

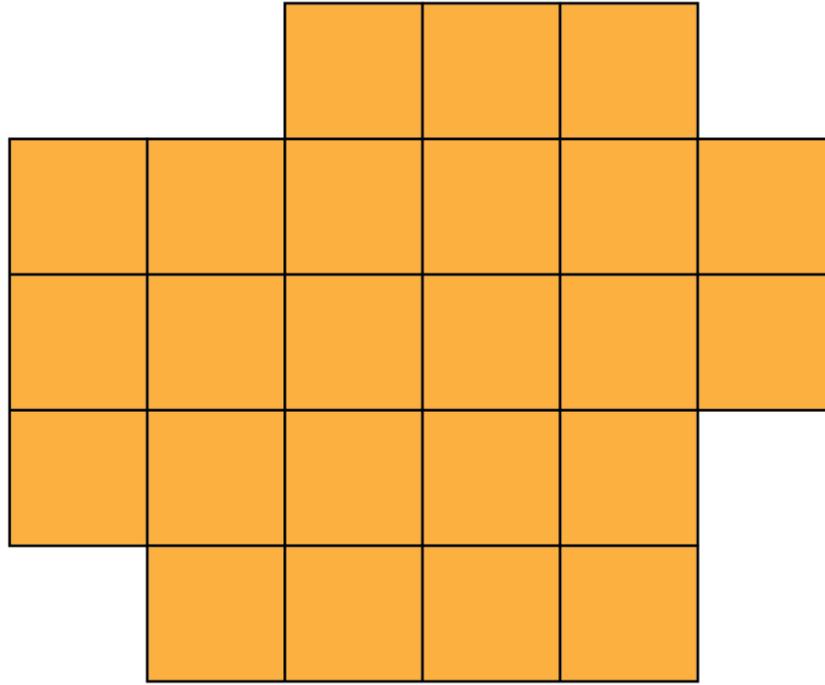
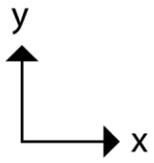
# Wood River Valley Model Construction Update

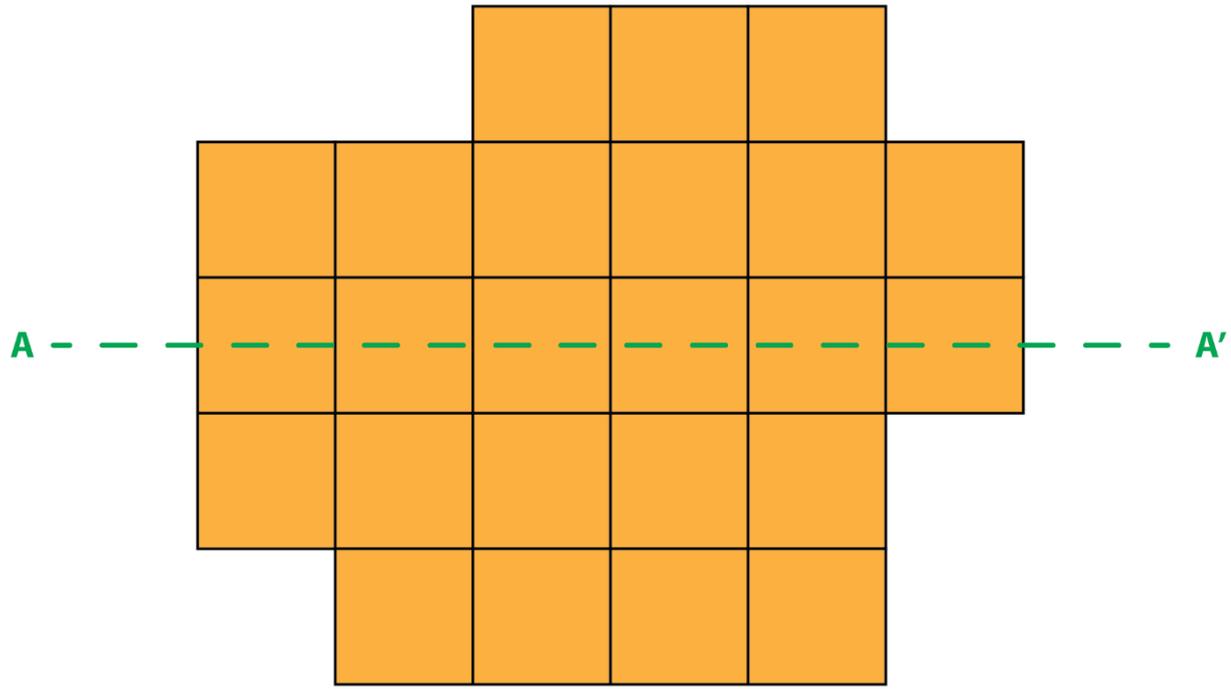
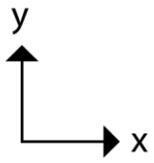
Jason C. Fisher

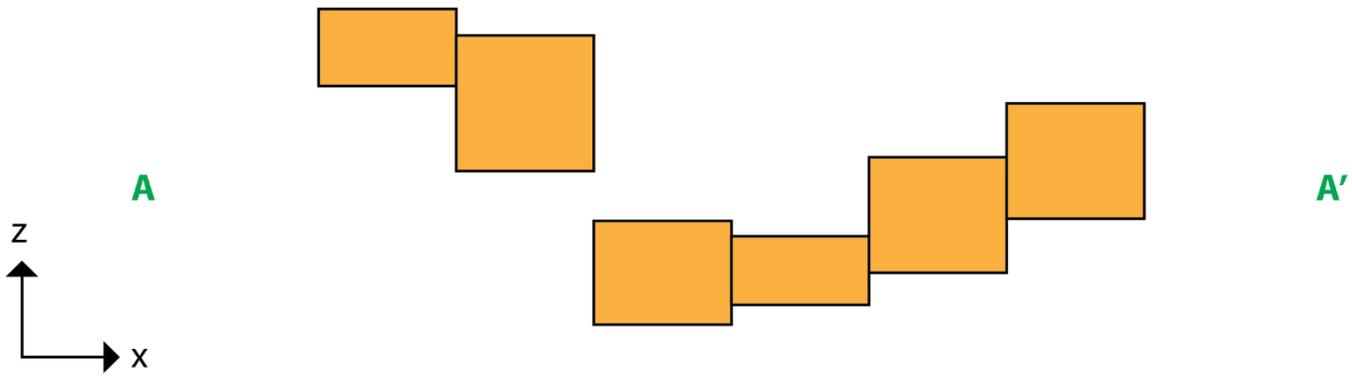
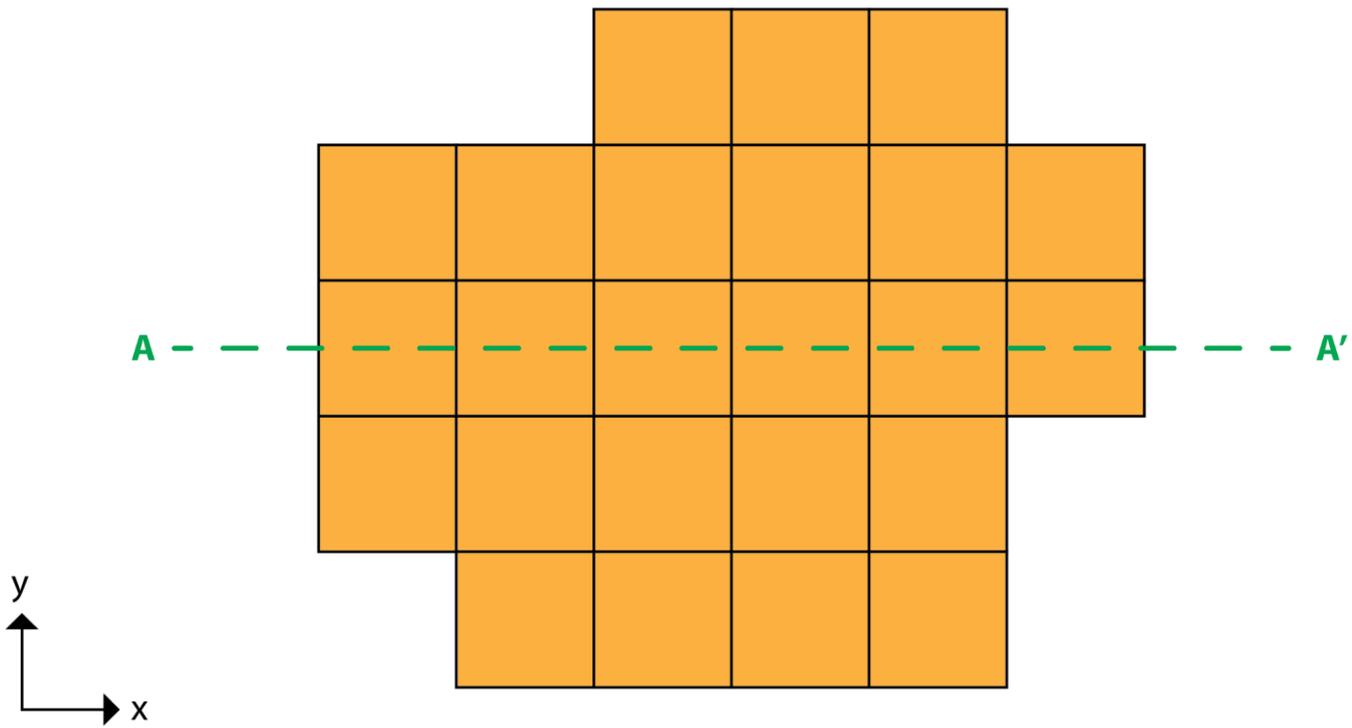
# PROVISIONAL: FOR INFORMATIONAL PURPOSES ONLY

