



MEDRC Series of R&D Reports
MEDRC Project: 19-HC-XXX

Title in Caps and Lower Case, May Wrap to Multiple Lines

by
XXXAuthors and OrganizationsXXX

The Middle East Desalination Research Center
Muscat, Sultanate of Oman

Month 20XX

Mission Statements

The mission of the Middle East Desalination Center is.....

Disclaimer

The views, analysis, recommendations, and conclusions in this report are those of the authors and do not represent official or unofficial policies or opinions of the Middle East Desalination Research Center (MEDRC), and MEDRC takes no position with regard to any findings, conclusions, or recommendations made. As such, mention of trade names or commercial products does not constitute their endorsement by MEDRC or the Oman Humanitarian Desalination Challenge sponsors.

This research report was made possible through support provided by the Office of Technical Support, Bureau for the Middle East, U.S. Agency for International Development, under the terms of Award No. 7200ME-18-IO-00002. The opinions expressed in this publication are those of the author(s) and do not necessarily reflect the views of the U.S. Agency for International Development.

Acknowledgments

The Middle East Desalination Research Center and the U.S. Agency for International Development, shall be acknowledged as the sponsors of the research. Only those persons who made meaningful contributions to the research or to the report should be included.

Commented [KP1]: Thanks are due to Deena Larsen at the U.S. Bureau of Reclamation for the final report format and helpful comments currently under my name.

Commented [KP2]: If you need any specific disclaimer, add it here.

Acronyms and Abbreviations

MEDRC Middle East Desalination Research Center

Measurements

°F degree Fahrenheit
°C degree Celsius
c centimeter
µg/L microgram per liter

Commented [KP3]: Define every acronym the first time you use it and add it to the list here.

Commented [KP4]: Define every measurement the first time you use it and add it to the list here.

Contents

Commented [KP5]: To update the Table of Contents, right-click on the table and select Update Field.

	Page
Mission Statements	ii
Disclaimer	ii
Acknowledgments.....	ii
Acronyms and Abbreviations	iii
Measurements	iii
Contents	v
Executive Summary	vii
Report Limits and Instructions.....	vii
Figure Instructions	vii
Table Instructions.....	viii
1. Introduction.....	1
1.1. Project Background.....	1
1.1.1. Problem	1
1.1.1.1. Do Not Worry About Formatting	2
1.1.1.2. We Will Take Care of It.....	2
Heading 5 If You Need Detailed Headings	2
Heading 5 Use Levels 5 and 6	2
Heading 6 Point 1.....	2
Heading 6 Point 2.....	2
1.1.2. Participants.....	2
1.2. Project Needs and Objectives	2
1.2.1. Needs.....	2
1.2.2. Objectives	2
1.3. Project Overview	3
1.3.1. Overall Approach and Concepts	3
1.3.2. Overall Method	3
1.3.3. Participants.....	3
2. Technical Approach and Methods	5
2.1. Project Facility/Physical Apparatus.....	5
2.1.1. Design Criteria.....	5
2.1.2. Source Water.....	5
2.1.3. Set Up.....	5
2.2. Methodology	6
2.2.1. Methods Used	6
2.2.2. Runs and Experiments Done.....	6
2.3. Analysis.....	6
2.3.1. Analytical Background	6
2.3.2. Analytical Process.....	7
3. Results and Discussion	9
4. Conclusions.....	11
4.1. Conclusions.....	11
4.2. Recommended Next Steps.....	11
References.....	13

Funding Opportunity Announcement No. MEDRC-19-001

Glossary (optional).....	15
Metric Conversions (optional but highly recommended)	17

Figures

	Page
Figure 1.—Study area.	1
Figure 2.—Schematic of overall project concept.	3
Figure 3.—Really cool picture of the project that makes us wish we were there... ..	6
Figure 4.—Ensure the chart conveys your information as simply as possible.	9
Figure 5.—Complex charts will make it virtually impossible for your reader to understand you. Also, do not put additional information in the caption. Put all relevant information in the text.	10
Figure 6.—Sum it all up please.....	11

Commented [KP6]: To update the Table of Figures, right-click on the table and select Update Field.

