

PROCEDURES MANUAL

Document No. : **PM-OM-01** Eff. Date : **3-30-21**

Revision No. : **01** Pages : **1 of 3**

DESIGN AND DEVELOPMENT

I. OBJECTIVE

This procedure clearly defines the process to determine the pipe sizes, bill of quantities, duration and total cost of the project.

II. SCOPE

Water System Design

III. RESPONSIBILITY AND RESOURCES

Responsible person is the Operation and Maintenance Division Manager.

The Operation and Maintenance shall conduct data gathering, prepare plans and drawings, and program of works.

Resources required draftsman who shall prepare the drawings, team leader secure data on site which includes number of households, distances and elevations of the terrain with the use of measuring tape and level instrument. Computers with Auto-CAD software.

IV. DEFINITION OF TERMS

LWUA – Local Water Utilities Administration

PSA – Philippine Statistics Authority

POW – Program of Works

Auto-CAD – Auto-Computer Aided Design

V. REFERENCE DOCUMENTS

Previous completed projects

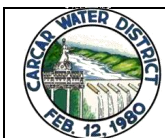
LWUA design handbook

VI. RECORDS GENERATED

Engineering's Field Book, Data files, Photographs, Auto-CAD file, Analysis, Plans and Drawings, POW

Prepared by: **NARJIB O. SORDILLA**
Process Owner

Approved by: **JOSEFA SN. MANUGAS**
QMR



PROCEDURES MANUAL

DESIGN AND DEVELOPMENT

VII. PROCEDURE DETAILS AND FLOW

No.	Process Flow	Description of Activity	Guidelines/Criteria/Policy	Responsible Person	Retained Information
1	<pre> graph TD START([START]) --> Demand[Determine Demand] </pre>	1.1 Data gathering on number of households 1.2 Measure distances and elevations	1.1 Average number per household from PSA / Actual Survey 1.2 Existing road and highways	1.1 Team Leader/ Engineer 1.2 Team Leader/ Engineer	1.1 Engineering's Field Book 1.2 Data files
2	<pre> graph TD Demand --> Supply[Check Supply] </pre>	2.1 Determine available supply at source or tapping point	2.1 Supply shall be more than the demand and potable	2.1 Division Manager/ Engineer	2.1 Data files and site photographs
3	<pre> graph TD Supply --> Design[Design] </pre>	3.1 Determine the appropriate pipe sizes 3.2 Prepare a plans and drawings 3.3 The Division team shall conduct review. 3.4 Division Head shall conduct verification of design.	3.1 Engineering Handbook 3.2 Data gathered	3.1 Division Manager/ Engineer 3.2 Draftsman/ Engineer	3.1 Auto-CAD file 3.2 Auto-CAD file 3.3 Minutes of Meeting
4	<pre> graph TD Design --> Analysis{Hydraulic Analysis} Analysis -- No --> B((B)) B --> Design Analysis -- Yes --> A((A)) </pre>	4.1 Determine effectiveness of design	4.1 Epanet software 4.2 Engineering Handbook	4.1 General Manager	4.1 Data files/ Analysis

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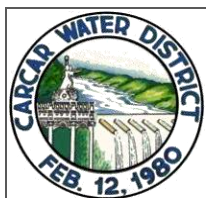
DESIGN AND DEVELOPMENT

5		5.1 Review and approval by Division Manager and General Manager	5.1 Right-of-way, Growth trend	5.1 General Manager	5.1 Plans and Drawings
6		6.1 Determine bill of quantities 6.2 Determine total project cost and duration	6.1 Previous completed projects 6.2 Previous completed projects	6.1 Division Manager/ Engineer 6.2 Division Manager/ Engineer	6.1 POW 6.2 POW
7		7.1 Approval of the proposed project	7.1 Estimated return of investment	7.1 General manager	7.1 POW

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PROCEDURES MANUAL

Document No. : **PM-OM-02** Eff. Date : **08-20-16**
Revision No. : **00** Pages : **1 of 3**

INSTALLATION OF PIPELINES

I. OBJECTIVE

This procedure clearly defines the process to determine the pipe sizes, bill of quantities, duration and total cost of the project.

II. SCOPE

This covers the entire Carcar Water District's Water System Design Expansion and all its Interested Parties.

III. RESPONSIBILITY AND RESOURCES

Operation and Maintenance personnel
Division Manager
Draftsman
General Manager
Team Leader

IV. DEFINITION OF TERMS

RRW – Road Right-of-Way
DPWH – Department of Public Works and Highways

V. REFERENCE DOCUMENTS

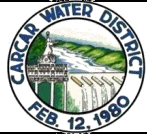
Carcar Water District Operations Manual

VI. RECORDS GENERATED

RRW form, Drawing and program of works, Certification of excavation permit (DPWH/ Municipality/ Barangay), Activity/ accomplishment monitoring form

Prepared by: WENCESLAO C. ABALO
Process Owner

Approved by: Josefa S.N. Manugas
QMR



PROCEDURES MANUAL

INSTALLATION OF PIPELINES

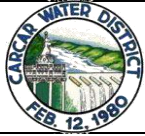
VII. PROCEDURE DETAILS AND FLOW

No.	Process Flow	Description of Activity	Guidelines/Criteria/Policy	Responsible Person	Retained Information
1	START				
1	Work-out RRW	1.1 Negotiate lot owner.	1.1 Owner should be the registered owner of the property	1.1 Operation and Maintenance personnel	1.1 RRW form
2	Approval	2.1 Approve by lot owner. 2.1.1 If no then process shall go back to work-out RRW.	2.1 Assessor's lot plan	2.1 Division Manager	2.1 RRW form
3	Preparation of drawings and program of works	2.1.2 If yes then proceed to preparation of drawings and program of works. 3.1 Preparation of program of works which includes cost estimate and work duration. Drawing/ plan is the reflection of actual work preparation.	3.1. All projects must have complete Plan and program of works	3.1 Division Manager 3.2 Draftsman	3.1 Drawings and program of works
4	Design	4.1 Review and approval by Division Manager and General Manager.	4.1 All programs must be clear and understandable	4.1 Division Manager 4.2 General Manager	4.1 Drawings and program of works
5	Processing of permits	5.1 Apply permits for pipeline excavation to DPWH/ Municipality/ Barangay permit.	5.1 100% of permits completed before starting the project	5.1 Operation and Maintenance personnel	5.1 Certification of excavation permit
	A				

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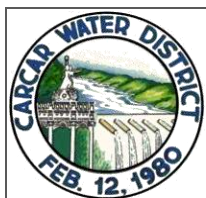
INSTALLATION OF PIPELINES

6	<pre> graph TD A((A)) --> B[Installation of pipelines] B --> C[Conduct pipeline hydro test and disinfection] C --> D{Pass?} D -- No --> C D -- Yes --> E[Interconnection of pipelines] E --> F[Backfilling compaction and restoration] F --> G[END] </pre>	<p>6.1 Observe proper excavation and backfilling include sand bedding, caution tape, and then installation of pipelines.</p>	<p>6.1 <i>Carcar Water District Operations Manual</i></p>	<p>6.1 Operation and Maintenance personnel</p>	<p>6.1 Activity/ accomplishment monitoring form</p>
7		<p>7.1 Before tapping interconnection, the new installed pipelines subject to conduct hydro testing together with disinfection by charging enough chlorine granules. Hydro testing applies a specified maximum pressure for not less than 24 hours.</p>	<p>7.1 <i>Carcar Water District Operations Manual</i></p>	<p>7.1 Operation and Maintenance personnel</p>	<p>7.1 Activity/ accomplishment monitoring form</p>
8		<p>8.1 If failed determine the leak location then repair and process shall go back to conduct pipeline hydro test and disinfection.</p>	<p>8.1 <i>Quality Control</i></p>	<p>8.1 Team Leader 8.2 Division Manager</p>	<p>8.1 Activity/ accomplishment monitoring form</p>
9		<p>8.2 If passed proceed to interconnection of pipelines.</p>			
10		<p>9.1 Identify the two existing point of pipelines and apply interconnection.</p>	<p>9.1 <i>Carcar Water District Operations Manual</i></p>	<p>9.1 Operation and Maintenance personnel</p>	<p>9.1 Activity/ accomplishment monitoring form</p>
		<p>10.1 Backfilling compaction and restoration.</p>	<p>10.1 <i>Carcar Water District Operations Manual</i></p>	<p>10.1 Operation and Maintenance personnel</p>	<p>10.1 Activity/ accomplishment monitoring form</p>

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PROCEDURES MANUAL

Document No. : **PM-OM-03** Eff. Date : **7-20-20**
Revision No. : **02** Pages : **1 of 2**

MAINTENANCE OF PIPELINES/ LEAK DETECTION

I. OBJECTIVE

This procedure clearly defines the process of finding and fixing leaks reduces pumping and treatment costs and minimizes the risks of contamination, water outages and property damage.

