



CHEMICAL COMPANY

March 24, 2014

Arkansas Department of Environmental Quality  
Water Enforcement Branch  
5301 Northshore Drive  
North Little Rock, AR 72118-5317

RE: NPDES Permit AR0000752 Discharge Monitoring Report for period ending February 28, 2014.

Enclosed you will find the Discharge Monitoring Reports ending February 28, 2014. The DMR's for Outfall 010-A were entered on the blank DMR forms provided by Amy Schluterman, ADEQ Water Enforcement.

If you have any questions regarding this report, please contact David Sartain at (870) 863-1400.

Sincerely,

A handwritten signature in cursive script that reads "Greg Withrow". The signature is written in black ink and is positioned above the printed name and title.

Greg Withrow  
General Manager

Enclosures

# NON-COMPLIANCE REPORT

Facility Name: **El Dorado Chemical Company**

Permit Number: **AR0000752**

AFIN:

**70-00040**

Month / Year: **Feb-14**

Type of Violation	Permit Limit	Date of Violation	Cause of Violation	Corrective Action or Other Narrative
Outfall 006 / Zinc Monthly Average (310 ug/L)	115.62 ug/L Monthly Average	2/2/2014	Unknown	EDCC continues to monitor and evaluate potential sources of the Zinc excursion.
Outfall 006 / Zinc Daily Max (310 ug/L)	231.99 ug/L Daily Max	2/2/2014	Unknown	EDCC continues to monitor and evaluate potential sources of the Zinc excursion.
Outfall 006 / Lead Monthly Average (64.4 ug/L)	3.8 ug/L Monthly Average	2/2/2014	Unknown	EDCC continues to monitor and evaluate potential sources of the Lead excursion.
Outfall 006 / Lead Daily Max (64.4 ug/L)	7.62 ug/L Daily Max	2/2/2014	Unknown	EDCC continues to monitor and evaluate potential sources of the Lead excursion.
Outfall 006 / TDS Monthly Average (560 mg/L)	291 mg/L Monthly Average	2/2/2014	Unknown	EDCC has land applied pelletized lime in the area of outfall 006 in an effort to promote vegetative cover.
Outfall 006 / TDS Daily Max (560 mg/L)	436.5 mg/L Daily Max	2/2/2014	Unknown	EDCC has land applied pelletized lime in the area of outfall 006 in an effort to promote vegetative cover.
Outfall 007 / Zinc Monthly Average (449 ug/L)	115.62 ug/L Monthly Average	2/2/2014	Unknown	EDCC continues to monitor and evaluate potential sources of the Zinc excursion.
Outfall 007 / Zinc Daily Max (449 ug/L)	231.99 ug/L Daily Max	2/2/2014	Unknown	EDCC continues to monitor and evaluate potential sources of the Zinc excursion.
Outfall 007 / Lead Monthly Average (5.87 ug/L)	3.8 ug/L Monthly Average	2/2/2014	Unknown	EDCC continues to monitor and evaluate potential sources of the Lead excursion.
Outfall 007 / TDS Monthly Average (1000 mg/L)	291 mg/L Monthly Average	2/2/2014	Unknown	EDCC has land applied pelletized lime in the area of outfall 007 in an effort to promote vegetative cover.
Outfall 007 / TDS Daily Max (1000 mg/L)	436.5 mg/L Daily Max	2/2/2014	Unknown	EDCC has land applied pelletized lime in the area of outfall 007 in an effort to promote vegetative cover.
<p>I CERTIFY THAT UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C 1001 AND 33 U.S.C. 1319. (Penalties under these statutes may include fines up to \$10,000 and or maximum imprisonment of between 6 months and 5 years.)</p>			<p style="text-align: center;"><i>Greg Withrow</i> 3/24/14</p>	
			Signature / Date	

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
DISCHARGE MONITORING REPORT (DMR)