Tables

	Page
Table 1.—Summary of Water Quality Data	5
Table 2.—Summary of results table	11

Executive Summary

Provide a brief synopsis of the need for research, the specific research questions, methods used to address the research questions, and conclusion. Add any important caveats or salient information that a decisionmaker funding the next project or person using the research should know.

Do not put anything here that is not covered in the report.

Report Limits and Instructions

Limit the main report to 50 pages. Put any other details into appendices. Put all data into an excel spreadsheet. The only figures and tables in the main report should summarize data and provide an overall picture of your work.

Figure Instructions

If it will help the reader understand your results, copy the most important figures from the text. For the executive summary, do not use automatic figure numbering. Just type in the figure reference: Figure ES-1 shows the major project results. Note that figure captions should be lower case (except for proper nouns), with a period at the end. Captions should be left-aligned *on the left edge of the figure* (which may or may not be the same as the left edge of the column). Have one space before and after each figure and caption.

Figures should be readable, with contrasting colors and shapes.

Short Project Title

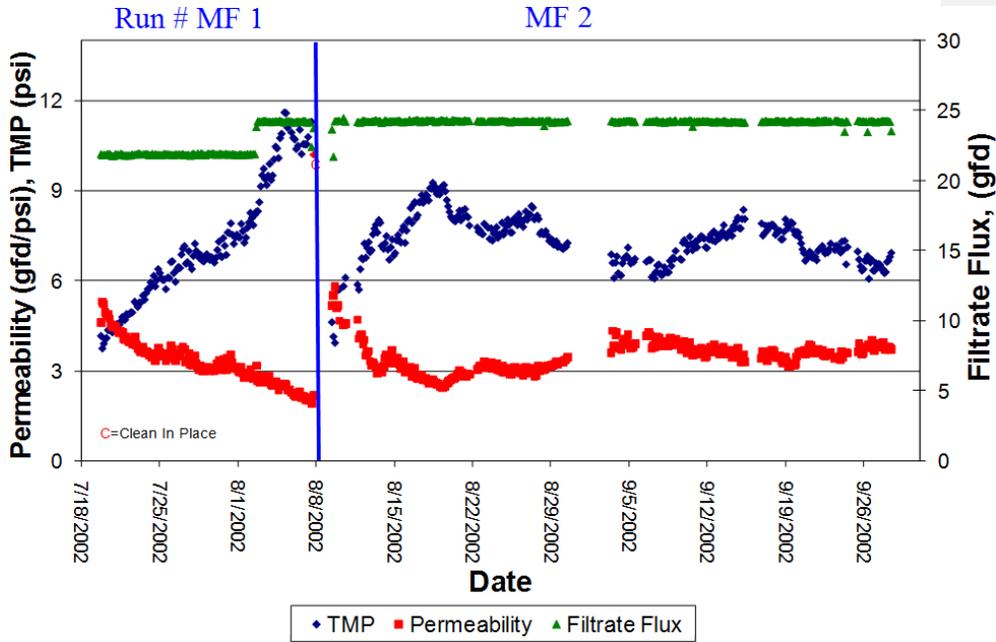


Figure ES-1.—Sum it all up, please.

Table Instructions

If it will help the reader, copy any summary tables (such as Table ES-1). Again, do not use automatic table numbering, which is used in the body of the text. Use one space before and after the table. Do not provide an image of a table.

Table ES-1.—Summary of results table

Factor	Run 1	Run 2	Run 3

1. Introduction

Provide the background needed to understand why we did the project (needs), what the project accomplished (objectives), approach, and overview. (Hint: Copy from your project application.)

Commented [KP7]: You can change the organization of the report to fit your project. However, we prefer this organization. Ensure that your report has this information.

