



ETC Engineers & Architects, Inc.

ENGINEERS ■ ARCHITECTS ■ PLANNERS

■ 1510 SOUTH BROADWAY, LITTLE ROCK, AR 72202 ■ PHONE 501-375-1786 ■ FAX 501-375-1277 ■

January 17, 2018

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Mr. Richard Healey
Manager
Enforcement Branch
ADEQ Office of Water Quality
5301 Northshore Drive
North Little Rock, AR 72118

Ref: City of Forrest City; Permit No.: AR0020087
CAP for Effluent violations

The recent Consent Administrative Order (CAO) signed by the City of Forrest City lists 6 effluent violations (see attached list of discharge violations) and instructs the Forrest City Water Utility (FCWU) to develop a Corrective Action Plan (CAP) and submit the plan to ADEQ by January 9th 2018. This letter is in response to that requirement. We recognize that FCWU is late in submitting this CAP. However, we had requested a time extension on 1/10/2018 through an email to you.

Over the last three years (2015 – 2017), FCWU have violated Suspended Solids permit limits on three occasions, Fecal Coliform permit limit on two occasion and Total Ammonia/Nitrogen permit limit on one occasion. In order to develop a CAP, I reviewed all of the violations.

My review summary are as follows:

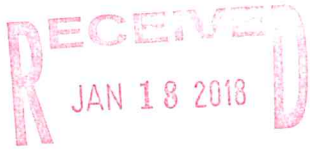
1. Suspended Solids:

- a. In 2015, FCWU violated Monthly Suspended Solids permit limit on two different occasions. Once during the reporting period 2/1/2015 to 2/28/2015 and the second time during the reporting period 8/1/2015 to 8/28/2015. Both times the violations did not exceed 10% of the permit limit.
- b. In 2016, FCWU violated Suspended Solids permit limit on one occasion. Once during the reporting period 10/1/2016 to 10/31/2016. This time the violation was less than 5% of the permit limit.
- c. There were no violations in 2017.
- d. FCWU submitted non-compliance reports each time violations occurred (see attachment FC-1, FC-2 & FC-4).
- e. The noncompliance reports submitted by FCWU described the probable cause of each violation. In the opinion of the FCWU staff, the violations were caused by excessive rain related impact on the equalization basins. FCWU owns and maintains two very large

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■ e-mail: etc@etcengineersinc.com ■





(140 acres total) ponds as equalization basins. Excess flow during a rainfall event are diverted to the equalization basins. The flow from the ponds are later returned to the treatment plans as capacity becomes available.

- f. During the three above referenced violations, the pond water level got dangerously high due to record amount of rainfall (in excess of 100-yr rainfall). As such, FCWU had to return higher amount of flow from the pond then desirable. The plant was not able to treat the additional flow adequately. Hence the violations.
- g. FCWU has initiated better management of return flowrate from the ponds and more appropriate operation of the treatment units. This is exhibited by the fact that there was no reported violation of permit limit in the entire period since October 2016 violation.
- h. Additionally, FCWU has been engaged in capital improvement of the ponds including piping system and erosion control. Recently those improvements have been completed. This will provide additional flexibility in peak flow management and as such assure control of any future violations.
- i. In conclusion, I see no need for any immediate additional corrective actions. FCWU will monitor discharge quality of the Suspended Solids on a continual basis and adjust plant operation accordingly to avoid any permit violation.

2. Nitrogen/Ammonia Total:

- a. FCWU violated total Nitrogen/Ammonia permit limit only on one occasion during the last three years. The violation took place during the reporting period 5/1/2016 to 5/31/2016. The violation exceeded the permit limit by 10% only.
- b. FCWU submitted a non-compliance report on the violations (see attachment FC-3).
- c. The noncompliance report submitted by FCWU described the probable cause for the violation. In the opinion of the FCWU staff, the violation was caused by imbalance in the sludge depth ratio in the Clarifier #1.
- d. The sludge depth ratio imbalance was the result of clogged RAS suction line from Clarifier #1.
- e. The corrective action taken by FCWU was to drain and clean Clarifier #1 along with the RAS line. The Clarifier #1 was subsequently put back into operation. It has been functioning normally since then.
- f. There have been no reported Nitrogen/Ammonia violations since then.
- g. In conclusion, I see no need for any immediate additional corrective actions. FCWU will monitor discharge quality of the Nitrogen/Ammonia on a continual basis.
- h. FCWU will adopt scheduled and preventive operation and maintenance procedures to avoid any future similar occurrence thereby avoid any permit violation.

