



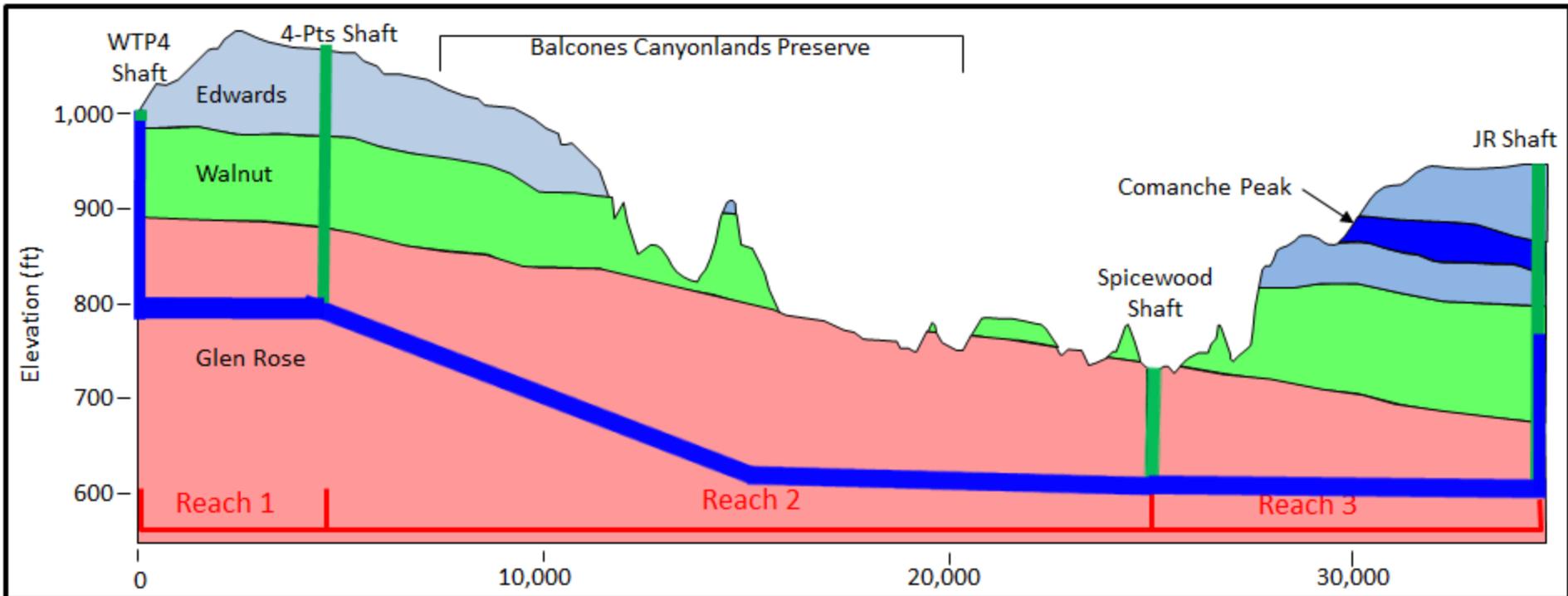
JOLLYVILLE TRANSMISSION MAIN: Environmental Commissioning Monthly Report

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



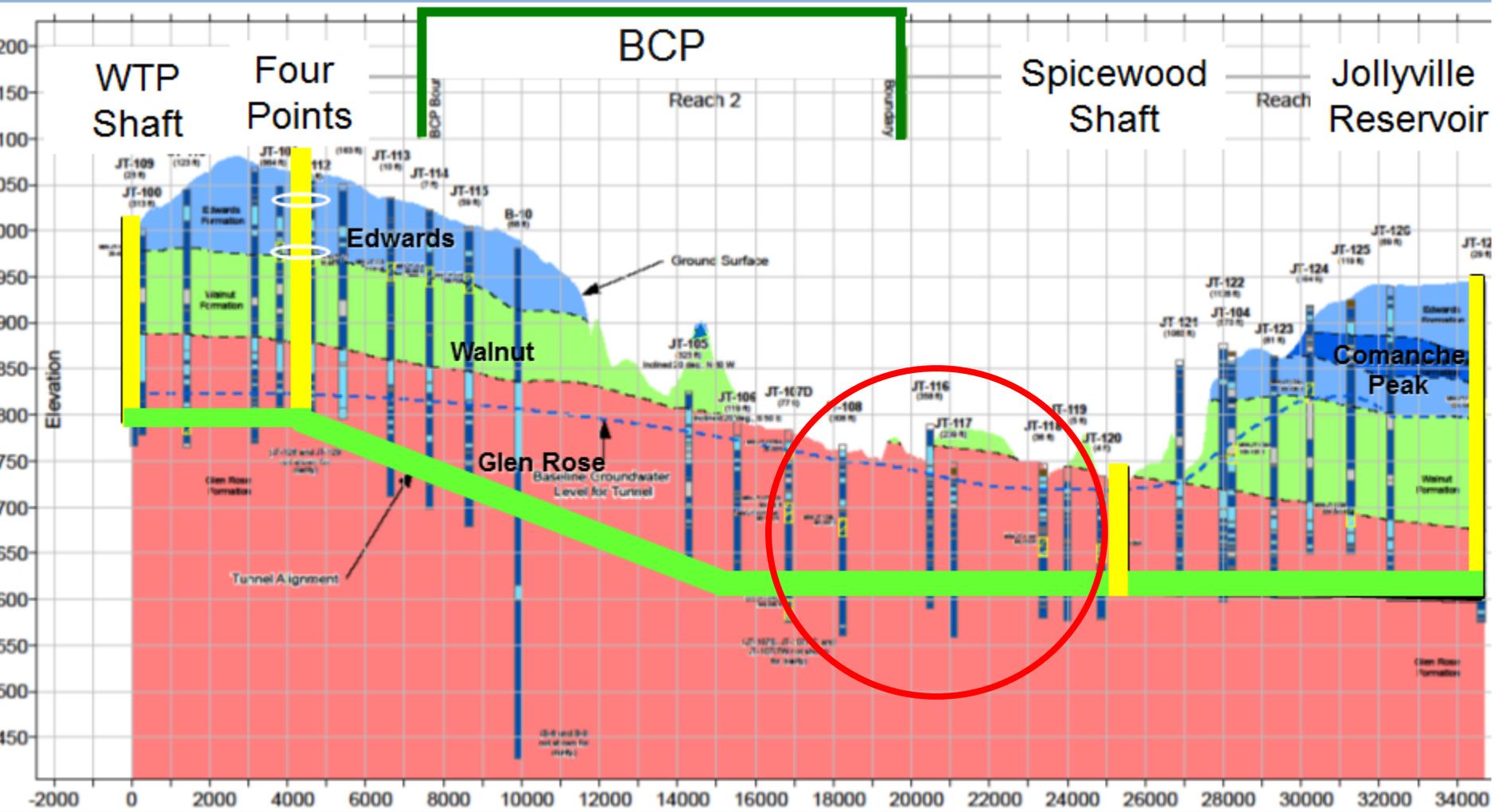
Environmental Commissioning Activities - JVTM

