



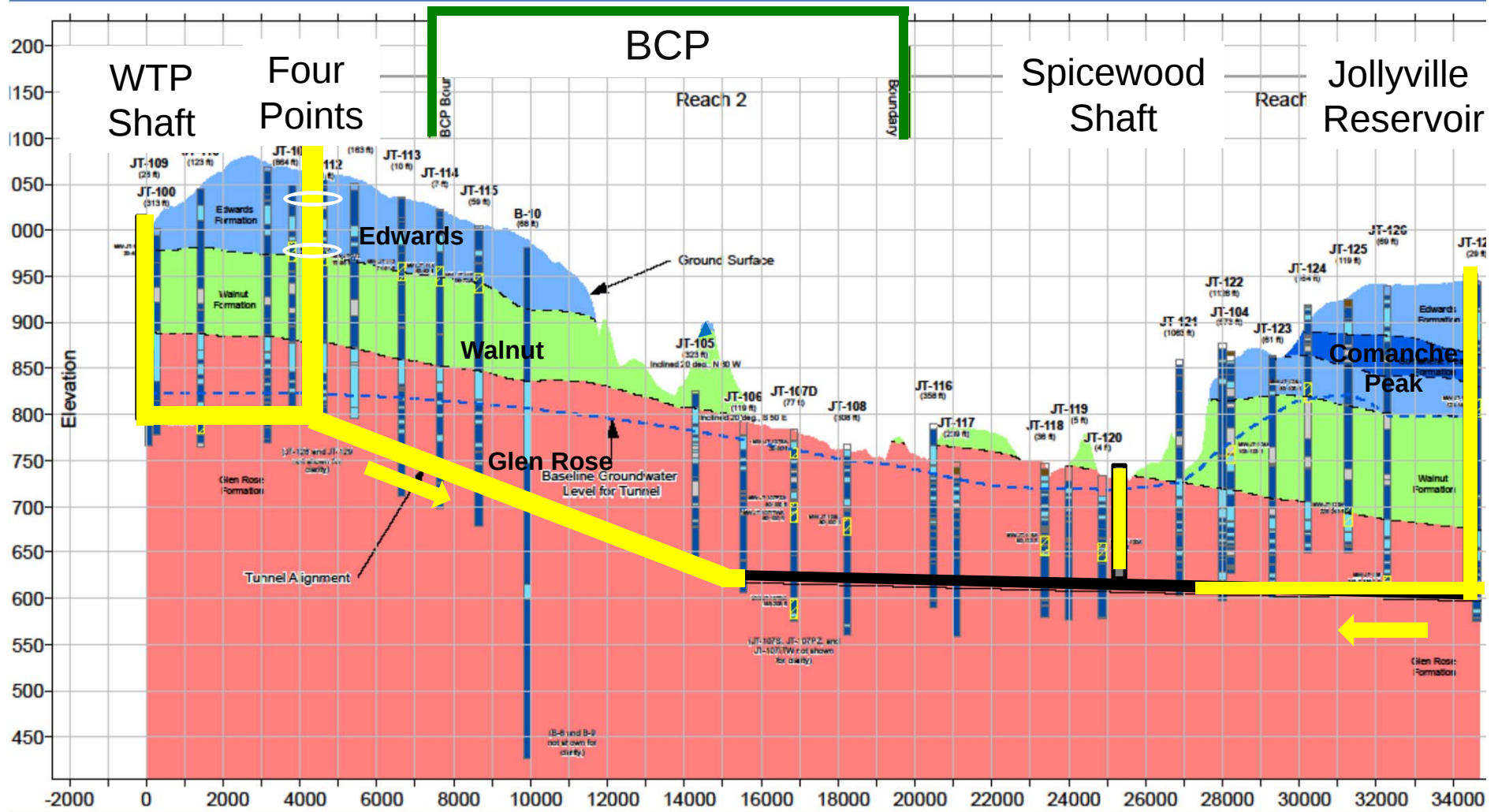
JOLLYVILLE TRANSMISSION MAIN: Environmental Commissioning Monthly Report

Presented to the Austin Environmental Board
February 6, 2013

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

Jollyville Transmission Main Project

 = progress





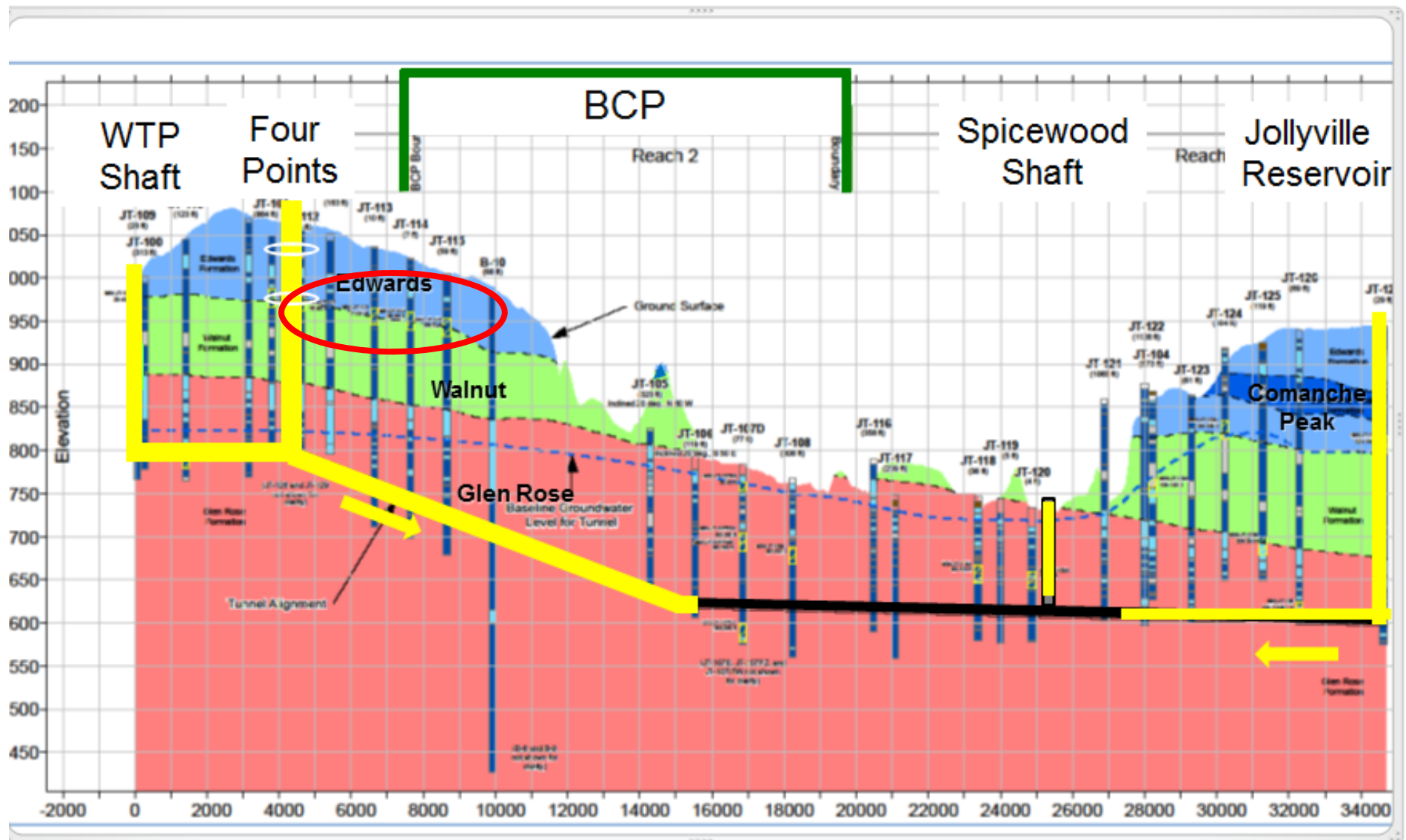
Environmental Commissioning Activities - JVTM

