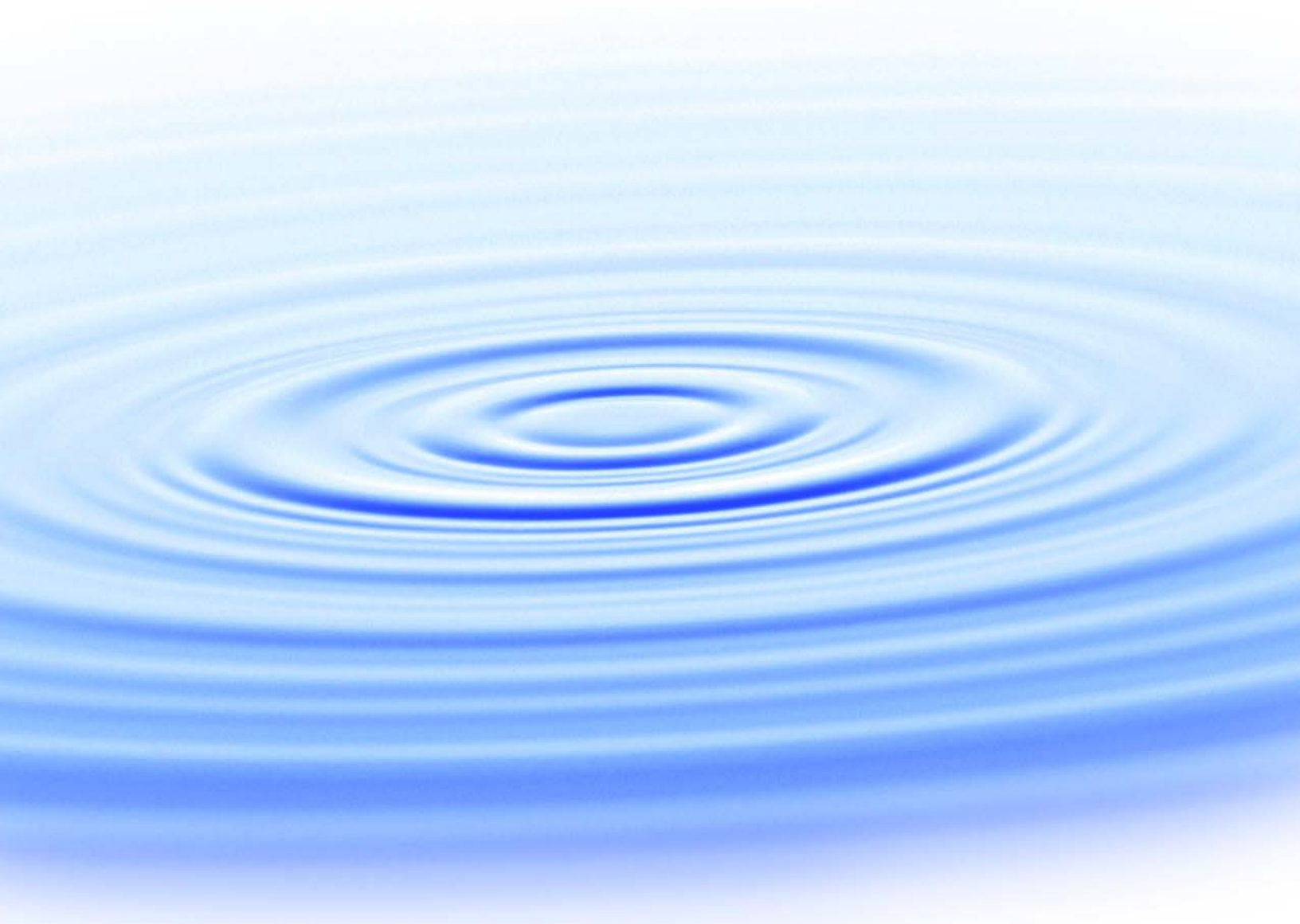
WATEREUSE

Style Guide



WateReuse Research Foundation

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Style Guide

June 2015

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About the Style Guide

The results of WateReuse Research Foundation projects are published in a final report. This style guide is divided into three sections to help researchers prepare documents for submission. The first section outlines the Foundation's editorial preferences. The second section describes how to properly format the report. The third section provides sample pages for progress reports, project profiles, and final reports.

Before preparing the draft report, read the guidelines carefully. If multiple members of the research team are writing sections of the report, each should familiarize himself or herself with the style guide. It can also be helpful to create a list of terms specific to the report to share with all members of the research team to ensure consistency.

Microsoft® Word formatting templates can be downloaded from the following link:

http://watereuse.org/foundation/research/research-templates

Overview of Publishing Process

Once the Project Advisory Committee (PAC) has approved the final report, the publishing process begins. An editor will review the final report for style, grammar, consistency, and completeness. The editor will typically generate a list of queries if there are missing references, conflicting information, or other issues that need to be resolved. The Project Manager will send copyediting questions to the Principal Investigator for resolution. Once the editorial review is complete, the Foundation prepares the report for final publication.

Checklist for Final Report Submission

Before submitting a final report, use this checklist to ensure that the document is complete and ready to be delivered to the WateReuse Research Foundation.

- ☐ The document is complete and follows the Foundation's editorial style (see page 5) and formatting guidelines (see page 13).
- ☐ **Title Page:** Organizations that contributed cash funding to the project are listed as cosponsors on the Title Page (page iii). Any other supporting organizations (including in kind contributors and participating agencies) are listed on the Acknowledgments page.
- ☐ (**Table of) Contents:** Chapter titles, subheads, and page numbers are all correct.
- ☐ **(List of) Figures and Tables:** The figure captions, table titles, and page numbers are listed correctly.
- ☐ **(List of) Acronyms** is complete.
- ☐ **Acknowledgments:** All names and organizations are correct.
- ☐ All acronyms are spelled out or defined on first use throughout the document.
- ☐ All figures and tables are numbered and referenced in the text. The words "Figure" and "Table" are spelled out (e.g., Figure 2.1, Table 1.2)
- ☐ All references cited in the text have been fully documented in the Reference list and vice versa.
- ☐ Figures and tables have been formatted to fit on an 8 ½ x 11 inch page and incorporated into the final document.
- ☐ Type captions in the Microsoft Word document beneath the figure; do not include captions as part of the figure.

