




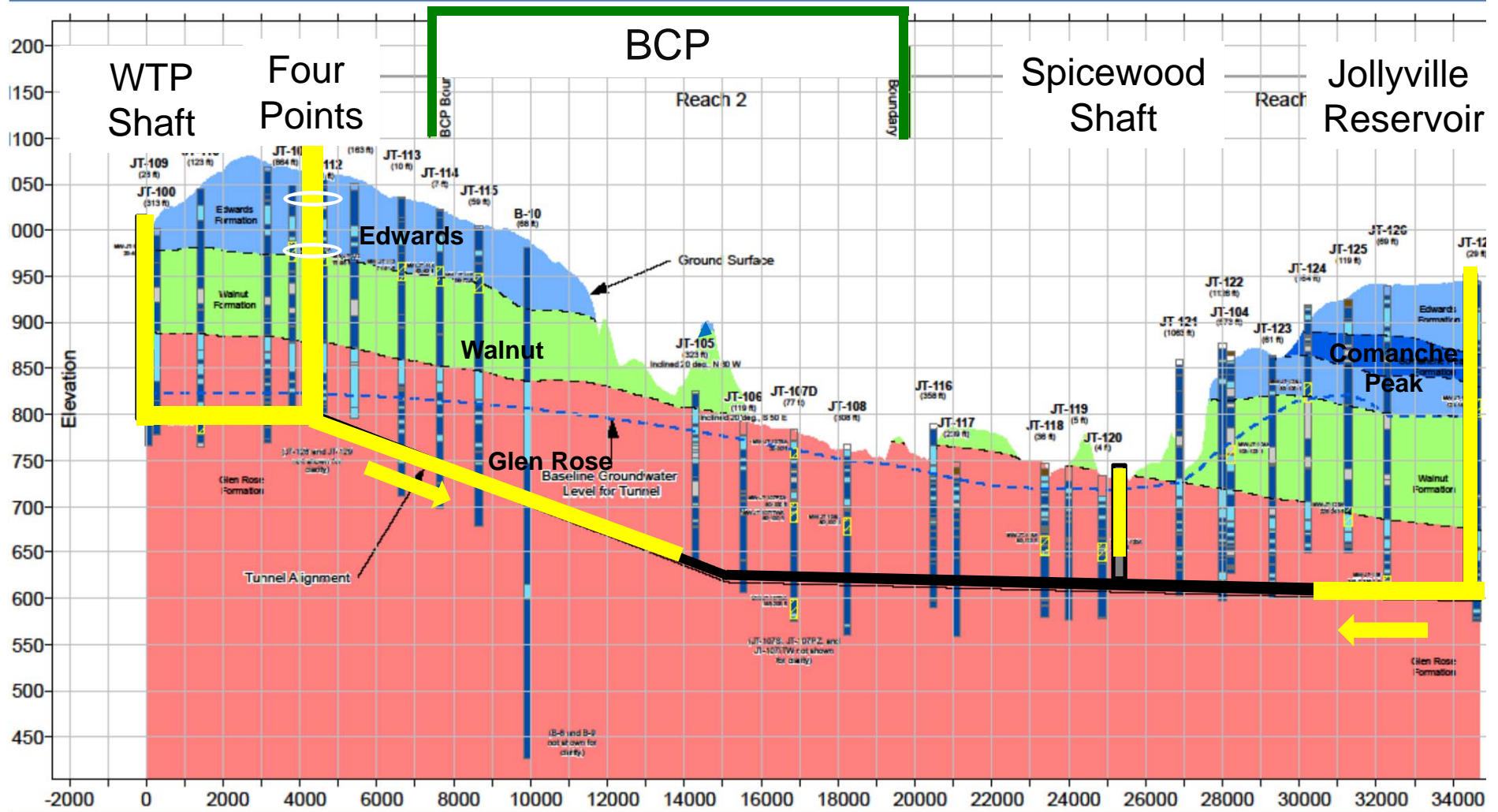
JOLLYVILLE TRANSMISSION MAIN: Environmental Commissioning Monthly Report

