

3.2 PERT/CPM- Project management tool used to schedule, organize and coordinate task within the project.

3.3 Plan and design- a reference drawing

3.3 Hydro testing- a process of testing strength of the installed pipes and determination of possible leakage.

3.4 Restoration - a process of putting back all damaged concrete pavements to its original condition.

3.5 Fittings- refers to various materials used in connecting pipes.

3.6 Senior Water Utilities Management Officer (SWUMO) -personnel who supervises the activity of Water Maintenance Men

3.7 Water Maintenance Foreman/Senior Water Maintenance Man B (SWMMB)/Water Maintenance Man A (WMMA)- personnel who supervises the installation of water distribution p

4.0 REFERENCE DOCUMENTS

4.1 Program of Work
4.2 Approved Drawings
4.3 Applicable Permits and Documents

5.0 SAFETY REQUIREMENTS

This document is a property of Silang Water District (SWD) and the content are treated confidential. Unauthorized reproduction is strictly prohibited unless otherwise, permitted by SWD Management
5.1 Wear Applicable Personal Protective Gears (Hard hat, Long sleeve shirt, Safety Shoes, Reflectorized vest, impact resistant eye protector with side protection, gloves, ear muffs, rain boots, raincoat)

5.2 Installation of Warning device and barricades

5.3 Installation of Steel plates for drive ways

5.4 Installation of Tent

5.5 Use of Tower Light

6.0 EQUIPMENT AND MATERIALS

6.1 Material for Installation of new pipe line (See attachment 1)

6.2 Plumbing Tools

6.3 Set of Wrenches

6.4 Pneumatic Jackhammer and Compressor

6.5 Dewatering Pump

6.6 Concrete Cutter

6.7 Electric Concrete Breaker

6.8 Shovel

6.9 Crowbar

6.10 Rammer

6.11 Boring Tools

6.12 Mallet

6.13 Concrete Mixer

6.14 Valve keys

6.15 Portable Hydro testing Machine

6.16 Portable Edger

6.17 Portable Generator
7.0 PROCESS FLOW

7.1 For Installation Water Distribution Pipes (New Mainline)

<table>
<thead>
<tr>
<th>RESPONSIBLE</th>
<th>FLOW CHART</th>
<th>REFERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWUMO</td>
<td>Receives Approved Program of Work and Design Plans</td>
<td>Approved Program of Work and Design Plan</td>
</tr>
<tr>
<td>SWUMO and Water Maintenance Foreman / SWMMB/WMMA</td>
<td>Allocates Manpower, Tools and Equipment</td>
<td>Approved Program of Work and Design Plan</td>
</tr>
<tr>
<td>Utility Worker B</td>
<td>Conducts Excavation of Trench</td>
<td>Approved Program of Work and Design Plan</td>
</tr>
<tr>
<td>Water Maintenance Foreman /SWMMB/WMMA</td>
<td>Accomplish RIS, Inspect and Withdraws Materials</td>
<td>Approved Program of Work and Requisition And Issue Slip (RIS)</td>
</tr>
<tr>
<td>Water Maintenance Foreman/SWMMB/WMMA and Utility Worker B</td>
<td>Connects and Tightens fittings to the Pipes</td>
<td>Approved Program of Work and Design Plan</td>
</tr>
<tr>
<td>Water Maintenance Foreman/SWMMB/WMMA and Utility Worker B</td>
<td>Pouring of Concrete thrust block</td>
<td>Approved Program of Work and Design Plan</td>
</tr>
</tbody>
</table>

This document is a property of Silang Water District (SWD) and the content are treated confidential. Unauthorized reproduction is strictly prohibited unless otherwise, permitted by SWD Management.
INSTALLATION OF WATER DISTRIBUTION PIPES (MAIN LINE)  
(by administration)

