

**Arkansas Department of Environmental Quality
Water Quality Management Plan Update Summary Sheet**

Date: 10/24/2011

New Permit Renewal Permit Amended Permit

Type of Discharge: Industrial Wastewater

Facility Name: Ash Grove Cement Company – Outfall 003 only

Permit No.: AR0042846

Design Flow Rate (MGD): 0.83¹

Receiving Stream: unnamed tributary of French Creek, thence to French Creek, thence to Walnut Bayou, and thence to the Red River

HUC + Reach Code:² 11140106+004 **7Q10:** 0 cfs

Planning Segment: 1B **County:** Little River

Proposed Effluent Limits in mg/L (BOD5/TSS/DO):

May – October: 10/NA/2.0
November – April: 10/NA/5.0

TMDL Limits (if any): None known.

Justification (Sag = Minimum Modeled Value ≠ Difference in Value):

Reach No.	Length (miles)	DO _C (mg/L)	Sag _C (mg/L)	Distance to Sag _C (miles)	DO _P (mg/l)	Sag _P (mg/L)	Distance to Sag _P (miles)
1	1	2.0	2.0	0.0	5.0	4.8	0.3

Current Effluent Limits in mg/L (BOD5/TSS/DO):³ Year – Round: NA/NA/Report

Outfall Location (Lat/Long): 33° 41' 15.3" N; 94° 25' 28.7" W

Remarks: This is for the reissuance of the discharge permit for this existing facility.

¹ Flow is based on the highest monthly average flow reported during the past two years (May 2009-May 2011) at Outfall 003.

² The closest numbered downstream reach in the ADEQ's 2008 305(b) Report is Walnut Bayou (Reach 004).

³ This facility is not in the WQMP because no BOD for an external outfall. The permit included an internal outfall for treated sanitary wastewater, and it is being proposed to remove the internal outfall and use the external outfall.

BVC

```

*****
*                               SIMPLIFIED METHOD PROGRAM                               *
*                               COMPLETE INPUT LISTING                               *
*****

```

42846 - C.SMP

----*--*--* Run Information *--*--*--*--*

```

Name of receiving stream ----- Un.Trib.French Crk.
Number of discharges ----- 1
Number of reaches ----- 1
Reaeration type ----- O'Connor-Dobbins
Run title ----- Ash Grove - Critical

```

----*--*--* Upstream Parameters *--*--*--*--*

Parameter	Value	Comment
Flow (cfs)	0.000	
Temperature (°C)	30.000	
Dissolved Oxygen (mg/l)	-0.000	
5-Day BOD (mg/l)	-0.000	
Ult. CBOD / 5-Day BOD	2.300	
pH (su)	-0.000	
Ammonia (mg/l)	-0.000	
Alkalinity (mg/l)	-0.000	

----*--*--* Effluent Parameters *--*--*--*--*

Number of Discharges = 1

For Discharge Number 1 (Ash Grove)

Parameter	Value	Comment
Flow (MGD)	0.830	Max. Flow Rate
Temperature (°C)	30.000	Reg. 2 Std.
Dissolved Oxygen (mg/l)	2.000	
5-Day BOD (mg/l)	8.400	BOD5 = 10
Ult. CBOD / 5-Day BOD	2.300	EPA Guidance
pH (su)	-0.000	
Ammonia (mg/l)	5.000	BOD5 = 10
Alkalinity (mg/l)	-0.000	
Beginning of Reach Number	1.000	

----*--*--* Reach Information *--*--*--*--*

Number of Reaches = 1
 Reaeration Type is O'Connor-Dobbins

For Reach Number 1

Parameter	Value	Comment
Length (mile)	1.000	
Velocity (fps)	0.100	
Slope (ft/mile)	-0.000	
Average Depth (ft)	0.800	
Temperature (°C)	30.000	Calculated

BOD Removal Rate	(1/day)	0.400	Draft EPA MOA
NH3 Decay Rate	(1/day)	0.400	Draft EPA MOA
Sediment Oxygen Demand	(g/m ² /day)	1.800	k20 = 1
Photosynthesis/respiration	(mg/L/day)	-0.000	