Presented to the Austin Environmental Board
January 16, 2013

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

Jollyville Transmission Main Project

 = progress

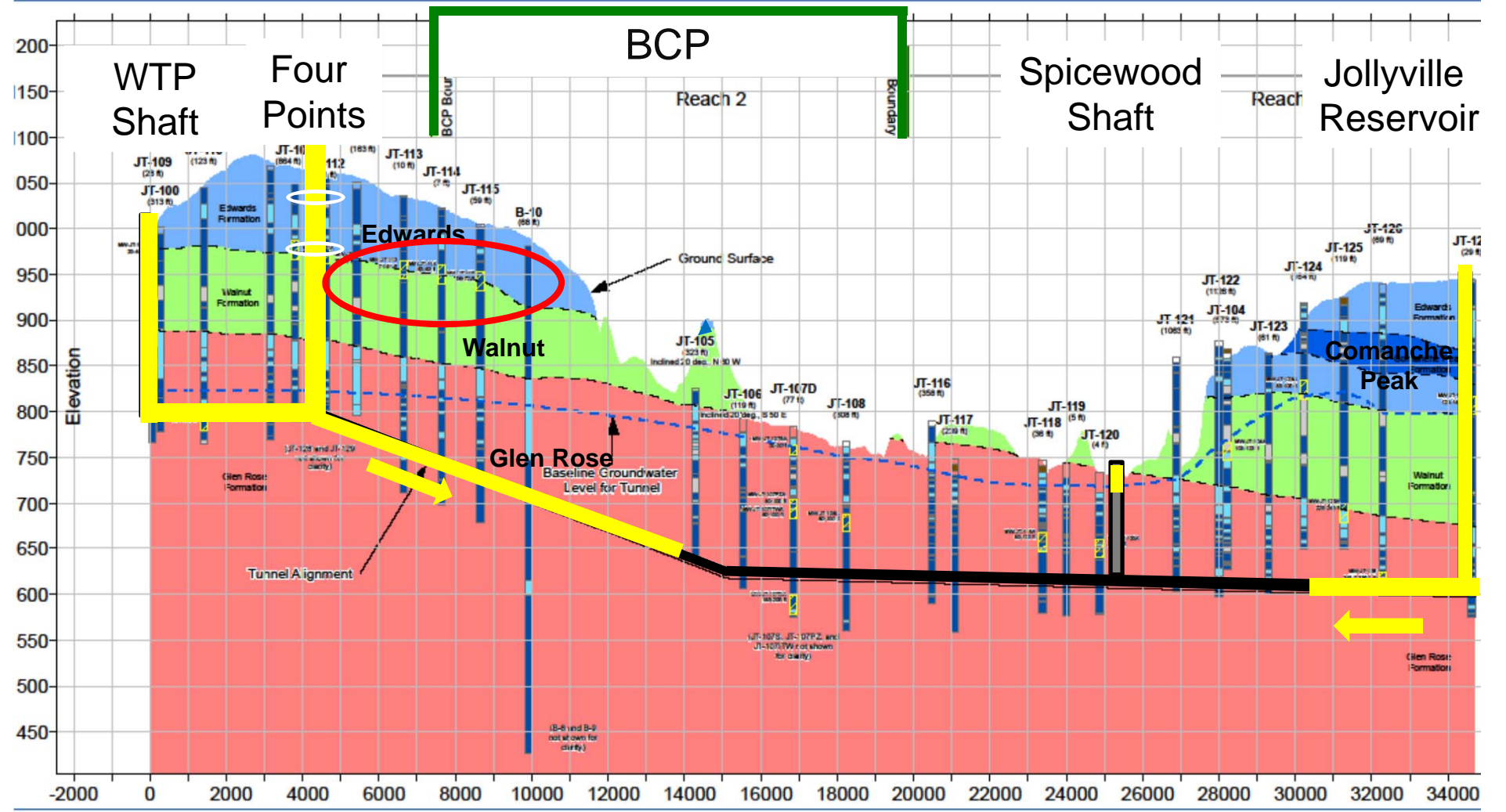




Environmental Commissioning Activities - JVTM

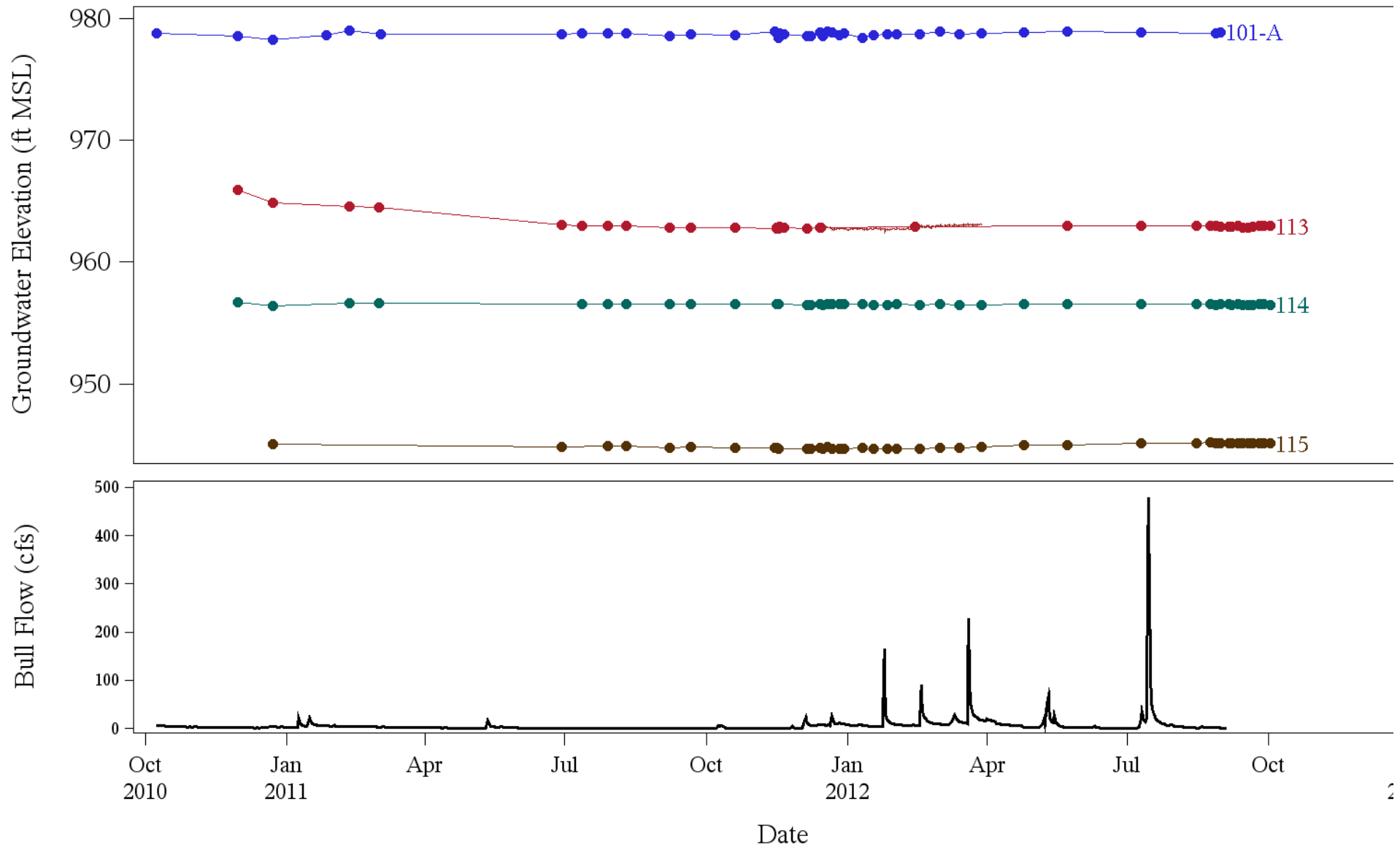
- Monthly shaft site (surface) visits concurrent with plant site visits
- Biweekly shaft/tunnel visits to active shafts (4Points, Jollyville) and tunnel reaches (R2, R3)
- Biweekly meetings of the Environmental Commissioning Coordination Group (ECCG) to resolve potential issues
- Environmental Monitoring
 - *Increased monitoring schedule at adjacent sites as mining progresses in Reach 2, Reach 3 and Spicewood Shaft*
 - *Age Dating sampling 90-95% complete (still will take samples in tunnel if flowing water is encountered)*
- Environmental Cost Summary

Initial INTERA Contract Amount	\$ 1,713,814
Total Amount Billed to Date (work from July 2012)	\$ 1,379,460
Total Remaining	\$ 334,353