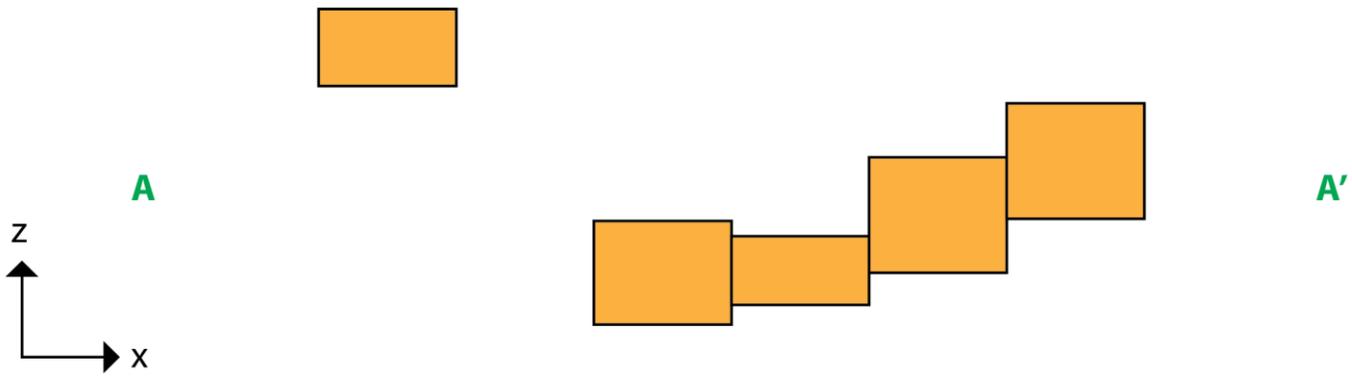
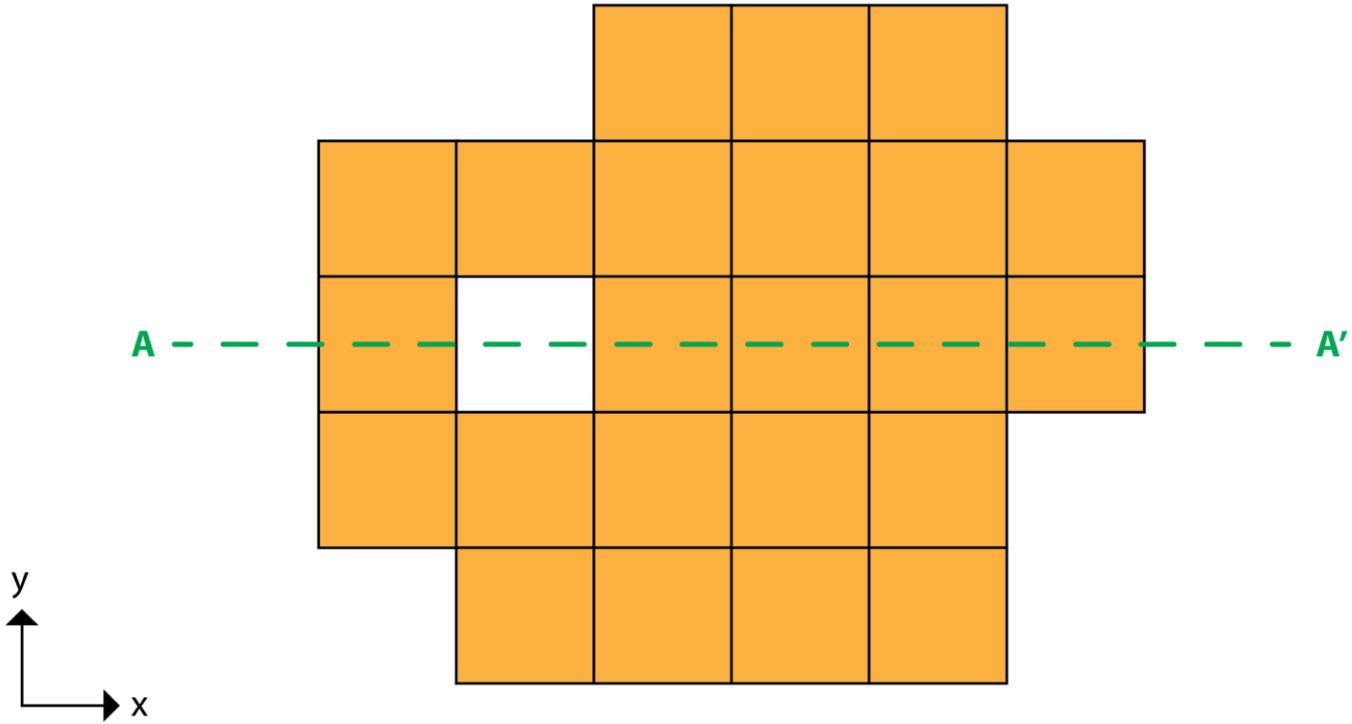
These slides were presented at the Wood River Valley Modeling Technical Advisory Committee meeting Thursday, 8/12/2014, 10am-3pm at the Community Campus, Black Box Room, in Hailey. Taken outside the context of the original presentation, these slides may not provide a complete or accurate representation of the speaker's intent.

