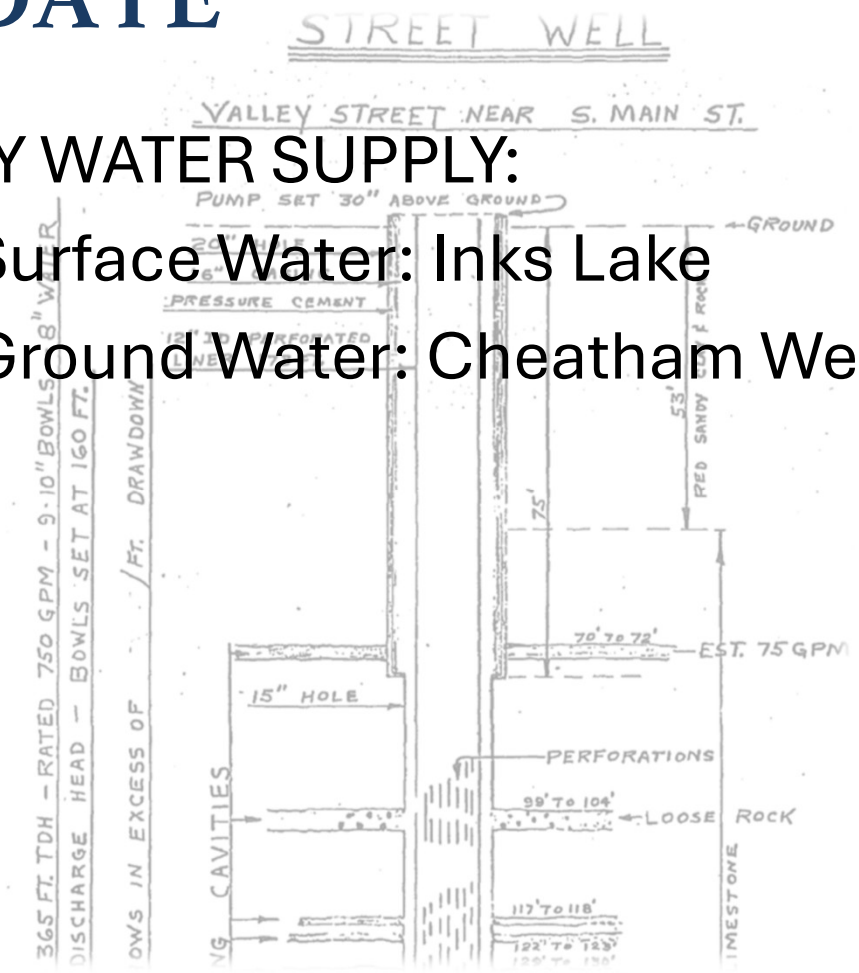
WATER WELLS AND PUMPS UPDATE

City Council
Regular Meeting

March 11, 2025

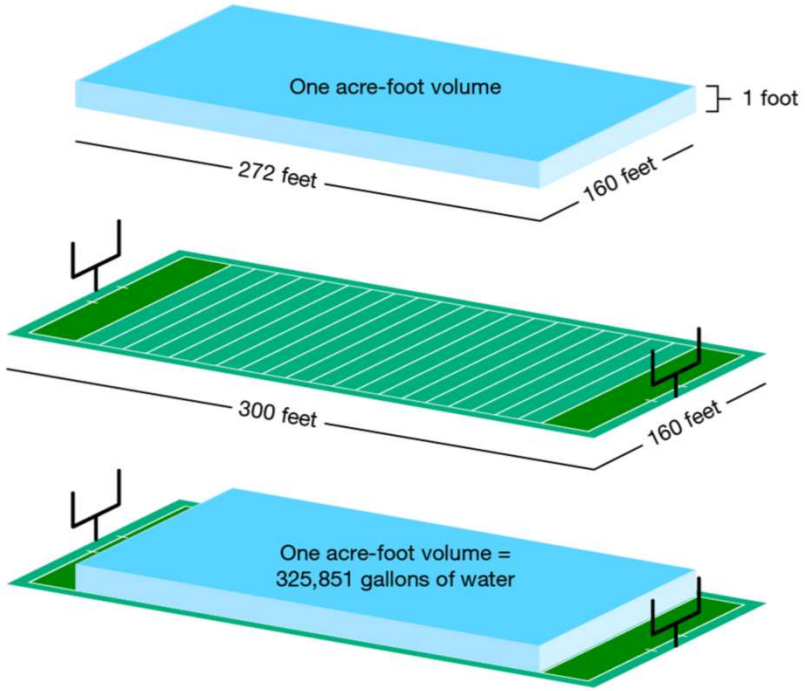
CTIY WATER SUPPLY:

- Surface Water: Inks Lake
- Ground Water: Cheatham Wells



CHEATHAM WELLS

- Cheatham Well has a historical use permit
- 921 Ac-Ft per year



1AcFt=325,851 gal

Cheatham Wells Information

Constructed circa1961

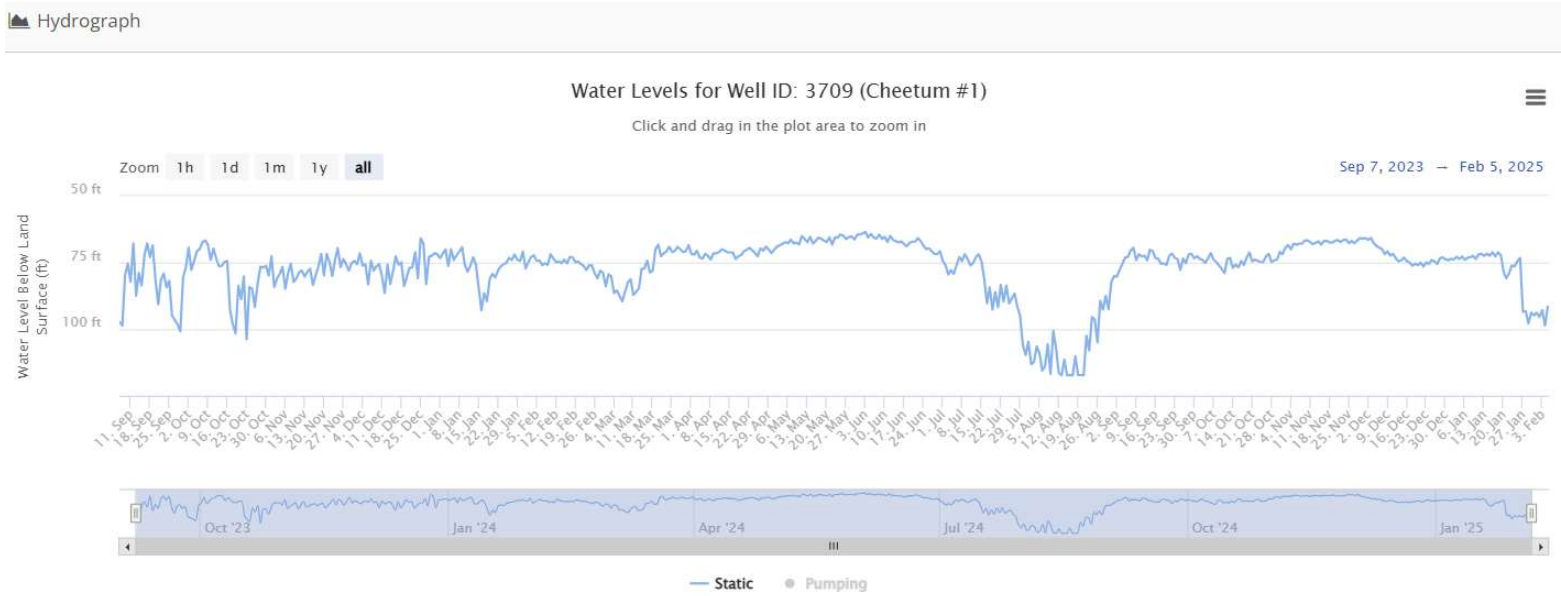
Cheatham 1 (western location) is 480’ deep