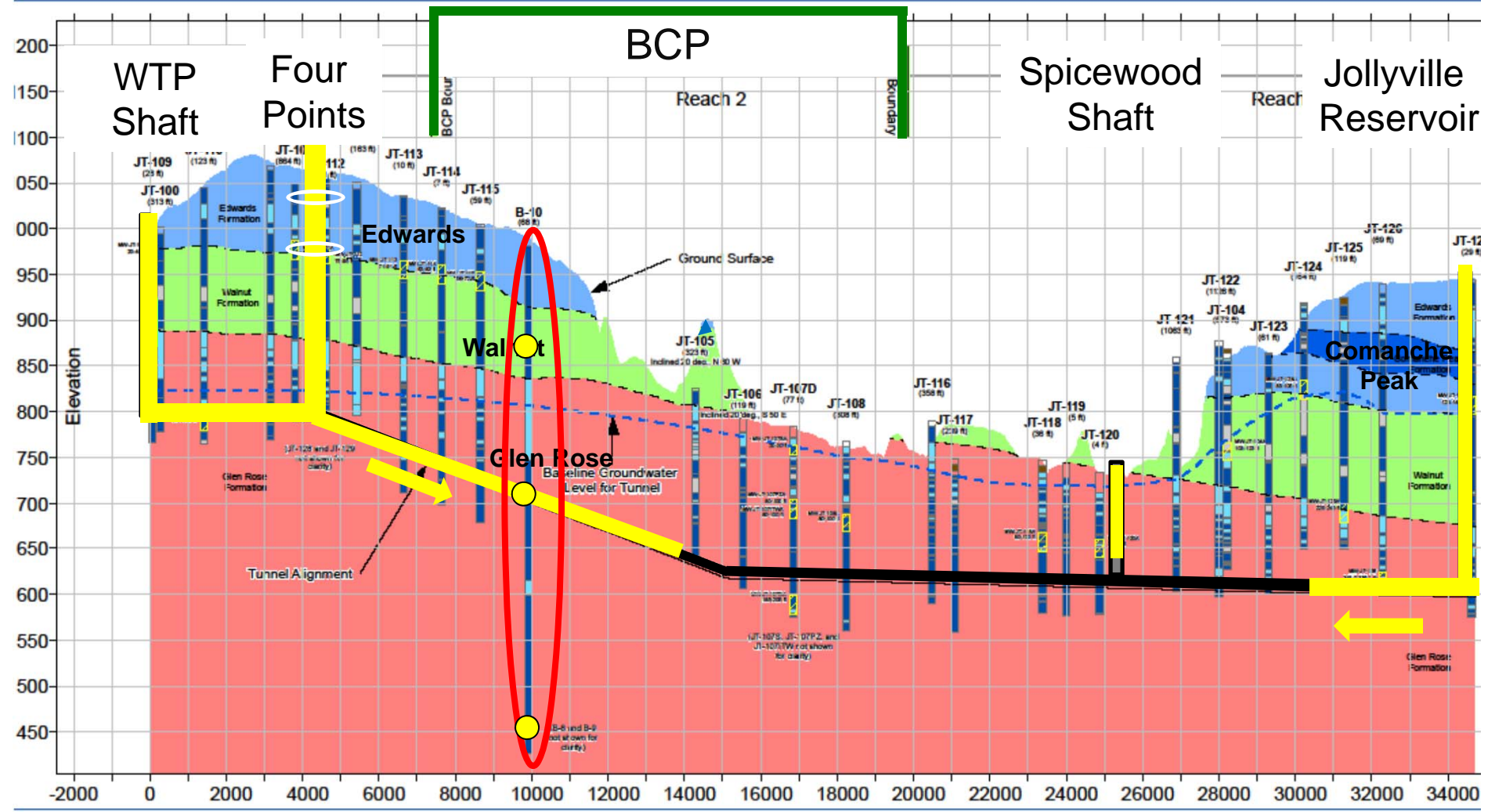


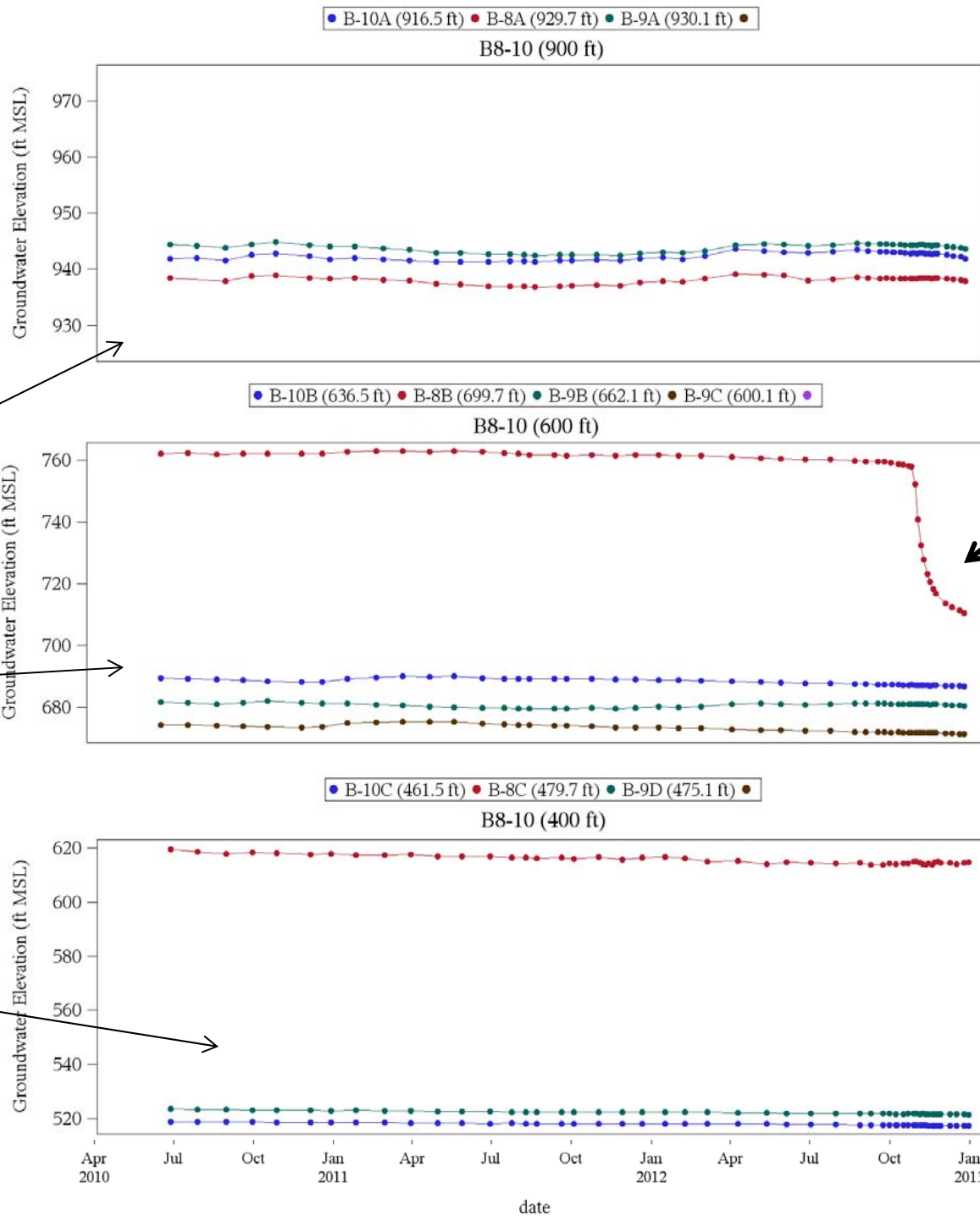
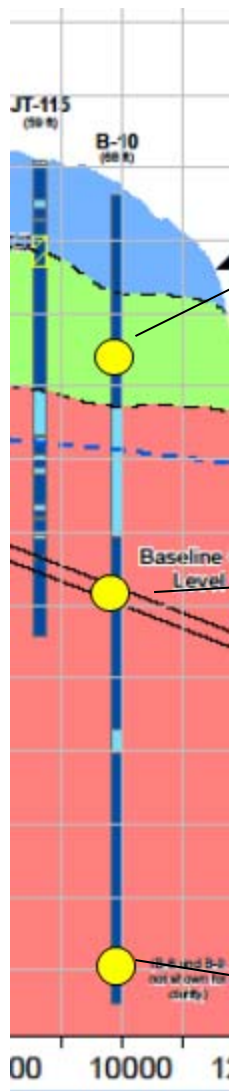
West Edwards Wells