II. SCOPE

This procedure only applies for preventive maintenance of pipes.

III. RESPONSIBILITY AND RESOURCES

Responsible person are the leak detection operator & Operation team leaders.

Resources required operator who shall conduct leak detection survey. The team leaders secure the actual data which include low pressure monitoring, flow meter suddenly high consumption & routine target schedule.

IV. DEFINITION OF TERMS

Leak Detection Survey – is to detect where the exact location of leaks by using leak detector instrument.

Carcar Water District Pipe Network – is the reflection of pipelines with location and sizes.

Flow Meter – is a device that measures a large volume of water delivered to a property.

V. REFERENCE DOCUMENTS

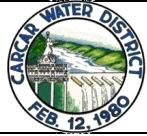
Carcar Water District Pipe Network.

VI. RECORDS GENERATED

Job order request and Leak detection logbook.

Prepared by: JOBERT BABANTO
Process Owner

Approved by: JOSEFA SN. MANUGAS, CPA, MPA
Department Manager / QMR



PROCEDURES MANUAL

MAINTENANCE OF PIPELINES /LEAK DETECTION

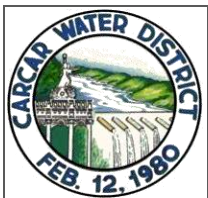
VII. PROCEDURE DETAILS AND FLOW

No.	Process Flow	Description of Activity	Guidelines/Criteria/Policy	Responsible Person	Retained Information
1	START				
1	Tools & Equipment preparation	1.1 Checking of tools & leak detector equipments, include (flashlight, spray paint rolling measure & logbook	1.1 Check all tool & equipment before proceed to the site 1.2 Daily, Night Time	1.1 Leak Detection personnel	1.1 Memorandum receipt of tools & equipment.
2	Proceed to specific area for leak detection	2.1 The team comes to the site with 1 Barangay representative (tanod) if needed for the safety	2.1 Safety first purposes	2.1 Leak Detection personnel	2.1 Leak Detection logbook 2.1 Leak Detection Schedule
3	Conduct leak detection activity	3.1 The operator move slowly with a maximum of half a meter apart aligned the pipelines. Use leak pen to check the tap stands if available.	3.1 The leak detection team commits to perform 500 to 1000 linear meters per activity.	3.1 Leak Detection Operator	3.1 Leak Detection logbook
4	Leak Repair	4.1 Once the operator detected the leaks, the LDT apply Leak Repair Procedure	4.1 100% of Detected leaks should repair base on schedule respond time	4.1 Leak Detection personnel	4.1 Leak Detection logbook
5	Record to the logbook	5.1 All Detected leaks with marking must record in the logbook for request preparation	5.1 100% of leaks recorded within the day	5.1 Leak Detection personnel	5.1 Job Order form for request & complains
6	Check & Repair	6.1 Checking of repaired leaks through leak detection equipment	6.1 Checking of leaks excavated with the minimum of 1 meter radius	6.1 Assigned team	6.1 Leak Detection logbook
	Negative → Positive END				

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Document No. : **PM-OM-04** Eff. Date : **12-3-18**

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MAJOR LEAK REPAIR PROCEDURE

I. OBJECTIVE

This procedure clearly defines the process to minimize water losses and contamination.

II. SCOPE

This covers the entire Carcar Water District's Water System Design Expansion and all its Interested Parties.

III. RESPONSIBILITY AND RESOURCES

Operation and Maintenance personnel
Public Information Officer
Division Manager
Storekeeper
PACD personnel

IV. DEFINITION OF TERMS

RIS – Requisition Issuance Slip

V. REFERENCE DOCUMENTS

Carcar Water District Operations Manual
Carcar Water District Citizen's Charter

VI. RECORDS GENERATED

Maintenance Order Form, Tools Logbook, Equipment Logbook, Carcar Water District Pipe Network/ Gate Valve Location Files, RIS, Minutes of Operations' Coordination Meeting, CWD Repair Leak Checklist

Prepared by:

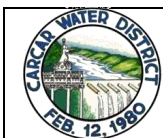
HENRY A. CUI

Process Owner

Approved by:

JOSEFA SN, MANUGAS, CPA, MPA

Quality Management Representative



PROCEDURES MANUAL

MAJOR LEAK REPAIR PROCEDURE

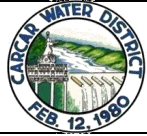
VII. PROCEDURE DETAILS AND FLOW

No.	Process Flow	Description of Activity	Guidelines/Criteria/Policy	Responsible Person	Retained Information
1	START ↓ Receive maintenance order form	1.1 Receive maintenance order form.	1.1 <i>Carcar Water District Citizen's Charter</i>	1.1 Operation and Maintenance personnel	1.1 Maintenance Order Form
2	↓ Check and prepare tools and equipment	2.1 Check and prepare appropriate tools and equipment needed in leak repair.	2.1 <i>Carcar Water District Operations Manual</i>	2.1 Operation and Maintenance personnel	2.1 Tools Logbook 2.2 Equipment Logbook
3	↓ Isolate the area and identify the gate valves in affected areas	3.1 To determine the coverage area for possible low pressure/ no water. 3.2 Public information as needed.	3.1 <i>Carcar Water District Operations Manual</i> 3.2 <i>Residents of the affected areas should be informed at least 2 hrs. before the interruptions</i>	3.1 Operation and Maintenance personnel 3.2 Public information officer	3.1 Carcar Water District Pipe Network/ Gate Valve Location Files 3.2 Not Applicable
4	↓ Install barricade then proceed excavation of 1.00M x 2.00M	4.1 Install barricade then proceed excavation of 1.00M x 2.00M for working space.	4.1 <i>Carcar Water District Operations Manual</i>	4.1 Operation and Maintenance personnel	4.1 Gate Pass
5	↓ Request appropriate fittings ↓ A	5.1 Request appropriate fittings needed in leak repair.	5.1 <i>Accuracy of request of the materials</i>	5.1 Operation and Maintenance personnel 5.2 Division Manager 5.3 Storekeeper	5.1 RIS

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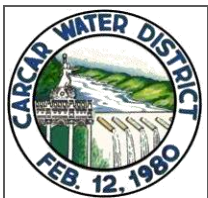
MAJOR LEAK REPAIR PROCEDURE

6	<pre> graph TD A((A)) --> B[Close gate valves] B --> C[Repair leakage] C --> D[Open Gate Valves] D --> E[Back filling and Compaction] E --> F[Flush pipeline then restoration] F --> G[Fill-up and submit the maintenance order form and CWD repair leak checklist] G --> H[END] </pre>	6.1 Close gate valves in affected areas.	6.1 Carcar Water District Operations Manual	6.1 Operation and Maintenance personnel	6.1 Minutes of Operations' Coordination Meeting
7		7.1 Repair leakage.	7.1 Carcar Water District Operations Manual	7.1 Operation and Maintenance personnel	7.1 Maintenance Order Form
8		8.1 Open gate valves in affected areas.	7.2 Carcar Water District Citizen's Charter	8.1 Operation and Maintenance personnel	8.1 Minutes of Operation's coordination meeting
9		9.1 Open gate valves in affected areas.	8.1 Carcar Water District Operations Manual	9.1 Operation and Maintenance personnel	9.1 Not applicable
10		10.1 Flush pipeline then restoration.	9.1 Carcar Water District Operations Manual	10.1 Operation and Maintenance personnel	10.1 Minutes of Operations' Coordination Meeting
11		11.1 Fill-up the maintenance order form and CWD repair leak checklist then submit to PACD personnel.	10.1 Carcar Water District Operations Manual	11.1 Operation and Maintenance personnel 11.2 PACD personnel	11.1 Maintenance Order Form 11.2 CWD Repair Leak Checklist

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MAINTENANCE OF PIPELINES

I. OBJECTIVE

This procedure clearly defines the process to minimize water losses and contamination.

II. SCOPE

This covers the entire Carcar Water District's Water System Design Expansion and all its Interested Parties.

III. RESPONSIBILITY AND RESOURCES

Operation and Maintenance personnel
Division Manager
Storekeeper
PACD personnel

IV. DEFINITION OF TERMS

RIS – Requisition Issuance Slip

V. REFERENCE DOCUMENTS

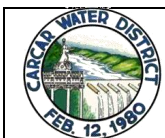
Carcar Water District Operations Manual
Carcar Water District Citizen's Charter

VI. RECORDS GENERATED

Maintenance Order Form, Tools Logbook, Equipment Logbook, RIS, Minutes of Operations' Coordination Meeting, CWD Repair Leak Checklist.

