



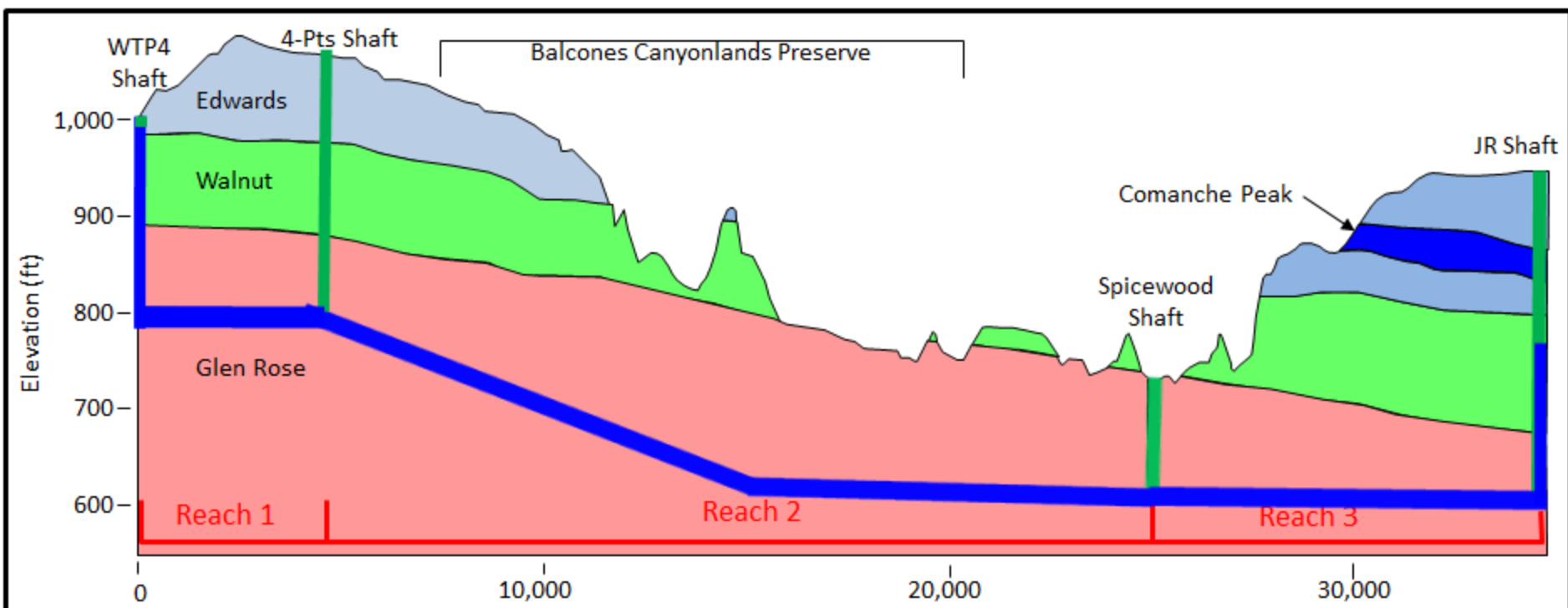
# **JOLLYVILLE TRANSMISSION MAIN: Environmental Commissioning Monthly Report**

Presented to the Austin Environmental Board  
May 7, 2014

Thais Perkins, Watershed Protection Department  
David Johns, Watershed Protection Department

\*to be updated

## JTM Current Status as of 4/9/14



- Reach 1 tunneling, pipe placement, and grouting is complete
- Reach 2 tunneling, pipe placement and grouting is complete.
- Reach 3 tunneling, pipe placement, and grouting is complete.

- WTP4 Shaft piping is 95% complete
- JR Shaft piping is 50% complete



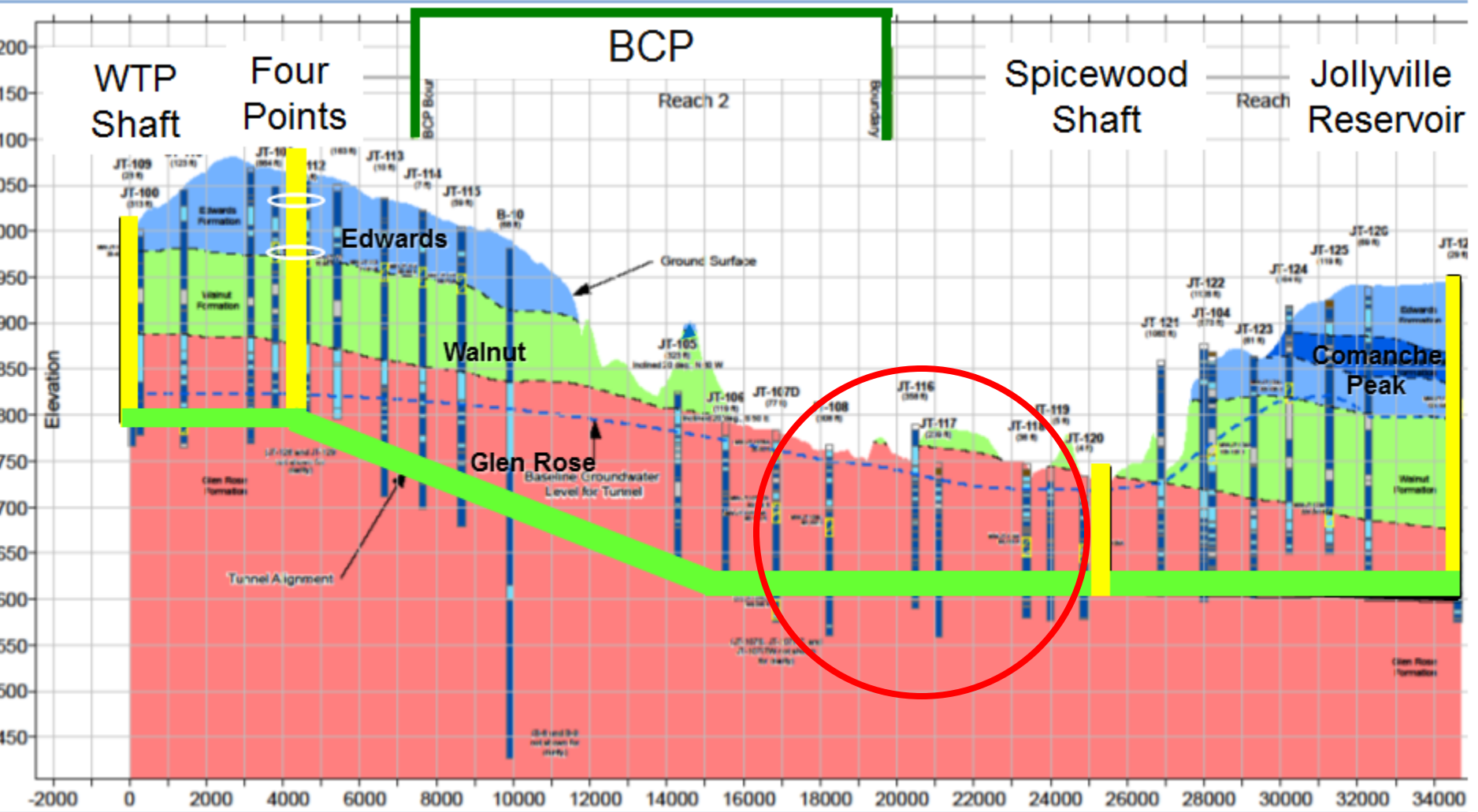
# Environmental Commissioning Activities - JVTM