Form Approved  
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME: EL DORADO CHEMICAL CO.  
ADDRESS: P.O. BOX 231  
FACILITY: EL DORADO, AR 717310231  
EL DORADO CHEMICAL CO., INC.  
LOCATION: 4500 NORTHWEST AV  
EL DORADO, AR 71730  
ATTN: DAVID SARTAIN/GREG WITHROW

AR0000752  
PERMIT NUMBER

001-A  
DISCHARGE NUMBER

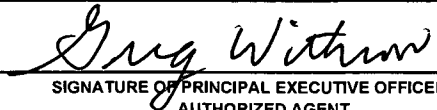
DMR Mailing ZIP CODE: 717310231  
MAJOR

MONITORING PERIOD  
MM/DD/YYYY  
2/1/2014  
MM/DD/YYYY  
2/28/2014

001-MONTHLY-PROCESS WASTEWATER  
External Outfall

No Discharge

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
00011 1 0 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****				Three Per Week	INSITU
	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	86 INST MAX	deg F		Three Per Week	INSITU
00300 1 1 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****			Three Per Week	GRAB
	PERMIT REQUIREMENT	*****	*****	*****	5 INST MIN	*****	*****	mg/L		Three Per Week	GRAB
00400 1 0 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****			Continuous	GRAB
	PERMIT REQUIREMENT	*****	*****	*****	6 MINIMUM	*****	9 MAXIMUM	SU		Continuous	GRAB
00530 1 0 Effluent Gross	SAMPLE MEASUREMENT				*****					Three Per Week	COMP24
	PERMIT REQUIREMENT	462 MO AVG	692 DAILY MX	lb/d	*****	30 MO AVG	45 DAILY MX	mg/L		Three Per Week	COMP24
00610 1 0 Effluent Gross	SAMPLE MEASUREMENT				*****					Three Per Week	COMP24
	PERMIT REQUIREMENT	265.7 MO AVG	811.84 DAILY MX	lb/d	*****	12 MO AVG	18 DAILY MX	mg/L		Three Per Week	COMP24
00620 1 0 Effluent Gross	SAMPLE MEASUREMENT				*****					Three Per Week	COMP24
	PERMIT REQUIREMENT	405.02 MO AVG	1153.73 DAILY MX	lb/d	*****	26.3 MO AVG	74.9 DAILY MX	mg/L		Three Per Week	COMP24
00940 1 0 Effluent Gross	SAMPLE MEASUREMENT				*****					Monthly	COMP24
	PERMIT REQUIREMENT	Req. Mon. MO AVG	Req. Mon. DAILY MX	lb/d	*****	38 MO AVG	57 DAILY MX	mg/L		Monthly	COMP24

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	 SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE	DATE
Greg Withrow-General Manager			870-863-1400	03/24/2014
TYPED OR PRINTED			AREA Code	NUMBER

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

REPORT FLOW AS MONTHLY AVG. & DAILY MAX. IN MGD (MILLION GALLONS/DAY). D.O. MUST BE EQUAL OR EXCEED THE PERMIT LIMIT AT ALL TIMES (INSTANTANEOUS MINIMUM). PERMIT APPEAL 06/27/97. CAO 02-059 LIMITS APPLY FOR 3 YEARS FROM THE EFFECTIVE DATE OF THE RENEWAL PERMIT. 70-00040

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AR0000752  
PERMIT NUMBER

001-A  
DISCHARGE NUMBER

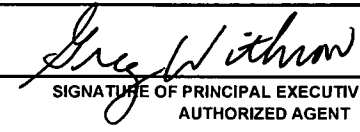
DMR Mailing ZIP CODE: 717310231  
MAJOR

MONITORING PERIOD  
MM/DD/YYYY  
2/1/2014  
MM/DD/YYYY  
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001-MONTHLY-PROCESS WASTEWATER  
External Outfall