- 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

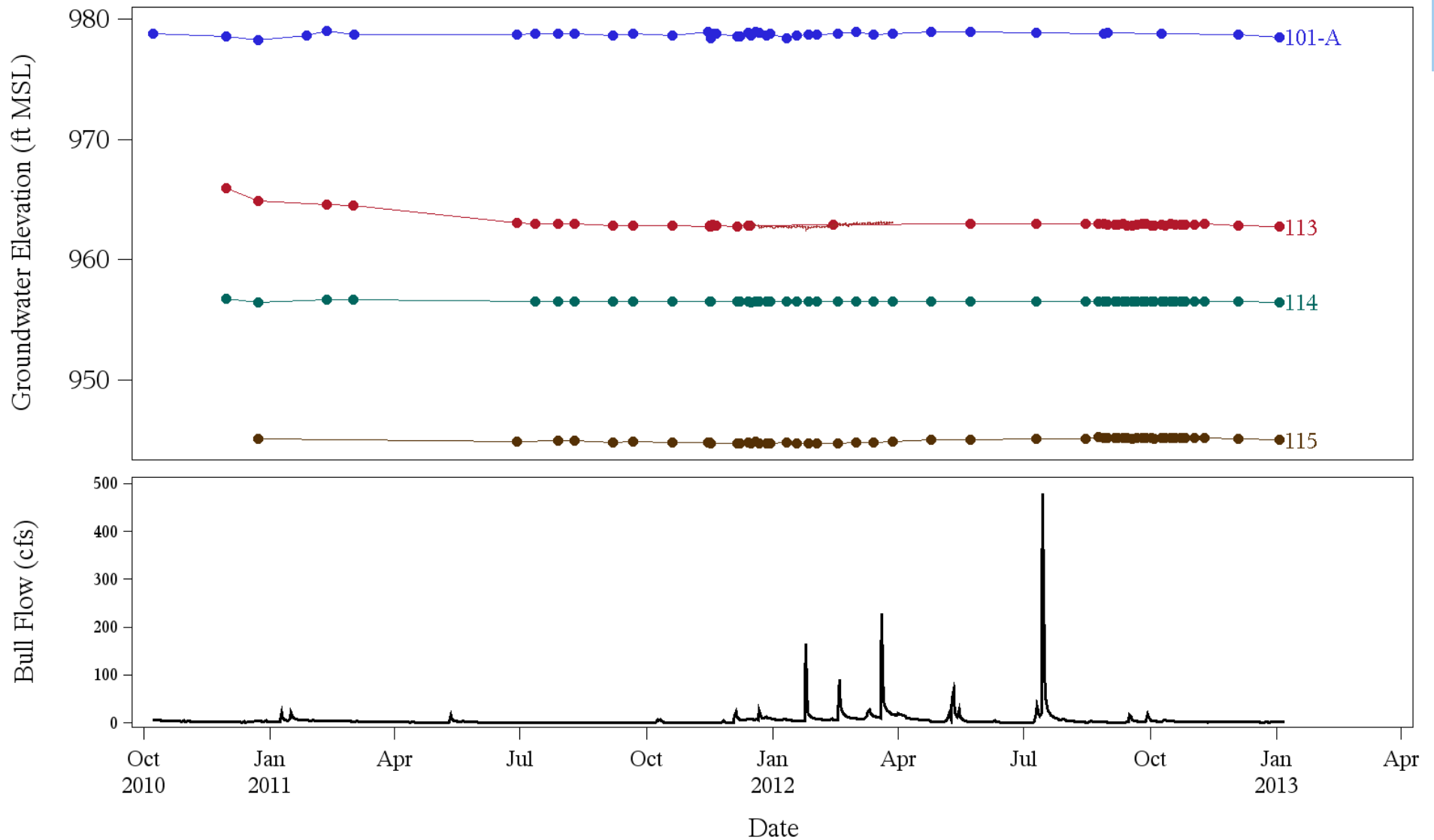
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West Edwards Wells