- Monthly shaft site (surface) visits concurrent with plant site visits
- Excavation and tunnel mapping complete.
- Meetings of the Environmental Commissioning Coordination Group (ECCG) to resolve potential issues as needed
  - *Continuing to review Water Management Plan*
  - *Reviewed pressure and leakage testing requirements for JVTM pipe*
  - *Attending plant startup and commissioning meetings*
  - *Reviewed shaft backfill requirements and shift to use of Controlled Low-Strength Material*
  - *Closely monitoring placement of CLSM and bentonite rings near permeable layers in shaft backfill*
- Environmental Monitoring
  - *With exception of remotely monitored wells, most sites on a monthly monitoring interval (point data or continuous data)*



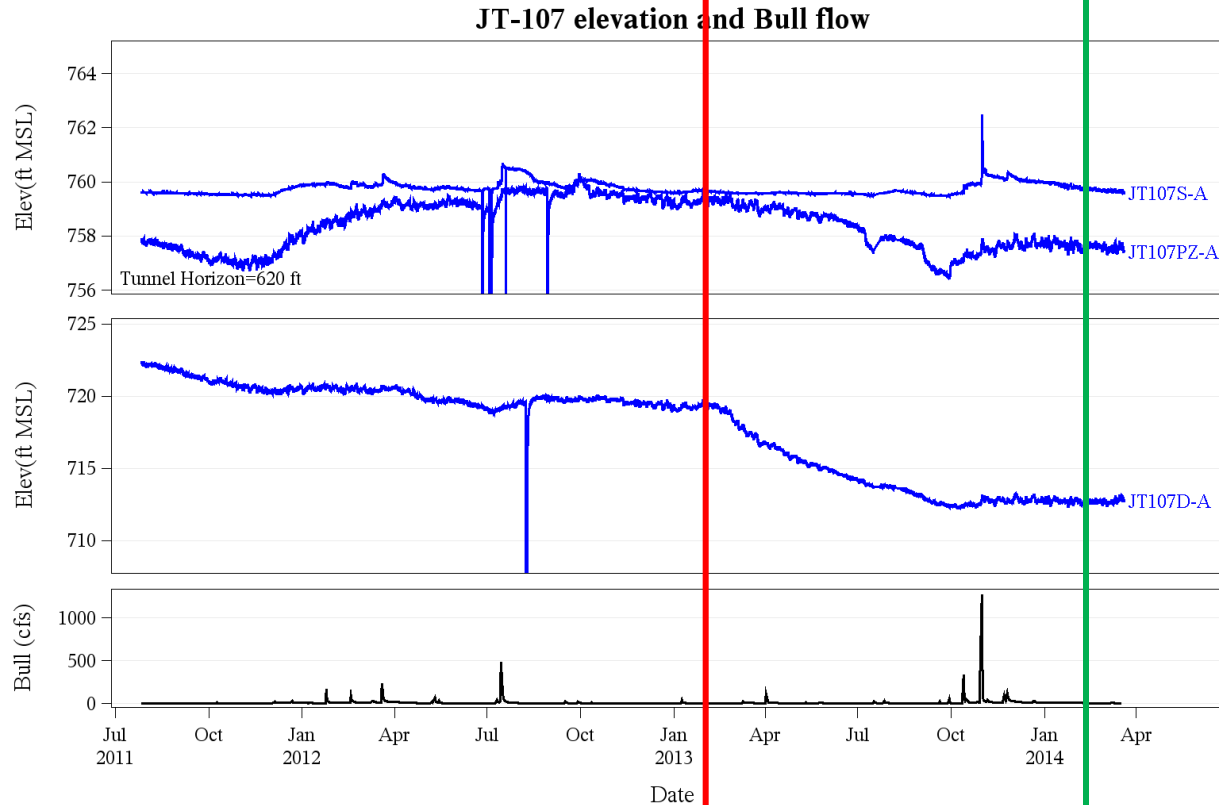
# BCP Wells

- = excavated
- = pipe laid
- = pipe laid & grouted

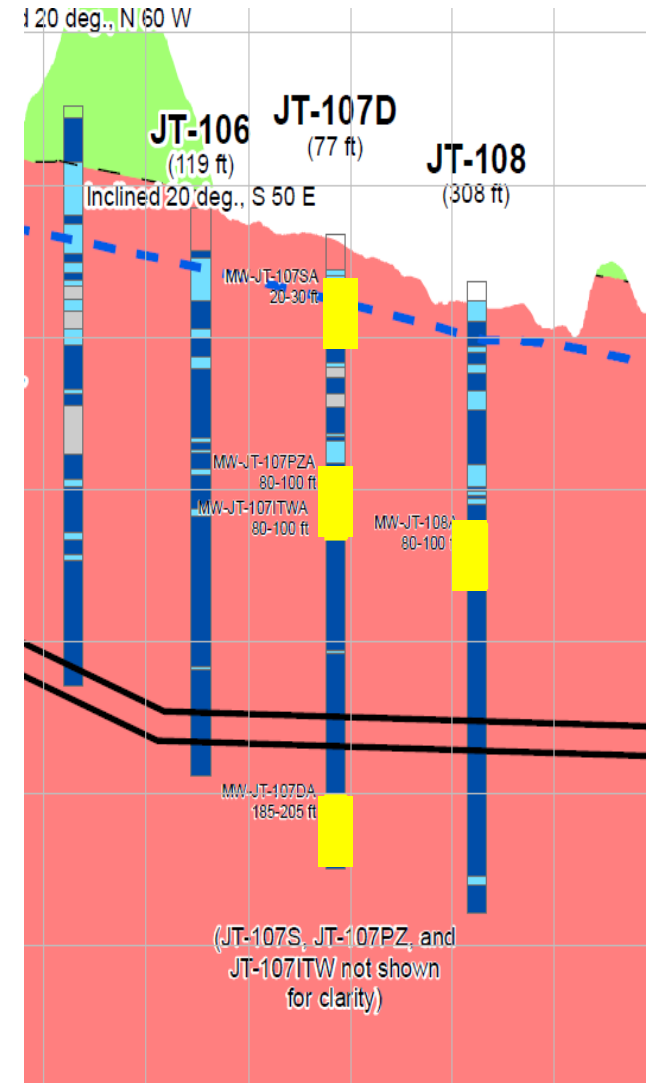


Tunnel passes 107  
cluster 2/13/13

Approx time of grouting  
late Feb 2014



City of Austin DRAFT: QA/QC review pending

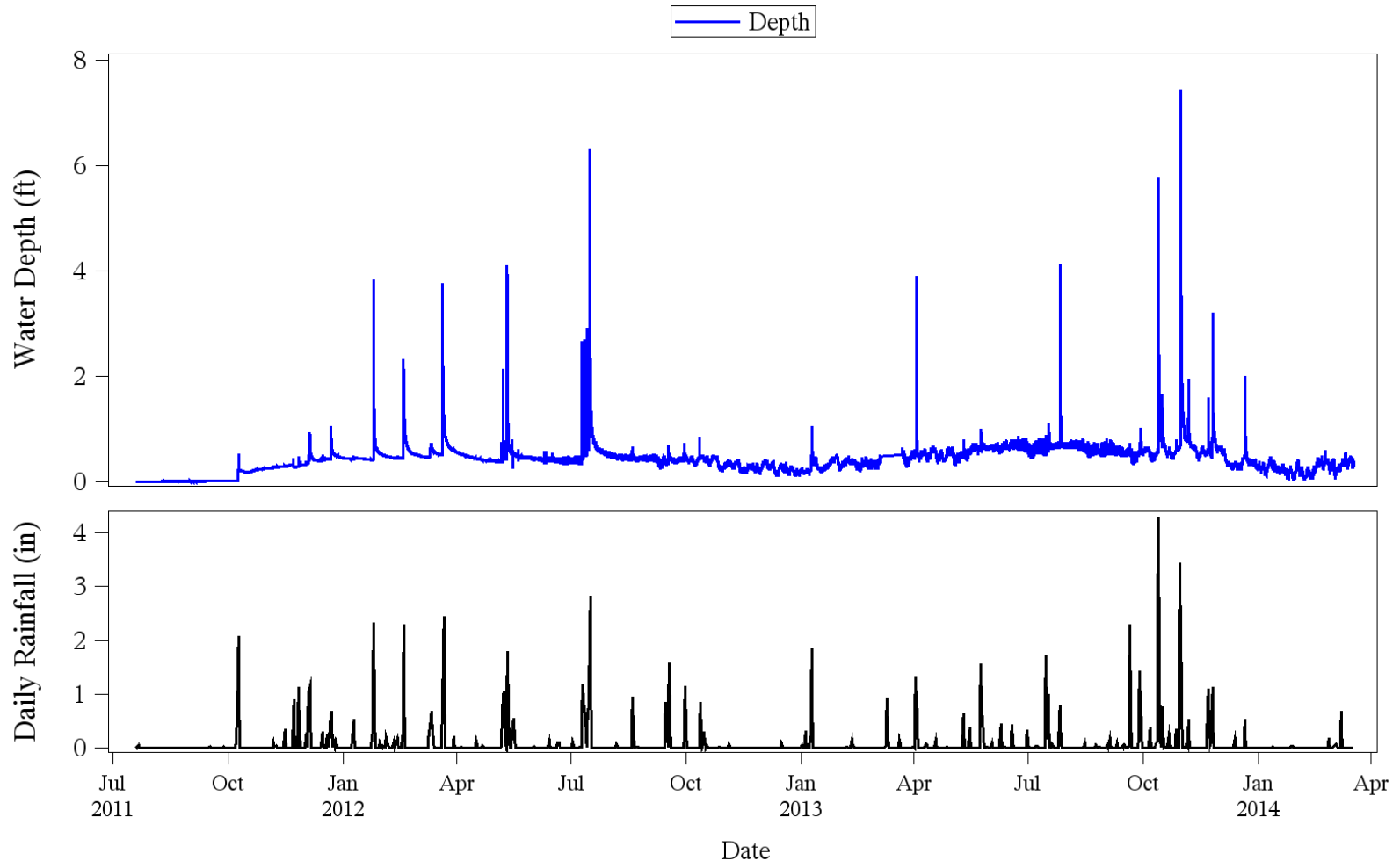


- decline (~8 feet) in deepest well as tunnel passes with stabilization after rain
- small decline in PZ-A (~3 ft) with some recovery after rain
- no decline in 107S-A.



