



CITY CORPORATION
Russellville Water and Sewer System

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September 27, 2013

Mr. Alan Anderson
Water Enforcement Branch
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

**Re: City Corporation – CAO
Meeting with ADEQ (September 25, 2013)
NPDES Permit No. AR0021768
CAO LIS No. 09-146
AFIN 58-00105**

Dear Mr. Anderson,

I would like to thank ADEQ for the opportunity to meet and discuss the current situation in regards to the City Corporation Consent Administrative Order (CAO). As requested in the meeting on September 25, 2013, City Corporation has summarized the CAO with regard to total suspended solids (TSS). The following letter provides a summary of the history of the CAO, current efforts and actions taken to date, and the future obligations of City Corporation.

History

The CAO was executed on November 6, 2009, and became effective on December 25, 2009. The CAO required City Corporation to develop two separate Corrective Action Plans (CAPs). The first CAP was specifically to address TSS/TRC and the second CAP would be developed as a comprehensive plan for the entire system. In the original CAP for TSS/TRC, City Corporation proposed a plan to analyze the installation of disc filters and perform a pilot test to monitor expected performance. The deadlines and milestones in the TSS/TRC Corrective Action Plan were established with the intent to install the disc filters. However, the disc filters performed poorly during the pilot test and City Corporation was forced to evaluate alternative solutions for TSS. Additionally, City Corporation attempted to revise the schedule for TSS as noted on page 3 of the CAP (attached) for TSS/TRC - "In the event that the pilot test that the pilot test proves the filters to be ineffective, owner will research other treatment technologies and submit to ADEQ for a revision in this schedule." CWB Engineers, Inc. sent a letter to ADEQ on August 4, 2011

updating ADEQ of the poor pilot tests and the decision to pursue alternative treatment methods which would require extension of the schedule for TSS. ADEQ responded in a letter dated August 16, 2011 that the final compliance date of July 31, 2012 for TSS would not be extended. On February 15, 2012, ADEQ sent a second letter denying the compliance date extension for TSS and TRC. Therefore, with the poor results of the pilot test and the steps required to re-evaluate technologies and complete the engineering design for the TSS, meeting the compliance date of July 31, 2012 was no longer feasible and ADEQ was made aware of this fact.

Current Efforts and Action Taken

City Corporation has been working diligently with CDM Smith to complete the design and construction of the treatment plant modifications required in the Consent Order. City Corporation has worked with the City of Russellville to pass a bond issuance of \$9 million for improvements at the Pollution Control Works (PCW). The project was divided into Schedule I and Schedule II. City Corporation has completed the majority of the construction of the Dechlorination facility (Schedule I) at a total contract cost of \$597,840. Construction is underway on the PCW improvements to achieve compliance regarding Nitrates and TSS (Schedule II). The current contract amount for this project is \$10,313,526.74. The improvements include an additional aeration basin and anoxic zones for nitrate removal, an additional clarifier, and upgrades to the two existing clarifiers. The new clarifier and clarifier upgrades will provide improved hydraulic capacity and sludge handling at the plant. These improvements when completed will allow City Corporation to comply with the current TSS effluent limits. A copy of the most recent Weekly Progress Report is included with this correspondence, which includes pictures of the current construction of the additional clarifier.

City Corporation started the "Operations Modification Evaluation Program" in September 2010. Plant operators and management worked with engineering consultants and ADEQ to improve and optimize the operation at the treatment plant. City Corporation made several operational changes and modifications to maximize the existing treatment plant and presented ADEQ with quarterly progress reports on the efforts. The program lasted through the end of 2011, at which time CDM Smith formally presented the Preliminary Engineering Report (PER) and planned improvements to ADEQ.

City Corporation has also made adjustments in the way sludge is handled at the plant. In an effort to improve effluent quality, changes were made to the sludge blanket and sludge wasting operations at the plant. This was a result of the "Operations Modification Evaluation Program" and recommendations from the engineer. The modifications improved the performance of the plant, however, significant rainfall events still pose a problem until the final improvements to the plant are complete. Furthermore, City Corporation has entered into a contract with an engineering firm to evaluate and design improvements for the sludge handling at the plant. This will allow the staff to waste sludge continuously, regardless of the weather and will improve effluent quality TSS numbers. City Corporation is also well underway with a multi-year improvement plan to the wastewater collection system which will help reduce the flows at the plant and reduce the likelihood of TSS violations due to sludge carryover during heavy rainfall events.

Future Obligations

City Corporation has submitted a revised timeline in a recent progress report to ADEQ that included a final compliance date of January 10, 2016 for Nitrate and TSS . As stated above, construction is currently ongoing and the expected completion date is February 2015. City Corporation has allowed ample time between construction completion and final compliance to identify any issues with the new construction and to optimize the operation of the new treatment features. It is feasible that the plant could maintain compliance immediately following completion of the construction, thus exceeding the compliance date stated in the CAP.