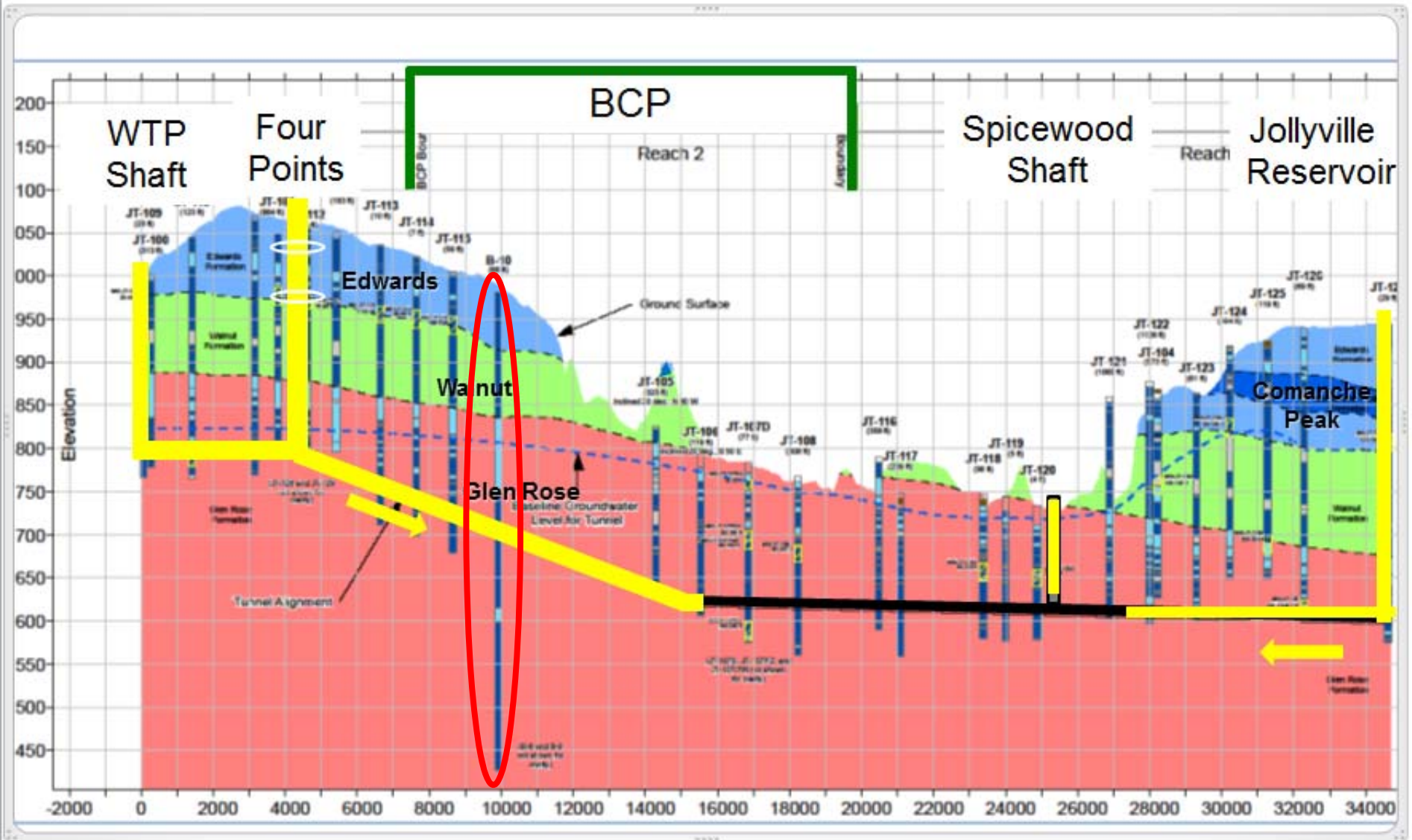
● 101-A ● 113 ● 114 ● 115 ●

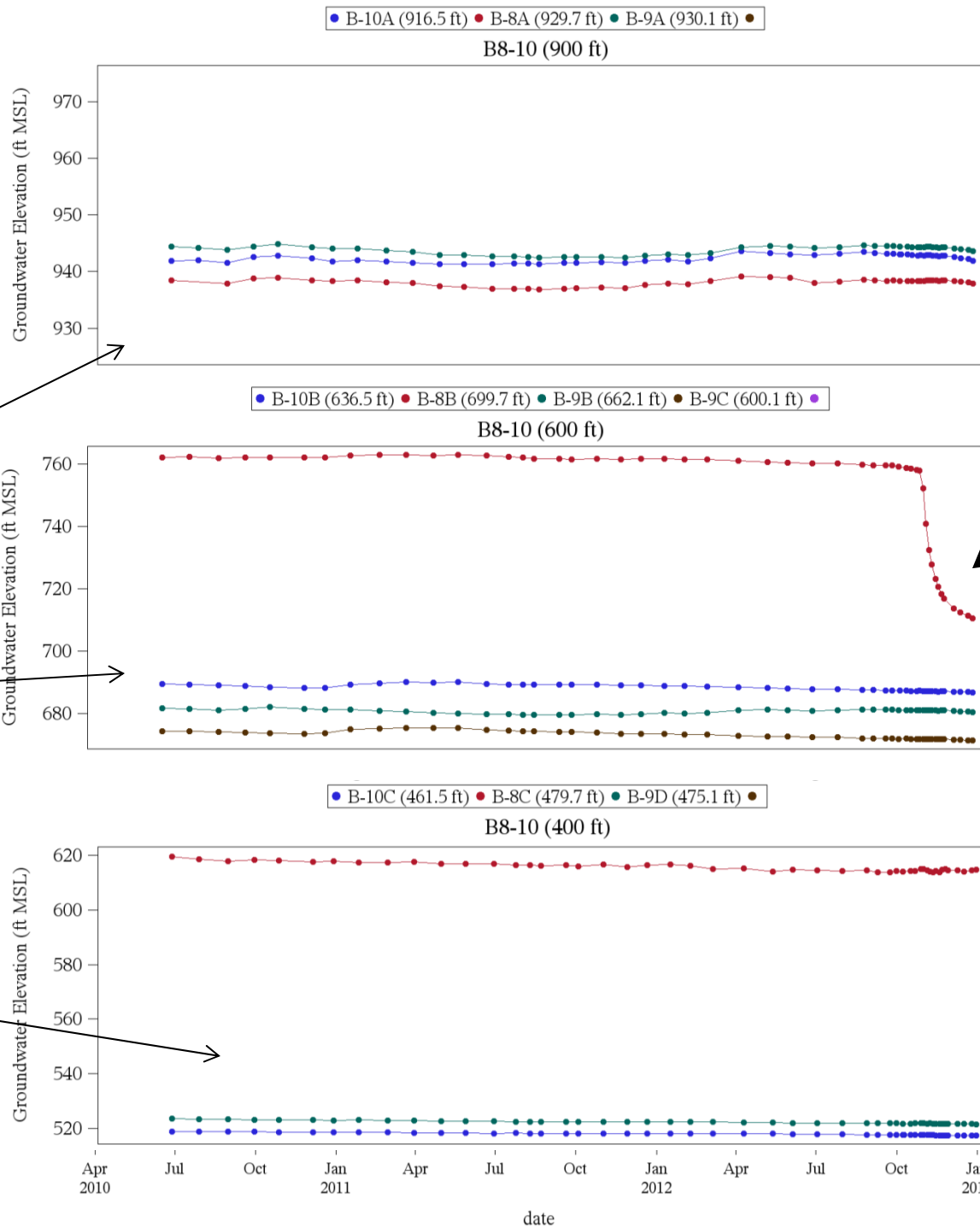
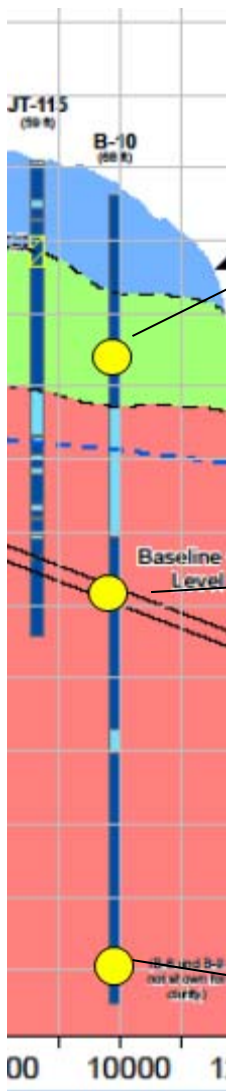


