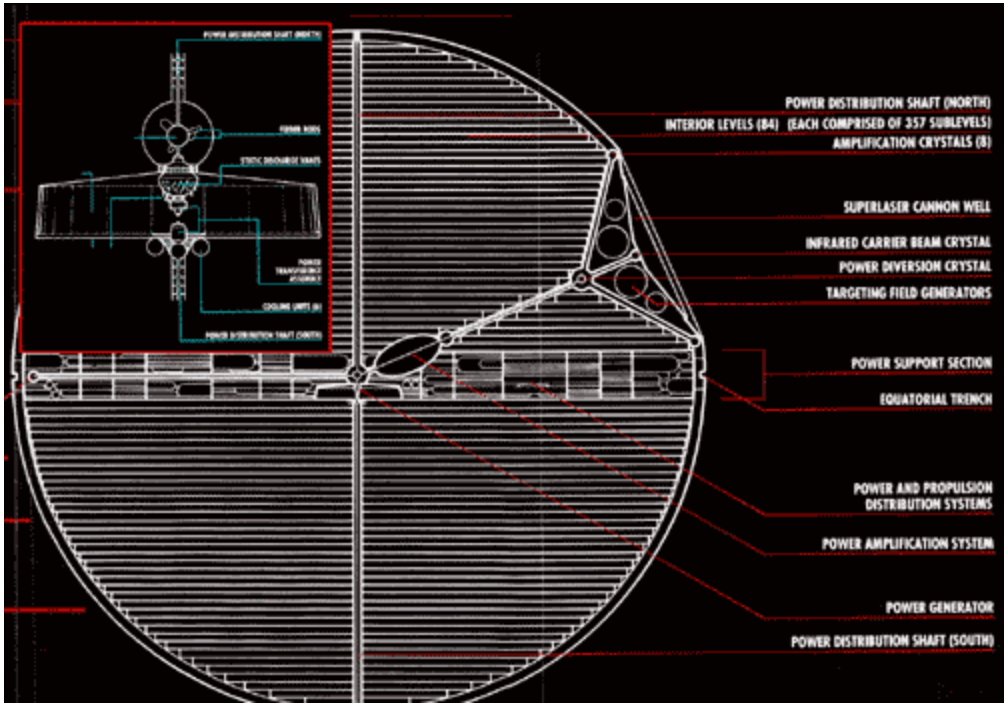
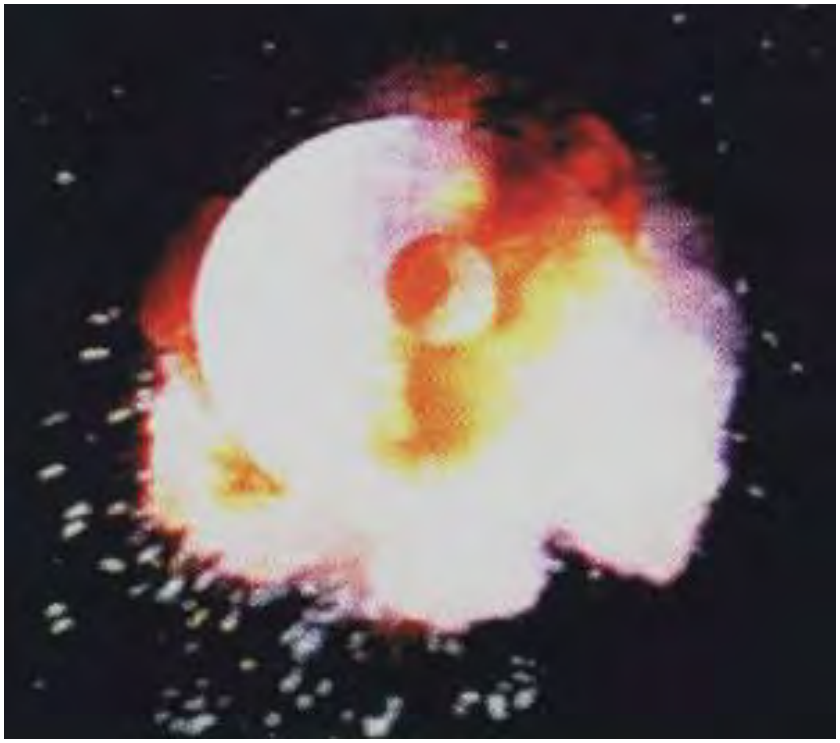
Water Security Tools and Resources

Michael Copeland
EPA Region 8 Water Security
Casper, WY
4/24/13

Had the Empire done a proper Vulnerability/Security Assessment…



A great tragedy could have been avoided….



From smoking gun to mushroom "planet"….

