

First Stop – Sligar's Hot Springs

# Hagerman Valley Geology

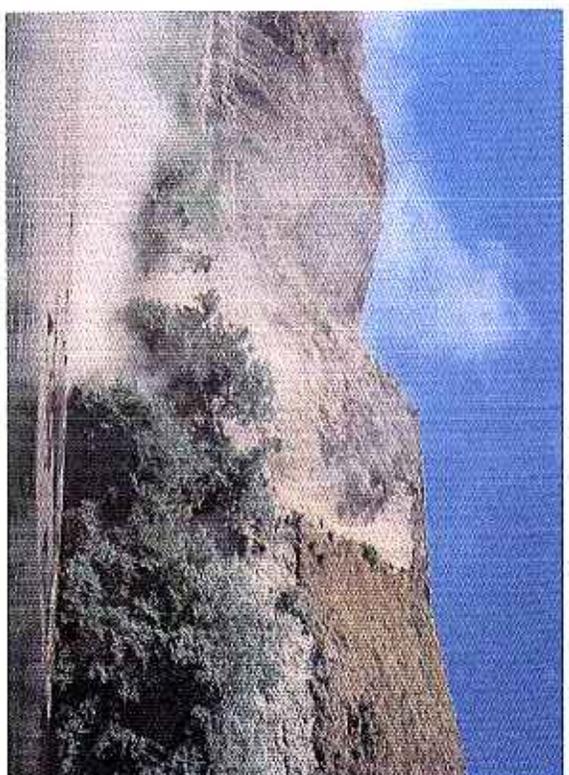
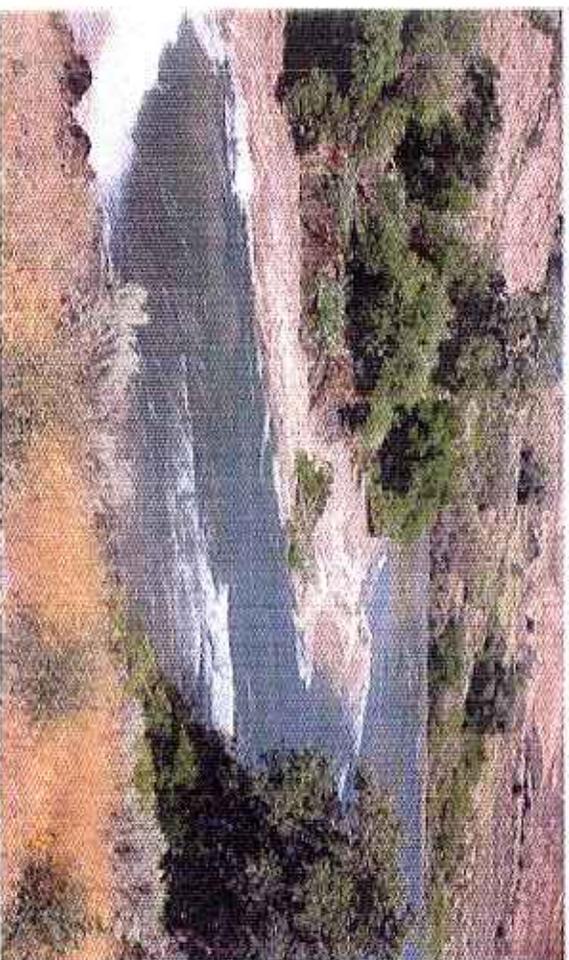
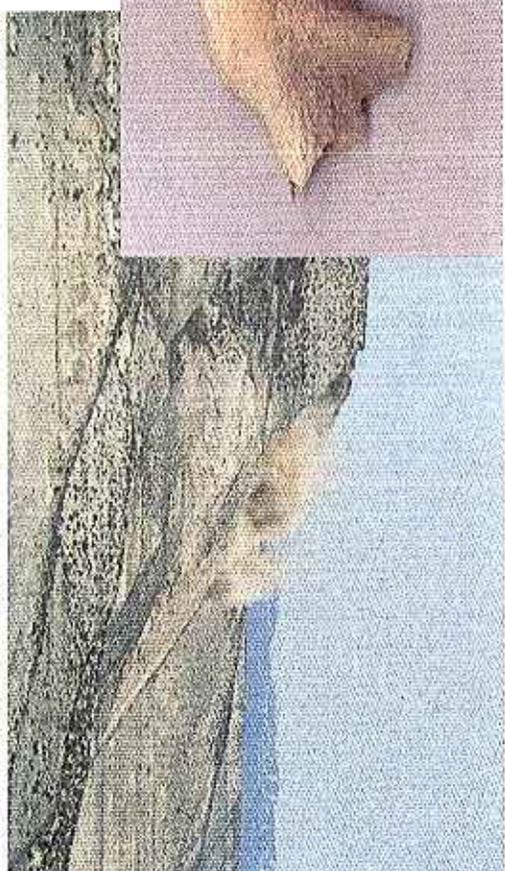
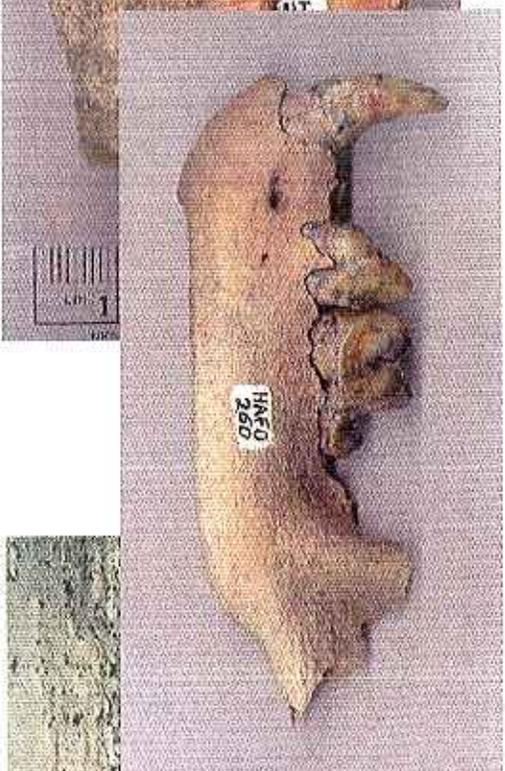
A Focus on:

*The Effect of Large-scale Heterogeneities and Geologic Structures on Spring Spatial Distribution*

