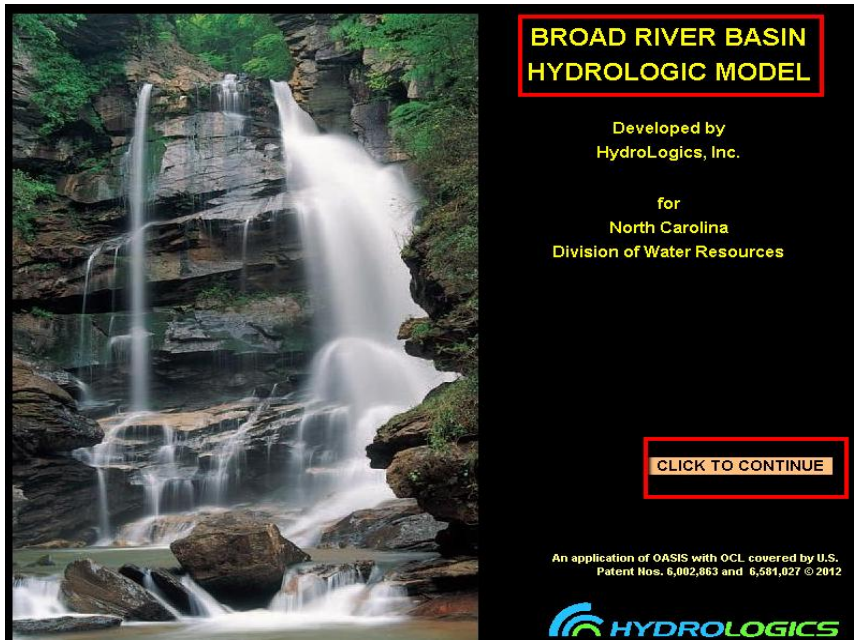
Broad River Basin Model

How To Do A Model Run

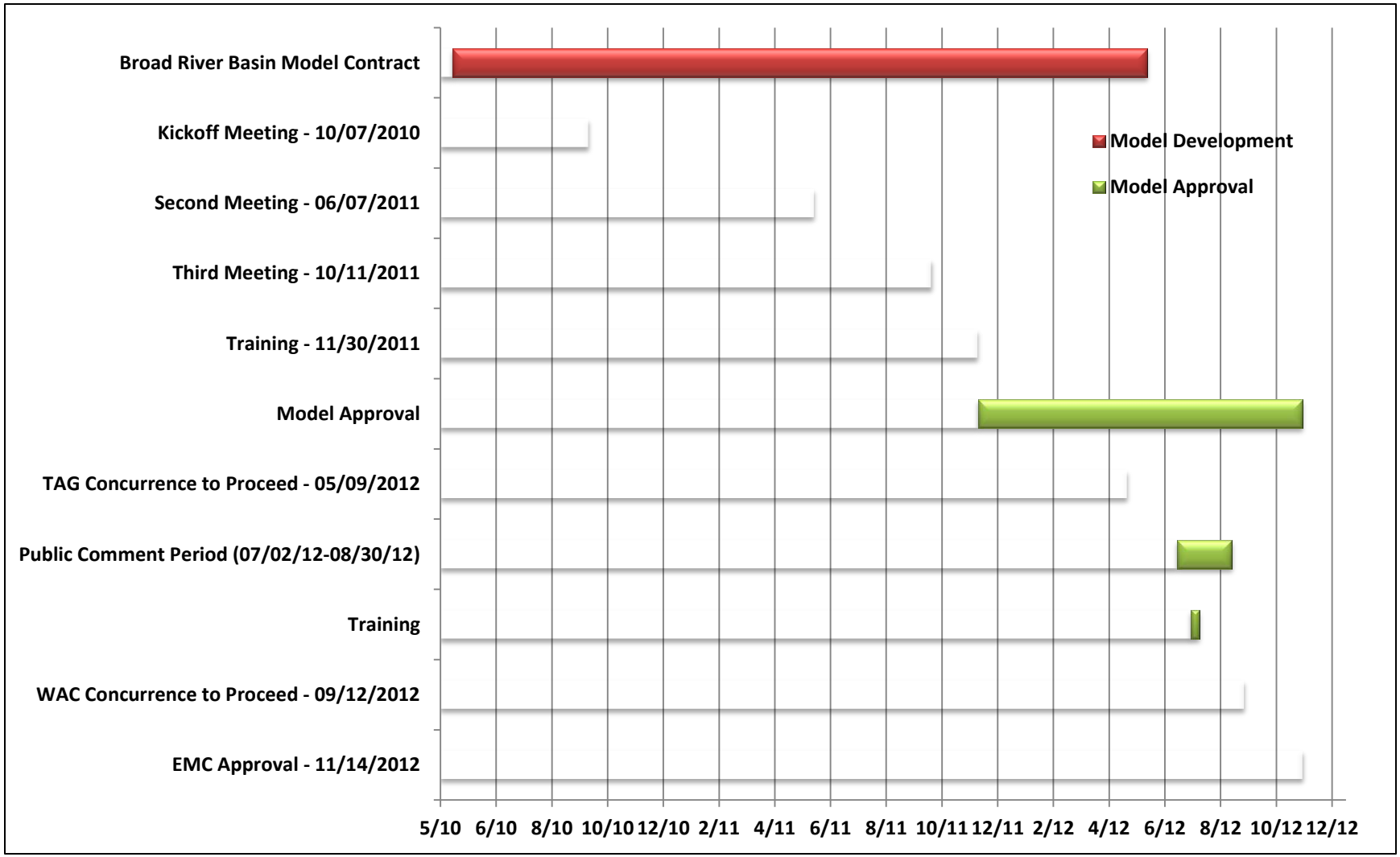


July 11, 2012

Technical Advisory Group
Water Allocation Committee Sub-Committee

Tom Fransen
Division of Water Resources
NC Department of Environment and Natural Resources

Broad River Basin Modeling Process



Agenda

- ***View Results of Existing Model Scenarios***
  - Plots
  - Tables
  - Overlay Plots from Multiple Runs
  - Quick View tables and Plots
- Create and Run a New Simulation Scenario
  - Copy run from existing model scenario
  - Modify Model scenario
    - Using interface
    - Using quick view
  - Model Output
    - Copy Results to User's Desktop
- Online OASIS Help
- Open Session Discussion

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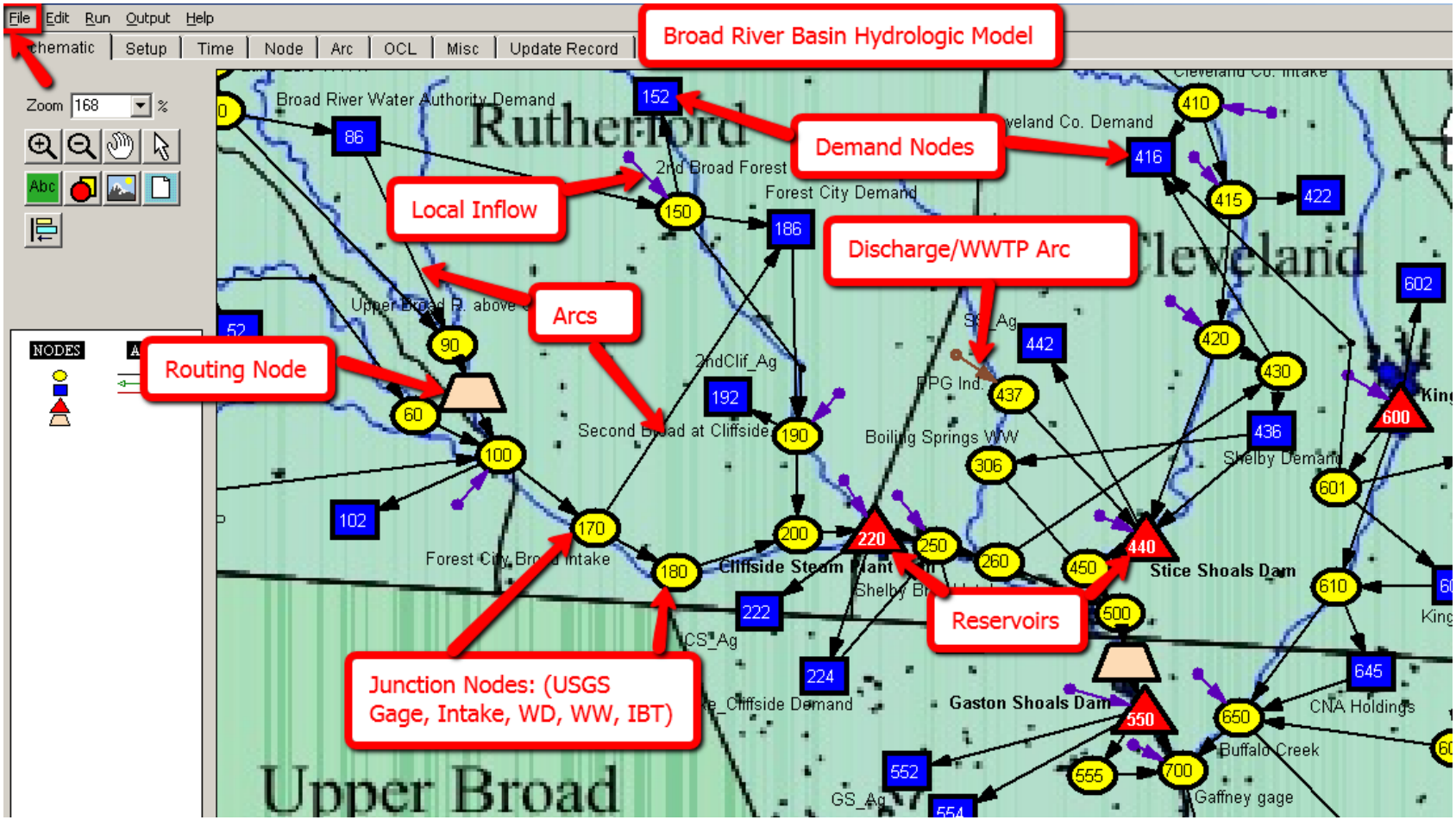
Output of Existing Model Scenarios

Go to http://appserver.ncwater.org



View Model Output: Plots

OASIS with OCL --- Run directory: D:\Broad_users\dngandu\OASIS\Runs\Simulation\Simbase_2060_Update_06jun2012 [S...

