**City of Jackson Water Crisis 2022**

**Incident Command Brief**

**September 21, 2022**

**INCIDENT OVERVIEW**

The City of Jackson Surface Water System was impacted by recent flooding. Both the O.B. Curtis and J.H. Fewell water treatment plants had reduced water output that created pressure problems in the system. The City lacked sufficient pressures in some areas of the City to sustain adequate access to flush toilets and maintain optimal disinfection for drinking water. Both O.B. Curtis and J.H. Fewell water treatment plants lacked sufficient Class A Operators and maintenance staff.

Dr. Daniel Edney, State Health Officer of the Mississippi State Department of Health, issued a Declaration of a Public Drinking Water Supply Emergency in the City of Jackson ordering the City including, but not limited to, employees of the Public Works Department and Emergency Management immediately cooperate with state response teams and contractors deployed to augment current staffing and to take remediation actions deemed necessary by the State Incident Commander. The Governor of Mississippi, Tate Reeves, has declared an emergency for the City of Jackson due to the effect on essential government services, medical facilities, and schools. A Unified Command has been established to combat this emergency.

Following two rounds of sample collection and bacti analyses in the Mississippi Public Health Laboratory, the state-imposed boil water notice for the City of Jackson was lifted at 1300, on 15 Sept 2022.

O.B. Curtis remained at a steady pressure over the past 24 hours at around 85 p.s.i. All tanks are currently maintaining good margins for overhead storage. On site storage at O.B. Curtis has remained stable. Pressure should be stable throughout the city. The City has received isolated reports of discolored water and pressure issues. These reports are decreasing each day. The City reports that many of these issues are related to routine water leaks or meter issues. Each is being assessed by the city for response.

Overall water production continues to meet demand and is maintaining sufficient margin to support limited work in both O.B. Curtis and J.H. Fewell water treatment plants to improve water production toward rated capacities and redundancy for continuous operations.

A large group of EMAC (Emergency Management Assistance Compact) teams are now on-site supplementing O.B. Curtis staff in addition to assistance from the Mississippi Rural Water Association. The teams onsite are from South Carolina, Michigan, Maryland, and Ohio. These teams include operators, mechanics, instrument technicians, and maintenance. This work has expanded to J.H. Fewell Water Plant.

**TREATMENT FACILITY STATUS**

* **O.B. Curtis**
  + Conventional Treatment Plant:
    - Authorized for **25** million gallons
    - Capacity of **18.7** million gallons
    - Producing **12.6** million gallons
  + Membrane Treatment Plant:
    - Authorized for **25** million gallons
    - Producing **22.5** million gallons
* **J.H. Fewell**
  + Authorized for **20** million gallons
  + Potential flex to **30** million gallons
  + Producing **10.06** million gallons
* **Total:** 
  + City of Jackson: **45.16** million gallons

**Tank/Well Status:** As of 0800 hrs., the city was operating at **87** psi.

**NOTES:** Due to the system maintaining normal pressures, tank and well statuses will be updated only when significant changes occur.

**CURRENT AND PLANNED OBJECTIVES**

O.B Curtis Water Treatment Facility:

* Repair high service pumps
* Establish switch over safety protocol for chlorine disinfectant process
* Improve safety throughout facilities
* Continue installation and testing for raw water intake pumps #2 and #4
* Establish automation and improve accuracy of electronics
* Staffing the operator shifts
* Complete sludge handling process
* Establish process control for water treatment
* Develop a distribution system monitoring plan

JH Fewell Water Treatment Facility:

* Repair sump pumps in the Raw Round
* Repair Raw Service Pumps
* Repair High Service Intake Pumps
* Repair High Service Pump #4
* Ensure facility operations maintain capabilities of 20 MGD with adequate resiliency
* Ensure capacity to flex to 30 MGD to assist with maintenance activities at OB Curtis

