

Table 2. QC Summary for water chemistry analyses.

Parameter	Matrix	Sample Period	Matrix Spike			Lab Control Samples			Sample Duplicate RPD	Blank
			% Recovery		RPD	% Recovery		RPD	RPD	Results
TDS	Water	15-16 May 2006	NA	NA	NA	101	99.2	1.6	1.01	<10 mg/L
TOC	Water	15-16 May 2006	98.3	95.6	2.02	99.4	99.7	0.372		<1 mg/L
Selenium (dissolved)	Water	15-16 May 2006	NA	NA	NA	102				<1 µg/L
Selenium (total)	Water	15-16 May 2006	99.1	97.4	1.73	100				<1 µg/L
Chloride	Water	15-16 May 2006	X		0.0532	93.7			0.511	<0.2 mg/L
Sulfate	Water	15-16 May 2006	94.7	96.2	1.33	97.1			1.92	<0.2 mg/L
Selenium	Sediment	15-16 May 2006	99.6	99.9	0.337	102				<2 mg/kg
Oil and Grease	Sediment	15-16 May 2006	NA	NA	NA	94.5	96.8	2.35		<28 mg/kg
Oil and Grease	Water	15-16 May 2006	NA	NA	NA	92.2	91.2	1.09		<5 mg/L
Oil and Grease	Water	15-16 May 2006	NA	NA	NA	99.2	102	2.73		<5 mg/L
TDS	Water	18-17 July 2006	NA	NA	NA	98.4	98.4	0		<10 mg/L
TOC	Water	18-17 July 2006	101	99.3	0.798	104	104	0.173		<1 mg/L
Selenium	Water	18-17 July 2006	99	97.2	1.9	97.5	103	5.45	20.6	<1 µg/L
Selenium	Water	18-17 July 2006	98	89	9.47	101				<1 µg/L
Chloride	Water	18-17 July 2006	107	109	0.329	102				<0.2 mg/L
Sulfate	Water	18-17 July 2006	106	105	0.31	109				<0.2 mg/L
Selenium	Sediment	18-17 July 2006							0.0	<1 mg/kg
Oil and Grease	Water	18-17 July 2006	NA	NA	NA	98.2	102	3.75		<5 mg/L

RPD = relative percent difference; X = spiking level invalid due to high concentration of analyte in spiked sample

Table 3. QC results for fish tissue analyses of total selenium.

Sample Period	Matix Spike			Lab Control Samples			Blank
	% Recovery		RPD	% Recovery		RPD	Results*
15-16 May 2006	95.3	97.3	1.86	93.2	94.2	1.07	<2
15-16 May 2006	103	102	1.17	102	102	0.197	<2
15-16 May 2006	99	101	0.601	95.8	96.6	0.832	<2
15-16 May 2006	101	101	0	92.8	93	0.215	<2
15-16 May 2006	95.8	99.4	3.69	92.2	92.4	0.217	<2
15-16 May 2006	101	100	0.398	95.2	94.2	0.846	<2
15-16 May 2006	102	103	0.783	94.6	94.4	0.211	<2
15-1 May 2006	97.8	97.2	0.616	96.6	97	0.413	<2
27-29 Sept 2006	87.4	91.6	4.69	93.8	93.4	0.427	<2
27-29 Sept 2006	117	98.2	17.3	98.4	98.6	0.203	<2
27-29 Sept 2006	97.6	97.4	0.205	105			<2
27-29 Sept 2006	99.8	98.6	1.21	96			<2
27-29 Sept 2006	102	97.2	5.02	106			<2

\*Units are Mg/kg

Table 4. QC results for field duplicates and blanks.

ANALYTE	5/15-16/2006				7/18-19/2006			
	Result		RPD	Blank	Result		RPD	Blank
Total Dissolved Solids	300	290	3.39	<10	1200	1200	0.00	<10 mg/L
Total Organic Carbon	8.4	8.5	1.18	<1	15	15	0.00	<1 mg/L
Chloride	110	110	0.00	<0.002	200	200	0.00	0.26 mg/L
Sulfate	4.7	4.7	0.00	<0.002	510	500	1.98	<0.2 mg/L
Oil and Grease	<5	<5	0	<0.2	<5	<5	0.00	<5 mg/L
Dissolved Organic Carbon	6.4	6.3	1.57	<0.2	12	12	0.00	<1 mg/L
Dissolved selenium	0.0047	0.0064	0.02	<5	6	6.3	4.88	<1 µg/L
Total selenium	0.0041	0.0052	23.66	<1	5.8	6.2	6.67	<1 µg/L
Sediment Chemistry								
Selenium					<1	<1	0.0	NA mg/kg

Table 5. QC results for sonde calibrations.