# Bull Creek @ Trib 7 (Pit Spring proxy)

Bull Creek Spicewood Springs 7th Crossing, Troll

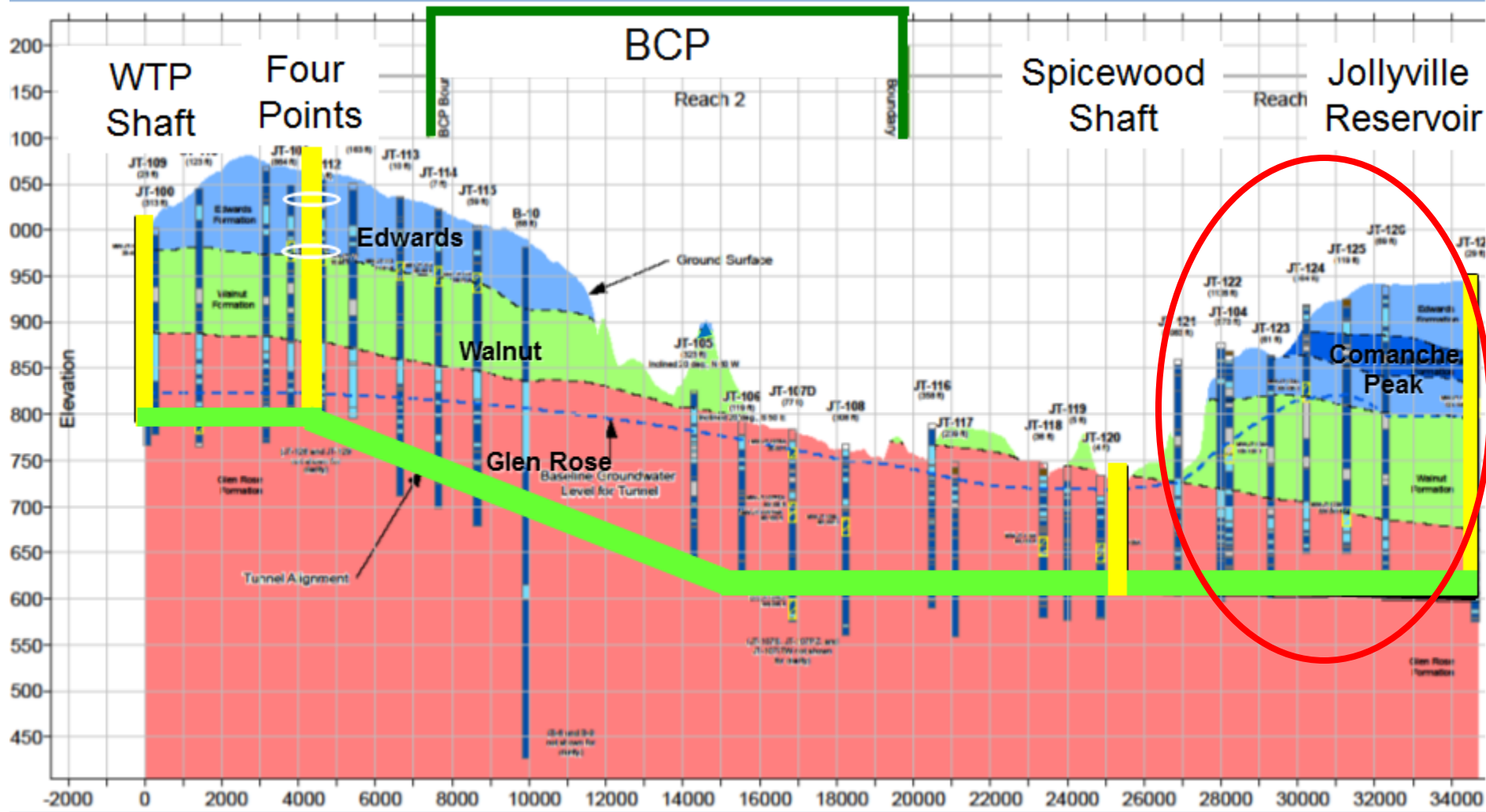


City of Austin DRAFT: QA/QC review pending



# East Side Wells

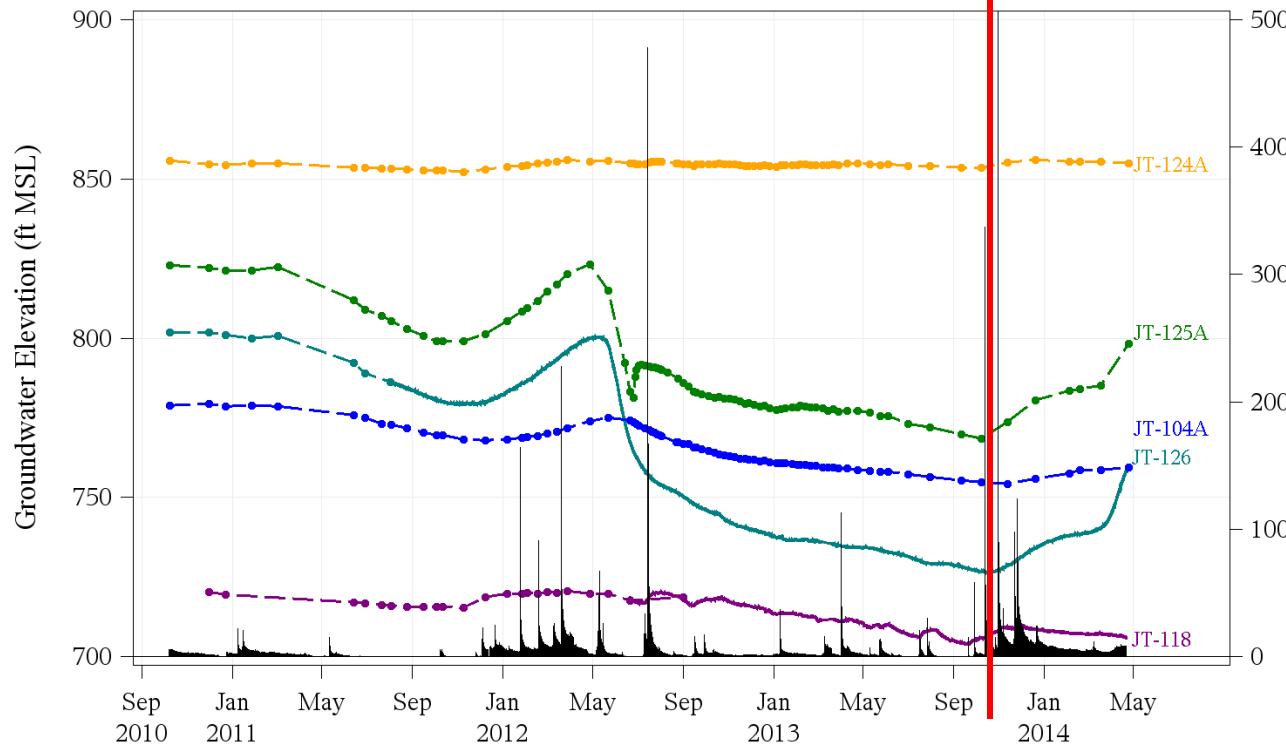
- = excavated
- = pipe laid & grouted



# East Side Wells

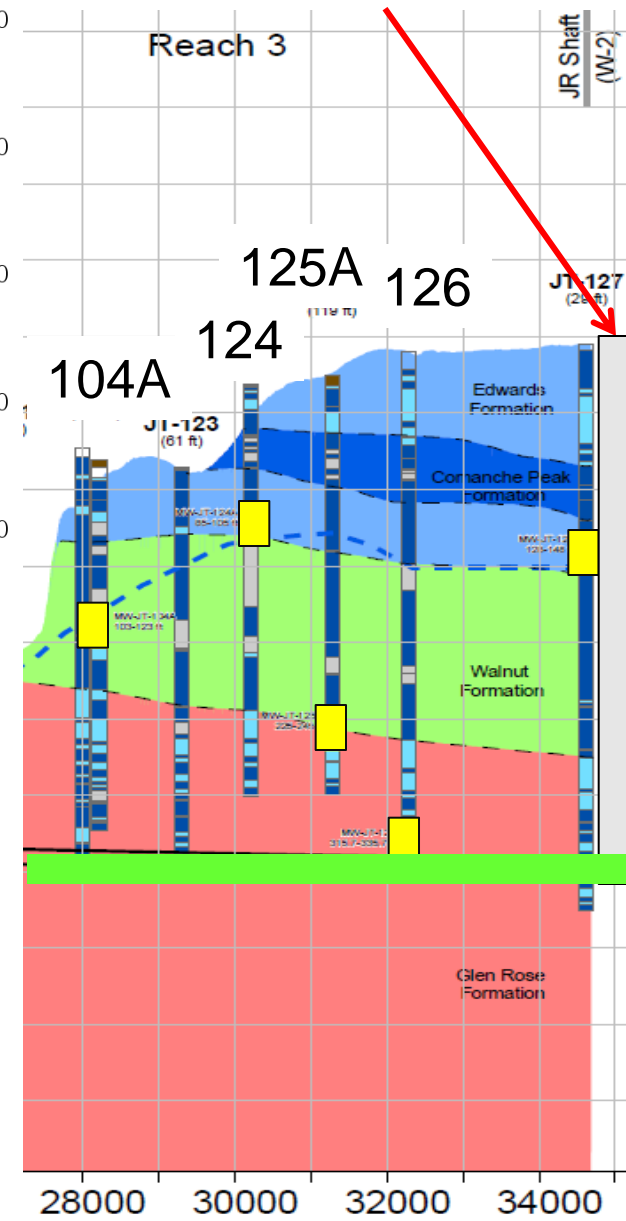
Approx time of grouting  
late Oct 2014

Hydrographs for Wells JT-104A, JT-118, JT-124A, JT-125A and JT-126



- Reach 3 excavation complete, pipe laid, and grouted.
- Most wells saw an uptick after October rain events (excluding 127, not pictured), but grouting also occurred at this time, so the two events are confounded.
- Groundwater levels in JT-125A and JT-126 appear to be recovering as CLSM is being poured in the JR shaft.