No Discharge

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Sulfate, total (as SO4)	SAMPLE MEASUREMENT				*****						
00945 1 0 Effluent Gross	PERMIT REQUIREMENT	Req. Mon. MO AVG	Req. Mon. DAILY MX	lb/d	*****	81 MO AVG	122 DAILY MX	mg/L		Monthly	COMP24
Selenium, total recoverable	SAMPLE MEASUREMENT				*****						
00981 1 0 Effluent Gross	PERMIT REQUIREMENT	.09 MO AVG	.17 DAILY MX	lb/d	*****	5.58 MO AVG	11.2 DAILY MX	ug/L		Monthly	COMP24
Zinc, total recoverable	SAMPLE MEASUREMENT				*****						
01094 1 0 Effluent Gross	PERMIT REQUIREMENT	1.78 MO AVG	3.57 DAILY MX	lb/d	*****	115.62 MO AVG	231.99 DAILY MX	ug/L		Monthly	COMP24
Copper, total recoverable	SAMPLE MEASUREMENT				*****						
01119 1 0 Effluent Gross	PERMIT REQUIREMENT	.19 MO AVG	.38 DAILY MX	lb/d	*****	12.2 MO AVG	24.48 DAILY MX	ug/L		Monthly	COMP24
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT				*****	*****	*****	*****			
50050 1 0 Effluent Gross	PERMIT REQUIREMENT	Req. Mon. MO AVG	Req. Mon. DAILY MX	MGD	*****	*****	*****	*****		Continuous	RCORDR
Solids, total dissolved	SAMPLE MEASUREMENT				*****						
70295 1 0 Effluent Gross	PERMIT REQUIREMENT	Req. Mon. MO AVG	Req. Mon. DAILY MX	lb/d	*****	237 MO AVG	356 DAILY MX	mg/L		Monthly	COMP24

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ATTN: DAVID SARTAIN/GREG WITHROW


AR0000752	002-A
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
2/1/2014	2/28/2014

DMR Mailing ZIP CODE: 717310231  
MAJOR

002-MONTHLY-PROC/STORM OVERFLW  
External Outfall

No Discharge

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
pH	SAMPLE MEASUREMENT	*****	*****	*****		*****					
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	6 MINIMUM	*****	9 MAXIMUM	SU		Daily	GRAB
Solids, total suspended	SAMPLE MEASUREMENT	*****	*****	*****							
00530 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	Req. Mon. MO AVG	Req. Mon. DAILY MX	mg/L		Daily	GRAB
Oil & Grease	SAMPLE MEASUREMENT	*****	*****	*****	*****						
00556 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	10 MO AVG	15 DAILY MX	mg/L		Daily	GRAB
Nitrogen, ammonia total (as N)	SAMPLE MEASUREMENT				*****						
00610 1 0 Effluent Gross	PERMIT REQUIREMENT	265.7 MO AVG	811.84 DAILY MX	lb/d	*****	12 MO AVG	18 DAILY MX	mg/L		Daily	GRAB
Nitrogen, nitrate total (as N)	SAMPLE MEASUREMENT				*****						
00620 1 0 Effluent Gross	PERMIT REQUIREMENT	405.02 MO AVG	1153.73 DAILY MX	lb/d	*****	26.3 MO AVG	74.9 DAILY MX	mg/L		Daily	GRAB
Sulfate, total (as SO4)	SAMPLE MEASUREMENT	*****	*****	*****	*****						
00945 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	250 MO AVG	375 DAILY MX	mg/L		Monthly	GRAB
Selenium, total recoverable	SAMPLE MEASUREMENT	*****	*****	*****	*****						
00981 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	5.58 MO AVG	11.2 DAILY MX	ug/L		Monthly	COMP24

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TYPED OR PRINTED			AREA Code	NUMBER

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

REPORT FLOW AS MONTHLY AVG. & DAILY MAX. IN MGD (MILLION GALLONS/DAY). PERMIT APPEALED 06/27/02. COMPLY WITH CONDITIONS OF EXISTING PERMIT WHICH CORRESPOND TO CONDITIONS BEING STAYED UNTIL PERMIT MOD EFFECTIVE 06/01/04. SAMPLES ARE TO BE TAKEN WITHIN 24 HOURS OF THE 1ST DISCHARGE. SEE CAO 02-059. 70-00040