File Edit Run Output Help

Schematic | Setup | Time | Node | Arc | OCL | Misc | Update Record

	Year	Month	Day
Start of Run	1929	01	01
End of Run	2009	09	30

Initial Reservoir Levels

Node Number	Node Name	Storage	Ur
10	Lake Summit (Tuxedo Da	2010.6	FT
40	Lake Adger (Turner Shoa	911.6	FT
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440	Stice Shoals Dam	654.3	FT
525	Lower Broad Routing	100.0	KA
550	Gaston Shoals Dam	604.2	FT
600	Kings Mt. / Moss Lake	736.0	FT

No Forecasts
Conditional Forecasts
Non-conditional Forecasts

Systemwide Demand Multiplier
Use Multiplier
Multiplier Value 1

OCL Command Files
Select files to view or edit, then hit ENTER

_SafeYield_Constants.ocl
Agric_Allocation.ocl
Agric_Calculation.ocl
constants.ocl
drought_plans.ocl
Forecast-Trigger_Parms.ocl
inflows.ocl
main.ocl
return_flows.ocl
routing.ocl
udef_list.ocl

Edit Agricultural Data
Edit Notes
RUN
Run Safe Yield Analysis

View Output
Tables
Plots
Balance Sheet
Quick View

2. Click Plots

1. Output Current (Green). If not click "Run" to update.

Select items for editing. | Output CURRENT

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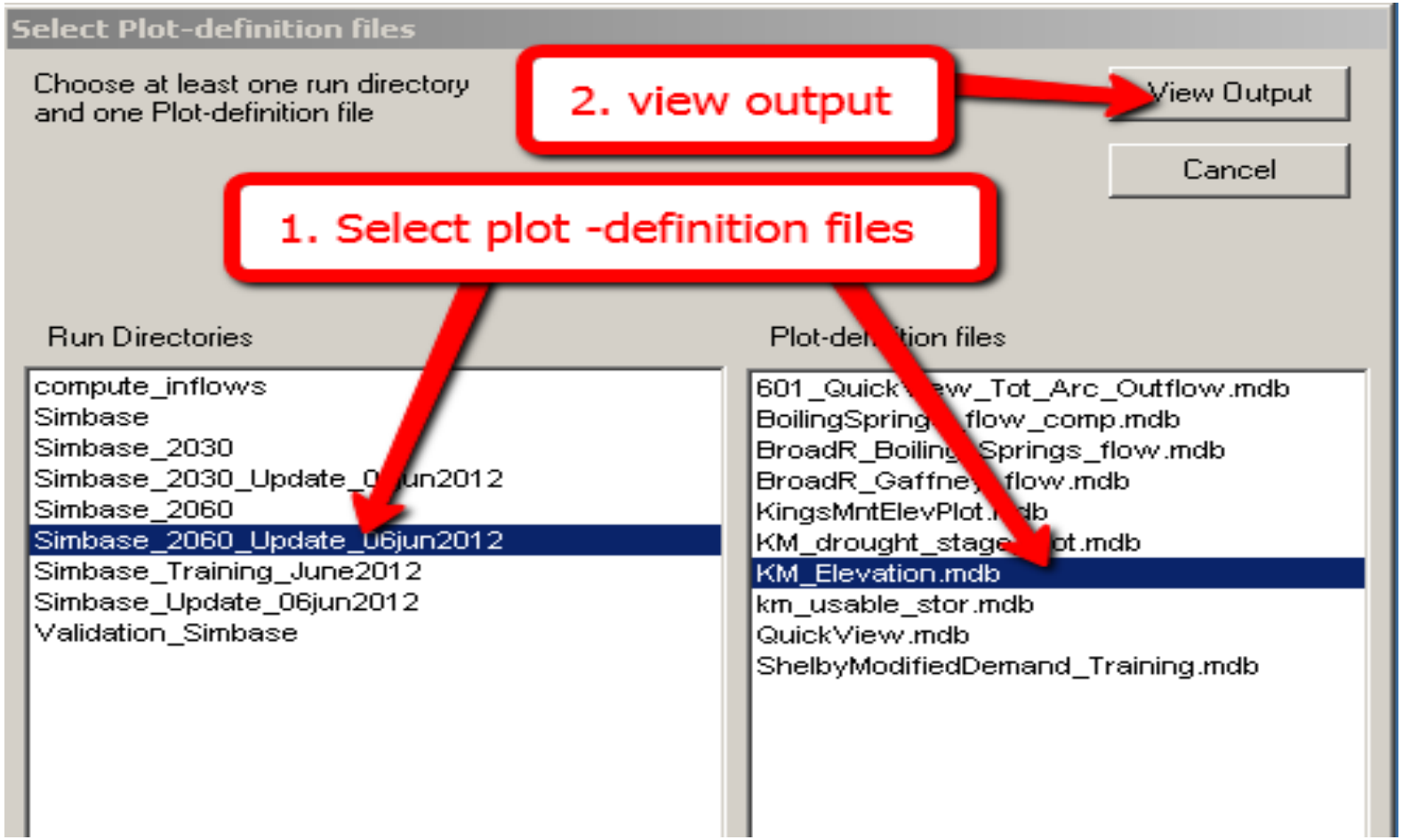
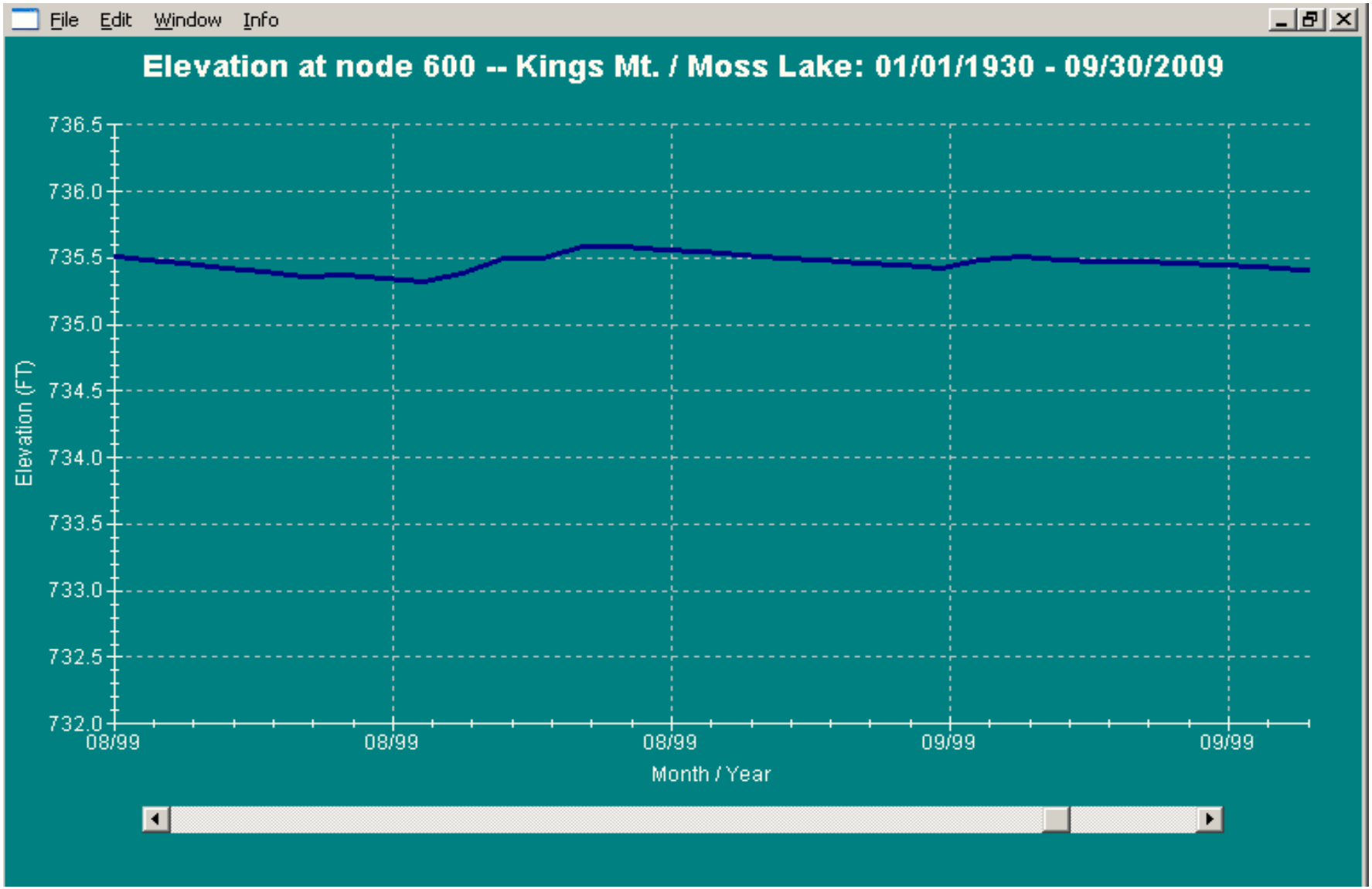
Model Output: Plots