By: Neal Farmer

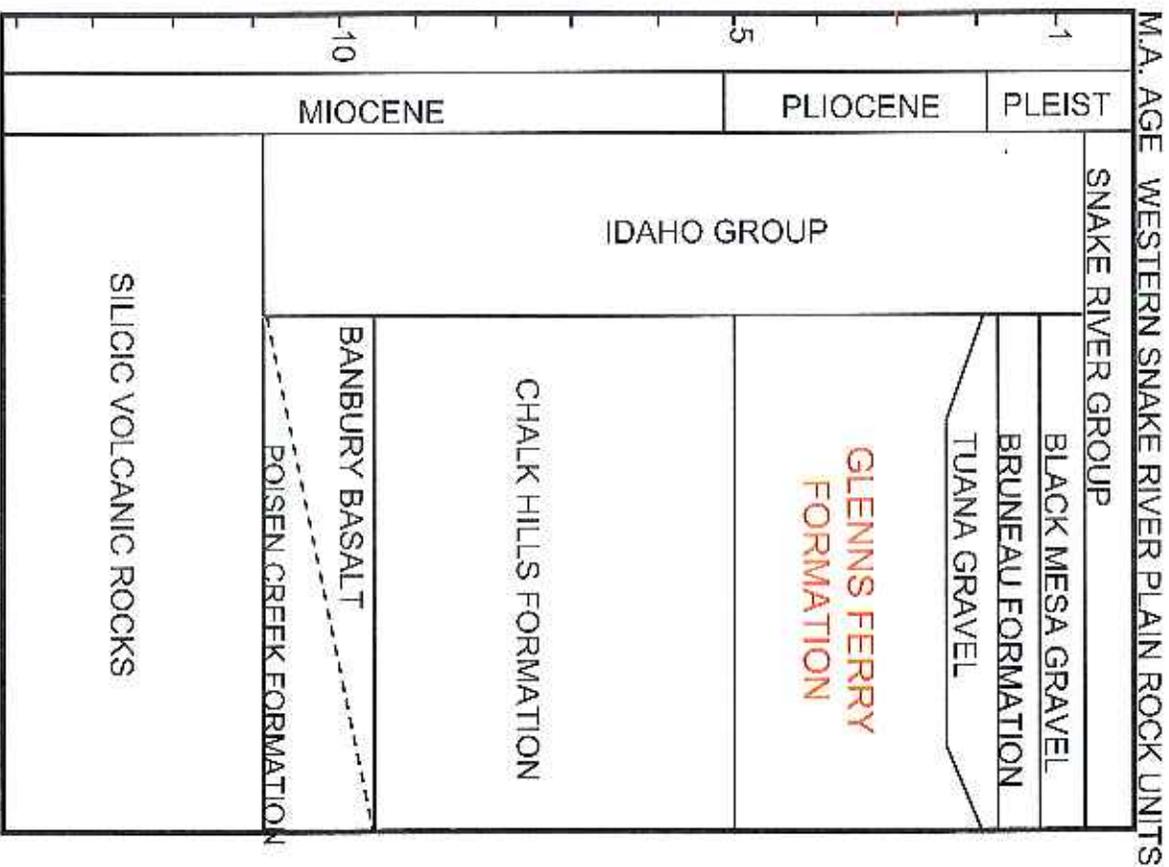
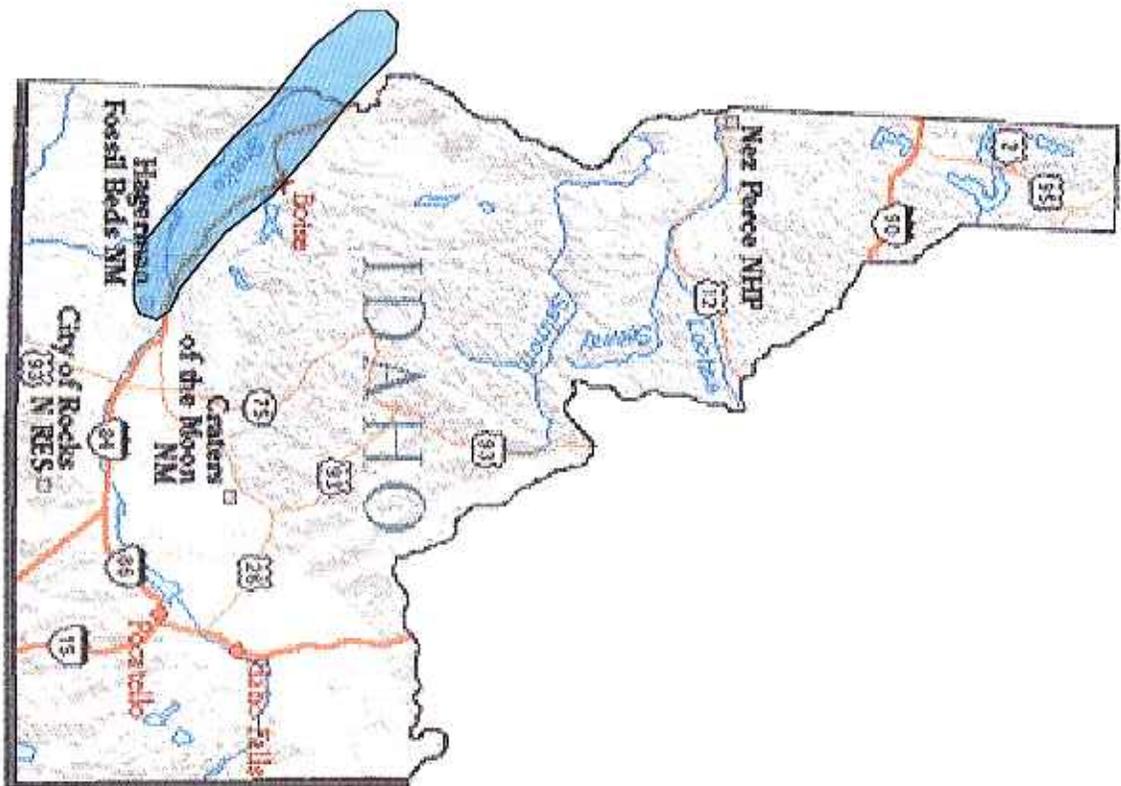
Idaho Department of Water Resources

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### 'Lake Idaho'

- 5 to 1.5 m.a.
- deposited Glenns Ferry Formation.
- about 50 miles wide and 150 miles long.
- some fossils are radioactive including the official Idaho State Fossil – "The Hagerman Horse".