3. Fecal Coliform:

- a. There were no Fecal Coliform violations in 2015.
- b. In 2016, FCWU violated Monthly Fecal Coliform permit limit once during the reporting period 6/1/2016 to 6/30/2016.

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- c. In 2017, FCWU violated Monthly Fecal Coliform permit limit once during the reporting period 7/1/2017 to 7/31/2017.
- d. FCWU submitted non-compliance reports on the violations (see attachment FC-5).
- e. The noncompliance reports submitted by FCWU described the probable cause for the violations. In the opinion of the FCWU staff, both violations were caused by malfunctioning of the UV units.
- f. FCWU reduces fecal coliform count by applying ultra violet ray to the effluent. The FCWU UV system was designed to apply UV rays necessary to reduce the fecal count to the permitted level. The only reason the Fecal Coliform count would exceed the permit level is that the UV system was not functioning as designed. Generally, UV bulbs have to be cleaned at the designed interval to receive optimum treatment. In addition, the electrical system must operate appropriately.
- g. The FCWU replaced the malfunctioning bulbs and performed necessary electrical maintenance.
- h. There have been no reported Fecal Coliform violations since then.
- i. In conclusion, I see no need for any immediate additional corrective actions. FCWU will monitor discharge quality of Fecal Coliform on a continual basis.
- j. FCWU will adopt scheduled and preventive operation and maintenance procedures to avoid any future similar occurrence thereby avoid any permit violation.

We will continue to submit reports as outlined in the CAO. Please feel free to contact me if you need additional clarifications. I can be contacted at 501-375-1786.

Sincerely,


Mizan Rahman, P.E.
Principal

CC: Mayor Larry Bryant, City of Forrest City
Mr. Calvin Murdock, Manager, Forrest City Water Utility

FORREST CITY WASTEWATER UTILITY

DISCHARGE VIOLATIONS

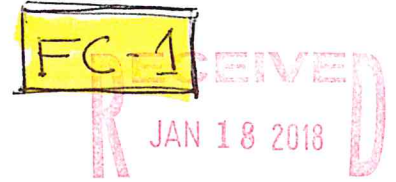
Letter Ref.	Dates	Parameters	CAO - Ref.	Status	Limit Value	Unit	DMR Value	Unit	% Violation
FC-1	2/28/2015	Solids Total, Suspended - Mo Avg			353.6	Lb	380	Lb	7.47%
FC-2	8/28/2015	Solids Total, Suspended - Mo Avg			353.6	Lb	385.4	Lb	8.99%
FC-3 & ADEQ-1	5/31/2016	Nitrogen, ammonia Total - 7 Day Avg	Item 19, 20 & 21		4.5	mg/l	4.82	mg/l	7.11%
ADEQ-2	6/30/2016	Coliform, Fecal general - 30Day Avg			1000	Lb	4400	Lb	340.00%
FC-4 & ADEQ-3	10/31/2016	Solids Total, Suspended - Mo Avg			20	mg/l	20.8	mg/l	4.00%
FC-5 & ADEQ-4	7/31/2017	Coliform, Fecal general - 7Day Avg			2000	Lb	3233	Lb	61.65%

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Forrest City Water Utility

303 NORTH ROSSER ST.
FORREST CITY, ARKANSAS 72335
870-633-2921



NON-COMPLIANCE REPORT

Facility Name: Forrest City Wastewater Treatment Plant

NPDES Permit: AR0020087

REPORTING PERIOD 2/1/2015 TO 2/28/15

VIOLATION 1 Exceeded Total Suspended Solids Permit Limit

PARAMETER	NUMERIC VALUE	PERMIT LIMIT
TSS MO. AVG. (QUANTITY)	380 lbs/day	353.6 lbs/day

REASON FOR VIOLATIONS:

Forrest City has the ability to divert high flows into an old 140 acre facultative treatment pond. Normally, between evaporation and a gradual return flow to the treatment units works great. However, due to extra heavy rains, the ponds filled to nearly overflow. Winds were causing the waves to lap over the levees. To prevent possible levee failure, we brought flows back through the system at much higher rates than normal. Activated sludge does not work well on algae, which was the cause of the high TSS.

All other parameters in the permit were in compliance.

CORRECTIVE ACTION/PREVENTIATIVE MEASURES/OTHER NARRATIVE:

Ponds are now at reasonable and somewhat manageable and the higher return rates should be at a level to obtain compliance.