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
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002-A  
DISCHARGE NUMBER

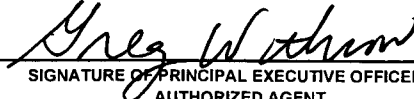
MONITORING PERIOD  
MM/DD/YYYY  
2/1/2014  
MM/DD/YYYY  
2/28/2014

DMR Mailing ZIP CODE: 717310231  
MAJOR

002-MONTHLY-PROC/STORM OVERFLW  
External Outfall

No Discharge

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Zinc, total recoverable	SAMPLE MEASUREMENT	*****	*****	*****	*****						
01094 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	115.62 MO AVG	231.99 DAILY MX	ug/L		Monthly	COMP24
Lead, total recoverable	SAMPLE MEASUREMENT	*****	*****	*****	*****						
01114 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	3.8 MO AVG	7.62 DAILY MX	ug/L		Monthly	COMP24
Copper, total recoverable	SAMPLE MEASUREMENT	*****	*****	*****	*****						
01119 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	12.2 MO AVG	24.48 DAILY MX	ug/L		Monthly	COMP24
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT				*****			*****			
50050 1 0 Effluent Gross	PERMIT REQUIREMENT	Req. Mon. MO AVG	Req. Mon. DAILY MX	MGD	*****	*****	*****	*****		Daily	ESTIMA
Solids, total dissolved	SAMPLE MEASUREMENT	*****	*****	*****	*****						
70295 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	500 MO AVG	750 DAILY MX	mg/L		Monthly	GRAB

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Greg Withrow-General Manager			870-863-1400	03/24/2014
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AR0000752	003-A
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
2/1/2014	2/28/2014

DMR Mailing ZIP CODE: 717310231  
MAJOR

003-MONTHLY-TRTD DOMESTIC WW  
External Outfall

No Discharge

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
pH 00400 1 0 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	6.14	*****	6.26	SU	0	Weekly	Grab
	PERMIT REQUIREMENT	*****	*****	*****	6 MINIMUM	*****	9 MAXIMUM	SU		Weekly	GRAB
Flow, in conduit or thru treatment plant 50050 1 0 Effluent Gross	SAMPLE MEASUREMENT	0.030	0.030		*****	*****	*****	*****	0	Weekly	INSTAN
	PERMIT REQUIREMENT	Req. Mon. MO AVG	Req. Mon. DAILY MX	MGD	*****	*****	*****	*****		Weekly	INSTAN

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DISCHARGE NUMBER


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MM/DD/YYYY  
2/1/2014  
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2/28/2014

DMR Mailing ZIP CODE: 717310231  
MAJOR

006-MONTHLY-CONT STORMWATER  
External Outfall

No Discharge

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
pH	SAMPLE MEASUREMENT	*****	*****	*****	6.94	*****	7.01	SU	0	Daily	Grab
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	6 MINIMUM	*****	9 MAXIMUM	SU		Daily	GRAB
Solids, total suspended	SAMPLE MEASUREMENT	*****	*****	*****	*****	1800	1800	Mg/L	0	Weekly	Grab
00530 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	Req. Mon. MO AVG	Req. Mon. DAILY MX	mg/L		Weekly	GRAB
Oil & Grease	SAMPLE MEASUREMENT	*****	*****	*****	*****	2.7	2.8	mg/L	0	Weekly	Grab
00556 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	10 MO AVG	15 DAILY MX	mg/L		Weekly	GRAB
Nitrogen, ammonia total (as N)	SAMPLE MEASUREMENT	*****	*****	*****	*****	42.75	44.50	mg/L	0	Weekly	Grab
00610 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	Req. Mon. MO AVG	Req. Mon. DAILY MX	mg/L		Weekly	GRAB
Zinc, total recoverable	SAMPLE MEASUREMENT	*****	*****	*****	*****	310	310	ug/L	2	Monthly	COMP24
01094 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	115.62 MO AVG	231.99 DAILY MX	ug/L		Monthly	COMP24
Cadmium, total recoverable	SAMPLE MEASUREMENT	*****	*****	*****	*****	0.88	0.88	ug/L	0	Monthly	COMP24
01113 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	2.03 MO AVG	4.08 DAILY MX	ug/L		Monthly	COMP24
Lead, total recoverable	SAMPLE MEASUREMENT	*****	*****	*****	*****	64.4	64.4	ug/L	2	Monthly	COMP24
01114 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	3.8 MO AVG	7.62 DAILY MX	ug/L		Monthly	COMP24