- 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

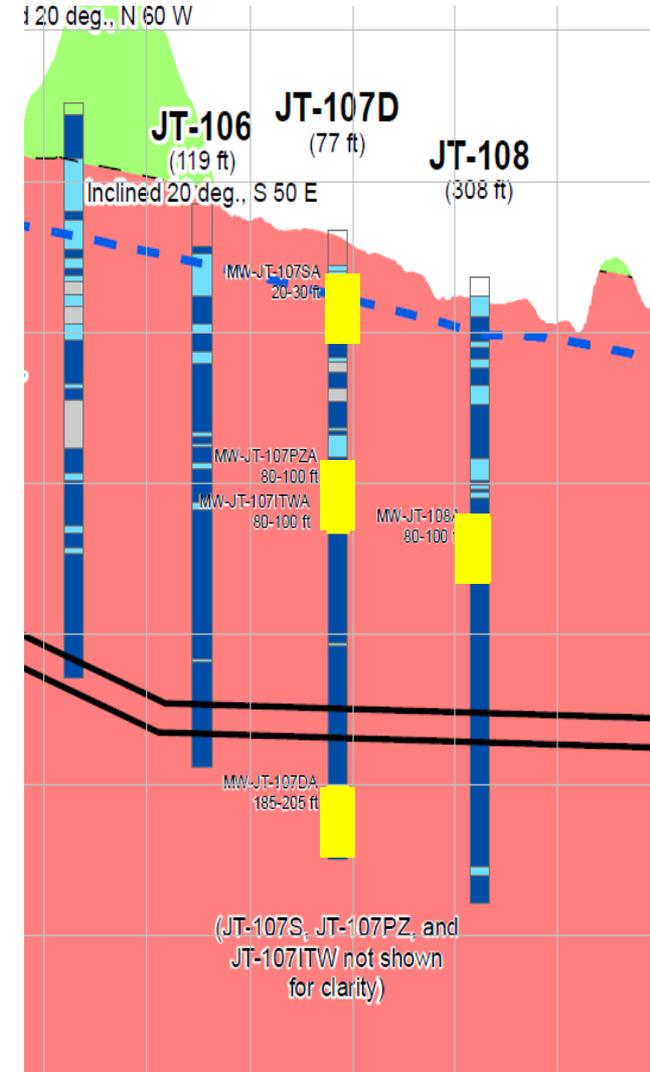
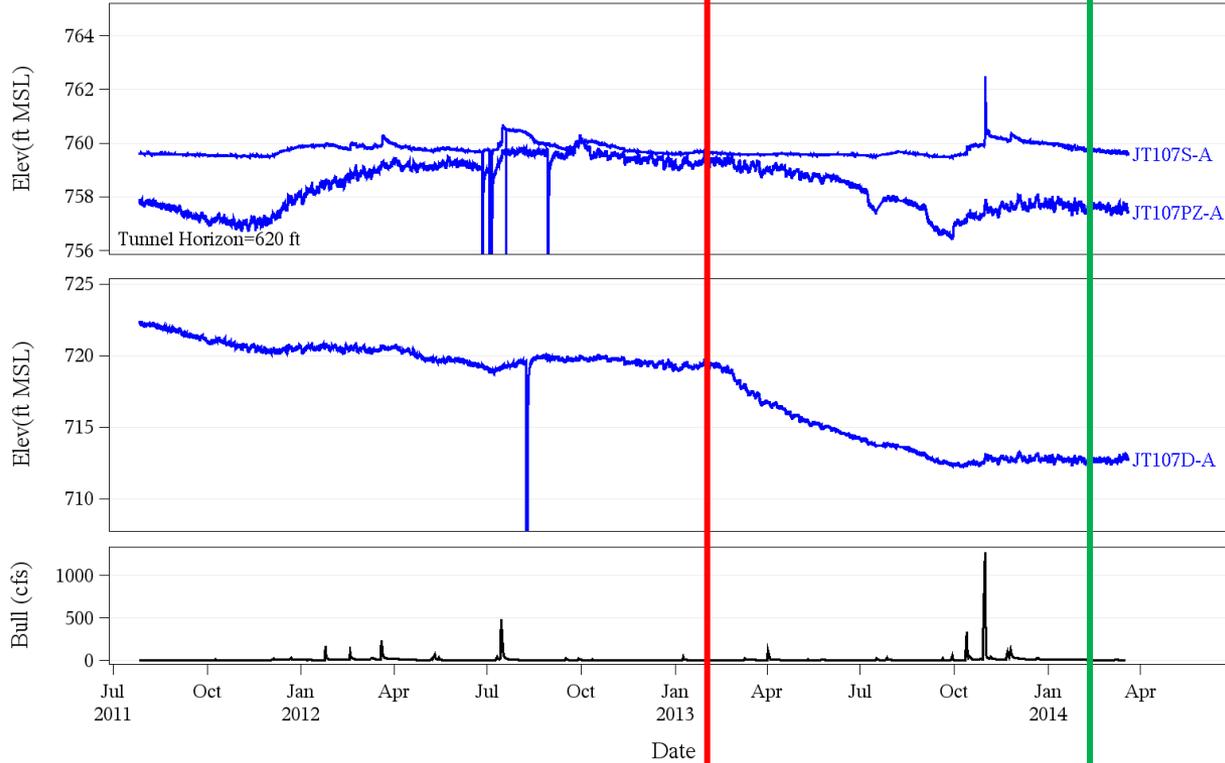
- = excavated
- = pipe laid
- = pipe laid & grouted