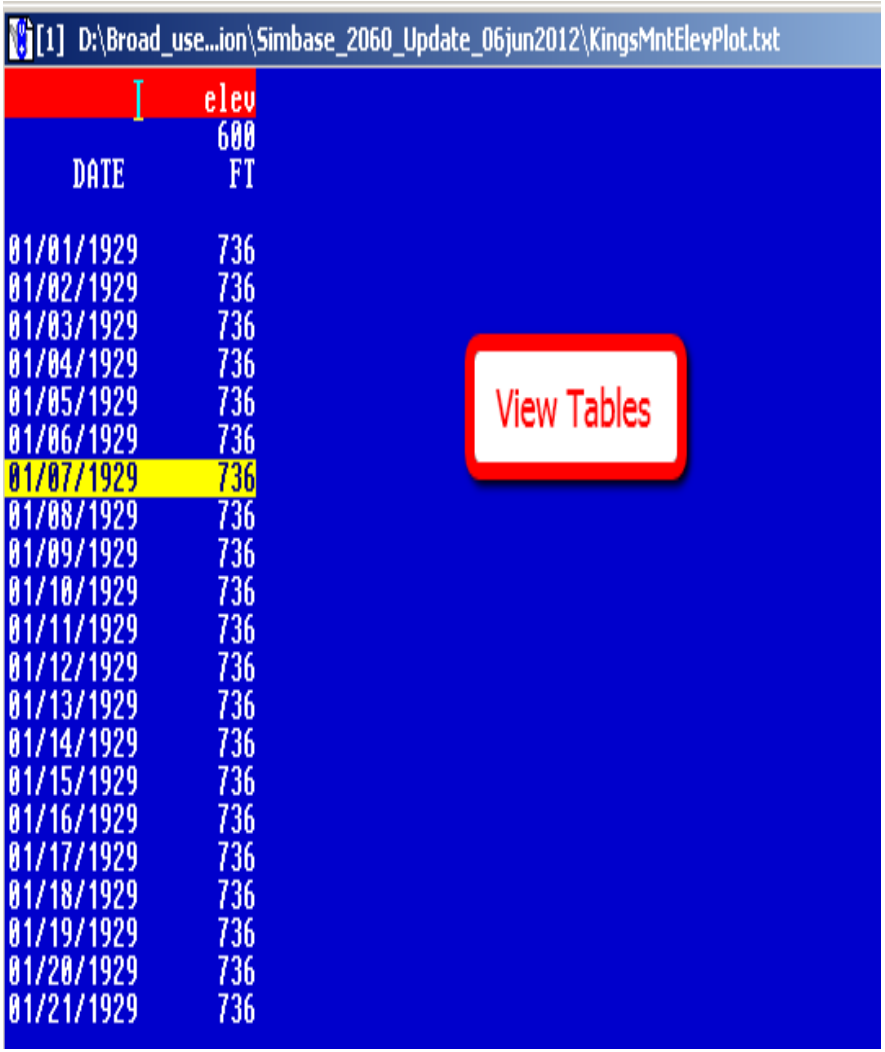
Model Output: Plots



Model Output: Tables

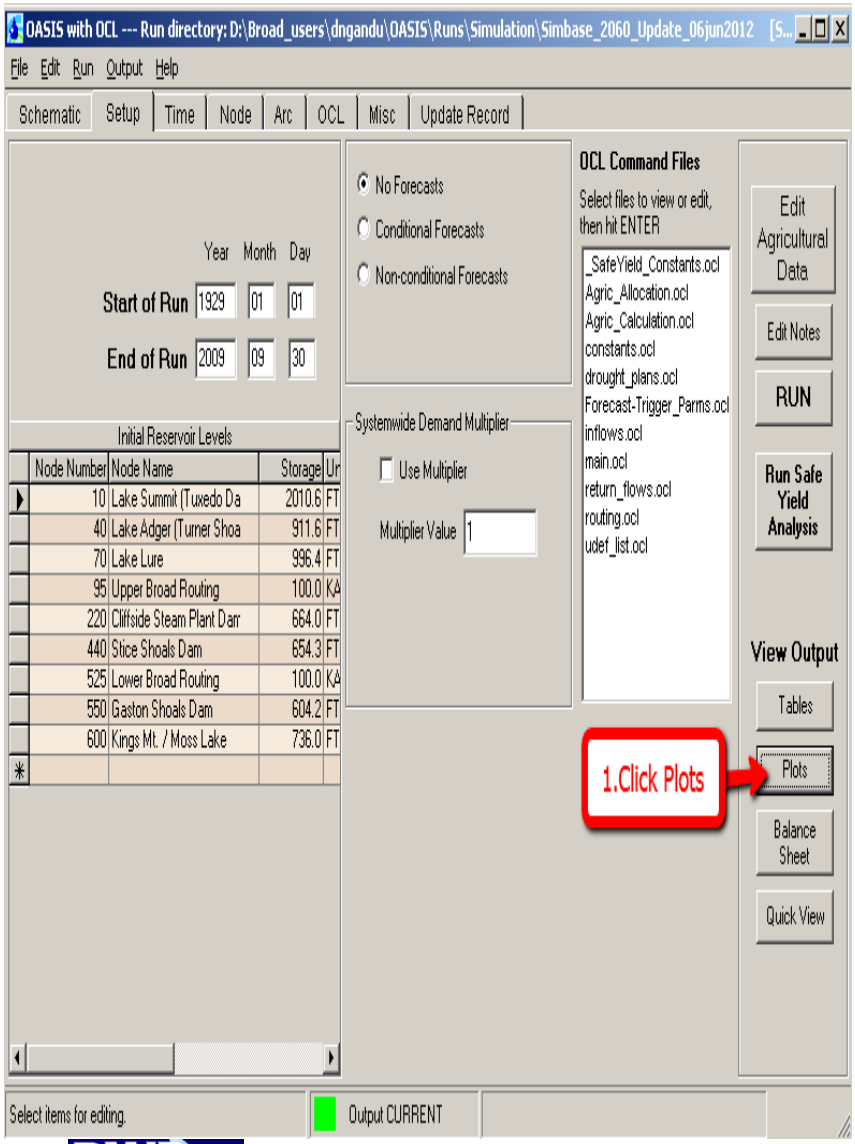
- Repeat previous steps to view tables:

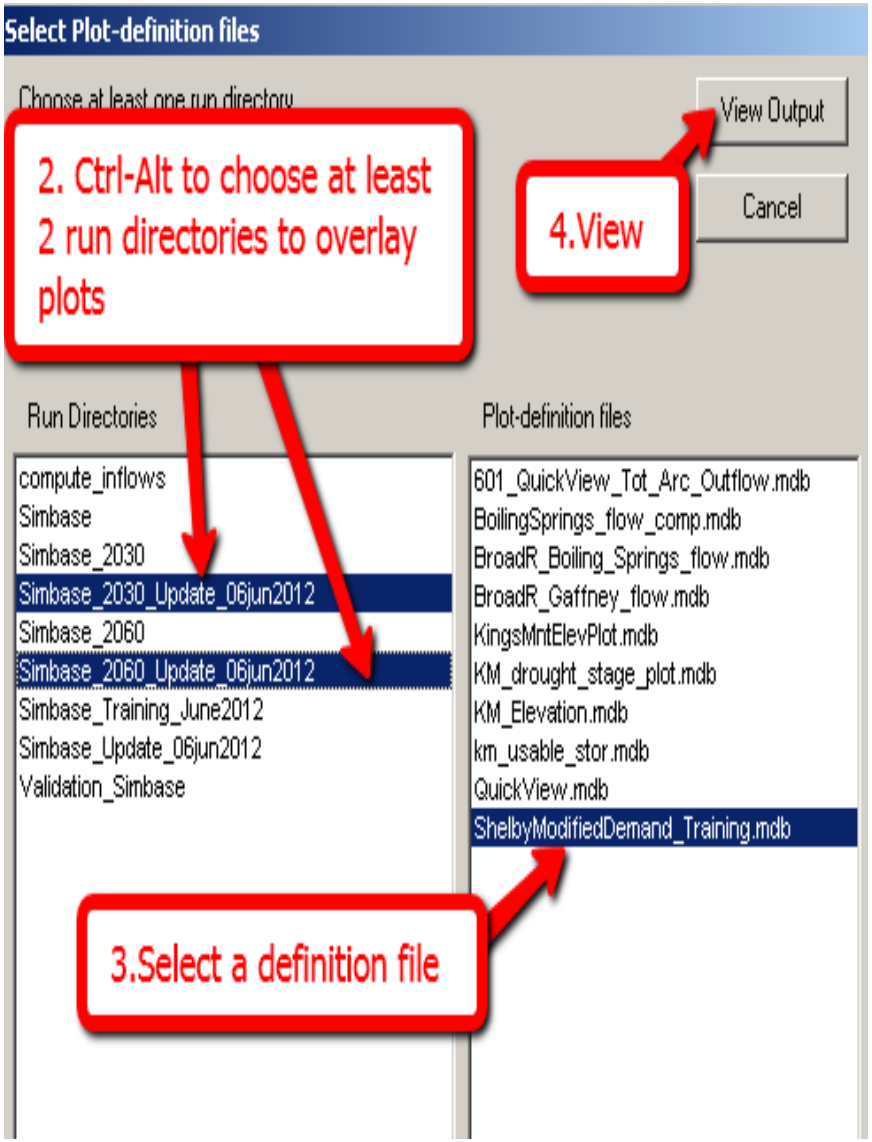
1. Make sure output is current
2. Click Tables
3. Select plot definition files
4. View output.



DATE	elev 600 FT
01/01/1929	736
01/02/1929	736
01/03/1929	736
01/04/1929	736
01/05/1929	736
01/06/1929	736
01/07/1929	736
01/08/1929	736
01/09/1929	736
01/10/1929	736
01/11/1929	736
01/12/1929	736
01/13/1929	736
01/14/1929	736
01/15/1929	736
01/16/1929	736
01/17/1929	736
01/18/1929	736
01/19/1929	736
01/20/1929	736
01/21/1929	736

