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ENGINEERING INTEGRATION

April 24, 2020

Ms. Danielle E. Harbin
Enforcement Analyst
Division of Environmental Quality
Office of Water Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

**RE: AMENDED CORRECTIVE ACTION PLAN
WEST MEMPHIS UTILITIES
NPDES PERMIT NUMBER AR0022039, AFIN 18-00879**

Dear Ms. Harbin:

On behalf of West Memphis Utilities (WMU), please accept the following as the requested Amended Corrective Action Plan (CAP) in response to the Consent Administrative Order (CAO) issued by your office (effective date of April 25, 2020). As outlined in the Finding of Fact section of the CAO, WMU has experienced sanitary sewer overflows and treatment plant bypasses since March 1, 2016. As a result of these occurrences, WMU has steadfastly worked towards determining root causes of these occurrences and developing proposed corrective actions to eliminate them. The changes presented in this proposed Amendment are in large part a result of continued studies and evaluations performed by WMU through their own forces and work provided by this office and RJN Group.

Since the original CAP was approved by ADEQ in April 2018, WMU has committed over \$4,000,000 in both sewer system rehabilitation/repair contracts and professional fees for continued SSES, collection system and WWTP modeling, collection system enhancement studies, and WWTP expansion studies. As ADEQ has been informed through past annual meetings and semi-annual progress reports, the results of these investigations and studies over the past two years have made it clear to WMU that certain collection system and treatment facility enhancements will need to be added to those scheduled work efforts outlined in the original CAP.

As recommended in RJN Group's *Capacity Analysis and Augmentation Study* that was completed last fall, several refinements to the collection system network are recommended that will minimize the potential for gravity system surcharging and upstream SSOs: most notably redirecting the effluent from Pump

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Station Nos. 3 and 4 into a new common force main that redirects sewage to Pump Station 9, and installing a new force main from Pump Station 10 and tying directly to the WWTP. These two system enhancements will have several benefits in addition to the reduction of SSOs. The first is that a significant sewage load will be taken off Pump Station 8. The second benefit is that sewage will no longer be pumped several times in a daisy chain manner before it is ultimately delivered to the main pump station delivering flow to the WWTP. This reduces the likelihood of an intermediate pump station failure creating a cascading failure to upstream basins thereby lessening the potential for SSO. Lastly, the redirection of the sewage from Pump Stations 3 and 4 to Pump Station 9 will better utilize the existing flow capacity currently available. To this end, design work for the new common force main for Pump Stations 3 and 4 is underway with construction scheduled for late summer/early fall.

As highlighted by Fisher & Arnold's *Wastewater Treatment Facility Treatment and Hydraulic Expansion Study, April 2020*, the existing WWTP is not able to hydraulically pass a flowrate exceeding 6.8 MGD without significant impact to the final clarifiers. As a result, flows in excess of this amount must be redirected to their equalization basin for storage until such time that influent flows are well below this rate such that this impounded sewage can be introduced back into the WWTP. Unfortunately, during wet weather storm events it has been determined that average daily flows remain at elevated levels for days, thus filling the equalization basin. Should the West Memphis area be hit with several back to back rainfall events during the wet season, as is very common in this area, any additional flows exceeding 6.8 MGD must be bypassed around the plant. To alleviate the potential for future bypass events at the WWTP, and to provide WMU with the ability to meet anticipated future system growth, it is recommended that this existing WWTP be expanded to treat an average daily flow of 12 MGD and be able to handle a peak influent flow of 18 MGD. In expanding the WWTP to accommodate these flow rates, the equalization basin can be reasonably relied upon only for the most extreme rainfall events and can be emptied relatively quickly, without the need to bypass flow directly to the river. Anticipated components necessary to accommodate these increased flows include construction of a new grit removal system, new aeration basin flow split, replacement of the four existing clarifiers with four larger units, new RAS/WAS sludge pumps, new waste sludge digester storage, new UV system and refinements to the equalization basin pumps. Construction of this enhanced WWTP is expected to cost approximately \$20,000,000 with design anticipated to start in early summer 2020 and construction to follow in 2021 through fall 2023.

Other work that WMU is committing to will be the continued SSES work on the remainder of that portion of collection system that has not yet been studied, the continued manhole and collector line rehabilitation as identified in already completed studies as well as that work to be identified in future studies, and the post rehabilitation flow monitoring of those completed areas of the collection system to prove these efforts have resulted in a reduction of I/I.

Listed below is a summary of those projected system studies, rehabilitation and expansions that are currently anticipated to be required in order to be in compliance with the CAO by December 31, 2023.

COLLECTION/TREATMENT SYSTEM ACTIVITIES TIMEFRAME

TASK	2020	2021	2022	2023	ESTIMATED INVESTMENT
SSES – PHASE 3	■				\$100,000
SSES – PHASE 4		■			\$400,000
COLLECTION SYSTEM REHABILITATION	■	■	■	■	\$5,500,000
POST REHAB FLOW MONITORING	■	■	■	■	\$500,000
PUMP STATION 9 ADDITIONAL PUMP INSTALL	■				\$750,000
PUMP STATION 10 FM REROUTE TO WWTP			■	■	\$1,000,000
PUMP STATIONS 3 & 4 COMMON FORCE MAIN	■	■			\$1,500,000
WWTP EQ BASIN PUMPING IMPROVEMENTS	■	■			\$750,000
WWTP EXPANSION DESIGN/CONSTRUCTION		■	■	■	\$20,000,000
TOTAL ESTIMATED INVESTMENT					\$30,500,000

In summary, WMU is fully prepared to continue the investments begun several years ago to eliminate bypasses at their WWTPF and SSOs within their collection system. WMU also wants to stress that the above referenced expenditures are in addition to those on-going investments made to continue their normal O&M to their collection and treatment systems.

On behalf of WMU, we look forward to your review and comment on this proposed CAP. If I can be of any assistance during your review, please do not hesitate to contact me at this office.

Sincerely,

FISHER & ARNOLD, INC.



Tim Verner, P.E.
 Senior Vice President

TV/tv

Cc: Todd Pedersen, General Manager, WMU