Calvin Murdock



Forrest City Water Utility

303 NORTH ROSSER ST.
FORREST CITY, ARKANSAS 72335
870-633-2921

FC-2

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NON-COMPLIANCE REPORT

Facility Name: Forrest City Wastewater Treatment Plant

NPDES Permit: AR0020087

REPORTING PERIOD 8/1/2015 TO 8/28/15

VIOLATION 1 Exceeded Total Suspended Solids Permit Limit

PARAMETER	NUMERIC VALUE	PERMIT LIMIT
TSS MO. AVG. (QUANTITY)	385.4 lbs/day	353.6 lbs/day

REASON FOR VIOLATIONS:

Forrest City has the ability to divert high flows into an old 140 acre facultative treatment pond. Normally, between evaporation and a gradual return flow to the treatment units works great. However, due to extra heavy rains, the ponds filled to nearly overflow. Winds were causing the waves to lap over the levees. To prevent possible levee failure, we brought flows back through the system at much higher rates than normal. Activated sludge does not work well on algae, which was the cause of the high TSS.

All other parameters in the permit were in compliance.

CORRECTIVE ACTION/PREVENTIATIVE MEASURES/OTHER NARRATIVE:

We have reduced the TSS loading by reducing the flow from the Ponds back through our treatment facility.

Calvin Murdock



Forrest City Water Utility

303 NORTH ROSSER ST.
FORREST CITY, ARKANSAS 72335
870-633-2921

FC-3

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NON-COMPLIANCE REPORT

Facility Name: Forrest City Wastewater Treatment Plant

NPDES Permit: AR0020087

REPORTING PERIOD 5/1/2016 TO 5/31/16

VIOLATION 1 Exceeded Total Ammonia Nitrogen Permit Limit

PARAMETER	NUMERIC VALUE	PERMIT LIMIT
Nitrogen, ammonia 7 DA AVG. (QUANTITY)	4.82 mg/L	4.5 mg/L

REASON FOR VIOLATIONS:

Clarifier #1 suction pipe for the RAS was clogged which caused an imbalance in the sludge depth ratio. This imbalance caused a higher than normal Nitrogen ammonia level.

CORRECTIVE ACTION/PREVENTIATIVE MEASURES/OTHER NARRATIVE:

Drained and washed out Clarifier #1. Refilled now working normal.

Calvin Murdock

ADEQ-1

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ARKANSAS
Department of Environmental Quality

July 20, 2016

The Honorable Larry Bryant
Mayor, City of Forrest City
303 North Rosser
Forrest City, AR 72336

RE: NPDES Permit Number AR0020087, AFIN 62-00070
NPDES Permit Effluent Violations

Dear Mayor Bryant:

The Department has conducted a file review of the above referenced permit and determined your facility reported the following violation of the effluent limitations in Part I, Section A of your Permit for the reporting period ending May 31, 2016:

Monitoring Period End Date	Dsch#	Parameter	Limit Value	DMR Value
05/31/2016	001-A	Nitrogen, ammonia total [as N], 7 DA AVG, mg/L	4.5	4.82

Failure to remain in compliance with the effluent limitations set forth in your permit violates Part I, Section A of your permit, and may result in formal enforcement action that will include the assessment of a civil penalty.

Thank you for your attention to this matter. Should you have any questions, feel free to contact me at 501-682-0664 or you may e-mail me at pemberton@adeq.state.ar.us.

Sincerely,



Layne Pemberton
Enforcement Analyst
Office of Water Quality
NPDES Enforcement Section

ADEQ-2

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ADEQ

ARKANSAS
Department of Environmental Quality

October 28, 2016

The Honorable Larry Bryant
Mayor, City of Forrest City
303 North Rosser
Forrest City, AR 72336

RE: NPDES Permit Number AR0020087, AFIN 62-00070
NPDES Permit Effluent Violations

Dear Mayor Bryant:

The Department has conducted a file review of the above referenced permit and determined your facility reported the following violation of the effluent limitations in Part I, Section A of your Permit for the reporting period ending June 30, 2016:

DMR End Date	Discharge Number	Parameter Description	Reported DMR Value	Permit Limit
06/30/2016	001-A	Coliform, fecal general (30DA GEO, #/100mL)	4400	1000

Failure to remain in compliance with the effluent limitations set forth in your permit violates Part I, Section A of your permit, and may result in formal enforcement action that will include the assessment of a civil penalty.

Thank you for your attention to this matter. Should you have any questions, feel free to contact me at 501-682-0664 or you may e-mail me at pemberton@adeq.state.ar.us.