Date	Sonde	DO% Sat	DO mg/l	pH 7.00 su	pH 10.00 su	SpC 1500 $\mu$ S	temp for DO °C
5/16/2006	Field sonde	100.0	8.44	6.98	10.22	1525	23.57
5/17/2006	Field sonde	100.1	9.93	6.21	9.31	NA	15.53
5/17/2006	Field sonde	107.2	8.74	6.36	9.6	1530	25.39
5/18/2006	5b	93.3	8.5	7.24	NA	NA	19.61
5/18/2006	6	96.1	8.66	7.02	9.9	1509	20.19
5/18/2006	7	100.8	7.65	7.07	9.96	1553	29.41
5/18/2006	4	102.0	8.56	7.05	9.98	1516	23.85

Shaded cells indicate post calibration check results that are outside of control limits.

Table 6. QC summary for toxicity testing.

Sample	Control Survival	Control Reproduction	Concurrent reference test within control limits?	Routine reference test within control limits?
4th Lagoon treated water ("worse case" effluent)	100	28.6	Y	Y
Highway 82 (BC-1)	100	33.7	Y	Y
Control limits	80	15		

Attachment B: Corrected Report Tables.

Table 4.13. Results of benthic invertebrate collections made during field survey conducted during May 15-18, 2006.

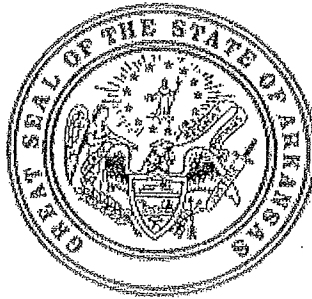
ORDER	FAMILY	GENUS	Location						
			BC-0	BC-1	BC-2	BC-3	CC-1	FC-1	TC-1
Amphipoda	Gammaridae	<i>Gammarus</i>	3		4		1		
Bivalva	Unionidea								2
Bivalva	Sphaeriidae		1		2		4		12
Bivalva	Corbiculidae							12	1
Coleoptera	Dytiscidae	<i>Hydroporus</i>					1		
Coleoptera	Dytiscidae	<i>Oreodytes</i>					1		
Coleoptera	Gyrinidae	<i>Dineutus</i>	1						
Coleoptera	Hydrophilidae		1						
Coleoptera	Elmidae	<i>Stenelmis</i>						3	
Coleoptera							1		
Decapoda							1		
Decapoda	Cambaridae		3	1	10	2	1		3
Decapoda	Palaemonidae	<i>Macrobrachium</i>		31	54	2			4
Diptera	Ceratopogonidae						1		
Diptera	Chironomidae		3		3	5	2	1	2
Diptera	Culicidae						1		
Diptera	Pelecorhynchidae	<i>Glutops</i>				1			
Diptera	Tabanidae				1	1		1	
Diptera	Tipulidae	<i>Limnophilia</i>					1		
Diptera	Tipulidae	<i>Tipula</i>						4	
Ephemeroptera	Ephemeridae	<i>Hexagenia</i>							3
Rynchobdellida	Glossiphoniidae				1				
Gastropoda	Physidae	<i>Physella</i>							1
Gastropoda	Viviparidae	<i>Viviparus</i>							12
Gastropoda	Planorbidae				1		1		
Gastropoda					1				
Hemiptera	Corixidae	<i>Trichocorixa</i>	1				1		1
Isoptera	Assellidae	<i>Lirceus</i>							1
Odonata	Aeshnidae		1						
Odonata	Coenagrionidae	<i>Argia</i>			1			1	
Odonata	Gomphidae	<i>Dromogomphus</i>	1						
Odonata	Gomphidae	<i>Gomphus</i>							3
Odonata	Gomphidae	<i>Progomphus</i>						1	
Odonata	Libellulidae	<i>Sympetrum</i>					1		
Odonata	Libellulidae	<i>Simetrum</i>	1						
Oligochaeta			2		17	13	5	49	
Trichoptera	Hydropsychidae	<i>Cheumatopsyche</i>	1				1	4	1
Hirudinea								1	
		TOTAL TAXA	12	2	11	6	16	10	13

