Pacific Northwest
NATIONAL LABORATORY

PNNL-12345

Title of Report

Subtitle

July 15, 2018

AJ McDonald
RJ Reynolds
CM McMaster
JK Rowlings

FOR OFFICIAL USE ONLY:
May be exempt from public release under the Freedom of Information Act (5 USC 552), exemption number(s) and category:

Exemption and Category

Department of Energy review required before public release.

Reviewing Official
Reviewing Official (Name/Organization)

FOUO Date
Date

Guidance Used
Guidance Used (if Applicable)

U.S. DEPARTMENT OF ENERGY

Prepared for the U.S. Department of Energy
Under contract DE-AC05-76RL01830

PNNL-12345

Title of Report

Subtitle

July 15, 2018

AJ McDonald
CM McMaster
RJ Reynolds
JK Rowlings

Prepared for
the U.S. Department of Energy
Under Contract DE-AC05-76RL01830

Pacific Northwest National Laboratory
Richland, Washington 99352

DISCLAIMER

PACIFIC NORTHWEST NATIONAL LABORATORY
operated by
BATTELLE
for the
UNITED STATES DEPARTMENT OF ENERGY
under Contract DE-AC05-76RL01830

Abstract

Here is the abstract. Here is the abstract. Here is the abstract. Here is the abstract. Here is the abstract. Here is the abstract.

- Itemized List Bullet 1
  - ListBullet 2
    - List Bullet 3

1. Enumerate List Style
   a. Second level
      i. Third level
         (1) Fourth level
            (a) Fifth level
               (i) Sixth level

Executive Summary

Here is Executive Summary

$$f(x) = a_0 + \sum_{n=1}^{\infty} \left(a_n \cos \frac{n\pi x}{L} + BN_n \sin \frac{n\pi x}{L} \right) \quad (1)$$

where f = where statement where tabs should be placed before the variable and on both sides of the equal sign.

x = definition of x

n = definition of n

a = definition of a

BN = definition of BN

Acronyms and Abbreviations

CDA	Communications Design and Architecture
PNNL	Pacific Northwest National Laboratory

Acknowledgments

Here are acknowledgments.

Contents

Figures

Tables

1.0 Introducion

Here is a sample section, the highest level heading. Here is a sample section, the highest level heading. Here is a sample section, the highest level heading.

1.1 Here is Heading 2

Here is a sample subsection. Here is a sample subsection. Here is a sample subsection.

1.1.1 Here is Heading 3

Here is a sample subsection. Here is a sample subsection. Here is a sample subsection.

1.1.1.1 This is Heading 4

Here is text for Heading 4.

This is Heading 5

Here is text for Heading 5.

Table 1. Table Caption.

Experiment[b]	F (cm^3/hr)	ρ_b (g/cm^3)	ω	V_w (mL)	v (cm/hr)	t_o V_w	R	K_d (mL/g)
Sodium orthophosphate	30.37	1.478	0.386	20.89	16.01	11.22	5.54	1.19
Sodium pyrophosphate	41.93	1.44	0.385	20.33	22.18	15.90	7.61	1.76
Sodium tripolyphosphate	40.80	1.460	0.392	21.27	21.22	14.70	5.17	1.12
Calcium	31.41	1.478	0.386	20.89	16.57	11.95	14.14	3.44

(a) F = flow rate; ρ_b = bulk density; ω =average volumetric water content (standard deviation); V_w =average pore volume; v =average pore water velocity; t_o =step input; R =retardation factor; K_d =sediment water distribution coefficient based on R.

(b) Columns appeared saturated and had reached a stable water content.

Table 2. This is a coppertop table. It is easy to make as you can see in the documentation.

Experiment[b]	F (cm^3/hr)	ρ_b (g/cm^3)	ω	V_w (mL)	v (cm/hr)	t_o V_w	R	K_d (mL/g)
Sodium orthophosphate	30.37	1.478	0.386	20.89	16.01	11.22	5.54	1.19
Sodium pyrophosphate	41.93	1.44	0.385	20.33	22.18	15.90	7.61	1.76
Sodium tripolyphosphate	40.80	1.460	0.392	21.27	21.22	14.70	5.17	1.12
Calcium	31.41	1.478	0.386	20.89	16.57	11.95	14.14	3.44

(a) F = flow rate; ρ_b = bulk density; ω =average volumetric water content (standard deviation); V_w =average pore volume; v =average pore water velocity; t_o =step input; R =retardation factor; K_d =sediment water distribution coefficient based on R.

(b) Columns appeared saturated and had reached a stable water content.

Table 3. Sample Table Caption. If a caption stretches to multiple lines, it will wrap below with a hanging indent (as in this example). Tables may have alternating gray bands if it makes scanning information easier.

Experiment[b]	F (cm^3/hr)	ρ_b (g/cm^3)	ω	V_w (mL)	v (cm/hr)	t_o V_w	R	K_d (mL/g)
Sodium orthophosphate	30.37	1.478	0.386	20.89	16.01	11.22	5.54	1.19
Sodium pyrophosphate	41.93	1.44	0.385	20.33	22.18	15.90	7.61	1.76
Sodium tripolyphosphate	40.80	1.460	0.392	21.27	21.22	14.70	5.17	1.12
Calcium	31.41	1.478	0.386	20.89	16.57	11.95	14.14	3.44

(a) F = flow rate; ρ_b = bulk density; ω =average volumetric water content (standard deviation); V_w =average pore volume; v =average pore water velocity; t_o =step input; R =retardation factor; K_d =sediment water distribution coefficient based on R.