# Jollyville Reservoir Shaft (open)

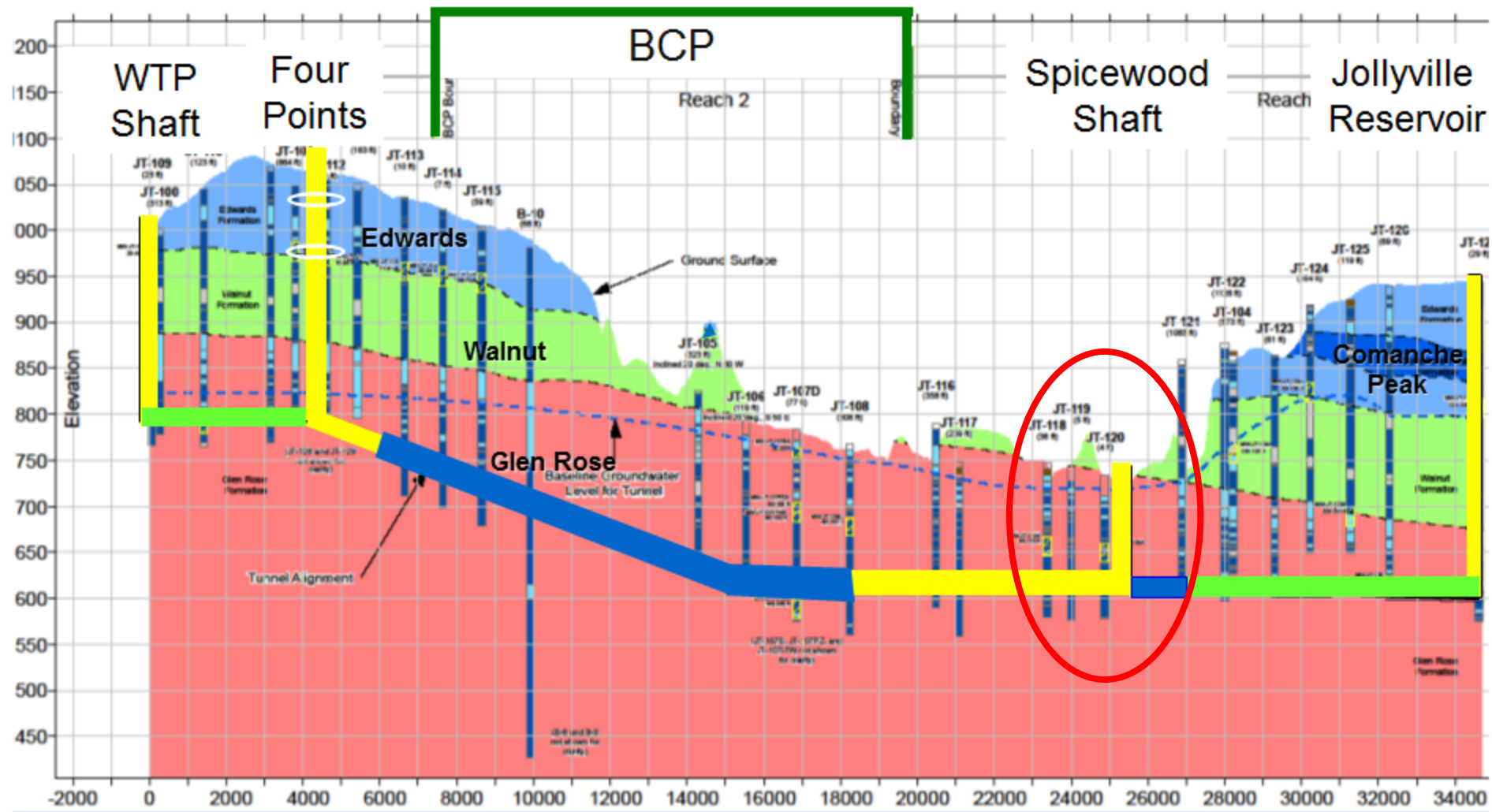






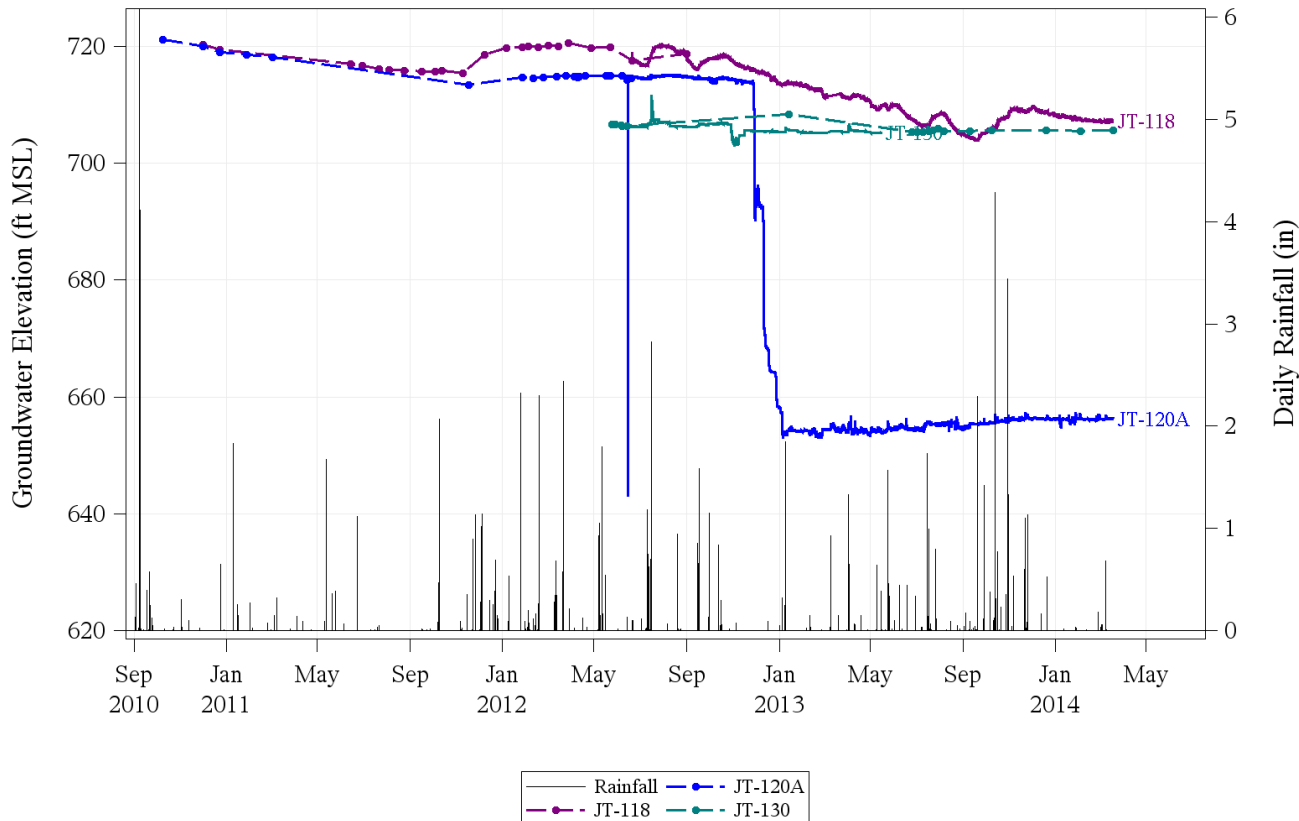
# Spicewood Wells

- = excavated
- = pipe laid
- = pipe laid & grouted



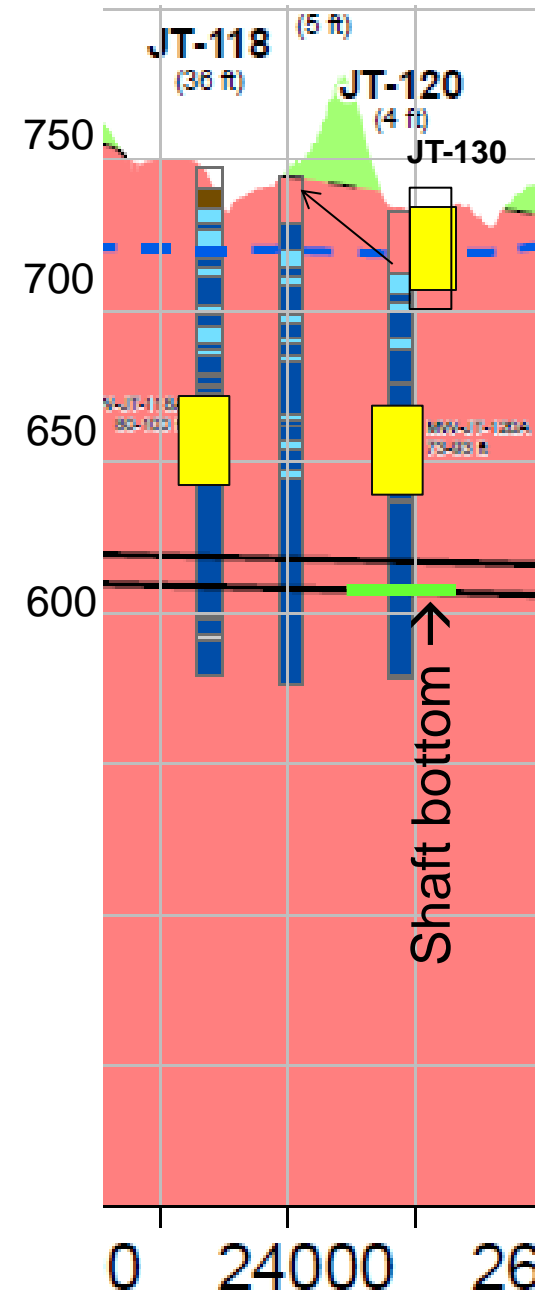
# Spicewood Shaft Wells

Hydrographs for Wells JT-118, JT-120A and JT-130



City of Austin DRAFT: QA/QC review pending

- JT-120 (adjacent to shaft) water level at bottom of screen
- JT-118 declines influenced by shaft and responsive to rainfall
- JT-130 relatively flat