City of Austin DRAFT: QA/QC review pending

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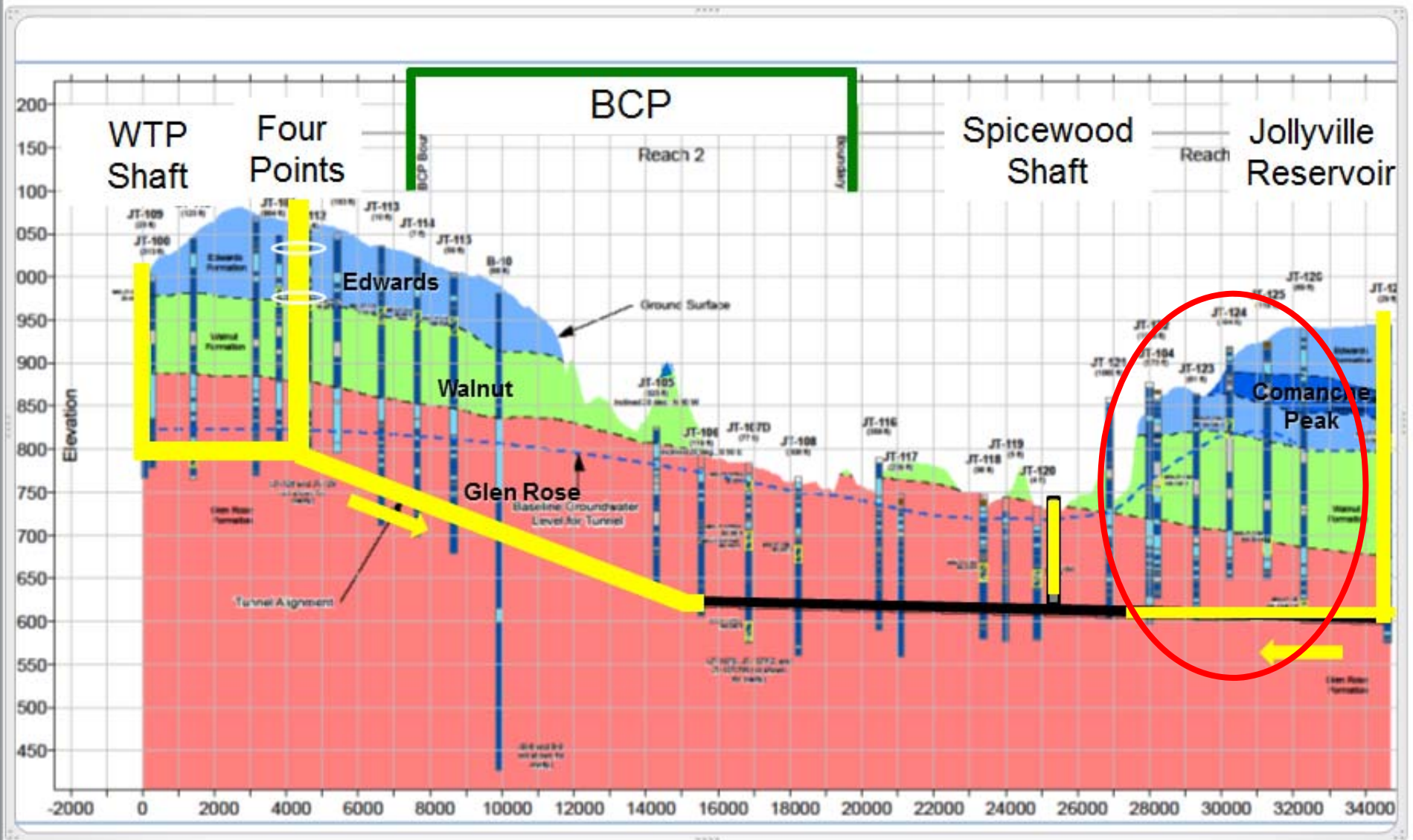
Tunnel affects groundwater levels at tunnel horizon, but not above or below.

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

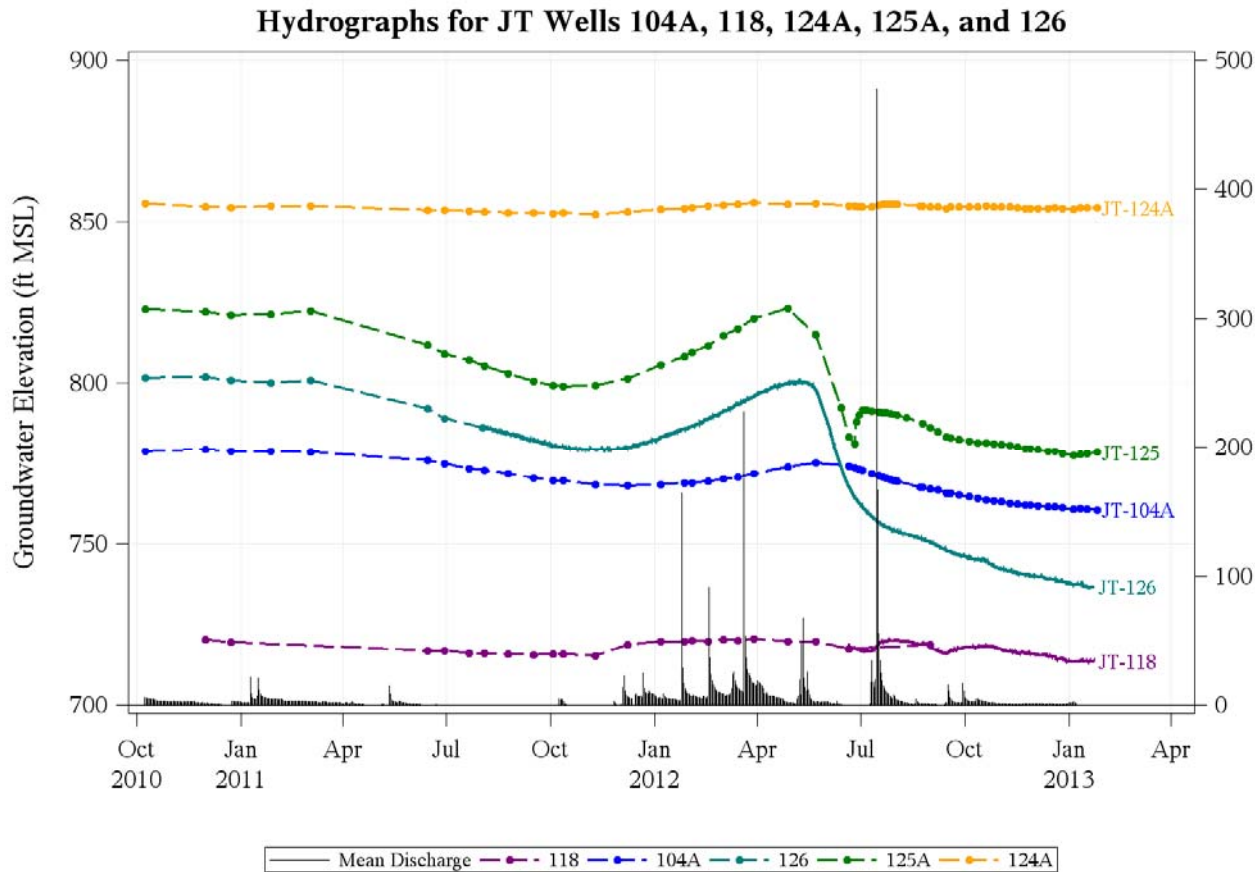
Fugro Boring Id	Piezometer Elevation (ft msl)
B-9A	930.05
B-8A	929.7
B-10A	916.54
B-8B	699.7
B-9B	662.05
B-10B	636.54
B-9C	600.05
B-8C	479.7
B-9D	475.05
B-10C	461.54

