Treatment Plans

Past….

Present….

Future….

What future treatment needs are required to meet regulations?

Click to continue

Safe Drinking Water:
Water Treated to Provide Public Health Protection

Butler Ozone Treatment Facility Current Treatment

Disinfection: ozone and chloramines, corrosion control: soda ash, fluoridation
Treat and pump: 5 million gallons per day, max. 13 MGD
Complex treatment requires Class 4 operators license

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Planning for future treatment improvements

Treatment requirements for compliance with EPA regulations

Ozone System Upgrades

Renovations for Johnston Pump Station

Compliance with Regulations (Unfunded Mandate):

Add UV Treatment by 2013

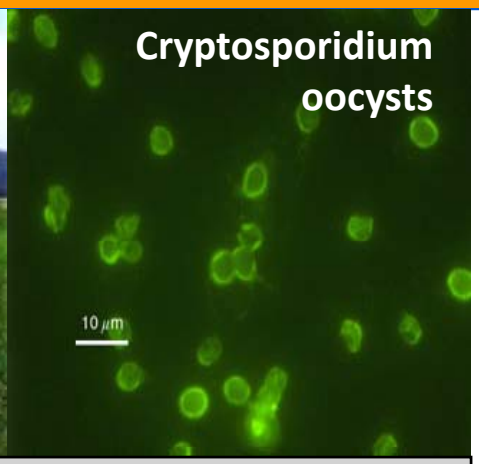
Needed upgrades and improvements of energy efficiencies:

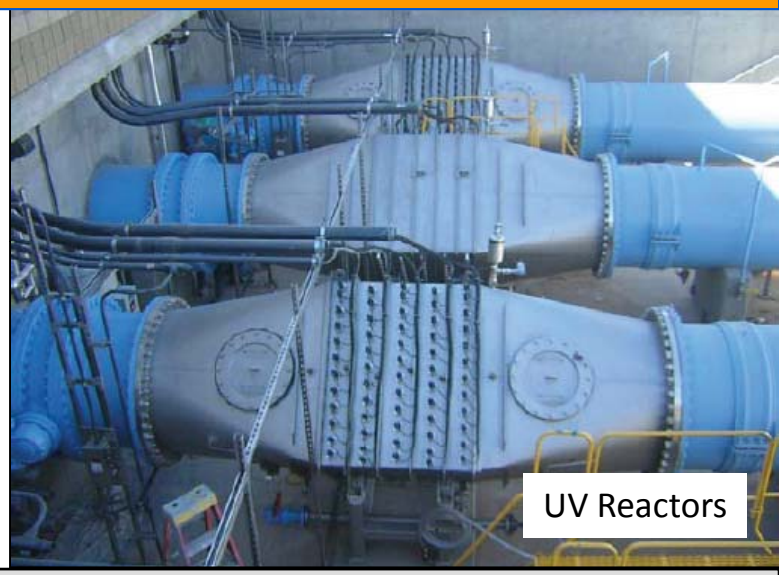
- –Upgrades to 50+ year old Pump Station
- –Ozone system

Click to continue

The District is Currently in the Design Phase of a UV Treatment Facility

Federally mandated US EPA LT2 regulation





The Regulation

Applicability: drinking water systems that utilize surface water sources

Purpose: Inactivatate *Cryptosporidium*

***Cryptosporidium*:** microscopic protozoan that can cause cryptosporidiosis. *Crypto* can enter surface water via fecal material commonly grazing animals

Cryptosporidiosis: Symptoms include nausea, diarrhea, and a low grade fever

The Requirement

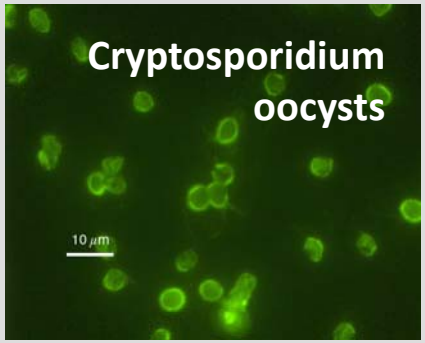
- Install treatment to inactivate Cryptosporidium by 2013
- Most Cost Effective Treatment: Ultra Violet (UV) Light
- Estimated Cost: **$3-6 million** in capital costs

Click to continue

US EPA Testing Requirements for Long Term 2 Compliance

Regulation requires: monthly testing for 2 years

Must add treatment to inactivate *Cryptosporidium* even if testing found no *crypto* present.