● 101-A ● 113 ● 114 ● 115 ●



City of Austin DRAFT: QA/QC review pending

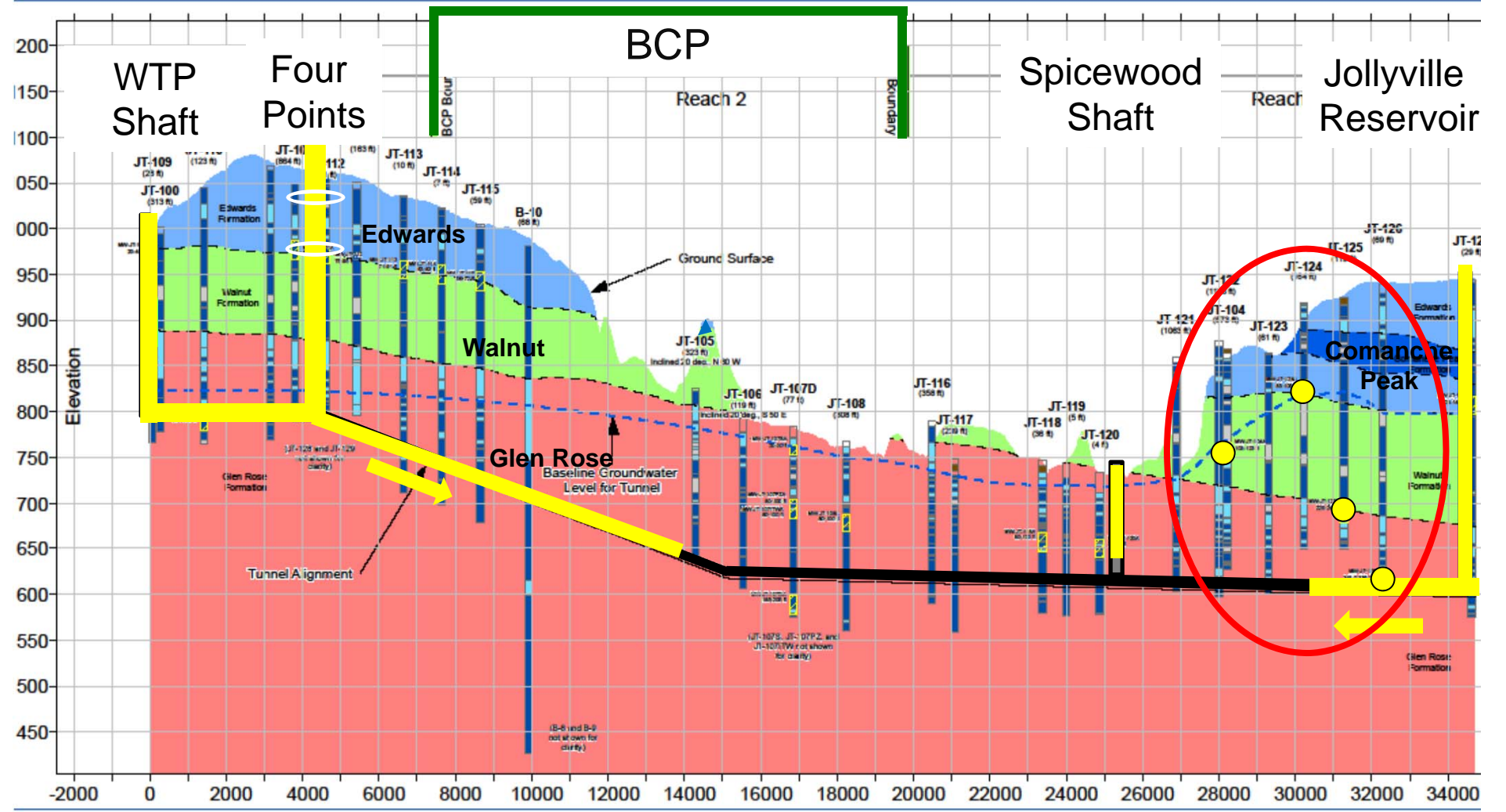




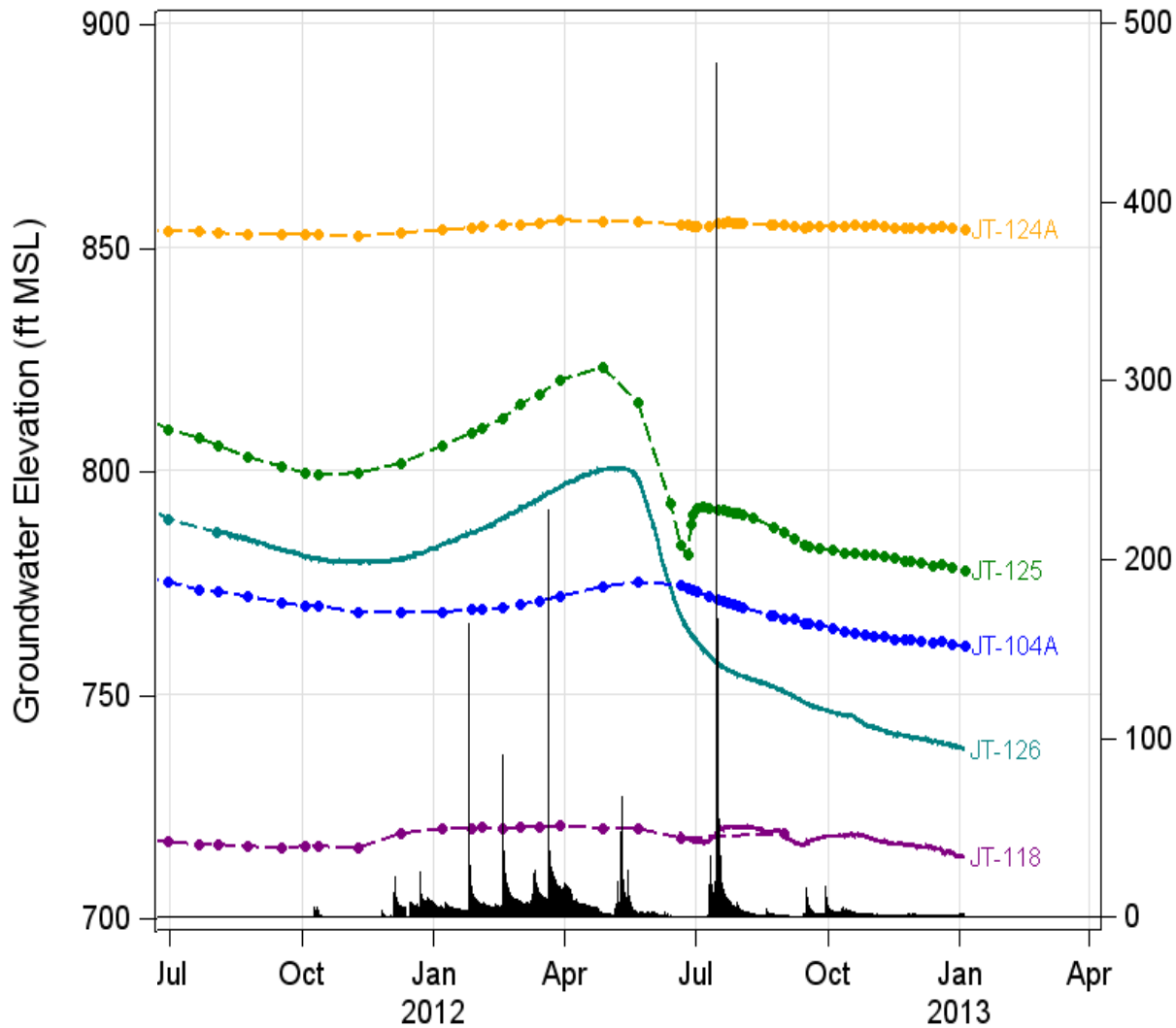
Tunnel affects groundwater levels at tunnel horizon, but not above or below.