Prepared by: HENRY A. CUI
Process Owner

Approved by: JOSEFA SN. MANUGAS, CPA, MPA
Quality Management Representative



PROCEDURES MANUAL

MINOR LEAK REPAIR PROCEDURE

VII. PROCEDURE DETAILS AND FLOW

No.	Process Flow	Description of Activity	Guidelines/Criteria/Policy	Responsible Person	Retained Information
1	START				
1	Receive maintenance order form	1.1 Receive maintenance order form.	1.1 <i>Carcar Water District Citizen's Charter</i>	1.1 Operation and Maintenance personnel	1.1 Maintenance Order Form
2	Check and prepare tools and equipment	2.1 Check and prepare appropriate tools and equipment needed in leak repair.	2.1 <i>Carcar Water District Operations Manual</i>	2.1 Operation and Maintenance personnel	2.1 Tools Logbook 2.2 Equipment Logbook
3	Excavate 1.00M x 1.00M	3.1 Excavation 1.00M x 1.00M for working place.	3.1 <i>Carcar Water District Operations Manual</i>	3.1 Operation and Maintenance personnel	3.1 Not applicable
4	Request appropriate fittings	4.1 Request appropriate fittings needed in leak repair.	4.1 <i>Accuracy of request of the materials</i>	4.1 Operation and Maintenance personnel 4.2 Division Manager 4.3 Storekeeper	4.1 RIS
5	Close control valve	5.1 Close control valve.	5.1 <i>Carcar Water District Operations Manual</i>	5.1 Operation and Maintenance personnel	5.1 Not Applicable
6	Repair leakage	6.1 Repair leakage.	6.1 <i>Carcar Water District Operations Manual</i> 6.2 <i>Carcar Water District Citizen's Charter</i>	6.1 Operation and Maintenance personnel	6.1 Maintenance Order Form
	A				

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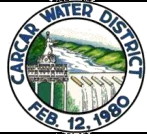
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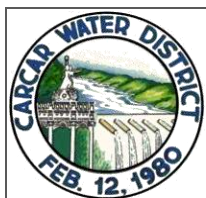
MINOR LEAK REPAIR PROCEDURE

7	<pre> graph TD A((A)) --> B[Open control Valve] B --> C[Back filling and Compaction] C --> D[Check the supply and all connection lines] D --> E[Flush pipeline then restoration] E --> F[Fill-up and submit the maintenance order form and CWD repair leak checklist] F --> G[END] </pre>	7.1 Open control valve.	7.1 <i>Carcar Water District Operations Manual</i>	7.1 Operation and Maintenance personnel	7.1 Not Applicable
8		8.1 Back filling and Compaction.	8.1 <i>Carcar Water District Operations Manual</i>	8.1 Operation and Maintenance personnel	8.1 Not Applicable
9		9.1 Check the supply and all connection lines.	9.1 <i>Carcar Water District Operations Manual</i>	9.1 Operation and Maintenance personnel	9.1 Not Applicable
10		10.1 Flush pipeline then restoration.	10.1 <i>Carcar Water District Operations Manual</i>	10.1 Operation and Maintenance personnel	10.1 Minutes of Operations' Coordination Meeting
11		11.1 <i>Fill-up the maintenance order form and CWD repair leak checklist then submit to PACD personnel.</i>	11.1 <i>Maintenance order form and CWD repair leak checklist should be properly filled out</i>	11.1 Operation and Maintenance personnel	11.1 Maintenance order form
				11.2 PACD personnel	11.2 CWD repair leak checklist

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PROCEDURES MANUAL

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PRODUCTION OF WATER

I. OBJECTIVE

This procedure clearly defines the process of producing good quality of water demanded by the consumers in economic manners and increase level of water supply for customer satisfaction.

II. SCOPE

This covers the entire Carcar Water District's Spring and Well Production.

III. RESPONSIBILITY AND RESOURCES

Responsible person are the Production team.

Resources require personnel to operate pumps, reading of flow meters, monitor pressure gauges & reservoirs. They gather data such as low pressure reading, turbidity test result, discharge rate and meter accuracy, level of reservoir and level of spring.

IV. DEFINITION OF TERMS

PSI – Pounds per square inch

V. REFERENCE DOCUMENTS

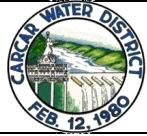
Carcar Water District Operations Manual

VI. RECORDS GENERATED

Flow Meter Reading Logbook, Pressure Gauges Record Logbook, Turbidity Test Result File, Flow Rate Record and Reservoir Monitoring Logbook

Prepared by: WENCESLAO C. ABALO
Process Owner

Approved by: Josefa S.N. Manugas
QMR



PROCEDURES MANUAL

PRODUCTION OF WATER PROCEDURE

VII. PROCEDURE DETAILS AND FLOW

No.	Process Flow	Description of Activity	Guidelines/Criteria/Policy	Responsible Person	Retained Information
1	START				
1	Identify sources & flow meters	1.1 Springs runs through gravity and pumps and wells run by pumps.	1.1 Pumps based on demand time	1.1 Production team personnel	1.1 Spring & wells record
2	Pump operation	2.1 Run & stop the pump check pressure gauges, reservoir monitoring, checking of turbidity and checking of water level.	2.1 Operation of pumps based on pressure monitoring with no less than 10 psi for the highest elevation	2.1 Pump tender or pump operator	2.1 Pump operation logbook
3	Check the status of flow meters	3.1 Flow meters check weekly and conduct flow rate measurement.	3.1 Checking of flow rate based on original spring or well data. Checking of meter based on calibration result	3.1 Team leaders and production personnel	3.1 Flow rate record
4	Conduct reading of flow meters	4.1 Collect daily flow meter reading and calculate.	4.1 Monitoring daily consumption to identify the daily average used	4.1 Production personnel	4.1 Daily record of flow meter reading
5	Daily production result Low/ High Normal	5.1 The sum of total production of all sources is equal to the total Production of Water daily. 5.1.1 If low/ high then process shall go back to pump operation. 5.1.2 If normal then end the process.	5.1 Production of water result is not more than 15% of the entire demand	5.1 Production personnel	5.1 Daily production report
	END				

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PROCEDURES MANUAL

Document No. : PM-OM-07 Eff. Date : 08-20-16

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LINE SURVEY PROCEDURE

I. OBJECTIVE

This procedure clearly defines the process to identify the types of pipes, the sizes & the date of acquisition.

II. SCOPE

This covers the entire Carcar Water District's Water System Design Expansion and all its Interested Parties.

III. RESPONSIBILITY AND RESOURCES

All Teams

Responsible person are the team leaders.

Resources required operator who shall conduct line survey. The team leaders secured the actual data which include low pressure monitoring, flow meter suddenly high consumption & routine target schedule.

IV. DEFINITION OF TERMS

PSI – Pounds per square inch

V. REFERENCE DOCUMENTS

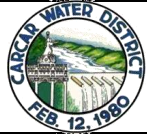
Carcar Water District Pipe Network

VI. RECORDS GENERATED

Pressure gauge record, Flow meter logbook, Maintenance order form

Prepared by: WENCESLAO C. ABALO
Process Owner

Approved by: Josefa S.N. Manugas
QMR



PROCEDURES MANUAL

LINE SURVEY PROCEDURE

VII. PROCEDURE DETAILS AND FLOW

No.	Process Flow	Description of Activity	Guidelines/Criteria/Policy	Responsible Person	Retained Information
1	START	1.1 Check pressure gauges based on normal reading and flow meters in unusual continuous flow.	1.1 Pressure gauges read not less than 10 psi or based on standard on the specific area. Flow meter read based on daily consumption	1.1 All Teams	1.1 Pressure gauge record
	Check pressure gauges and flow meters	1.1.1 If not okay line survey should be conducted.			1.2 Flow meter logbook
2	Not Okay	1.1.2 If okay then end of process.			
2	Conduct line survey	2.1 Check pipe location, tap stands, water meters and service connections.	2.1 Prepare immediate report for the result of line survey	2.1 All Teams	2.1 Maintenance order form
3	Immediate response for the request	3.1 The assigned team conducts immediate response for the request if it is for repair or for replacement.	3.1 The CWD personnel responded not more than 1 hour after receiving the request	3.1 All Teams	3.1 Maintenance order form
4	Final check of pressure gauges and flow meters	4.1 After performing all activities the team conducts the final check of pressure gauges and flow meters.	4.1 Pressure gauges read not less than 10 psi or based on standard on the specific area. Flow meter read based on daily consumption	4.1 All Teams	4.1 Pressure gauges record and flow meter daily logbook
	Not Okay	4.1.1 If not okay then process shall go back to conduct line survey.			
	Okay	4.1.2 If okay then end of process.			
	END				

Doc No. : PM-OM-07

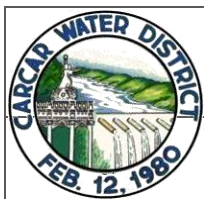
Rev. No. : 00

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Eff. Date : 08-20-16

Pages : 2 of 2



PROCEDURES MANUAL

Document No. : PM-OM-08 Eff. Date : 12-02-19

Revision No. : 01 Pages : 1 of 3

PHYSICAL-CHEMICAL TEST FOR WATER

I. OBJECTIVE

This procedure clearly defines the process of annual testing for physical-chemical parameters for the quality of water.