Editorial Style

The WateReuse Research Foundation follows *The ACS Style Guide*, published by the American Chemical Society, for most style issues. For issues not covered in *The ACS Style Guide*, the Foundation defers to *The Chicago Manual of Style*. The Foundation follows *Webster's Collegiate Dictionary* for spelling. Some of the Foundation's key style preferences are highlighted below, but authors should also consult *The ACS Style Guide* for issues not covered here.

1.1 Numbers

In nontechnical text, use words for cardinal numbers less than 10; use numerals for 10 and above. Spell out ordinals "first" through "ninth"; use numerals for 10th or greater.

In technical discussions, use numerals with units of time or measure, and use a space between the numeral and the unit, except %, $, and º (angular degrees), ´ (angular minutes), and ´´ (angular seconds).

6 min
4%
40º, *but* 40 ºC

Use all numerals in a series or range containing numbers 10 or greater, even in a nontechnical sense.

4, 9, and 14 experiments

For very large numbers used in a nontechnical sense, use a combination of numerals and words.

1 billion tons
155 million people

Spell out numbers at the beginning of a sentence or recast the sentence.

Arabic numerals in parentheses may be used to enumerate a list of phrases or sentences within a paragraph. Always use an opening and a closing parenthesis, not one alone.

Arabic numerals followed by periods or enclosed in parentheses may be used to enumerate a displayed list of sentences or to number paragraphs.

In four digit numbers, use no commas or spaces.

1000 but 10,000

1.2 Equations

Mathematical equations can be presented within running text or displayed on lines by themselves. Double number equations displayed on lines by themselves (1.1, 1.2, etc.). The first number represents the chapter number and second number represents the equation number. To cite an equation in text, spell out "Equation" and capitalize it when it is followed by a number.

1.3 Capitalization

Generally, in text keep all words lowercase, including chemical names and terms, except proper nouns and adjectives.

Capitalize the words "figure," "table," "chart," and "scheme" when they refer to a specific numbered item.

Capitalize the first word after a colon if the colon introduces more than one complete sentence, a quotation, or a formal statement.

In general, capitalize formal proper names but do not capitalize the general terms for them.

> 32nd Western Regional Meeting, but the regional meeting
> Governor Smith, but the governor

In text, capitalize the names of specific titles when they appear with a person's name, but not the general term for them.

> Professor Mary Smith, the professor
> Bob Jones, Chair of the Department of Chemistry; the chair of the department

1.4 Abbreviations and Acronyms

Define acronyms on first use, followed by the acronym in parentheses. Thereafter, use only the acronym. For clarity, it may be necessary to define the acronym again if it is used infrequently and many pages have passed since it was last used. Include a complete list of acronyms with the final report.

Use the abbreviations U.S. and U.K. as adjectives only; spell out United States and United Kingdom as the noun forms.

Use two-letter abbreviations for U.S. state and territory names and Canadian provinces and territories.

Abbreviate units of measure when they accompany numerals. Do not use a period after an abbreviated unit of measure (exception: in. for inch). Do not define units of measure.

Always use the symbol "%" with numerals. Use the word "percentage" when it does not follow a numeral.

Please refer to *The ACS Style Guide* for a list of standard abbreviations.

1.5 Dashes

The shortest dash is the hyphen (-); the en dash is (–) is longer; and the em dash (—) is the longest.

Consult *Webster's Collegiate Dictionary* to resolve hyphenation questions. The Foundation prefers not to hyphenate most prefixes such as anti-, co-, extra-, micro-, non-, pre-, re-, etc.

antibacterial
cooperation
nonpolar
precooled

Hyphens may be used with prefixes if more than one prefix is present (post-reorganization) or when the unhyphenated word does not convey the intended meaning (reform vs. re-form).

Unit Modifiers. Unit modifiers are two words that together describe a noun. They are often hyphenated.

time-dependent reaction
high-frequency transition

The Foundation allows the hyphen to be omitted in cases where there is little or no risk of ambiguity, but the use must be consistent throughout the report. An example of a unit modifier that could be clarified with the use of a hyphen is "fast sailing ship." Does the phrase refer to a ship that is now sailing fast or a sailing ship that is capable of rapid navigation? If the second construction is intended, a hyphen should be included: "fast-sailing ship"

Use the en dash to mean the equivalent of "and", "to", or "versus" in two word concepts where both words are of equal weight.

carbon–oxygen bond
cost–benefit analysis
Beer–Lambert law

Use an en dash between ranges.

12–20 months
parts C–E
pp 12–25

Use an em dash to set off words that would be misunderstood without them.

All three experimental parameters—temperature, time, and concentration—were strictly followed.

Note: En dashes and em dashes are found under the insert symbol command /more symbols/special characters/ in Microsoft Word.

1.6 Punctuation

Use serial commas. A serial comma is the final comma before a conjunction

> cats, dogs, and horses not cats, dogs and horses

Quoted words, phrases, and sentences run into the text are enclosed in double quotation marks. Single quotation marks enclose quotations within quotations. Place periods and commas inside quotation marks. Exclamation marks and question marks should be placed inside the quotation marks when they are part of the quoted material; otherwise they should be placed outside.

Insert a single space after punctuation, including the sentence ending period.

1.7 Vertical Lists

Each entry in a vertical list begins with a bullet or a number. Omit periods after items in a vertical list unless one or more of the items are complete sentences. If the vertical list completes a sentence begun in an introductory element, the final period is also omitted unless the items in the lists are separated by commas or semicolons.

If the vertically listed items are phrases, especially long phrases, that grammatically complete the sentence containing them, commas may, but need not, be used after each item. If commas are used, the last item is followed by a period.

A colon is commonly used to introduce a list or series. Do not use a colon (or any punctuation) between a verb and its object or complement or between a preposition and its object.

> The colors were
> green
> blue
> yellow

The terms *as follows* and the *following* require a colon if followed by a list.

If the material introduced by a colon consists of more than one sentence, or if it is a formal statement or a quotation, it should begin with a capital letter. Otherwise, the items in the list may begin with a lowercase letter.

1.8 Miscellaneous Grammar Issues

Do not reference something as being “above” or “below” in the text. Use the words “earlier” or “previously,” and “later” or “in the following” (e.g., The test results are explained in the following.)

Do not use the words “over” and “under” when referring to amounts. Use “more than” and “less than” (e.g., There were more than 50 people at the meeting.)

For more precise scientific writing, avoid using the words “since” and “while” when not referring to time. Instead use “because” for since and use “although,” “whereas,” or “but” for while.

1.9 References

Cite references in text by author name and year of publication in parentheses inside the punctuation. If a reference has more than two authors, give only the first name listed followed by “et al.”