Table 4.14. Results of benthic invertebrate collections made during field survey conducted during July 17-19, 2006

ORDER	FAMILY	GENUS	Location							
			BC-0	BC-1	BC-2	BC-1-3	BC-3	CC-1	FC-1	TC-1
Amphipoda	Gammaridae	<i>Gammarus</i>	4		3					3
Bivalva	Unionidea									
Bivalva	Sphaeriidae					9		1	19	65
Bivalva	Corbiculida	<i>Corbicula</i>					1		42	1
Coleoptera	Dytiscidae	<i>Laccophilus</i>					1			
Coleoptera	Dytiscidae							1		
Coleoptera	Gyrinidae	<i>Dineutus</i>	1							
Coleoptera	Halplidae	<i>Peltodytes</i>			1					
Coleoptera	Elmidae	<i>Stenelmis</i>							4	8
Coleoptera	Hydrophilidae	<i>Berosus</i>				1				
Decapoda	Cambaridae		8			7	6	2	1	7
Decapoda	Palaemonidae	<i>Macrobrachium</i>			56	5	2			
Diptera	Ceratopogonidae	<i>Bezzia</i>								1
Diptera	Chironomidae		5		7	10	8	7	3	5
Diptera	Culicidae									
Diptera	Tabanidae							1		3
Diptera	Tabanidae	<i>Tabanus</i>					2			
Diptera								1		
Ephemeroptera	Caenidae	<i>Caenis</i>								1
Ephemeroptera	Ephemeride	<i>Hexagenia</i>								2
Ephemeroptera	Heptageniidae					1				
Gastropoda	Physidae								1	
Gastropoda	Physidae	<i>Physella</i>			1			7		1
Gastropoda	Viviparidae	<i>Viviparus</i>								20
Gastropoda	Planorbidae	<i>Planorbella</i>			2	2				
Hemiptera	Corixidae	<i>Trichocorixa</i>						4		
Hemiptera	Notonectidae	<i>Notonecta</i>						1		
Isoptera	Assellidae	<i>Lirceus</i>								1
Megaloptera	Sialidae	<i>Sialis</i>						2		7
Odonata	Aeshnidae									
Odonata	Cordulidae	<i>Epitheca</i>			1					
Odonata	Gomphidae	<i>Dromogomphus</i>								
Odonata	Gomphidae	<i>Gomphus</i>	1							2
Odonata	Gomphidae	<i>Progomphus</i>							2	
Odonata	Libellulidae	<i>Plathemis</i>				1				
Odonata	Libellulidae	<i>Pachydiplax</i>						1		
Odonata	Libellulidae						1			
Oligochaeta							1	1	1	1
Trichoptera	Hydropsychidae	<i>Cheumatopsyche</i>				1				2
		TOTAL TAXA	5	0	7	9	8	12	8	17



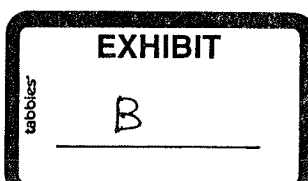
# ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION



## REGULATION NO. 2

### REGULATION ESTABLISHING WATER QUALITY STANDARDS FOR SURFACE WATERS OF THE STATE OF ARKANSAS

Adopted by the Arkansas Pollution Control and Ecology Commission on July 27, 2007