II. SCOPE

Supply safety potable water.

III. RESPONSIBILITY AND RESOURCES

Accredited Laboratory/ Carcar Water District Personnel.

IV. DEFINITION OF TERMS

Physical-Chemical Test for Water – parameters for testing of water

Accredited Laboratory – is to perform testing and evaluating water

Carcar Water District Personnel – is the person involved in conducting Physical-Chemical Testing

RCL – Recommended Contaminant Level

MDL – Method Detection Limit

IDL – Instrument Detection Limit

ND – Contamination

V. REFERENCE DOCUMENTS

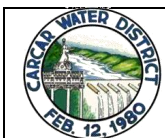
Philippine National Standards for Drinking Water (PNSDW), 2007.

VI. RECORDS GENERATED

Purchase Request, Physical-Chemical Test Result for Water

Prepared by: CLAIRE JOYCE G. PADIN,RMT
Process Owner

Approved by: JOSEFA SN. MANUGAS,CPA,MPA
Division Manager/QMR



PROCEDURES MANUAL

PHYSICAL-CHEMICAL TEST FOR WATER

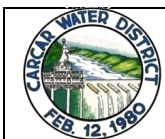
VII. PROCEDURE DETAILS AND FLOW

No.	Process Flow	Description of Activity	Guidelines/Criteria/Policy	Responsible Person	Retained Information
01	<pre> graph TD START([START]) --> REQ[Prepare Purchase Request for Physical-Chemical Testing] </pre>	1.1 CWD Personnel make a Request.	<i>Location for Testing</i> <i>Once a year, every April or May</i>	Carcar Water District Personnel	Purchase Request
02	<pre> graph TD REQ --> GM[GM's approval for Physical-Chemical Testing] </pre>	2.1 Approved by the General Manager.	<i>Request should be with complete signatories</i>	General Manager	Purchase Request
03	<pre> graph TD GM --> TEST[Conduct Physical-Chemical Test for Water] </pre>	3.1 Take desired sample from the designated location for Laboratory Testing.	<i>Designated Location for Testing</i>	DOH Accredited Laboratory/ Carcar Water District Personnel	Not Applicable
04	<pre> graph TD TEST --> PASSED{Passed?} PASSED -- Yes --> END([END]) PASSED -- No --> REQ </pre>	4.1 Check the laboratory results. 4.1.1 Interpret results. In case of exceedance of standard values of physical-chemical parameters, monitoring shall be carried out for the next 3 months wherein all results must comply with the standards. If results still exceed, further study must be done to determine the cause of contamination for	<i>Philippine National Standards for Drinking Water (PNSDW), 2007</i>	Accredited Laboratory/ Carcar Water District Personnel	Physical-Chemical Test Results for Water

Doc No. : **PM-OM-08**
 Rev. No. : **01**

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PROCEDURES MANUAL

PHYSICAL-CHEMICAL TEST FOR WATER

proper identification of corrective actions.

4.1.2. If corrective actions are identified, apply the corrective action and process shall go back to Process Flow no.1 of PM-OM-08.

4.1.3 If passed then end of process.

Doc No. : **PM-OM-08**

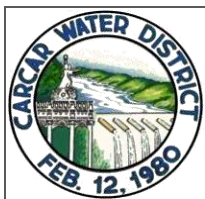
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PROCEDURES MANUAL

Document No. : **PM-OM-09** Eff. Date : **08-20-16**

Revision No. : **00** Pages : **1 of 2**

WATER TREATMENT

I. OBJECTIVE

This procedure clearly defines the process that can be used to achieve safe levels of chlorine in drinking water supply delivered to every concessionaire.

II. SCOPE

This covers the entire Carcar Water District's Operations and Maintenance and its Interested Parties.

III. RESPONSIBILITY AND RESOURCES

Team Leaders

IV. DEFINITION OF TERMS

Disinfection/ Chlorination – is a treatment method by using chlorine

Chlorine – is a highly efficient disinfectant

Ppm – parts per million

RIS – Requisition Issuance Slip

V. REFERENCE DOCUMENTS

Philippine National Standards for Drinking Water (PNSDW), 2007

VI. RECORDS GENERATED

RIS and Daily Chlorine Residual Form, Calculating $Q \times 0.3$ ppm to 1.5 ppm, Preventive Maintenance Logbook, Daily Chlorine Residual Logbook

Prepared by: WENCESLAO C. ABALO
Process Owner

Approved by: Josefa S.N. Manugas
QMR



PROCEDURES MANUAL

WATER TREATMENT PROCEDURE

VII. PROCEDURE DETAILS AND FLOW

No.	Process Flow	Description of Activity	Guidelines/Criteria/Policy	Responsible Person	Retained Information
1	START				
	Disinfection/ Chlorination	1.1 Clean empty drums, fill-up with water and mix with chlorine based on computation.	1.1 Treated Based on Philippine National Standards for Drinking Water, 2007	1.1 Team leaders	1.1 RIS and Daily Chlorine Residual Form, Calculating $Q \times 0.3$ ppm to 1.5 ppm
2	Check chlorinator	2.1 Check chlorinator and chlorine dosage.	2.1 Dosage not less than 0.3 ppm and not more than 1.5 ppm	2.1 Team leaders	2.1 Preventive Maintenance Logbook
3	Conduct chlorine testing daily	3.1 Flush pipelines, conduct internal testing using test kit. 3.1.1 If below/ above the standard then process shall go back to checking chlorinator. 3.1.2 If within the standard then end the process.	3.1 Assigned personnel for their corresponding area obliged to conduct testing daily	3.1 Team leaders	3.1 Daily Chlorine Residual Logbook
	Below/ Above the Standard				
	Within the Standard				
	END				

Doc No. : PM-OM-09

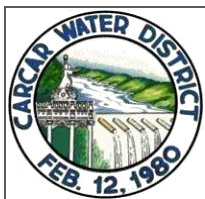
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Eff. Date : 08-20-16

Pages : 2 of 2



PROCEDURES MANUAL

Document No. : PM-OM-10 Eff. Date : 08-20-16

Revision No. : 00 Pages : 1 of 2

CLEANING OF RESERVOIR

I. OBJECTIVE

This procedure clearly defines the process to improve the water quality and ensure compliance with Philippine National Standards for Drinking Water (PNSDW), 2007.

II. SCOPE

This procedure relates to water reservoir operations and maintenance.

III. RESPONSIBILITY AND RESOURCES

Operation and Maintenance personnel

IV. DEFINITION OF TERMS

Reservoir – a storage space for water

V. REFERENCE DOCUMENTS

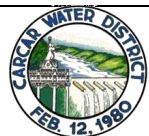
Carcar Water District Operations Manual
Philippine National Standards for Drinking Water (PNSDW), 2007

VI. RECORDS GENERATED

Reservoir Cleaning Logbook

Prepared by: WENCESLAO C. ABALO
Process Owner

Approved by: Josefa S.N. Manugas
QMR



PROCEDURES MANUAL

CLEANING OF RESERVOIR

VII. PROCEDURE DETAILS AND FLOW

No.	Process Flow	Description of Activity	Guidelines/Criteria/Policy	Responsible Person	Retained Information
1	START				
1	Public Information	1.1 Public information as needed.	1.1 Residents of the affected areas should be informed 1 day before the clean-up	1.1 Operation and Maintenance personnel	1.1 Reservoir Cleaning Logbook
2	Prepare Tools and Equipment	2.1 Prepare tools and equipment.	2.1 Tools and equipment should be completely prepared	2.1 Operation and Maintenance personnel	2.1 Reservoir Cleaning Logbook
3	Check/ Monitor Reservoir Water Level	3.1 Check/ monitor the status of the reservoir after peak hour to determine the water loss.	3.1 Carcar Water District Operations Manual	3.1 Operation and Maintenance personnel	3.1 Reservoir Cleaning Logbook
4	Close Inlet Valve then Start to Clean and Open Drain Valve	4.1 Close inlet valve to stop water run through reservoir then start to clean and open drain valve to remove the dirt, sediments and stains. 4.2 Wash inside walls; ceiling and floor of the reservoir using a pressurize spray.	4.1 Carcar Water District Operations Manual	4.1 Operation and Maintenance personnel	4.1 Reservoir Cleaning Logbook
5	Disinfection	5.1 Disinfect reservoir (inside) with dissolved chlorine granules.	5.1 Carcar Water District Operations Manual	5.1 Operation and Maintenance personnel	5.1 Reservoir Cleaning Logbook
6	Close Drain Valve and Open Inlet Valve	6.1 Close the drain valve and open inlet valve then back to operation.	6.1 Carcar Water District Operations Manual	6.1 Operation and Maintenance personnel	6.1 Reservoir Cleaning Logbook
	END				

Doc No. : PM-OM-10

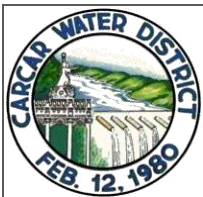
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PROCEDURES MANUAL

Document No. : **PM-OM-11** Eff. Date : **08-20-16**

Revision No. : **00** Pages : **1 of 3**

REPLACEMENT OF PIPELINES

I. OBJECTIVE

This procedure clearly defines the process to identify the types of pipes, the sizes and the date of acquisition.