(Smith, 1999)
(Johnson and Johnson, 2006)
(Perez et al., 2003)

Use an en dash (–) rather than a hyphen (-) between page ranges.

The following are examples of ACS Books standard forms for various types of literature citations. (For more examples and a thorough discussion of reference style, consult *The ACS Style Guide.*)

1.9.1 Journal Articles

Author, A. B.; Author, C. D. *J. Abbrev.* **19XX,** *vol*, xx–yy.
NOTE: No punctuation in journal abbreviations except periods. No conjunctions, articles, or prepositions in journal abbreviations. No comma or semicolon before or after journal titles.

Evans, D. A.; Fitch, D. M.; Smith, T. E.; Cee, V. J. Application of Complex Aldol Reactions to the Total Synthesis of Phorboxazole B. *J. Am. Chem. Soc.* **2000,** *122,* 10033–10046.

Peacock-Lopez, E. Exact Solutions of the Quantum Double Square-Well Potential. *Chem. Ed.* [Online] **2007,** *11,* 383–393 http://chemeducator.org/bibs/0011006/11060380lb.htm (accessed Aug 23, 2007).

1.9.2 Magazine with dates instead of volume numbers

Author, A. B.; Author, C. D. Article Title. *Magazine,* **Date,** pagination.

Manning, R. Super Organics. *Wired,* **May 2004**, pp 176–181.

1.9.3 Book without editors

Author, A. B.; Author, C. D. *Book Title;* Series Name and number; Publisher: City, STATE (2 letters), year; Vol. 1, pp xx–yy.

Chang, R. *General Chemistry: The Essential Concepts,* 3rd ed.; McGraw-Hill: Boston, MA, 2003.

1.9.5 Book with editors, no authors named

Book Title; Editor, A. B.; Editor, C. D., Eds.; Series Name and number; Publisher: City, STATE (2 letters), year; Vol. No., pp xx–yy.

Omega-3 Fatty Acids: Chemistry, Nutrition, and Health Effects; Shahidi, F., Finley, J. W., Eds.; ACS Symposium Series 788; American Chemical Society: Washington, DC, 2001.

1.9.6 Book with editors and authors named

Author, A. B. Chapter Title. In *Book Title;* Editor, C. D.; Ed.; Series Name and number; Publisher: City, STATE (2 letters), year; Vol. No., pp xx–yy.

Gbalint-Kurti, G. G. Wavepacket Theory of Photodissociation and Reactive Scattering. In *Advances in Chemical Physics;* Rice, S. A., Ed.; Wiley: New York, 2004; Vol. 128; p 257.

1.9.6 Patent

Patent Owner, A. B. Patent Title. U.S. Patent No., Date.

Wilkins, T. D.; Tucker, K. D. Detection, Isolation, and Purification of Clostridium Difficile Toxin A with Toxin Receptors. U.S. Patent 5,098,826, March 24, 1992.

1.9.7 Thesis

Author, A. B. Thesis Title. Level of Thesis, University Name, City, STATE, year.
Note: The title of the thesis is not required.

Thoman, J. W., Jr. Studies of Molecular Deactivation: Surface-Active Free Radicals and S(O)para-difluorobenzene. Ph.D. Dissertation, Massachusetts Institute of Technology, Cambridge, MA, 1987.

Gehring, A. Ph.D. Dissertation, Harvard University, 1998.

1.9.8 Conference Proceedings

Author, A.; Author, B. Title of Presentation. In *Title of Collected Work*, Name of the Meeting, Location of Meeting, Date of Meeting; Editor A. B.; Editor, C. D.; Publisher: City, STATE, Year, Pagination.

Winstein, S. Teaching Chemistry to Undergraduates. In *University Chemical Education*, Proceedings of the International Symposium on University Chemical Education, Frascati (Rome), Italy, October 16–19, 1969; Chisman, D. G. Ed.; Butterworths: London, 1970, pp. 249–259.

Kaplan, L. J.; Selder, A. *Books of Abstracts*, 213th ACS National Meeting, San Francisco, CA, April 13–17, 1997; American Chemical Society: Washington, DC, 1997; CHED-824.

1.9.9 Technical Bulletin or Report

Author, A. B.; Author, C. D. *Title of Report*; Technical Report Number; Publisher: City, STATE, Date; Pagination.

U.S. EPA. *Technical Support Document: Water Quality-Based Toxics Control;* EPA/505/2-90-001; Office of Water, U.S. Government Printing Office: Washington, DC, 1991.

Crampton, S. B.; McAllaster, D. R. *Collision and Motional Averaging Effects in Cryogenic Atomic Hydrogen Masers;* WMC-AFOSR-002; NTIS: Springfield, VA, 1983.

1.9.10 Unpublished Materials

Author, A. Title of Unpublished Work. *Journal Name*, phrase indicating stage of publication.

For material accepted for publication, use the phrase “in press”.

For material not yet accepted for publication, use “unpublished work” or ”submitted for publication” as appropriate.

The punctuation retains the style (e.g., roman, **bold,** or *italic*) of the character to which it is attached. Include the state name for all U.S. cities except New York. Include the country name for all non-U.S. cities except London and Paris.

Certain journals that have duplicate titles should be cited along with the city of publication. For example:

Science (Washington, D.C.)
Nature (London)
Nature (London) New Biol.
Nature (London) Phys. Sci.

Certain journals do not have volume numbers:

Chem. Ind. (London)
Chem Lett.
J. Chem. Soc.
J. Chem. Soc. Chem. Commun.
J. Chem. Soc. Faraday Trans. 1 or 2
J. Chem. Soc. Perkin Trans. 1 or 2
Proc. Chem. Soc. London
Tetrahedron Lett.

