



Harquahala Valley Groundwater Wheeling June 6, 2017

*Project Overview & Water
Quality Discussion*

*Chris Hassert, PE
Planning & Engineering
Director*

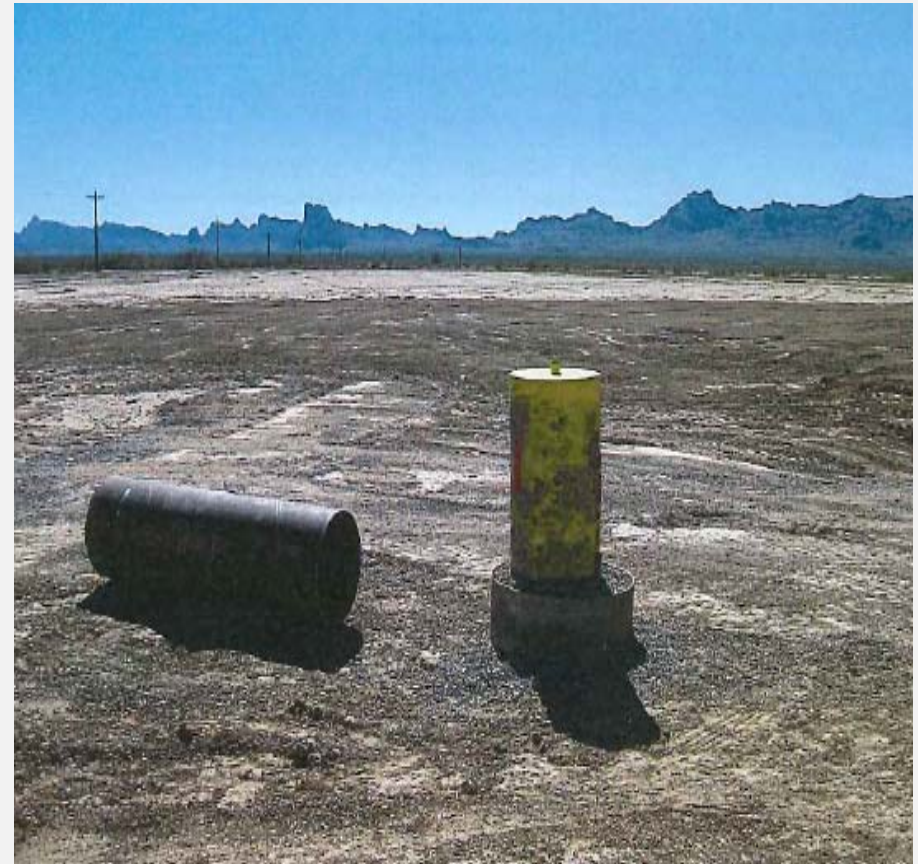


Project Location



Project Purpose

- Irrigation source for IWDS Golf Courses
- Previously relied on Excess CAP
- Back-up source for Scottsdale
- 1200+ Acres purchased to allow wheeling of 3645 AF/yr
- Plan is to pump approx. 4 MGD year round