1.1. Project Background

Describe the project (for example, location, study area, regulations, origin of the project). Figure 1 shows a map of the study area.

Commented [KP8]: To create a new header, copy and paste the heading you want.

This document should renumber headings, figures, tables, and equations automatically. To update:

- Select CTRL+A to select the entire document.
- Right click, and select update field.

If there are problems, just leave them with a comment explaining what you want it to be, and the editors will fix it.

Commented [KP9]: Always refer to the figure in the text. To add a figure reference to the text: Select the "Reference" tab in the upper ribbon, then Cross-reference. Select "Figure" from the drop-down menu under Reference type:". Select "Only label and number" from the drop down menu under "Insert reference to:"

Commented [KP10]: Provide a study area map if applicable.

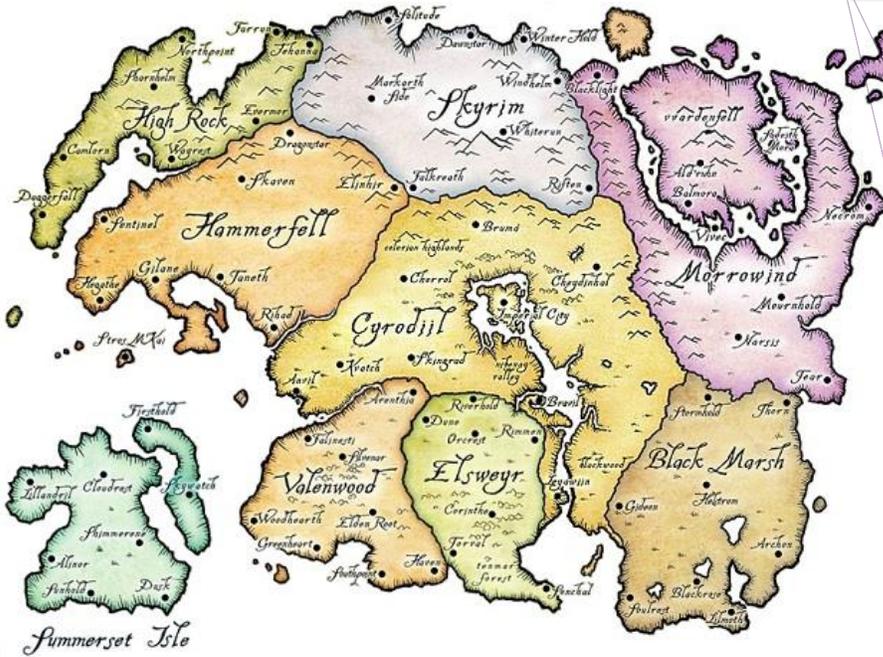


Figure 1.—Study area.

Commented [KP11]: Copy and paste this caption for all figures in the body of the text. Figures should update automatically. Then retype after the "—"

1.1.1. Problem

Briefly discuss the problem that the project addresses, if appropriate.

Short Project Title

1.1.1.1. Do Not Worry About Formatting

Headings are like road signs. They tell the reader what is coming up in the next few paragraphs. So detailed headings are good to have. Again, for any heading, just copy and paste the heading here and type in what you want it to be. Keep it consistent: Either Capitalize Every Word or Just capitalize the first word. But always do it the same way.

1.1.1.2. We Will Take Care of It

Just type your content in. We will make it consistent.

Heading 5 If You Need Detailed Headings

You can go to heading level 5 if you want.

Heading 5 Use Levels 5 and 6

But, like road signs, you need to have a choice of where to go. So give us at least two headings per heading level..

Heading 6 Point 1

This really gets us into the weeds here, but ok.

Heading 6 Point 2

Never have a heading all by itself. It gets lonely at night.

1.1.2. Participants

Briefly discuss previous research for the project, if appropriate.

1.2. Project Needs and Objectives

1.2.1. Needs

Why is this project needed? What problem is it solving?

1.2.2. Objectives

What did the project accomplish?