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EL DORADO CHEMICAL CO., INC.  
LOCATION: 4500 NORTHWEST AV  
EL DORADO, AR 71730  
ATTN: DAVID SARTAIN/GREG WITHROW

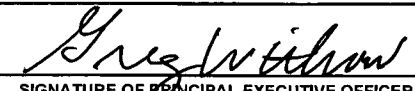
AR0000752	006-A
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
2/1/2014	2/28/2014

DMR Mailing ZIP CODE: 717310231  
MAJOR

006-MONTHLY-CONT STORMWATER  
External Outfall

No Discharge

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT	0.28	0.58	MGD	*****	*****	*****	*****	0	Daily	ESTIMA
50050 1 0 Effluent Gross	PERMIT REQUIREMENT	Req. Mon. MO AVG	Req. Mon. DAILY MX	MGD	*****	*****	*****	*****		Daily	ESTIMA
Solids, total dissolved	SAMPLE MEASUREMENT	*****	*****	*****	*****	560	560	mg/L	2	Monthly	GRAB
70295 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	291 MO AVG	436.5 DAILY MX	mg/L		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.		TELEPHONE	DATE
Greg Withrow-General Manager			870-863-1400	03/24/2014
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code	NUMBER

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

REPORT FLOW AS MONTHLY AVG. & DAILY MAX. IN MGD (MILLION GALLONS/DAY). PERMIT APPEALED 06/27/02. ENTIRE PERMIT CONTESTED. PERMIT STAYED UNTIL PERMIT MODIFICATION EFFECTIVE 06/01/04. SAMPLES ARE TO BE TAKEN WITHIN 24 HOURS OF THE 1ST DISCHARGE. 70-00040

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
DISCHARGE MONITORING REPORT (DMR)

Form Approved  
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME: EL DORADO CHEMICAL CO.  
ADDRESS: P.O. BOX 231  
FACILITY: EL DORADO, AR 717310231  
EL DORADO CHEMICAL CO., INC.  
LOCATION: 4500 NORTHWEST AV  
EL DORADO, AR 71730  
ATTN: DAVID SARTAIN/GREG WITHROW