II. SCOPE

This covers the entire Carcar Water District's Water System Design Expansion and all its Interested Parties.

III. RESPONSIBILITY AND RESOURCES

Responsible person are the Operation & Maintenance.

Resources required CAD operator who shall prepare plan. The operation prepares the actual data which include the status of pipes, types, sizes and date of acquisition.

IV. DEFINITION OF TERMS

G.I. – Galvanized iron

Hydro testing – to determine and verify pipeline strength

Disinfection – a treatment method by using chlorine

V. REFERENCE DOCUMENTS

Carcar Water District Pipe Network

VI. RECORDS GENERATED

Completion Report, Data Files, Drawings and Program Of Works, Filing of Permits, Daily pipe laying record logbook, Hydro testing record logbook

Prepared by:

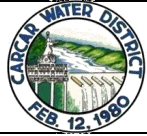
WENCESLAO C. ABALO

Process Owner

Approved by:

Josefa S.N. Manugas

QMR



PROCEDURES MANUAL

REPLACEMENT OF PIPELINES

VII. PROCEDURE DETAILS AND FLOW

No.	Process Flow	Description of Activity	Guidelines/Criteria/Policy	Responsible Person	Retained Information
1	START		1.1 Conducted at least once a year		
1	Evaluation of pipelines	1.1 Review the status of pipe which includes the types, sizes and date of installation	1.2 Pipeline operates more than 20 years or G.I. / Steel pipes are subject for replacement	1.1 Operation and Maintenance personnel	1.1 Completion report
2	Conduct Pipeline Survey	2.1 During survey the in charge shall conduct pipe location, sizes of propose pipe replace and the total length of pipe to be replace	2.1 To have a complete details for program and drawing	2.1 Operation and Maintenance personnel	2.1 Data Files
3	Preparation of Drawings and Program Of Works	3.1 Preparation of Program of Works which includes cost estimate and work duration. Drawing/ Plan is the reflection of actual work preparation	3.1. All projects must have complete Plan and program of works	3.1 Division Manager 3.2 Draftsman	3.1 Drawings and Program Of Works 3.2 Drawings and Program Of Works
4	Design	4.1 Review and approval by Division Manager and General Manager	4.1. All programs must be clear and understandable	4.1 Division Manager 4.2 General Manager	4.1 Drawings and Program Of Works 4.2 Drawings and Program Of Works
5	Processing of permits	5.1 Apply permits for pipeline excavation to DPWH/ Municipality/ Barangay permit	5.1 100% of permits completed before starting the project	5.1 Operation and Maintenance personnel	5.1 Filing of Permits
	A				

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Rev. No. : 00

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PROCEDURES MANUAL

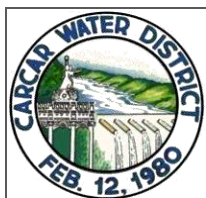
REPLACEMENT OF PIPELINES

6	<pre> graph TD A((A)) --> B[Retrieval and Replacement of Pipelines] B --> C[Conduct pipeline hydro test and Disinfection] C --> D{Pass?} D -- NO --> B D -- YES --> E[Interconnection Of Pipelines] E --> F([END]) </pre>	<p>6.1 Observe proper excavation and backfilling include sand bedding, caution tape and restoration of pipelines</p> <p>7.1 Before tapping interconnection, the new installed pipelines subject to conduct hydro testing together with disinfection by charging enough chlorine granules. Hydro testing applies a specified maximum pressure for not less than 24 hours</p> <p>8.1 Identify the two existing point of pipelines and apply interconnection</p>	<p><i>6.1 Excavation & Restoration process based on Carcar Water District Manual</i></p> <p><i>7.1 Standard Disinfection and Hydro testing based on Carcar Water District Manual</i></p> <p><i>8.1 100% accomplished based on Carcar Water District Standard</i></p>	<p>6.1 Operation and Maintenance personnel</p> <p>7.1 Operation and Maintenance personnel</p> <p>8.1 Operation and Maintenance personnel</p>	<p>6.1 Daily pipe laying record logbook</p> <p>7.1 Hydro testing record logbook</p> <p>8.1 Completion report</p>
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PROCEDURES MANUAL

Document No. : **PM-OM-13** Eff. Date : **08-20-16**
Revision No. : **00** Pages : **1 of 2**

BILLING FOR UNMETERED BILLED

I. OBJECTIVE

This procedure defines the entire process in the withdrawal of water from hydrants as requested by the Interested Parties.

II. SCOPE

This covers the entire Carcar Water District's Spring and Well Production.

III. RESPONSIBILITY AND RESOURCES

Assigned personnel in areas where fire hydrants are located.

IV. DEFINITION OF TERMS

CU.M. – Cubic Meter

PAC-D – Public Assistance and Complaints Desk

Interested Parties – Local Government Unit (LGU) and Other Agencies

V. REFERENCE DOCUMENTS

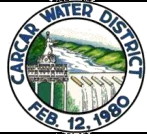
Withdrawal Slip and Official Receipt

VI. RECORDS GENERATED

Withdrawal Slip, Official Receipt and Flow Meter Logbook

Prepared by: WENCESLAO C. ABALO
Process Owner

Approved by: Josefa S.N. Manugas
QMR



PROCEDURES MANUAL

WATER WITHDRAWAL FOR UNMETERED BILLED

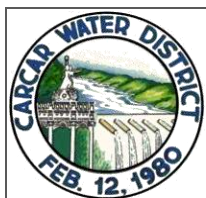
VII. PROCEDURE DETAILS AND FLOW

No.	Process Flow	Description of Activity	Guidelines/Criteria/Policy	Responsible Person	Retained Information
1	START				
	↓				
1	Fill up withdrawal slip	1.1 To quantify the volume and amount of water withdraw	1.1 No approved withdrawal slip, no extraction of water	1.1 Assigned Team	1.1 Withdrawal Slip
	↓		2.1 Base on withdrawal slip	1.2 Division Manager	
2	Pay to the Cashier	2.1 Interested Parties must pay to the Cashier	2.2 Base on the agreed standardization of proper billing for unmetered billed	2.1 Interested Parties	2.1 Official Receipt
	↓			2.2 Cashier	
	↓				
3	Water Withdrawal	3.1 PAC-D personnel will contact to assigned Team to extract the water	3.1 PAC-D will inform immediately the assigned personnel	3.1 PAC-D personnel	3.1 Withdrawal Slip
	↓				
	↓	3.2 Assigned personnel must check the Official Receipt	3.2 To ensure the exact quantity of water withdrawn	3.2 Assigned Team	3.2 Flow Meter Logbook
	↓				
	↓	3.3 Assigned personnel must read the flow meter before and after the extraction of water and to be written in the Withdrawal Slip/ Flow Meter Logbook	3.3 The Withdrawal Slip must be returned to the PAC-D personnel and filed		
	↓				
	END				

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PROCEDURES MANUAL

Document No. : **PM-OM-14** Eff. Date : **12-9-16**
Revision No. : **00** Pages : **1 of 2**

BACTERIOLOGICAL TESTING

I. OBJECTIVE

Monthly testing to assure the quality and safety potable water supply.

II. SCOPE

Supply safety potable water.

III. RESPONSIBILITY AND RESOURCES

Accredited Laboratory / Carcar Water District Personnel.

IV. DEFINITION OF TERMS

Bacteriological Testing – water testing for total Coli form, Fecal Coli forms, E. coli and HPC in drinking water.

Accredited Laboratory – is to perform testing and evaluating water.

Carcar Water District Personnel – is the person involved in conducting Bacteriological Testing.

V. REFERENCE DOCUMENTS

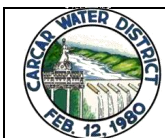
Philippine National Standards for Drinking Water (PNSDW), 2007.