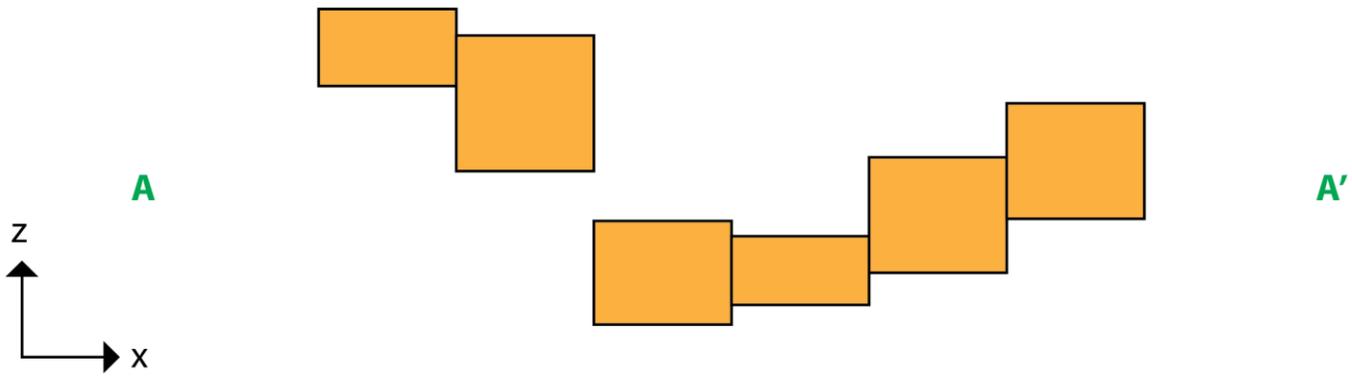
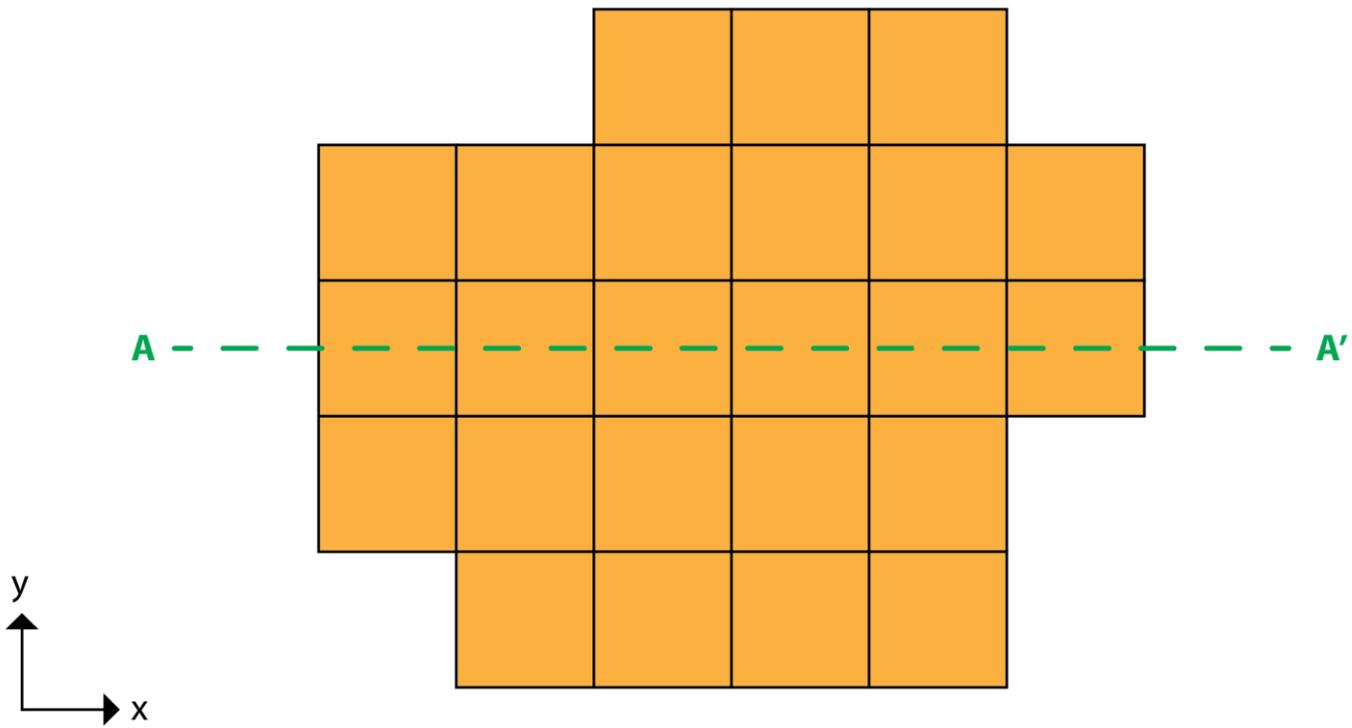
# **Vertical Overlap Between Adjacent Model Cells**

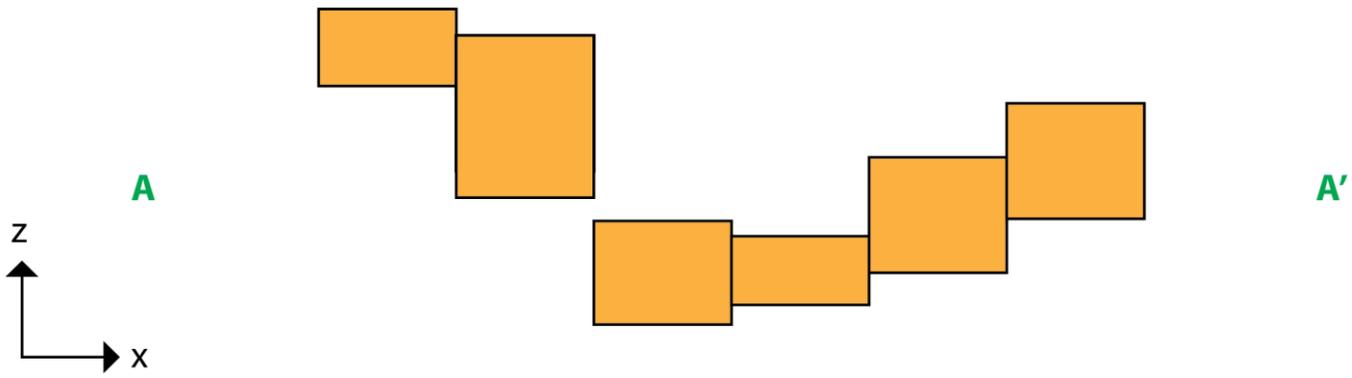
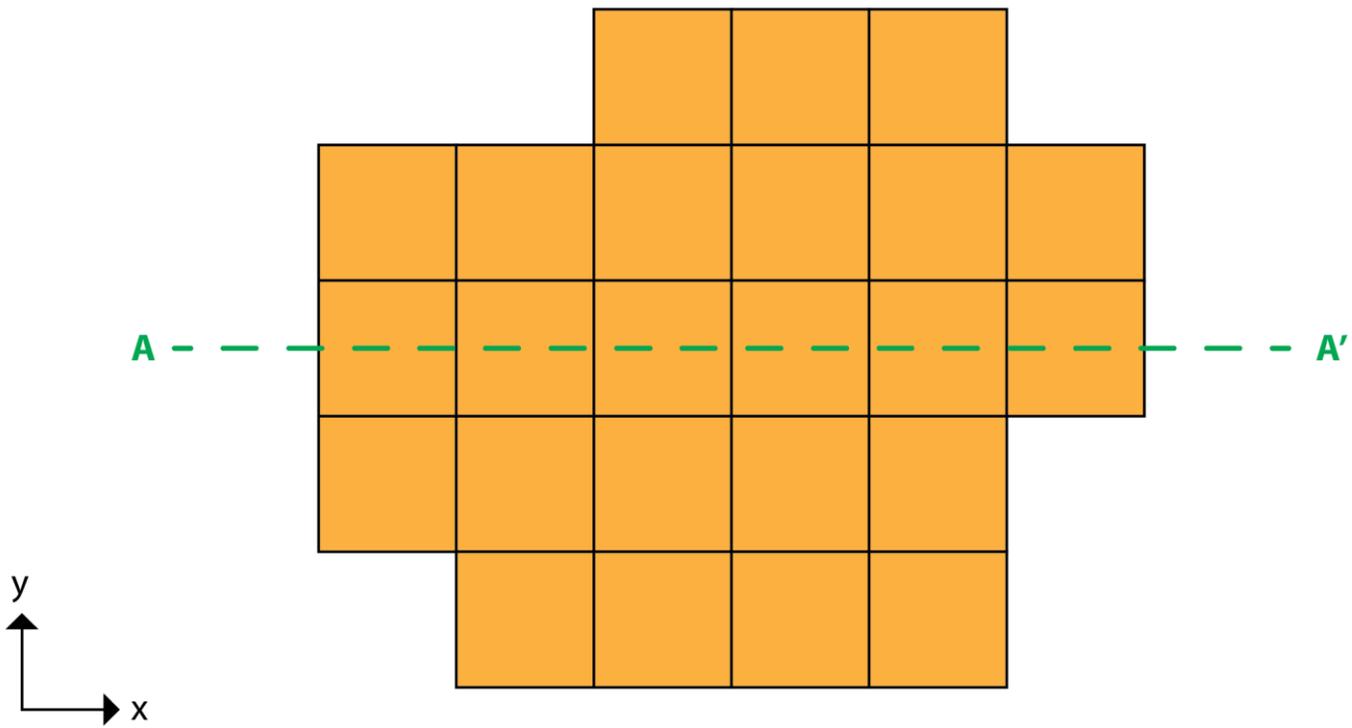