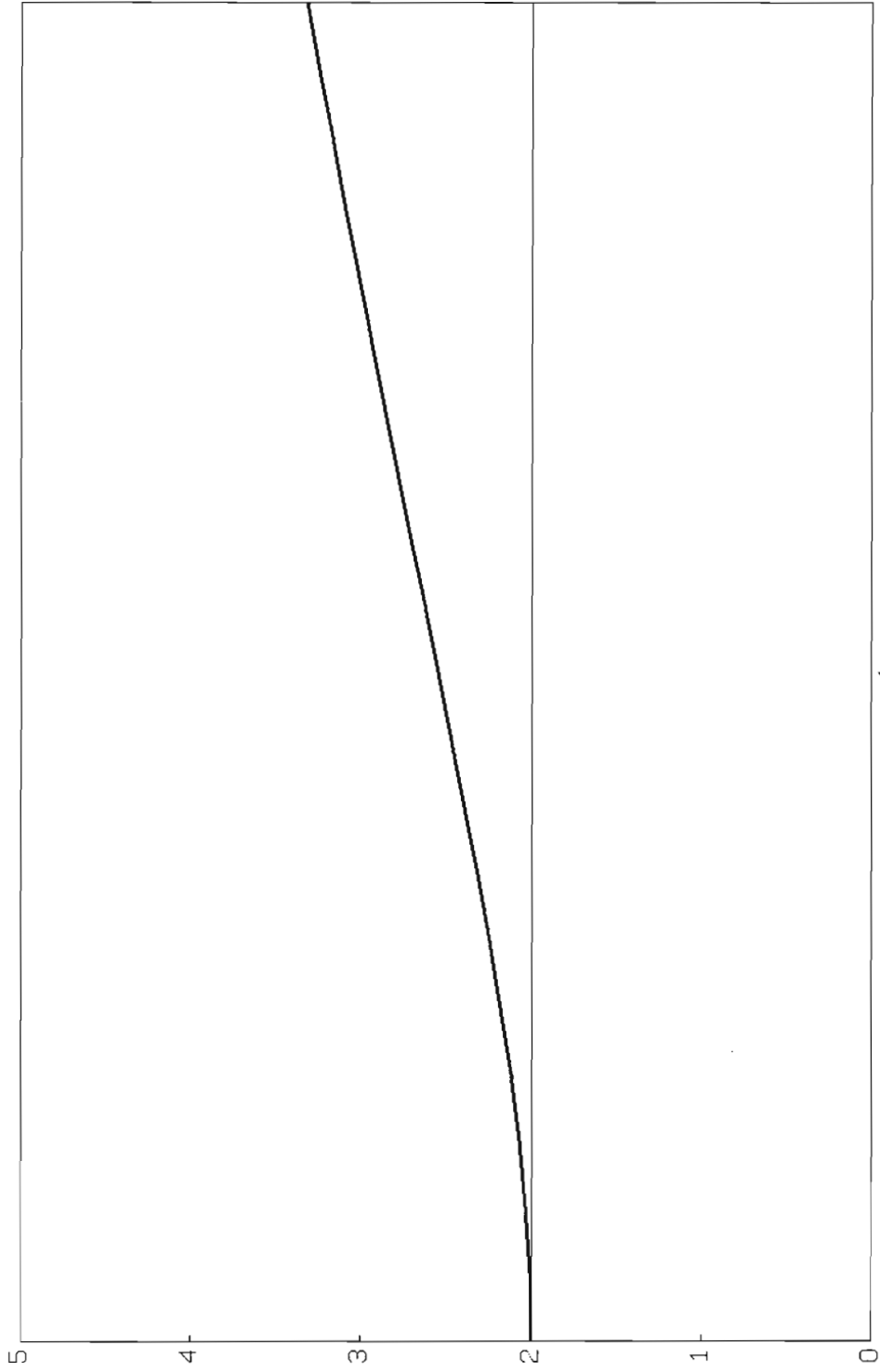
Temperature-corrected BOD removal rate	(1/day)	0.633
Temperature-corrected NH3 decay rate	(1/day)	0.864
Calculated reaeration rate at 20° C	(1/day)	5.701
Temperature-corrected reaeration rate	(1/day)	7.234
Calculated reach-averaged width	(ft)	16.040