VI. RECORDS GENERATED

Purchase Request, Bacte Test Data, Bacteriological Testing Result

Prepared by: **JOBERT D. BABANTO**
Process Owner

Approved by: **Josefa S.N. Manugas**
QMR



PROCEDURES MANUAL

BACTERIOLOGICAL TESTING


VII. PROCEDURE DETAILS AND FLOW

No.	Process Flow	Description of Activity	Guidelines/Criteria/Policy	Responsible Person	Retained Information
01	<p>START</p> <p>Prepare Purchase Request for Bacteriological Testing</p>	1.1 Prepare purchase request for Bacteriological Testing.	<p><i>Location for Testing</i></p> <p><i>Once a month</i></p>	Carcar Water District Personnel	Purchase Request
02	<p>GM's approval for Bacteriological Testing</p>	2.1 Approved by the General Manager.	<p><i>Request should be with complete signatories</i></p>	General Manager	Purchase Request
03	<p>Conduct Bacteriological Test</p>	<p>3.1 Flush pipelines into tap stand then gets chlorine residual.</p> <p>3.2 Collect water sample to the designated location for Laboratory test.</p> <p>3.3 Submit all water samples to the Accredited Laboratory then the result will be given within 2 – 3 working days.</p>	<p><i>Designated Location for Testing</i></p>	<p>3.1 Carcar Water District Personnel</p> <p>3.2 Accredited Laboratory / Carcar Water District Personnel</p> <p>3.3 Accredited Laboratory / Carcar Water District Personnel</p>	Bacte Test Data
04	<p>Receive Laboratory Result</p> <p>Failed</p> <p>Passed</p> <p>END</p>	<p>4.1 Identify the failed areas for another water testing.</p> <p>4.1.1 If failed then process shall go back to request for testing.</p> <p>4.1.2 If passed then ends the process.</p>	<p><i>Philippine National Standards for Drinking Water (PNSDW), 2007</i></p>	Accredited Laboratory / Carcar Water District Personnel	Bacteriological Testing Result

Doc No. : **PM-OM-14**
Rev. No. : **00**

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	PROCEDURES MANUAL	Document No. : PM-OM-15 Eff. Date : 6-15-20
		Revision No. : 01 Pages : 1 of 3
	<i>CUSTOMER SERVICE – OPERATION & MAINTENANCE</i>	

I. OBJECTIVE

This procedure defines the entire process to identify and assess customers' needs to achieve satisfaction.

II. SCOPE

This covers the entire Carcar Water District's Customer Service and all its Interested Parties.

III. RESPONSIBILITY AND RESOURCES

PACD Personnel, Alternate Personnel

IV. DEFINITION OF TERMS

PACD Personnel – person-in-charged for the effectively receive feedback and monitor customer satisfaction in conformity with Rule VI of the IRR of RA 9485.

Alternate PACD Personnel – person who will replace the PACD Personnel in his/her absence.

PACD – Public Assistance and Complaints Desk

IRR – Implementing Rules and Regulations

RA – Republic Act

CWD – Carcar Water District

V. REFERENCE DOCUMENTS

Carcar Water District Citizens' Charter

Rule VI of the IRR of RA 9485 – Section 5. Public Assistance Desk – Each office or agency shall establish a public assistance/ complaints desk in all their offices, where an officer or employee knowledgeable on frontline services shall at all times be available for consultation and advice. The desk shall be attended to even during break time.

VI. RECORDS GENERATED

Leak Repair Job Order Form/ Complaint Form (FM-MNT-12),
CWD Repair Leak Checklist (FM-MNT-09)

Prepared by: <u>PUBLIC ASSISTANCE AND COMPLAINTS DESK</u> Process Owner	Approved by: <u>JOSEFA S. N. MANUGAS, CPA, MPA</u> Department Manager/ QMR
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PROCEDURES MANUAL

CUSTOMER SERVICE - OPERATION & MAINTENANCE

VII. PROCEDURE DETAILS AND FLOW

No.	Process Flow	Description of Activity	Guidelines/Criteria/Policy	Responsible Person	Retained Information
01	<pre> graph TD START([START]) --> Receive[Receive Complaints/ Request] </pre>	<p>1.1 Receive complaints/ request thru phone call/ personally report to the office.</p> <p>1.2 Determine the type of complaint/ request either for repair/ inspection.</p> <p>1.3 Fill out completely the information in the Leak Repair Job Order Form/ Complaint Form (FM-MNT-12).</p>	<p>- Carcar Water District Citizen's Charter</p> <p>- If the complaint/ request is from the concessionaire and reported in the office, "Reported by" should be signed by the concessionaire, and if thru phone mark as phone call.</p> <p>- If the complaint/ request is from the CWD Personnel, there is no need to sign the "Reported by" portion.</p> <p>The one who prepared the complaint/ request shall sign the "Prepared by" portion.</p>	PACD Personnel/ Alternate PACD Personnel	Leak Repair Job Order Form/ Complaint Form (FM-MNT-12)
02	<pre> graph TD Relay[Relay to the designated team to perform the task] --> A((A)) </pre>	<p>2.1 Relay the reported complaint/ request by cellphone/ in person to the designated team to perform the task.</p> <p>2.2 The PACD Personnel/ Alternate PACD Personnel will provide the Leak Repair Job Order Form/ Complaint Form after the repair/ inspection to the assigned team.</p>	- Carcar Water District Citizen's Charter	PACD Personnel/ Alternate PACD Personnel	Leak Repair Job Order Form/ Complaint Form (FM-MNT-12)

Doc No. : **PM-OM-15**
Rev. No. : **01**

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PROCEDURES MANUAL

CUSTOMER SERVICE - OPERATION & MAINTENANCE

03	<p style="text-align: center;">A</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p>Team Leaders/ Members must return the Leak Repair Job Order Form/ Complaint Form along with the CWD Repair Leak Checklist, to the PAC-D Personnel/ Alternate PACD Personnel</p> </div>	3.1 Fill out completely the Leak Repair Job Order Form/ Complaint Form (FM-MNT-12)	<p>- The assigned team will fill out the "Action taken" portion in the Leak Repair Job Order Form/ Complaint Form (FM-MNT-12), then it must be verified by the Operation & Maintenance Division Head/ Department Head.</p> <p>- If "leak repair" attach the CWD Repair Leak Checklist (FM-MNT-09), then return to the PACD Personnel/ Alternate PACD Personnel.</p> <p>- If "inspection" the CWD Repair Leak Checklist is not needed, then return to the PACD Personnel/ Alternate PACD Personnel.</p>	<p>PACD Personnel/ Alternate PACD Personnel</p> <p>Team Leaders/ Members</p> <p>Division Head/ Department Head</p>	<p>Leak Repair Job Order Form/ Complaint Form (FM-MNT-12)</p> <p>CWD Repair Leak Checklist (FM-MNT-09)</p>
04	<div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p>Update the MOF System</p> </div> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p>END</p> </div>	4.1 PACD Personnel/ Alternate PACD Personnel must update the MOF System.	- Not Applicable	<p>PACD Personnel/ Alternate PACD Personnel</p>	<p>Leak Repair Job Order Form/ Complaint Form (FM-MNT-12)</p> <p>CWD Repair Leak Checklist (FM-MNT-09)</p>

Doc No. : **PM-OM-15**

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PROCEDURES MANUAL

Document No. : **PM-OM-16** Eff. Date : **12-01-17**
Revision No. : **00** Pages : **1 of 3**

CONSTRUCTION OF FACILITIES

I. OBJECTIVE

To establish a design process to support the construction of facilities.

II. SCOPE

This covers the entire Carcar Water District's Facilities Design.

III. RESPONSIBILITY AND RESOURCES

General Manager
Division Manager
Draftsman
Team Leader
Assigned Processing Personnel
Licensed surveyor
End User

IV. DEFINITION OF TERMS

Draftsman – a person who makes detailed technical plans or drawings
RRW – Road Right-of-Way

V. REFERENCE DOCUMENTS

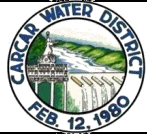
Program of Works
RA 10752
RA 9184

VI. RECORDS GENERATED

Deed of Sale/ Deed of Donation, Drawing and Program of Works, Fencing Permit, Building Permit, Electrical Permit, Fire Safety Evaluation Purchase Request, Subdivision Plan, Leveling Data, Requisition Issuance Slip, Gate Pass, Activity/ Accomplishment Monitoring Report, Project Cost Sheet