1.3. Project Overview

1.3.1. Overall Approach and Concepts

What was the overall approach taken? What were the general concepts? Provide a schema, such as Figure 2, if appropriate.

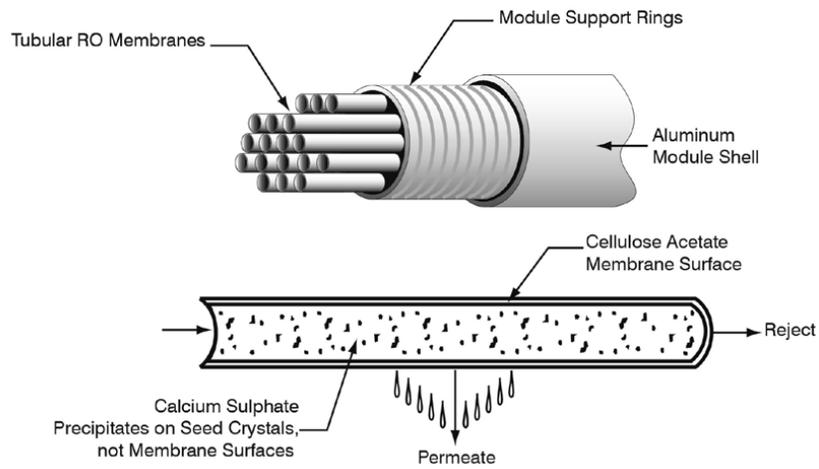


Figure 2.—Schematic of overall project concept.

1.3.2. Overall Method

Briefly discuss the overall methods and analysis.

1.3.3. Participants

Note who was involved, if appropriate. Or just put names in the acknowledgment section.

2. Technical Approach and Methods

In this chapter, detail what was done and how it was done. Provide descriptions of the project facility or physical apparatus, runs and methods, and analysis (including equations used).

2.1. Project Facility/Physical Apparatus

2.1.1. Design Criteria

2.1.2. Source Water

What source water did you use? Provide a brief table such as Table 1 if appropriate. Note that data tables should be provided in a separate excel spreadsheet.

Table 1.—Summary of Water Quality Data

Parameter	Units	Feed	Product	Concentrate
TDS	mg/L	18,600	10,400	22,300
Sodium	mg/L	4,100	1,700	5,500
Calcium	mg/L	2,200	950	1,600
Magnesium	mg/L	600	300	700
Chloride	mg/L	9,900	5,700	10,600
Sulfate	mg/L	2,200	600	3,300
Bicarbonate	mg/L	200	100	300

mg/L = milligrams per liter

Commented [KP12]: Always refer to the table in the text. To add a table reference to the text: Select the "Reference" tab in the upper ribbon, then Cross-reference. Select "Table" from the drop-down menu under Reference type:". Select "Only label and number" from the drop-down menu under "Insert reference to:"

Commented [KP13]: Please copy and use this table, from the table header through the notes.

Commented [KP14]: Put notes at the bottom of the table. If there are no notes, leave this table row blank.

2.1.3. Set Up

What physical set up did you use? Add pictures of the set up or facility as appropriate (Figure 3).

Short Project Title



Figure 3.—Really cool picture of the project that makes us wish we were there.

2.2. Methodology

2.2.1. Methods Used

2.2.2. Runs and Experiments Done

2.3. Analysis

2.3.1. Analytical Background

Provide the background needed to understand your analysis. Include equations, in accordance with Faraday's law as shown in Equation 1:

Equation 1. Faraday's Law

Where:

- m_{Fe} is the mass of Fe generated (g),
- I is constant current
- t is variable generation time

Commented [KP15]: Always refer to equations in the text. To add an equation reference to the text:
Select the "Reference" tab in the upper ribbon, then Cross-reference.
Select "Equation" from the drop-down menu under Reference type:."
Select "Only label and number" from the drop-down menu under "Insert reference to:"

Commented [KP16]: Please make sure that each variable in the equation is defined.