--*-*-* Results for Un.Trib.French Crk. *-*-*-*-*

Discharge is to -- Un.Trib.French Crk.
Run Title is -- Ash Grove - Critical

River Mile	DO Predicted	DO Observed	BOD Predicted	BOD Observed	NH3 Predicted	NH3 Observed
1.000	2.000		19.320		5.000	
0.950	2.005		18.950		4.870	
0.900	2.029		18.587		4.743	
0.850	2.069		18.231		4.619	
0.800	2.120		17.881		4.499	
0.750	2.179		17.539		4.382	
0.700	2.245		17.203		4.268	
0.650	2.316		16.873		4.157	
0.600	2.391		16.550		4.048	
0.550	2.468		16.233		3.943	
0.500	2.546		15.921		3.840	
0.450	2.625		15.616		3.740	
0.400	2.704		15.317		3.643	
0.350	2.783		15.024		3.548	
0.300	2.862		14.736		3.456	
0.250	2.940		14.453		3.366	
0.200	3.016		14.177		3.278	
0.150	3.092		13.905		3.193	
0.100	3.167		13.638		3.110	
0.050	3.240		13.377		3.029	
-0.000						
-0.000	3.312		13.121		2.950	

Dissolved Oxygen Profile
Ash Grove - Critical



Max unionized ammonia = 0.0000 mg/L

BVC

```

*****
*                               SIMPLIFIED METHOD PROGRAM                               *
*                               COMPLETE INPUT LISTING                               *
*****

```

42846_P_SMP

----*--*--* Run Information *--*--*--*--*

```

Name of receiving stream ----- Un.Trib.French Crk.
Number of discharges ----- 1
Number of reaches ----- 1
Reaeration type ----- O'Connor-Dobbins
Run title ----- Ash Grove - Primary

```

----*--*--* Upstream Parameters *--*--*--*--*

Parameter	Value	Comment
Flow (cfs)	0.000	
Temperature (°C)	30.000	
Dissolved Oxygen (mg/l)	-0.000	
5-Day BOD (mg/l)	-0.000	
Ult. CBOD / 5-Day BOD	2.300	
pH (su)	-0.000	
Ammonia (mg/l)	-0.000	
Alkalinity (mg/l)	-0.000	

----*--*--* Effluent Parameters *--*--*--*--*

Number of Discharges = 1

For Discharge Number 1 (Ash Grove)

Parameter	Value	Comment
Flow (MGD)	0.830	Max. Flow Rate
Temperature (°C)	22.000	Reg. 2 Std.
Dissolved Oxygen (mg/l)	5.000	
5-Day BOD (mg/l)	8.400	BOD5 = 10
Ult. CBOD / 5-Day BOD	2.300	EPA Guidance
pH (su)	-0.000	
Ammonia (mg/l)	5.000	BOD5 = 10
Alkalinity (mg/l)	-0.000	
Beginning of Reach Number	1.000	

----*--*--* Reach Information *--*--*--*--*

Number of Reaches = 1
 Reaeration Type is O'Connor-Dobbins

For Reach Number 1

Parameter	Value	Comment
Length (mile)	1.000	
Velocity (fps)	0.100	
Slope (ft/mile)	-0.000	
Average Depth (ft)	0.800	
Temperature (°C)	22.000	Calculated

BOD Removal Rate	(1/day)	0.400	Draft EPA MOA
NH3 Decay Rate	(1/day)	0.400	Draft EPA MOA
Sediment Oxygen Demand	(g/m ² /day)	1.100	k20 = 1
Photosynthesis/respiration	(mg/L/day)	-0.000	