RESPONSIBLE

Water Maintenance Foreman/SWMMB/WMMA and Utility Worker B

Water Maintenance Foreman/SWMMB/WMMA and Utility Worker B

Water Maintenance Foreman/SWMMB/WMMA and Utility Worker B

Clerk Processor B

FLOWCHART

A

Backfilling and Compaction of Trench and Clearing

Conducts Hydro Testing and Disinfection

Performs and Records Restoration Works

Submits Final Accomplishment Report

REFERENCE

Approved Program of Work and Design Plan

Approved Program of Work and Design Plan

Approved Program of Work and Design Plan

Weekly Progress Report

THIS DOCUMENT IS A PROPERTY OF SILANG WATER DISTRICT (SWD) AND THE CONTENT ARE TREATED CONFIDENTIAL. UNAUTHORIZED REPRODUCTION IS STRICTLY PROHIBITED UNLESS OTHERWISE PERMITTED BY SWD MANAGEMENT.
8.0 PROCEDURE

8.1 For Installation of Water Distribution pipes (Mainline)

Based on work order from the management, installation of mainline shall commence. The Planning and Design Division shall provide the Program of Work, and Design Plans.

8.1.1 Upon receipt of Program of work, and Design Plans the SWUMO shall assign the Water Maintenance Foreman/SWMMB/WMMA to allocate manpower, tools and equipment.

8.1.2 The Utility Worker A shall use concrete cutter and jack hammer for the concrete pavement. The Utility Worker B shall do the excavation of trench as indicated on the design plan.

8.1.3 The Water Maintenance Foreman/SWMMB/WMMA shall accomplish the Requisition and Issue Slip, inspect and withdraw materials needed.

8.1.4 The Water Maintenance foreman/SWMMB/WMMA shall perform the hauling, joining of pipes using lubricants (margarine or cooking oil or lard) in the gasket, and laying of joined pipes.

8.1.5 After five (5) pipes were installed the Utility Worker B shall perform backfilling on the laid pipes while the other Utility Worker B shall continue the joining and laying of pipes until all the pipes are installed.

8.1.6 The Water Maintenance Foreman/SWM/WMMA shall connects and tighten the fittings.

8.1.7 The Water Maintenance Foreman/SWM/WMMA together with Utility Worker B shall conducts pouring of concrete thrust block

8.1.8 The Utility Worker B shall perform backfilling and compaction of trench and clearing.

8.1.9 the Water Maintenance Foreman/SWWMB/WMMA together with Utility Worker B shall performs Hydro testing of pipes as follows:
   a. Fill the new pipeline with water until a 150 psi pressure is reached.
   b. Leave it for 2 hrs.
   c. If after 2 hrs., the pressure become less than 150 psi. Do the following:
      i. Tracing of water leak
      ii. Excavation
      iii. Repairing of defective pipes/fittings
      iv. Backfilling of trench
      v. Repeat Hydro testing
8.1.11 Upon passing the Hydro testing the Water Maintenance Foreman shall disinfect the pipe line by putting appropriate amount of chlorine for 24 hrs. cycle (1 day). (Note: please see below Chlorine formula)

\[ \text{Kg. Chlorine} = \left(\frac{50}{1,000,000}\right) \times \left(\left(\frac{\pi d^2}{4}\right) \times L \times 1,000\right) \]

Legend:
- \(d\) = diameter of pipe in meter
- \(L\) = length of pipe in meter

8.1.12 The Water Maintenance Foreman/SWMMB/WMMA, with the help of WRFO, shall check the residual chlorine after 24 hrs, using comparator kit in which the reading should be 25 ppm (parts per million).

8.1.13 The Water Maintenance Foreman/SWMMB/WMMA shall conduct flushing of the pipeline with clear water until the residual chlorine is not greater than 0.75 ppm but not less than 0.25 ppm.

8.1.14 The Water Maintenance Foreman/SWMMB/WMMA shall advise the Water Resource Facilities Operator (WRFO) to close/shuts off gate valves leading to the area.

8.1.15 The Water Maintenance Man shall cut the main line and install fittings for interconnection.

8.1.16 The Water Maintenance Foreman/SWMMB/WMMA shall advise the WRFO for opening of gate valves.


8.1.18 The Water Maintenance Foreman/SWMMB/WMMA shall submit Weekly Project Update Form to the Clerk Processor B until the completion of the project.

8.1.19 The Clerk Processor B shall submit weekly progress report to the EOD Manager.

8.1.20 The Water Maintenance Foreman/SWMMB/WMMA shall submit the final sketch of the project to Clerk Processor B once the project is completed.