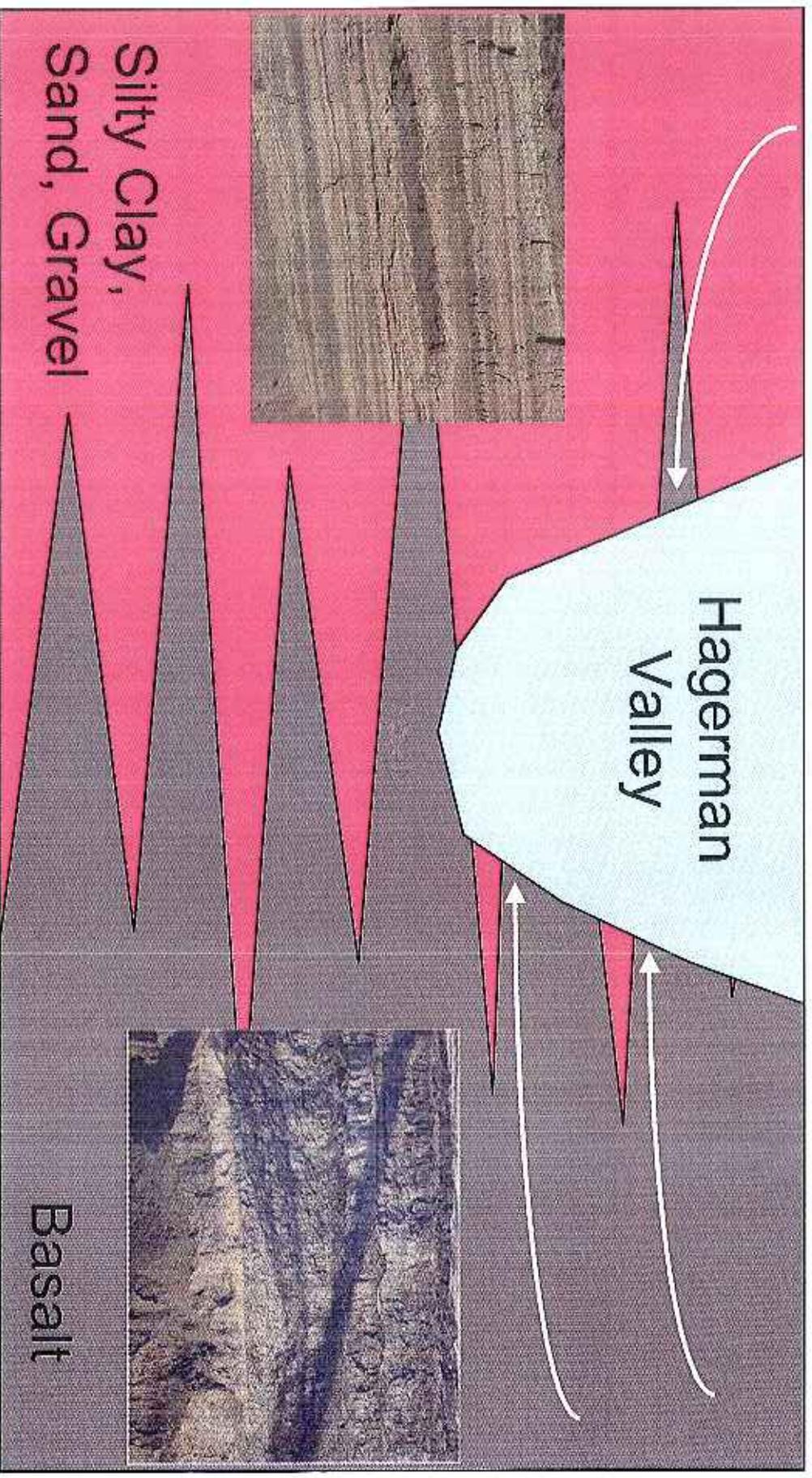


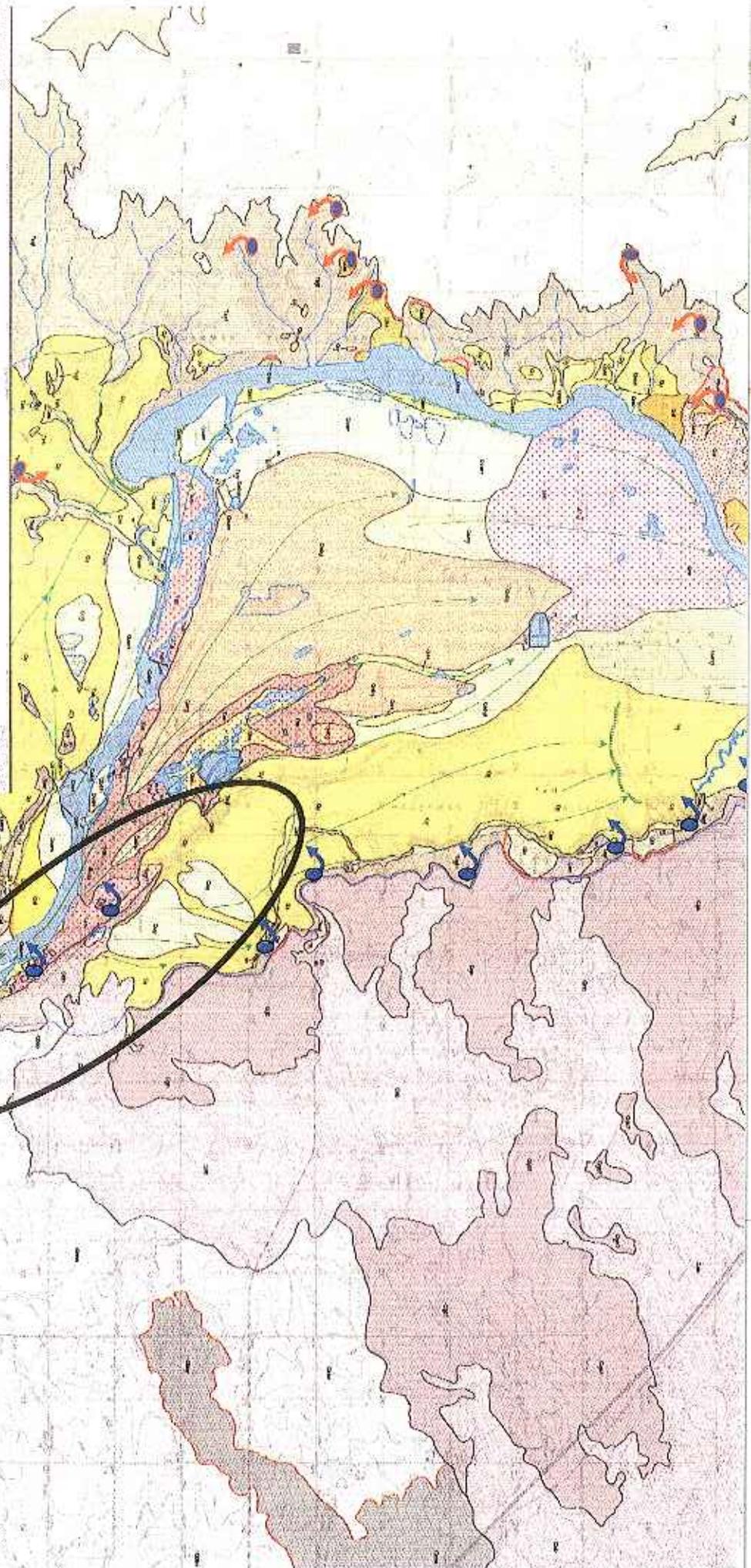
(modified from Malde, 1972)

“East Meets West” – Geologic Transition Zone of the Eastern and Western Snake River Plain

