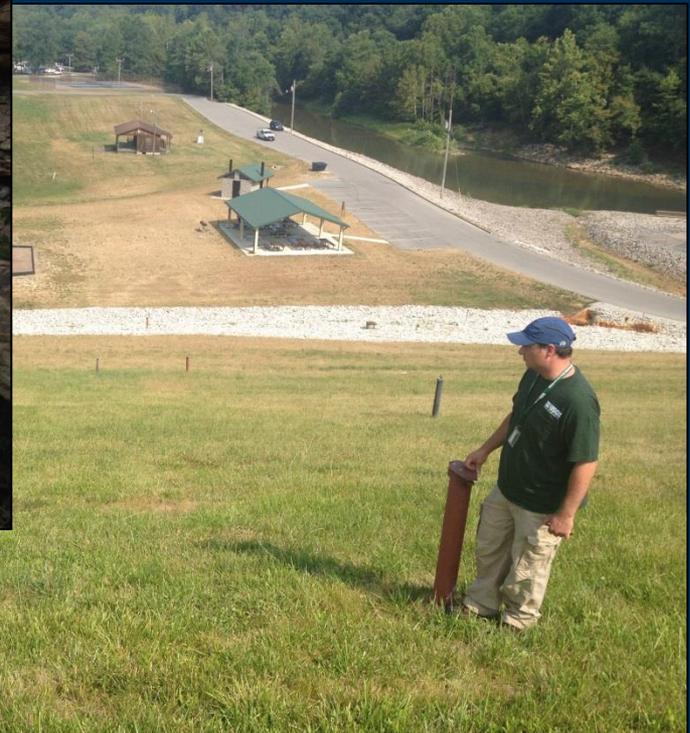


Rough River Dam Piezometer Network

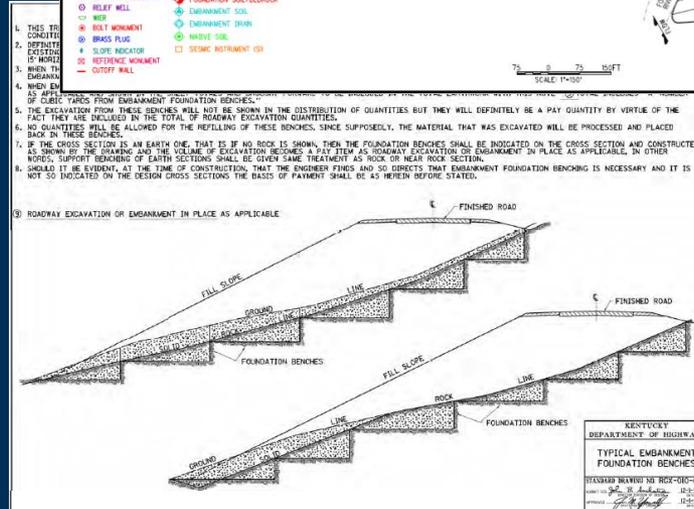
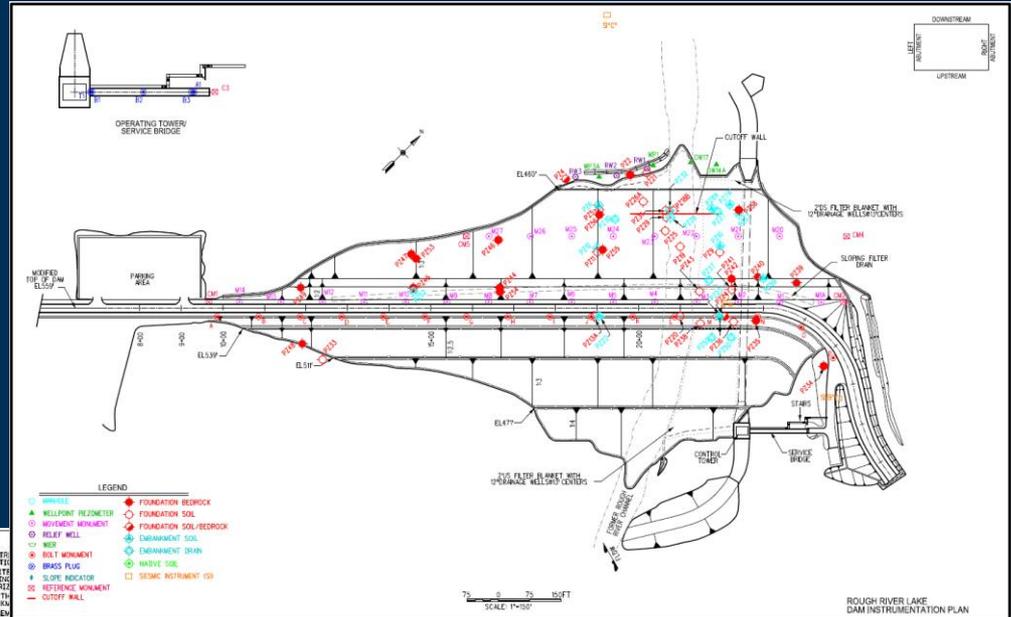
Original site recon – July, 2012