Overlay Plots from Multiple Runs





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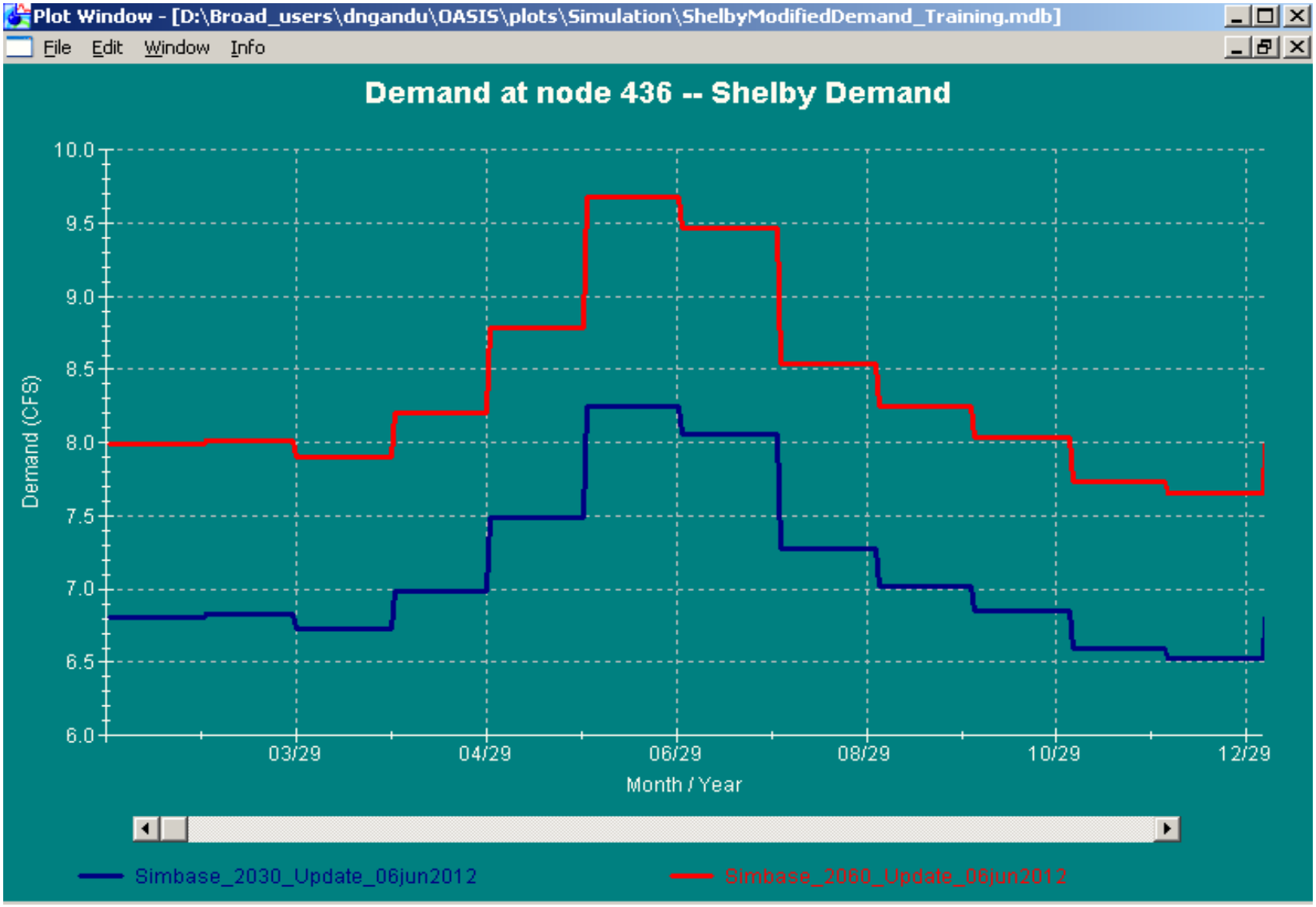
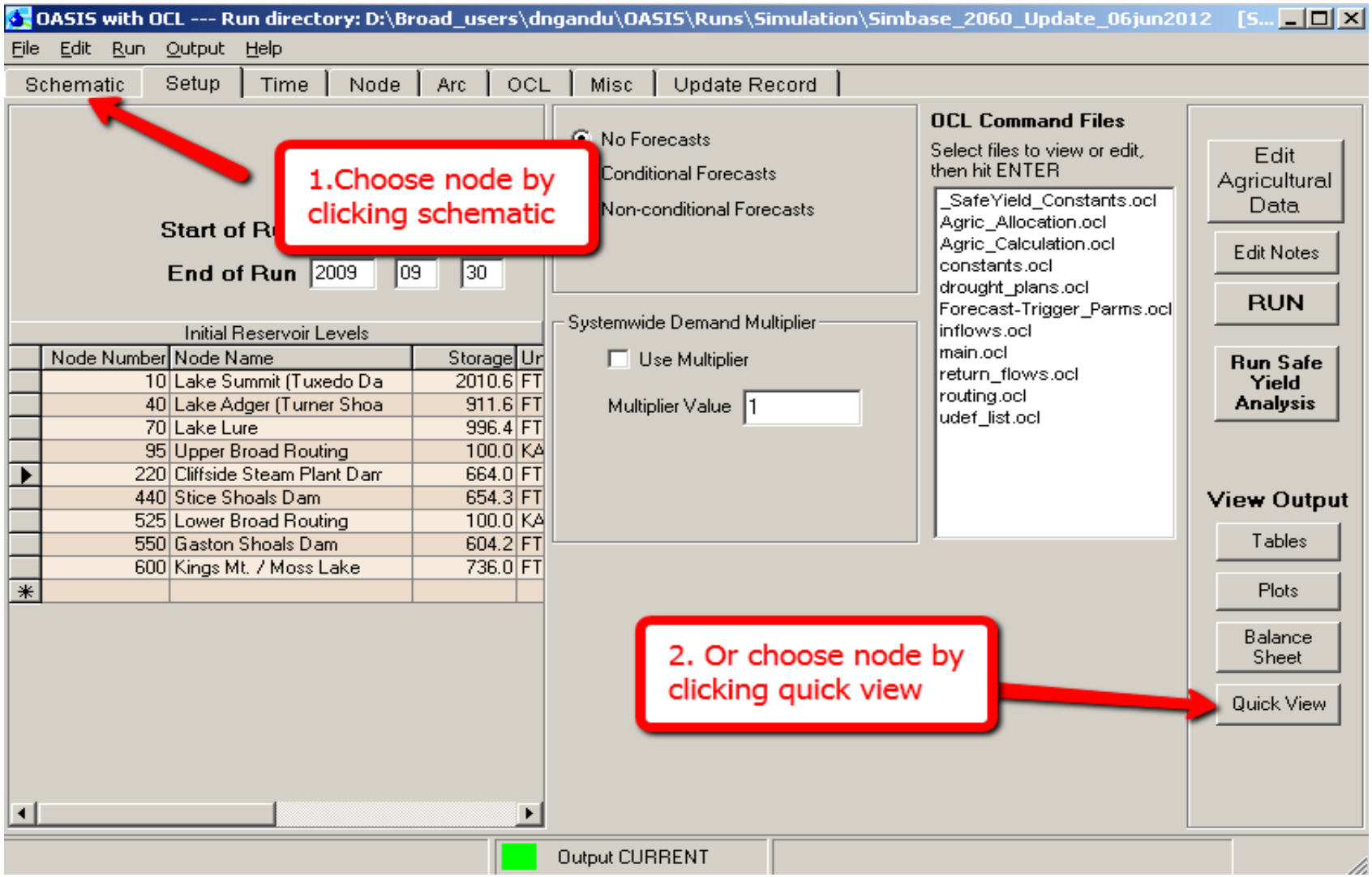
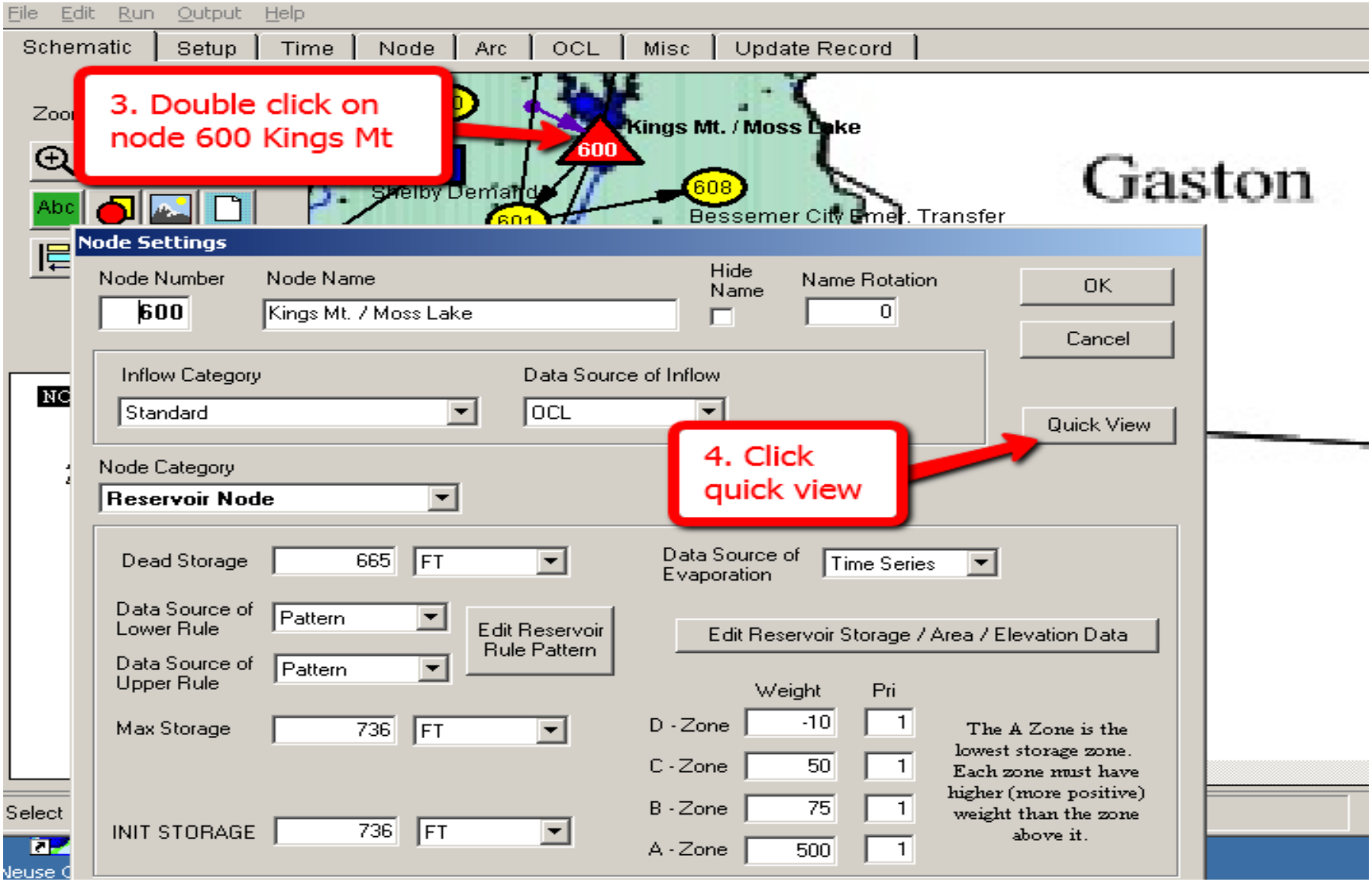
Overlay Plots from Multiple Runs



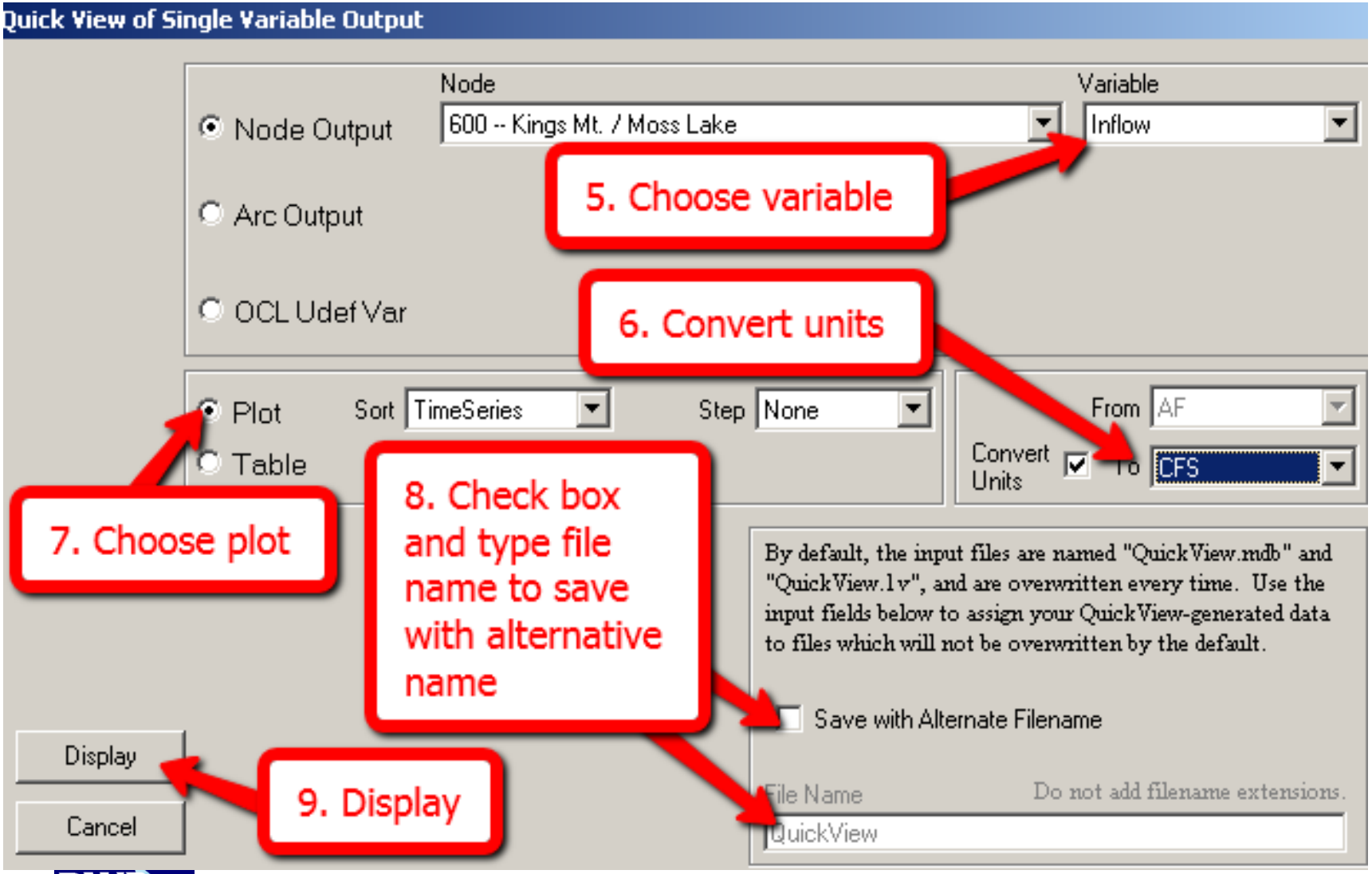
Quick View Plots & Tables



Quick View Plots & Tables



Quick View Plots & Tables



Quick View Plots & Tables Cont..

- Repeat steps 1-6, then choose table for step 7 to generate table
- Continue with steps 8 and 9 to save table and display results if needed.