Prepared by: HENRY A. CUI
Process Owner

Approved by: JOSEFA SN. MANUGAS
QMR



PROCEDURES MANUAL

CONSTRUCTION OF FACILITIES

VII. PROCEDURE DETAILS AND FLOW

No.	Process Flow	Description of Activity	Guidelines/Criteria/Policy	Responsible Person	Retained Information
1	<pre> graph TD START([START]) --> Acquire{Acquire Land or Plot} Acquire -- "Deed of Donation" --> Survey[Lot Sub Division Survey] Acquire -- "Deed of Sale" --> Survey Survey --> Data[Survey Data] Data --> Design{Design} Design --> A((A)) Design --> B((B)) </pre>	<p>1.1 Lot owner and lot number verification at the Assessor's Office</p> <p>1.1.1 If Deed of Sale, preparation of the document to be signed by the lot owner then proceed to Lot Subdivision Survey</p> <p>1.1.2 If Deed of Donation, preparation of the document to be signed by the lot owner and accepted by the Board of Directors, through the General Manager, then proceed to Lot Sub Division Survey</p>	<p>1.1 RA 10752 (an act facilitating acquisition of RRW or location for government infrastructure projects)</p> <p>1.1.1 Complete documents in accordance with COA checklist</p> <p>1.1.2 Complete documents in accordance with COA checklist</p>	<p>1.1 Assigned processing personnel</p> <p>1.1.1 Assigned processing personnel</p> <p>1.1.2 Assigned processing personnel</p>	<p>1.1 Tax Declaration and Lot Number</p> <p>1.1.1 Deed of Sale, Tax Declaration/ Certificate of Title</p> <p>1.1.2 Deed of Donation, Tax Declaration/ Certificate of Title</p>
2	Lot Sub Division Survey	2.1 Sub-division Survey	2.1 Subdivision Plan	2.1 Licensed surveyor	2.1 Subdivision Plan
3	Survey Data	3.1 Profile leveling, cross section survey 3.2 Survey for demand result	3.1 Activity conducted with the use of leveling instruments 3.2 Result shall indicate the demand distribution	3.1 Division Manager 3.2 Team Leader	3.1 Leveling Data 3.2 Sketch/ Drawing Plotting the Demand
4	Design	4.1 Review and approval by Division Manager and General Manager	4.1. All programs must be clear and understandable	4.1.1 Division Manager 4.1.2 General Manager	4.1 Drawings and Program of Works 4.2 Drawings and Program of Works

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PROCEDURES MANUAL

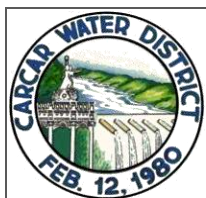
CONSTRUCTION OF FACILITIES

<p>5</p> <p>6</p> <p>7</p>	<pre> graph TD A((A)) --> D{Processing of permits} D -- Not granted --> B((B)) D -- Yes --> E[Purchase of Materials] E --> F[Project Implementation] F --> G[END] </pre>	<p>5.1 Apply permits for fencing or building with City Engineering Office/ Bureau of Fire Protection</p> <p>5.1.1 If not granted then process shall go back to Design</p> <p>5.1.2 If yes then proceed to purchase request</p> <p>6.1 Prepare purchase request</p> <p>7.1 Prepare Requisition Issuance Slip and Gate Pass for the materials, tools and equipment needed</p> <p>7.2 Monitoring of activity/ accomplishment</p> <p>7.3 Monitoring of Project Cost Sheet</p>	<p><i>5.1 Building Code of the Philippines</i></p> <p><i>5.1.1 Consider revising the plan to meet the requirement</i></p> <p><i>5.1.2 2016 Revised Implementing Rules and Regulation of Republic Act 9184, Government Procurement Reform Act</i></p> <p><i>6.1 2016 Revised Implementing Rules and Regulation of Republic Act 9184, Government Procurement Reform Act</i></p> <p><i>7.1 RIS should be complete in signatories</i></p> <p><i>7.2 Activity/ Accomplishment Monitoring should be monitored daily</i></p> <p><i>7.3 Project Cost Sheet should be monitored weekly/ monthly and closed out 3 months after the project completion</i></p>	<p>5.1 Assigned processing personnel</p> <p>5.1.1.1 Assigned processing personnel</p> <p>5.1.1.2 Draftsman</p> <p>5.1.1.3 Division Manager</p> <p>5.1.1.4 General Manager</p> <p>5.1.2 Assigned processing personnel</p> <p>6.1.1 End user</p> <p>6.1.2 Division Manager</p> <p>6.1.3 General Manager</p> <p>6.1.4 BAC Chair</p> <p>7.1.1 Assigned personnel</p> <p>7.1.2 Division Manager</p> <p>7.1.3 Storekeeper</p> <p>7.2.1 Assigned personnel</p> <p>7.2.2 Division Manager</p> <p>7.3.1 Assigned personnel</p> <p>7.3.2 Division Manager</p>	<p>5.1 Blue print/ A3 size copy of plans and drawing, Fencing Permit, Building Permit, Electrical Permit, Fire Safety Evaluation, Barangay Clearance, Tax Clearance, Tax Declaration Certified Thru Copy, Deed of Donation, Deed of Absolute Sale</p> <p>5.1.1 Blue print/ A3 size copy of plans and drawing</p> <p>5.1.2 Purchase Request</p> <p>6.1 Purchase Request</p> <p>7.1.1 Requisition Issuance Slip</p> <p>7.1.2 Gate Pass</p> <p>7.2 Activity/ Accomplishment Monitoring Report</p> <p>7.3 Project Cost Sheet</p>
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PROCEDURES MANUAL

Document No. : **PM-OM-17** Eff. Date : **12-3-18**
Revision No. : **00** Pages : **1 of 3**

WELL DRILLING

I. OBJECTIVE

This procedure defines the process by which the Carcar Water District conducts Well Drilling by Administration.

II. SCOPE

This covers the entire CWD Well Drilling Operation by administration.

III. RESPONSIBILITY AND RESOURCES

Responsible persons are the Drilling and Production team.

The Operation and Maintenance shall conduct data gathering, prepare plans and drawings, and program of works.

IV. DEFINITION OF TERMS

NWRB – National Resources Board

LWUA – Local Water Utilities Administration

POW – Program of Works

Auto-CAD – Auto-Computer Aided Design

V. REFERENCE DOCUMENTS

Previous completed projects

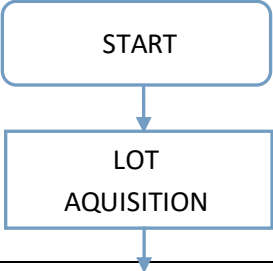
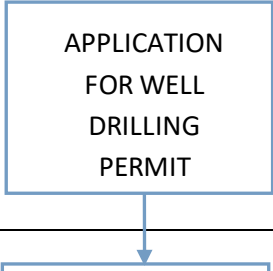
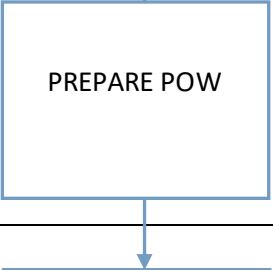

VI. RECORDS GENERATED

Well Drilling Logbook

Prepared by: ENGR. HENRY A. CUI
Process Owner

Approved by: JOSEFA SN. MANUGAS, CPA, MPA
QUALITY MANAGEMENT REPRESENTATIVE

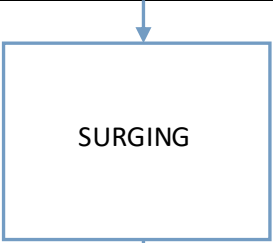
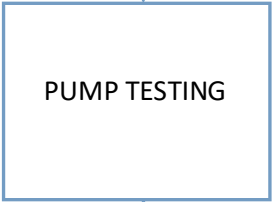
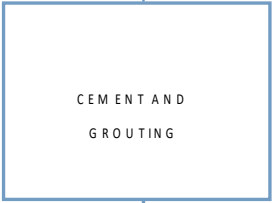
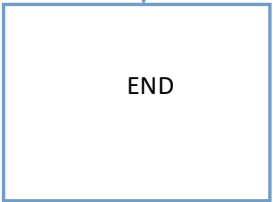
VII. PROCEDURE DETAILS AND FLOW

No.	Process Flow	Description of Activity	Guidelines/Criteria/Policy	Responsible Person	Retained Information
1	 <pre> graph TD START([START]) --> LOT[LOT AQUISITION] </pre>	1.1 Acquisition of drilling site through sale, donation or other modes of acquiring ownership	1.1 RA 10 752 – The Right of Way Act 1.2 Well drilling site shall be based on the recommendation of the geo-resistivity result or if potential aquifer is available according to the map provided by LWUA Geo-resistivity.	1.1 CWD personnel	1.1 Deed of sale, Deed of Donation and any proof of ownership
2	 <pre> graph TD APP[APPLICATION FOR WELL DRILLING PERMIT] </pre>	2.1 Filing of application for drilling permit with NWRB	2.1 NWRB Guidelines	2.1 CWD personnel	2.1 Drilling Permit
3	 <pre> graph TD POW[PREPARE POW] </pre>	3.1 Well design base on geo-resistivity result 3.2 Cost and estimate	3. 1 Geo-resistivity Result / Map 3. 2 Well design	3. 1 Division Manager	3.1 POW 3.2 Well design 3.3 Geo-resistivity Result
4	 <pre> graph TD DRILL[DRILLING] </pre>	4. 1 Conduct drilling according to POW, Borehole design and Well depth.	4. 1 Soil sampling in every one (1) meter depth.	4. 1 Well logging personnel	4. 1 Soil samples

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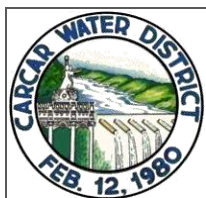
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5		5. 1 Surging and bailing out of settlement for 18 hours.	5. 1 LWUA utility rules	5. 1 CWD personnel / Job Order personnel	5. 1 Photographs of activity.
6		6. 1 5 steps draw down test. (1 hour duration per step)	6. 1 Data per step duration 6. 2 Data of 72 hours test	6. 1 CWD personnel / Job Order personnel	6. 1 Pumping test result
7		7. 1 Well grouting proper sanitary seal protection for the surface water	7. 1 Well design	7. 1 CWD personnel	7. 2 Photographs of the activity
8					

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PROCEDURES MANUAL

Document No. : **PM-OM-18** Eff. Date : **12-2-19**

Revision No. : **00** Pages : **1 of 2**

PREVENTIVE MAINTENANCE OF CHLORINATOR

I. OBJECTIVE

This procedure clearly defines the process that can be used to achieve & maintain the safe levels of chlorine in drinking water supply delivered to every concessionaire.