West

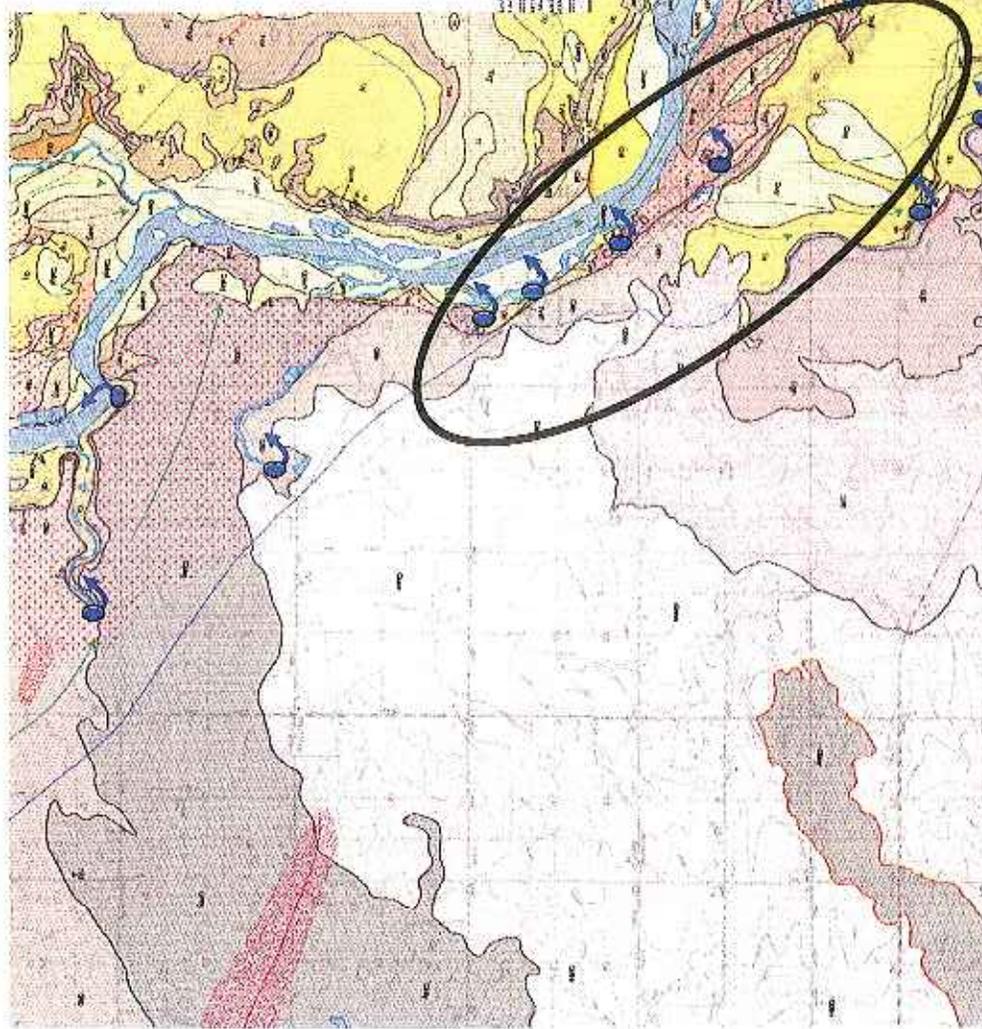
East





**Geologic map and Spring locations**  
(Source: Idaho Geological Survey digital maps)

-  Anthropogenic Spring
-  Natural Spring



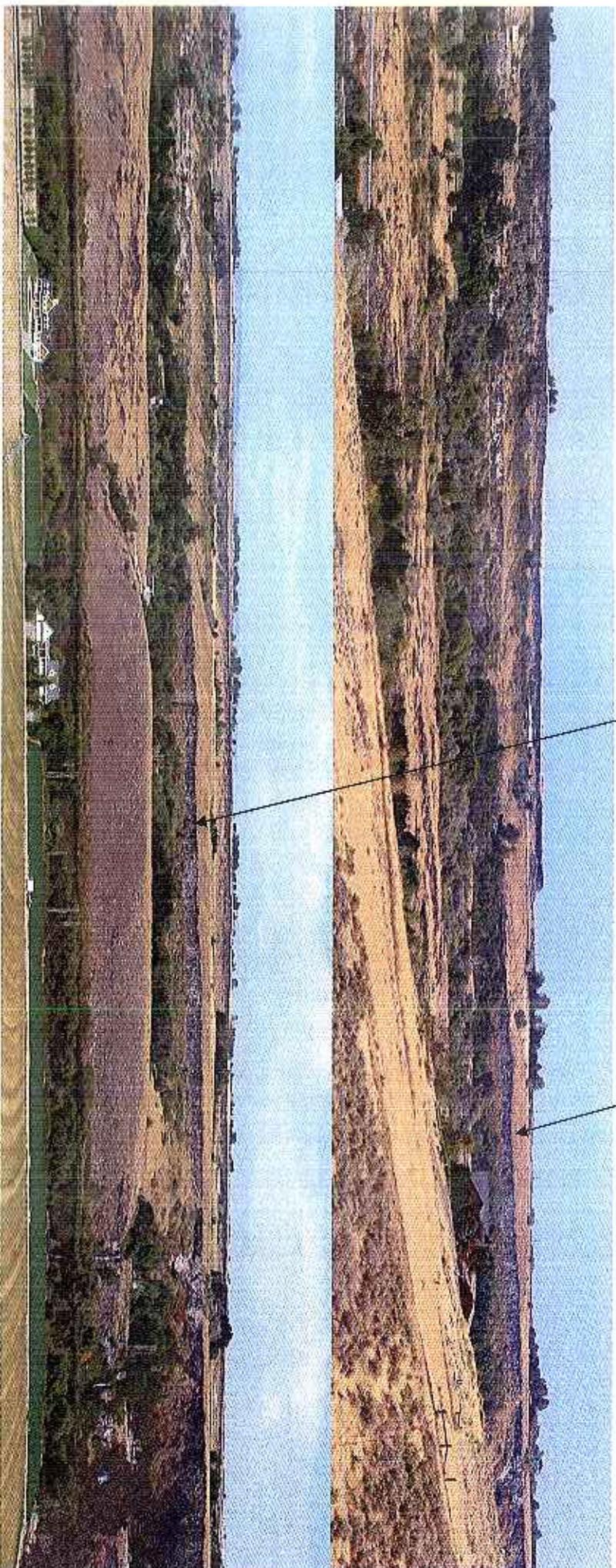




Thousand Springs – note the dip of the springs and contact.



Northwest Dipping Basalt near Thousand Springs  
(view azimuth is east)