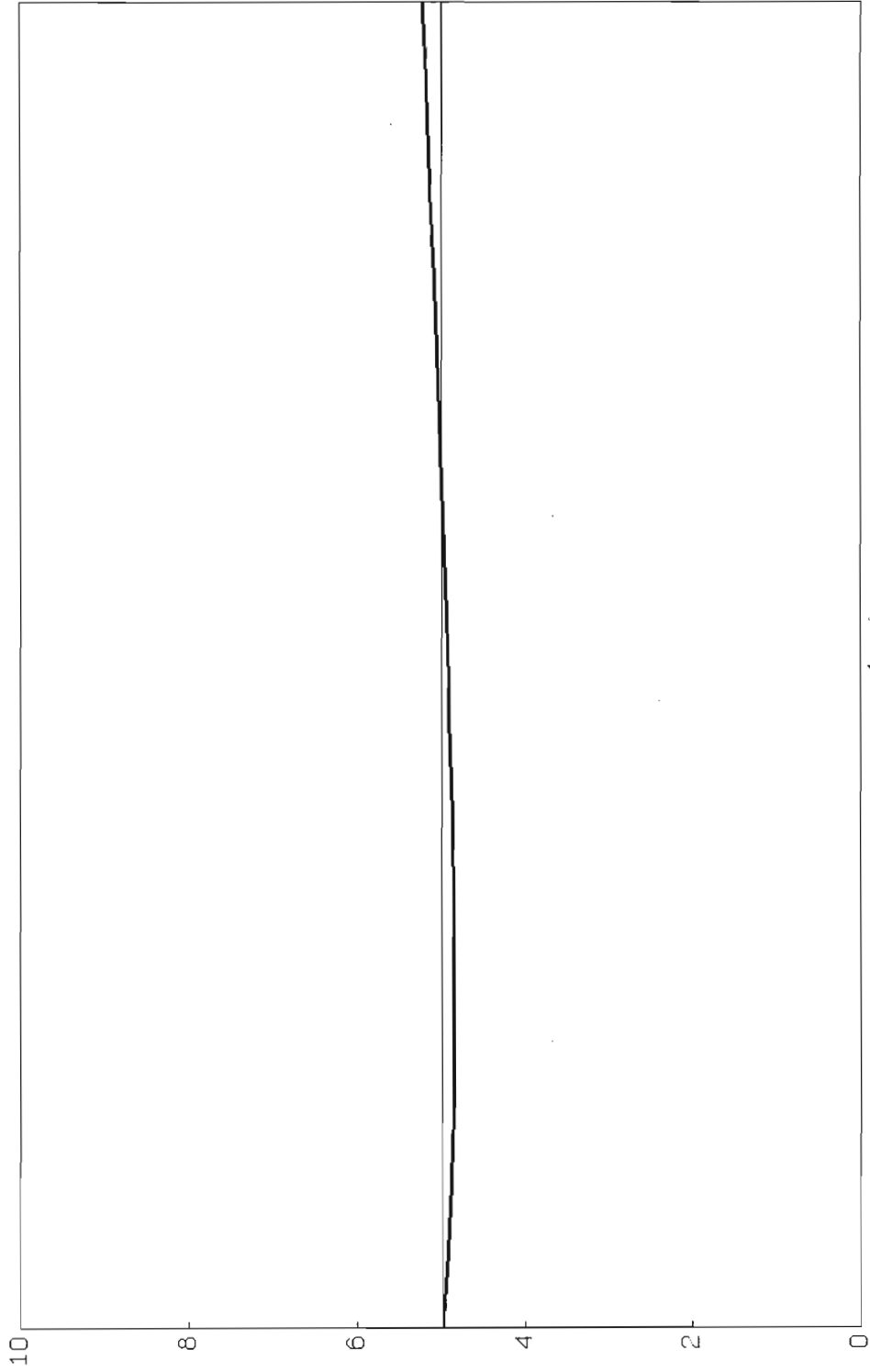
Temperature-corrected BOD removal rate	(1/day)	0.438
Temperature-corrected NH3 decay rate	(1/day)	0.467
Calculated reaeration rate at 20° C	(1/day)	5.701
Temperature-corrected reaeration rate	(1/day)	5.979
Calculated reach-averaged width	(ft)	16.040

--*-*-* Results for Un.Trib.French Crk. *-*-*-*-*

Discharge is to -- Un.Trib.French Crk.
Run Title is -- Ash Grove - Primary

River Mile	DO Predicted	DO Observed	BOD Predicted	BOD Observed	NH3 Predicted	NH3 Observed
1.000	5.000		19.320		5.000	
0.950	4.941		19.063		4.929	
0.900	4.898		18.809		4.859	
0.850	4.870		18.559		4.791	
0.800	4.854		18.312		4.723	
0.750	4.848		18.068		4.656	
0.700	4.849		17.828		4.590	
0.650	4.857		17.590		4.525	
0.600	4.871		17.356		4.461	
0.550	4.889		17.125		4.398	
0.500	4.910		16.897		4.336	
0.450	4.935		16.673		4.274	
0.400	4.961		16.451		4.214	
0.350	4.990		16.232		4.154	
0.300	5.019		16.016		4.095	
0.250	5.050		15.803		4.037	
0.200	5.082		15.592		3.980	
0.150	5.115		15.385		3.924	
0.100	5.148		15.180		3.868	
0.050	5.181		14.978		3.814	
-0.000						
-0.000	5.214		14.779		3.760	

Dissolved Oxygen Profile
Ash Grove - Primary



Max unionized ammonia = 0.0000 mg/L