After 2 years of testing, the District has found no *Cryptosporidium*

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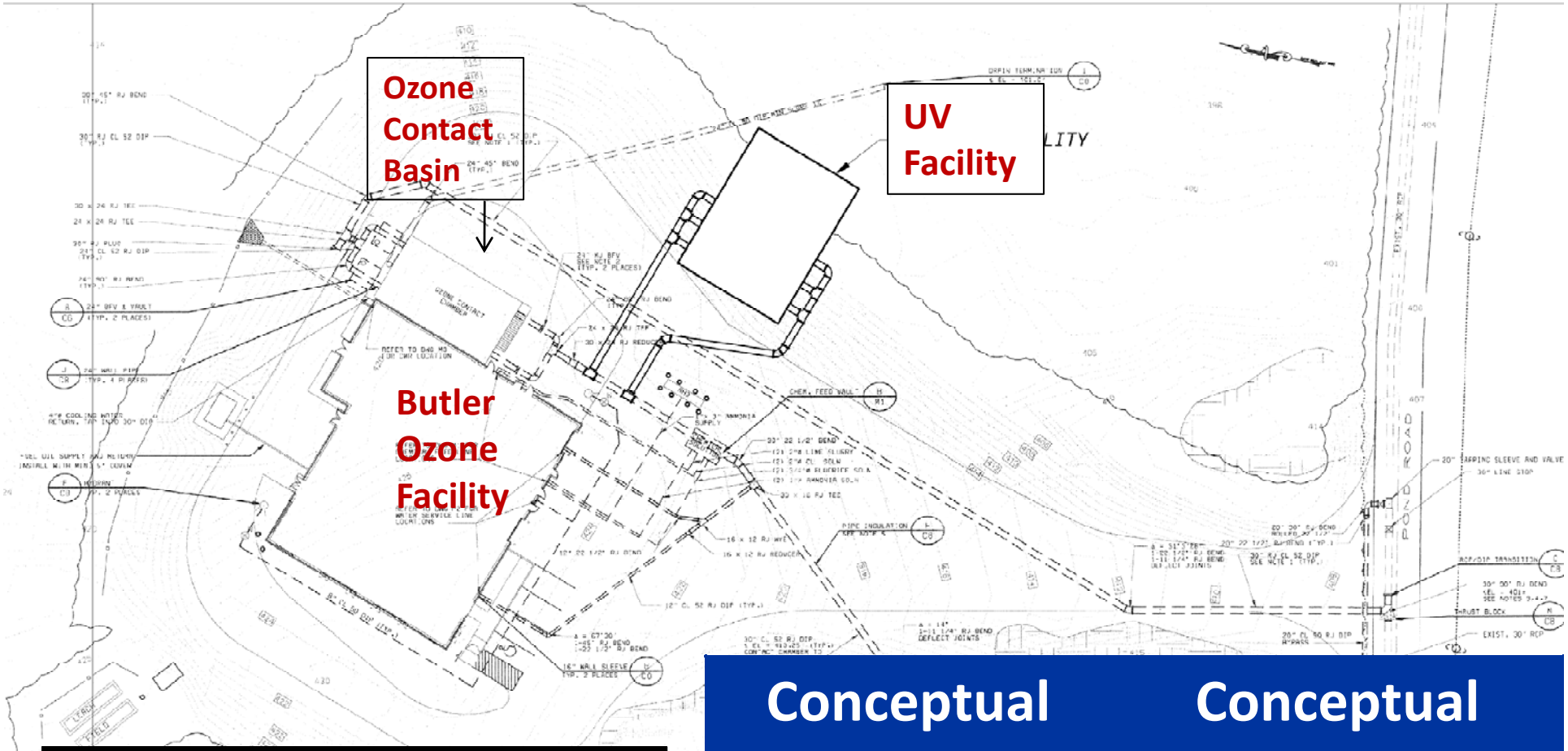


Ultra Violet Treatment: Site Layout

Conceptual Study Costs	Conceptual Estimate
Capital Costs	$3 - 6 million
Annual O&M Costs	$16,000 -$66,000

Click to continue

Planned Renovations to Johnston Pump Station

Johnston Pump Station

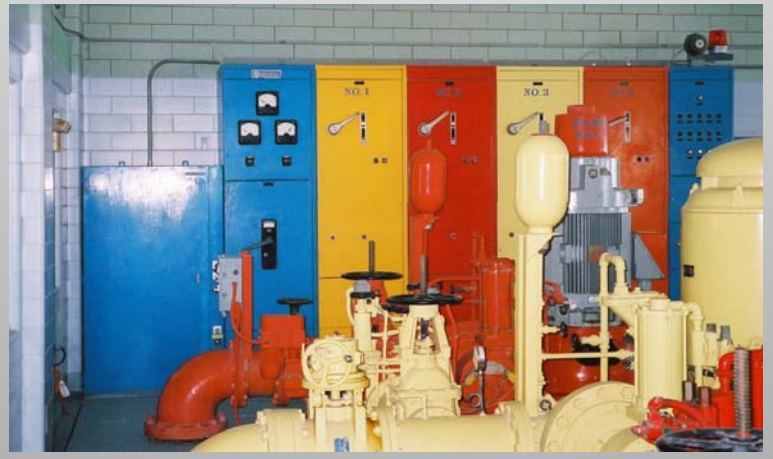
- Constructed 1958
- Designed to pump and treat water
- Continuous use for over 50 years with few upgrades (2 pumps, boiler, roof, transformer)
- Prepare the station for long term continuous operation

Click to continue

Replace Aging Equipment to Increase Energy Efficiency

Replace 50+ year old valves

Replace original motor control panel to current codes and standards



Maintain single pump capacity of 5 mgd and overall capacity of 13 mgd

Replace four 150 hp pumps and motors to optimize pumping efficiency

Click to continue

Conceptual Cost Estimate

JPS Renovations	Conceptual Estimate
Capital Costs	$3.2 million

Click to continue

On the Horizon….

Ozone System Upgrades: Planning for a reliable, cost effective system for the next 20 years

Ozone System is 16 Years Old

Why Upgrades are Needed?

- Age of equipment
  - Difficulty in obtaining parts
- Improve Energy Efficiency
  - Current system is extremely energy intensive
- Improved methodology & technology
  - Efficient operations
  - Servicing

Currently Planning a Roadmap for Ozone System Upgrades in the Future