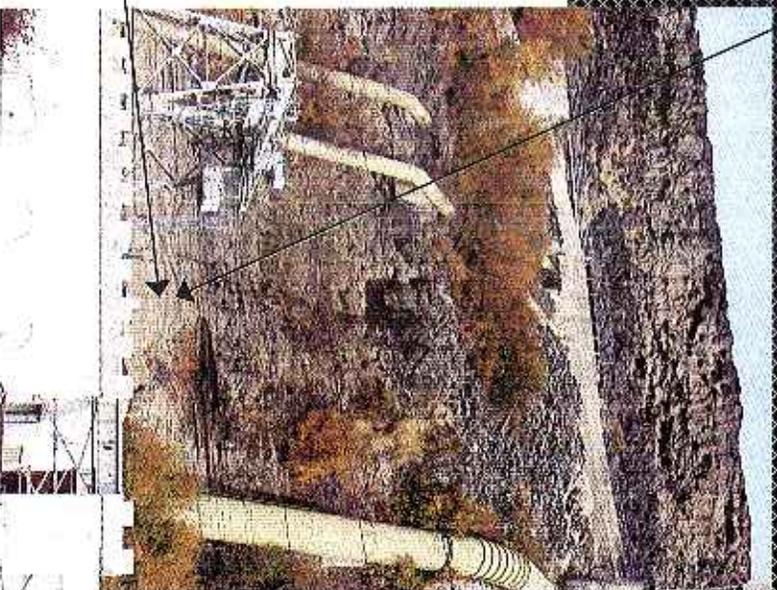
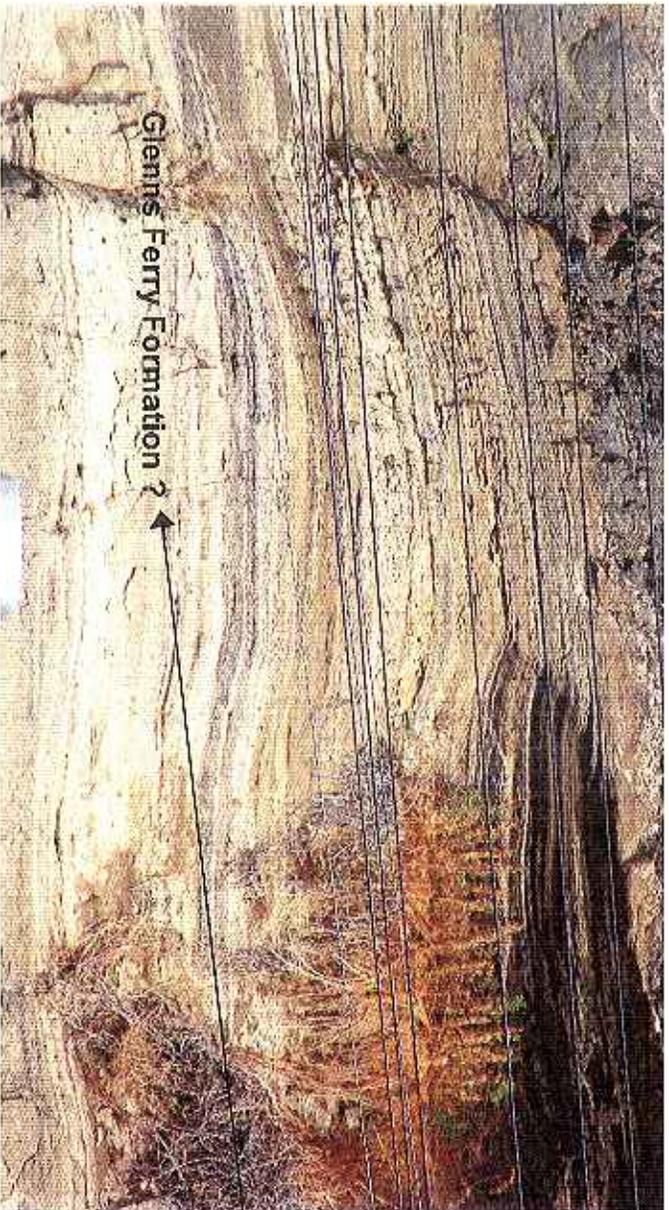
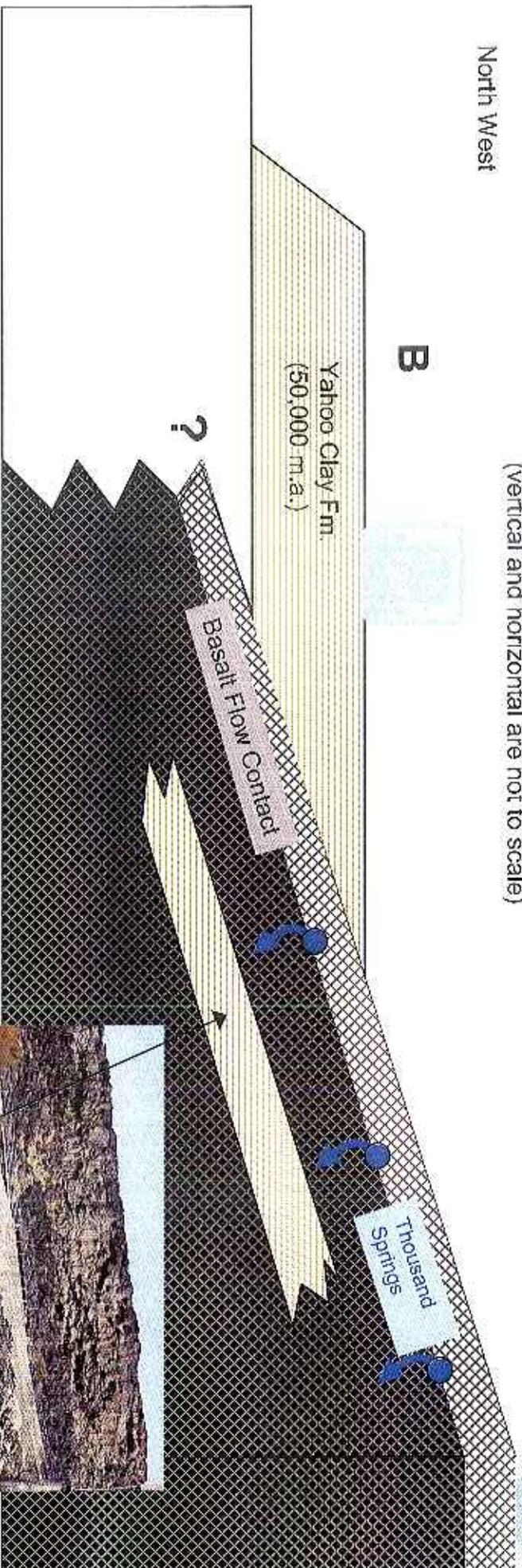
# Conceptual Block Diagram of Geology B-B'

(vertical and horizontal are not to scale)

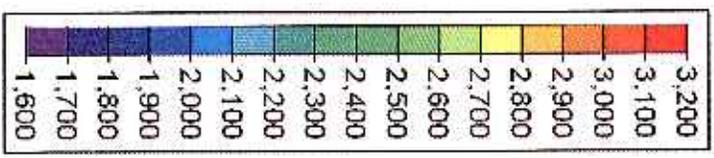
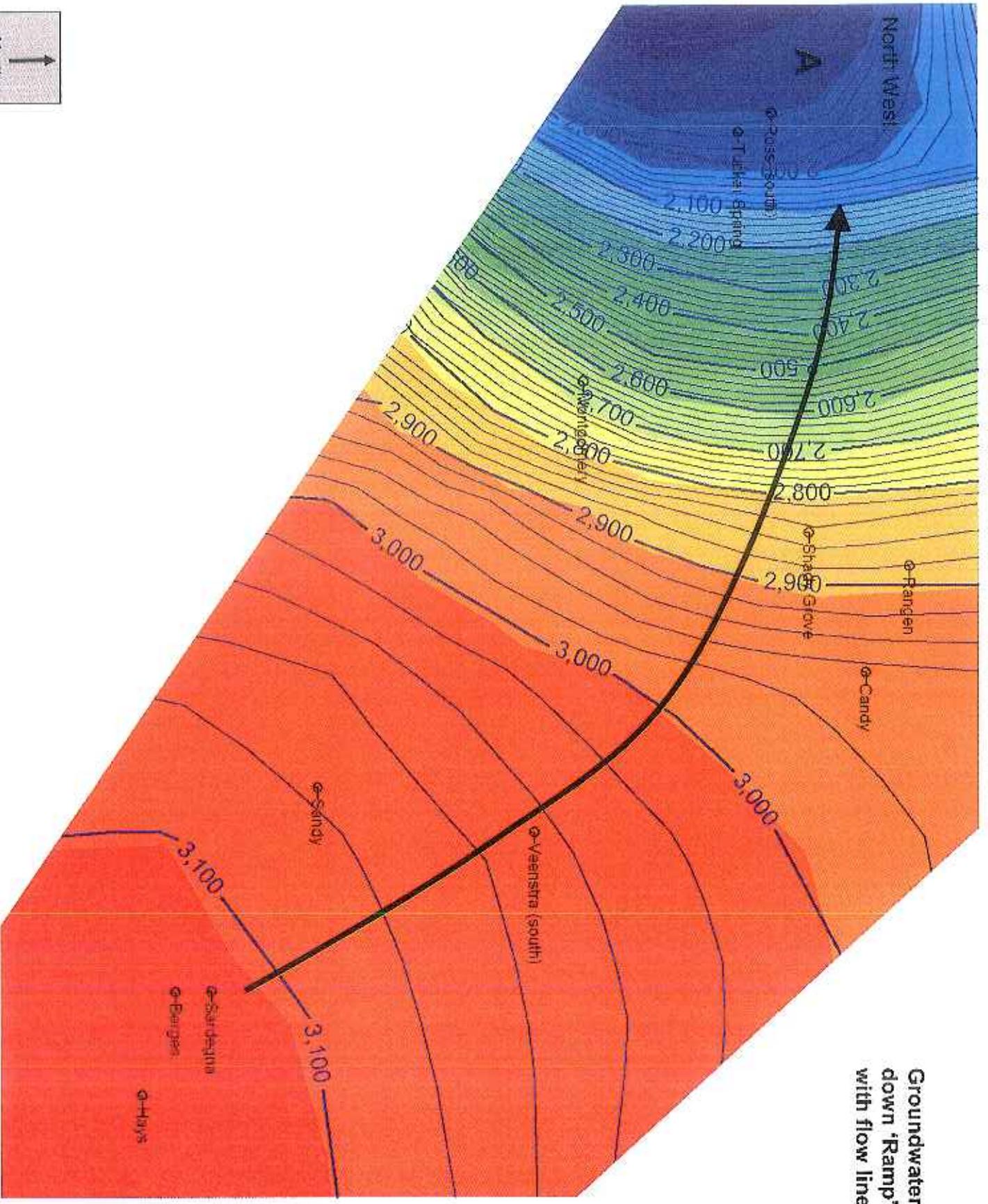
North West