Sincerely,



Layne Pemberton
Enforcement Analyst
Office of Water Quality
NPDES Enforcement Section



Forrest City Water Utility

303 NORTH ROSSER ST.
FORREST CITY, ARKANSAS 72335
870-633-2921

FC-4

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NON-COMPLIANCE REPORT

Facility Name: Forrest City Wastewater Treatment Plant

NPDES Permit: AR0020087

REPORTING PERIOD 10/1/2016 TO 10/31/16

VIOLATION 1 Exceeded Total Suspended Solids Permit Limit

PARAMETER	NUMERIC VALUE	PERMIT LIMIT
TSS MO. AVG. (Concentration)	20.8 mg/L	20.0 mg/L

REASON FOR VIOLATIONS:

Forrest City has the ability to divert high flows into an old 140 acre facultative treatment pond. Normally, between evaporation and a gradual return flow to the treatment units works great. However, due to extra heavy rains, the ponds filled to nearly overflow. Winds were causing the waves to lap over the levees. To prevent possible levee failure, we brought flows back through the system at much higher rates than normal. Activated sludge does not work well on algae, which was the cause of the high TSS.

All other parameters in the permit were in compliance.

CORRECTIVE ACTION/PREVENTIATIVE MEASURES/OTHER NARRATIVE:

We have reduced the TSS loading by reducing the flow from the Ponds back through our treatment facility.

Calvin Murdock

ADEQ-3

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ADEQ

ARKANSAS
Department of Environmental Quality

January 24, 2017

The Honorable Larry Bryant
Mayor, City of Forrest City
303 North Rosser
Forrest City, AR 72336

Email <larrysbryant@gmail.com>

RE: NPDES Permit Number AR0020087, AFIN 62-00070
NPDES Permit Effluent Violations

Dear Mayor Bryant:

The Department has conducted a file review of the above referenced permit and determined your facility reported the following violation of the effluent limitations in Part I, Section A of your Permit for the reporting period ending October 31, 2016:

Monitoring Period End Date	Dsch#	Parameter	Limit Value	DMR Value
10/31/2016	001-A	Solids, total suspended, MO AVG, mg/L	20	20.8

Failure to remain in compliance with the effluent limitations set forth in your permit violates Part I, Section A of your permit, and may result in formal enforcement action that will include the assessment of a civil penalty.

Thank you for your attention to this matter. Should you have any questions, feel free to contact me at 501-682-0664 or via e-mail at pemberton@adeq.state.ar.us.

Sincerely,



Layne Pemberton
Enforcement Analyst
Office of Water Quality, NPDES Enforcement Section

CC: Calvin Murdock <whcm2@aol.com>



Forrest City Water Utility

303 NORTH ROSSER ST.
FORREST CITY, ARKANSAS 72335
870-633-2921

FC-5

NON-COMPLIANCE REPORT

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Facility Name: Forrest City Wastewater Treatment Plant

NPDES Permit: AR0020087

REPORTING PERIOD 7/1/2017 TO 7/31/17

VIOLATION 1 Exceeded 7day Geo Fecal Coliform Permit Limit

PARAMETER	NUMERIC VALUE	PERMIT LIMIT
7day Fecal Coliform (Maximum Concentration)	3233 #/100mL	2000 #/100mL

REASON FOR VIOLATIONS:

A unknown electrical event caused multiply bulbs to malfunction and or become inoperable in the U.V. Unit.

CORRECTIVE ACTION/PREVENTIATIVE MEASURES/OTHER NARRATIVE:

As of July 18, 2017 we have inspected all controls and repaired/replaced all U.V. Bulbs.

Calvin Murdock

ADEQ - 4

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ADEQ

ARKANSAS
Department of Environmental Quality

September 25, 2017

The Honorable Larry Bryant
Mayor, City of Forrest City
303 North Rosser
Forrest City, AR 72336

Email <larrysbryant@gmail.com>

RE: NPDES Permit Number AR0020087, AFIN 62-00070
NPDES Permit Effluent Violations

Dear Mayor Bryant:

The Department has conducted a file review of the above referenced permit and determined your facility reported the following violation of the effluent limitations in Part I, Section A of your Permit for the reporting period ending July 31, 2017:

Monitoring Period End Date	Dsch#	Parameter	Limit Value	DMR Value	% Vio
07/31/2017	001-A	Coliform, fecal general, 7 DA GEO, #/100mL	2000	3233	62%

Failure to remain in compliance with the effluent limitations set forth in your permit violates Part I, Section A of your permit, and may result in formal enforcement action that will include the assessment of a civil penalty.

Thank you for your attention to this matter. Should you have any questions, feel free to contact me at 501-682-0664 or via e-mail at pembernton@adeq.state.ar.us.

Sincerely,



Layne Pemberton
Enforcement Analyst
Office of Water Quality, NPDES Enforcement Section

CC: Calvin Murdock <whcm2@aol.com>