Formatting Guidelines

The final report must be prepared using Microsoft® Word. A template document is available from the Foundation to assist you in following the specifications for preparing the report. The template document can be downloaded from the following link: http://watereuse.org/foundation/research/research-templates

Table 2.1. Formatting Checklist

Text	Font	Style	MS Word Style
Front Matter and Chapter Titles	20 point Times New Roman Bold	Capitalize the first letter of major words[a]	Title,Chapter
Chapter Number	18 point Times New Roman Italic	Spell out the word "Chapter" followed by an Arabic number	Chapter Number
Footers	9 point Arial	Do not include footers on blank pages	Footer
Table of Contents	11 point Times New Roman	Leader dots are created with a right tab setting	Table of Contents
List of Figures/Tables	11 point Times New Roman	Leader dots are created with a right tab setting	List of Figures/Tables
Body Text	11 point Times New Roman		Normal
Heading 1	14 point Times New Roman Bold	Capitalize the first letter of major words[a]	Heading 1
Heading 2	12 point Times New Roman Bold	Capitalize the first letter of major words[a]	Heading 2
Heading 3	11 point Times New Roman Bold Italic	Capitalize the first letter of major words[a]	Heading 3
Figure Captions	10 point Times New Roman Bold	Left align under the figure. Capitalize only the first word of the caption.	Caption1
Table Title	11 point Times New Roman Bold	Capitalize the first letter of major words[a]	Table Title
Table Column Heads	10 point Times New Roman Bold	Capitalize the first letter of major words[a]	Table Headings
Table Body	10 point Times New Roman	Font size may be reduced to fit table	Table Text
Table Footnotes	9 point Times New Roman	Footnote must be one point smaller than body	Table Footnote

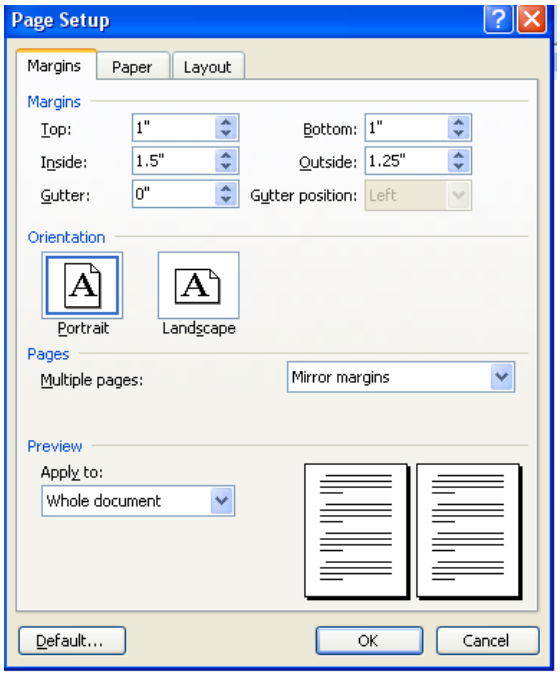
[a]Capitalize the first letter of each word, except for articles (a, an, the) and coordination conjunctions (and, but, or for, nor)

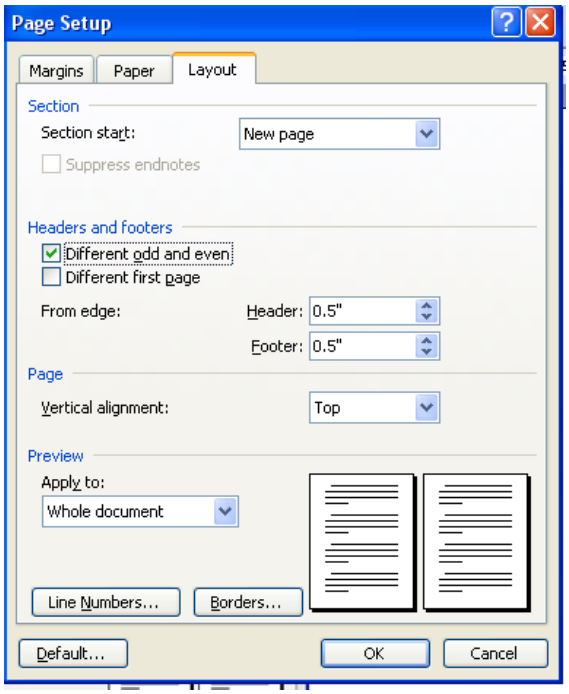
2.1 Page Setup

In the Page Setup dialog box, choose *Mirror Margins.* This allows the margins to be set to account for the binding of the report. Set the margins as follows:

Top: 1 inch Inside:
1.5 inch Bottom: 1
inch Outside: 1.25
inch

Under Headers and Footers, select *Different Odd and Even* and set footers at 0.5 inch from the edge. See the screen captures below.





2.2 Footers

Footers are set in 9 point Arial. The odd page footer includes the words “WateReuse Research Foundation” set flush left and the page number flush right (right tab set at 5.75 inches). The even page footer includes the page number set flush left and the words “WateReuse Research Foundation” set flush right (right tab set at 5.75 inches).

2.3 Front Matter

WateReuse Research Foundation reports include three major divisions: the front matter, the main text, and back matter. The standard front matter includes the following pages:

Report half title i
About the Foundation ii
Title Page iii
Disclaimer/Copyright..... iv
(Table of) Contents v
(List of) Figures ..... (odd or even page)
(List of) Tables..... (odd or even page)
(List of) Acronyms..... (odd or even page)
Foreword ..... (odd page)
Acknowledgments ..... (odd or even page)
Executive Summary ..... (odd page)

Use roman numerals for the pages in the front matter. The first page that includes a page number is the (table of) contents, which is usually page v. Pages i–iv are unnumbered. The first page of the first chapter should be numbered as Arabic page 1.

2.4 Chapter Openers

All new chapters start on odd pages. If necessary, insert an odd page section break at the end of a chapter to force the next chapter to begin on an odd page. An odd page section break inserts a blank, unnumbered even page when the document is printed.

2.4.1 Chapter Number

The word "Chapter" followed by an Arabic numeral (1, 2, 3, etc.) is set on the first line of a chapter opening page. The text is set in 18 point Times New Roman Italic. The first letter of all major words are capitalized. You may highlight the text and select "Chapter Number" from the Styles and Formatting menu to apply the appropriate style to text when using the Foundation's template.

2.4.2 Chapter Title

The chapter title is set below the chapter number in 20 point Times New Roman Bold. The first letter of all major words are capitalized. There is a border beneath the chapter title. There is 12 points (or 1 line space) between the chapter number and chapter title. Insert one paragraph return after the chapter title. You may highlight the text and select "Title,Chapter" from the Styles and Formatting menu to apply the appropriate style to text when using the Foundation's template.

2.5 Body Text

Text is set in 11 point Times New Roman, single spaced, and left aligned. There is a 12 point space (or 1 line) before each paragraph. Paragraphs are not indented. If using the Foundation template, you may highlight the text and select "Normal" from the Styles and Formatting menu to apply the appropriate style to text.