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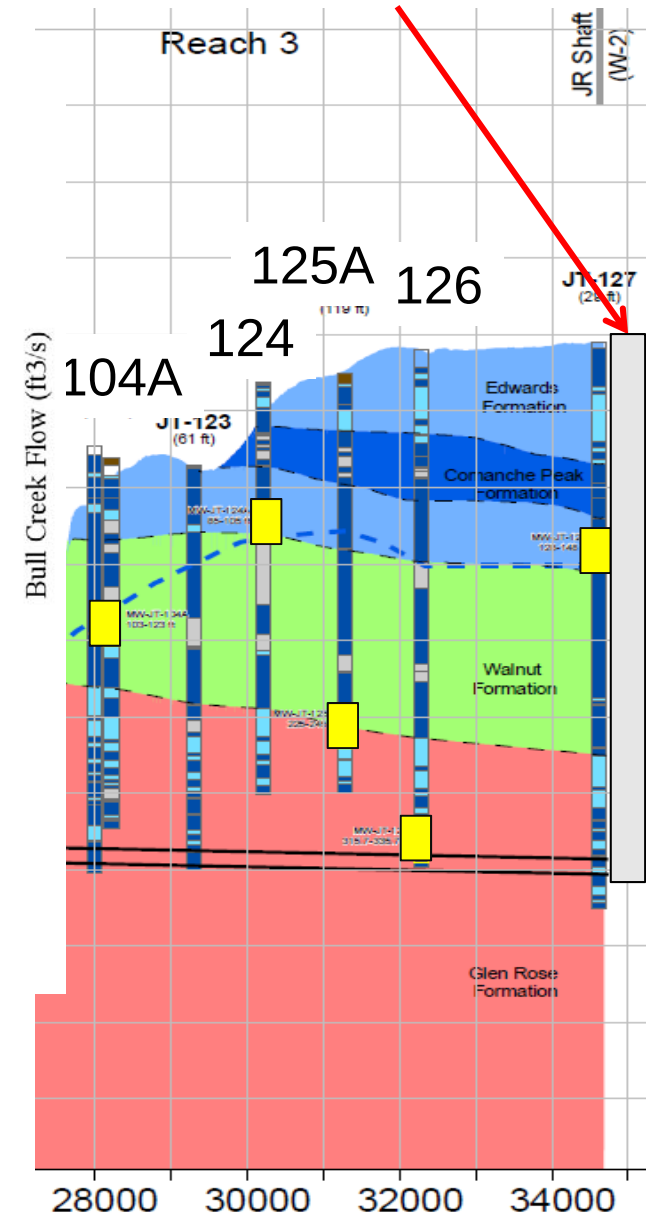
East Side Wells



City of Austin DRAFT: QA/QC review pending

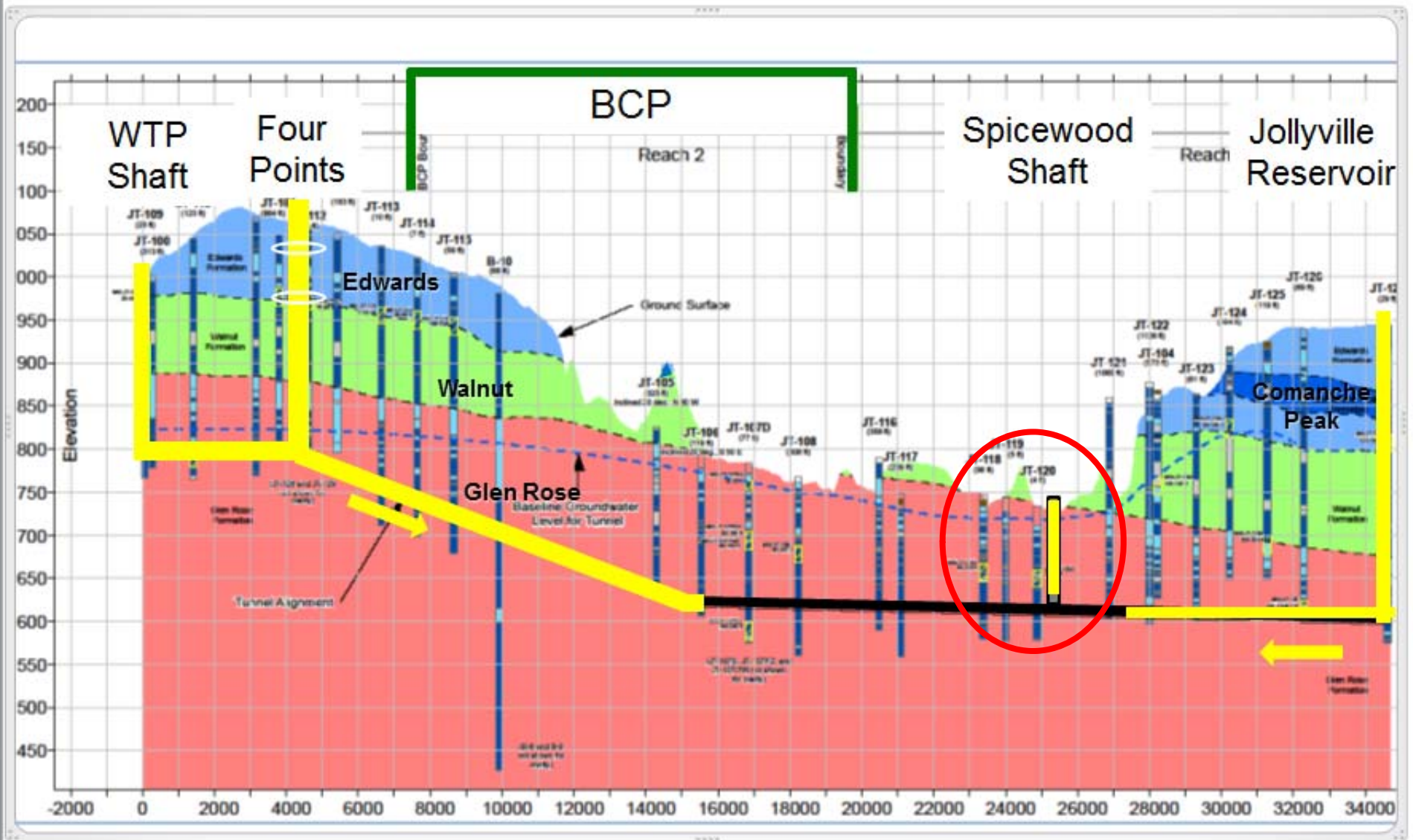
- 126 and 104 declining, but 125A beginning to rise.
- JT-124 Walnut well level relatively flat.