AR0000752  
PERMIT NUMBER

007-A  
DISCHARGE NUMBER

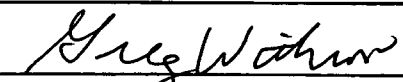
DMR Mailing ZIP CODE: 717310231  
MAJOR

MONITORING PERIOD  
MM/DD/YYYY  
2/1/2014  
MM/DD/YYYY  
2/28/2014

007-MONTHLY-CONT STORMWATER  
External Outfall

No Discharge

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
pH	SAMPLE MEASUREMENT	*****	*****	*****	6.21	*****	6.51	SU	0	Daily	Grab
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	6 MINIMUM	*****	9 MAXIMUM	SU		Daily	GRAB
Solids, total suspended	SAMPLE MEASUREMENT	*****	*****	*****	*****	276.5	276.5	mg/L	0	Weekly	Grab
00530 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	Req. Mon. MO AVG	Req. Mon. DAILY MX	mg/L		Weekly	GRAB
Oil & Grease	SAMPLE MEASUREMENT	*****	*****	*****	*****	2.6	2.7	mL/L	0	Weekly	Grab
00556 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	10 MO AVG	15 DAILY MX	mL/L		Weekly	GRAB
Nitrogen, ammonia total (as N)	SAMPLE MEASUREMENT	*****	*****	*****	*****	48.4	76.10	mg/L	0	Weekly	Grab
00610 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	Req. Mon. MO AVG	Req. Mon. DAILY MX	mg/L		Weekly	GRAB
Zinc, total recoverable	SAMPLE MEASUREMENT	*****	*****	*****	*****	449	449	ug/L	2	Monthly	COMP 24
01094 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	115.62 MO AVG	231.99 DAILY MX	ug/L		Monthly	COMP24
Lead, total recoverable	SAMPLE MEASUREMENT	*****	*****	*****	*****	5.87	5.87	ug/L	1	Monthly	COMP 24
01114 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	3.8 MO AVG	7.62 DAILY MX	ug/L		Monthly	COMP24
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT	0.38	0.92	*****	*****	*****	*****	*****	0	Daily	Estima
50050 1 0 Effluent Gross	PERMIT REQUIREMENT	Req. Mon. MO AVG	Req. Mon. DAILY MX	MGD	*****	*****	*****	*****		Daily	ESTIMA

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	 SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE	DATE	
Greg Withrow-General Manager			870-863-1400	03/24/2014	
TYPED OR PRINTED				AREA Code	NUMBER

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

REPORT FLOW AS MONTHLY AVG. & DAILY MAX. IN MGD (MILLION GALLONS/DAY). PERMIT APPEALED 06/27/02. ENTIRE PERMIT CONTESTED. PERMIT STAYED UNTIL PERMIT MODIFICATION EFFECTIVE 06/01/04. 70-00040

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
DISCHARGE MONITORING REPORT (DMR)

Form Approved  
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME: EL DORADO CHEMICAL CO.  
ADDRESS: P.O. BOX 231  
FACILITY: EL DORADO, AR 717310231  
EL DORADO CHEMICAL CO., INC.  
LOCATION: 4500 NORTHWEST AV  
EL DORADO, AR 71730  
ATTN: DAVID SARTAIN/GREG WITHROW


AR0000752	007-A
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
2/1/2014	2/28/2014

DMR Mailing ZIP CODE: 717310231  
MAJOR

007-MONTHLY-CONT STORMWATER  
External Outfall

No Discharge

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Solids, total dissolved	SAMPLE MEASUREMENT	*****	*****	*****	*****	1000	1000	mg/L	2	Monthly	Grab
70295 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	291 MO AVG	436.5 DAILY MX	mg/L		Monthly	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	 SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE	DATE
Greg Withrow-General Manager			870-863-1400	03/24/2014
TYPED OR PRINTED		AREA Code	NUMBER	MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

REPORT FLOW AS MONTHLY AVG. & DAILY MAX. IN MGD (MILLION GALLONS/DAY). PERMIT APPEALED 06/27/02. ENTIRE PERMIT CONTESTED. PERMIT STAYED UNTIL PERMIT MODIFICATION EFFECTIVE 06/01/04. 70-00040

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)  
 NAME El Dorado Chemical Co.

ADDRESS P.O. Box 231  
 El Dorado, AR 717310231  
 El Dorado Chemical Co.

FACILITY LOCATION 4500 Northwest Ave  
 El Dorado, AR 71730

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
 DISCHARGE MONITORING REPORT (DMR)