Multiple piezometers and pending earthwork dictated site design.

Requirements

- Limit “hard-wired” sites; use wireless telemetry (spread-spectrum radio)
- Make individual PZ installations sturdy, yet semi-portable
- SDI-12 communications (Serial Data Interface at 1200 Baud – digital / low power)



Electronics selected were both custom and “off the shelf” units built by SUTRON™; SUTRON™ coordinated subcontracted equipment from INW™.



<http://www.sutron.com/>



<http://inwusa.com/>



Contracting – we set records....

Military Interdepartmental Purchase Request (MIPR) signed – August 16, 2012 – procurement process “officially” starts (some documentation was written in advance).

We had officially missed every deadline for purchases in the FY due to the timing late in the fiscal year – but were able to push through contracts as emergencies.

Proposal / work plan approved by USGS on August 27, 2013.

Requisition was let on September 4, 2012.

Authorization to proceed was given to SUTRON on October 17, 2012.



PZ installations had to be “semi-permanent” - “sleeve” design adopted for site to accommodate this requirement



PZ risers were pre-assembled to save time / costs.

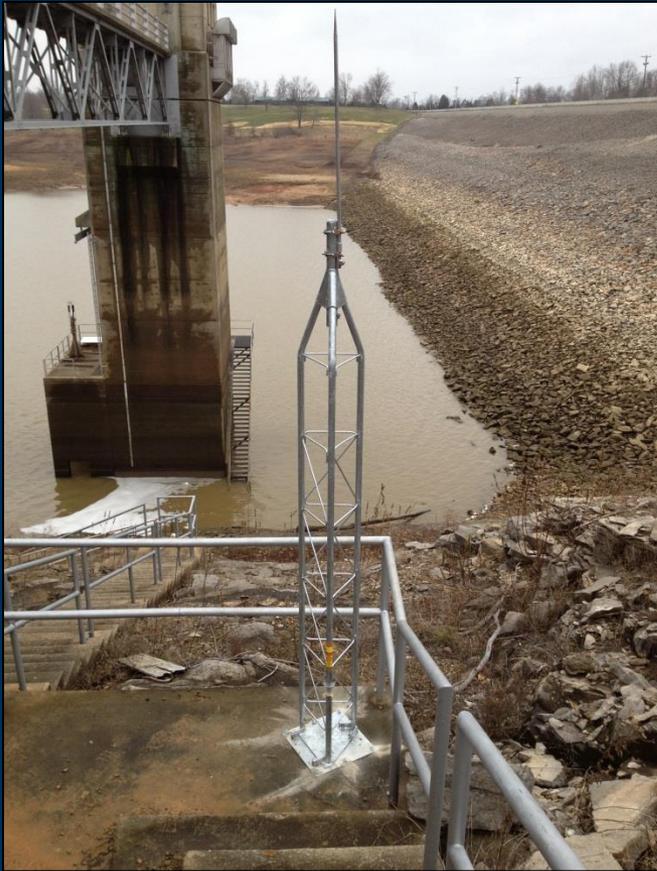


Installation – February, 2013

30 PZs downstream, 10 PZs upstream



2 permanent master stations with satellite transmitters; upstream (station 1) and downstream (station 2)



Installation required 6 USGS crew 4 days to complete; SUTRON engineers scheduled time on-site to verify installation and assist.