B8-b – screened @ tunnel horizon ~50 ft drop as tunnel passes.

Fugro Boring Id	Piezometer Elevation (ft msl)
B-9A	930.05
B-8A	929.7
B-10A	916.54
B-8B	699.7
B-9B	662.05
B-10B	636.54
B-9C	600.05
B-8C	479.7
B-9D	475.05
B-10C	461.54

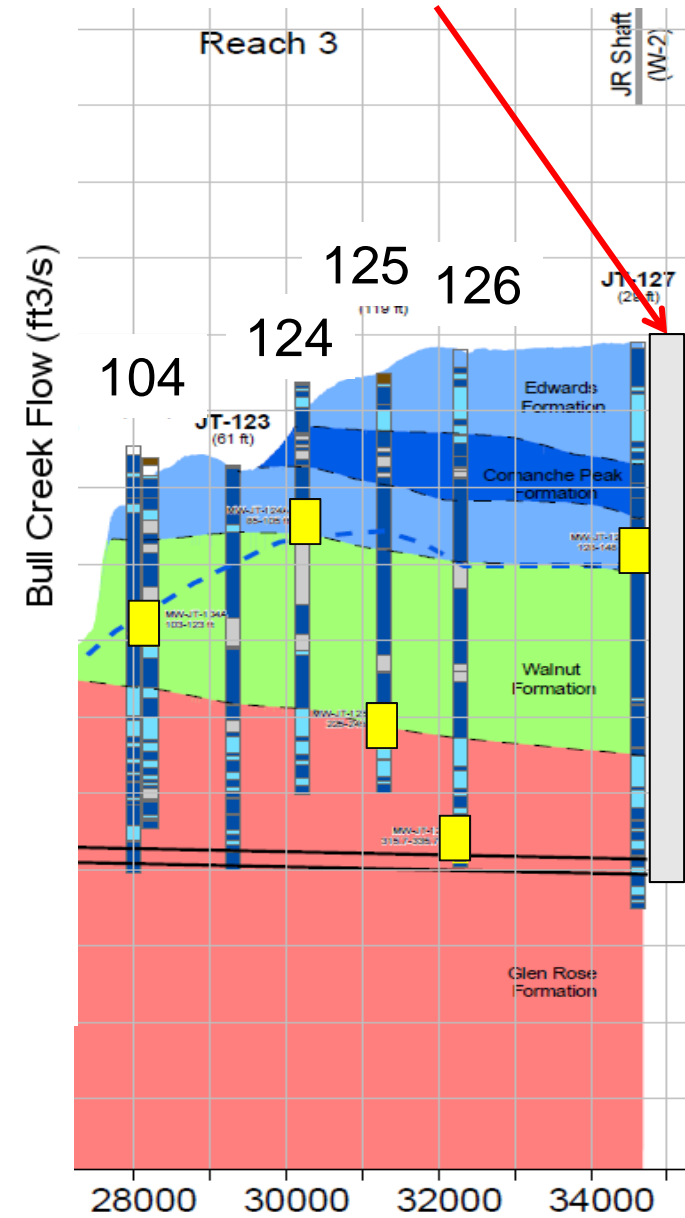


East Side Wells



- All GR wells declining, in addition to 104 in Walnut.
- JT-124 Walnut well level relatively flat.