Jollyville Reservoir Shaft



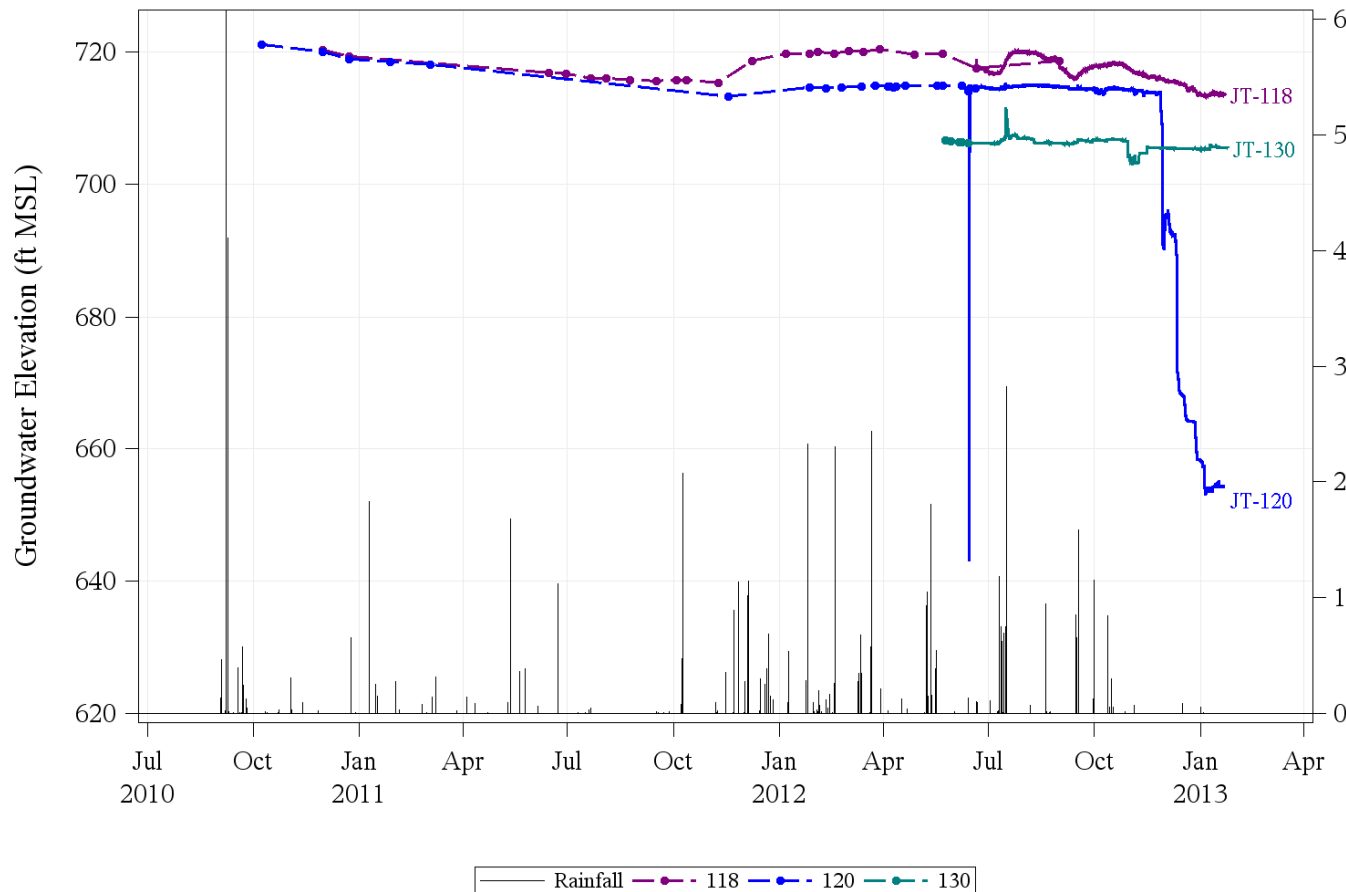
Jollyville Transmission Main Project

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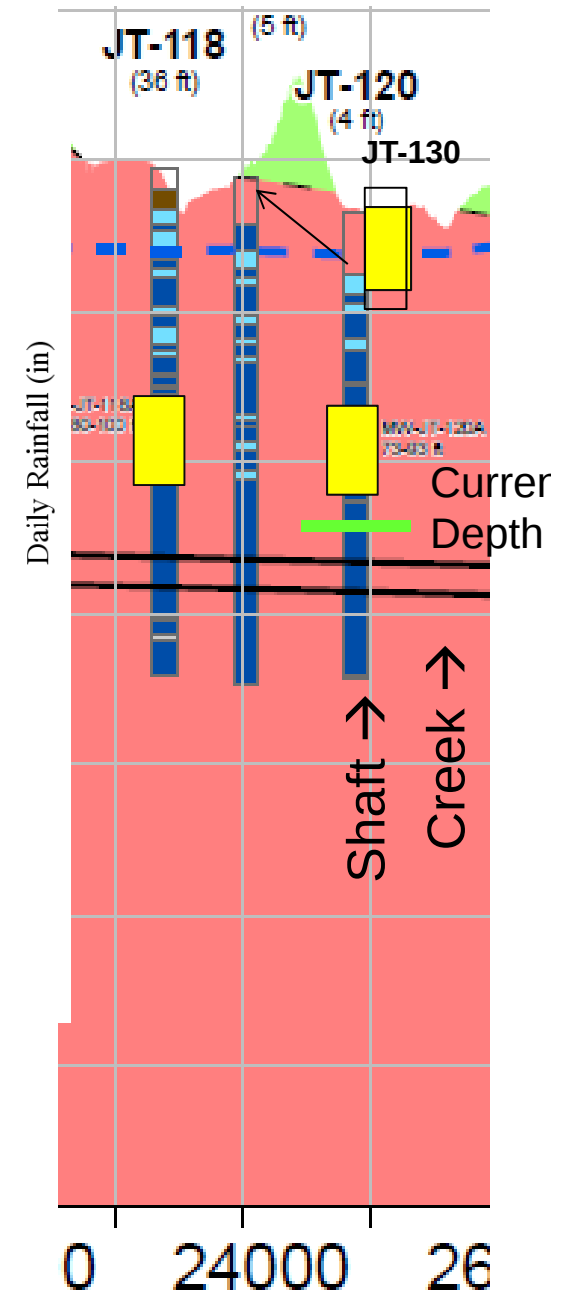
Spicewood Shaft Wells