Upstream units (station 1)



Downstream units (station 2)



Installation of stilling-basin unit – March, 2013 (more permanent “CSG” design).



Data is archived permanently and available to the USACE (internal-access only) at:

<http://waterdata.usgs.gov/ky/nwis/gw>

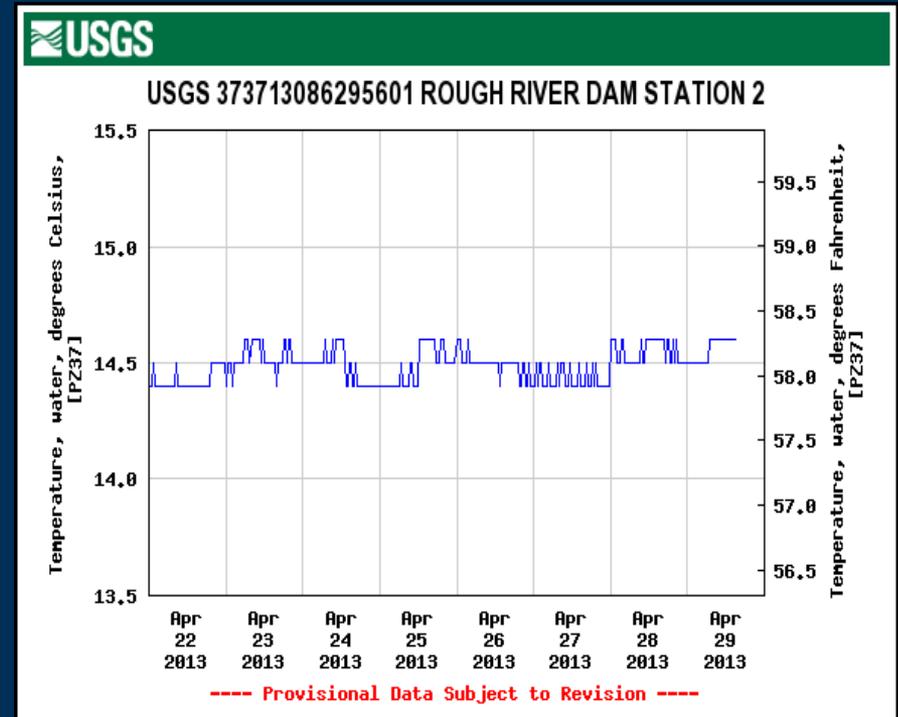
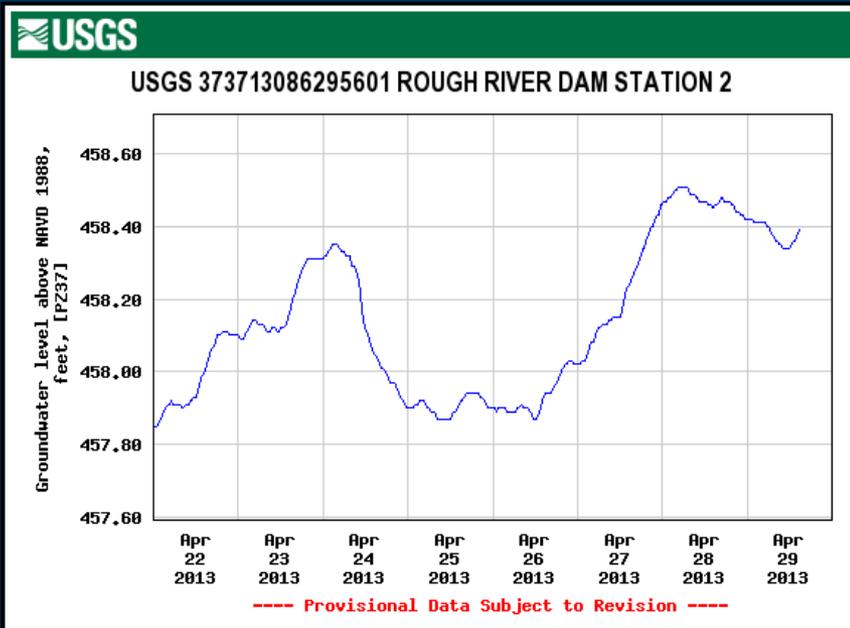
Available Parameters	Available Period	Output format	Days (7)
<input type="checkbox"/> All 16 Available Parameters for this site		<input checked="" type="radio"/> Graph	<input type="text"/>
<input checked="" type="checkbox"/> 62611 Water level, NAVD [PZ13A]	2013-02-07 2013-04-29	<input type="radio"/> Graph w/ stats	-- or --
<input checked="" type="checkbox"/> 62611 Water level, NAVD [PZ20]	2013-02-07 2013-04-29	<input type="radio"/> Graph w/o stats	Begin date
<input checked="" type="checkbox"/> 62611 Water level, NAVD [PZ22]	2013-02-07 2013-04-29	<input type="radio"/> Graph w/ (up to 3) parms <small>NEW</small>	<input type="text" value="2013-04-22"/>
<input checked="" type="checkbox"/> 62611 Water level, NAVD [PZ23]	2013-02-07 2013-04-29	<input type="radio"/> Table	End date
<input checked="" type="checkbox"/> 62611 Water level, NAVD [PZ24]	2013-02-07 2013-04-29	<input type="radio"/> Tab-separated	<input type="text" value="2013-04-29"/>
<input checked="" type="checkbox"/> 62611 Water level, NAVD [PZ35]	2013-02-07 2013-04-29		
<input checked="" type="checkbox"/> 00010 Temperature, water [PZ35]	2013-02-08 2013-04-29		
<input checked="" type="checkbox"/> 62611 Water level, NAVD [PZ36]	2013-02-07 2013-04-29		
