

Water Accounting

Enhancements and Network Visualization Plan

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Account Priority Date

- Account priority date
 - Optional attribute to specify the priority of a storage or diversion account
 - Earlier date specifies a higher priority
 - Multiple (1..24) priorities per date (with 1 the highest priority)
 - Set through Accounts Manager dialog or Account Configuration dialog
 - Accessed through Rpl predefined functions

Account Priority Date, p. 2

■ Accounts Manager Dialog

Water Accounts Manager

File Account System View

Storage Accounts
 Diversion Accounts
 PassThrough Accounts

NONE

NONE

January 1, 1880 2:00

Object ▲	Account Name	Account Type	Water Type	Water Owner	Priority Date
BigRes	City Water	Storage	NONE	NONE	Jan. 1, 1880 1:00
BigRes	Farm Water	Storage	NONE	NONE	

Account Priority Date, p. 3

■ Account Configuration Dialog

Modify Account: Farm Water

Farm Water
BigRes --
StorageAccount

General | Methods | Supplies | Demands | Units

Acct Name: Farm Water

Object: BigRes

Type: StorageAccount

Water Type: <no watertypes are defined in the accounting system>

Water Owner: <no waterowners are defined in the accounting system>

Begin Accrual: 12:00 February 25, 2005

Rent Return: 12:00 February 26, 2005

Priority Date: January 1, 1880 2 Has Priority Date

System Custom

OK Apply Copy Cancel

Account Priority Date, p. 4

- Rpl predefined functions modified to return account names in ascending priority date order:
 - AccountNamesByAccountType
 - AccountNamesByWaterType
 - AccountNamesByWaterOwner
 - AccountNamesFromObjReleaseDestination
 - AccountNamesFromObjReleaseDestinationIntra

Account Priority Date, p. 5

- AccountPriorityDate(
 STRING AccountName)

Accepts one STRING argument, an account name, and returns a DATETIME, the account's priority date.

Fails if the account doesn't exist or doesn't have a priority date.

Account Priority Date, p. 6

- AccountNameFromPriorityDate(
DATETIME PriorityDate)

Accepts one DATETIME argument, a priority date, and returns a STRING, the name of the account with the priority date.

Fails if no account has the priority date.

Automated PassThrough Account Creation

Convenience function to create a linked sequence of PassThrough Accounts between designated Accounts on designated Simulation Objects.

Physical links must first be defined.

Supplies will be created between the selected Accounts and all created Accounts.

More information is available in RiverWare Online Help.

PassThroughAccounts will be created and linked between the two specified Accounts on all intervening objects.

Upstream

Obj Type:
Object:
Account:

Downstream

Obj Type:
Object:
Account:

New Accounts Properties

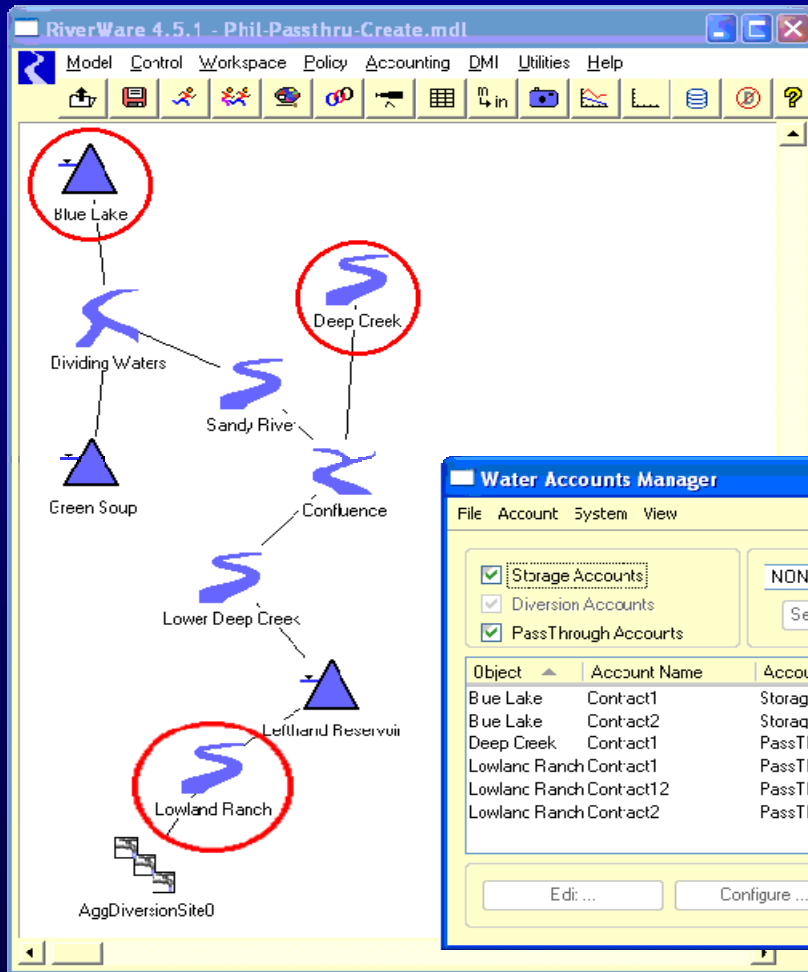
Name:
Water Type:
Water Owner:

New Supplies Properties

Release Type:
Destination:

Create 5; Link 7 Accounts:
1) Blue Lake^Contract1
2) Dividing Waters^Contract12 [Create]
3) Sandy River^Contract12 [Create]
4) Confluence^Contract12 [Create]
5) Lower Deep Creek^Contract12 [Create]
6) Lefthand Reservoir^Contract12 [Create]
7) Lowland Ranch^Contract12

Automated PassThrough Account Creation, p. 2



First create Storage or PassThrough accounts on uppermost and lowermost Simulation Objects.

Water Accounts Manager

File Account System View

Storage Accounts NONE NONE December 14, 2003 1:00
 Diversion Accounts Set Water Type Set Water Owner Set Priority Date Clear
 PassThrough Accounts

Object	Account Name	Account Type	Water Type	Water Owner	Priority Date
Bue Lake	Contact1	Storage	Alpha Water	Guldenstern	
Bue Lake	Contact2	Storage	Beta Water	Rosencrantz	
Deep Creek	Contact1	PassThrough	Alpha Water	Guldenstern	
Lowlanc Ranch	Contact1	PassThrough	Alpha Water	Guldenstern	
Lowlanc Ranch	Contact12	PassThrough	Delta Water	Ccnsortium	
Lowlanc Ranch	Contact2	PassThrough	Beta Water	Rosencrantz	

Buttons: Edit ... Configure ... Open Object ... Delete Close

Automated PassThrough Account Creation, p. 3

“Create PassThrough Accounts” dialog available from either:

- The Water Accounts Manager:
Account >> Create >> PassThrough Accounts ...
- An Open Object dialog box:
Account >> Create >> PassThrough Accounts ...

Steps:

- Select uppermost (“Upstream”) Object / Account
- Select lowermost (“Downstream”) Object / Account
- Select New Accounts Properties: Name / Water Type / Water Owner ... either custom entry and selection, or use properties of Upstream or Downstream account.
- Select New Supplies Properties: Release Type / Destination.
- If a valid account creation path exists, OK button is active.

Create PassThrough Accounts

PassThrough Accounts will be created and linked between the two specified Accounts on all intervening objects.