**PERSONNEL DEPLOYED TO O.B. CURTIS**

* **MEMA: 8**
* **MSDH: 14**
* **MDEQ: 1**
* **CITY OF JACKSON: 3 in addition to O.B. Curtis personnel**
* **EPA: 5**
* **USACE: 4**
* **FEMA: 3**

**PERSONNEL DEPLOYED TO J.H. FEWELL**

* **MEMA: 2**
* **CITY OF JACKSON: 1 in addition to J.H. Fewell personnel**
* **GCWW: 6**
* **EPA: 2**
* **MSDH: 2**
* **USACE: 2**

**TASKS COMPLETED: O.B. CURTIS**

**CITY OF JACKSON**

* Coordinated with Calflo contractor
  + Will work with EMAC teams from Spartanburg and WSSC when on site
* Continuing work on intermediate and long-term planning
* Finalizing budgets from multiple funding sources including ARPA and SRF

**MARYLAND**

**(ANNE ARUNDEL CO.)**

* Assisted WSSC on work on 24-inch valve in EQ basin
  + Unable to repair currently
* Repaired motors on EQ tank
  + There is a valve closed between EQ and sludge
    - Currently working to locate valve
* Created an SOP for filter backwash to ensure continuity
* Continued work on flange in membrane treatment plant
  + Assessment revealed water rising in an area
    - Membrane will need to be out of service in order to repair
* Collaborated with WSSC on filter work
* Completed work on prelude line for raw water pump #2
  + Awaiting on solenoid from vendor, once arrived will be ready for service

**WSSC**

* **Filter #4 back in service**
  + **This filter has been out of service for more than a year!**
* Filter #3 needs valve replacement and gasket material for filter sweeper assemblies
* Filter #2 surface wash completed
* Assessment of high service pump #3 revealed there was a missing relay
  + Further testing needs to be done
* Completed flowmeters in the filter gallery for #1, #2, #3, #4, and #6
* Troubleshooting head-loss meter
* Hosed down gravity thickeners

**MICHIGAN**

* Oriented/knowledge transfer with incoming electrician
* Checked wires/connections in membrane building, chemical building, unit heaters, back pulse pump, and supply fans
* Assessed exhaust fan in membrane building chemical room
  + Letting it dry/ will assess tomorrow after completely dry
* Replaced a fan in UV 2

**SOUTH CAROLINA**

**(MOUNT PLEASANT)**

* Continued work in membrane treatment plant building
* Replaced O rings on valves to keep them from leaking
  + Testing tomorrow to ensure effectiveness
* Heater for CIP is working
  + Running at 87 degrees
* Ran feed lines for chemical additions for CIP system in membrane
* Changed out and cleaned cassette racks in membrane
* Intake gates will now open
  + Will need to be cranked manually

**SOUTH CAROLINA**

**(SPARTANBURG)**

* Identified issues with sludge flow meter not showing any flow
  + Parts required for repair ordered
* Sludge pump #1 in service
  + Creating a list of replacement parts for future repairs
* Competed work on Centrifuge #2
* Continued ventilation repairs in chemical building

**MISSISSIPPI STATE DEPARTMENT OF HEALTH**

* Continued to provide support to the City of Jackson and EMAC teams at J.H. Fewell
* Continued to source parts for Conventional, Membrane, and Solids handling
* Continuing task assignments and prioritization of tasks based on availability of parts
* Coordinated with contract project manager

**CONTRACT PROJECT MANAGERS**

* Conducted site orientation with contractors from Louisiana
* Conducted safety walkthrough of O.B. Curtis
  + Continued safety assessment
* Continued integration with EMAC teams on site
* Began sourcing parts for repairs

**OTHER ACTIONS**

* Tuesday night, booster station for the Magnolia Drive tank lost power which caused a lower pressure in the area served by the tank
  + Power has been restored, and Magnolia tank has recovered
* Conventional filter #4 has been restored to service and made available to operators creating a potential capacity of an additional 4 MGDs processed through the filter daily
* Safety standdown occurred from 1400 hours to 1600 hours due to excessive heat
* Chlorine monitoring alarm arrived on site today
  + Contract project managers will oversee installation