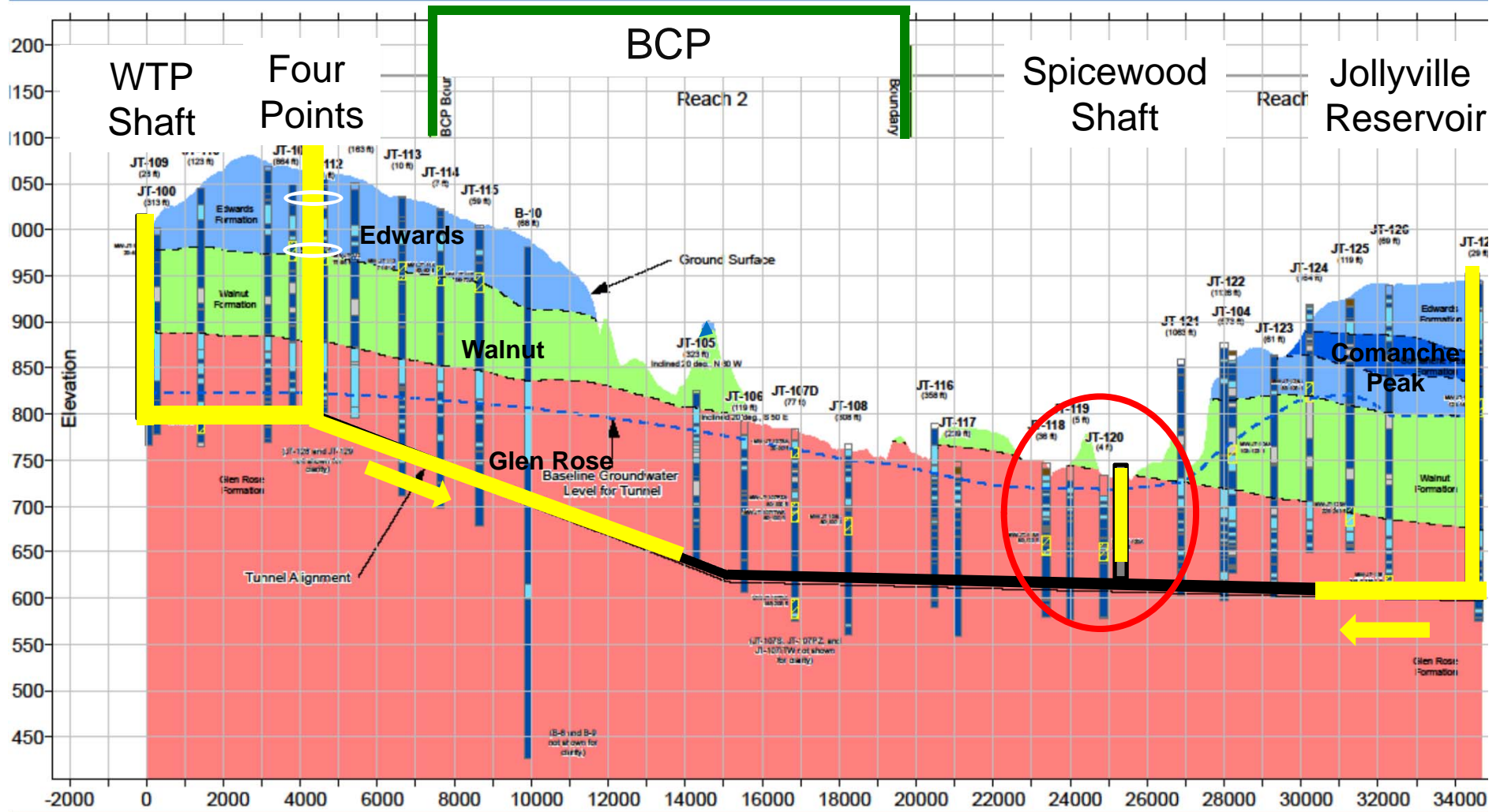
Jollyville Reservoir Shaft





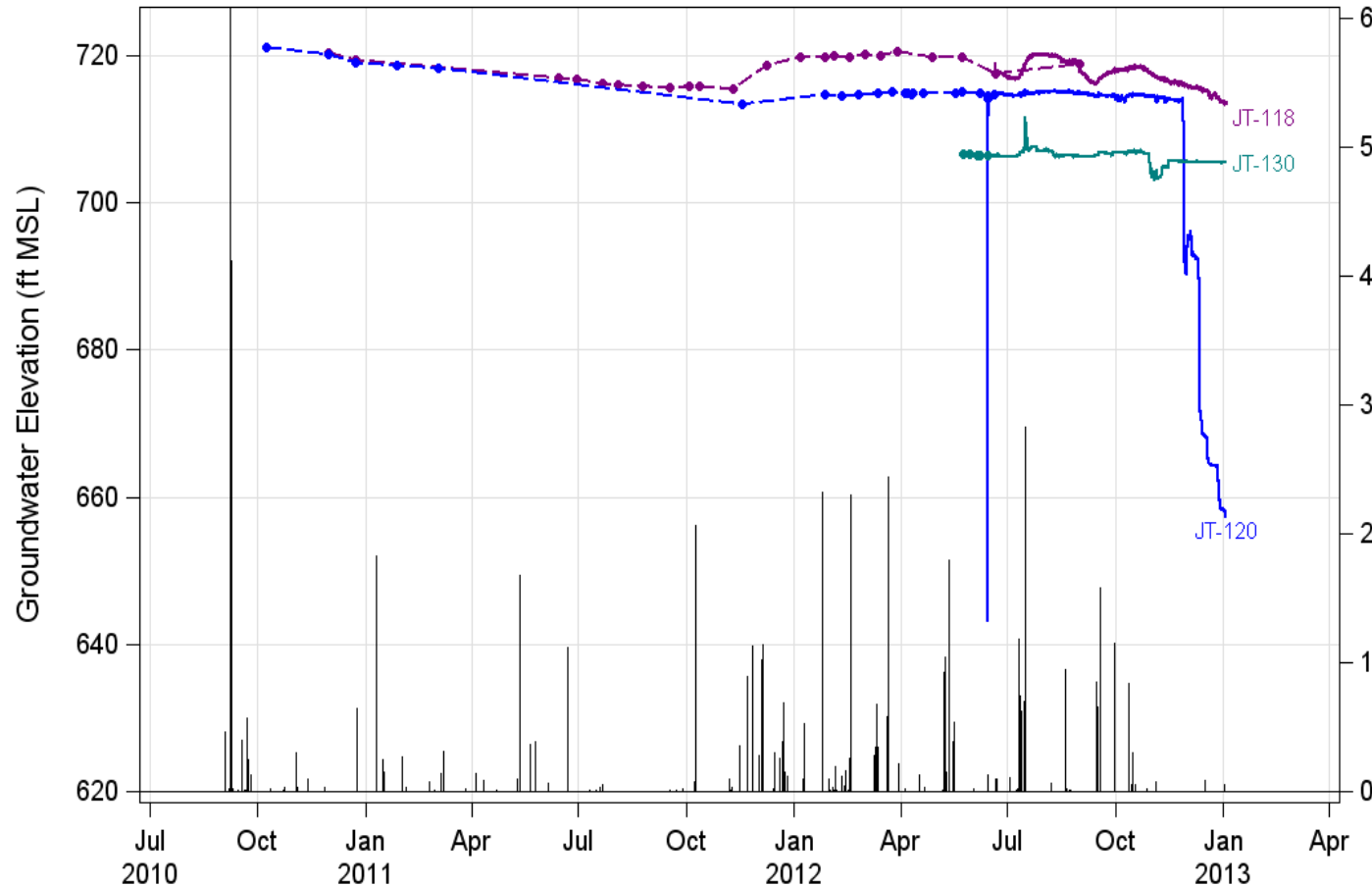
Jollyville Transmission Main Project

= progress

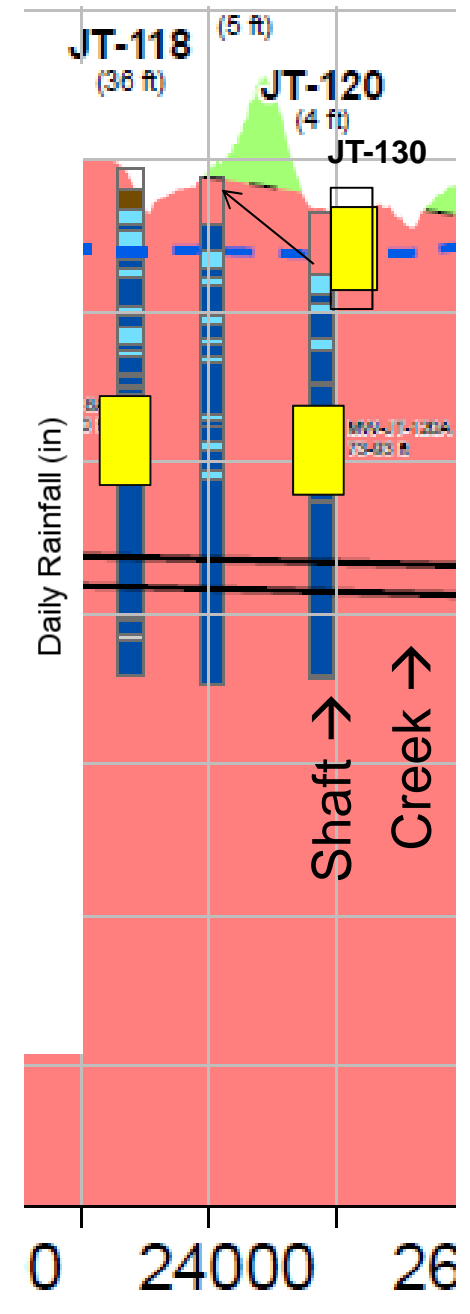


Spicewood Shaft Wells

Hydrographs for JT Wells 118, 120 and 130



- Additional grouting procedure in November 2011 helped reduce seepage into shaft and water levels in JT-130 to rebound
- JT-120 is located adjacent to the shaft and screened well below JT-130 screen (liner plates down to 70 ft below ground, JT120A screened from about 73-93 ft below ground so shaft is now (roughly 100 ft) well below bottom of 120A)
- Unclear whether 118 responding to drought or shaft





Environmental Monitoring Update – Surface flow



- All springs and stream reaches flowing but low due to drought
- Water quality parameters within expected ranges
- 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