2.6 Heading 1

The first level subhead is set in 14 point Times New Roman Bold, single spaced, and left aligned. All major words are capitalized. There is a 12 point space (or 1 line) above the heading. If heads are numbered, use double numbering separated by a period with the first number indicating the chapter number and second number indicating the heading number (1.1, 1.2, etc.). There is no period following the second number. If using the Foundation template, you may highlight the text and select "Heading 1" from the Styles and Formatting menu to apply the appropriate style to the heading.

2.7 Heading 2

The second level subhead is set in 12 point Times New Roman Bold, single spaced, and left aligned. All major words are capitalized. There is a 12 point space (or 1 line) above the heading. If heads are numbered, use triple numbering separated periods (1.1.1, 1.1.2, etc.). There is no period following the last number. If using the Foundation template, you may highlight the text and select "Heading 2" from the Styles and Formatting menu to apply the appropriate style to the heading.

2.8 Heading 3

The third level subhead is set in 11 point Times New Roman Bold Italic, single spaced, and left aligned. All major words are capitalized. There is a 12 point space (or 1 line) above the heading. If heads are numbered, use quadruple numbering separated periods (1.1.1.1, 1.1.1.2, etc.). There is no period following the last number. If using the Foundation template, you may highlight the text and select "Heading 3" from the Styles and Formatting menu to apply the appropriate style to the heading.

2.9 Figures

All figures should be black and white. WateReuse Research Foundation products are printed in black and white only. Color figures will be reproduced in black and white. Do not use shaded, tinted, or screened backgrounds in graphics or in text. Use patterns (not colors) to differentiate elements in illustrations making sure to allow for reduction. Note that colors such as red and blue will be the same shade of gray when printed in black and white. Print color figures on a black and white laser printer to ensure that the figures are readable.

All figures should be formatted to fit in a print area of 5.75 inches x 9.5 inches and be embedded in the Microsoft Word document and placed as close to the place they are cited in the text as possible. Figures are best placed at the top and bottom of pages. If figures are very wide, they can be presented in landscape on the page. Figures should be placed flushed left on the page. Insert a paragraph return between the text and the top of the figure.

2.10 Figure Captions

Every figure should be given a number and cited in the text by that number. The figure number and caption are set on the same line beneath the figure. Each caption is double numbered (1.1., 1.2., 1.3., etc.) A period and a single space separate the figure number and the figure caption. The caption text is set in 10 point Times New Roman Bold, single spaced, and left aligned. Figure captions are written sentence style, with the first word of each

sentence capitalized. If using the Foundation template, you may highlight the text and select "Caption1" from the Styles and Formatting menu to apply the appropriate style to the caption.

2.11 Tables

All tables should be black and white and formatted to fit on an 8 ½ x 11 inch page. If tables are very wide, they can be presented in landscape on the 8 ½ x 11 inch page. If tables are very long, they can continue to another page. Tables should be placed as close as possible after they are cited in the text; however, tables should be placed so that they begin and end on the same page if the table can fit on a single page. Tables are most aesthetically pleasing when placed at the tops and bottoms of pages. Insert a paragraph return before or after a table to visually separate it from the text. A minimum of six lines of text should appear on the page with the table. If six lines do not fit, insert a page break so that no text appears on the page. Tables are set flush left on the page.

Use the Microsoft Word Table Editor to insert and format Tables.

2.11.1 Table Number and Title

Every table should be given a number and cited in the text by that number. The table number and table title are set on the same line. Each table should be double numbered (1.1., 1.2., 1.3., etc.) A period and a single space separate the table number and table title. The text is set in 11 point Times New Roman Bold, single spaced, and left aligned. The first letter of all major words is capitalized. If using the Foundation template, you may highlight the text and select "Table Title" from the Styles and Formatting menu to apply the appropriate style to the heading.

2.11.2 Table Column Headings

The table column heads are set in 10 point Times New Roman Bold, single spaced, left aligned or centered, with 3 points space above and below. All major words are capitalized. There is .5 pt border (rule) above and below the column heads. (Although the standard size type for table text is 10 point, the text may be reduced to as small as 8 point to make a very large table fit.) If using the Foundation template, you may highlight the text and select "Table Headings" from the Styles and Formatting menu to apply the appropriate style to the heading. Use the Borders and Shading menu to add the borders.

2.11.3 Table Body

The table body is set in 10 point Times New Roman, first word only in caps, and single spaced. The first column is always left aligned; the other columns can be left aligned or centered. Add 3 points space above the first line in the table and 3 points below the last line in the table. Add a 0.5 pt border (rule) below the last entry in the table. Using the Microsoft® Word Table Editor, you may insert a black column or row to visually separate sections of the table. If using the Foundation template, you may highlight the text and select "Table Text" from the Styles and Formatting menu to apply the appropriate style to the table text. Use the Borders and Shading menu to add the border.

2.11.3 Table Footnotes

The footnotes are set in 9 point Times New Roman, single spaced, left aligned, with 4points space above each note. If the size of the text used in the table body has been reduced to make the table fit, keep the footnote text one point smaller than the table body text. A paragraph return should be entered to separate the bottom of a table from the text that follows. If using the Foundation template, you may highlight the text and select “Table Footnote” from the Styles and Formatting menu to apply the appropriate style to text.

2.11.4 Table Borders

Use the MS Word Table Editor to insert and format text. You may select “View Gridlines” from the Borders and Shading menu to view the table gridline on screen. Use the Borders and Shading menu to add .5 point borders above and below the column headings and below the last entry in the table. Do not use outside borders or vertical borders. Additional horizontal borders are permitted for clarity, but it is best to add horizontal or vertical spacing to further separate items.

2.12 References

References are set in 11 point Times New Roman, single spaced, and left aligned. There is a 6 point space before each entry. There is also a .0.5 inch hanging indent for each entry. If using the Foundation template, you may highlight the text and select “Reference List” from the Styles and Formatting menu to apply the appropriate style to text.

Appendix: Sample Pages

The following pages are a collection of sample pages for documents that will need to be provided to the Foundation. You may download Microsoft® Word versions of these files from the following link:

http://watereuse.org/foundation/research/research-templates

Report Formatting Sample

The sample pages show the correct formatting for the most common elements that appear in the WateReuse Research Foundation research reports. Research teams should submit all drafts of research reports in the correct formatting.

Project Profile

The Foundation requires that the Principal Investigator provide a Project Profile. The purpose of a profile for each WateReuse Research Foundation research report is to assist water professionals in deciding the usefulness of the full report. Profiles of all reports are made available to all subscribing utilities, consultants, and manufacturers.