<input checked="" type="checkbox"/> 00010 Temperature, water [PZ36]	2013-02-08 2013-04-29		
<input checked="" type="checkbox"/> 62611 Water level, NAVD [PZ38]	2013-02-07 2013-04-29		
<input checked="" type="checkbox"/> 00010 Temperature, water [PZ38]	2013-02-08 2013-04-29		
<input checked="" type="checkbox"/> 62611 Water level, NAVD [PZ50]	2013-02-07 2013-04-29		
<input checked="" type="checkbox"/> 00010 Temperature, water [PZ50]	2013-02-08 2013-04-29		
<input checked="" type="checkbox"/> 62611 Water level, NAVD [PZ51]	2013-02-07 2013-04-29		
<input checked="" type="checkbox"/> 00010 Temperature, water [PZ51]	2013-02-08 2013-04-29		
<input type="checkbox"/> 70969 DCP battery voltage	2013-03-23 2013-04-29		



Note – you will only see “1 publicly viewable site” listed on the NWISWeb GUI as the USACE data is NOT “publicly” viewable.



Data is available via internal access at: <http://waterdata.usgs.gov/ky/nwis/gw>



Points

- **Upstream sites transmit 15-minute data; downstream sites transmit 30-minute data. GOES transmission window for downstream master station is completely full at this time requiring this resolution.**
- **Temperature is a “secondary” sensor and is not NIST certified; USGS KY WSC received a USGS waiver to transmit due to data status as internal-use only.**
- **This is a large, complex network – even through “debugging” period, it has remained operational at 95% or better.**
- **Data is processed according to USGS procedures ¹ – spikes, shifts, and other routine / expected anomalies are corrected or removed prior to records becoming “approved” – they remain “provisional” until then.**



Questions?