Tunnel passes 107 cluster 2/13/13

Approx time of grouting late Feb 2014

JT-107 elevation and Bull flow



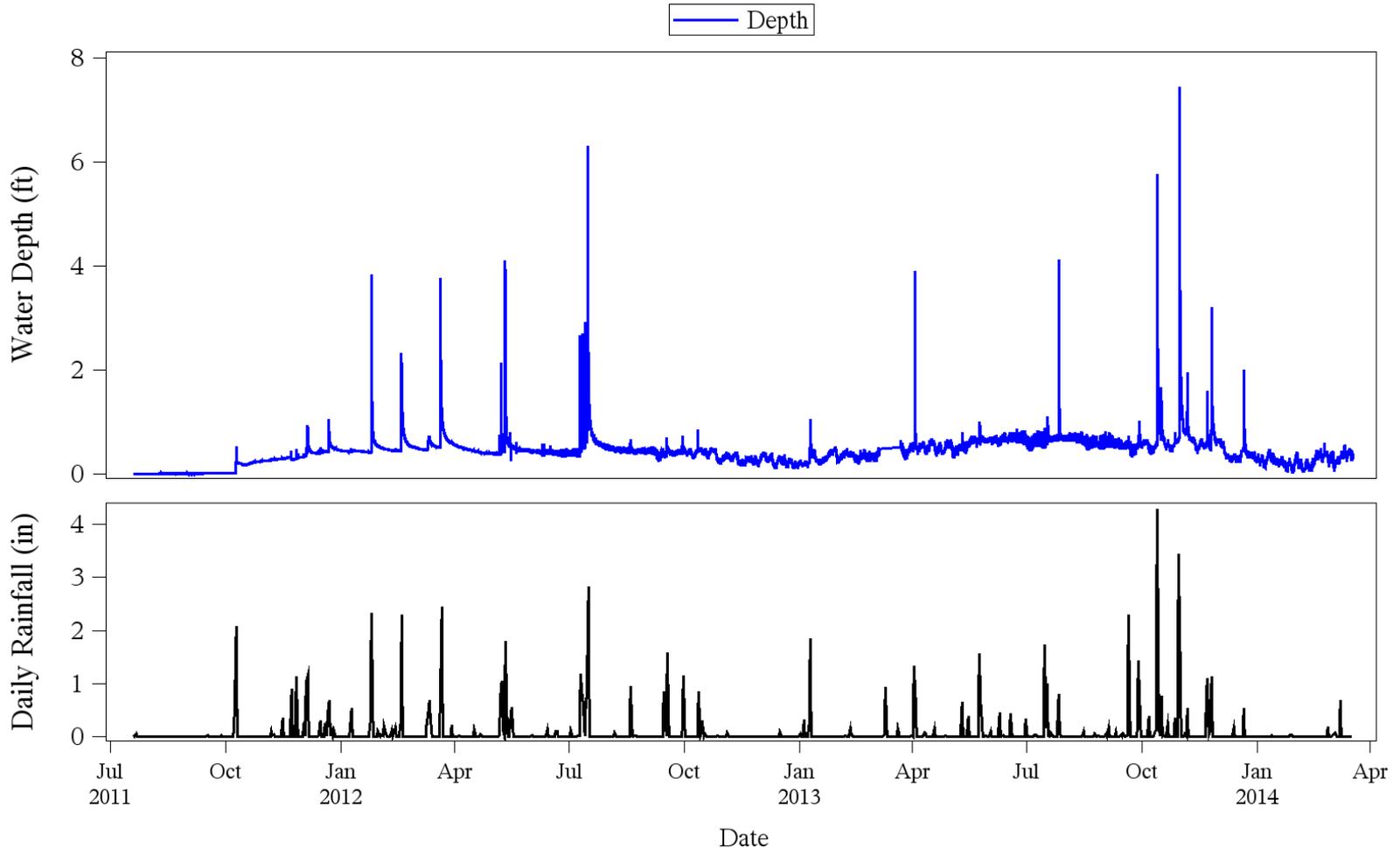
City of Austin DRAFT: QA/QC review pending