EPA Tools

- Water Infrastructure – Water Security – Tools and Technical Assistance
  - http://water.epa.gov/infrastructure/watersecurity/techtools/index.cfm
  - Web-based and stand-alone resources
- DHS Webinars
  - http://www.dhs.gov/files/programs/gc_1231165582452.shtm
  - Lectures on tools, trends, issues, and best practices for infrastructure protection and resilience

EPA Tools

- Climate Resilience Evaluation and Assessment Tool (CREAT)
- Community-Based Water Resiliency Electronic Tool (CBWR)
- Federal Funding for Utilities - Water/Wastewater - in National Disasters(Fed FUNDS)
- Vulnerability Self Assessment Tool (VSAT)
- Water Health and Economic Analysis Tool (WHEAT)
- The Water Contaminant Information Tool (WCIT)
- Tabletop Exercise Tool for Water Systems: Emergency Preparedness, Response, and Climate Resiliency

CREAT Demo:

Climate Resilience Evaluation and Awareness Tool (CREAT) | Climate | US EPA - Windows Internet Explorer

http://water.epa.gov/infrastructure/watersecurity/climate/creat.cfm

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One EPA Workplace | Climate Resilience Evalua...

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EPA United States Environmental Protection Agency

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Water: Climate

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- Water Home
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- Grants & Funding
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- Our Waters
- Pollution Prevention & Control
- Resources & Performance
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- Water Infrastructure
  - Drinking Water
  - Green Infrastructure
  - Septic Systems
  - Sustainable Infrastructure

You are here: Water » Water Infrastructure » Water Security » Climate » Climate Resilience Evaluation & Awareness Tool (CREAT)

Climate Resilience Evaluation & Awareness Tool (CREAT)

Download CREAT | Climate Ready Water Utilities (CRWU) Home | CRWU Tools & Resources | CREAT Training

EPA has developed CREAT, a software tool to assist drinking water and wastewater utility owners and operators in understanding potential climate change threats and in assessing the related risks at their individual utilities. CREAT provides users with access to the most recent national assessment of climate change impacts for use in considering how these changes will impact utility operations and missions. Version 2.0 is now available for download free of charge.

CREAT allows users to evaluate potential impacts of climate change on their utility and to evaluate adaptation options to address these impacts using both traditional risk assessment and scenario-based decision making. CREAT provides libraries of drinking water and wastewater utility assets (e.g., water resources, treatment plants, pump stations) that could be impacted by climate change, possible climate change-related threats (e.g., flooding, drought, water quality), and adaptive measures that can be implemented to reduce the impacts of climate change. The tool guides users through identifying threats based on regional differences in climate change projections and designing adaptation plans based on the types of threats being considered. Following assessment, CREAT provides a series of risk reduction and cost reports that will allow the user to evaluate various adaptation options as part of long-term planning.

- New! For more information see CREAT Fact Sheet (PDF) (2 pp, 400K)

Local intranet 100%

CREAT Demo:

Registration - Windows Internet Explorer

http://yosemite.epa.gov/ow/SReg.nsf/Registration?OpenForm&Download=CREAT

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Climate

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You are here: EPA Home » Water » Water Infrastructure » Water Security » Climate » Climate Resilience Evaluation and Awareness Tool (CREAT)

Climate Resilience Evaluation and Awareness Tool (CREAT)

Register to download CREAT. Registration information is used to provide users with updates and correspondence related to CREAT.