8.1.21 The Clerk Processor B shall consolidate and submit the Actual Cost of Construction to the EOD Manager.

9.0 FORMS ATTACHED

9.1 Progress Report
9.2 Actual Cost of Construction

This document is a property of Silang Water District (SWD) and the content are treated confidential. Unauthorized reproduction is strictly prohibited unless otherwise, permitted by SWD Management.
# Interconnection of Water Distribution Pipes (Mainline) of Turned Over Subdivision and RWSA

**Document No:**
EOD-WSM-P007

**Rev. No.:**
00

**Page No.:** 1 of 6

<table>
<thead>
<tr>
<th>DCN NO.</th>
<th>REV NO.</th>
<th>IMPLEMENTATION DATE</th>
<th>REVISION HISTORY</th>
<th>ORIGINATED BY</th>
<th>CHECKED BY</th>
<th>APPROVED BY</th>
<th>PAGE REVISED</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016-032</td>
<td>00</td>
<td>09/06/2016</td>
<td>INITIAL RELEASE</td>
<td>EDGARDO F. AMBULO</td>
<td>ENGR. ALBERTO L. RESURRECCION</td>
<td>BONIFACIO B. DELA CRUZ</td>
<td>NONE</td>
</tr>
</tbody>
</table>

This document is a property of Silang Water District (SWD) and the content are treated confidential. Unauthorized reproduction is strictly prohibited unless otherwise, permitted by the SWD Management.
1.0 PURPOSE
To implement the interconnection of Water Distribution Pipes (main line) of turned over Subdivision and RWSA.

2.0 SCOPE
This procedure is applicable in the conduct of interconnection of water distribution pipes (mainline) of newly turned over subdivision and RWSA.

3.0 DEFINITION OF TERMS
3.1 Program of Work- estimates of the work items, quantities and cost and a PERT/CPM network of the project activities.
3.2 PERT/CPM- Project management tool used to schedule, organize and coordinate task within the project.
3.3 Plan and design - a reference drawing
3.4 RWSA- Rural Waterworks and Sanitation Association
3.5 Leak- an occurrence in which water passes through a hole in a surface.
3.6 Fittings- refers to various materials used in connecting pipes.
3.7 Restoration- a process of putting back all damaged concrete pavement to its original condition

4.0 REFERENCE DOCUMENTS
4.1 Program of Work
4.2 Approved Drawings

5.0 SAFETY REQUIREMENTS
5.1 Wear Applicable Personal Protective Equipment (Hard Hat, Long Sleeve shirt, Safety shoes, ReflectORIZED vest., wearing of impact resistant eye protection with side protection, wearing of protective gloves, rain boots, raincoat
5.2 Installation of Warning device and barricades
5.3 Installation of steel plates for drive ways
6.0 EQUIPMENT AND MATERIALS

6.1 Material for interconnection (See Attachment 1)
6.2 Plumbing tools
6.3 Set of Wrenches
6.4 Pneumatic Jackhammer and Compressor
6.5 Concrete Cutter
6.6 Shovel
6.7 Crowbar
6.8 Dewatering Pump
7.0 PROCESS FLOW

7.1 For Interconnection of Water Distribution Pipes (mainline) of Turned Over Subdivision and RWSA

<table>
<thead>
<tr>
<th>RESPONSIBLE</th>
<th>FLOW CHART</th>
<th>REFERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWUMO</td>
<td>Receives Approved Program of work and Design Plans</td>
<td>Approved Program of Work and Design Plans</td>
</tr>
<tr>
<td>SWUMO and Water Maintenance Foreman/ SWMMB/WMMA</td>
<td>Allocates Manpower, tools and Equipment</td>
<td>Approved Program of Work and Design Plans</td>
</tr>
<tr>
<td>Water Maintenance Foreman/ SWMMB/WMMA</td>
<td>Accomplish RIS, inspect and Withdraws Materials</td>
<td>Approved Program of Work and Design Plans and Requisition and Issue Slip (RIS)</td>
</tr>
<tr>
<td>Water Maintenance Foreman/ SWMMB/WMMA with Utility Worker B</td>
<td>Conduct excavation of working well</td>
<td>Approved Program of Work and Design Plans</td>
</tr>
<tr>
<td>Water Maintenance Foreman/ SWMMB/WMMA, B and C</td>
<td>Install, connects and tighten fittings</td>
<td>Approved Program of Work and Design Plans</td>
</tr>
<tr>
<td>Utility Worker B</td>
<td>Backfills the working well</td>
<td>Approved Program of Work and Design Plans</td>
</tr>
<tr>
<td>Water Maintenance Foreman/ SWMMB/WMMA with Utility Worker B</td>
<td>Performs and Record Restoration work</td>
<td>Approved Program of Work and Design Plans</td>
</tr>
<tr>
<td>Clerk Processor B</td>
<td>Submits Final Accomplishment Report</td>
<td>Weekly Progress Report</td>
</tr>
</tbody>
</table>

