

Overview of WATER9

Session 1 of 2

The Use of WATER9 with Project
Files

WATER9 Version 3

- Additional divert flow lines permitted
- Specified mass transfer coefficient option
- Biological removal in DAF option
- Multiple DAF units in parallel
- Load project from a list of recent projects
- Update ratio of mixing to stripping
- Reports formats updated
- Update floating roof model (activity coef.)
- Newer modules, improved features (SSheet)

Session 1

- WATER9, what it does.
- Opening project files
- Calculations
- Unit properties
- Compound properties
- Inspection of the components of a project
- Reports that are available

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WATER9 What it Does

- Multimedia environmental impact of a process.
- Organizing information about a process.
- Chemical properties
- Inputs of key unit properties
- Inspection of the components of a project
- Wide variety of reports
- Create information for other uses/programs
- Collection system and headspace flow

WATER9 Create Information for Other Users/Programs

- Air dispersion modeling.
- Water dispersion modeling.
- Groundwater migration.
- 40 CFR Appendix C of Part 63; Appendix J of Part 60
- Permit calculations
- Process design. one tool.
- Process modification (what if)
- Evaluation of air emission controls

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Opening Project Files 1

- What is a project file?
 1. Definition of process units
 2. Compounds and compound properties
 3. Waste definitions
 4. Default values
 5. Sheet values (location of units GPS)
 6. Comments
- WATER9 project files are uniform.
- WATER9 project files can be reviewed.

Opening Project Files 2

- What can you do with a WATER9 project file?
 - Get or send a project file set by Email (small size)
 - Project files, one name different extensions
 - .wwa, .ccc, .wwd, .wwt, .www, .comments
 - Get or send reports
 - Import reports into spreadsheets
 - Review the assumptions in the project
- Illustration of opening a project file

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Calculations

- Load a project.
 - Main menu [file] [load]
 - Main menu [load a previous project]
- Select a compound.
- Save project if you made changes.
- **Press the update button**
- Wait for completion of calculations
- Illustration

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Unit Properties 1

- Process units are items of equipment in a process train or a treatment plant.
- unit properties describe the unit
 - size
 - cover, agitation
 - biological growth
 - waste added
- Illustration

Unit Properties 2

- Default values of unit properties are available.
- Do not use default values for actual units.
 - size
 - cover
 - agitation
 - biological growth
 - waste added
- Example of special caution...

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Compound Properties

- Compound properties are in the WATER9 data base
- Separate compound properties are stored in the project files
- The project files and the WATER9 data base may have different compound properties
- Illustration of checking compound properties

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- **Inspection of the components of a project**
- Reports that are available

Inspection of the Components of a Project

- Calculate, are there errors?
- material balance, does it balance?
- Overall report, how large are the errors?
- Unit properties, are they accurate?
- Replace compound properties with data base values, do you get different results?
- Convergence and recycle.
- Wind speed

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- **Reports that are available**

WATER9 Reports 1

- Main menu [file] [view].
 - Reports for one compound
 - Reports for all compounds
 - Reports for compound properties
- Unit pop-up window
 - view report for one unit
 - view report for one compound
- Screen display

WATER9 Reports 2

- What can I do with a report?
 - Read it on screen
 - Print it on paper
 - Save it to a file (Email)
 - Import with a Spreadsheet
- Report Utilities
 - Search
 - Help
- Illustration of reports

Session 2: Creating a WATER9 Project

- Preparation of a flow diagram for the process
- Transferring process information into a project
- Methanol in a basin
- Split flow for parallel units
- Debugging methods
- Validation methods