[1] D:\Broad_use...s\Simulation\Simbase_2060_Update_06jun2012\QuickView.txt

	inflow
	600
DATE	CFS
01/01/1929	63
01/02/1929	63
01/03/1929	60
01/04/1929	55
01/05/1929	41
01/06/1929	123
01/07/1929	103
01/08/1929	81
01/09/1929	69
01/10/1929	73
01/11/1929	97
01/12/1929	73
01/13/1929	71
01/14/1929	84
01/15/1929	64
01/16/1929	65
01/17/1929	66
01/18/1929	73
01/19/1929	56
01/20/1929	67
01/21/1929	84
01/22/1929	63
01/23/1929	63
01/24/1929	63
01/25/1929	61

Section of the table results

DWR Division of Water Resources

Agenda

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  - Copy run from existing model scenario
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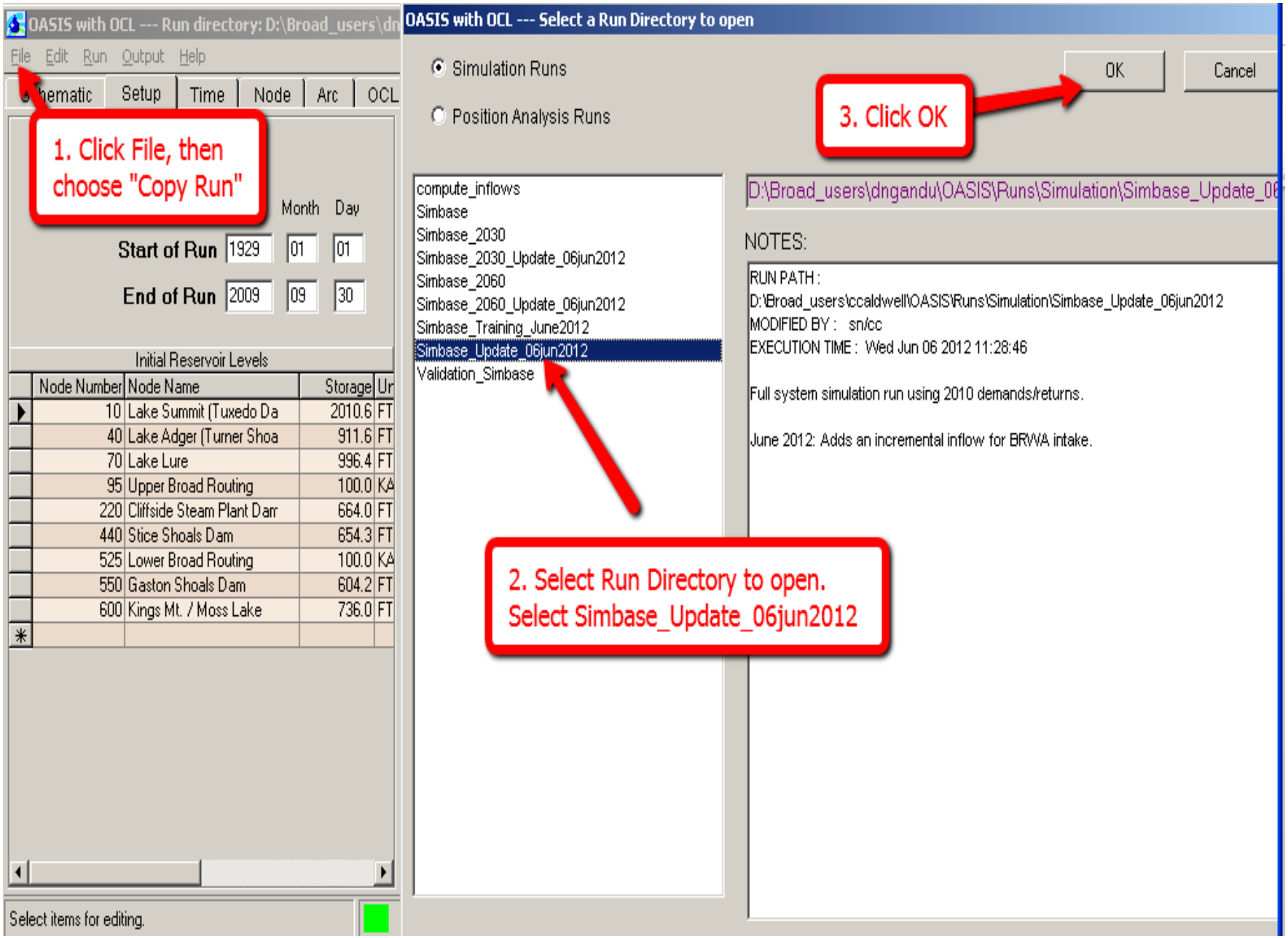
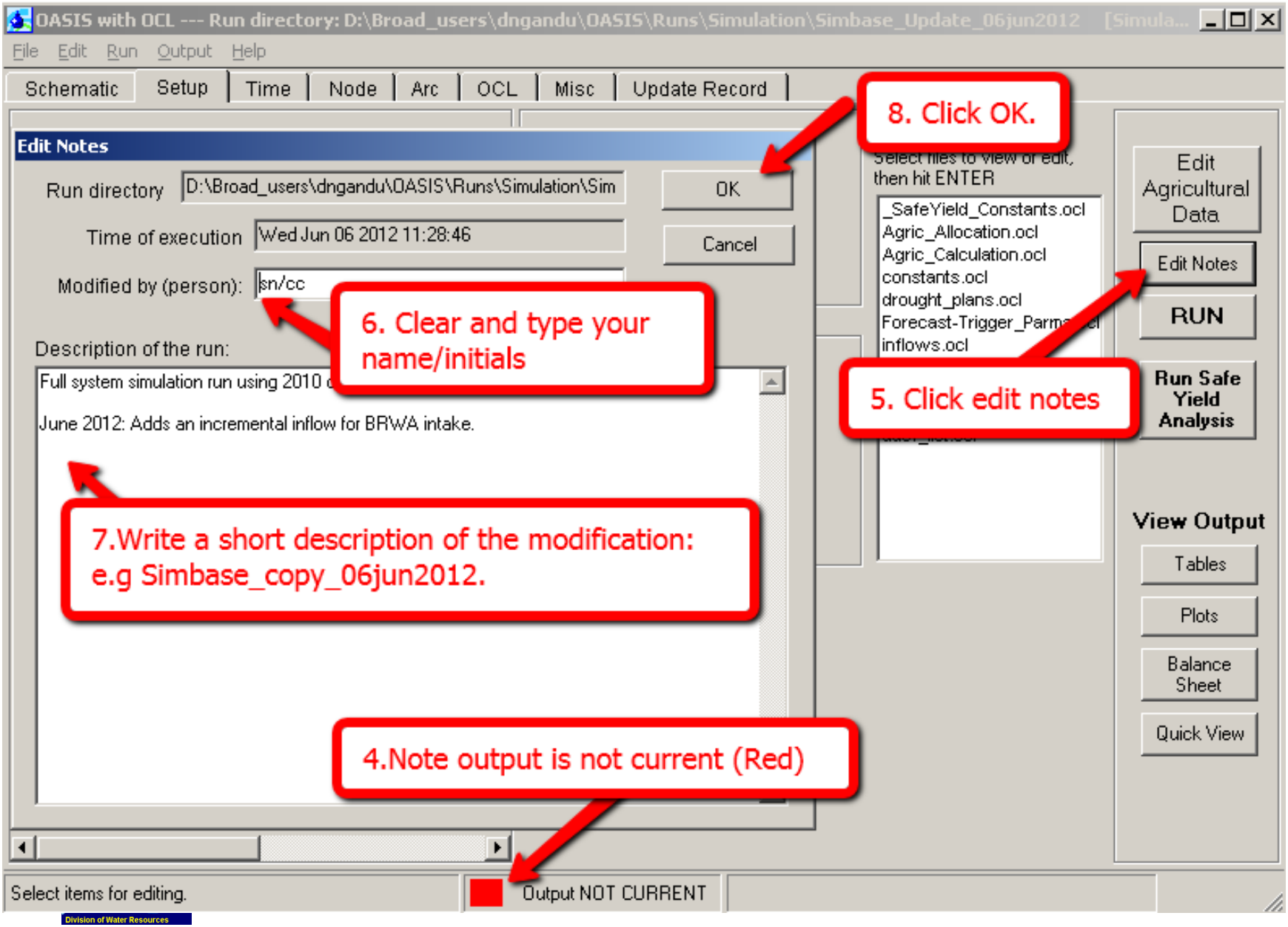
- Online OASIS Help
- Open Session Discussion

DWR Division of Water Resources

Create New Simulation Scenario



Create New Simulation Scenario



Create Run from Quick View

OASIS with OCL --- Run directory: D:\Broad_users\dngandu\OASIS\Runs\Simulation\Simbase_Update_06jun2012 [Simula...

File Edit Run Output Help

Schematic | Setup | Time | Node | Arc | OCL | Misc | Update Record

2. Click schematic

Start of Run 1929 01 01

End of Run 2009 09 30

Initial Reservoir Levels

Node Number	Node Name	Storage	Ur
10	Lake Summit (Tuxedo Da	2010.6	FT
40	Lake Adger (Turner Shoa	911.6	FT
70	Lake Lure	996.4	FT
95	Upper Broad Routing	100.0	KA
220	Cliffside Steam Plant Darr	664.0	FT
440	Stice Shoals Dam	654.3	FT
525	Lower Broad Routing	100.0	KA
550	Gaston Shoals Dam	604.2	FT
600	Kings Mt. / Moss Lake	736.0	FT

No Forecasts

Conditional Forecasts

Non-conditional Forecasts

Systemwide Demand Multiplier

Use Multiplier

Multiplier Value 1

OCL Command Files

Select files to view or edit, then hit ENTER

_SafeYield_Constants.ocl
Agric_Allocation.ocl
Agric_Calculation.ocl
constants.ocl
drought_plans.ocl
Forecast-Trigger_Parms.ocl
inflows.ocl
main.ocl
return_flows.ocl
routing.ocl
udef_list.ocl