Hydrographs for JT Wells 118, 120 and 130



City of Austin DRAFT: QA/QC review pending

- 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



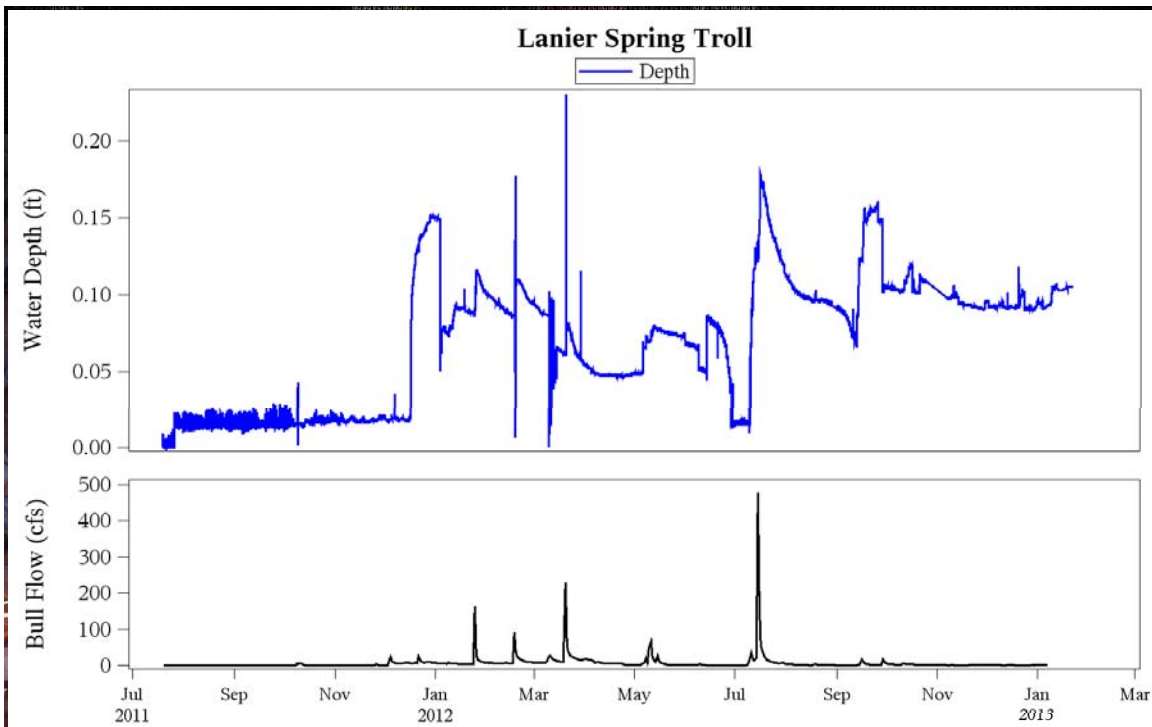
**Trib 4 downstream from Spicewood Shaft
January 22, 2013**

- All springs and stream reaches flowing but low due to drought. Recent small rise in all from recent rain.
- 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