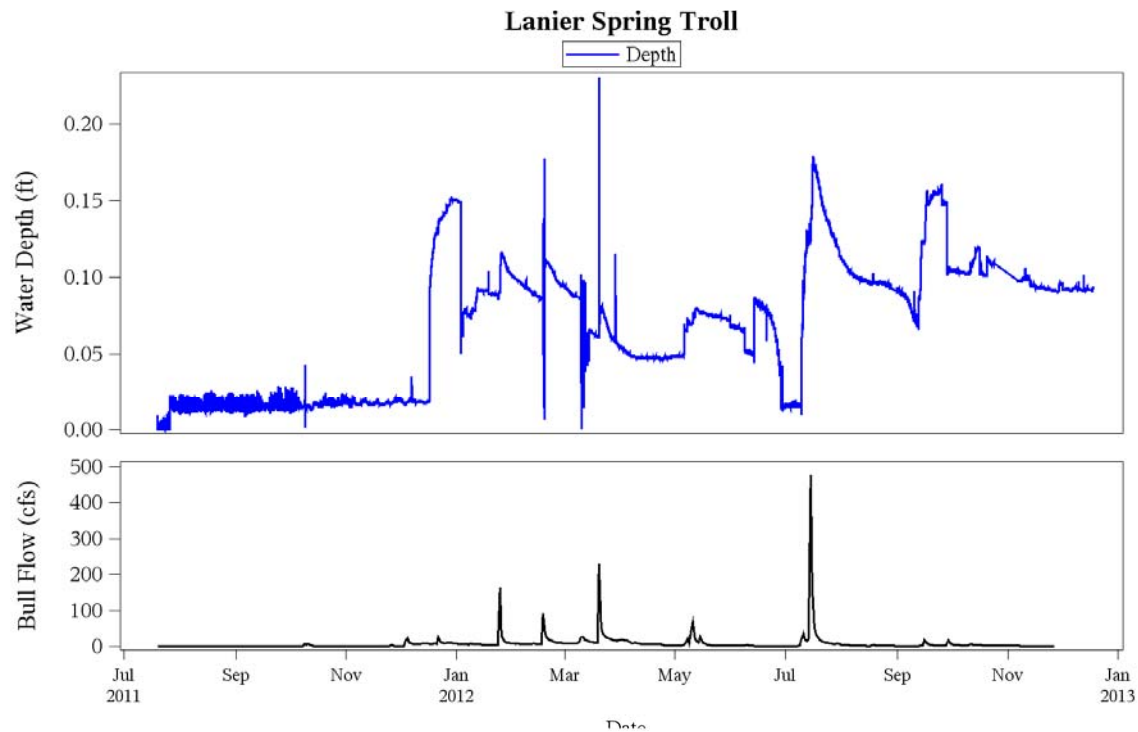
Trib 4 by Spicewood Shaft 7/25/12

12.18.12

Lanier Spring

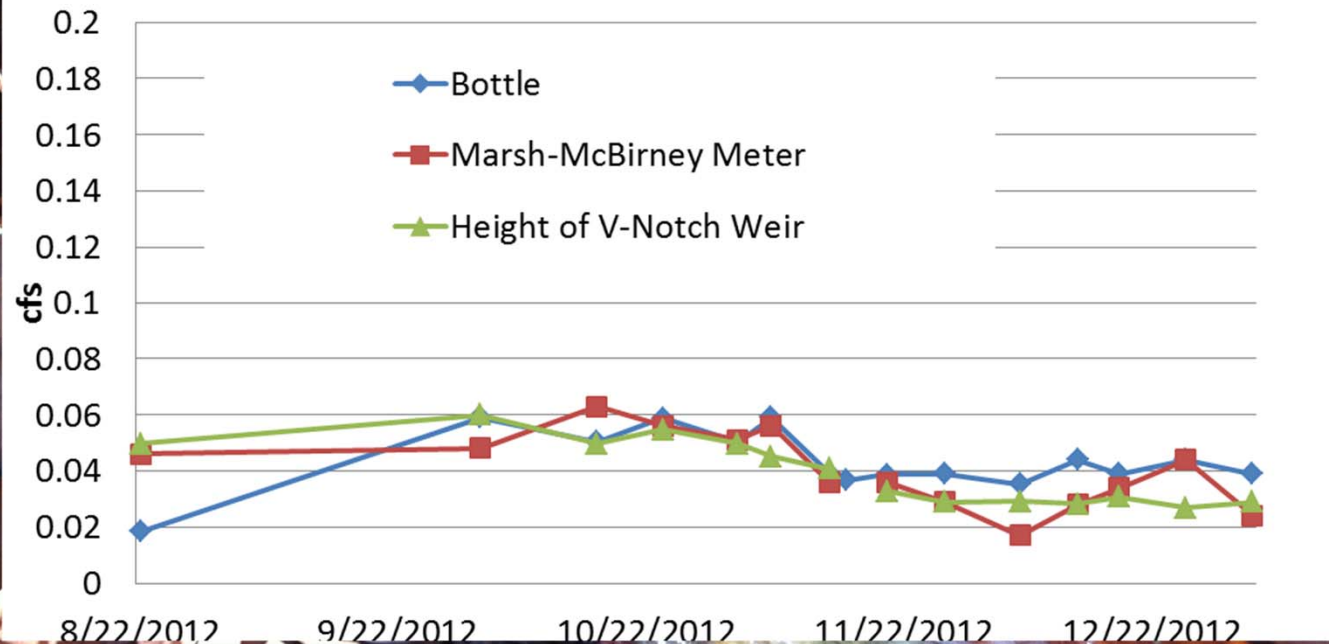
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City of Austin DRAFT: QA/QC review pending

Lanier Spring flow - various methods





Jollyville Plateau Salamander Monitoring

Site	Date of Last Count	Count #	Historical Average (& last four counts)
Lanier	Sept 7, 2012	100	66 (100,56,48,59)
Franklin/Pit	August 2012	180	102 (87,39,100,180)
Tanglewood	August 2012	1	2 (0,0,3,1)
Lower Ribelin	September 2012	94	89 (176,43,42,94)
Upper Ribelin	May 23, 2011	75	85 (123,74,67,75)
Trib 4 @ Spicewood	October 2012	0	5 (9,2,0,0)