Edit Agricultural Data

Edit Notes

RUN

Run Safe Yield Analysis

View Output

Tables

Plots

Balance Sheet

Quick View

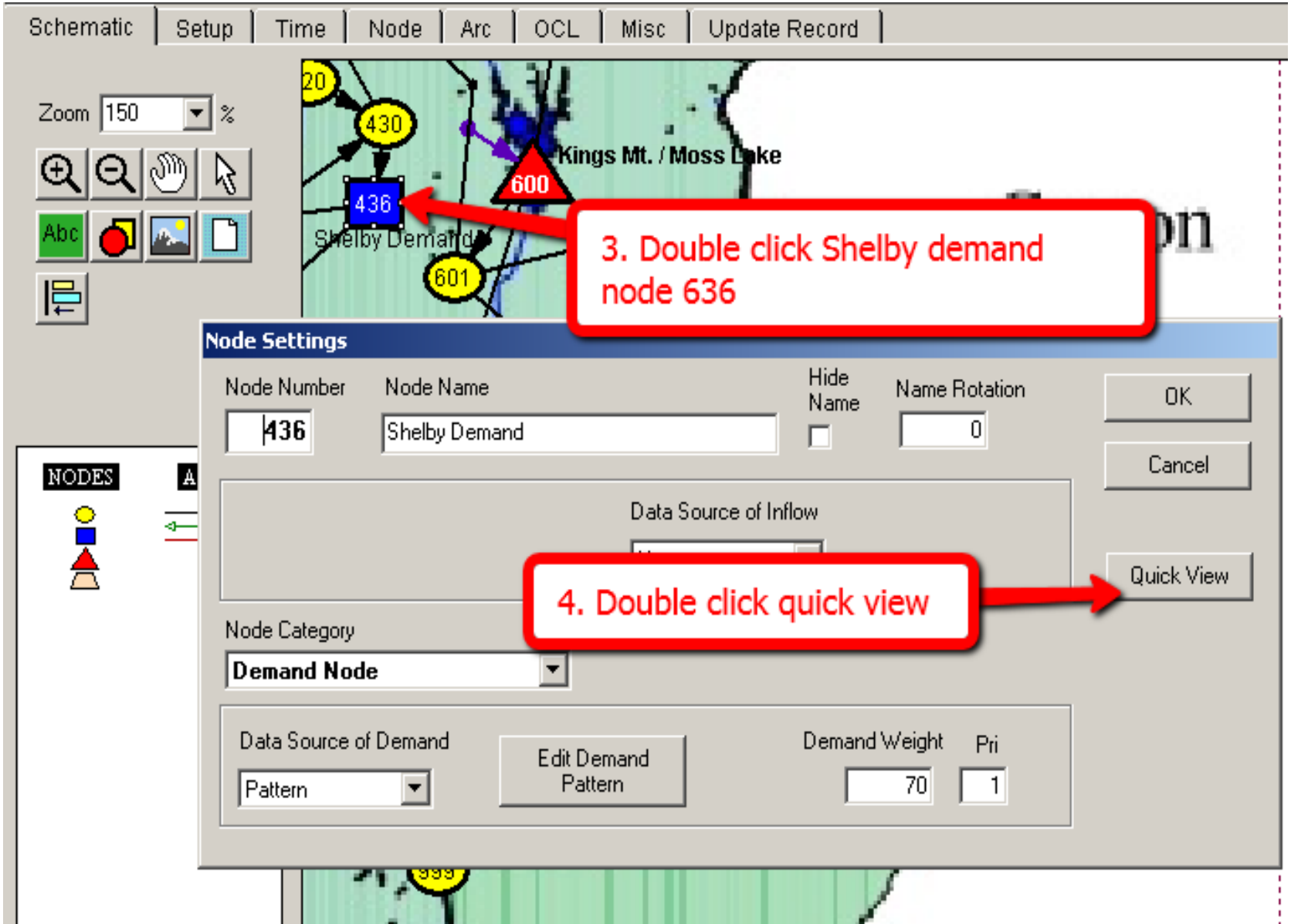
1. Click quick view

Select items for editing.