In summary, City Corporation has been working aggressively to address the issues at the treatment plant. We have made every effort to comply with the CAO and remain conscientious of the ratepayers of Russellville. We strive to protect the environment and have shown a strong effort in regards to our progress towards compliance. We are aware that excursions have happened in regards to TSS, but feel that these events are out of our control until the improvements are complete at the wastewater plant. City Corporation requests that in light of all the information presented in this letter, ADEQ will consider amending the CAO to extend the date of compliance for TSS to January 10, 2016. We feel we will be in full compliance of the TSS effluent quality requirements at that time. Again, thank you for the opportunity to discuss this issue.

Sincerely,



Steve Mallett, P.E.
General Manager, City Corporation

cc: Clint Bell, CWB Engineers
Andrew Pownall, CDM Smith
City Corporation Board of Directors
File

Advertise, Bid, & Award Contract	60	370	1/02/11
Complete Construction	270	640	10/03/11
Place Units in Service			10/03/11
Attain TSS & TRC Compliance			not later than 7/31/12

** In the event that the pilot test proves the filters to be ineffective, owner will research other treatment technologies and submit to ADEQ for a revision in this schedule.

The implementation schedule above assumes an effective date for the CAO of December 25, 2009 and is based on reasonable estimates of the time involved for each stage. A large portion of the construction phase will involve the shop drawing review and equipment delivery stages. A conservative estimate for the time involved in the shop drawing/equipment delivery period of the construction phase is 28 weeks (7 months).

IV. Conclusion

The use of disc-filters as a plant polishing process step is a commonly used solution for treating TSS problems, and, given the success of similar installations, we feel that this would be an appropriate solution to the Russellville PCW TSS problems. The pilot plant study will help to verify these assumptions and provide data necessary to fine tune the disc-filter units for the specific Russellville PCW wastewater characteristics. The project will include the installation of dechlorination facilities utilizing sulfur dioxide, in order to address the TRC violations. The proposed 18 month period between the completion of pilot testing and the completion of construction may be able to be improved upon depending on the lead time of equipment. However, we feel that the milestone schedule above is a good estimate of the time involved for the successful completion of the project.



Project Weekly Progress Report

Project: PCW Schedule II – Nitrate Removal Report No.: 011
Project No.: 109678-97875 Week Ending: 9/21/2013
Construction Project Manager: Andrew Pownall, PE
Sr. Resident Project Representative: Steve P. Sharkey

	Sunday (#70)	Monday (#71)	Tuesday (#72)	Wednesday (#73)	Thursday (#74)	Friday (#75)	Saturday (#76)
Weather(AM/PM):	NA	Partly Sunny	Sunny	Partly Sunny	Rain	Rain	NA
Precipitation:	NA	0.0"	0.0"	0.0"	0.30"	0.70"	NA
Temp. ^{oF} (Hi/Lo):	NA	67/91	67/91	73/93	68/90	67/72	NA

Contract Date: May 3, 2013 Original Contract Price \$ 10,751,750.00
Notice to Proceed: July 8, 2013 Add'l Cost App'd C.O's \$ (438,223.26)
Days To (SC/FC): 467/497 Revised Contract Price \$ 10,313,526.74
Substantial Compl. Date: January 2, 2015 Amt Paid thru Last Pay Req \$ 701,088.80
Final Compl. Date: February 1, 2015 Add'l Time App'd C.O's: 3 calendar days

Contractor: Archer Western Construction (AW)
Contractor's On-Site Superintendent: Richard Scholz
Contractor's Project & Assist. Managers: Wayne Pursley & Shawn Durham
Subcontractor's on site this week: Dawson Excavating, Fast Tie Rebar

Major Deliveries: placed 36 CYs of 2,500 psi, Class A concrete; Secondary Clarifier No. 20" RAS encasement, supplied by Mobley Concrete, from Diamondback Steel (3) tractor trailer loads of reinforcement for Secondary Clarifier No. 3's foundation slab, (6) loads #57 washed stone

Visitors: Bobby & Mat (Concrete Technicians, GHB&W)

Sr. Resident Project Representative: Steve P. Sharkey Date: 09/23/2013



Information needed: _____

Problems noted: _____

Delays: Inclement weather on Friday, Sept. 20, 2013. Due to early morning rain showers, which continued steadily until 3:00 p.m., Contractor relieved its crews and heavy equipment operators by 8:00 a.m.