Cheatham 2 (eastern location) is 140’ deep

Possible previous partial collapse

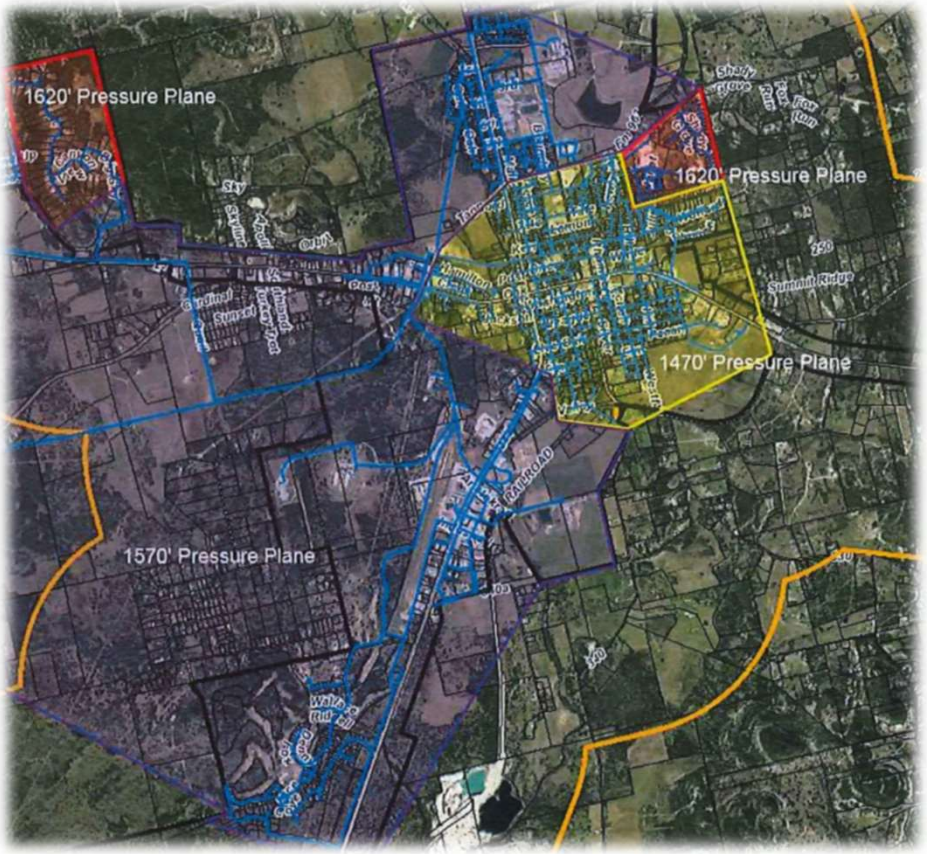
Both wells produce about 600 gallons per minute each or 900 combined

Ellenburger Aquifer



Lake vs. Surface Water

About 50/50
Surface> Jul-Oct
Ground> Nov-June



Cheatham 2 Well Information

New Pump: Replaced in 2023

Pump Depth: 135’

Static Water Level: 77’

Draw Down Level: 120’