-- provided by Nathan Bendik, Salamander Biologist for WPD

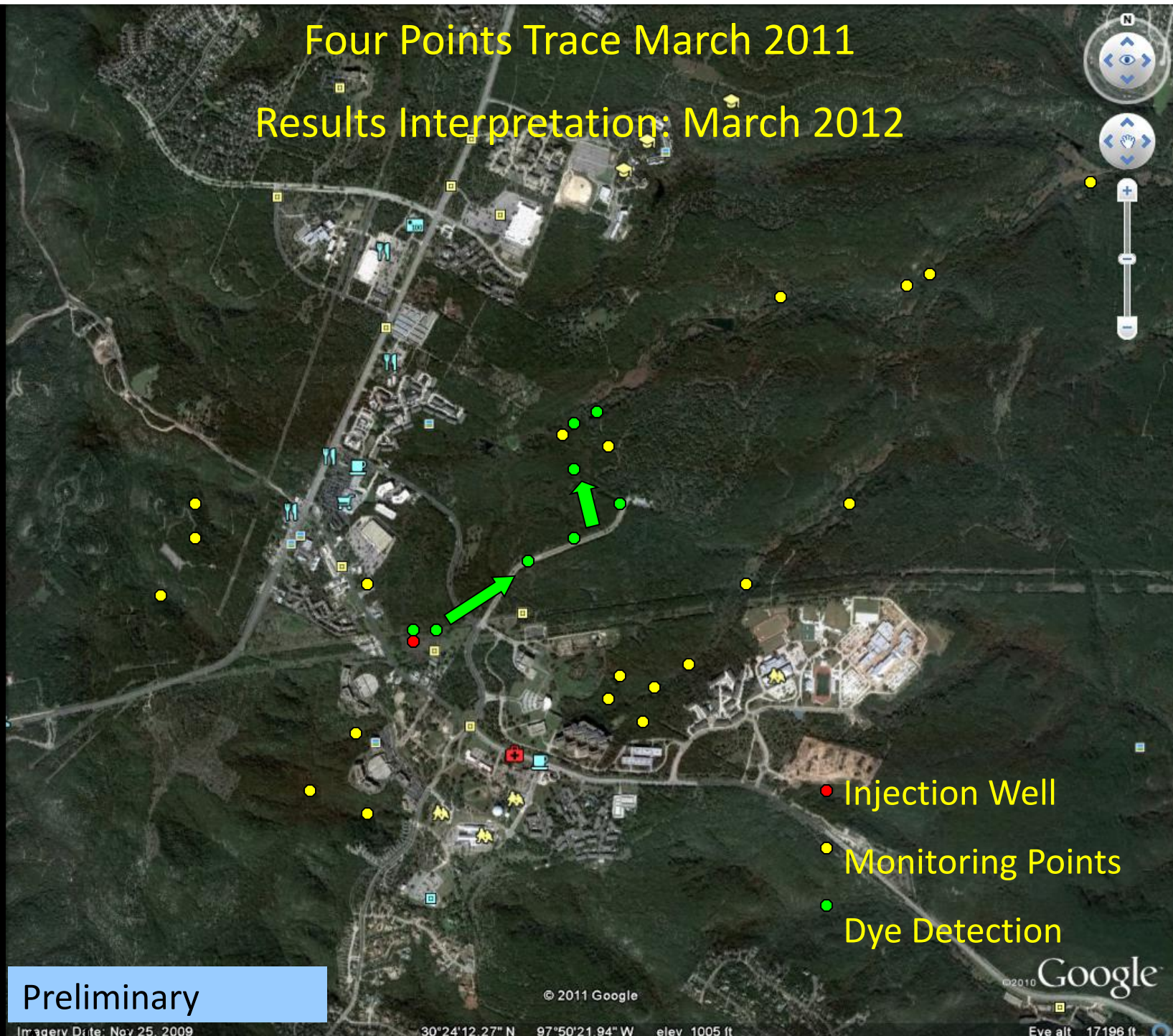


JVTM Environmental Monitoring Summary (cont.)

Trigger	Range	Recent Occurrences
TROLL Alarms	Outside of range of historical Variability	None
Tunnel Inflow Triggers	<p>Baseline water inflow triggers: 50 gpm over 10 feet of tunnel length 200 gpm over 500 feet of tunnel length 400 gpm over a single tunnel reach (1, 2, or 3)</p> <p>Sensitive area triggers: 25 gpm over 10 ft of tunnel length 100 gpm over 500 ft of tunnel length</p>	<p>Water inflows ~0.15 gpm over entire length of Reach 2 tunnel; ~0.1 gpm Reach 3</p> <p>No tunneling in sensitive areas</p>
Spring/Streamflow Triggers	Relative to one another; paired comparison analysis	All surface sites responding consistently with rainfall and general trends

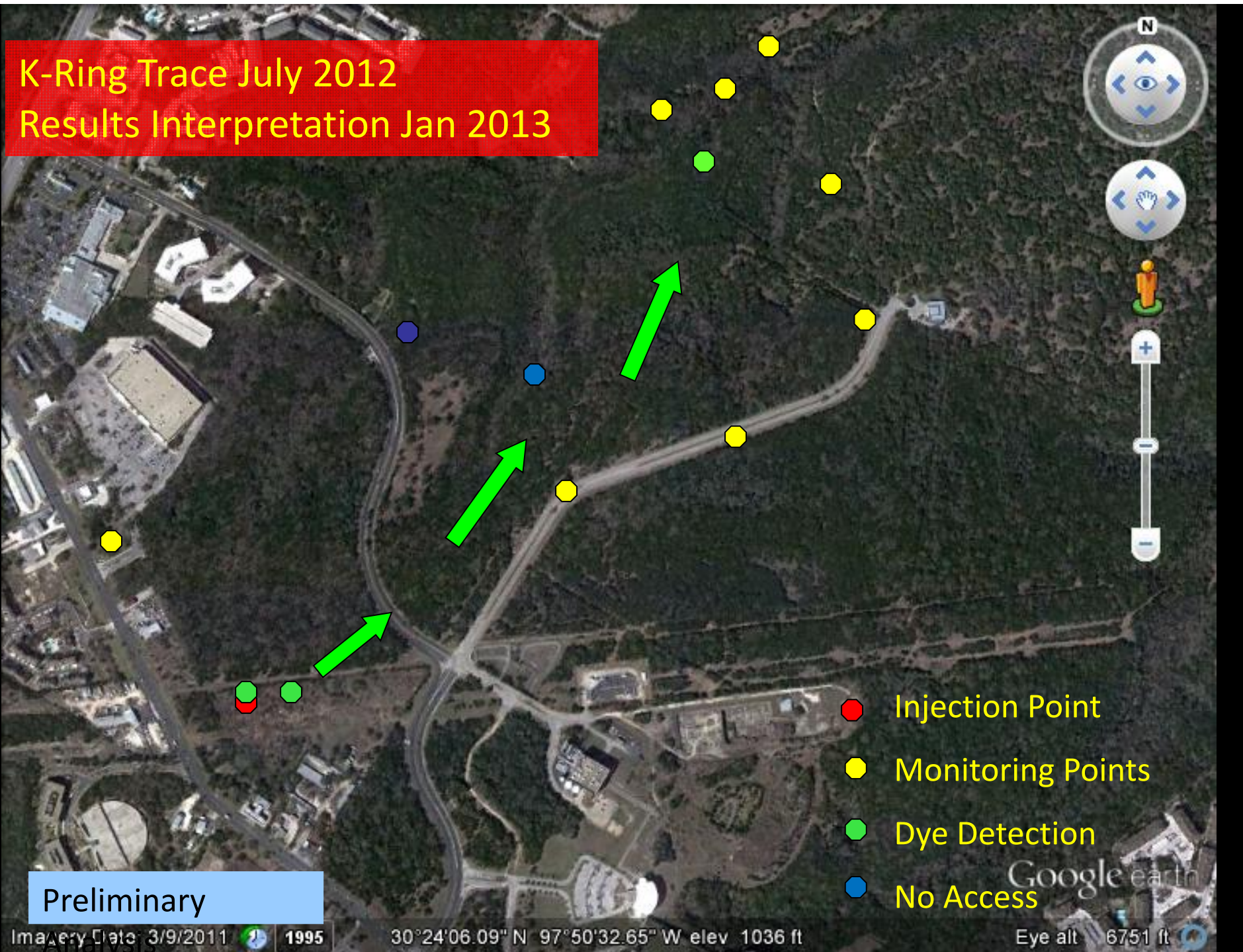
Four Points Trace March 2011

Results Interpretation: March 2012



Preliminary

K-Ring Trace July 2012
Results Interpretation Jan 2013



Preliminary

JTM Reach 2: Dry Tunnel





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Watershed Protection Department
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974-2291

Shaft Inflows

Four Points

Jollyville

Spicewood

50.00
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00

1/16/12 2/16/12 3/16/12 4/16/12 5/16/12 6/16/12 7/16/12 8/16/12 9/16/12 10/16/12 11/16/12