Short Project Title

- Z is the number of electrons transferred per Fe atom (2 for ferrous ions and 3 for ferric ions)
- F is Faraday's constant (96,486 C eq⁻¹)

2.3.2. Analytical Process

Explain how you analyzed the results.

3. Results and Discussion

Discuss the conclusions and results. Explain what the results mean. The simpler the language, the better.

Have summary figures. Keep your result figures as simple as possible. Use only lines that MEAN something in the figure. Also, do not put additional information in the caption. Put all relevant information in the text.

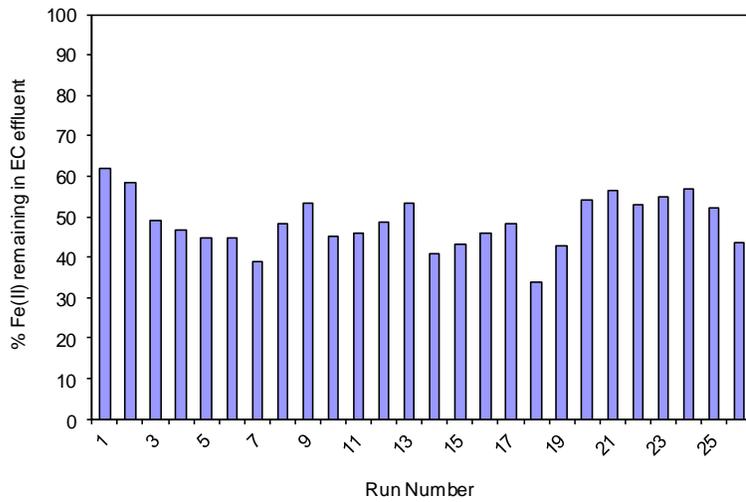


Figure 4.—Ensure the chart conveys your information as simply as possible.

Short Project Title

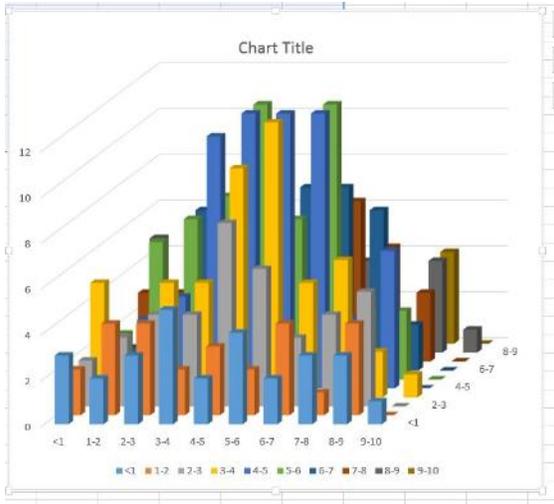


Figure 5.—Complex charts will make it virtually impossible for your reader to understand you. Also, do not put additional information in the caption. Put all relevant information in the text. If you really really need this level of complexity, then add these complex figures to your appendix.

4. Conclusions

4.1. Conclusions

Provide the bottom line. Use the same concluding figures and tables as in the Executive Summary, such as Figure 6.