Compared to 2023: Down 200 gal/min

Cheatham 1 Well Information

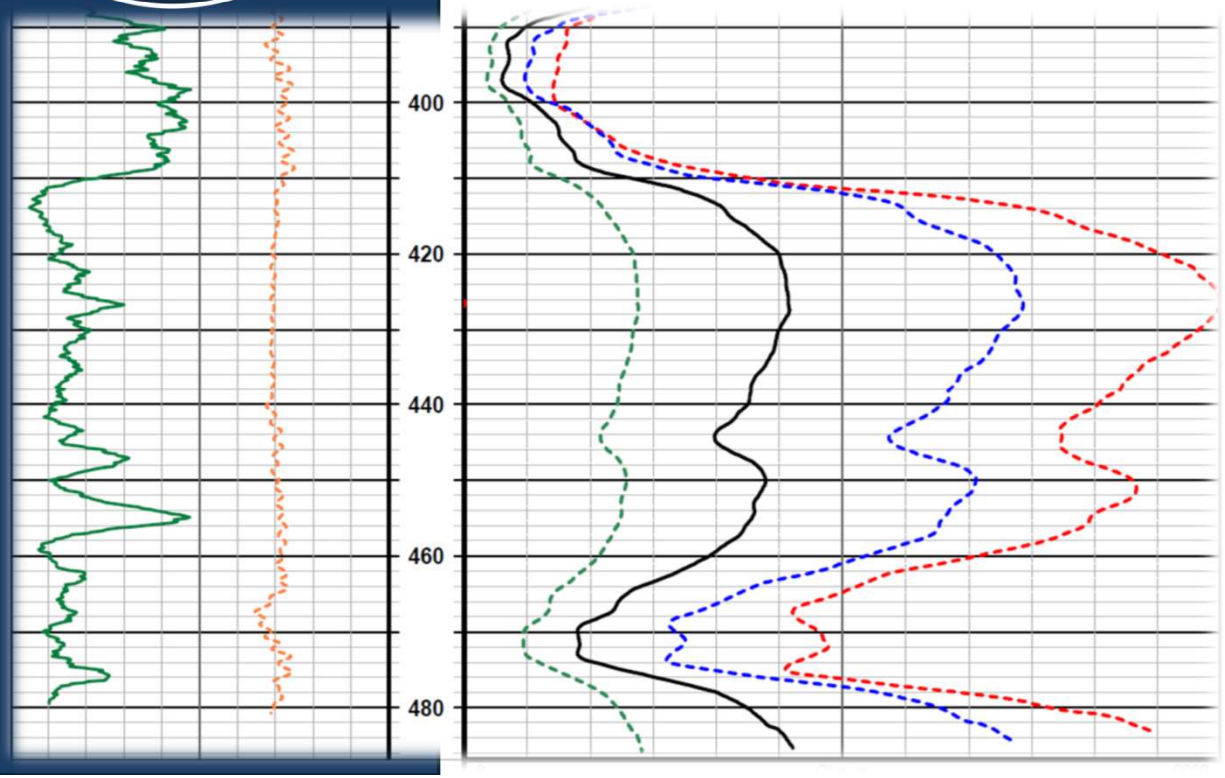
- Removed old pump & Video Recording
- Inspected the well, ran various tests such as Caliper, Gamma Ray, deviation, and quality
- Deepest pump can be set: 185’ based on Caliper Test
- Larger Pump is needed

Cheatham 1 Test: Caliper

Caliper Test shows diameter deviation

This well narrows at 120’ and at 190’