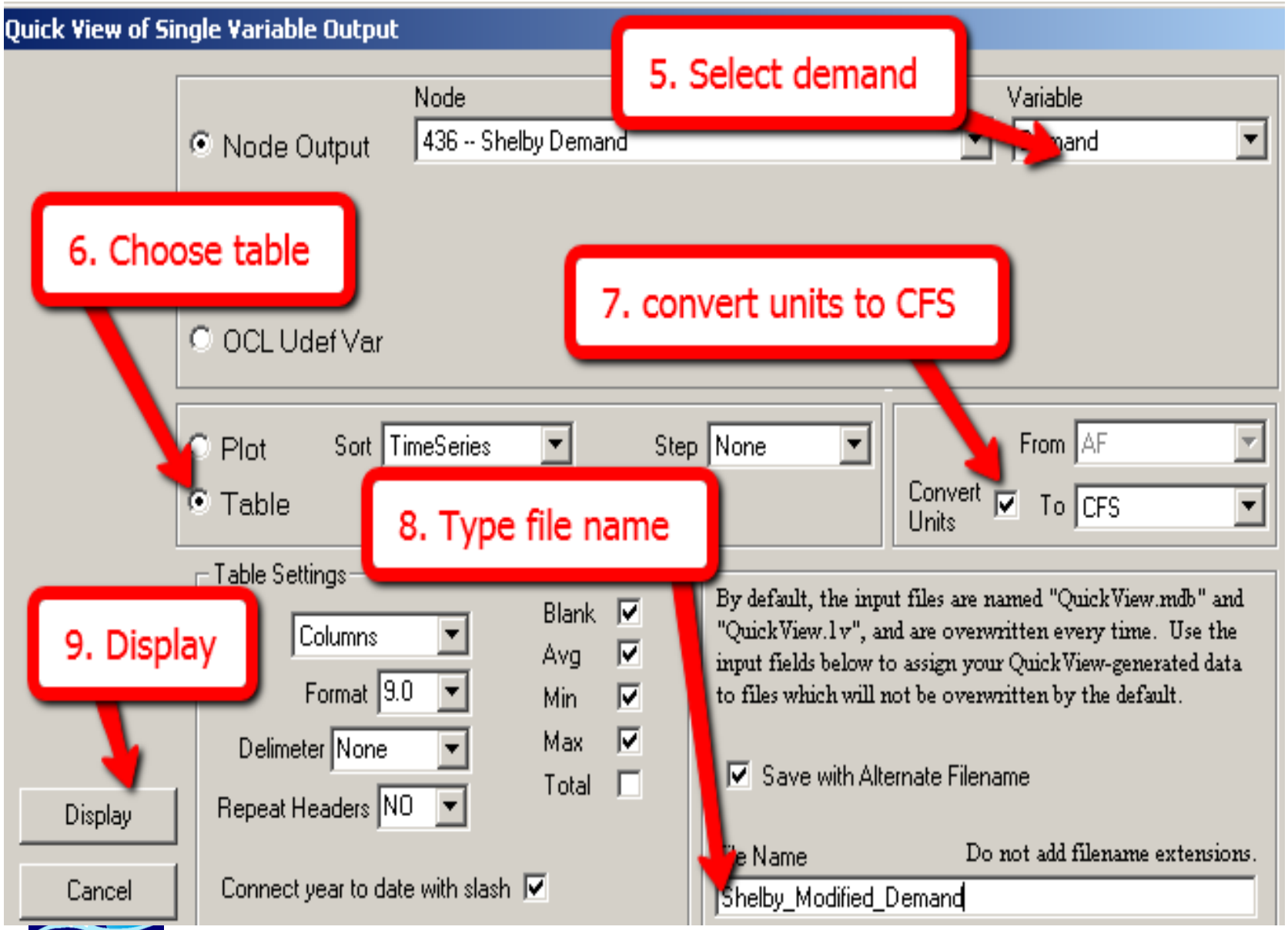
Output CURRENT

DWR Division of Water Resources

Create Run from Quick View

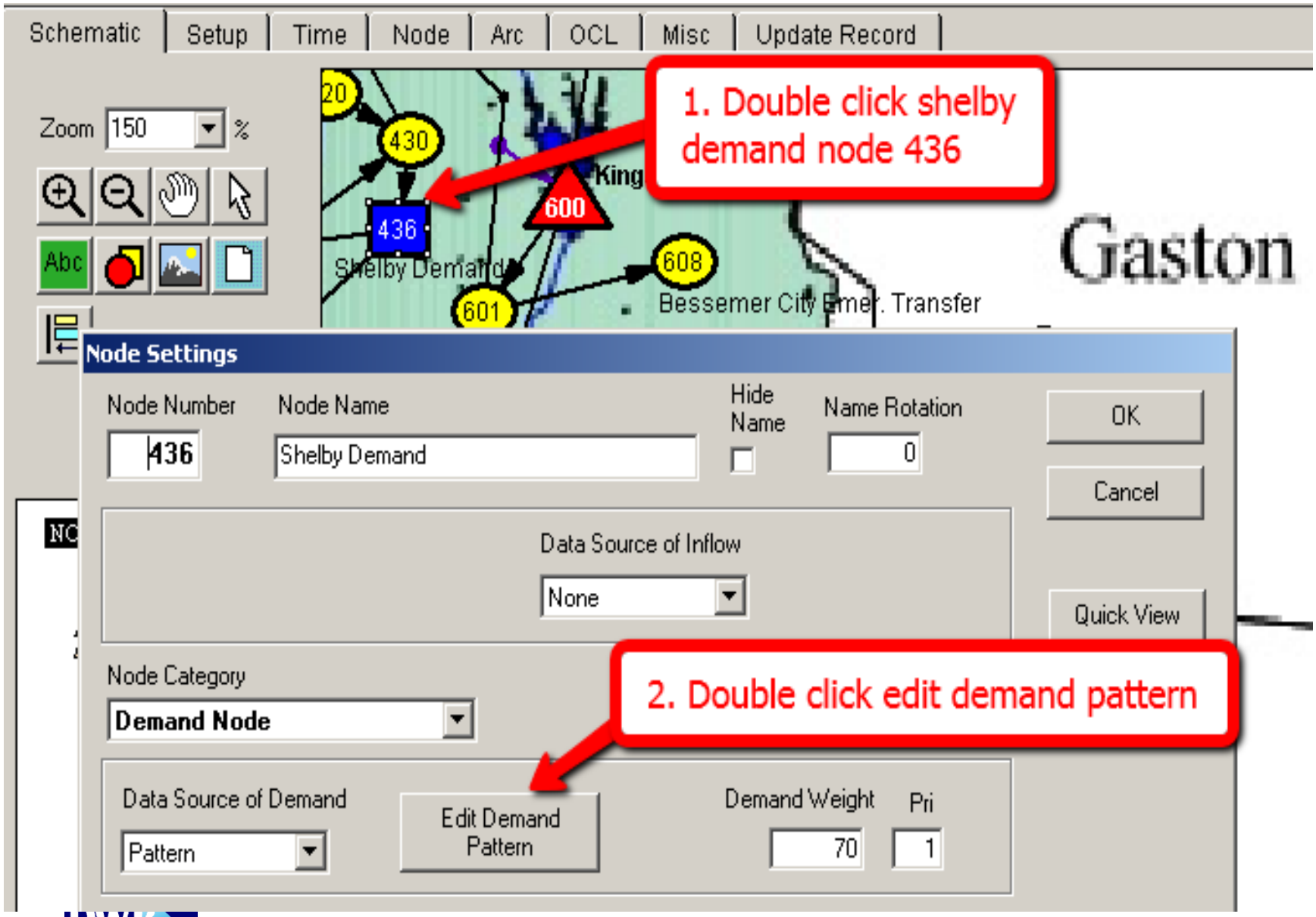


Create Run from Quick View

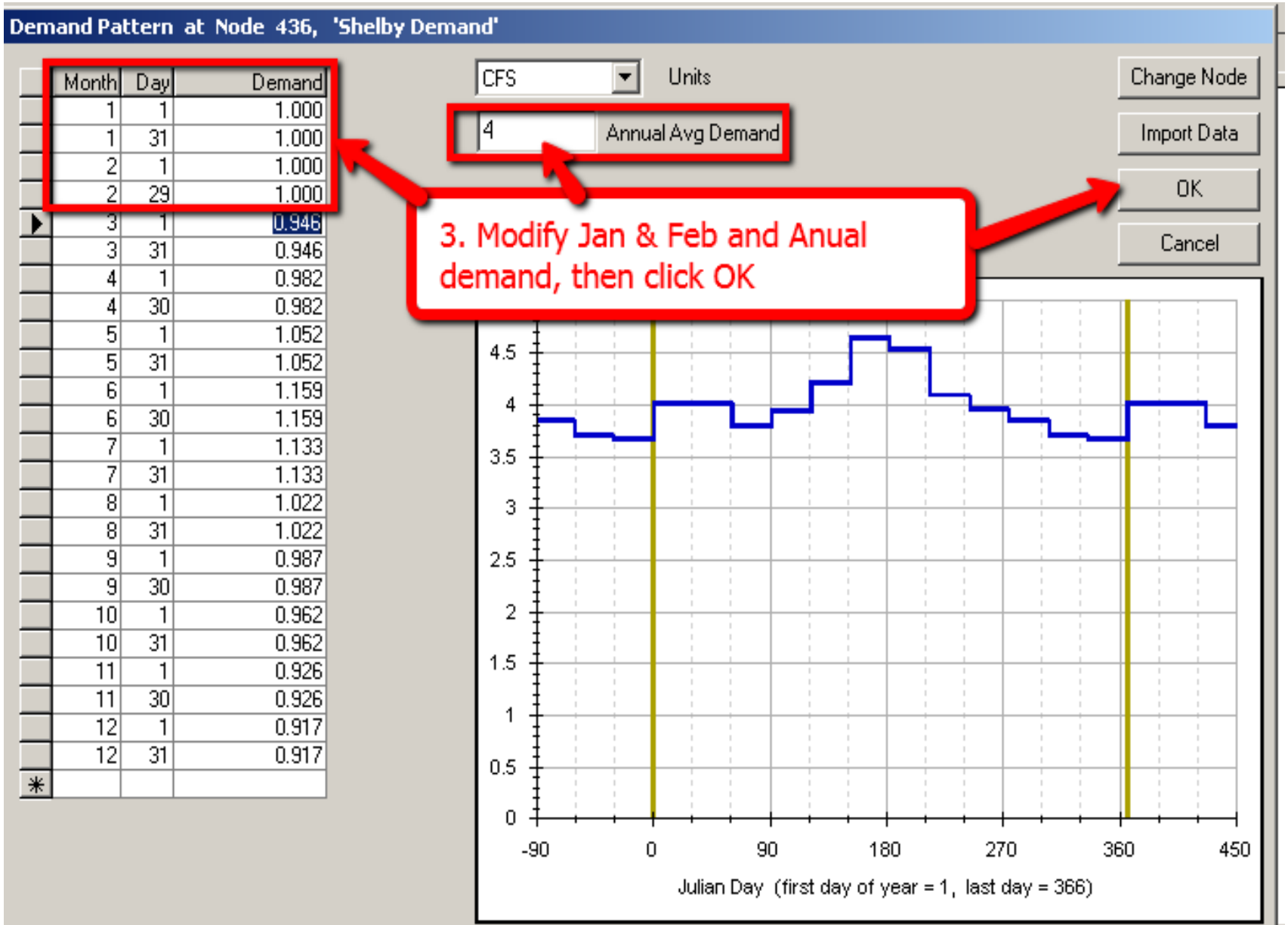


Division of Water Resources

Modify Run from Quick View

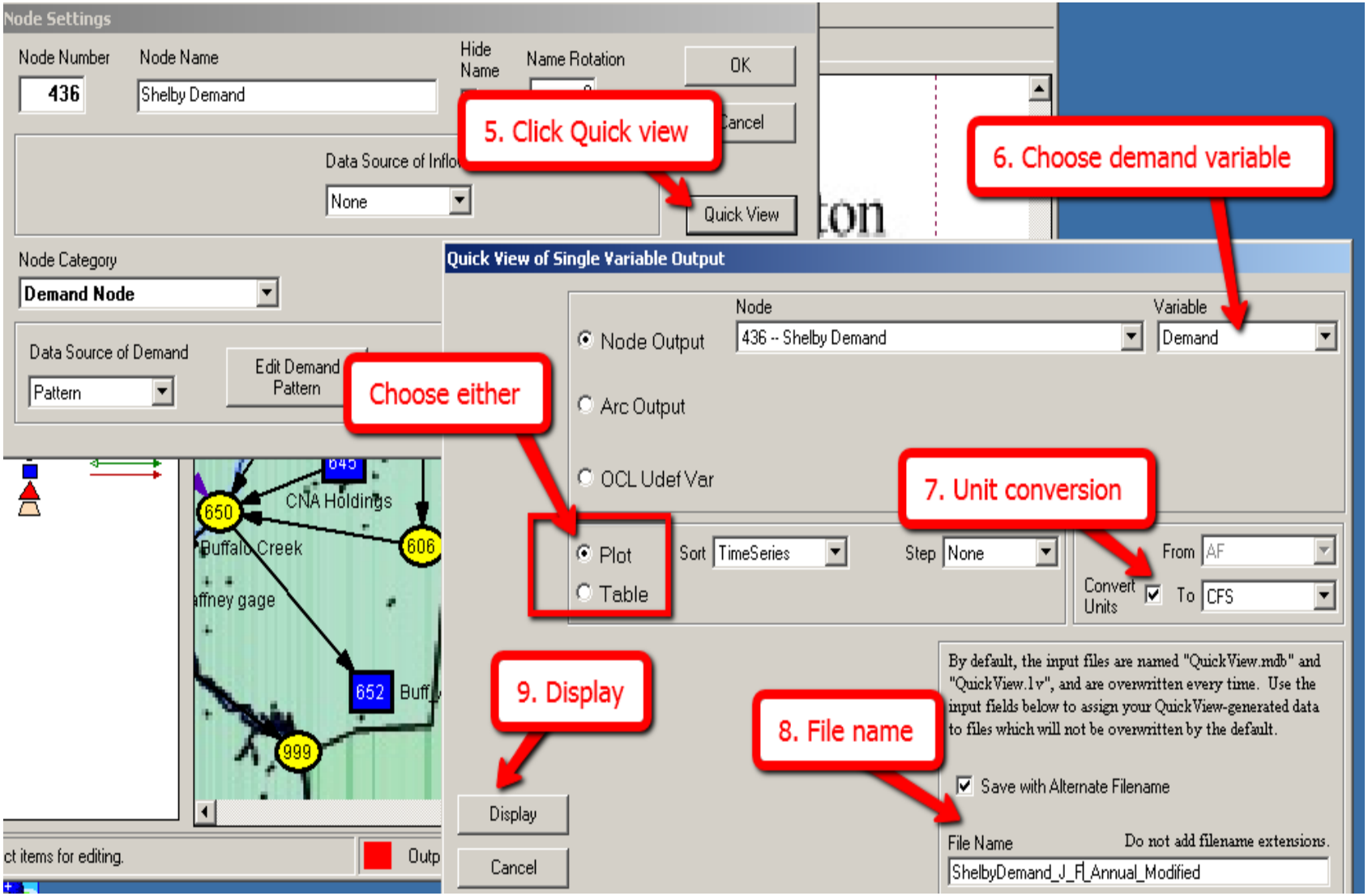


Modify Run from Quick View Cont..



Month	Day	Demand
1	1	1.000
1	31	1.000
2	1	1.000
2	29	1.000
3	1	0.946
3	31	0.946
4	1	0.982
4	30	0.982
5	1	1.052
5	31	1.052
6	1	1.159
6	30	1.159
7	1	1.133
7	31	1.133
8	1	1.022
8	31	1.022
9	1	0.987
9	30	0.987
10	1	0.962
10	31	0.962
11	1	0.926
11	30	0.926
12	1	0.917
12	31	0.917

Modify Run from Quick View Cont..



Changes Completed Run Scenario

OASIS with OCL --- Run directory: D:\Broad_users\dngandu\OASIS\Runs\Simulation\Simbase_Update_06jun2012 [Simula...

File Edit Run Output Help

Schematic | Setup | Time | Node | Arc | OCL | Misc | Update Record | OASIS with OCL --- Run directory: D:\Broad_users\dngandu

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- (•) No Forecasts
- ( ) Conditional Forecasts
- ( ) Non-conditional Forecasts

Systemwide Demand Multiplier

☐ Use Multiplier

Multiplier Value 1

OCL Command Files

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Agric_Calculation.ocl
constants.ocl
drought_plans.ocl
Forecast-Trigger_Parms.ocl
inflows.ocl
main.ocl
return_flows.ocl
routing.ocl
udef_list.ocl

Edit Agricultural Data

Edit Notes

RUN

Run Safe Yield Analysis

Plots

Balance Sheet

Quick View

9. Once all desired modifications are done, click run to execute

Select items for editing. | Output NOT CURRENT

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Completed Run

OASIS with OCL --- Run directory: D:\Broad_users\dngandu\OASIS\Runs\Simulation\Simbase_Update_06jun2012 [Simula...

File Edit Run Output Help

Schematic | Setup | Time | Node | Arc | OCL | Misc | Update Record

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_SafeYield_Constants.ocl
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constants.ocl
drought_plans.ocl
Forecast-Trigger_Parms.ocl
inflows.ocl
main.ocl
return_flows.ocl
routing.ocl
udef_list.ocl

Edit Agricultural Data

Edit Notes

RUN

Run Safe Yield Analysis

View Output

Tables

Plots

Balance Sheet

Quick View

Completed Run. Output is current!

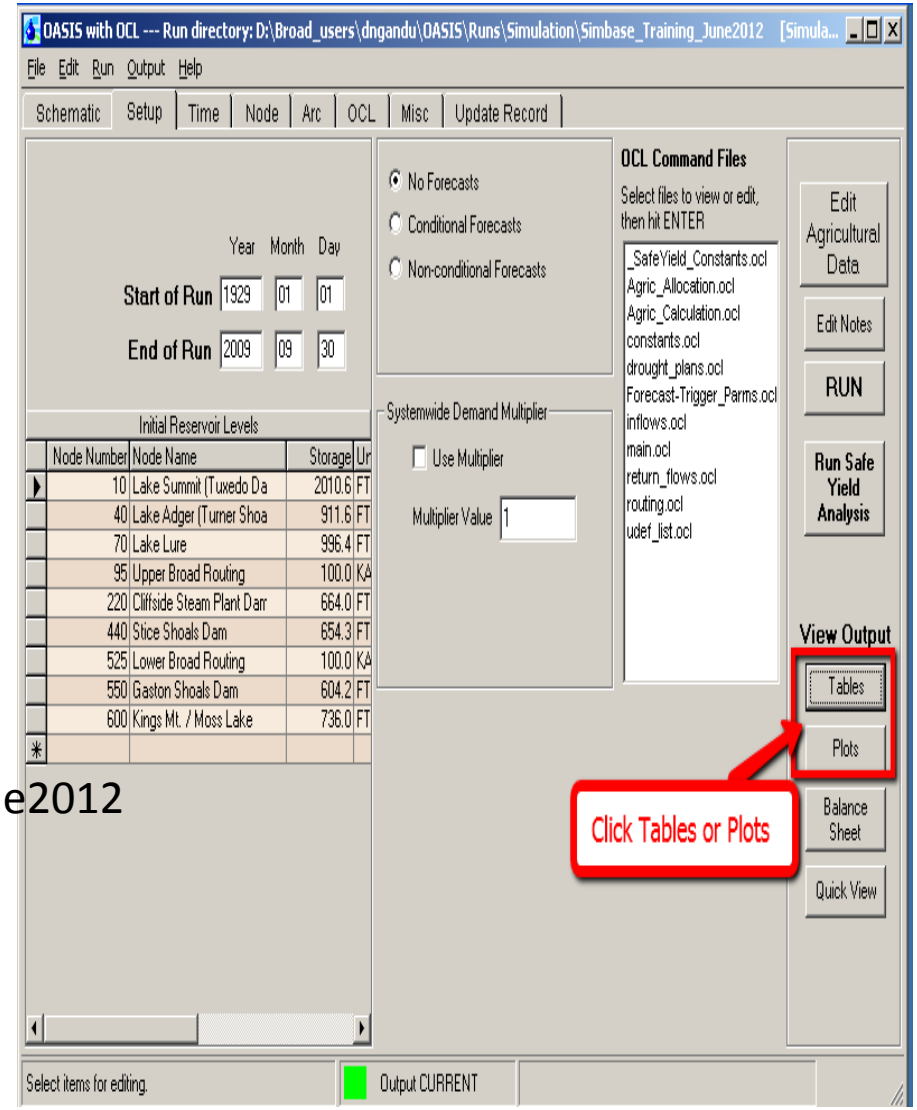
Select items for editing. | Output CURRENT