The Principal Investigator submits a completed Project Profile Form with the revised draft final project report. Please note that the report itself will still contain an Executive Summary. In writing the Project Profile, the Principal Investigator uses few abbreviations, symbols or equations. However, if such terms are used, their definitions are clearly stated the first time the terms are mentioned.

Progress Report

Research teams are contractually required to submit quarterly progress reports. These reports are intended to allow the Project Advisory Committee (PAC) and Project Manager to evaluate the progress and quality of the work completed. Quarterly progress reports are required to include project status information, budget information, and outreach information.
Written comments from the PAC on the progress reports are provided to the research team by the Project Manager. Copies of progress reports are also provided to participating water and wastewater utilities to facilitate their review of data collected at their facilities.

Report Formatting Sample

The sample pages show the correct formatting for the most common elements that appear in WateReuse Research Foundation research reports.

You may download a Microsoft® Word template from the following link:
http://watereuse.org/foundation/research/research-templates

Research Report Title Goes Here

Half Title Page (page i)

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About the WateReuse Research Foundation

The mission of the WateReuse Research Foundation is to build support for water reuse through research and education. The Foundation's research advances the science of water reuse and supports communities across the United States and abroad in their efforts to create new sources of high quality water for various uses through reclamation, recycling, reuse, and desalination while protecting public health and the environment.

The Foundation sponsors research on all aspects of water reuse, including emerging chemical contaminants, microbiological agents, treatment technologies, reduction of energy requirements, concentrate management and desalination, public perception and acceptance, economics, and marketing. The Foundation's research informs the public of the safety of reclaimed water and provides water professionals with the tools and knowledge to meet their commitment of providing a reliable, safe product for its intended use.

The Foundation's funding partners include the supporters of the California Direct Potable Reuse Initiative, Water Services Association of Australia, Pentair Foundation, and Bureau of Reclamation. Funding is also provided by the Foundation's Subscribers, water and wastewater agencies, and other interested organizations.

About the Foundation Page (page ii)

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Research Report Title Goes Here

Research Report Subtitle (if any) Goes Here

John Smith
University of Water Research

Mary Johnson
Acme Engineering

Sam Waterway
Institute of Learning

Title Page (page iii)

Report title set in 24 point Univers 55 Bold. Report subtitle (if any) is set in 16 point Univers 55 italic. There is a 12 point space above the subtitle.

Principal Investigators and any other authors are listed in 11 point Times New Roman. Affiliations are in Italics. Any other project team members are listed on the Acknowledgments page.

Organizations that contributed cash funding to the project are listed as cosponsors in 11 point Times New Roman. Any other supporting organizations (including in kind contributors and participating agencies) are listed on the Acknowledgments page.

Cosponsors

Bureau of Reclamation
State Water Agency

WateReuse Research Foundation
Alexandria, VA

Disclaimer

This report was sponsored by the WateReuse Research Foundation and cosponsored by ●●●. The Foundation, its Board Members, and the project cosponsors assume no responsibility for the content of this publication or for the opinions or statements of facts expressed in the report. The mention of trade names of commercial products does not represent or imply the approval or endorsement of the WateReuse Research Foundation, its Board Members, or the cosponsors. This report is published solely for informational purposes.

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Acronyms

API	American Petroleum Institute
AWT	advanced wastewater treatment
BOD	biochemical oxygen demand
Br	bromide
BU	Baylor University
CBOD5	carbonaceous biochemical oxygen demand
CCV	continuing calibration verfication
COD	chemical oxygen demand
DBP	disinfection by-product
DI	deionized
DO	dissolved oxygen
DOC	dissolved organic carbon
EDTA	ethylenediaminetetraacetic acid
ESI	electrospray interface
ET	evapotranspiration
FWS	free water surface
GLM	general linear model
GWSWWRF	George W. Shannon Wetlands Water Recycling Facility
HAA	haloaceticacid
HLB	hydrophilic-lipophilic balance
HLR	hydraulic loading rate
HRT	hydraulic retention time
LC-MS/MS	liquid chromatography/mass spectrometry/mass spectrometry
Li	lithium
LiBr	lithium bromide

Abbreviations (New Page)

(List of) Acronyms is set in 11 point Times New Roman. There is a 3 point space above each paragraph.

Foreword

The WateReuse Research Foundation, a nonprofit corporation, sponsors research that advances the science of water reclamation, recycling, reuse, and desalination. The Foundation funds projects that meet the water reuse and desalination research needs of water and wastewater agencies and the public. The goal of the Foundation's research is to ensure that water reuse and desalination projects provide sustainable sources of high-quality water, protect public health, and improve the environment.

An Operating Plan guides the Foundation's research program. Under the plan, a research agenda of high-priority topics is maintained. The agenda is developed in cooperation with the water reuse and desalination communities including water professionals, academics, and Foundation subscribers. The Foundation's research focuses on a broad range of water reuse and desalination research topics including:

- Defining and addressing emerging contaminants, including chemicals and pathogens
- Determining effective and efficient treatment technologies to create 'fit for purpose' water
- Understanding public perceptions and increasing acceptance of water reuse
- Enhancing management practices related to direct and indirect potable reuse
- Managing concentrate resulting from desalination and potable reuse operations
- Demonstrating the feasibility and safety of direct potable reuse

The Operating Plan outlines the role of the Foundation's Research Advisory Committee (RAC), Project Advisory Committees (PACs), and Foundation staff. The RAC sets priorities, recommends projects for funding, and provides advice and recommendations on the Foundation's research agenda and other related efforts. PACs are convened for each project to provide technical review and oversight. The Foundation's RAC and PACs consist of experts in their fields and provide the Foundation with an independent review, which ensures the credibility of the Foundation's research results. The Foundation's Project Managers facilitate the efforts of the RAC and PACs and provide overall management of projects.

●●● *Insert one paragraph summary of this report.* ●●●

Douglas Owen
Chair
WateReuse Research Foundation

Melissa Meeker
Executive Director
WateReuse Research Foundation

Foreword (New Odd Page)

Foreword is set in 11 point Times New Roman. The Foreword always begins on an odd numbered page. Inert an odd page section break on the previous page if it is also on an odd numbered page to create a blank even numbered page (Page Layout/Breaks/Odd Page)

Acknowledgments

This project was funded by the WateReuse Research Foundation in cooperation with ●●●.

The project team would like to thank ●●●.