Upstream

Obj Type: StorageReservoir

Object: Blue Lake

Account: Contract1

Downstream

Obj Type: Reach

Object: Lowland Ranch

Account: Contract12

New Accounts Properties

Name: Contract12

Water Type: Delta Water

Water Owner: Consortium

Use Upstream Downstream

New Supplies Properties

Release Type: Contract

Destination: Agriculture2

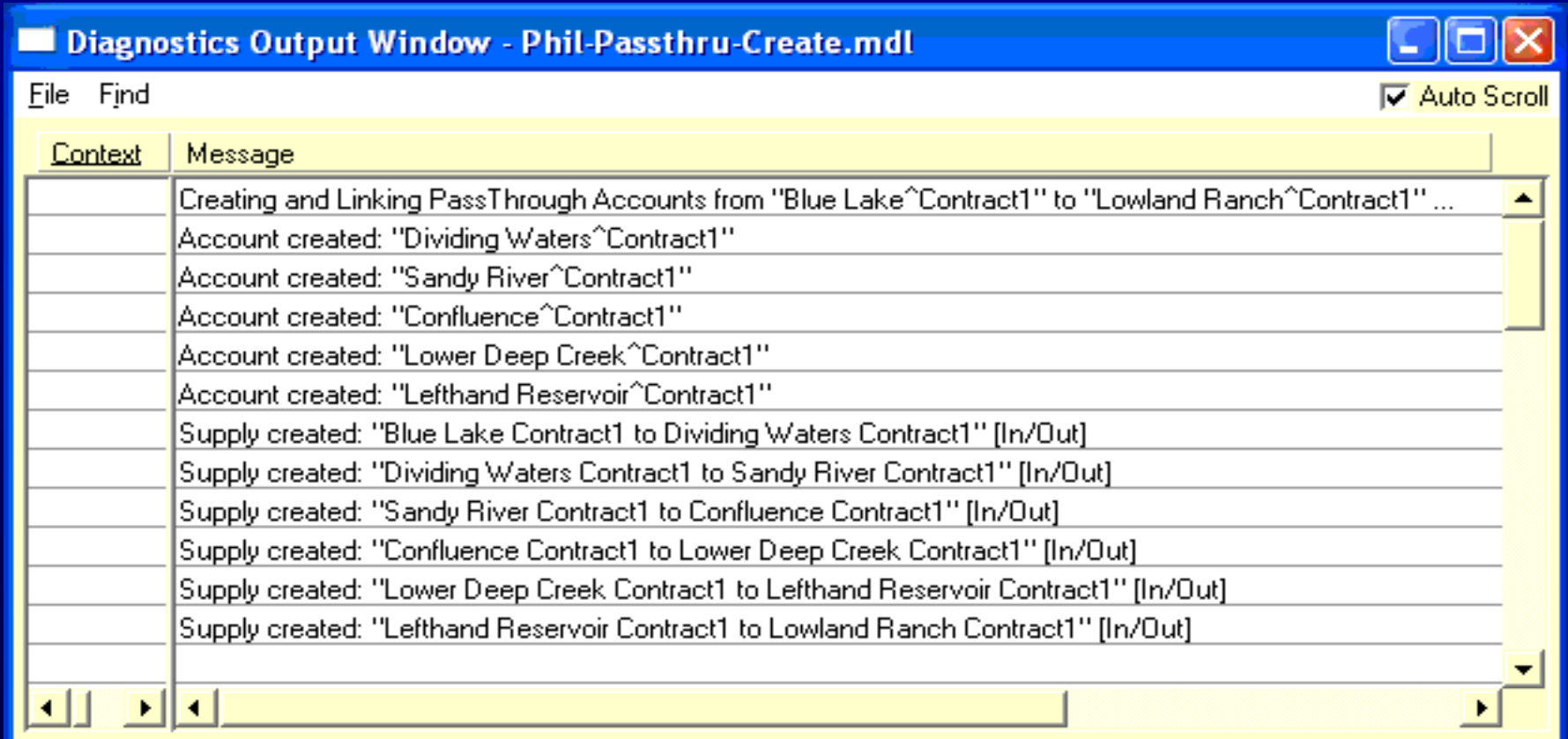
Create 5; Link 7 Accounts:

- 1) Blue Lake~Contract1
- 2) Dividing Waters^Contract12 [Create]
- 3) Sandy River^Contract12 [Create]
- 4) Confluence~Contract12 [Create]
- 5) Lower Deep Creek^Contract12 [Create]
- 6) Lefthand Reservoir^Contract12 [Create]
- 7) Lowland Ranch^Contract12

OK Apply Close

Automated PassThrough Account Creation, p. 4

Creation results are reported in the Diagnostic Output Window:



The screenshot shows a window titled "Diagnostics Output Window - Phil-Passthru-Create.mdl" with a menu bar containing "File" and "Find", and a checked "Auto Scroll" option. The main area is a table with two columns: "Context" and "Message".

Context	Message
	Creating and Linking PassThrough Accounts from "Blue Lake^Contract1" to "Lowland Ranch^Contract1" ...
	Account created: "Dividing Waters^Contract1"
	Account created: "Sandy River^Contract1"
	Account created: "Confluence^Contract1"
	Account created: "Lower Deep Creek^Contract1"
	Account created: "Lefthand Reservoir^Contract1"
	Supply created: "Blue Lake Contract1 to Dividing Waters Contract1" [In/Out]
	Supply created: "Dividing Waters Contract1 to Sandy River Contract1" [In/Out]
	Supply created: "Sandy River Contract1 to Confluence Contract1" [In/Out]
	Supply created: "Confluence Contract1 to Lower Deep Creek Contract1" [In/Out]
	Supply created: "Lower Deep Creek Contract1 to Lefthand Reservoir Contract1" [In/Out]
	Supply created: "Lefthand Reservoir Contract1 to Lowland Ranch Contract1" [In/Out]

Network Visualization

- Accounting Network visualized on the workspace
- Dynamic level-of-detail exploration
- Possibly integrated with the current simulation object schematic or an independent "view" of the model

Network Visualization Requirements

- Graphical Representation of:
 - Accounts & their associations with simulation objects
 - Supplies (& demands)
 - Exchanges
 - Release types
 - Water types
 - Water owners

Network Visualization Requirements (cont.)

- Ability to hide/show accounts by:
 - Accounts type
 - Supply type
 - Release type
 - Water type
 - Water owner
- Ability to show ultimate flow of paper water even when intermediate accounts have been hidden

Network Visualization Requirements (cont.)

- User interaction features shall include:
 - Ability to create/delete accounts
 - Ability to edit accounts
 - Ability to create/delete supplies
 - Ability to print & export snapshots
 - Ability to control fonts, colors, scale