#### Use Variations Supported by UAA

Bois d'Arc Creek from Caney Creek to Red River - no domestic or industrial water supply use(GC-1,#13)  
Town Creek below Acme tributary - no domestic water supply(GC-4,#14)  
Unnamed trib. from Acme - no domestic water supply(GC-4,#14)  
Gum Creek - no domestic water supply use(GC-2,#15)  
Bayou de Loutre from Gum Creek to State line - no domestic water supply use(GC-2,#16)  
Walker Branch - no domestic water supply use(GC-2,#17)  
Little Cornie Bayou from Walker Branch to State line - no domestic water supply use(GC-2,#18)  
Alcoa unnamed trib to Hurricane Cr.and Hurricane Cr. - no domestic water supply use(GC-4,#19)  
Holly Creek - no domestic water supply use(GC-4,#20)  
Dry Lost Creek and Tribs. - no domestic water supply use(GC-4.#21)  
Lost Creek - no domestic water supply use(GC-4,#22)  
Albemarle unnamed trib (AUT) to Horsehead Creek - no domestic water supply use(GC-2,#27)  
Horsehead Creek from AUT to mouth - no domestic water supply use(GC-2,#27)  
Dismukes Creek and Big Creek to Bayou Dorcheat - no domestic water supply  
Boggy Creek - No domestic water supply use (GC-2)

#### **SPECIFIC STANDARDS: GULF COASTAL ECOREGION**

(Plates GC-1, GC-2, GC-3, GC-4)

	<u>Typical Streams</u>	<u>Spring Water Streams</u>	<u>Lakes and Reservoirs</u>
Temperature °C (°F)*	30 (86)	30 (86)	32 (89.6)
Ouachita River			
(state line to Little Missouri River)	32 (89.6)		
Red River	32 (89.6)		
Turbidity (NTU)(primary/storm)	21/32	21/32	25/45
Red River(primary/storm)	50/150		
Minerals	see Reg. 2.511		see Reg. 2.511
Dissolved Oxygen (mg/l)**	<u>Pri.</u>	<u>Crit.</u>	see Reg. 2.505
<10 mi <sup>2</sup> watershed	5	2	
10 mi <sup>2</sup> - 500 mi <sup>2</sup>	5	3	
>500 mi <sup>2</sup> watershed	5	5	
All sizes	6	5	
All other standards	(same as statewide)		

\* Increase over natural temperatures may not be more than 2.8°C (5°F).

\*\* At water temperatures ≤10°C or during March, April and May when stream flows are 15 CFS and greater, the primary season D.O. standard will be 6.5 mg/l. When water temperatures exceed 22°C, the critical season D.O. standard may be depressed by 1 mg/l for no more than 8 hours during a 24-hour period