This document is a property of Silang Water District (SWD) and the content are treated confidential. Unauthorized reproduction is strictly prohibited unless otherwise, permitted by the SWD Management.
8.0 PROCEDURE

8.1 For Interconnection of Water Distribution Pipes (mainline) of Turned Over Subdivision and RWSA

Upon fulfillment of Silang Water District (SWD) requirement as determined by Office of the General Manager (OGM), donated mainline by Rural Waterworks and Sanitation Association (RWSA)/subdivision for interconnection to SWD distribution line (main line) will be done by Water Systems Maintenance.

8.1.1 Upon receipt of Program of work and Design Plans the SWUMO shall assign the Water Maintenance Foreman/SWMM/WMMA to allocate manpower, tools and equipment.

8.1.2 The Water Maintenance Foreman/SWMMB/WMMA shall accomplish the Requisition and Issue Slip, inspect and withdraw materials needed.

8.1.3 The Utility Worker A shall use concrete cutter and jack hammer for the concrete pavement.

8.1.4 The Water Maintenance Foreman/SWMMB/WMMA with Utility Worker B shall excavate a working well.

8.1.5 The Water Maintenance Foreman/SWMMB/WMMA shall advise the Water Resource Facilities Operator (WRFO) to close/shuts gate valves leading to the area.

8.1.6 The Water Maintenance Man shall cut the main line and install, connects and tighten fitting for interconnection to SWD distribution lines (main line).

8.1.7 The Utility Worker B shall perform backfilling of working well.

8.1.8 The Water Maintenance Foreman/SWMMB/WMMA shall advise the WRFO for opening of gate valves.

8.1.9 The Water Maintenance Foreman/SWMMB/WMMA shall check the interconnected fittings for any leakages. If any leakages found do the following:
   a. Excavation of working well
   b. Shutting of gate valves
   c. Repairing/replacement of defective pipes/fittings
   d. Backfilling of working well
   e. Repeat checking for any leakages.

8.1.10 The Utility Worker A shall perform restoration of concrete pavement.

8.1.11 The Water Maintenance Foreman/SWMMB/WMMA shall submit Weekly Project Update form to the Clerk Processor.
8.1.12 The Clerk Processor C shall submit Weekly Progress Report and Actual Cost of Construction to the EOD Manager.

9.0 FORMS ATTACHED

9.1 Progress Report
9.2 Actual Cost of Construction
<table>
<thead>
<tr>
<th>DCN NO.</th>
<th>REV NO.</th>
<th>IMPLEMENTATION DATE</th>
<th>REVISION HISTORY</th>
<th>ORIGINATED BY</th>
<th>CHECKED BY</th>
<th>APPROVED BY</th>
<th>PAGE REVISED</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016-028</td>
<td>00</td>
<td>09/06/2016</td>
<td>INITIAL RELEASE</td>
<td>EDGARDO F. AMBULO</td>
<td>ENGR. ALBERTO L. RESURRECCION</td>
<td>BONIFACIO B. DELA CRUZ</td>
<td>NONE</td>
</tr>
</tbody>
</table>
1.0 PURPOSE

To implement the rehabilitation of water distribution pipes (main line) in accordance with the approved Construction Plan.

2.0 SCOPE

This procedure is applicable to the rehabilitation of installation of water distribution pipes (mainline).