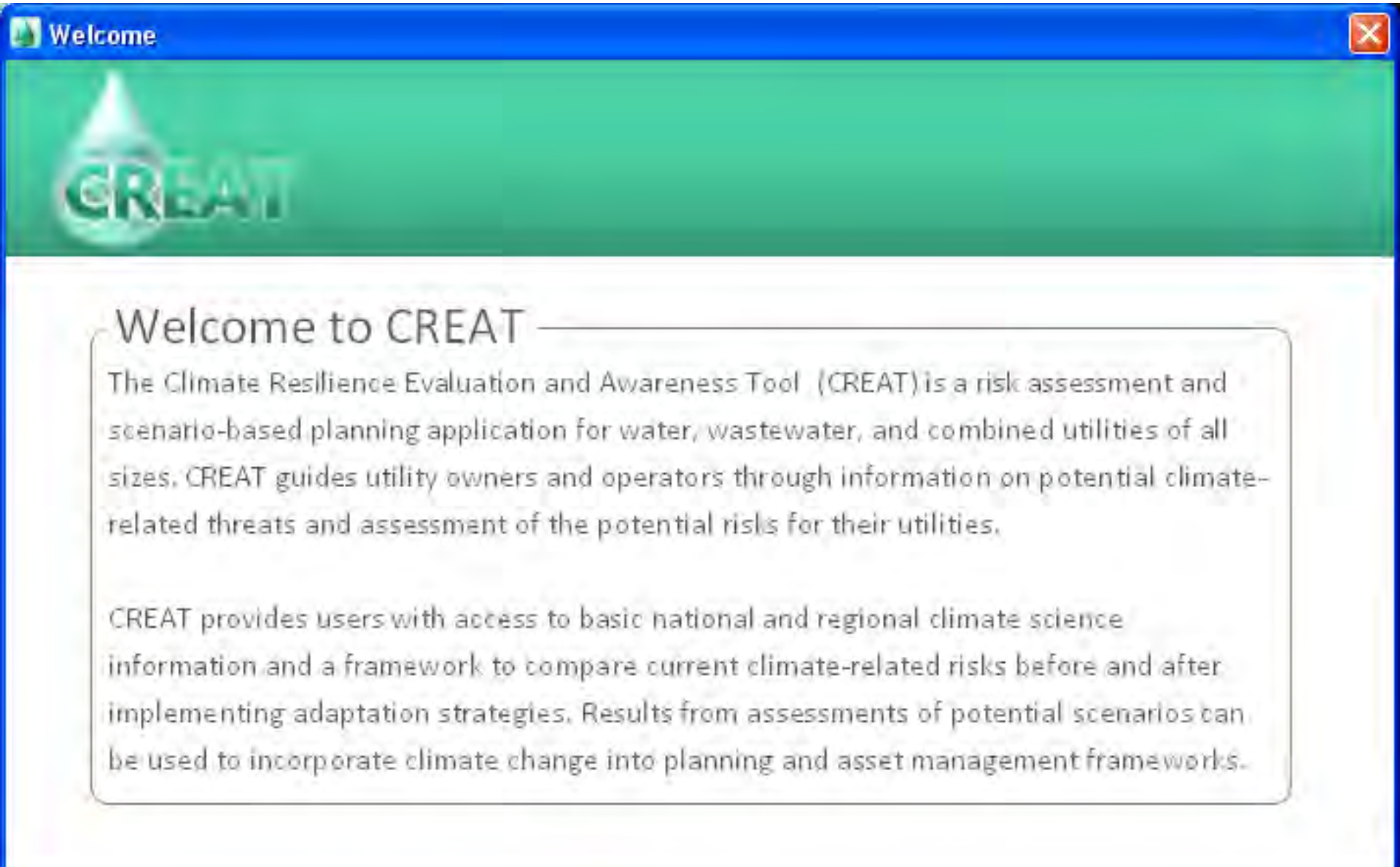
Please enter only *business information* (not your personal information) for address, e-mail, and phone number. Note: Items marked with an asterisk (*) indicate a required entry.

User Information

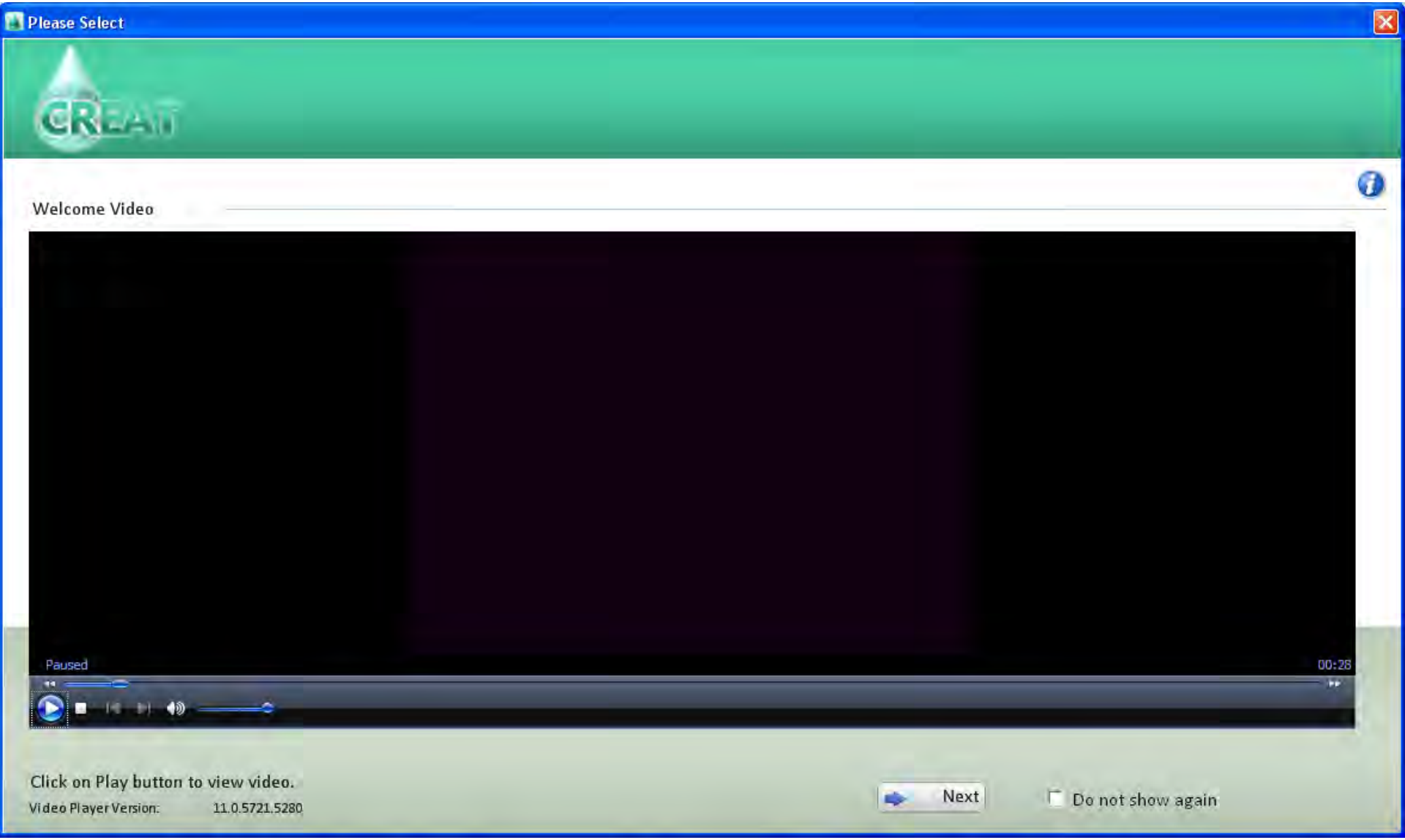
*First Name:	Michael
*Last Name:	Copeland
*Street Address:	1595 Wynkoop Street
Street Address 2:	M/C 8P-AR
*City:	Denver
*State:	CO
*Zip:	80202
*E-mail	land.michael@epa.gov