South East

B'



Groundwater Contours  
down 'Ramp' Structure  
with flow line.

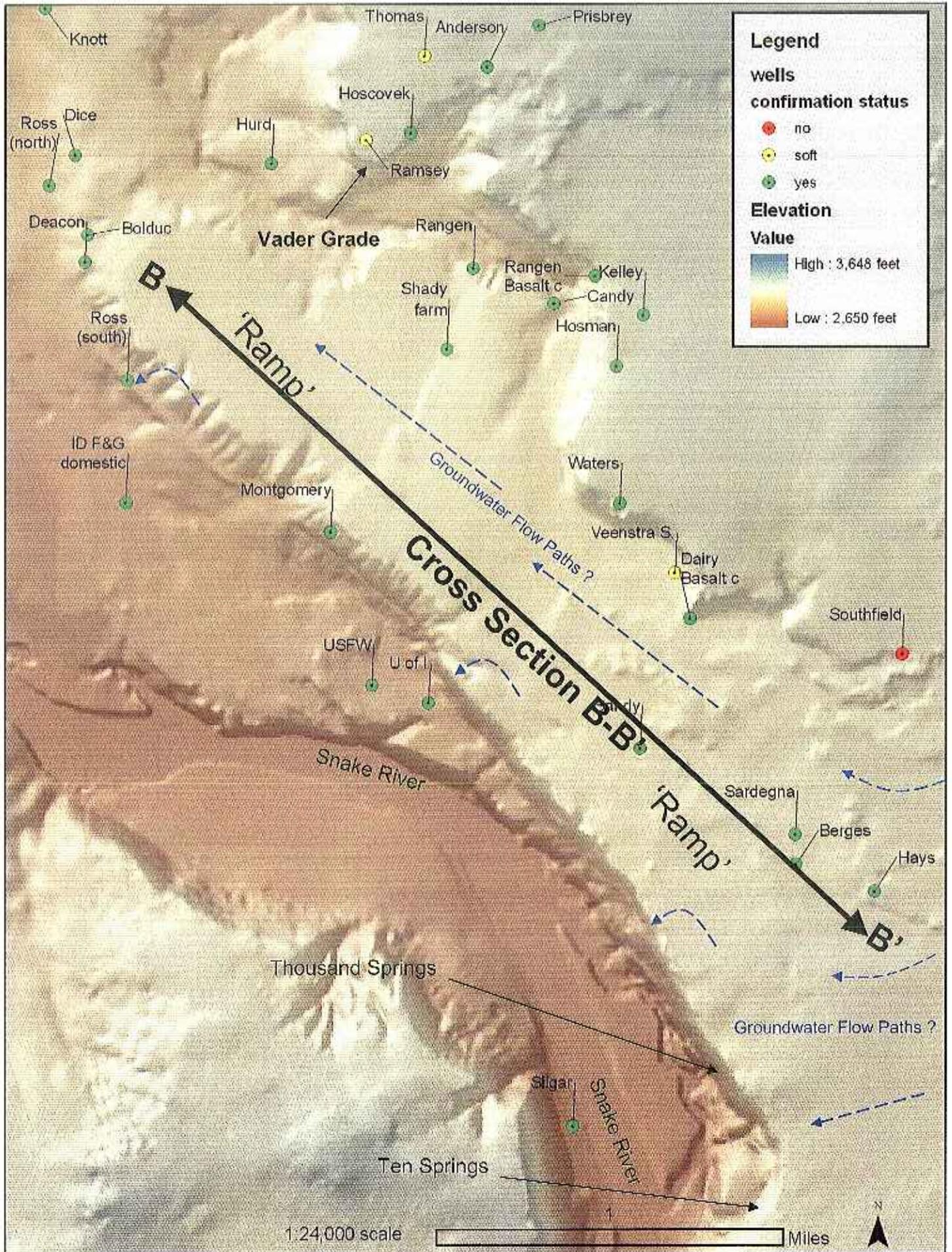


**A'**