- 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

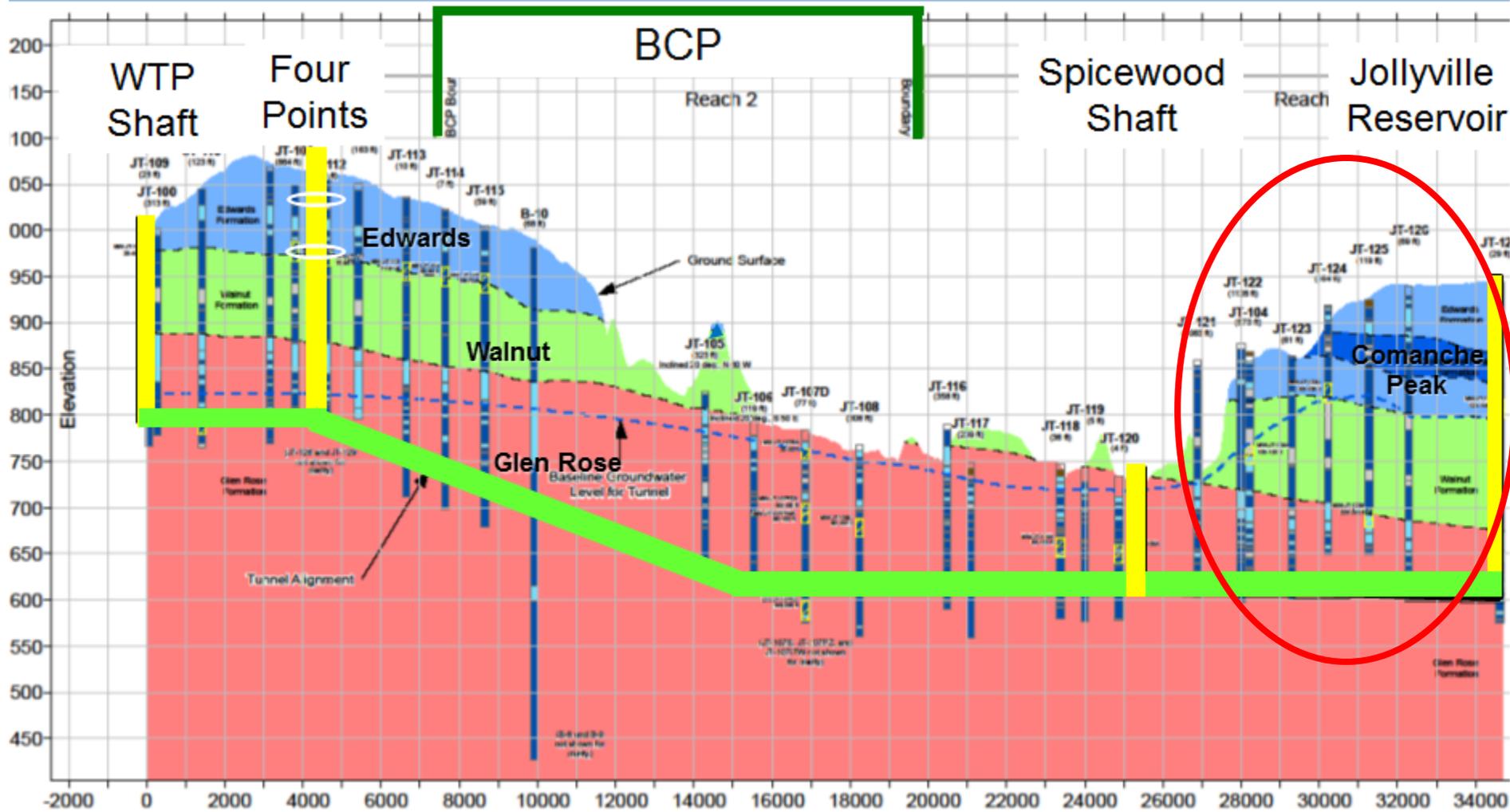


City of Austin DRAFT: QA/QC review pending



East Side Wells

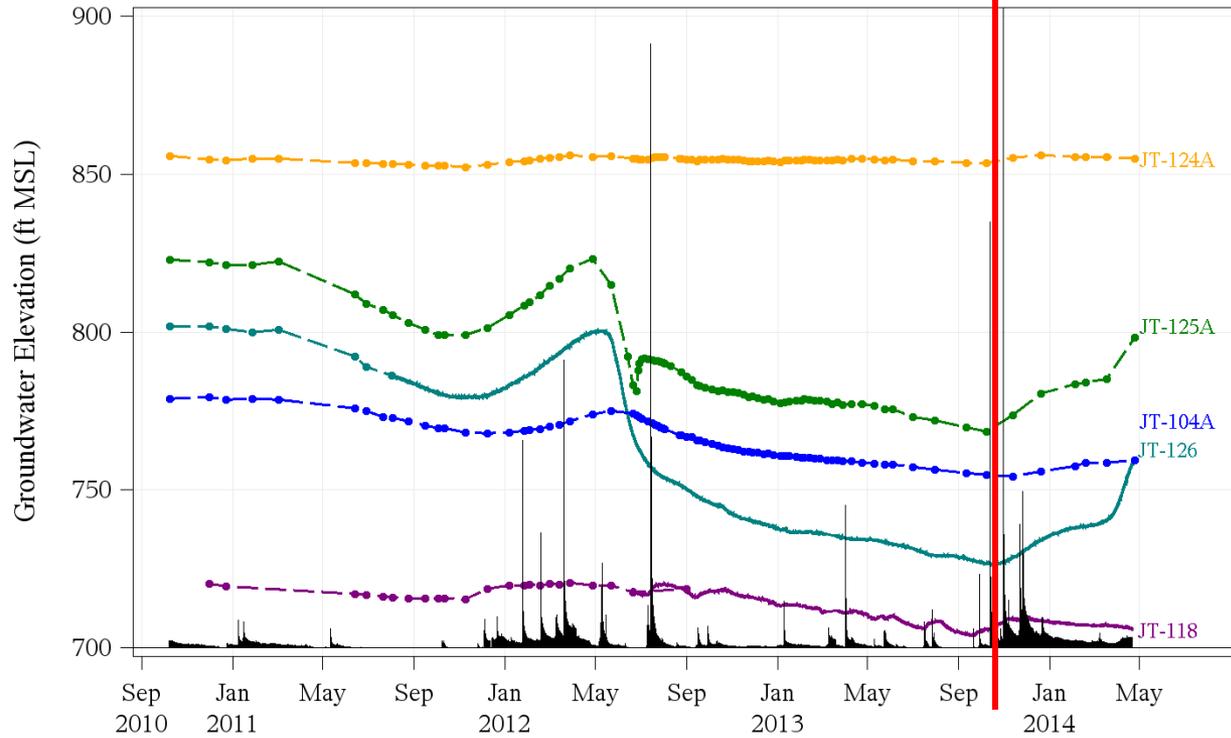
- = excavated
- = pipe laid & grouted



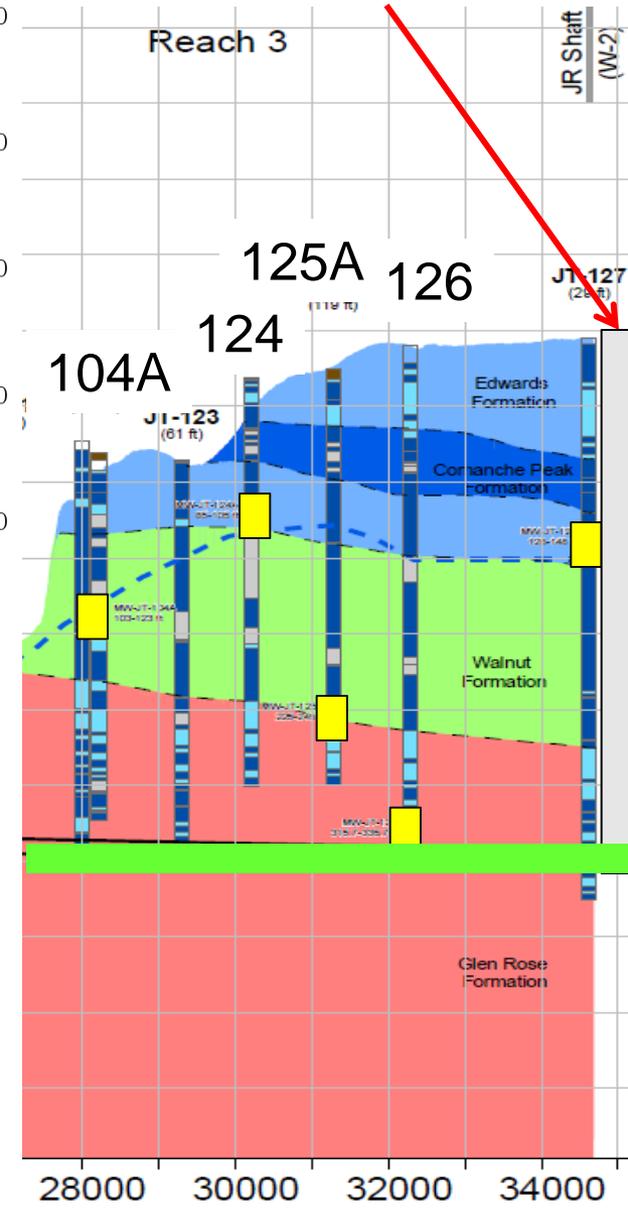
East Side Wells

Approx time of grouting
late Oct 2014

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



Jollyville Reservoir Shaft (open)