3.0 DEFINITION OF TERMS

3.1 Program of Work- estimates of the work items, quantities and cost and a PERT/CPM network of the project activities.

3.2 PERT/CPM- Project management tool used to schedule, organize and coordinate task within the project.

3.3 Plan and design- a reference drawing

3.4 Hydro testing- a process of testing strength of the installed pipes and determination of possible leakage.

3.5 Restoration- a process of putting back all damaged concrete pavements to its original condition.

3.6 Fittings- refers to various materials used in connecting pipes.

3.7 Senior Water Utilities Management Officer (SWUMO) - personnel who supervises the activity of Water Maintenance Man

3.8 Water Maintenance Foreman/Senior Water Maintenance Man B (SWMMB)/Water Maintenance Man A (WMMA) - personnel who supervises the installation of water distribution pipes

4.0 REFERENCE DOCUMENTS

4.1 Program of Work
4.2 Approved Drawings
4.3 Applicable Permits and Documents

This document is a property of Silang Water District (SWD) and the content are treated confidential. Unauthorized reproduction is strictly prohibited unless other, permitted by SWD Management
5.0 SAFETY REQUIREMENTS

5.1 Wear Applicable Personal Protective Gears (Hard hat, Long sleeve shirt, Safety Shoes, Reflectorized vest, impact resistant eye protector with side protection, gloves, ear muffs, rain boots, raincoat)
5.2 Installation of Warning device and barricades
5.3 Installation of Steel plates for drive ways
5.4 Installation of Tent
5.5 Use of Tower Light

6.0 EQUIPMENT AND MATERIALS

6.1 Material for Installation of new pipe line (See Attachment 1)
6.2 Plumbing Tools
6.3 Set of Wrenches
6.4 Pneumatic Jackhammer and Compressor
6.5 Dewatering Pump
6.6 Concrete Cutter
6.7 Electric Concrete Breaker
6.8 Shovel
6.9 Crowbar
6.10 Rammer
6.11 Boring Tools
6.12 Mallet
6.13 Concrete Mixer
6.14 Valve keys
6.15 Portable Hydro testing Machine
6.16 Portable Edger
6.17 Portable Generator
7.0 PROCESS FLOW

7.1 For Rehabilitation of Water Distribution Pipes (mainline)

RESPONSIBLE | FLOW CHART | REFERENCE
--- | --- | ---
SWUMO | Receives Approved Program of Work and Design Plans | Approved Program of Work and Design Plan
SWUMO and Water Maintenance Foreman SWMMB/WMMA | Allocates Manpower, Tools and Equipment | Approved Program of Work and Design Plan
Utility Worker B | Conducts Excavation of Trench | Approved Program of Work and Design Plan
Water Maintenance Foreman SWMMB/WMMA | Accomplish RIS, Inspect and Withdraws Materials | Approved Program of Work and Requisition And Issue Slip (RIS)
Water Maintenance Foreman SWMMB/WMMA and Utility Worker B | Performs Hauling, Joining, Laying of Pipes and Records Result | Weekly Progress Report
Water Maintenance Foreman SWMMB/WMMA and Utility Worker B | Connects and Tightens fittings to the Pipes | Approved Program of Work and Design Plan
Water Maintenance Foreman SWMMB/WMMA and Utility Worker B | Pouring of Concrete thrust block | Approved Program of Work and Design Plan
REHABILITATION OF WATER DISTRIBUTION PIPES (MAIN LINE)

RESPONSIBLE

Water Maintenance Foreman SWMMB/WMMA and Utility Worker B

Water Maintenance Foreman SWMMB/WMMA and Utility Worker B

Water Maintenance Foreman SWMMB/WMMA , B and C

Water Maintenance Foreman SWMMB/WMMA and Utility Worker B

Clerk Processor B

FLOWCHART

A

Backfilling and Compaction of Trench and Clearing

Conducts Hydro Testing and Disinfection

Installs Fittings for transfer of service line

Performs and Records Restoration Works

Submits Final Accomplishment Report

REFERENCE

Approved Program of Work and Design Plan

Approved Program of Work and Design Plan

Approved Program of Work and Design Plan

Approved Program of Work and Design Plan

Weekly Progress Report

This document is a property of Silang Water District (SWD) and the content are treated confidential. Unauthorized reproduction is strictly prohibited unless other, permitted by SWD Management.
8.0 PROCEDURE

8.1 For Rehabilitation of Water Distribution Pipes (mainline)

Based on work order from the management, rehabilitation of mainline shall commence. The Planning and Design Division shall provide the Program of Work, and Design Plans.