Capped Well-head

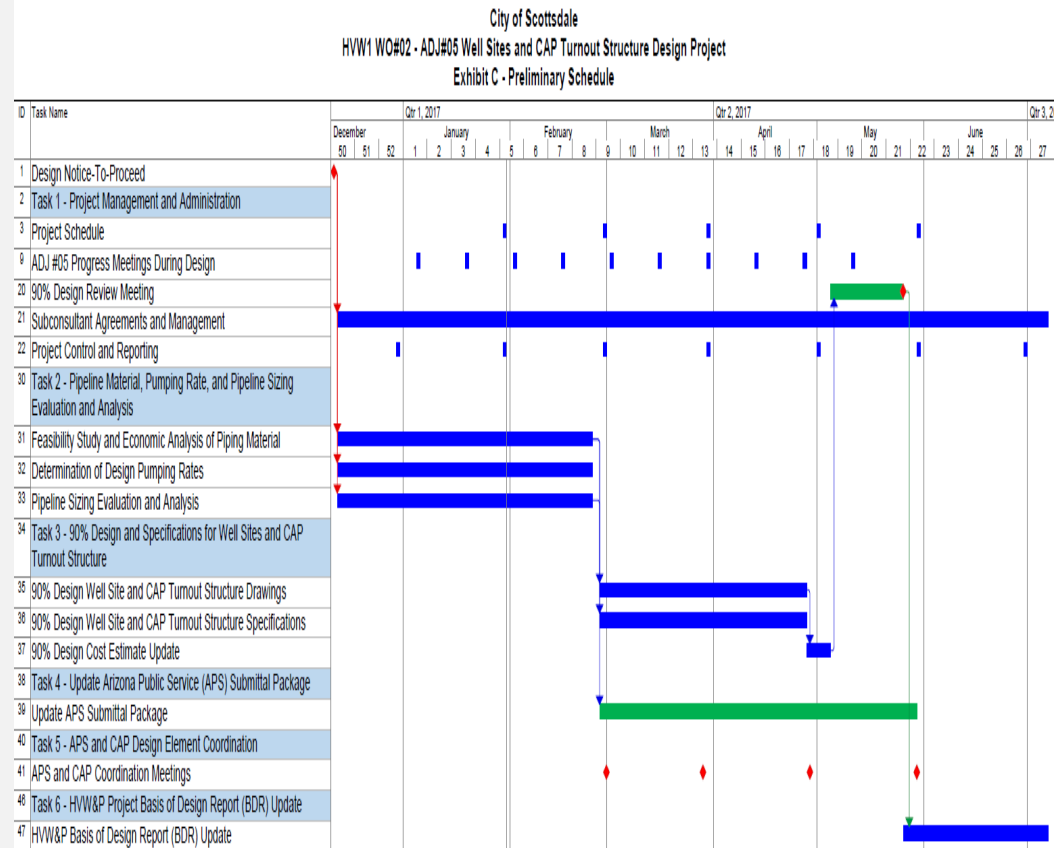
Why Project is Needed

- Excess CAP water no longer available
- Scottsdale does not allow golf course irrigation using potable water
- Golf courses responsible for securing a long term water source
- Other sources explored but unsuccessful
- State Statutes provide for the withdrawal and transportation of GW



Project Status

- 3 wells drilled and capped
- Well sites designed to 90%
- CAP Canal Turn-in under preliminary design
- APS Power Requirements determined
- NEPA Environmental Assessment (EA) underway



Water Quality Findings



TDS and NO3 for wells MBT3, MBT4, and MBT7 on 8/2/1988

MBT3: 600 TDS, 1.9 NO3 (mg/L)
 MBT4: 600 TDS, 3.5 NO3 (mg/L)
 MBT7: 620 TDS, 3.7 NO3 (mg/L)

TDS and NO3 for new Wells 1, 2, and 3 from 24-hour pump tests in October 2015 (wells 1 and 2) and January 2016 (well 3)

Well 1: 906 TDS, 8.5 NO3 (mg/L)
 Well 2: 962 TDS, 12.2 NO3 (mg/L)
 Well 3: 902 TDS, 5.8 NO3 (mg/L)

TDS well DG-1/MBT7 2001 through 2015 from ADWR reports

Year	TDS range (mg/L)
2001	560-610
2002	610-620
2003	710-800
2004	940-1300
2005	1600-1800
2006	1600-1900
2007	1200-1600
2008	1200-1400
2009	1000-1500
2010	900-1100
2011	810-920
2012	750-800
2013	750-760
2014	770-800
2015	750-830

- Focus on Salinity (TDS), a Secondary Contaminant
- Requests a 1-Yr operational trial upon approval of EA
- Suggests naturally declining TDS concentrations in aquifer
- Goal is to avoid a potentially unnecessary RO plant
- RO treatment technology introduces undesirable issues



City of Scottsdale

Harquahala Valley
Groundwater Wheeling Pilot Proposal and
Total Dissolved Solids (TDS) Monitoring Plan