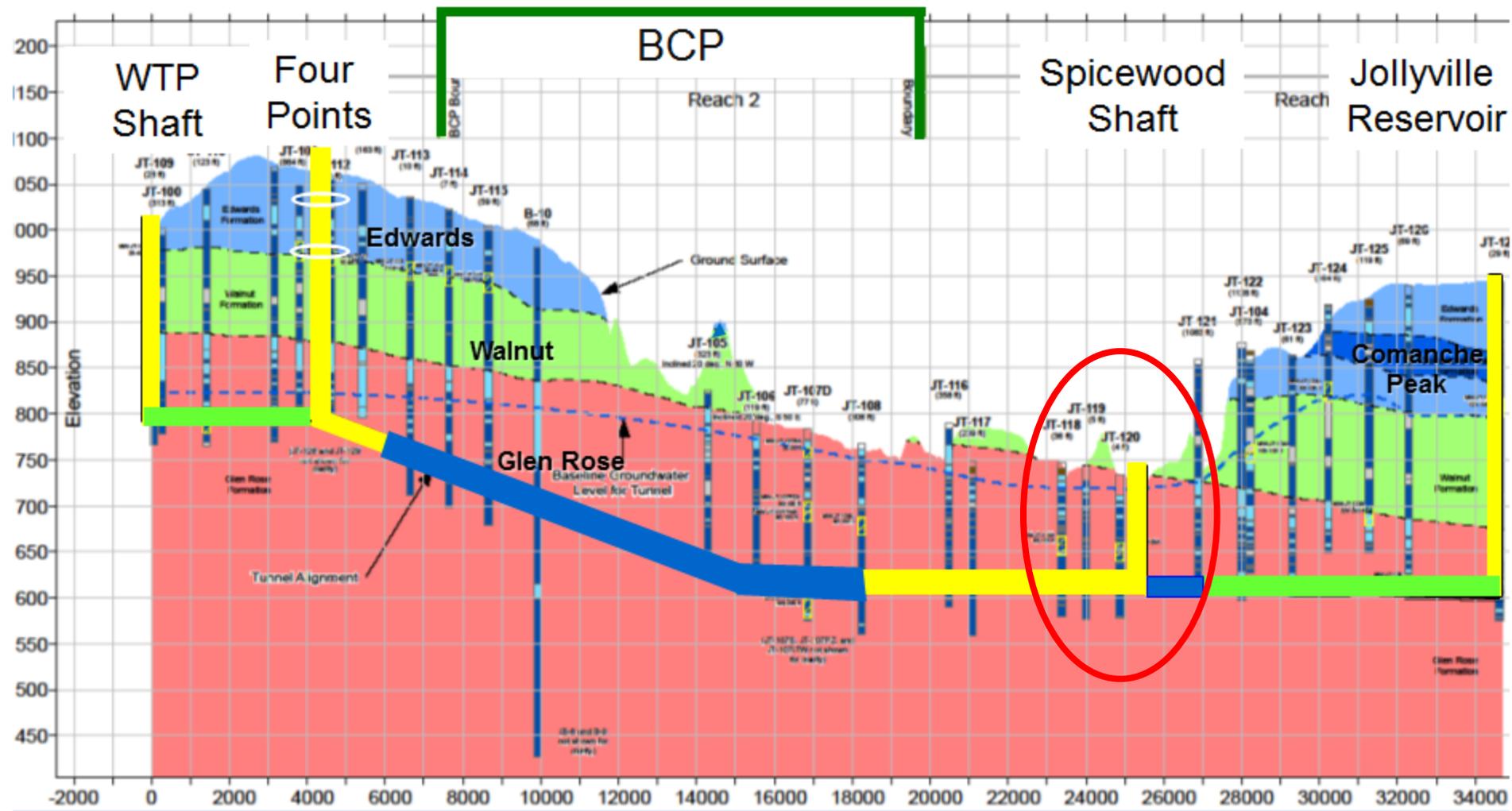


- Reach 3 excavation complete, pipe laid, and grouted.
- Most wells saw an uptick after October rain events (excluding 127, not pictured), but grouting also occurred at this time, so the two events are confounded.
- Groundwater levels in JT-125A and JT-126 appear to be recovering as CLSM is being poured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