8.1.1 Upon receipt of Program of work, and Design Plans the SWUMO shall assign the Water Maintenance Foreman/SWMMB/WMMA to allocate manpower, tools and equipment.

8.1.2 Utility Worker A shall use concrete cutter and jack hammer for the concrete pavement. The Utility Worker B shall do the excavation of trench as indicated on the design plan.

8.1.3 Water Maintenance Foreman/SWMMB/WMMA shall accomplish the Requisition and Issue Slip, inspect and withdraw materials needed.

8.1.4 Water Maintenance foreman/SWMMB/WMMA shall perform the hauling, joining of pipes using lubricants (margarine or cooking oil or lard) in the gasket, and laying of joined pipes.

8.1.5 After five (5) pipes were installed the Utility Worker B shall perform backfilling on the laid pipes while the other Utility Worker B shall continue the joining and laying of pipes until all the pipes are installed.

8.1.6 Water Maintenance Foreman/SWMM/WMMA shall connects and tighten the fittings.

8.1.7 Water Maintenance Foreman/SWMM/WMMA together with Utility Worker B shall conducts pouring of concrete thrust block.

8.1.9 Utility Worker B shall perform backfilling and compaction of trench, and clearing.

8.1.10 the Water Maintenance Foreman/SWMMB/WMMA together with Utility Worker B shall performs Hydro testing of pipes as follows:
   a. Fill the new pipeline with water until a 150 psi pressure is reached.
   b. Leave it for 2 hrs.
   c. If after 2 hrs., the pressure become less than 150 psi. Do the following:
      i. Tracing of water leak
      ii. Excavation
      iii. Repairing of defective pipes/fittings
      iv. Backfilling of trench
      v. Repeat Hydro testing
8.1.11 Upon passing the Hydro testing the Water Maintenance Foreman shall disinfect the pipe line by putting appropriate amount of chlorine for 24 hrs. cycle (1 day). (Note: please see below Chlorine formula)

\[
\text{Kg. Chlorine} = \left(\frac{50}{1,000,000}\right) \times \left(\frac{\pi d^2}{4}\right) \times L \times 1,000
\]

Legend:
- \(d\) = diameter of pipe in meter
- \(L\) = length of pipe in meter

8.1.12 Water Maintenance Foreman/SWMMB/WMMA, with the help of WRFO, shall check the residual chlorine after 24 hrs, using comparator kit in which the reading should be 25 ppm (parts per million).

8.1.13 Water Maintenance Foreman/SWMMB/WMMA shall conduct flushing of the pipeline with clear water until the residual chlorine is not greater than 0.75 ppm but not less than 0.25 ppm.

8.1.14 Water Maintenance Foreman/SWMMB/WMMA shall advise the Water Resource Facilities Operator (WRFO) to close/shuts off gate valves leading to the area.

8.1.15 Water Maintenance Man shall cut the main line and install fittings for interconnection.

8.1.16 Water Maintenance Man shall install fittings for the transfer of service line to the new mainline.

8.1.17 Water Maintenance Foreman/SWMMB/WMMA shall advise the WRFO for opening of gate valves.

8.1.18 Water Maintenance Foreman/SWMMB/WMMA with Utility Worker B shall perform restoration of concrete pavement.

8.1.19 Water Maintenance Foreman/SWMMB/WMMA shall submit Weekly Project Update Form to the Clerk Processor B until the completion of the project.

8.1.20 Clerk Processor B shall submit weekly progress report to the EOD Manager.

8.1.21 Water Maintenance Foreman/SWMMB/WMMA shall submit the final sketch of the project to Clerk Processor B once the project is completed.

8.1.22 The Clerk Processor B shall consolidate and submit the Actual Cost of Construction to the EOD Manager.

9.0 FORMS ATTACHED

9.1 Progress Report
9.2 Actual Cost of Construction
<table>
<thead>
<tr>
<th>DCN NO.</th>
<th>REV NO.</th>
<th>IMPLEMENTATION DATE</th>
<th>REVISION HISTORY</th>
<th>ORIGINATED BY</th>
<th>CHECKED BY</th>
<th>APPROVED BY</th>
<th>PAGE REVISED</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016-029</td>
<td>00</td>
<td>09/06/2016</td>
<td>INITIAL RELEASE</td>
<td>EDGARDO F. AMBULO</td>
<td>ENGR. ALBERTO L. RESURRECCION</td>
<td>BONIFACIO B. DELA CRUZ</td>
<td>NONE</td>
</tr>
</tbody>
</table>

This document is a property of Silang Water District (SWD) and the content are treated confidential. Unauthorized reproduction is strictly prohibited unless otherwise, permitted by SWD Management.
1.0 PURPOSE
To conduct water leak detection to lessen the water leakage problem that contributes to Non Revenue Water (NRW).