Principal Investigator
John Smith, *Water Recycling, Inc.*

Project Team
John Smith, *Baylor University*
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John Smith, *Wetland Solutions, Inc.*

Participating Agencies
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John Smith, *Small Town Water Agency*
John Smith, *Rural Water Agency*

Project Advisory Committee
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John Smith, *Southwest Florida Water Management District*
John Smith, *Portland Water Bureau*
John Smith, *AECOM*
John Smith, *Bureau of Reclamation*

Acknowledgments (New Page)
The Acknowledgments are set in 11 point Times New Roman.

Executive Summary

The Executive Summary previews the main points of the research report. It is written for nontechnical people who may not have the time or inclination to read the entire report. The Executive Summary should include enough information for a reader to get familiarized with what is discussed in the full report without having to read it. It should describe the objectives of the project and summarize the findings.

Development and use of advanced wastewater treatment technologies have greatly improved water quality of receiving waters over the past four decades. However, advances in analytical chemistry and molecular biology in the past decade have also indicated effects of trace level wastewater-derived organic compounds (WDOCs) on biota. Although multiple factors have been identified that may contribute to the observed WDOC effects on wildlife, potential for adverse ecological effects in effluent-dominated receiving waters raise questions about treated effluent used for augmentation of aquatic habitats and the safety of intentional and unintentional indirect potable water reuse.

Executive Summary (New Odd Page)

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Chapter 1

The Chapter Title for the Chapter Goes Here

Subhead numbering is optional

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1.1 Introduction to the Topics Covered in the Chapter

Development and use of advanced wastewater treatment technologies have greatly improved water quality of receiving waters over the past four decades. However, advances in analytical chemistry and molecular biology in the past decade have also indicated effects of trace level wastewater-derived organic compounds (WDOCs) on biota. Although multiple factors have been identified that may contribute to the observed WDOC effects on wildlife, potential for adverse ecological effects in effluent-dominated receiving waters raise questions about treated effluent used for augmentation of aquatic habitats and the safety of intentional and unintentional indirect potable water reuse.

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1.1.1 More Information on the Topics Covered

Development and use of advanced wastewater treatment technologies have greatly improved water quality of receiving waters over the past four decades. However, advances in analytical chemistry and molecular biology in the past decade have also indicated effects of trace level wastewater-derived organic compounds (WDOCs) on biota. Although multiple factors have been identified that may contribute to the observed WDOC effects on wildlife, potential for adverse ecological effects in effluent-dominated receiving waters raise questions about treated effluent used for augmentation of aquatic habitats and the safety of intentional and unintentional indirect potable water reuse. Development and use of advanced wastewater treatment technologies have greatly improved water quality of receiving waters over the past four decades. However, advances in analytical chemistry and molecular biology in the past decade have also indicated effects of trace level wastewater-derived organic compounds (WDOCs) on biota. Although multiple factors have been identified that may contribute to the observed WDOC effects on wildlife, potential for adverse ecological effects in effluent-dominated receiving waters raise questions about treated effluent used for augmentation of aquatic habitats and the safety of intentional and unintentional indirect potable water reuse.

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1.1.1.1 Impacts on Advanced Wastewater Treatment

Development and use of advanced wastewater treatment technologies have greatly improved water quality of receiving waters over the past four decades. However, advances in analytical chemistry and molecular biology in the past decade have also indicated effects of trace level wastewater-derived organic compounds (WDOCs) on biota. Although multiple factors have been identified that may contribute to the observed WDOC effects on wildlife, potential for adverse ecological effects in effluent-dominated receiving waters raise questions about treated effluent used for augmentation of aquatic habitats and the safety of intentional and unintentional indirect potable water reuse..

10 point Times New Roman Bold

Figure 1.1. Development and use of advanced wastewater treatment technologies illustrated.

Development and use of advanced wastewater treatment technologies include the following:

- This item;
- That item;
- Those items; and
- More Items.

However, advances in analytical chemistry and molecular biology in the past decade have also indicated effects of trace level wastewater-derived organic compounds (WDOCs) on biota. Although multiple factors have been identified that may contribute to the observed WDOC effects on wildlife, potential for adverse ecological effects in effluent-dominated receiving waters raise questions about treated effluent used for augmentation of aquatic habitats and the safety of intentional and unintentional indirect potable water reuse. Equation 1.1 becomes pseudo-first-order with respect to pCBA:

$$\frac{d[pCBA]}{dt} = -k'_{HO^{\cdot}/pCBA}[pCBA] \tag{1.1}$$

$$k'_{HO^{\cdot}/pCBA} = k_{HO^{\cdot}/pCBA}[HO^{\cdot}]_{ss} \tag{1.2}$$

Development and use of advanced wastewater treatment technologies have greatly improved water quality of receiving waters over the past four decades. However, advances in analytical chemistry and molecular biology in the past decade have also indicated effects of trace level wastewater-derived organic compounds (WDOCs) on biota. Although multiple factors have been identified that may contribute to the observed WDOC effects on wildlife.

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Table 1.1. Seawater Sampling Locations

Location	Location Description	Latitude	Longitude
Monterey, CA	Coastal seawater, Pacific	37˚ 34’ 55” N	122˚ 58’ 37” W
San Diego, CA	Coastal seawater, Pacific	33˚ 08’ 21” N	117˚ 20’ 16” W
San Francisco Bay, CA	Estuarine water, Pacific	37˚ 51’ 39” N	122˚ 19’ 35” W
Singapore	Estuarine water, Pacific	1˚ 18’ 30” N	103˚ 52’ 27” E
Panama City, FL	Estuarine water, Atlantic	30˚ 12’ 0” N	85˚ 40’ 48” W

10 point Times New Roman

Development and use of advanced wastewater treatment technologies have greatly improved water quality of receiving waters over the past four decades. However, advances in analytical chemistry and molecular biology in the past decade have also indicated effects of trace level wastewater-derived organic compounds (WDOCs) on biota. Although multiple factors have been identified that may contribute to the observed WDOC effects on wildlife, potential for adverse ecological effects in effluent-dominated receiving waters raise questions about treated effluent used for augmentation of aquatic habitats and the safety of intentional and unintentional indirect potable water reuse. Development and use of advanced wastewater treatment technologies have greatly improved water quality of receiving waters over the past four decades. However, advances in analytical chemistry and molecular biology in the past decade have also indicated effects of trace level wastewater-derived organic compounds (WDOCs) on biota. Although multiple factors have been identified that may contribute to the observed WDOC effects on wildlife, potential for adverse ecological effects in effluent-dominated receiving waters raise questions about treated effluent used for augmentation of aquatic habitats and the safety of intentional and unintentional indirect potable water reuse. Development and use of advanced wastewater treatment technologies have greatly improved water quality of receiving waters over the past four decades. However, advances in analytical chemistry and molecular biology in the past decade have also indicated effects of trace level wastewater-derived organic compounds (WDOCs) on biota.