(b) Columns appeared saturated and had reached a stable water content.

2.0 This is a test section

Here we are testing section heads so that we can see how they format. Here we are testing section heads so that we can see how they format. Here we are testing section heads so that we can see how they format. Here we are testing section heads so that we can see how they format.

2.1 This is a test subsection

Here we are testing section heads so that we can see how they format. Here we are testing section heads so that we can see how they format. Here we are testing section heads so that we can see how they format. Here we are testing section heads so that we can see how they format.

2.1.1 This is a test subsubsection

Here we are testing section heads so that we can see how they format. Here we are testing section heads so that we can see how they format. Here we are testing section heads so that we can see how they format. Here we are testing section heads so that we can see how they format.

2.1.1.1 This is a test paragraph

Here we are testing section heads so that we can see how they format. Here we are testing section heads so that we can see how they format. Here we are testing section heads so that we can see how they format. Here we are testing section heads so that we can see how they format.

This is a test subparagrapn

Here we are testing section heads so that we can see how they format. Here we are testing section heads so that we can see how they format. Here we are testing section heads so that we can see how they format. Here we are testing section heads so that we can see how they format.

Figure 1. Figure caption.

3.0 Extending templates with functions

Although templates provide quite a few features, often you need to extend them with your own functionality. The need to add features isn't uncommon or uncalled for. For example, we've often seen the need to display a date and time in an easy-to-read format. This common request could easily be implemented as part of the template system. This is just one common example, and template systems can be extended in many cases.

Although templates provide quite a few features, often you need to extend them with your own functionality. The need to add features isn't uncommon or uncalled for. For example, we've often seen the need to display a date and time in an easy-to-read format. This common request could easily be implemented as part of the template system. This is just one common example, and template systems can be extended in many cases.

Although templates provide quite a few features, often you need to extend them with your own functionality. The need to add features isn't uncommon or uncalled for. For example, we've often seen the need to display a date and time in an easy-to-read format. This common request could easily be implemented as part of the template system. This is just one common example, and template systems can be extended in many cases.

Although templates provide quite a few features, often you need to extend them with your own functionality. The need to add features isn't uncommon or uncalled for. For example, we've often seen the need to display a date and time in an easy-to-read format. This common request could easily be implemented as part of the template system. This is just one common example, and template systems can be extended in many cases.

Sidebar Headline

Here is where to enter text.

Extending templates with functions

Although templates provide quite a few features, often you need to extend them with your own functionality. The need to add features isn't uncommon or uncalled for. For example, we've often seen the need to display a date and time in an easy-to-read format. This common request could easily be implemented as part of the template system. This is just one common example, and template systems can be extended in many cases.

Although templates provide quite a few features, often you need to extend them with your own functionality. The need to add features isn't uncommon or uncalled for. For example, we've often seen the need to display a date and time in an easy-to-read format. This common request could easily be implemented as part of the template system. This is just one common example, and template systems can be extended in many cases.

Although templates provide quite a few features, often you need to extend them with your own functionality. The need to add features isn't uncommon or uncalled for. For example, we've often seen the need to display a date and time in an easy-to-read format. This common request could easily be implemented as part of the template system. This is just one common example, and template systems can be extended in many cases.

Although templates provide quite a few features, often you need to extend them with your own functionality. The need to add features isn't uncommon or uncalled for. For example, we've often seen the need to display a date and time in an easy-to-read format. This common request could easily be implemented as part of the template system. This is just one common example, and template systems can be extended in many cases.

Copper Sidebar Headline

Here is where to enter text.

Figure 2. Caption-Fig

A Deep Learning Workstation

The process of setting up a deep-learning workstation is fairly involved. It consists of...

A.1 Appendix subsection

A.1.1 Appendix subsubsection

Figure A.1. This little fellow likes to eat eucalyptus leaves. Thus, he and his fellow species members are found in eucalyptus forests.

B Second Appendix

B.1 An equation in Appendix

$$f(x) = a_0 + \sum_{n=1}^{\infty} \left(a_n \cos \frac{n\pi x}{L} + BN_n \sin \frac{n\pi x}{L} \right) \tag{B.1}$$

where f = where statement where tabs should be placed before the variable and on both sides of the equal sign.

x = definition of x

n = definition of n

a = definition of a

BN = definition of BN

B.2 A Table in Appendix

Table B.1. Table in Appendix

α	β	γ	δ	∇
1	2	3	4	5

Distribution

No. of Copies

Client

3 Client Name
Client Organization
Client Address
City, State, Zipcode

Recipient

4 Recipient Organization
Address
City, State, Zipcode
AK Recipient
BK Recipient (3)

Other Recipients

2 Another Recipient Organization
Address
City, State, Zipcode
PA Dirac
ER Schrödinger

3 Still another Recipient Organization
Address
City, State, Zipcode
SZ Queue
SB Adams
GR Washington

No. of Copies

Foreign Distribution

13 Total Number of Foreign Copies

6 Foreign Organization
Foreign Name
Address
Address line two
Country

7 Second Foreign Organization
Second Foreign Name
Second Address
Address line two
Country

Local Distribution

35 Total Number of Local Copies

AK Kelly	Mailstop
BZ Eberly	Mailstop
CX Smith	PDF

Pacific Northwest National Laboratory

ZB Zebra	Mailstop
XC Excellent	Mailstop
CC Charleston	PDF

Pacific Northwest National Laboratory

902 Battelle Boulevard
P.O. Box 999
Richland, WA 99352
1-888-375-PNNL (7675)

www.pnnl.gov