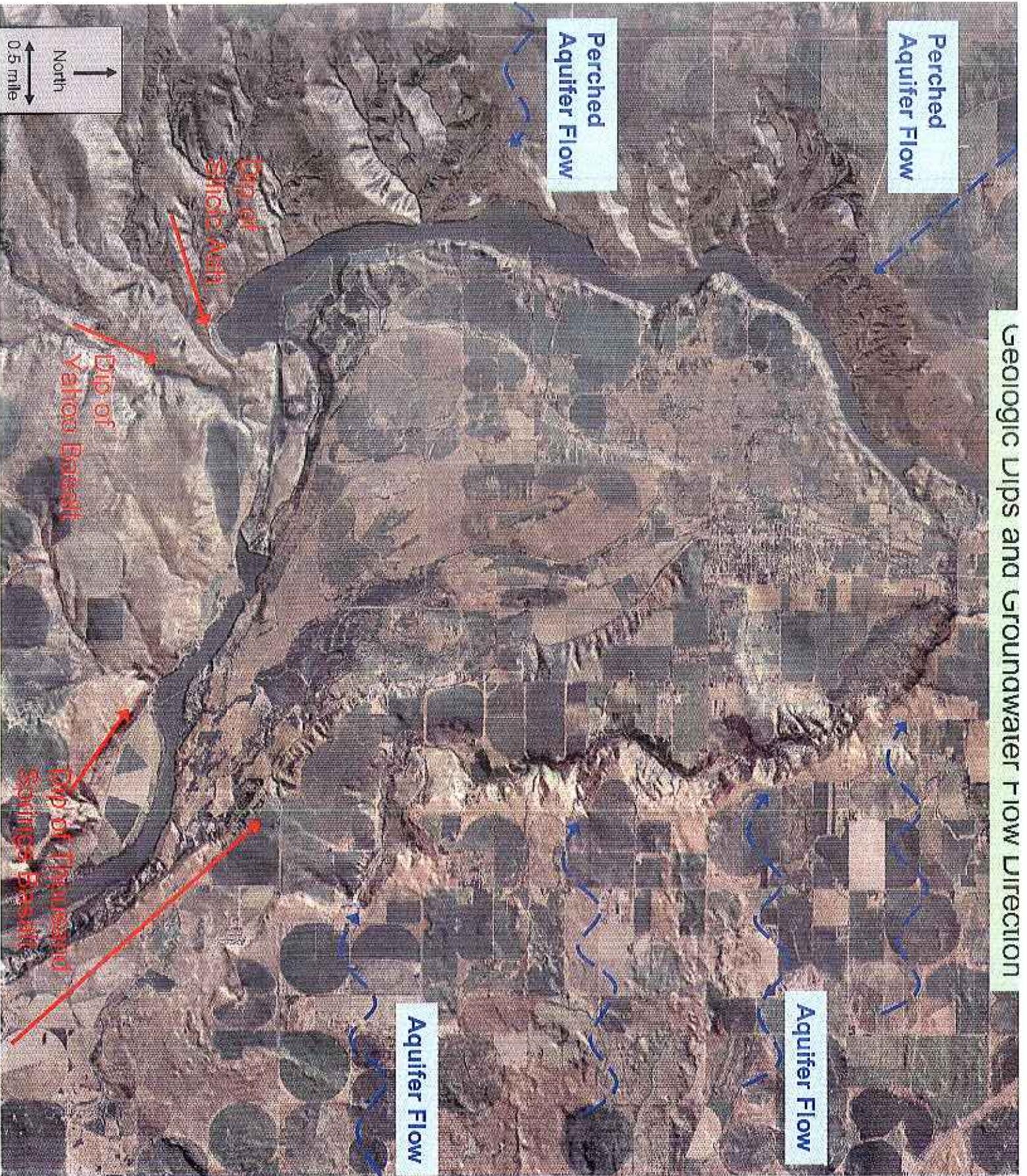
South  
East



# 'Ramp' Area Wells



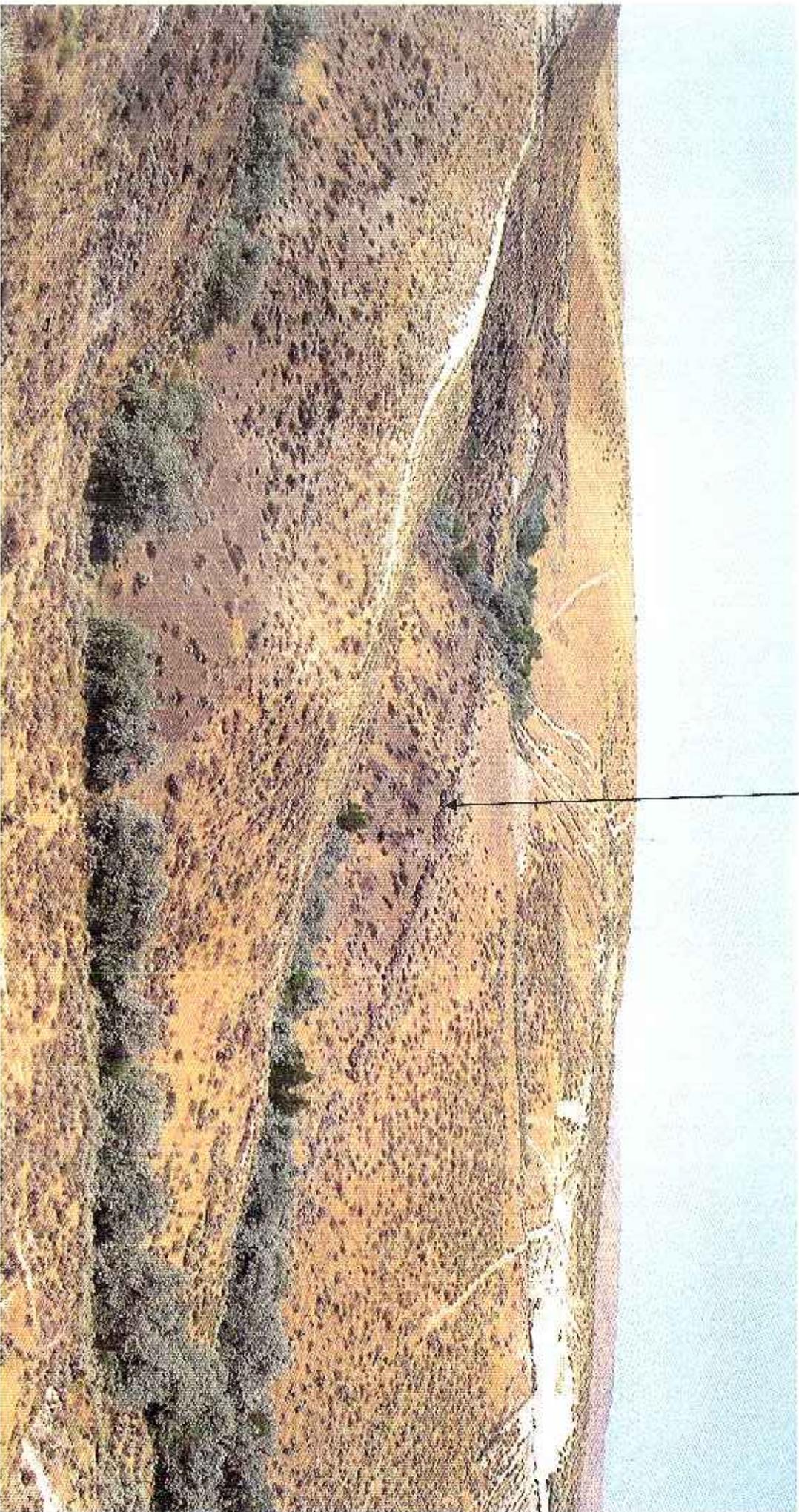
Geologic Lips and Groundwater Flow Direction