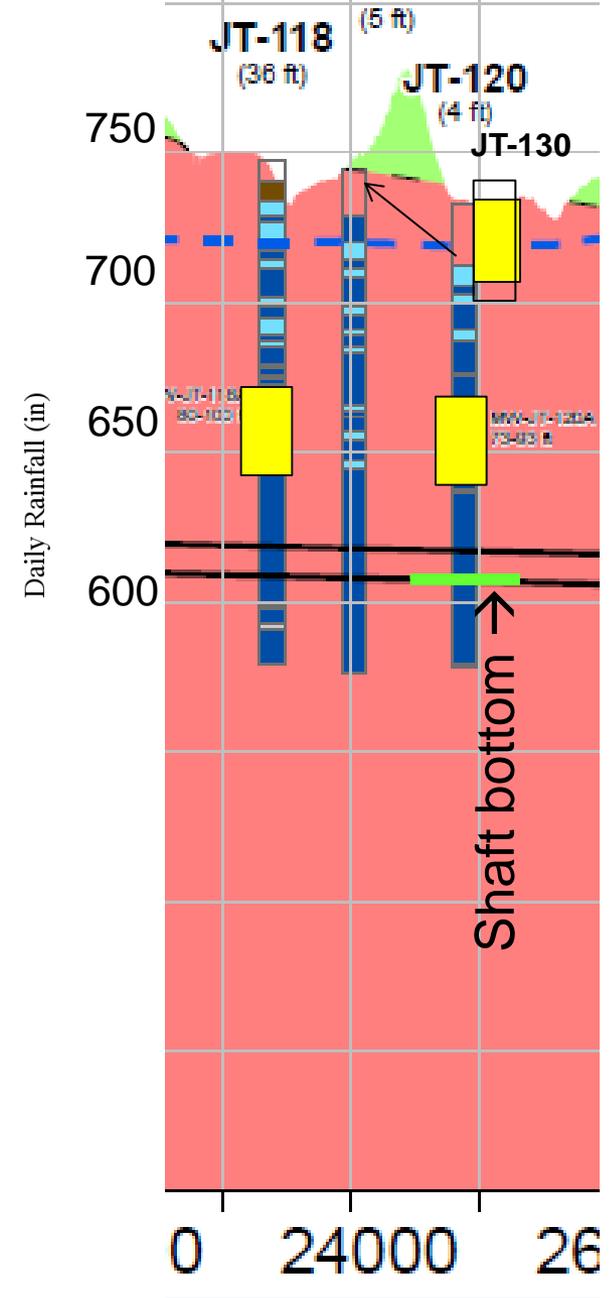
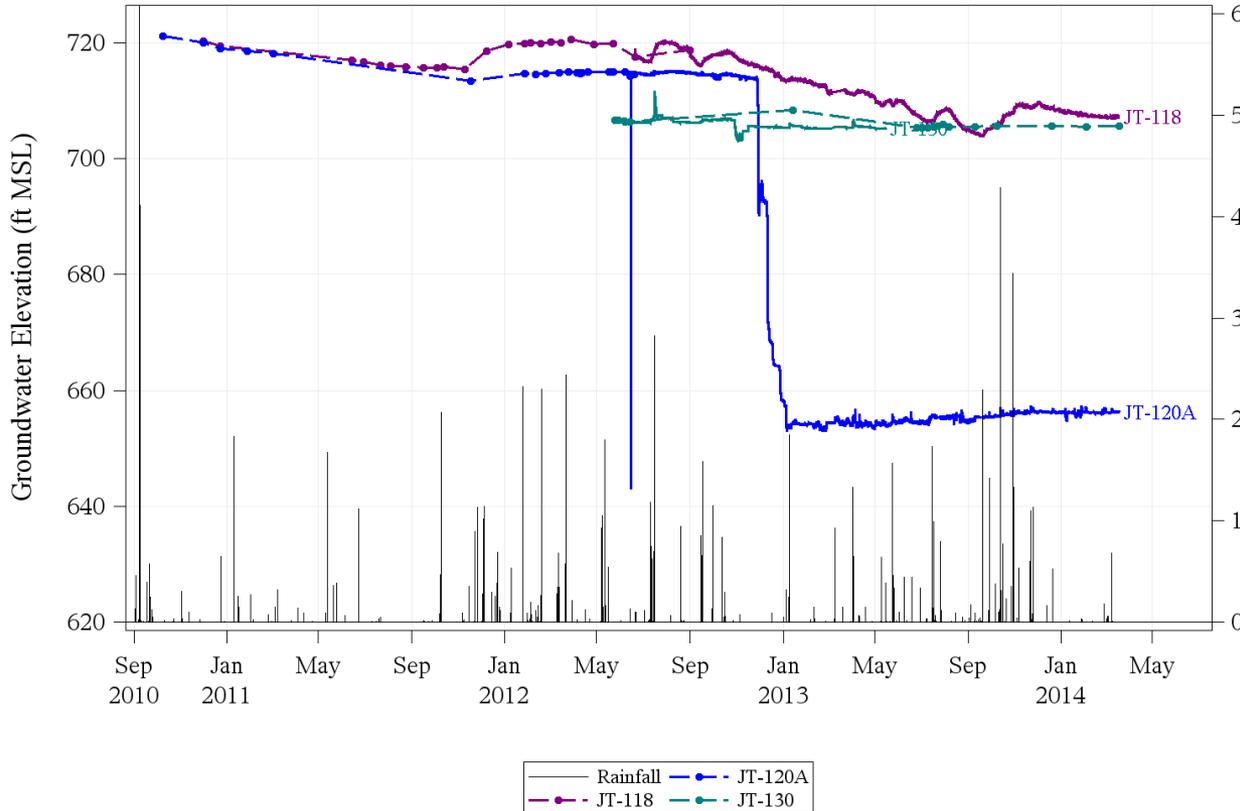
Spicewood Wells