### Variations Supported by UAA

- Loutre Creek – from headwaters to railroad bridge, critical season D.O. standard – 3 mg/l; primary season – 5 mg/l; from railroad bridge to mouth, critical season D.O. – 2 mg/l (GC-2, #1)
- Unnamed tributary to Smackover Creek – headwaters to Smackover Creek, year round D.O. criteria – 2 mg/l 9 (GC-2, #2)
- Unnamed tributary to Flat Creek – from headwaters to Flat Creek, year round D.O. criteria – 2mg/l (GC-2, #4)
- Dodson Creek – from headwaters to confluence with Saline River, critical season D.O. standard – 3 mg/l (GC-4, #5)
- Jug Creek – from headwaters to confluence with Moro Creek, critical season D.O. standard – 3mg/l (GC-2, #6)
- Lick Creek – from headwaters to Millwood Reservoir, critical season D.O. standard – 2mg/l (GC-1, #7)
- Coffee Creek and Mossy Lake – exempt from Reg. 2.406 and Chapter Five (GC-3, #8)
- Red River from Oklahoma to confluence with Little River – total dissolved solids – 850 mg/l (GC-1, #9)
- Bluff Creek and unnamed trib. – sulfates 651 mg/l; total dissolved solids 1033 mg/l (GC-1, #9)
- Muddy Fork Little Missouri River – sulfates 250 mg/l; total dissolved solids 500 mg/l (GC-1, #24)
- Little Missouri River – sulfates 90 mg/l; total dissolved solids 180 mg/l (GC-1, #25)
- Mine Creek from Highway 27 to Millwood Lake – chlorides – 90 mg/l; sulfates – 65 mg/l; TDS - 700 mg/l (GC-1, #11)
- Caney Creek – chlorides 113 mg/l; sulfates 283 mg/l; total dissolved solids 42 mg/l (GC-1, #12)
- Bois d' Arc Creek from Caney Creek to Red River – chlorides 113 mg/l; sulfates 283 mg/l; dissolved solids 420 mg/l (GC-1, #13)
- Town Creek below Acme tributary – sulfates 200 mg/l; TDS 700 mg/l (GC-4, #14)
- Unnamed trib. from Acme – sulfates 330 mg/l; TDS 830 mg/l (GC-4, #14)
- Gum Creek – chlorides 104 mg/L; TDS 311 mg/L (GC-2, #15)
- Bayou de Loutre from Gum Creek to State line – Chlorides 250 mg/l; TDS solids 750 mg/l (GC-2, #16)
- Walker Branch – chlorides 180 mg/l; total dissolved solids 970 mg/l (GC-2, #17)
- Ouachita River – from Ouachita River mile (ORM) 223 to the Arkansas-Louisiana border (ORM 221.1), site specific seasonal D.O. criteria; 3mg/L June and July; 43.5 mg/L August; 5 mg/L September through May. These seasonal criteria may be unattainable during or following naturally occurring high flows, (i.e., river stage above 65 feet measured at the lower gauge at the Felsenthal Lock and Dam, Station No. 89-o, and also for the two weeks following the recession of flood waters below 65 feet), which occurs from May through August. Naturally occurring conditions which fail to meet criteria should not be interpreted as violations of these criteria (GC-3, #26)
- Alcoa unnamed trib. to Hurricane Cr. and Hurricane Cr. – see Reg. 2.511 (CG-4, #19)
- Holly Creek – See Reg. 2.511 (CG-4, #20)
- Saline River bifurcation – See Reg. 2.511 (GC-4, #23)
- Dry Lost Creek and tributaries – See Reg. 2.511 (GC-4, #21)
- Lost Creek – See Reg. 2.511 (GC-4, #22)
- Albermarle unnamed trib. (AUT) to Horsehead Creek – chlorides 137 mg/l; TDS 383 mg/l (GC-2, #27)
- Horsehead Creek from AUT to mouth – chlorides 85 mg/l; TDS 260 mg/l (GC-2, #27)
- Bayou Dorcheat – sulfates 16 mg/l (GC-2, #27)
- Dismukes Creek – chlorides 26 mg/L; TDS 157 mg/L (GC-2, #28)
- Big Creek from Dismukes to Bayou Dorcheat – chlorides 2 mg/L; TDS 200 mg/L (GC-2, #28)
- Bayou de Loutre from Great Lakes outfall to Loutre Creek – maximum water temperature 96°F (GC-25, #29)
- Unnamed tributary of Lake June below Entergy Couch Plant to confluence with Lake June – maximum water temperature 95 degrees F (limitation of 5 degrees above natural temperature does not apply) (GC-1, #3).
- Boggy Creek – chlorides 631 mg/L; sulfates 63 mg/L; TDS 1,360 mg/L; and selenium 15.6 µg/L

## APCEC REGULATIONS TRACKING SHEET

Regulation No. 2                      Common Name: Water Quality Standards

1.        Strawman review of draft regulations by key groups.

*initiated*

*completed*

ADEQ Legal/Admin

reviewed with ADEQ Water Division

Industrial/Environmental  
Groups

reviewed with Arkansas Game & Fish Commission; United States Fish and Wildlife, United States Environmental Protection Agency-Region 6, and Arkansas Environmental Federation.

2.        Proposed regulations presentation to Commission's Regulations Committee for approval to public comment period.

*Date:* 9/22/2006

*By:* William A. Eckert

*Comments/Approval*

approved to initiate rulemaking by Minute Order

3.        Legal notice of proposed regulations and public hearing.

*Publication*

*Arkansas Democrat-Gazette*

*Dates of publication*

January 31, 2007 and February 1, 2007

4.        Provide Legislative Council with three copies of proposed regulations and the legislative questionnaire at least ten days prior to the first public hearing.

Proposed regulations and legislative questionnaire provided by Doug Szenher, ADEQ.

5.        Hold public hearing(s) on the proposed regulations.

*Location*

El Dorado, Arkansas

*Date*

March 19, 2007

6.        Date of final day of public comment period: April 2, 2007

7.        Final proposed regulation and response to comments prepared by Clean Harbors El Dorado LLC.



Responsiveness Summary filed with the APC&EC on May 3, 2007, and the final proposed regulation and proposed Minute Order delivered to Judge O'Malley and ADEQ on July 11, 2007.