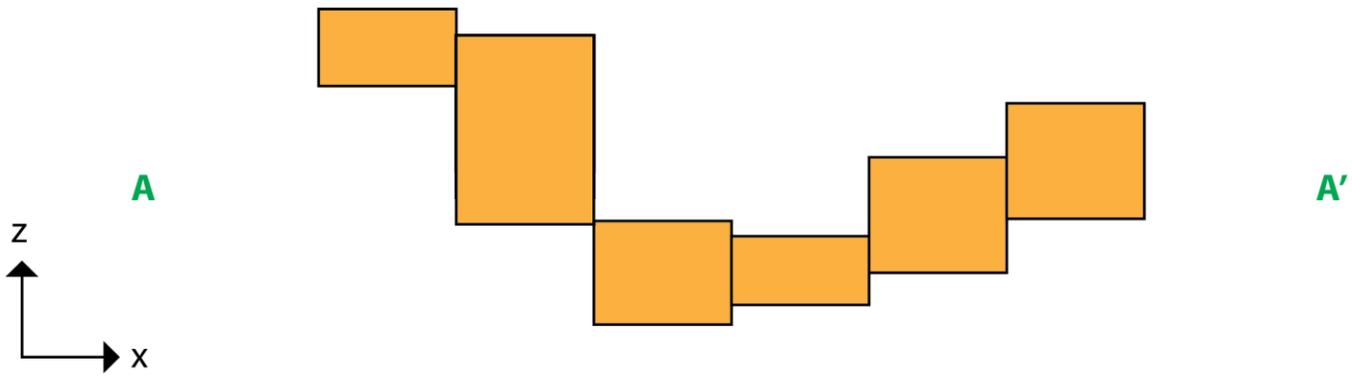
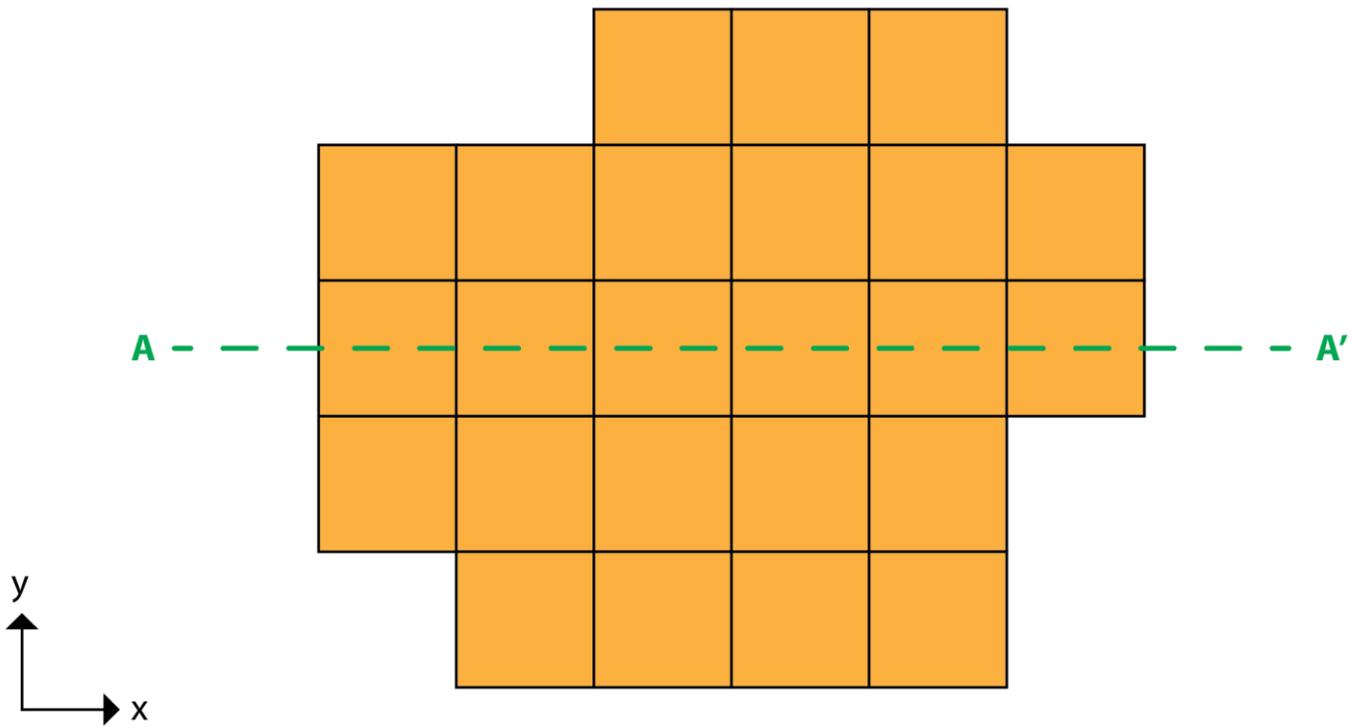


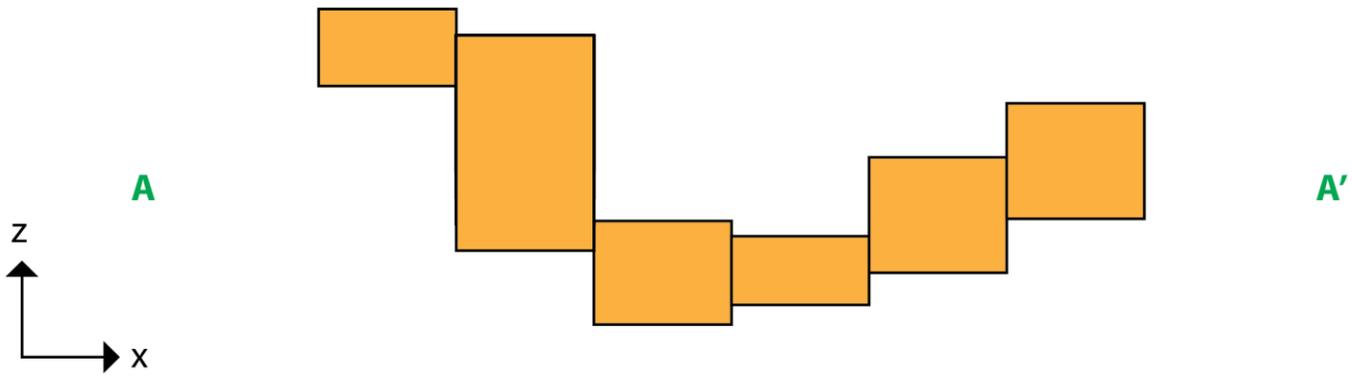
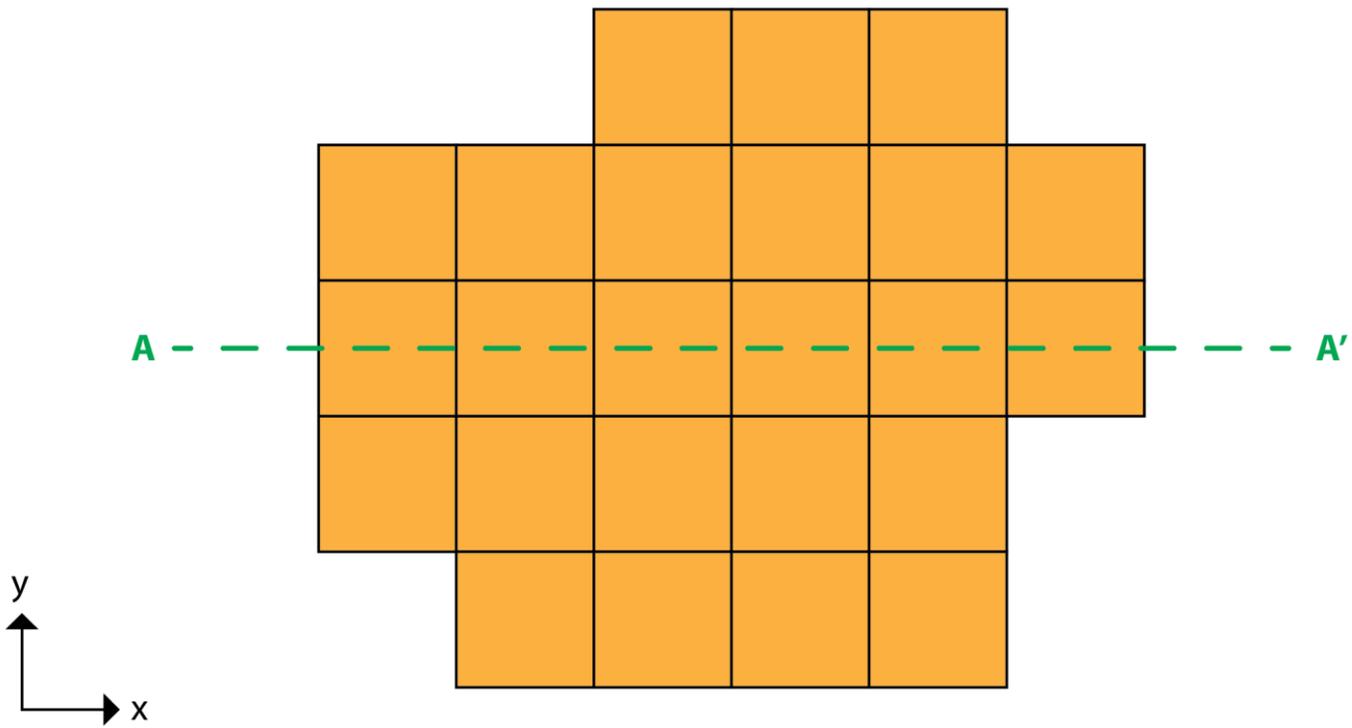