DWR Division of Water Resources

Plot of Modified Run

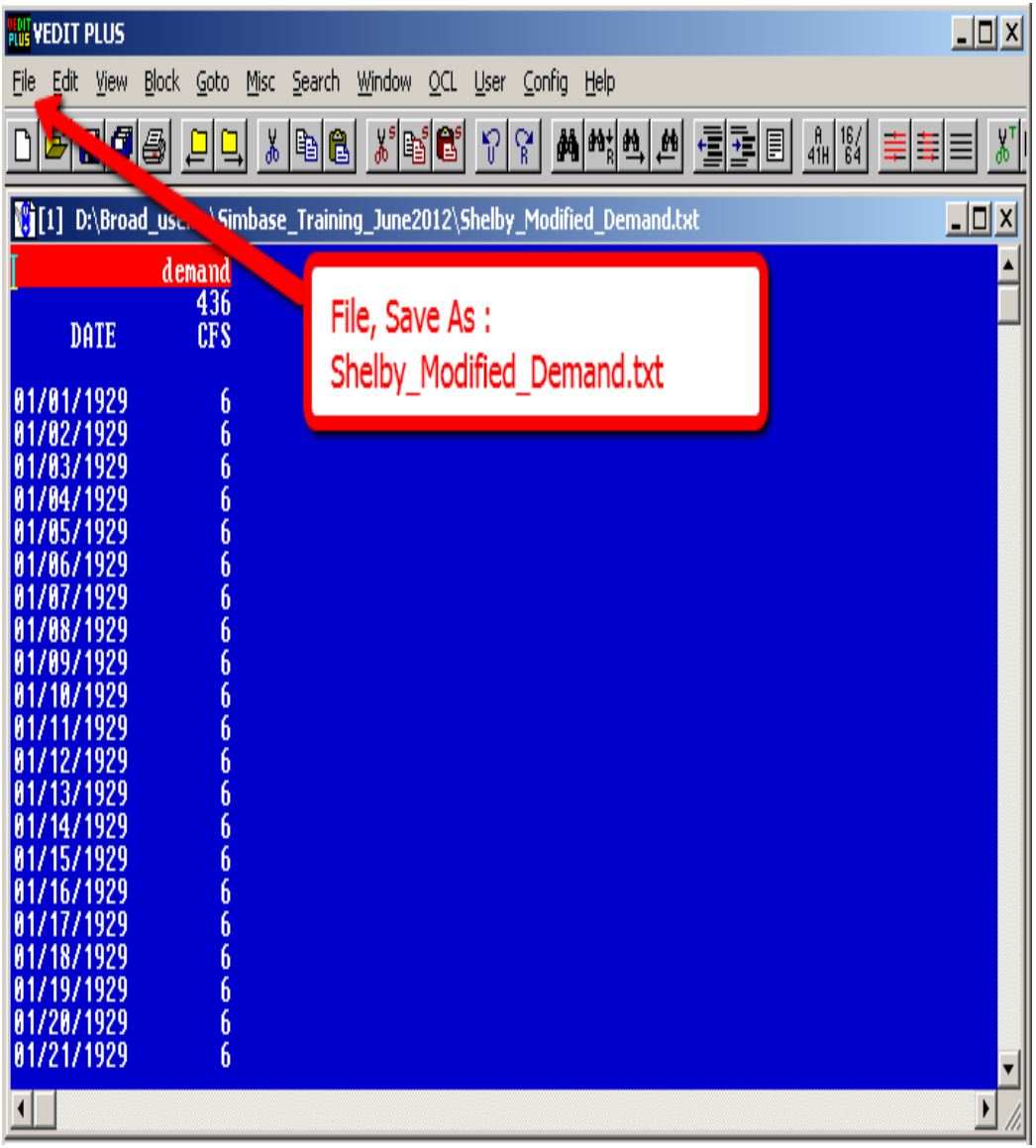
Copy Results to User's Desktop

- Open the run.
- On server Desktop
  - Broad OASIS
    - Click to continue
      - File
        - » Open Run
          - Simbase_Training_June2012
            - OK



Copy Results to User's Desktop Cont..

- Choose:
  - Simbase_Training_June2012 (Run Directory)
  - Shelby_modified_demand.1v (Table input file)
  - View Results



Copy Results to User's Desktop Cont..

On Citrix Desktop click on:

- My Computer
  - Local Desktop(D)
    - Broad _Users
      - (your name)
        - » OASIS
          - Runs
            - Simulations
              - Simbase_Training_June2012
                - Copy: Shelby_Modified_Demand.txt

Copy Results to User's Desktop Cont..

- Paste file to client V
  - Go to Local Desktop(D)
    - Client V
      - Documents and Settings
        - » Desktop – Paste
        - » Go to your desktop and open Shelby_Modified_Demand.txt

File Edit Format View Help

DATE	demand 436 CFS
01/01/1929	6
01/02/1929	6
01/03/1929	6
01/04/1929	6
01/05/1929	6
01/06/1929	6
01/07/1929	6
01/08/1929	6
01/09/1929	6
01/10/1929	6
01/11/1929	6
01/12/1929	6
01/13/1929	6
01/14/1929	6
01/15/1929	6
01/16/1929	6
01/21/1929	6
01/22/1929	6
01/23/1929	6
01/24/1929	6
01/25/1929	6
01/26/1929	6
01/27/1929	6
01/28/1929	6
01/29/1929	6
01/30/1929	6
01/31/1929	6
02/01/1929	6
02/02/1929	6

Shelby_Modified_Demand

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Agenda

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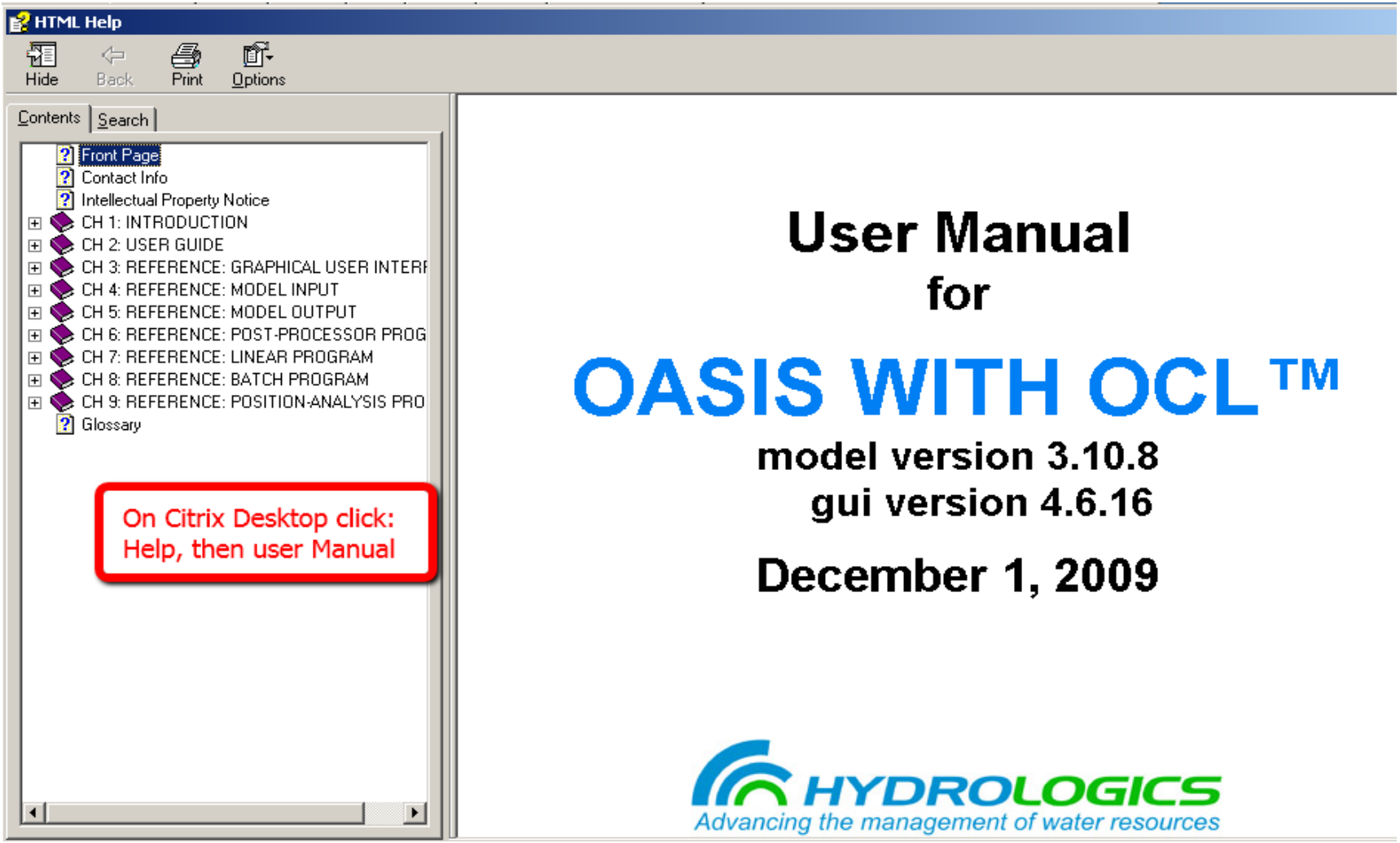
- ***Online OASIS Help***
- Open Session Discussion

DWR Division of Water Resources

Online Help



DWR
Division of Water Resources

Questions?

- **Broad Model Website -** http://www.ncwater.org/Data_and_Modeling/Broad/
- **Broad Model Report -** http://www.ncwater.org/Data_and_Modeling/Broad/background/03_BRBM_Modeling_the_Broad_River_Basin_Operations_with_OASIS.pdf
- **Model Training Signup -** http://www.ncwater.org/Data_and_Modeling/Broad/training.php

Contact Information

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Tom.Fransen@ncdenr.gov
919-707-9015