II. SCOPE

This covers the entire Carcar Water District's Operations and Maintenance and its Interested Parties.

III. RESPONSIBILITY AND RESOURCES

Carcar Water District Personnel
Operation Team

IV. DEFINITION OF TERMS

Chlorinator pump

V. REFERENCE DOCUMENTS

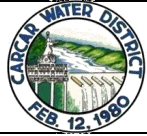
Philippine National Standards for Drinking Water (PNSDW) 2007.

VI. RECORDS GENERATED

Preventive Maintenance of Chlorinator Record

Prepared by: ENRIQUE FERNANDEZ JR.
Process Owner

Approved by: JOSEFA SN. MANUGAS, CPA, MPA
Department Manager/ QMR



PROCEDURES MANUAL

PREVENTIVE MAINTENANCE OF CHLORINATOR

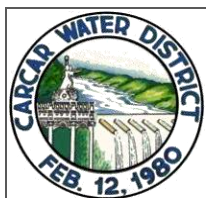
VII. PROCEDURE DETAILS AND FLOW

No.	Process Flow	Description of Activity	Guidelines/Criteria/Policy	Responsible Person	Retained Information
1		1.1 Printing of PM form with specific location, check tools & materials needed 1.2 Proceed to the specific chlorinator site	<i>1.1 Perform Preventive maintenance must be daily or not more than 2 days from the last check-up.</i>	1.1 Preventive Maintenance Team	1.1 Preventive Maintenance of Chlorinator Form
2		2.1 Check chlorinator, check feed rate and chlorine tank level. 2.2 Turn off Chlorinator, clean suction valve and strainer, discharge line, injector valves & pipe tapping point.	<i>2.1 Assigned personnel for their corresponding area obliged to conduct Preventive maintenance</i>	2.1 Preventive Maintenance Team	2.1 Preventive Maintenance of Chlorinator Form
3		3.1 Open suction & discharge valve then turn on the chlorinator. Open bypass valve to release the air from the hose.	<i>3.1 Chlorinators must be in good condition</i>	3.1 Preventive Maintenance Team	3.1 Preventive Maintenance of Chlorinator Form
4		4.1 Fill up form, data includes status of chlorinator, time in & out, chlorine level, feed rate, suction & discharge valve status & injector valve status.	<i>4.1 Form completely filled-up</i>	4.1 Preventive Maintenance Team	4.1 Preventive Maintenance of Chlorinator Record
5		5.1 Submit report to the in charge personnel	<i>5.1 Submit report within the day or first hour of the following dates.</i>	5.1 Preventive Maintenance Team	5.1 Preventive Maintenance of Chlorinator Record

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Document No. : **PM-OM-19** Eff. Date : **12-16-19**
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FILTRATION SYSTEM MONITORING

I. OBJECTIVE

This procedure defines the process that can be used in monitoring the filtration system and maintain safe water supply delivered to every concessionaire.

II. SCOPE

This covers the Water Filtration System.

III. RESPONSIBILITY AND RESOURCES

Responsible persons are the assigned Water Treatment Plant Personnel.

IV. DEFINITION OF TERMS

NTU- Nephelometric Turbidity Unit

V. REFERENCE DOCUMENTS

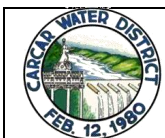
PNSDW – Philippine National Standard for Drinking Water (2007)

VI. RECORDS GENERATED

FM-PDN- 15 Daily Filtration Monitoring **RECORD**

Prepared by: WENCESLAO C. ABALO
Process Owner

Approved by: JOSEFA SN. MANUGAS, CPA, MPA
Department Manager/QMR



PROCEDURES MANUAL

FILTRATION SYSTEM MONITORING

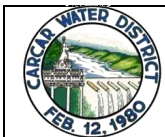
VII. PROCEDURE DETAILS AND FLOW

No.	Process Flow	Description of Activity	Guidelines/Criteria/Policy	Responsible Person	Retained Information
1	START				
	Check equipment and media filter	1.1 Checking turbidity tester, chlorinator and media filter tank cover	1.1 <i>All equipment are fully functional</i>	1.1 Assigned Personnel	
2	Conduct reading of flowmeter, pressure gauge, turbidity and pressure differential	2.1 Collect all datas, analyse and calculate 2.2 If turbidity result is greater than the standard proceed to other process. 2.3 If pressure differential result is 0.1 psi proceed to backwash procedure	2.1 <i>All equipment must be calibrated and within the PNSDW (2007) standard.</i> 2.2 $\leq 5 \text{ NTU}$	2.1 Assigned Personnel	2.1 Daily Filtration Monitoring Record
	END				

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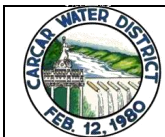
FILTRATION SYSTEM MONITORING

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FILTRATION SYSTEM MONITORING

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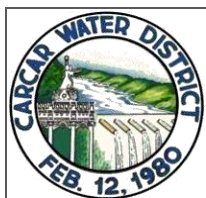
FILTRATION SYSTEM MONITORING

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PROCEDURES MANUAL

Document No. : **PM-OM-20** Eff. Date : **03-31-21**
Revision No. : **00** Pages : **1 of 2**

ISSUANCE OF CLEARANCE CERTIFICATE

I. OBJECTIVE

This procedure clearly defines the process of issuing a clearance certificate to any third party once the project is terminated or completed.

II. SCOPE

This procedure only applies to Project.

III. RESPONSIBILITY AND RESOURCES

OM Construction and Engineering Staff	Verify actual physical accomplishment (Resources required Physical Accomplishment Report)
Finance Staff	Verify actual financial accomplishment (Resources required Financial Accomplishment Report)
Administrative Staff	Issuance of Clearance Certificate

IV. DEFINITION OF TERMS

Clearance Certificate— a certification certifying a party is cleared from all liabilities of the project executed

V. REFERENCE DOCUMENTS

Program of Works
Actual Physical Accomplishments
Actual Financial Accomplishments

VI. RECORDS GENERATED

Supervisor of each project request logbook

Prepared by: **NARJIB O. SORDILLA**
Process Owner

Approved by: **JOSEFA SALVACION MANUGAS**
QMR/ Dep. Manager Admin-Finance



PROCEDURES MANUAL

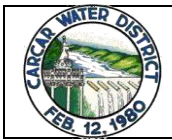
ISSUANCE OF CLEARANCE CERTIFICATE

No.	Process Flow	Description of Activity	Guidelines/Criteria/Policy	Responsible Person	Retained Information
1	START				
1	Requisition of Clearance Certificate	1.1 Contractors submit a request for clearance certificate	1.1 <i>Letter Request</i>	1.1 Contractors	1.1 Letter Request Copy
2	Check actual Physical Accomplishments	2.1 Conduct Site Inspection to verify the actual physical accomplishment	2.1 <i>Refer to Approved Bill of Quantity</i> 2.2 <i>Refer to construction logbook</i>	2.1 Const'n and Engineering (O&M Staff)	2.1 Logbook/ Record Book and Physical Accomplishment Report
3	Verifying Financial Accomplishments	3.1 Conduct checking and review of actual financial accomplishments	3.1 <i>Financial Record</i>	3.1 Finance Staff	3.1 Financial Accomplishments Report
4	If Cleared, Issue a Clearance Certificate	4.1 Issuance of Clearance Certificate	4.1 <i>Logbook</i>	4.1 Admin Staff	4.1 Clearance Certificate Copy
5	If not Cleared, Hold Equipment and Materials and Order Contractor to comply all necessary documents	5.1 Coordinate with the contractor for financial obligations settlement and submit all necessary documents	5.1 <i>Financial Record</i> 5.2 <i>Necessary Documents</i>	5.1 Finance Staff	5.1 Demand Letter Copy
6	After Compliance, Issue a Clearance Certificate	6.1 Issuance of Clearance Certificate	6.1 <i>Logbook</i>	6.1 Admin Staff	6.1 Clearance Certificate Copy
	END				

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PROCEDURES MANUAL

ISSUANCE OF CLEARANCE CERTIFICATE

REFERENCE ONLY

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