8. Formal presentation to the Public Health & Welfare Committee of the Legislative Council.

Date: May 17, 2007

By: Mary Leath, Chief Deputy Director, ADEQ

Comments/Approval

approved by legislative committee

9. Formal presentation of proposed final regulation to the Administrative Rules & Regulations Subcommittee of the Legislative Council (All regs.)

Date: May 30, 2007

By: Mary Leath, Chief Deputy Director, ADEQ

Comments/Approval

approved by legislative committee

10. Presentation of proposed final regulations to Commission's Regulations Committee.

Date: July 27, 2007

By: William A. Eckert

Comments/Approval

11. Provide Commission members with copy of proposed final regulation prior to Commission meeting.

Date: July 27, 2007

12. Present proposed final regulation to the Commission for adoption.

Date: July 27, 2007

By: William A. Eckert

Comments/Approval

13. Send two copies of adopted regulation to Secretary of State (regulation becomes effective twenty days after filing).

Date: \_\_\_\_\_

14. Formally submit adopted regulation to EPA (if necessary) with Governor's submittal letter.

Date Mailed: \_\_\_\_\_



ARKANSAS POLLUTION CONTROL  
AND ECOLOGY COMMISSION

SUBJECT: AMENDMENT TO  
REGULATION NO. 2  
CLEAN HARBORS  
EL DORADO LLC  
DOCKET 07-001-R

MINUTE ORDER NO. 07-\_\_\_\_\_

---

On January 12, 2007, Clean Harbors El Dorado LLC filed a petition with the Arkansas Pollution Control and Ecology Commission ("Commission") to initiate Third-Party Rulemaking to amend Regulation No. 2. The Commission authorized the initiation of rulemaking by Minute Order dated January 26, 2007. A public hearing was held on March 19, 2007, and the public comment period ended on April 2, 2007.

One (1) public comment was received.

In accordance with Regulation No. 8, a Statement of Basis and Purpose and a Responsiveness Summary to public comments was submitted to the Commission by Clean Harbors El Dorado LLC and by the Arkansas Department of Environmental Quality ("ADEQ").

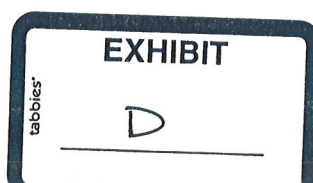
**IT IS, THEREFORE, ORDERED:**

1. That the rule proposed by Clean Harbors El Dorado LLC for modification of the Water Quality Standards for Boggy Creek is as follows:

TDS from 138 mg/L to 1,360 mg/L  
Sulfate from 41 mg/L to 63mg/L  
Chloride from 19 mg/L to 631 mg/L  
Selenium from 5 $\mu$ /L to 15.6 $\mu$ /L  
and Removal of the Domestic Water Supply  
Use designation for Boggy Creek.

The Commission adopts this rule pending report approval from the Legislative Council.

2. That the ADEQ staff is directed to make these changes to Regulation No. 2



ARKANSAS POLLUTION CONTROL  
AND ECOLOGY COMMISSION

SUBJECT: AMENDMENT TO  
REGULATION NO. 2  
CLEAN HARBORS  
EL DORADO LLC  
DOCKET 07-001-R

MINUTE ORDER NO. 07-\_\_\_\_\_

PAGE 2 OF 2

---

PROMULGATED THIS \_\_\_\_ DAY OF JULY, 2007, BY ORDER OF THE  
ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION

BY: \_\_\_\_\_  
Dana Samples, Chair

ATTEST: \_\_\_\_\_  
Teresa Marks, Director

APPROVED: \_\_\_\_\_  
Mike Beebe, Governor

COMMISSIONERS

\_\_\_\_\_ B. Ackerman  
\_\_\_\_\_ L. Bengal  
\_\_\_\_\_ S. Henderson  
\_\_\_\_\_ C. McGrew  
\_\_\_\_\_ D. Samples  
\_\_\_\_\_ T. Schueck  
\_\_\_\_\_ J. Shannon

\_\_\_\_\_ L. Sickel  
\_\_\_\_\_ J. Simpson  
\_\_\_\_\_ W. Thompson  
\_\_\_\_\_ E. Valdez  
\_\_\_\_\_ B. White  
\_\_\_\_\_ R. Young

\_\_\_\_\_ SUBMITTED BY: Al Eckert      PASSED: July \_\_\_\_, 2007.  
Dana Samples, Chair