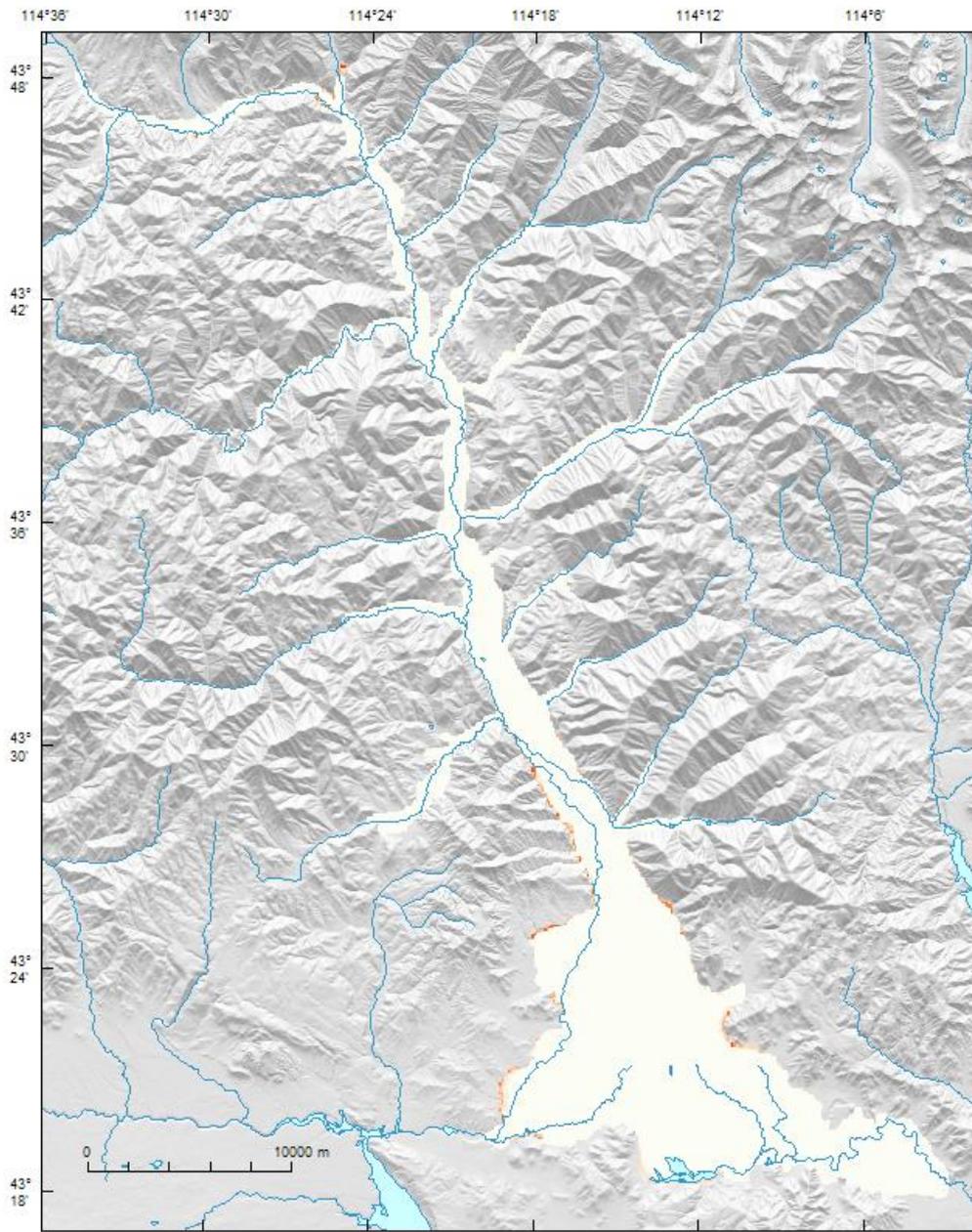






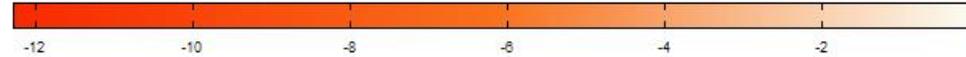




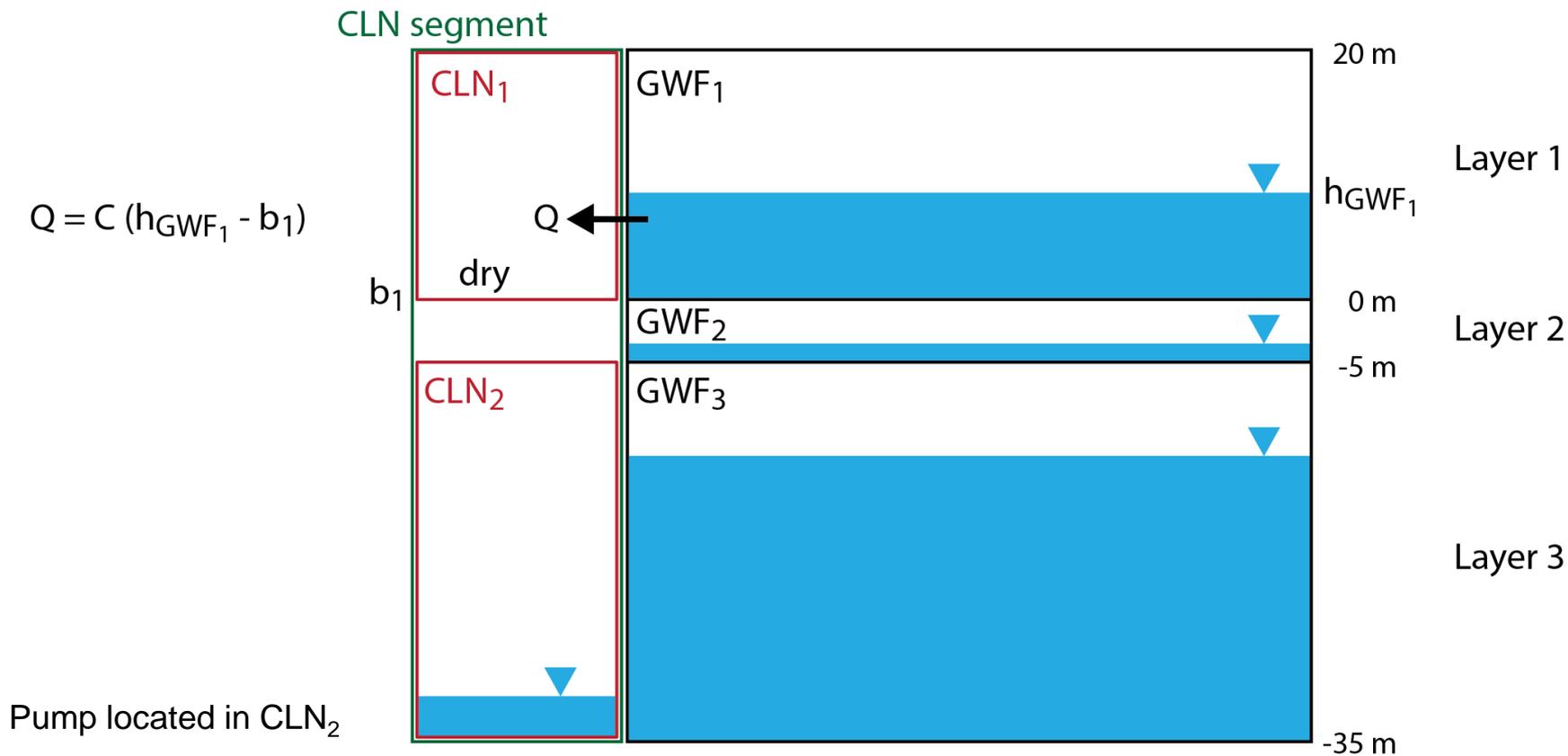


+proj=tmerc +lat\_0=42 +lon\_0=-114 +k=0.9996 +x\_0=2500000 +y\_0=1200000 +datum=NAD83 +units=m +no\_defs +ellps=GRS80 +towgs84=0,0,0

Adjustment to bedrock bottom elevations in meters.



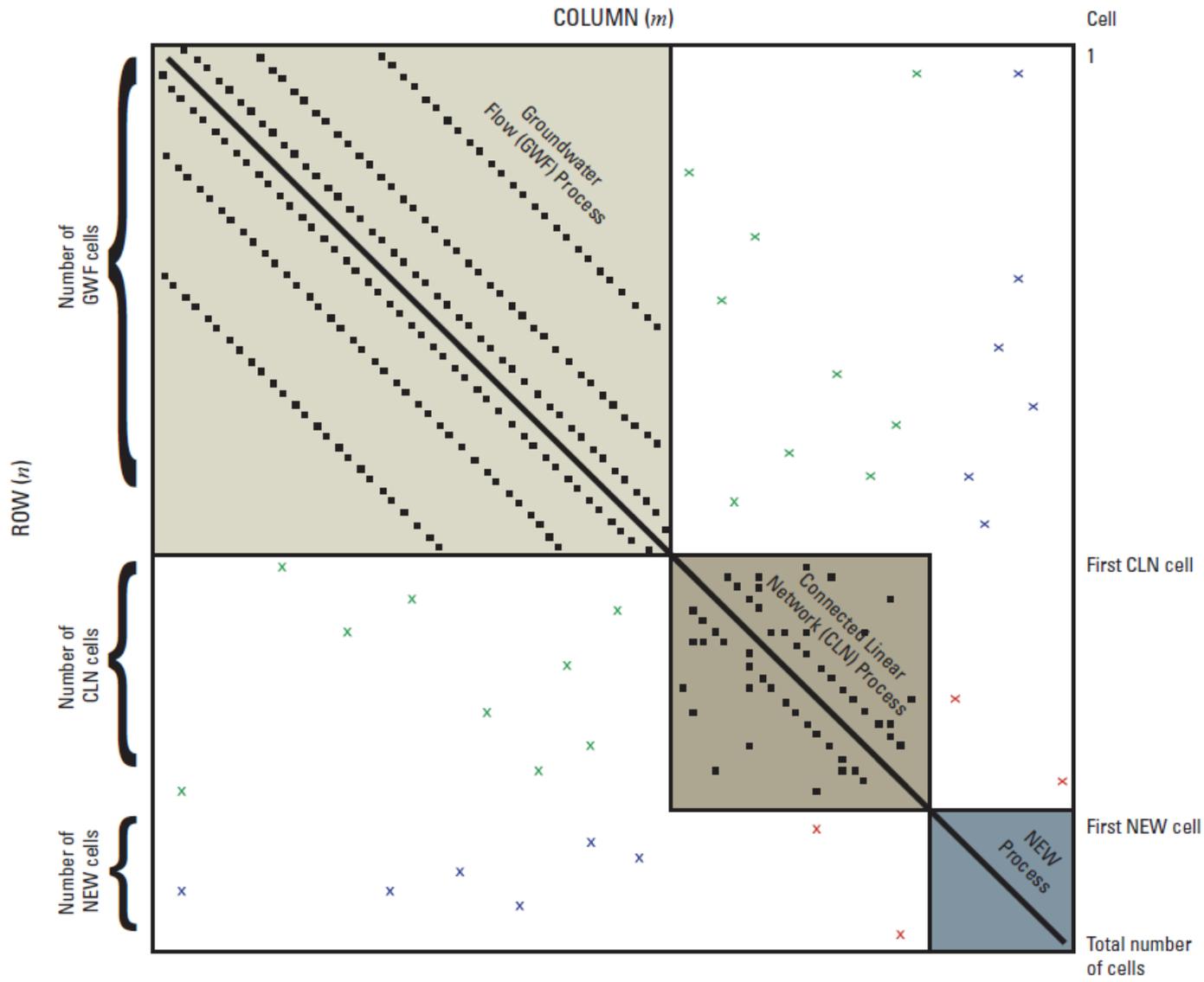
**Use of Connected Linear  
Network (CLN) and Well (WEL)  