CORRECTED COPY

Form Approved.  
 OMB No. 2040-0004

AR0000752  
 PERMIT NUMBER

010-A  
 DISCHARGE NUMBER

010-MONTHLY-PROCESS WASTEWATER

MONITORING PERIOD					
YEAR	MO	DAY	YEAR	MO	DAY
14	02	01	14	02	28

FROM

TO

Check here if No Discharge

NOTE: Read Instructions before completing this form

PARAMETER	X	QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Flow	SAMPLE MEASUREMENT	1.93	1.97	MGD	-----	-----	-----	-----	0	once/day	tot. meter
	PERMIT REQUIREMENT	Reg. Mon Mo Avg	Reg. Mon Daily Max		-----	-----	-----	-----			
Carbonaceous Biochemical Oxygen Demand (CBOD5)	SAMPLE MEASUREMENT	31.8	101.4	lb/day	N/A	N/A	N/A	-----	0	once/day	24 hr comp
	PERMIT REQUIREMENT	83.4 mo avg	125.1 daily max		N/A	N/A	N/A	-----			
Total Suspended Solids (TSS)	SAMPLE MEASUREMENT	72.9	150.5	lb/day	N/A	N/A	N/A	-----	0	once/day	24 hr comp
	PERMIT REQUIREMENT	500.4 mo avg	750.6 daily max		N/A	N/A	N/A	-----			
Ammonia-Nitrogen (NH3-N)	SAMPLE MEASUREMENT	81.05	120.89	lb/day	N/A	N/A	N/A	-----	0	once/day	24 hr comp
	PERMIT REQUIREMENT	265.2 mo avg	605 daily max		N/A	N/A	N/A	-----			
Nitrate Nitrogen as N	SAMPLE MEASUREMENT	190.90	376.16	lb/day	N/A	N/A	N/A	-----	0	three/week	24 hr comp
	PERMIT REQUIREMENT	405.02 mo avg	1153.73 daily max		N/A	N/A	N/A	-----			
Oil and Grease (O&G)	SAMPLE MEASUREMENT	80.94	81.80	lb/day	N/A	N/A	N/A	-----	0	two/week	grab
	PERMIT REQUIREMENT	166.8 mo avg	250.2 daily max		N/A	N/A	N/A	-----			
Dissolved Oxygen (DO)	SAMPLE MEASUREMENT	N/A	N/A	-----	7.04	N/A	N/A	mg/L	0	once/day	grab
	PERMIT REQUIREMENT	N/A	N/A		Report minimum	N/A	N/A				

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER  
 Greg Withrow-General Manager  
 TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

*Greg Withrow*  
 SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE 870 863-1400  
 DATE 14 03 24  
 AREA CODE NUMBER YEAR MO DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

American Interplex 501-224-5060

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)  
 NAME El Dorado Chemical Co.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
 DISCHARGE MONITORING REPORT (DMR)

CORRECTED COPY

Form Approved.  
 OMB No. 2040-0004

ADDRESS P.O. Box 231  
 El Dorado, AR 717310213  
 El Dorado Chemical Co.