Cheatham 1 Test: Gamma Ray

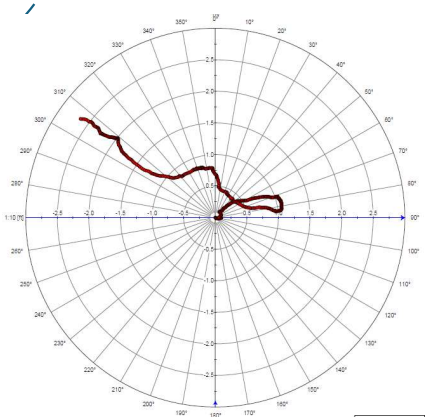


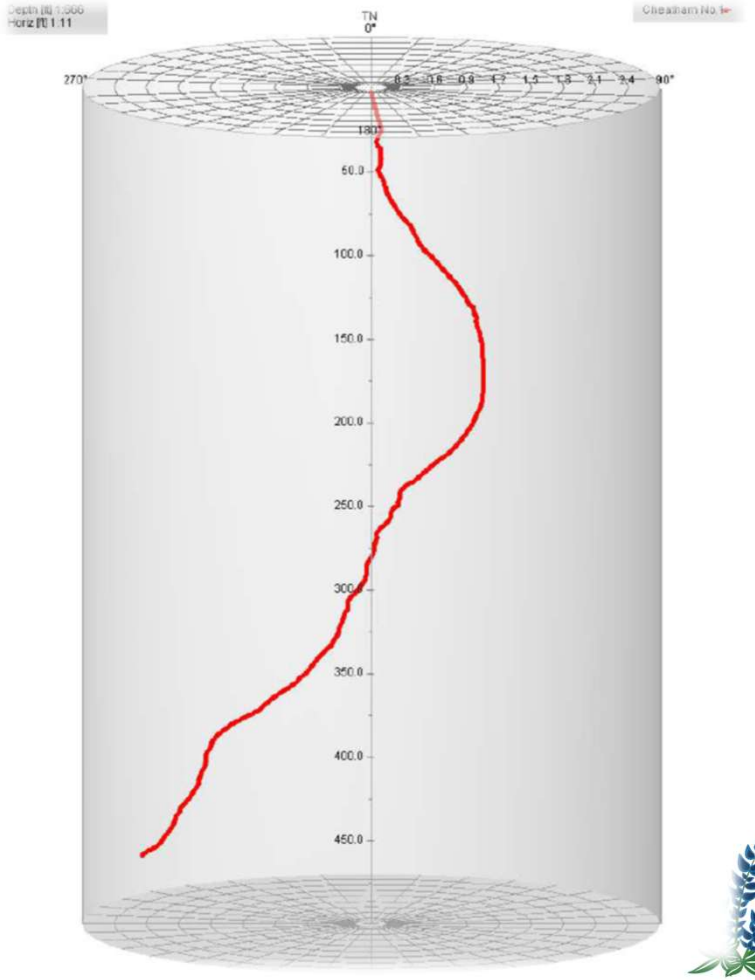
- Shows possible water production layers
- Measures Soil Electric Resistance
- Further apart means likely more production
- Most Production at 180’ and 430’

Cheatham 1 Test: Deviation

Shows how far from plumb well is

Deeper means likely further from straight





180'=1' Deviation

Cheatham 1: Cost

Water Well Cheatham 1 is more productive

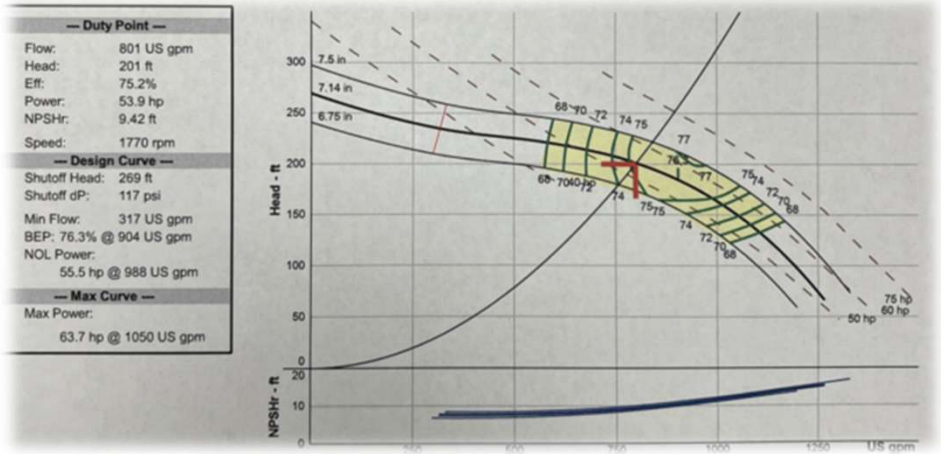
New pump will produce:

at 120’ water level over 900 Gallons per Minute

at 185’ water level 750 gallons per Minute

Cost $50K-$55K

MIMIMUM: 400 gpm in winter



VALLEY ST. WELL

Previously put out of service

- Broken Casing
- Too Close to Street

Highly productive well

- 1,000 Gallons Per Minute
- Can supply ½ of the City
- 200’ Deep
- Casing at 181’

Bring back to production

- Remove & Replace Casing $205K
- Electric, water tanks, chemicals, water supply lines

$2MM to $3MM

Questions?