- = 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

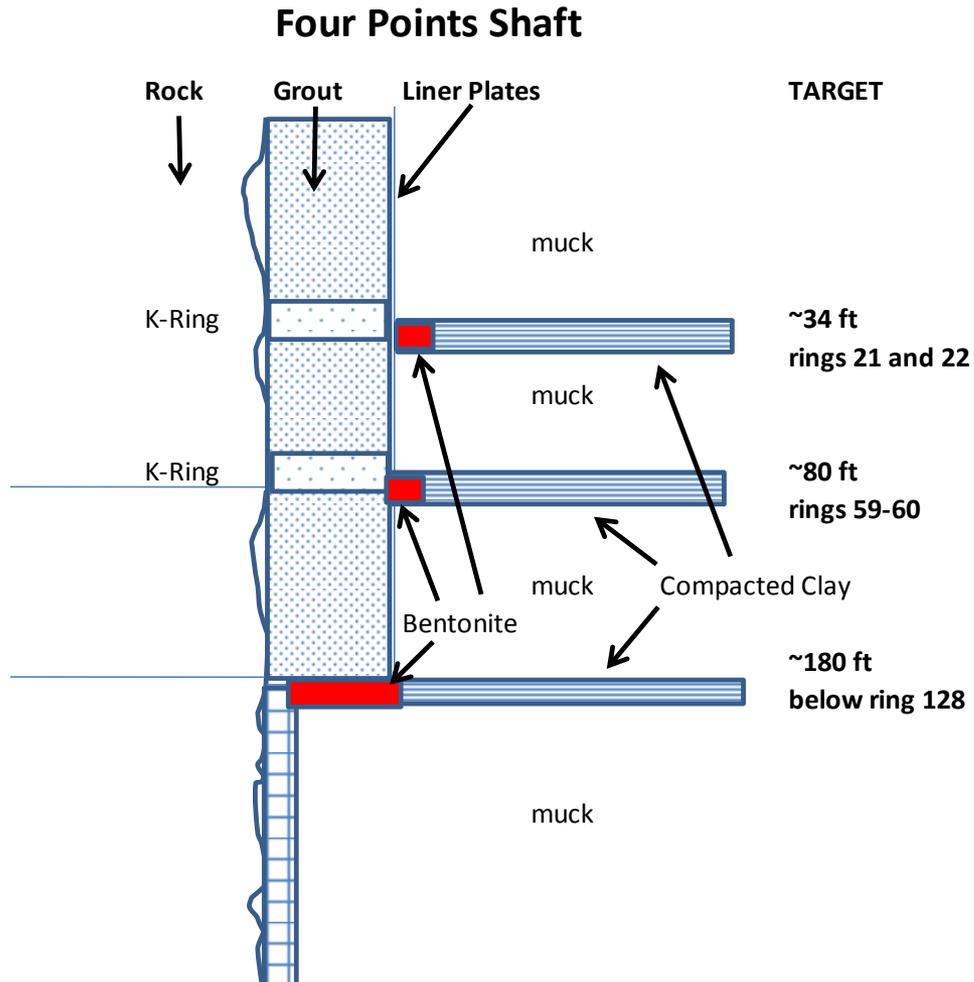
A photograph of a city skyline with several skyscrapers and buildings, partially obscured by a blue gradient overlay.

Creating Barriers to Vertical Water Movement in Shafts

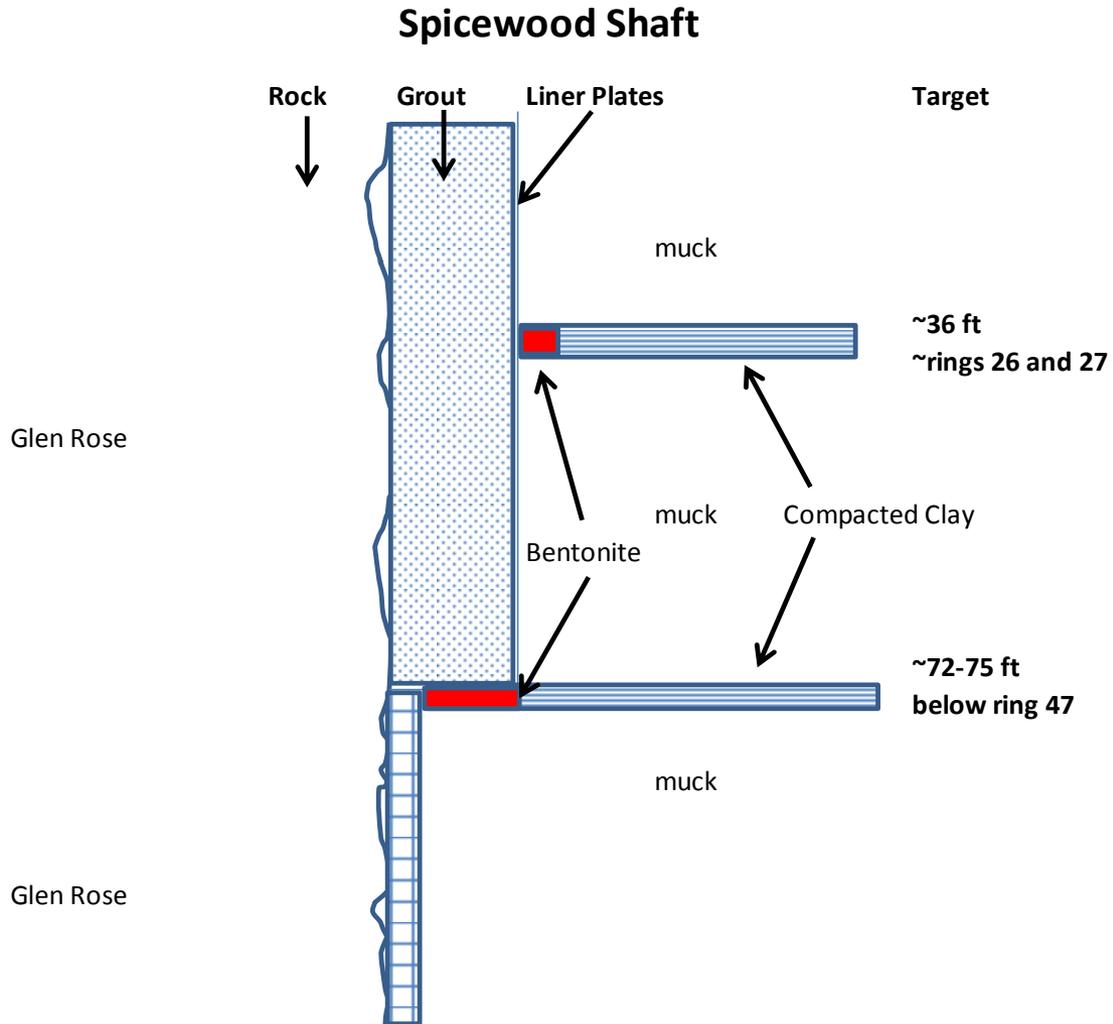
For 4 Points and Spicewood:

- 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



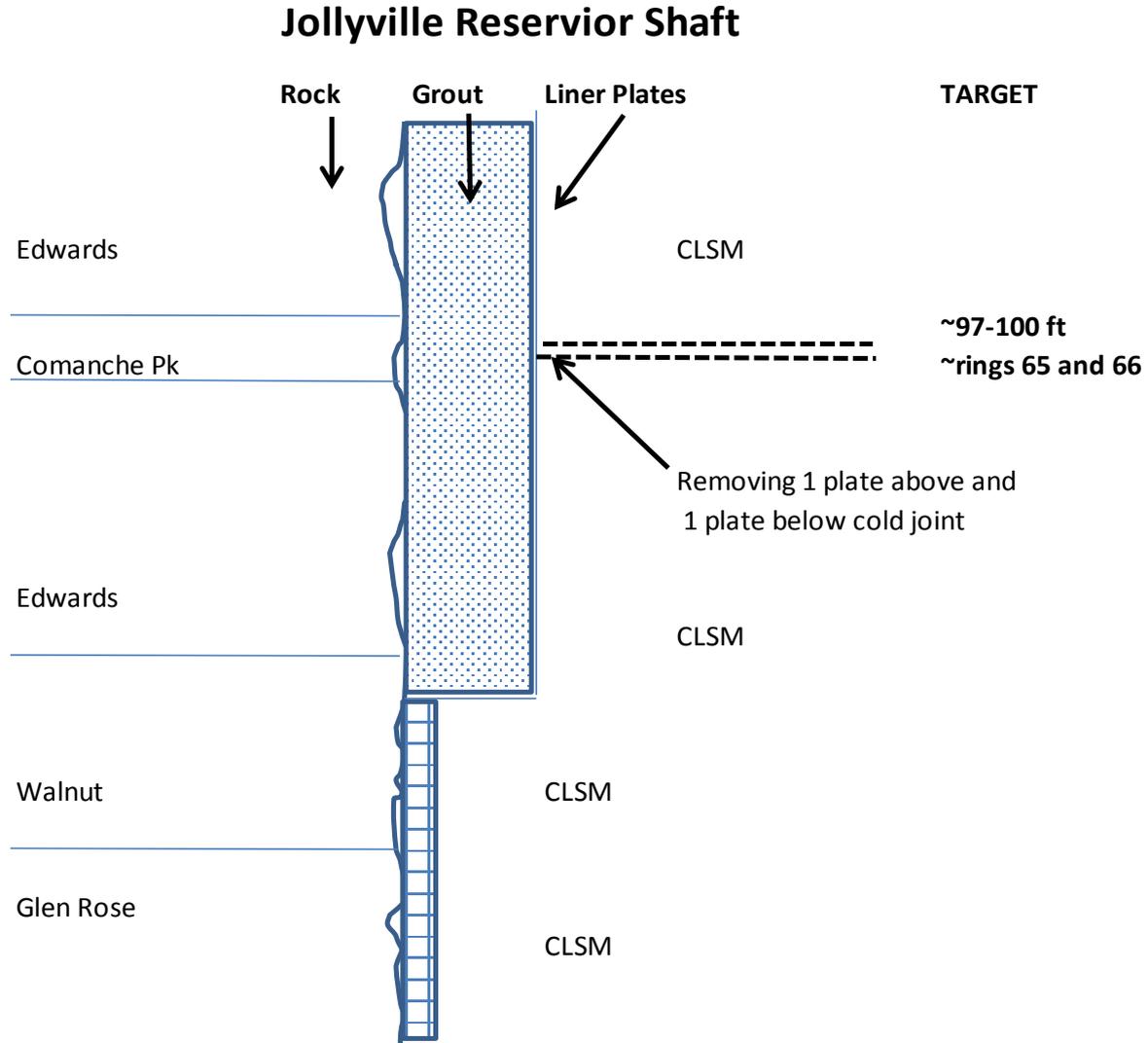
Marked Plates for Removal



4 Points Shaft: Upper Permeable Ring



Jollyville Shaft Backfill



A photograph of a city skyline with several skyscrapers and buildings, partially obscured by a blue gradient overlay.

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

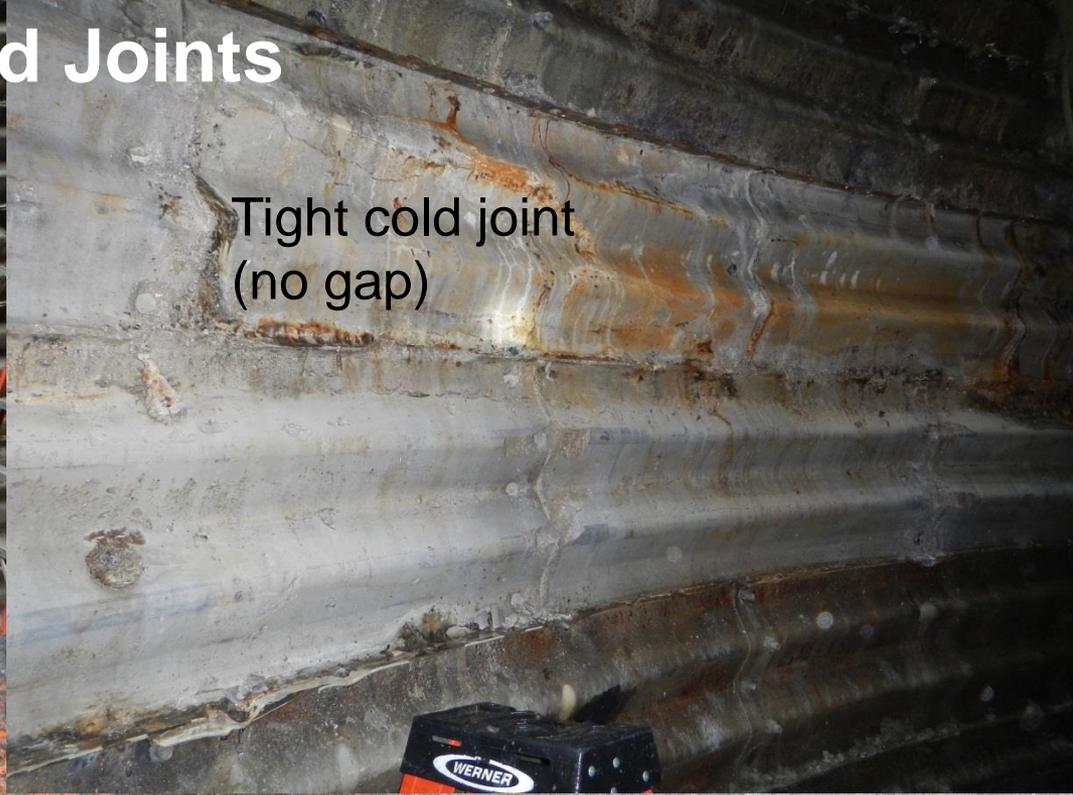


The Cold Joints

Removing
liner plates



Tight cold joint
(no gap)



Open cold joint with
loose material



Cleaned open
cold joint





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