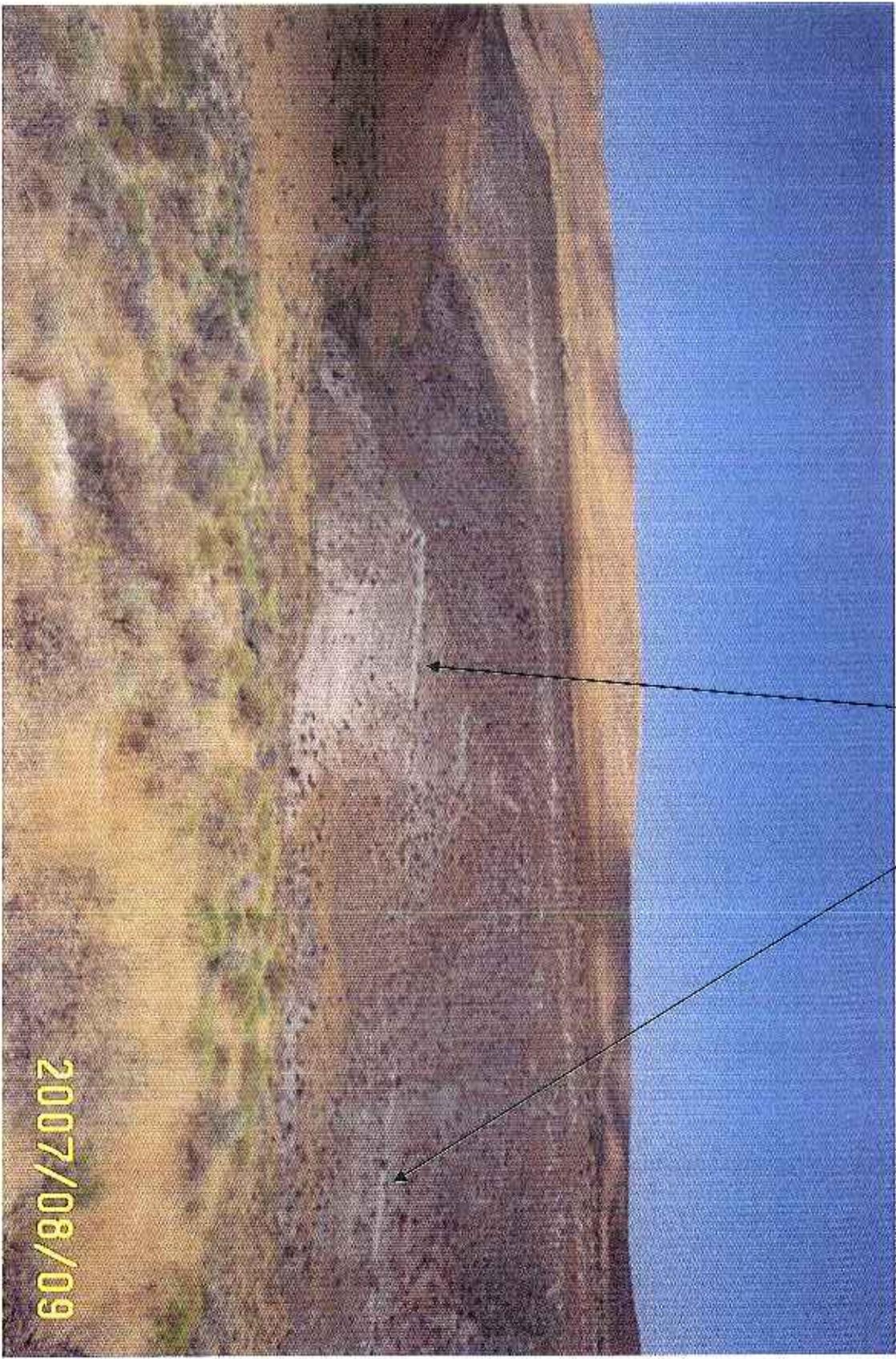
**Northwest Dipping Basalt on west side of Snake River**  
(view azimuth is to the west from National Fish Hatchery)



Northward Dipping Basalt at Yahoo Creek  
Intercalated with Glenns Ferry Fm.  
(view azimuth is west)



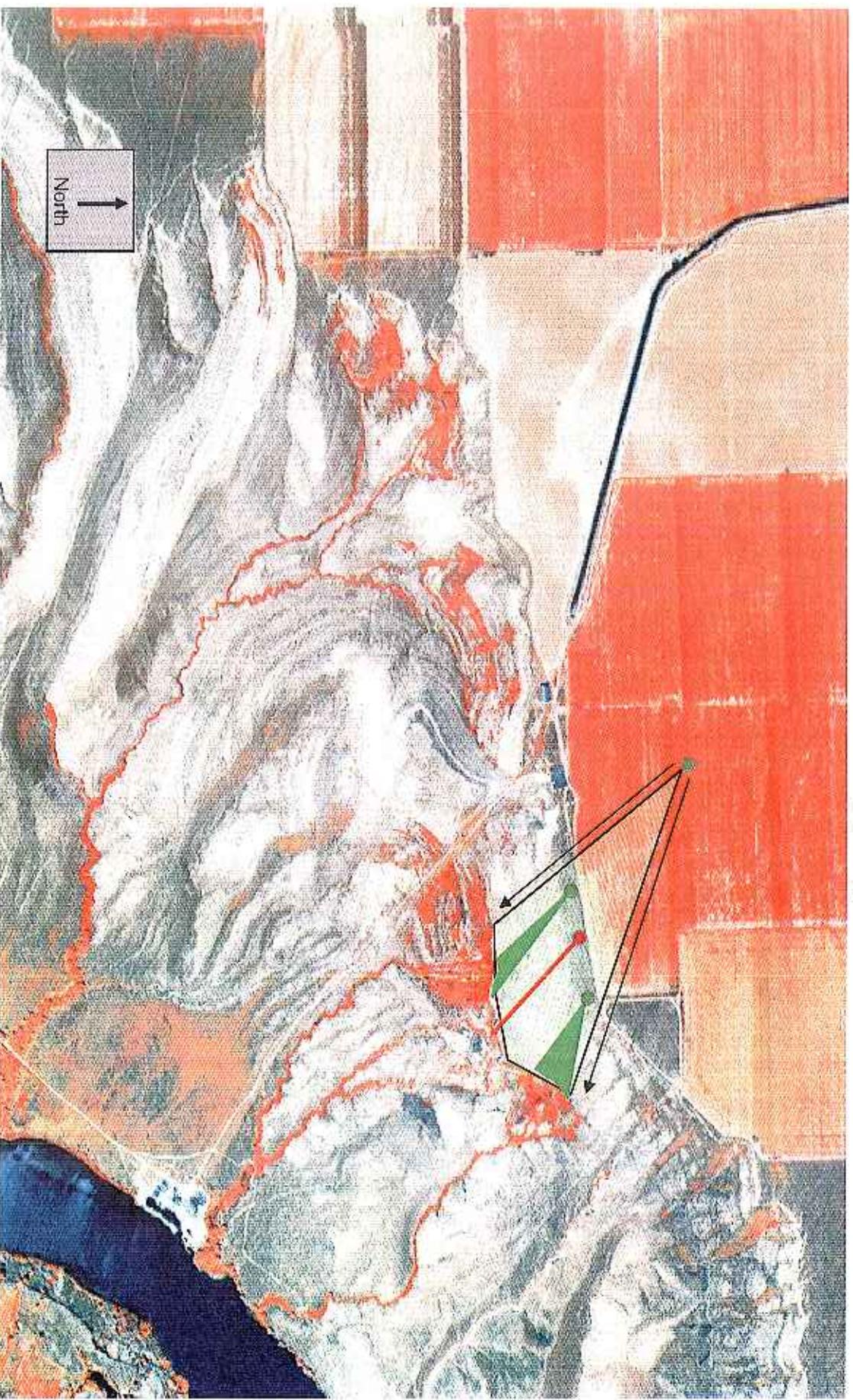
North Eastward Dipping Ash Interbedded  
within Glenns Ferry Fm.  
(view azimuth is west)



2007/08/09

Flourescent dye groundwater tracer tests document direction of groundwater flow is to southeast.

Surveyed geologic outcrops and well logs in this area support a southeast dipping architecture.



# Flourescent Dye Groundwater Tracer Tests