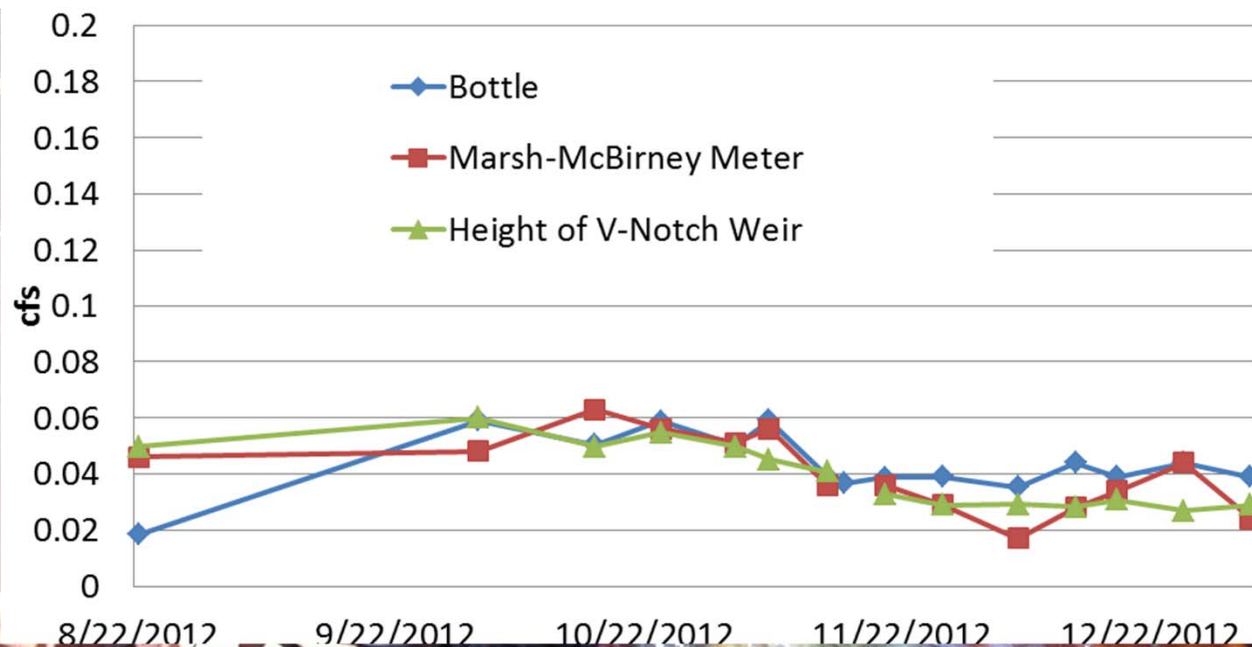
1.25.13

Lanier Spring





Lanier Spring flow - various methods



City of Austin DRAFT: QA/QC review pending



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

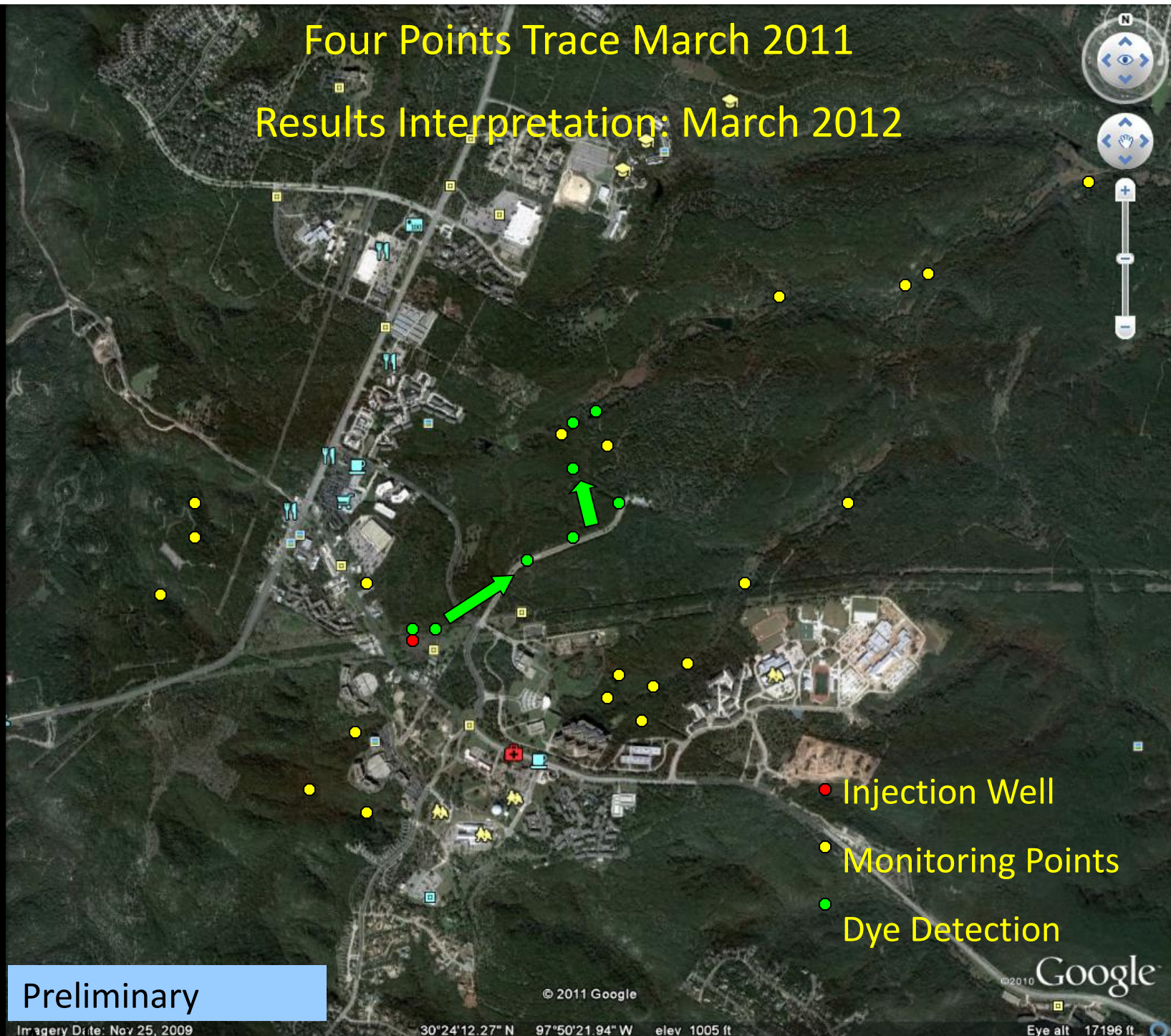


JVTM Environmental Monitoring Summary (cont.)

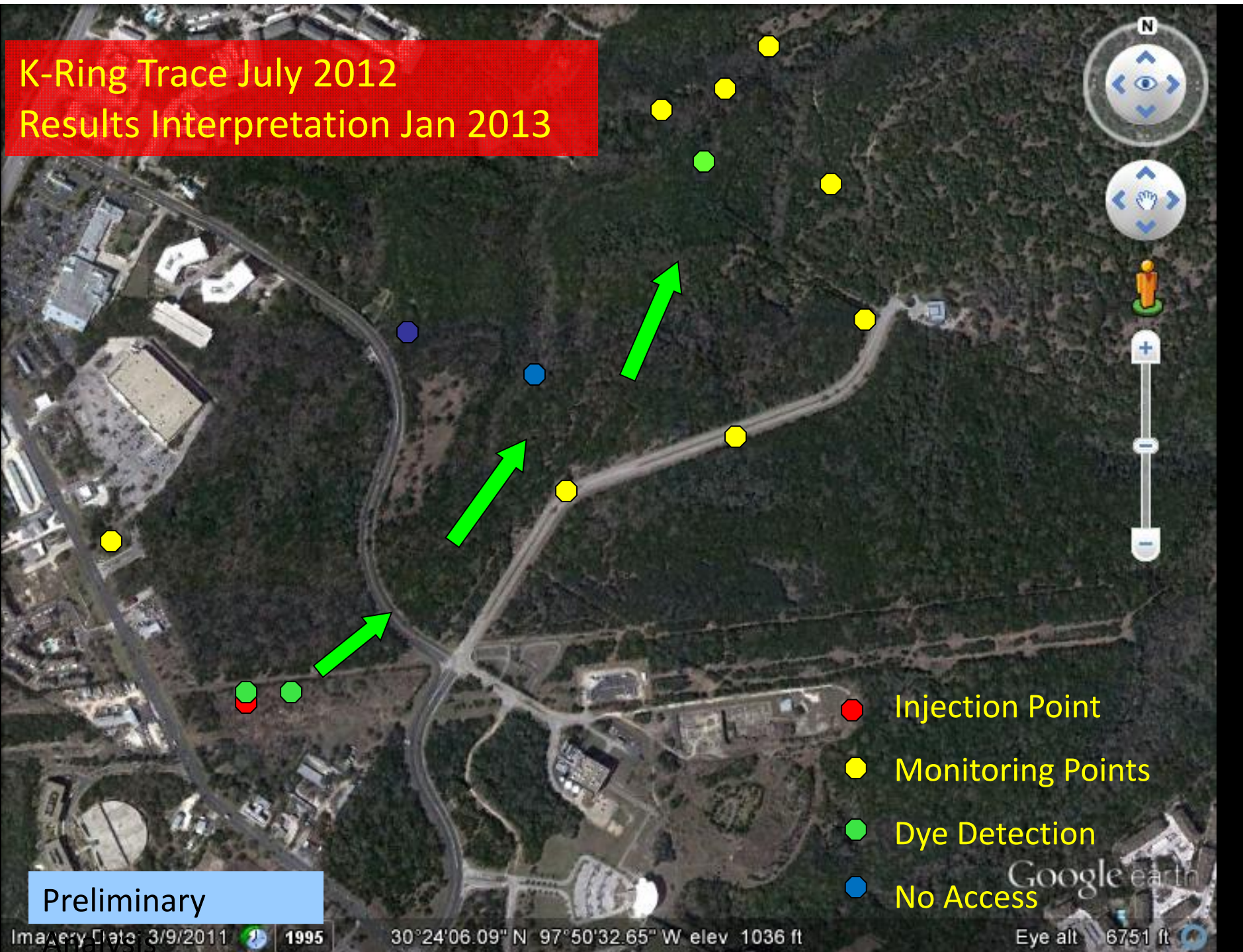
Trigger	Range	Recent Occurrences
TROLL Alarms	Outside of range of historical Variability	None
Tunnel Inflow Triggers	Baseline water inflow triggers: 50 gpm over 10 feet of tunnel length 200 gpm over 500 feet of tunnel length 400 gpm over a single tunnel reach (1, 2, or 3) Sensitive area triggers: 25 gpm over 10 ft of tunnel length 100 gpm over 500 ft of tunnel length	Water inflows ~0.15 gpm over entire length of Reach 2 tunnel; ~0.1 gpm Reach 3 No tunneling in sensitive areas
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



K-Ring Trace July 2012
Results Interpretation Jan 2013



Preliminary

JTM Reach 2: Dry Tunnel





Thais Perkins, Environmental Commissioning Coordinator
David Johns, Hydrogeologist
Watershed Protection Department
thais.perkins@austintexas.gov
david.johns@austintexas.gov
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