Done, but with errors on page.

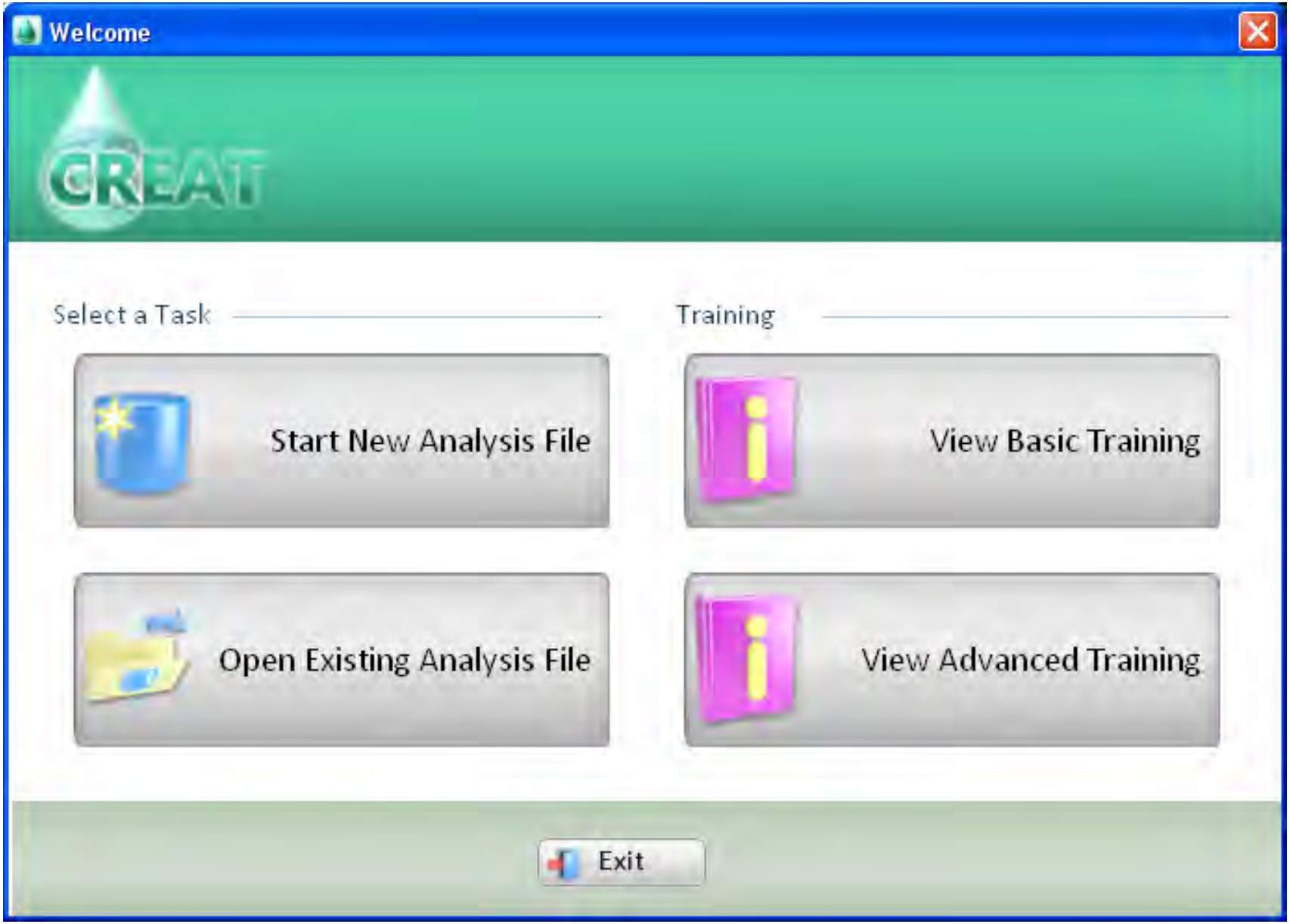
CREAT Demo:


Welcome
CREAT
Welcome to CREAT
The Climate Resilience Evaluation and Awareness Tool (CREAT) is a risk assessment and scenario-based planning application for water, wastewater, and combined utilities of all sizes. CREAT guides utility owners and operators through information on potential climate-related threats and assessment of the potential risks for their utilities.
CREAT provides users with access to basic national and regional climate science information and a framework to compare current climate-related risks before and after implementing adaptation strategies. Results from assessments of potential scenarios can be used to incorporate climate change into planning and asset management frameworks.

CREAT Demo:


Please Select
CREAT
Welcome Video
Paused
00:26
Click on Play button to view video.
Video Player Version: 11.0.5721.5280
Next
Do not show again

CREAT Demo:


Welcome
CREAT
Select a Task
Training
Start New Analysis File
View Basic Training
Open Existing Analysis File
View Advanced Training
Exit

CREAT Demo:

CREAT 2.0 - [C:\My Documents\CREAT_test.mdb]

File View Administration Resources Process Steps Help

Asset Tree

All Assets

Assets > Scenarios

Location 1 (L1)

CREAT Categories

Home

The Climate Resilience Evaluation and Awareness Tool (CREAT) is a risk assessment application for water, wastewater, and combined utilities of all sizes. CREAT helps utility owners and operators in understanding potential climate change threats and in assessing the related risks at their individual utilities. Begin the seven-step process by starting with Setup.

Setup

CREAT captures a variety of information about your utility, including size and ownership structure. You also specify other options used during analysis.

Threats

CREAT provides a set of descriptive narratives regarding climate change impact and potential threats associated with them. You can select the threats applicable to your utility and define custom ones.

Assets

CREAT provides a standardized list of assets. You can modify the asset inventory to reflect your specific facility.

Baseline Analysis

After establishing your initial facility setup, you can determine your current risk level associated with asset/threat combinations over the specified time periods.

Resilience Analysis

After conducting a baseline analysis, you can move forward and consider potential adaptations to your facility to lower the risk associated with specific asset/threat combinations.

Adaptation Planning

Use Adaptation Planning to review your existing and potential adaptive measures, and to develop packages of adaptive measures that you may consider for implementation over future time periods.

Results & Reports

Generate reports of the analysis results developed around your inventories of assets, threats, time periods, or various sorting of any analysis you have conducted.