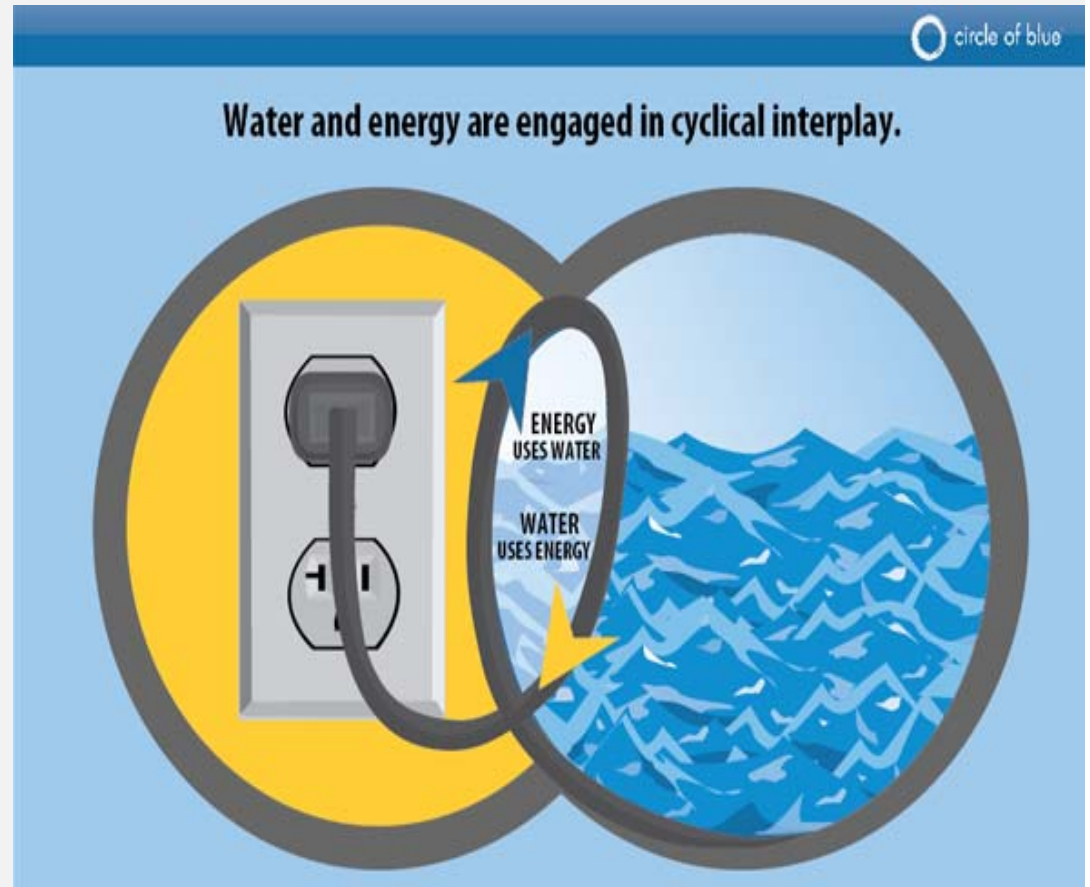
December 15th 2016



- 20% of water lost in concentrate stream
- Deep well injection not allowed in AZ
- Large lined ponds required
- Recovered salts hauled to landfills
- High capital and O&M costs



- RO treatment is energy intensive
- Large power demand to remove salts
- Increased carbon footprint for project
- Multiple satellite plants not efficient



- BOR Kickoff
- Scoping Letters & Public Comment Period
- Cultural & Historical Findings
- Newspaper Article (Quartzite)
- Prepare Draft EA Document
- Public Comment on Draft EA
- Prepare Final EA Document
- Finding of No Significant Impact (FONSI)

RECLAMATION

Managing Water in the West

Preliminary Draft Environmental Assessment

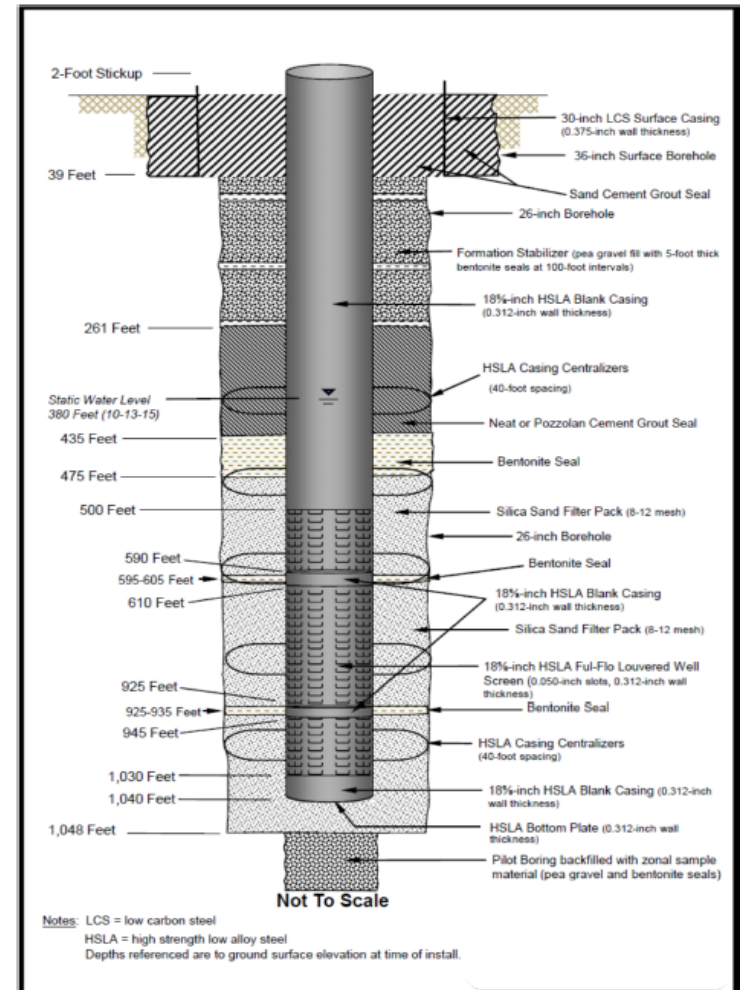
City of Scottsdale Harquahala Valley Water Supply Wells and Conveyance Pipeline Project

City of Scottsdale, Arizona



U.S. Department of Interior
Bureau of Reclamation
Phoenix Area Office

- Groundwater wheeling project
- 3-Well facility designed for two wells in service
- Relatively small capacity (0.25% of CAP Canal)
- Capable of Meeting Primary MCL's prior to canal discharge
- Secondary contaminant, TDS cannot be blended on-site to anticipated target
- Unique situation of declining TDS concentrations
- Pilot Proposal requests 1-year pumping and sampling plan



WELL NO. 1 AS-BUILT DIAGRAM

Questions?