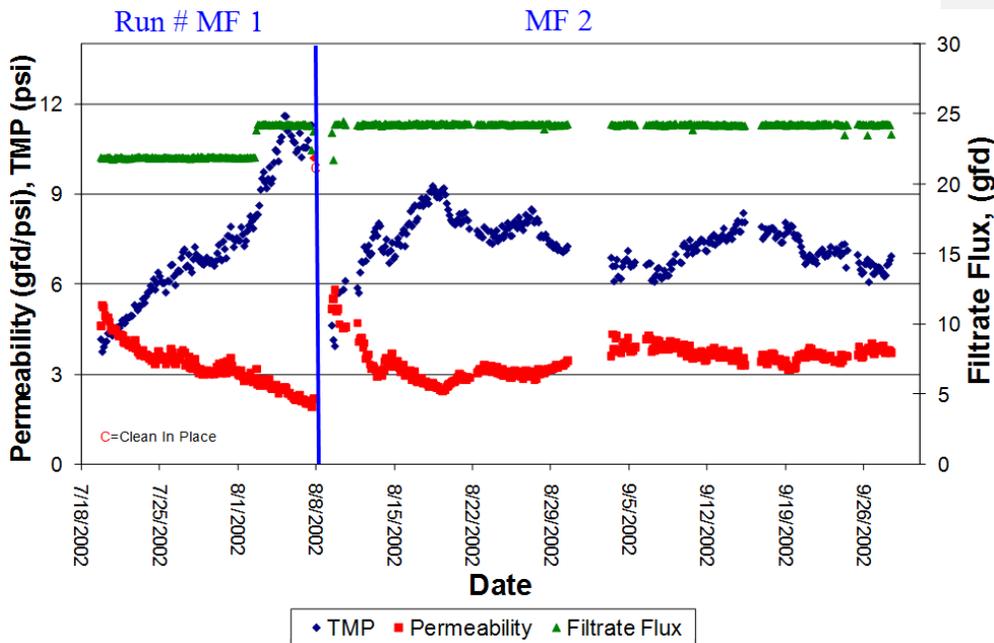


Figure 6.—Sum it all up please.

Table 2.—Summary of results table

Factor	Run 1	Run 2	Run 3

4.2. Recommended Next Steps

What should happen next? How should we continue this great work and make this investment worthwhile?

References

- LastName, F.I. Year. Title. Anything else. <<http://URL>>. Date accessed.
- LastName, F.I. and F.I. SecondLastName, Year. Title. Anything else.<<http://URL>>. Date accessed as MM/DD/YYYY.
- LastName, F.I., F.I. SecondLastName, F.I. ThirdLastName, Year. Title. Anything else. <<http://URL>>.. Date accessed as MM/DD/YYYY.
- Organization's Name Fully Spelled Out The First Time (ONFSOTFT), Year. Title. Anything else. <<http://URL>>.. Date accessed as MM/DD/YYYY.
- MEDRC (Middle East Desalination Research Center), 2017 (Guidance). This MEDRC Guidance, Which We Wrote for a Reason.
- MEDRC (Middle East Desalination Research Center), 2019 (FOA). **Desalination and Water Purification Research Program Fiscal Year 2017 Pilot Scale Testing Funding Opportunity Announcement No. BOR-DO-17-F006.** <https://www.usbr.gov/research/dwpr/docs/DWPR_PilotScale_FOA_012017.pdf>. Accessed 6/24/2017.

Commented [KP17]: •If there are two or more references with the same author and last name, do a keyword (MEDRC 2017 [Guidance], MEDRC 2017 [FOA]). This way, readers and editors do not have to puzzle out the MEDRC 2017a or 2017b from multiple authors, and the reader knows exactly which reference to go to.

Glossary (optional)

Commented [KP18]: Please define terms or jargon that a scientist who is not versed in advanced water treatment might not understand.

Jargon. Specialized language and vocabulary used by a particular science. This would include terms such as “deionization,” “omniphobic,” and “water reclamation.”

Phrase or word to be defined. Copy this definition and type in the phrase or word to be defined in the bold area and the definition in the plain text area.

Metric Conversions (optional but highly recommended)

Provide metric equivalents for non-metric units used in the text:

Unit	Metric equivalent
1 gallon	3.785 liters
1 gallon per minute	3.785 liters per minute
1 gallon per square foot of membrane area per day	40.74 liters per square meter per day
1 inch	2.54 centimeters
1 million gallons per day	3,785 cubic meters per day
1 pound per square inch	6.895 kilopascals
1 square foot	0.093 square meters
°F (temperature measurement)	$(^{\circ}\text{F}-32) \times 0.556 = ^{\circ}\text{C}$
1 °F (temperature change or difference)	0.556 °C