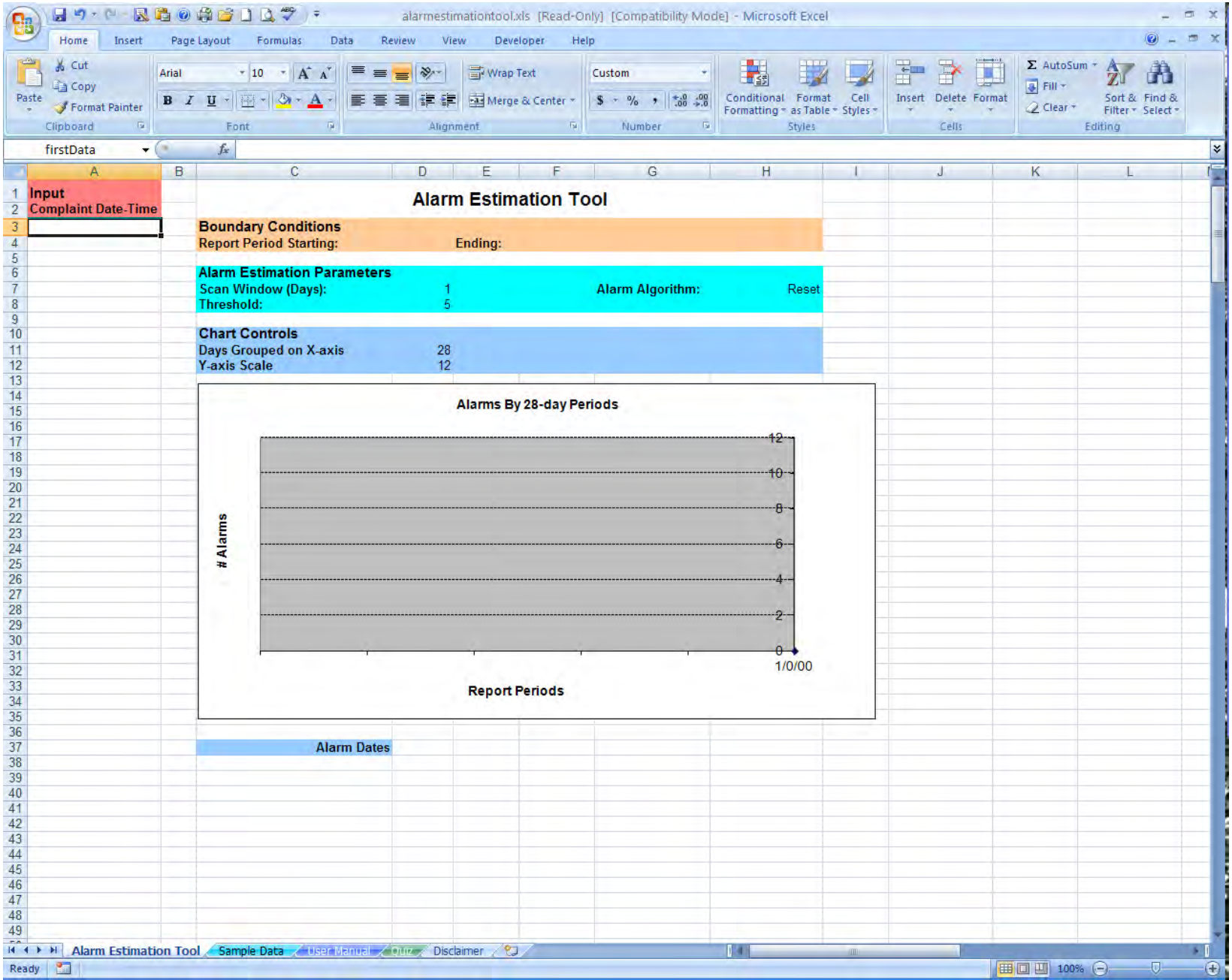
CREAT Demo:

Training
CREAT Training Videos
BASIC
Click on the video you would like to watch
ADVANCED
Welcome Video
Setup
Threats - Climate Information
Threats - Impacts
Assets
Baseline
Resilience
Planning
Results
Setup - Locations and Historical Data
Setup - Analysis Parameters
Threats - Climate Scenarios
Threats - Sea-level Rise
Threats - Assess Likelihood
Assets - Assignments
Baseline - Define Measures
Resilience - Contributions
Planning - Packages
Results - Communication
Basic_Setup
00:08
Now Playing: Basic.wpl
To view video in full screen with closed captions, double click on the play area.
If you experience difficulty playing these videos here, you can access the video directory to play in your preferred media player.
Close

Technical Assistance

- Alarm Estimation Tool (Excel-based)
- Decontamination and Recovery Planning - Water and Wastewater Utility Case Study PDF
- WaterISAC
- Control Systems Security Website
- Emergency/Incident Planning
- Pandemic Flu Planning for the Water Sector
- Recognizing Waterborne Disease and the Health Effects of Water Pollution: Physician On-Line Reference Guide
- Voluntary Water Infrastructure Security Enhancement (WISE) Initiative

AET Demo


alarmestimationtool.xls [Read-Only] [Compatibility Mode] - Microsoft Excel
Input
Complaint Date-Time
Alarm Estimation Tool
Boundary Conditions
Report Period Starting:
Ending:
Alarm Estimation Parameters
Scan Window (Days): 1
Threshold: 5
Alarm Algorithm: Reset
Chart Controls
Days Grouped on X-axis 28
Y-axis Scale 12
Alarms By 28-day Periods
Alarms
Report Periods
1/0/00
Alarm Dates
Alarm Estimation Tool
Sample Data
User Manual
Qtr
Disclaimer
Ready