Packages for Pumping**



# Failure to Converge

**Failure to Converge**

**3+ hours**



**EXPLANATION**

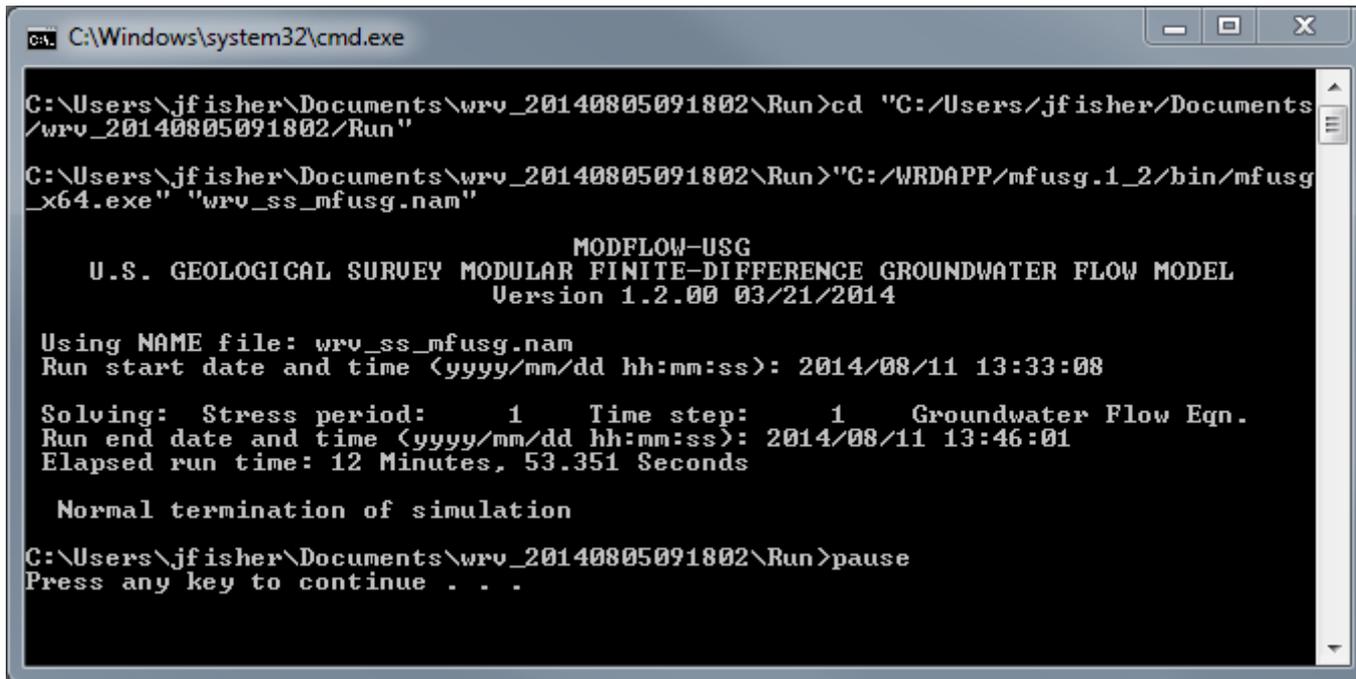
-  Main diagonal
-  Connection between two Cells in same process
-  Connection between cells in GWF and CLN processes
-  Connection between cells in GWF and NEW processes
-  Connection between cells in CLN and NEW processes