# Environmental Monitoring Update – Surface flow



**Pit Spring 3/18/14**

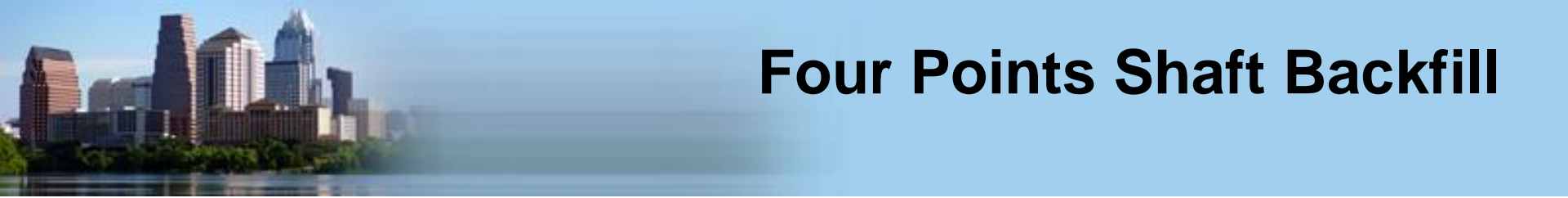
- Main stem of Bull Creek and all springs flowing at normal levels
- Nondetects for indicators of mining, vehicular operation, and drilling (TPH, Cu, Cr, Zn)
- Nondetects for di-n-butyl grout compounds in JT-112, Gaas spring



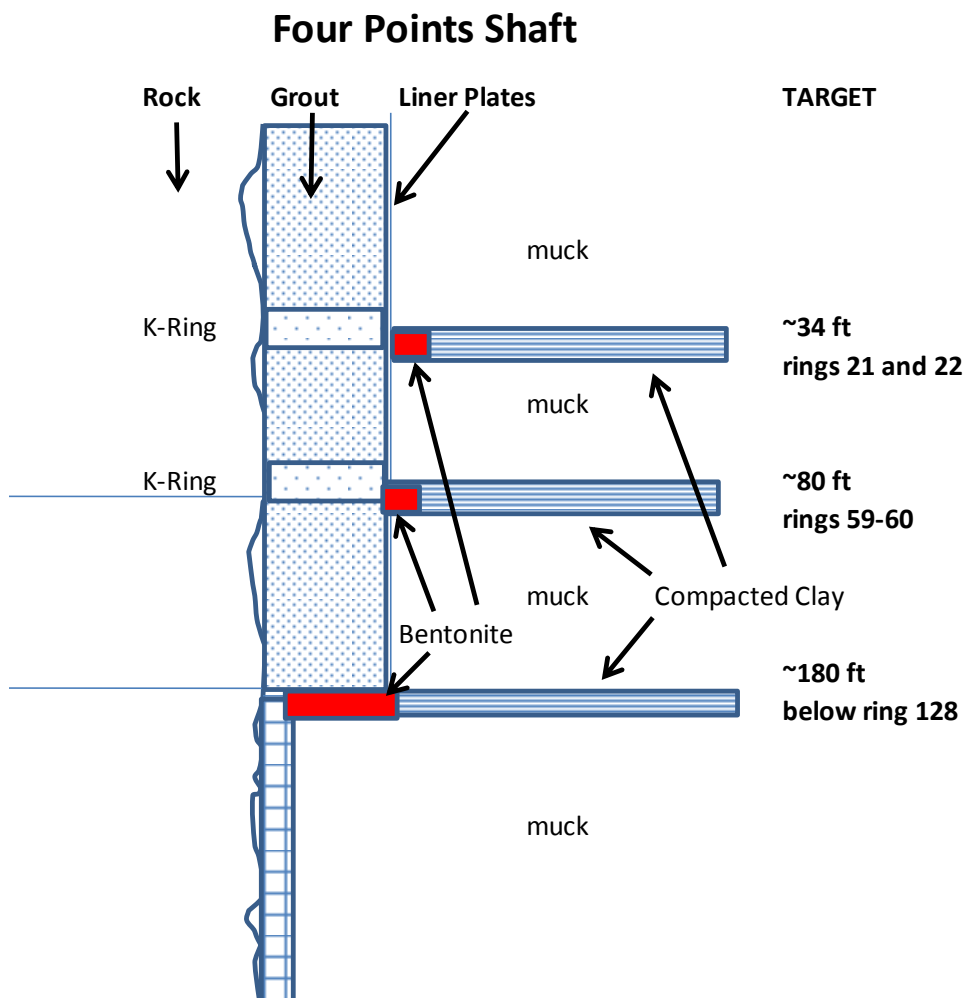
# Creating Barriers to Vertical Water Movement in Shafts

## For 4 Points and Spicewood:

- Identify horizons to seal
- Mark plates to remove above and below cold joint
- Remove loose material
- Inspect cold joint
- Place compacted clay and bentonite
- Inspect placed material