Table 1.2. Comparison of Observed Disinfection Byproduct Concentrations (µg/L) in Desalinated Water with Relevant Standards and Guidelines

	Concn of Disinfection Byproduct Found at 0.5		Concn of Disinfection Byproduct Found at 2.0		
Disinfection Byproduct[a]	Maximum	Median	Maximum	Median	Guideline
THMs	18	3.5	16	1.8	80
HAAs	4.3	2.3	8.5	3.1	60
Dibromoacetonitrile	0.60	0.25	0.93	0.42	20

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the correct spacing

[a]For THMs and HAAs, concentrations of compounds were summed using half the limit of detection for those samples in which the concentration was below the limit of quantification.

Table 1.3. Comparison of Observed Maximum Concentration (µg/L) of Disinfection Byproducts and Relevant Standards and Guidelines

Disinfection Byproduct	Guideline	Observed Maximum[a]			
		Colorado River		San Pablo Reservoir	
		Raw Water	Blend	Raw Water	Blend
THMs	80	**228**	**114**	**90**	83
HAAs					
HAA5	60	58	36	**71**	36
HAA9	—	138	69	93	67
Dichloroacetonitrile	4	**7.6**	2.6	5.6	1.7
Dibromoacetonitrile	20	1.5	2.3	2.4	1.9

[a]Boldfaced values exceed guideline level.

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Although multiple factors have been identified that may contribute to the observed WDOC effects on wildlife, potential for adverse ecological effects in effluent-dominated receiving waters raise questions about treated effluent used for augmentation of aquatic habitats and the safety of intentional and unintentional indirect potable water reuse. Development and use of advanced wastewater treatment technologies have greatly improved water quality of receiving waters over the past four decades. However, advances in analytical chemistry and molecular biology in the past decade have also indicated effects of trace level wastewater-derived organic compounds (WDOCs) on biota. Although multiple factors have been identified that may contribute to the observed WDOC effects on wildlife, potential for adverse ecological effects in effluent-dominated receiving waters raise questions about treated effluent used for augmentation of aquatic habitats and the safety of intentional and unintentional indirect potable water reuse.

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Sample Project Profile

The Foundation requires that the Principal Investigator provide a Project Profile. The purpose of a profile for each WateReuse Research Foundation research report is to assist water professionals in deciding the usefulness of the full report.

You may download a Microsoft® Word template for this document from the following link: http://watereuse.org/foundation/research/research-templates

Project Profile

Project Number:

Project Title:

Principal Investigator(s) and Affiliations

Participating Agencies

List all participating utilities and describe, in 10 words or less, their contribution to the project [note: portions of this section may be kept confidential upon request]

Keywords

Provide a list of subject area keywords.

Project Objective

State the relevant objectives of the project. (75 words or less)

Project Background

Provide background information. (75 words or less)

Project Approach

Describe the research approach for this project. May use subject subheads. (125 words or less)

Project Findings

Describe the results/findings of the research. May use subject subheads. This should be in plain language. (200 words or less.)

Future Recommendations

Provide plain language recommendations for topics of future study. (200 words or less.)

Plain Language Summary

Summarize the project and describe the relevant impacts that the research results may have using a plain language summary. Such a summary should be readable and understandable by the general public at large. (150 words or less.)

Project Outreach

List all outreach activities to date (including poster & oral presentations, publications, etc) that have been produced

Sample Progress Report

Research teams are contractually required to submit quarterly progress reports. These reports are intended to allow the Project Advisory Committee (PAC) and Project Manager to evaluate the progress and quality of the work completed.

You may download a Microsoft® Word template for this document from the following link: http://watereuse.org/foundation/research/research-templates

Project Title

Project Number: WateReuse-XX-XX

Progress Report # X

Reporting Period:

Date

Principal Investigator(s):

Name

Organization

Participating Utilities:

Organization 1
Organization 2…

Foundation Project Manager:

Name

1. Status Summary

1.1 Summary of Work

A short, plain language summary of work completed to date should follow.

1.2 Summary of Tasks Completed

(Include an assessment of actual versus planned progress for each task.)

Percent task completed by November 30, 2008

	Percent Completed
Task 1: August 2008 – July 2009	
Prepared and submitted Scope of Work	100%
Literature review	40%
Submit first progress report (October 30, 2008)	100%
Submit second progress report (January 28, 2009)	0%
Task 2: January 2009 – September 2009	
Bench Scale Tests	10%
Workshop with Experts and PAC (March 2009)	0%
Submit Third progress report (April 30, 2009)	0%
Submit Fourth progress report (July 28, 2009)	0%
Task 3: July 2009 – November 2009	
Pilot Scale Tests	0%
Summary and conclusions	0%
Submit Fifth progress report (October 30, 2008)	0%
Task 4 Final Report Phase: December 2009 – May 2010	
Submit Draft Final Report (December 30, 2009)	0%
Completion Date (May 30, 2010)	0%

1.3 List of Accomplishments to Date

1.4 Proposed Tasks to be Completed in Next Quarter

1.5 Problems Encountered in This Reporting Period

1.6 Rationale of Proposed Change (If Any) to the Scope of Work

2. Technical Summary

Please summarize in detail the technical material gathered during the last 3 months of the project. If data was collected, include data with any results, if utilities were interviewed, provide a summary of the interaction, if a format, such as a survey, was developed, please include a blank copy, if a journal article is being written, please include the material developed so far. Please include any other information that will allow the PAC to review the technical nature of this project."

2.1 Response to Foundation's Comments on Previous Progress Report

2.2 Methods and Materials

2.2.1 Subheadings

2.2.1.1 Sub-Subheadings

2.3 Data and Analysis

2.4 Significant Findings

Note: use appendix for extensive data or supporting information

3. Budget Summary

The following details should be included:

- The amount of the funding for the project and the amount of committed in kind.
- The amount spent to date of funds for the project and the amount of in-kind spent to date.

It is preferred that the budget from the agreement is included.

4. Outreach Summary

Any outreach conducted by the project team should be included. It should be listed as a full citation, including person who conducted the outreach, date of the event or publication, name of event or title of publication, location of event or location of publisher, name of publisher, volume of publication, pages of publication.

When applicable, a copy of the outreach material should be included.




WateReuse