# **The Well (WEL) Package is Now Used to Simulate Pumping**

# **The Well (WEL) Package is Now Used to Simulate Pumping**

**Assumption: pumped groundwater from  
a well is simulated as discharge from  
the lowest model cell in contact with the  
wells open interval.**

# Steady-State Conditions with All Aquifer Components



```
C:\Windows\system32\cmd.exe
C:\Users\jfisher\Documents\wrv_20140805091802\Run>cd "C:/Users/jfisher/Documents/wrv_20140805091802/Run"
C:\Users\jfisher\Documents\wrv_20140805091802\Run>"C:/WRDAPP/mfusg.1_2/bin/mfusg_x64.exe" "wrv_ss_mfusg.nam"

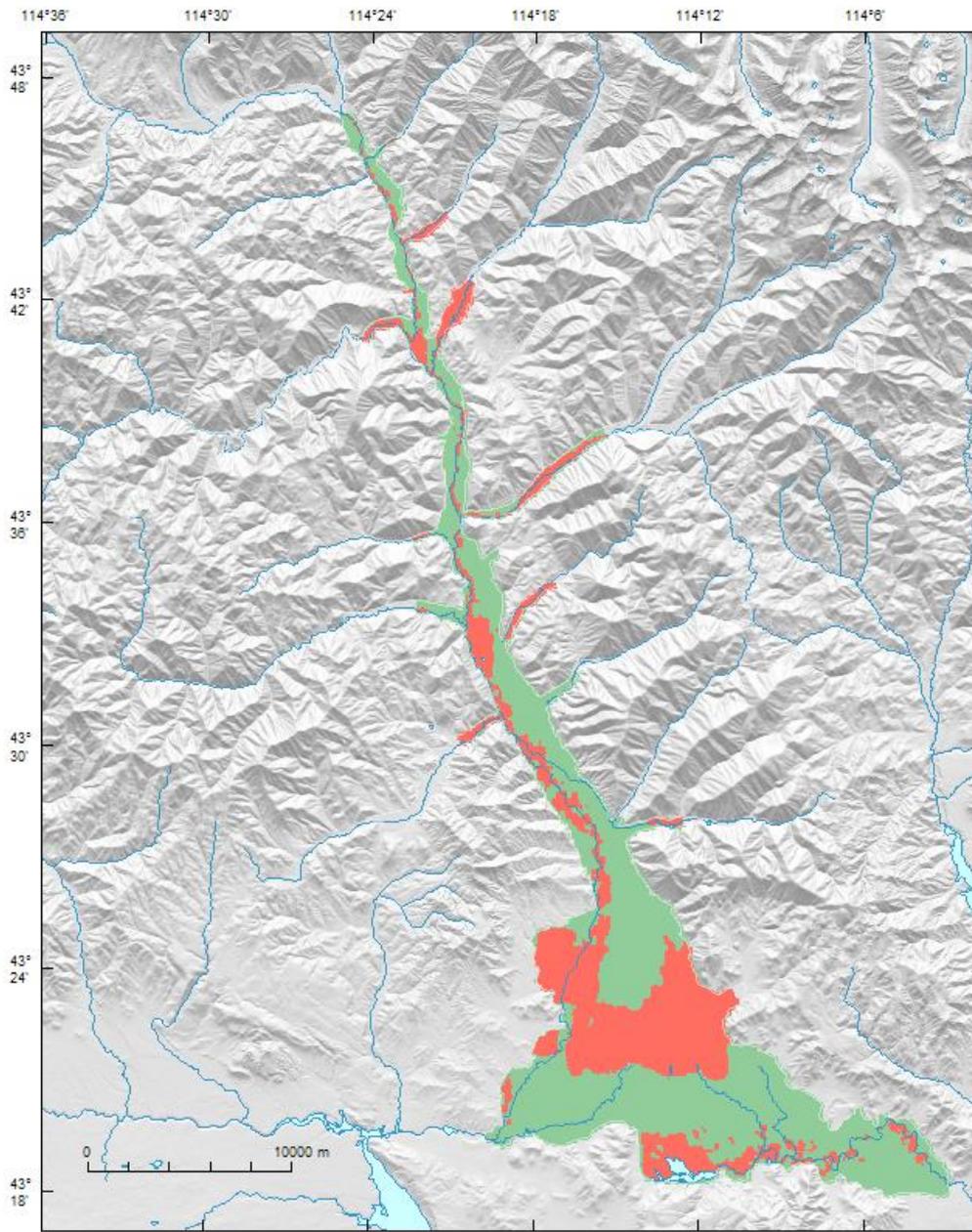
                MODFLOW-USG
  U.S. GEOLOGICAL SURVEY MODULAR FINITE-DIFFERENCE GROUNDWATER FLOW MODEL
                Version 1.2.00 03/21/2014

Using NAME file: wrv_ss_mfusg.nam
Run start date and time (yyyy/mm/dd hh:mm:ss): 2014/08/11 13:33:08

Solving:  Stress period:      1      Time step:      1      Groundwater Flow Eqn.
Run end date and time (yyyy/mm/dd hh:mm:ss): 2014/08/11 13:46:01
Elapsed run time: 12 Minutes, 53.351 Seconds

Normal termination of simulation

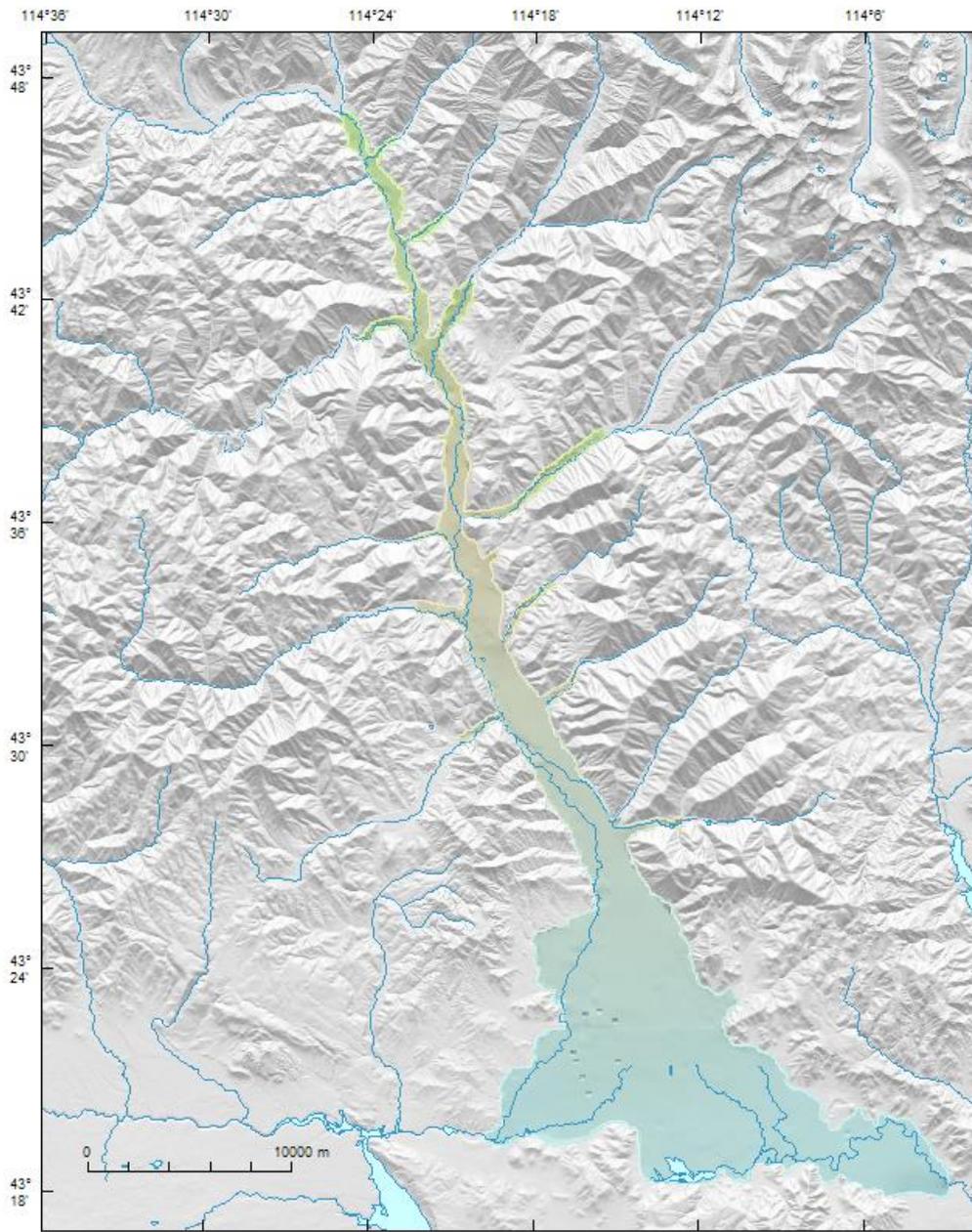
C:\Users\jfisher\Documents\wrv_20140805091802\Run>pause
Press any key to continue . . .
```