**TASKS COMPLETED: J.H. FEWELL**

**OHIO/MSDH/USEPA**

* UV bulbs inspected for disposal
  + Awaiting quote
* Continued assessment and identified parts needed for sump repairs at raw round
* Team from WSSC assisted in repairing toilets and O-rings

**EMAC**

* Arkansas – 1 Electrician, 1 Instrument Technician, 1 Mechanic – on site 9/22/2022 – 10/03/2022
* EMAC requests made for staffing augmentation for 10/03/2022 – 10/19/2022
* Participated in EMAC Coordination call with NEMA, National Coordinating State, and members at large to discuss current situation and anticipated needs. All were pleased to see the EMAC process working so well for non-traditional requests.
* EMAC Coordinator, New York – ON SITE
* AAcoDPW Team, Maryland – 1 instrument tech, 1 mechanic, 1 electrician, 1 water operator, 1 team lead – ON SITE
* WSSC Water Team, Maryland – 1 electrician, 3 instrument techs, 2 mechanics, 2 maintenance – ON SITE
* WSSC, Maryland – 1 electrician, 2 operators extended – 10/04/22
* Mount Pleasant, South Carolina – 2 operators and 2 mechanics – onsite 09/09/2022
* Spartanburg, South Carolina – 3 mechanics – onsite 09/12/2022
* Maryland – 3 operators, 2 mechanics, 1 instrument tech, 1 maintenance worker, 1 emergency management specialist supervisor, and 2 electricians – onsite 09/10/2022
* Michigan – 1 electrician – onsite 09/11/2022
* Ohio – 1 instrument tech, 4 maintenance crew – onsite 09/13/2022

**DIRECT FEDERAL ASSISTANCE**

**EPA**

* Executed the sampling plan monitoring for national primary drinking water regulation standards to test for maximum contaminant levels
  + 37 analytes could not be run
    - Will return next week to complete
* Completed nitrification sampling
* Coordinating monitoring results with O.B. Curtis operators and lab staff for accuracy
* Identifying trends in plant water quality sampling
* Evaluating chemical process control for O.B. Curtis and J.H. Fewell

**FEMA**

* FEMA dashboard reviewed by UCG,
  + edits in progress
* Federal Disaster Recovery Officer (FDRO), a member of FEMA’s interagency Recovery Coordination (IRC) cadre on site to assess situation

**USACE**

* Continuing to gather information to support the development of the Resiliency Playbook
  + Meeting with City of Jackson scheduled for next week

**UNMET NEEDS: O.B. CURTIS**

* Packing for pumps
* Update evacuation plans for facility
* Mitigate risk of future chlorine leaks while providing resiliency for disinfection
* Remove HS pump #7 and associated motor
* 30 amp stainless disconnect for EQ basin crane
* Address safety hazards throughout O.B. Curtis plant
* Need for electrical repair and electrical panel for polymer pump and sludge clarifier
* Continue to assess lower pressure issue at Forest Hill High School
* Plan for removing sediments from clear well
* Scope repairs to anhydrous ammonia tank #1
* Adequate tools and supplies

**UNMET NEEDS: J.H. FEWELL**

* Repair sump pump capacity
* Adequate tools and supplies
* Packing for pumps
* Order parts for all four high service pumps
* Parts needed - Bearings - SKF 6213 2RSJEM quantity 2
* Gasket Paper Green Garlock material 1/8” 6’x6’ Sheet
* Pump head studs
* 6ft & 12ft ladders (fiber glass only cannot be aluminum) have been ordered
* Assess and potentially replace sensor, SCADA, and level indicator in Hwy. 18 well tank
* Identify chlorine needs