Work deficiencies noted: _____

On-site Active Equipment: (4) Con-X tool containers, tool gang boxes, (3-4) pickup trucks, (1) combination backhoe, (1) D3 dozer, (1) trackhoe excavator, (1) front-end loader, (1) skid loader, 2,500 gal. spray water tanker, (2)-2", (1)-3" & (1)-1" submersible pumps w/discharge hoses, 50-ton Grove extension boom crane (w/operator), 100-ton Maxim crane w/160' boom & rigging (w/operator), (1) dual-wheel static/vibratory compactor, (1) Bomag vibratory (walk-behind) plate compactor, 1.5 CY concrete bucket, (3) air compressors, steel wall forms, survey equipment, level rod & stakes, (2) 2" pencil vibrators, portable generator, cum-a-long hoist with chain, hand tools, power screeder, concrete slab curing blankets , portable light plant

Summary of Work Performed this week:

Archer Western Construction (AW): Prime/General Contractor

Workforce: -1-Project Superintendent, 1-Project Manager, 1-Assist. Project Manager, 1-Field Engineer, 1-Mechanical & 1-Carpenter Superintendents, 1- Mechanical/Pipe Foreman, 2- Heavy Equipment Operators, (3) Carpenters, (4) Laborers

Hours: 4:00 a.m. to 7:00 p.m.

AW: 1. The lower and upper transverse and longitudinal reinforcement mats of new Aeration Basin No. 3' s thickened spread footer and interior thick concrete slab were spaced and tied between stay-tees.



2. Between the individual slabs to be concrete cast, bulkheads with impregnated PVC waterstops were set at mid-thickness of slab, and, extending above the floor slab starter walls into and reinforcing the perimeter walls, dowels were aligned at required spacings.

3. On the southwest side of Secondary Clarifier No. 3's foundation excavation cut-back side-slopes, the base was widened to allow for the extended spread footer.

4. At the southwest quadrant of Secondary Clarifier No. 3's excavated through solid shale, center lower hub pipe base, surrounding the reinforced, plastic wrapped ductile iron RAS pipe trench limits, between bulkheads, was concrete encased above #57 stone bedding to the bottom of the Clarifier's bottom slab.

5. On the east side of the Chlorine Feed Building's foundation, connected to an above grade non-potable water line, a 1" PVC vertical pipe with hose bib shut-off and a 2" quick disconnect service water hook-up, with (2) PVC ball valve shut-offs, were installed.

6. Along the sloped bottom of Secondary Clarifier No. 3's foundation slab, the remaining shale rock was cut with an allowance for the 6" thick seal slab and spread/compacted #57 stone base to adjust grade.

7. A 2,500 gallon water tanker truck discharged water pumped from the effluent junction box located outside the south chainlink fence onto active construction areas and maintenance roads which were stripped of vegetation on an as needed basis.

8. On the west and south sides of the existing Chlorine Feed Building, potholes were dug to locate the alignments and depths of the existing 2" to 2½" chlorine feed PVC lines that exit the building below grade.

Dawson Excavating (Dawson): Materials Hauling Broker

Workforce: 2 dump trucks w/Operators

Hours: 7:00 a.m. – 5:00 p.m.

Dawson: 1. A dump truck was loaded with excavated broken shale rock from the Secondary Clarifier's bottom excavation, and the material hauled off-site.



Fast Tie Rebar (Fast Tie): Slabs & Walls Reinforcement Assembly & Tying

Workforce: (1) Owner, (1) Superintendent, (7) Ironworkers

Hours: 7:00 a.m. - 5:30 p.m.

Fast Tie: 1. Lower and upper reinforcement steel mats, including separation stay-tees, for new Aeration Basin No. 3's perimeter spread footer and interior slab were spaced and wire tied above the compacted #57 stone base and paver bricks to achieve the required clear cover.

2. Hook dowel vertical rebars for slab #1's walls were spaced and tied.

Sunday 9/15/2013: No work was performed by Contractor and/or Subcontractors; therefore, on-site heavy equipment remained idle.

Saturday 9/21/2013: No work was performed by Contractor and/or Subcontractors; therefore, on-site heavy equipment remained idle.

WEEKLY PHOTOS



Photo 1.: New Secondary Clarifier No. 3's center lower hub 20" ductile iron RAS, southwest alignment, being concrete encased between bulkhead forms (looking southwest)



Photo 2.: New Aeration Basin No. 3's interior foundation and perimeter thickened spread footer slabs (8 ea.), above compacted #57 stone receiving lower & upper transverse & longitudinal rebars between bulkheads including waterstops (looking east)



Photo 3.: New Aeration Basin No. 3's foundation slab receiving lower & upper mats reinforcement steel also vertical wall hook dowels. Along the south slab edge (formed) is the reinforced 22" thick x 20" length knock-out slab extension (future AB connection), (looking east)



Photo 4.: New Secondary Clarifier No. 3's foundation slab's rough grade excavated shale rock bottom. Below 6" concrete seal slab compacted #57 stone base placed to adjust slope at 12:1. Concrete encased 20" DI RAS from center hub in background (looking south)