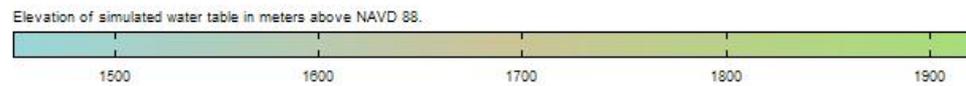
+proj=tmerc +lat\_0=42 +lon\_0=-114 +k=0.9896 +x\_0=2500000 +y\_0=1200000 +datum=NAD83 +units=m +no\_defs +ellps=GRS80 +towgs84=0,0,0

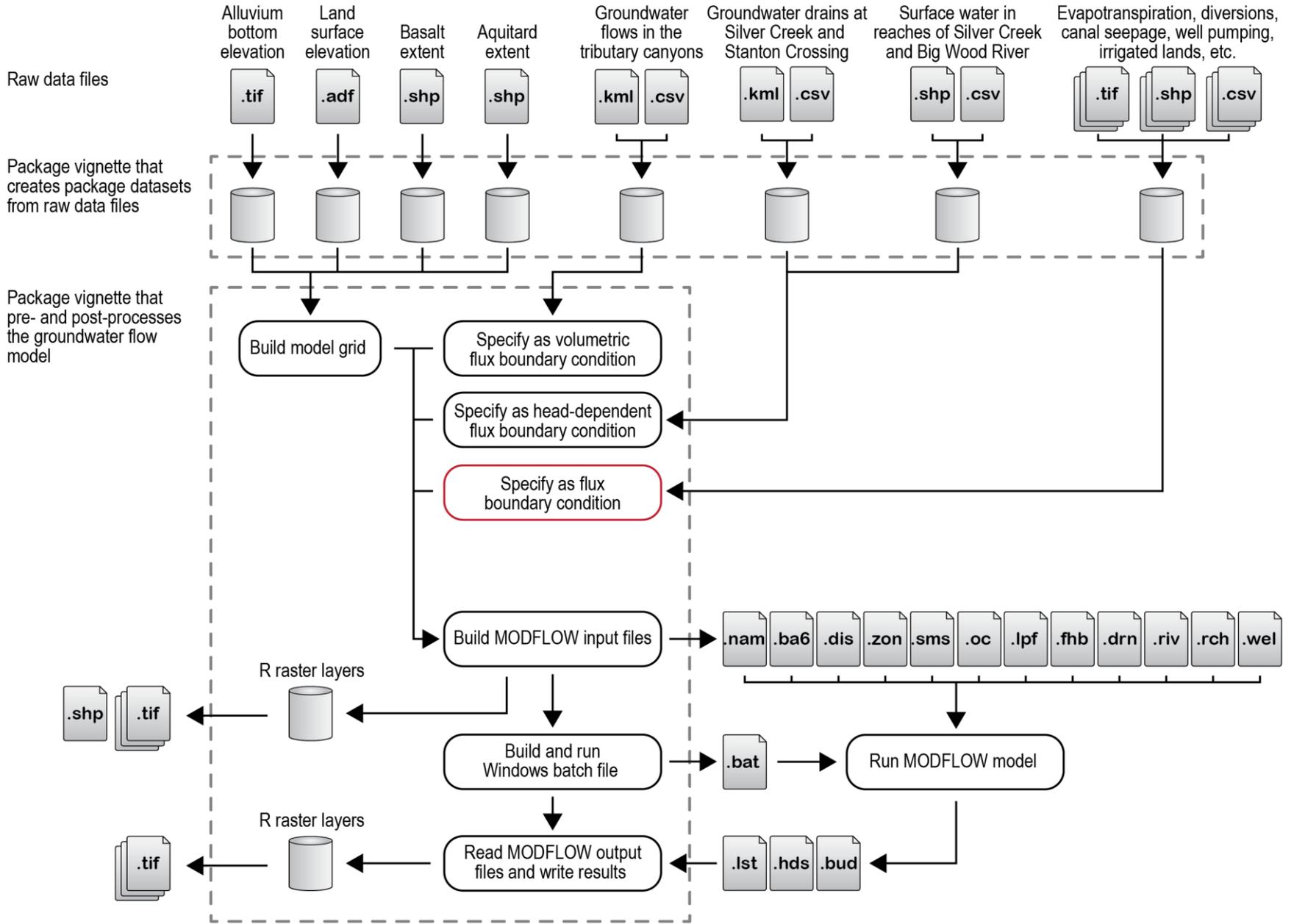
  
Partially Saturated

  
Saturated



+proj=tmerc +lat\_0=42 +lon\_0=-114 +k=0.9896 +x\_0=2500000 +y\_0=1200000 +datum=NAD83 +units=m +no\_defs +ellps=GRS80 +towgs84=0,0,0





# Package ‘wrv’

August 11, 2014

**Version** 0.1-5

**Date** 2014-07-28

**Title** Wood River Valley Groundwater Flow Model

**Author** Jason C. Fisher

**Maintainer** Jason C. Fisher <jfisher@usgs.gov>

**Depends** R (>= 3.1.0), sp, rgdal, rgeos, raster

**Imports** igraph

**Suggests** Rcurl, knitr, xtable, png

**SystemRequirements** MODFLOW-USG (>= 1.2)

**Description** Pre- and post-processing program for the groundwater-flow model of the Wood River Valley aquifer system, south-central Idaho.

**License** file LICENSE

**Copyright** This software is in the public domain because it contains materials that originally came from the United States Geological Survey (USGS), an agency of the United States Department of Interior. For more information, see the official USGS copyright policy at [http://www.usgs.gov/visual-id/credit\\_usgs.html#copyright](http://www.usgs.gov/visual-id/credit_usgs.html#copyright)

**URL** <https://github.com/jfisher-usgs/wrv>

**BugReports** <https://github.com/jfisher-usgs/wrv/issues>

**ByteCompile** yes

**LazyData** yes

**VignetteBuilder** knitr

## R topics documented:

alluvium.bottom	3
aquifer.extent	3
aquitard.extent	4
basalt.extent	5
BumpDisconnectedCells	5
bwr.sc	6
canal.seep	7
canals	8
cities	8
comb.sw.ir	9
CreateModflowInputFiles	10
disch.usgs.13139510	12
div.gw	12
div.sw	13
div.wv	14
DownloadFile	14
efficiency	15
et	16
et.method	17
ExcludeSmallCellChunks	18
ExportRasterStack	18
ExtractAlongTransect	19
GetSeasonalMultiplier	21
infil.basins	22
infiltration	22
irrentities	23
irr.lands	24
irr.lands.year	24
lakes	25
land.surface	26
map.labels	27
PlotMap	27
pod.gw	30
pod.wells	31
precip.zones	32
precipitation	33
priority.cuts	33
public.parcels	34
ReadModflowBinaryFile	35
ReadModflowListFile	36
rivers	37
SetPolygons	37
sink.locations	38
soils	39
source.locations	39
tributaries	40
wetlands	41

**Index** 42

# Questions