2.0 SCOPE
This procedure is for implementation of water leak detection in accordance to the schedule, by doing ocular inspection of the service area late at night when there is minimal noise around.

3.0 DEFINITION OF TERMS
3.1 Water Leak Detection Schedule- schedule of water leak detection activity
3.2 Water Leak Detection Crew- group of people conducting leak detection
3.3 Leak- an occurrence in which water passes through a hole in a surface
3.4 Potholing- inspection of mainline for any leakages by excavation of holes on the ground.
3.5 Service Request Form- refers to request for repair of distribution and service line

4.0 REFERENCE DOCUMENTS
4.1 Water Leak Detection Schedule

5.0 SAFETY REQUIREMENTS
5.1 Wear Applicable Personal Protective Equipment (Safety Shoes, Reflectorized vest, rain boots, raincoat)
5.2 Installation of Warning device
5.3 Installation of Tent
5.4 Use of Tower Light
5.5 Use of Flashlight

6.0 EQUIPMENT AND MATERIALS
6.1 Plumbing Tools
6.2 Shovel
6.3 Crowbar
7.0 PROCESS FLOW

7.1 For Water Leak Detection Procedure

**RESPONSIBLE**

- SWUMO
- Water Maintenance Foreman/SWMMB/WMMA
- Water Maintenance Foreman/SWMMB/WMM A, B and C and Utility Worker B
- Water Maintenance Foreman/SWMMB/WMM A
- Clerk Processor B
- Water Maintenance Man A, B and C

**FLOW CHART**

- Prepares and Submit Water Leak Detection Schedule to the EOD Manager for Approval
- Identifies the Location
- Conducts Water Leak Detection and Records
- Submits Report to SWUMO and EOD Manager
- Forward List of Water Leaks Detected to Customer Service Division for Service Request form
- Conducts Repair of Distribution and Service Line

**REFERENCE**

- Report of Non Revenue Water
- Water Leak Detection Schedule
- Water Leak Detection Schedule
- Summary Report of Water Leak Detection Conducted
- Summary Report of Water Leak Detection Conducted
- Repair of Distribution (Main line) and Service Line Procedure
8.0 PROCEDURE

8.1 For Water Leak Detection Procedure

8.1.1 Senior Water Utilities Management Officer shall prepare a Water Leak Detection Schedule and submit to Department Manager for approval.

8.1.2 The Water Maintenance Foreman/SWMMB/WMMA shall identify the location, where the Water Leak Detection will be conducted.

8.1.3 The Water Maintenance Foreman/SWMMB/WMMA shall form Water Leak Detection crew (consist of Water Maintenance Man, Utility Worker B and Driver) and ready all equipment that will be used.

8.1.4 The Water Maintenance Foreman/SWMMB/WMMA together with Water Leak Detection Crew shall proceed to identified location to perform Water Leak Detection activity.
   a. The Water Leak Detection Crew shall start looking for a water leak; if there is no mark/trace of water leak in the area they will conduct potholing.
   b. If there is water leak and repairable, immediate repair is done.

8.1.5 The Water Maintenance Foreman/SWMMB/WMMA shall accomplish and submit Summary Report of Water Leak Detection Conducted to SWUMO and EOD Manager.

8.1.6 The Clerk Processor B shall forward a list of Water Leak detected to Customer Service Division for preparation of Service Request Form.