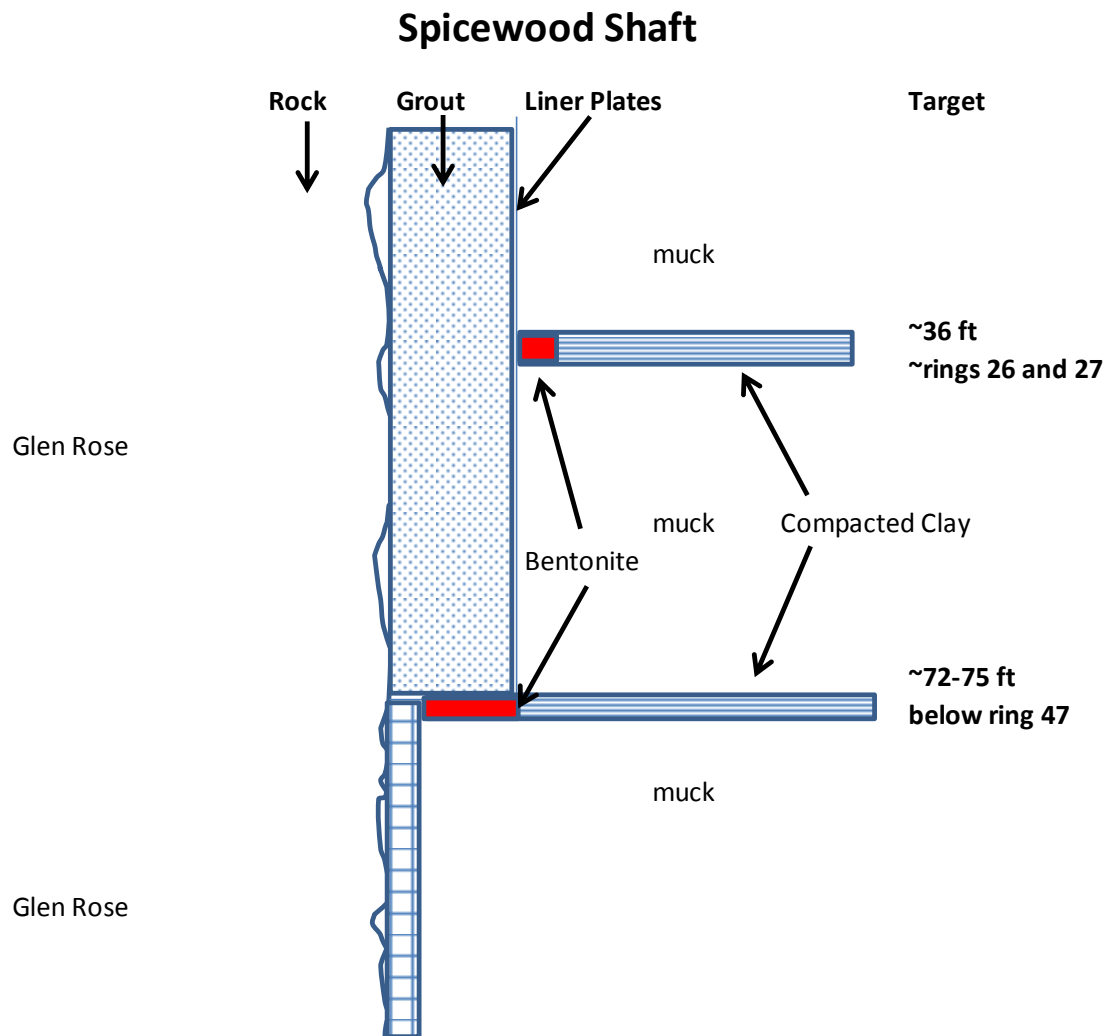
# Four Points Shaft Backfill







# Spicewood Shaft Backfill





Marking Plates at 4 Points





# Marked Plates for Removal



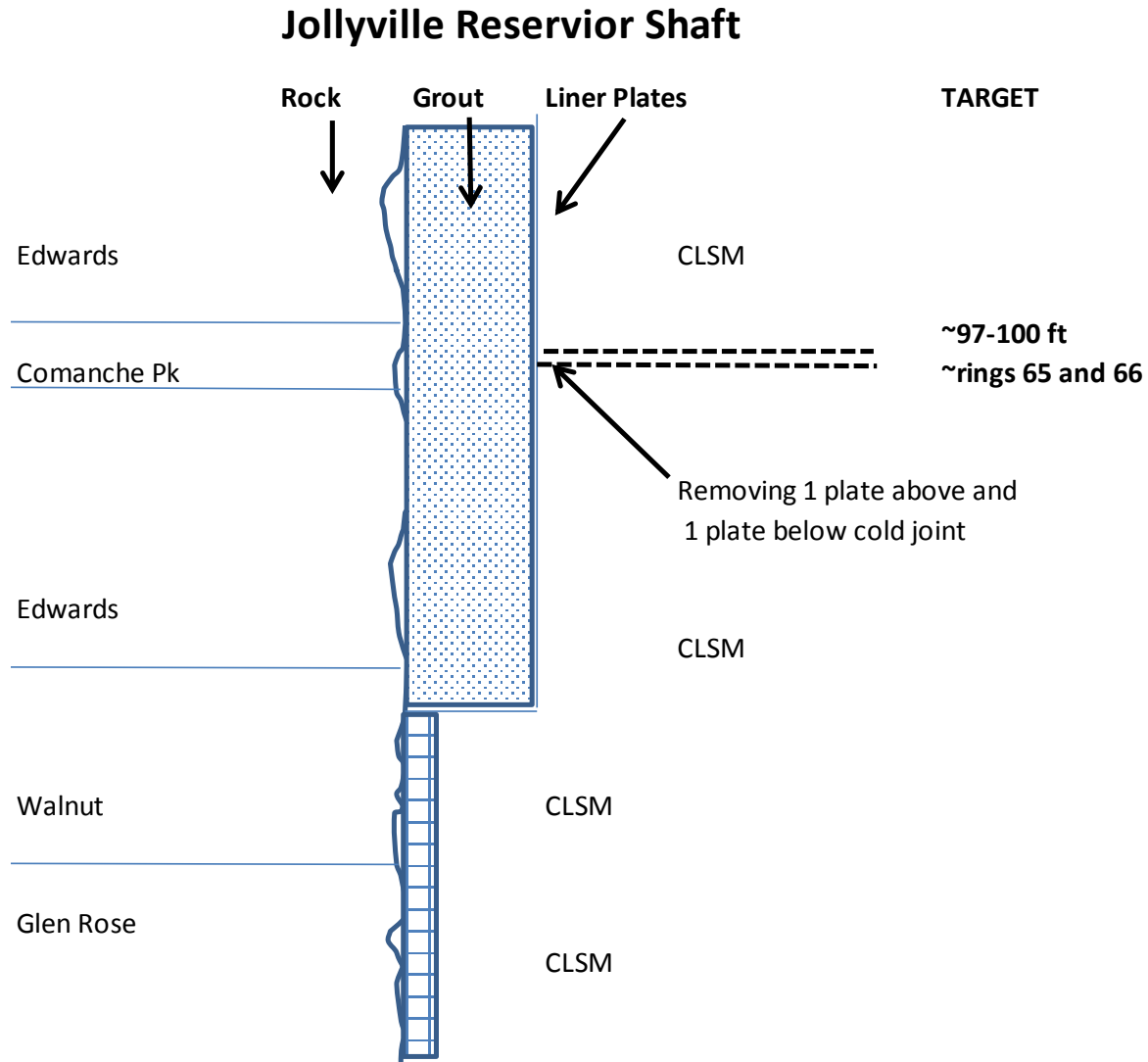


# 4 Points Shaft: Upper Permeable Ring





# Jollyville Shaft Backfill





# Creating Barriers to Vertical Water Movement

## For Jollyville:

- Identify horizons to seal
- Mark plates to remove above and below cold joint
- Remove loose material
- Inspect cold joint
- Place CLSM



# Controlled Low-Strength Material (CLSM)





# Installation of CLSM @ WTP shaft





# Jollyville Shaft: Pipe and CLSM





# The Cold Joints

Removing  
liner plates



Tight cold joint  
(no gap)



Open cold joint with  
loose material



Cleaned open  
cold joint







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