AET Demo

alarmestimationtool.xls [Read-Only] [Compatibility Mode] - Microsoft Excel

G3 | 1/1/2010 1:00:00 AM

	A	C	E	G
1	Data Set 1	Data Set 2	Data Set 3	Data Set 4
2				
3	4/3/2009 13:08	1/8/2008 7:50	1/4/2008 9:55	1/1/2010 1:00
4	4/3/2009 14:07	1/8/2008 13:02	1/11/2008 12:19	1/2/2010 2:00
5	4/6/2009 11:17	1/10/2008 13:58	1/11/2008 17:19	1/2/2010 2:01
6	4/9/2009 7:40	1/11/2008 8:16	1/14/2008 9:25	1/3/2010 3:00
7	4/10/2009 10:51	1/16/2008 12:08	1/23/2008 14:49	1/3/2010 3:01
8	4/10/2009 11:54	1/18/2008 8:25	1/25/2008 9:57	1/3/2010 3:02
9	4/10/2009 12:33	1/30/2008 10:34	1/27/2008 13:43	1/4/2010 4:00
10	4/13/2009 10:27	2/1/2008 12:33	1/30/2008 10:38	1/4/2010 4:01
11	4/14/2009 10:31	2/1/2008 16:04	2/3/2008 11:07	1/4/2010 4:02
12	4/14/2009 17:14	2/4/2008 12:52	2/4/2008 12:56	1/4/2010 4:03
13	4/15/2009 8:04	2/4/2008 14:59	2/4/2008 15:11	1/5/2010 5:00
14	4/16/2009 9:29	2/13/2008 15:53	2/7/2008 14:00	1/5/2010 5:01
15	4/17/2009 10:45	2/20/2008 9:01	2/8/2008 9:34	1/5/2010 5:02
16	4/20/2009 10:32	2/27/2008 15:07	2/14/2008 14:35	1/5/2010 5:03
17	4/21/2009 11:58	2/28/2008 17:14	2/15/2008 14:15	1/5/2010 5:04
18	4/21/2009 12:26	3/3/2008 16:09	2/19/2008 12:32	1/6/2010 6:00
19	4/22/2009 8:21	3/12/2008 15:38	2/19/2008 14:53	1/6/2010 6:01
20	4/22/2009 14:55	3/12/2008 15:46	2/20/2008 9:04	1/6/2010 6:02
21	4/22/2009 15:27	3/17/2008 12:55	2/21/2008 13:18	1/6/2010 6:03
22	4/23/2009 9:13	3/26/2008 11:53	2/26/2008 8:59	1/6/2010 6:04
23	4/23/2009 14:56	3/26/2008 13:31	2/27/2008 15:09	1/6/2010 6:05
24	4/28/2009 17:03	3/28/2008 13:36	2/28/2008 11:45	1/7/2010 7:00
25	4/29/2009 11:56	3/31/2008 12:04	2/28/2008 13:53	1/7/2010 7:01
26	5/1/2009 17:17	3/31/2008 13:28	2/28/2008 17:17	1/7/2010 7:02
27	5/8/2009 13:56	4/2/2008 8:10	2/29/2008 10:34	1/7/2010 7:03
28	5/14/2009 15:49	4/14/2008 8:47	3/3/2008 16:20	1/7/2010 7:04
29	5/18/2009 10:47	4/18/2008 15:56	3/3/2008 17:15	1/7/2010 7:05
30	5/18/2009 14:20	4/18/2008 17:03	3/6/2008 8:41	1/7/2010 7:06
31	5/19/2009 13:18	4/21/2008 8:18	3/11/2008 9:19	1/8/2010 8:00
32	5/20/2009 11:37	4/22/2008 16:53	3/11/2008 10:33	1/9/2010 9:00
33	5/21/2009 11:42	4/23/2008 10:28	3/12/2008 15:44	1/9/2010 9:01
34	5/22/2009 11:54	4/23/2008 14:12	3/12/2008 16:00	1/10/2010 10:00
35	5/26/2009 11:30	4/25/2008 13:03	3/17/2008 13:18	1/10/2010 10:01
36	5/28/2009 14:05	4/28/2008 12:15	3/24/2008 15:21	1/10/2010 10:02
37	5/28/2009 16:29	4/29/2008 10:27	3/24/2008 16:35	1/11/2010 11:00
38	5/28/2009 18:01	4/30/2008 11:49	3/26/2008 13:35	1/11/2010 11:01
39	5/29/2009 7:39	5/1/2008 11:53	4/2/2008 8:20	1/11/2010 11:02
40	5/29/2009 21:17	5/1/2008 17:11	4/2/2008 8:43	1/11/2010 11:03
41	6/1/2009 8:59	5/7/2008 15:01	4/2/2008 13:54	1/12/2010 0:00
42	6/1/2009 9:25	5/12/2008 17:04	4/4/2008 13:14	1/12/2010 0:01
43	6/1/2009 11:28	5/15/2008 14:19	4/8/2008 9:14	1/12/2010 0:02
44	6/3/2009 21:05	5/16/2008 8:51	4/10/2008 14:52	1/12/2010 0:03
45	6/5/2009 12:45	5/20/2008 10:32	4/11/2008 13:21	1/12/2010 0:04
46	6/6/2009 13:42	5/21/2008 9:04	4/14/2008 9:07	1/13/2010 13:00
47	6/6/2009 19:17	5/21/2008 10:35	4/16/2008 8:46	1/13/2010 13:01