8.1.7 Refers to Repair of Distribution and Service Line Procedure

9.0 FORMS ATTACHED

9.1 Water Leak Detection Schedule
9.2 Summary Report of Water Leak Detection Conducted
<table>
<thead>
<tr>
<th>DCN NO.</th>
<th>REV NO.</th>
<th>IMPLEMENTATION DATE</th>
<th>REVISION HISTORY</th>
<th>ORIGINATED BY</th>
<th>CHECKED BY</th>
<th>APPROVED BY</th>
<th>PAGE REVISED</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016-031</td>
<td>00</td>
<td>09/06/2016</td>
<td>INITIAL RELEASE</td>
<td>DENNIS ANARNA</td>
<td>ENGR. ALBERTO L. RESURRECCION</td>
<td>BONIFACIO B. DELA CRUZ</td>
<td>NONE</td>
</tr>
</tbody>
</table>
1.0 PURPOSE
To maintain the effectiveness and accuracy of water meter (repair and water meter calibration procedure).

2.0 SCOPE
All water meter accuracy @ Silang Water District servicing area.

3.0 DEFINITION OF TERMS
3.1 Qt. - Transitional Flowrates at which the meter is capable of detecting incremental flowrate to within (+/-) 2.0%
3.2 Test Bench - machine use for testing water meter
3.3 Calibration - a process of checking accuracy of water meter
3.4 Dial- water meter part read the initial and final reading of calibration process

4.0 REFERENCE DOCUMENTS
4.1 FORD TEST BENCH MANUAL
4.2 WATER METER MANAGEMENT (LWUA STANDARD)

5.0 SAFETY REQUIREMENTS
5.1 Personal safety protection equipment
5.2 Safety shoes
5.3 Apron
5.4 Face Mask
5.5 Gloves

6.0 EQUIPMENT AND MATERIALS
6.1 Crew Driver Set
6.2 Air Compressor
6.3 Sand Blaster
6.4 Bench Grinder
6.5 Bench Grip (Gato)
6.6 Paint Sprayer Nozzle
6.7 Air Nozzle
6.8 Pipe wrench set
6.9 Water Meter Test Bench
6.10 Working Table for Water meter repair
6.11 Lighting (LED)
6.12 Water Pump
6.13 Ventilator
6.14 Cleaning liquid
6.15 Cleaning Cream
6.16 Paint
6.17 Paint brush
6.18 Paint tinner
6.19 Rug and towel
6.20 Spare parts of different water meter
7.0 PROCESS FLOW

RESPONSIBLE

Water Maintenance Man A

FLOW CHART

Received New/Old Water meter Record to water meter maintenance Logbook

Initial Test Water Meter in series “Test” Bench Water Meter

Log the final reading of dial

Painting and seal the water meter

Ready for Issuance

REFERENCE

Maintenance Order

Water meter maintenance Logbook

Water meter maintenance Logbook

Water meter maintenance Logbook

Water meter maintenance Logbook
8.0 PROCEDURE

Based on work order from the management, installation of calibrated water will commence. Water Systems Maintenance will supervise and monitor the implementation or do work itself:

8.1 Receive old water meter from Plumber and New Water meter from warehouse and record all serial number to Water meter Maintenance Section Logbook.

8.2 Put the water meter per batch (10 pcs or less) on water meter test bench and run initial test to check the accuracy and status (Pass or Fail)
   8.2.1 Read the initial reading of the water meter dial and record to logbook set as initial reading of water meter.
   8.2.2 Run the Water meter test bench with Transitional Flow rates at which the meter is capable of detecting incremental flow rate to within (+/-) 2.0% and allow to reach the minimum (50) liter require or maximum (100) liter.
   8.2.3 When the water level gauge glass of the calibrated tank register reach the percentage set by technician (qt.) shut down the valve to stop the flowing of water then read the water meter dial again and record to the logbook as final reading.
   8.2.4 Get the difference between final reading minus initial reading and it will be the result of calibration, allowable percentage 100% ,98%,102%. Record to water meter maintenance section logbook.

8.3 If All new water meter passed they will be repainted according to yearly color code and if failed they will be dis-assembled and clean all internal part then assemble and repaint.

8.4 All assembled clean water meter will be run again on water meter test bench to assure the accuracy by adjusting the water meter regulator until the accuracy reached the allowable percentage (qt 100%, -2 / +2) and sealed by the use of magnetic wire and lead seal. (repaint according to yearly color code)

8.5 Record all water meter calibration test result data on Water Meter Maintenance Logbook.

8.6 Cleaning of Water meter test bench (pls refer to Water Meter Test Manual).

9.0 FORMS ATTACHED

9.1 Water Meter Maintenance Logbook