Alarm Estimation Tool | Sample Data | User Manual | Quiz | Disclaimer

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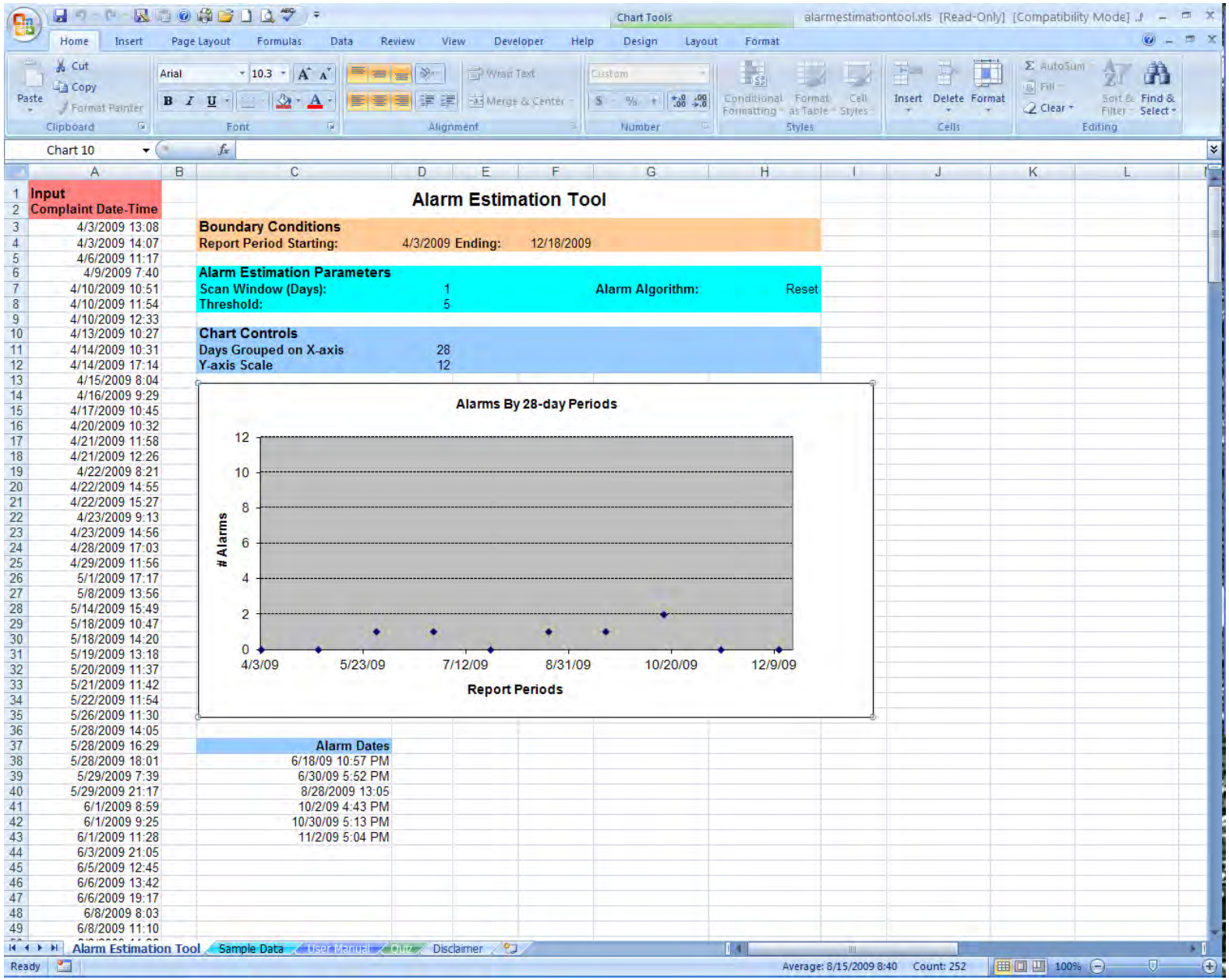
AET Demo


Alarm Estimation Tool
Input
Complaint Date-Time
Boundary Conditions
Report Period Starting: 4/3/2009 Ending: 12/18/2009
Alarm Estimation Parameters
Scan Window (Days): 1
Threshold: 5
Alarm Algorithm: Reset
Chart Controls
Days Grouped on X-axis 28
Y-axis Scale 12
Alarms By 28-day Periods
Alarms
Report Periods
4/3/09
5/23/09
7/12/09
8/31/09
10/20/09
12/9/09
Alarm Dates
6/18/09 10:57 PM
6/30/09 5:52 PM
8/28/2009 13:05
10/2/09 4:43 PM
10/30/09 5:13 PM
11/2/09 5:04 PM
Alarm Estimation Tool
Sample Data
User Manual
Quiz
Disclaimer

Other Resources

- No additional Water Security Grants in the near future
- Some funding for ICS/NIMS training and TTX and functional exercises
  - CO, WY Rural Water, ND Tribes planning to conduct TTXs in 2013
  - OW will provide onsite ICS100/200, 700/800 training when requested

Questions?
Carry on!