AR0000752  
 PERMIT NUMBER

010-A  
 DISCHARGE NUMBER

010-MONTHLY-PROCESS WASTEWATER

FACILITY LOCATION 4500 Northwest Ave  
 El Dorado, AR 71730

MONITORING PERIOD						
YEAR	MO	DAY	YEAR	MO	DAY	
14	02	1	TO	14	02	28


Check here if No Discharge

NOTE: Read Instructions before completing this form

PARAMETER	SAMPLE MEASUREMENT / PERMIT REQUIREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Lead, Total Recoverable	SAMPLE MEASUREMENT	0	0	lb/day	N/A	N/A	N/A	----	0	once/month	24 hr. comp
	PERMIT REQUIREMENT	0.40 mo avg	0.80 mo avg		N/A	N/A	N/A				24 hr comp
Nickel, Total Recoverable	SAMPLE MEASUREMENT	0	0	lb/day	N/A	N/A	N/A	-----	0	once/month	24 hr comp
	PERMIT REQUIREMENT	14.23 mo avg	28.55 daily max		N/A	N/A	N/A				24 hr comp
Selenium, Total Recoverable	SAMPLE MEASUREMENT	0	0	lb/day	N/A	N/A	N/A	-----	0	once/month	24 hr comp
	PERMIT REQUIREMENT	0.66 mo avg	1.32 daily max		N/A	N/A	N/A				24 hr comp
Silver, Total Recoverable	SAMPLE MEASUREMENT	0	0	lb/day	N/A	N/A	N/A	-----	0	once/month	24 hr comp
	PERMIT REQUIREMENT	0.08 mo avg	0.16 daily max		N/A	N/A	N/A				24 hr comp
Zinc, Total Recoverable	SAMPLE MEASUREMENT	0.49	0.49	lb/day	N/A	N/A	N/A	-----	0	once/month	24 hr comp
	PERMIT REQUIREMENT	7.35 mo avg	14.75 daily max		N/A	N/A	N/A				24 hr comp
Chromium (III), Total Recoverable	SAMPLE MEASUREMENT	0	0	lb/day	N/A	N/A	N/A	-----	0	once/month	24 hr comp
	PERMIT REQUIREMENT	39.52 mo avg	79.29 daily max		N/A	N/A	N/A				24 hr comp
Cyanide, Total Recoverable	SAMPLE MEASUREMENT	0	0	lb/day	N/A	N/A	N/A	-----	0	once/month	grab
	PERMIT REQUIREMENT	0.68 mo avg	1.37 daily max		N/A	N/A	N/A				grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER  
 Greg Withrow-General Manager  
 TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED, BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT  


TELEPHONE 870 863-1400  
 DATE 14 03 24  
 AREA CODE NUMBER YEAR MO DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

American Interplex 501-224-5060

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)  
 NAME El Dorado Chemical Co.

ADDRESS P.O. Box 231  
 El Dorado, AR 717310231

FACILITY El Dorado Chemical Co.  
 LOCATION 4500 Northwest Ave  
 El Dorado, AR 71730

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
 DISCHARGE MONITORING REPORT (DMR)

CORRECTED COPY

Form Approved.  
 OMB No. 2040-0004

AR0000752  
 PERMIT NUMBER

010-A  
 DISCHARGE NUMBER

010-MONTHLY-PROCESS WASTEWATER

MONITORING PERIOD						
YEAR	MO	DAY	TO	YEAR	MO	DAY
14	02	01		14	02	28

Check here if No Discharge

NOTE: Read Instructions before completing this form

PARAMETER	SAMPLE MEASUREMENT / PERMIT REQUIREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Total Dissolved Solids (TDS)	SAMPLE MEASUREMENT	N/A	N/A	-----	N/A	226.25	260.0	mg/L	0	two/week	grab
	PERMIT REQUIREMENT	N/A	N/A		N/A	Report mo avg	Report daily max			two/week	grab
Sulfates	SAMPLE MEASUREMENT	N/A	N/A	-----	N/A	23.0	24.0	mg/L	0	two/week	grab
	PERMIT REQUIREMENT	N/A	N/A		N/A	Report mo avg	Report daily max			two/week	grab
Chlorides	SAMPLE MEASUREMENT	N/A	N/A	-----	N/A	18.13	19.0	mg/L	0	two/week	grab
	PERMIT REQUIREMENT	N/A	N/A		N/A	Report mo avg	Report daily max			two/week	grab
Mercury, Total Recoverable	SAMPLE MEASUREMENT	N/A	N/A	-----	N/A	N/A	0.01	ug/L	0	once/month	24 hr comp
	PERMIT REQUIREMENT	N/A	N/A		N/A	N/A	<0.2 ug/l			once/month	24 hr comp
Cadmium, Total Recoverable	SAMPLE MEASUREMENT	0	0	lb/day	N/A	N/A	N/A	-----	0	once/month	24 hr comp
	PERMIT REQUIREMENT	0.22 mo avg	0.45 daily max		N/A	N/A	N/A			once/month	24 hr comp
Hexavalent Chromium, Dissolved	SAMPLE MEASUREMENT	0	0	lb/day	N/A	N/A	N/A	-----	0	once/month	24 hr comp
	PERMIT REQUIREMENT	0.96 mo avg	1.93 daily max		N/A	N/A	N/A			once/month	24 hr comp
Copper, Total Recoverable	SAMPLE MEASUREMENT	0	0	lb/day	N/A	N/A	N/A	-----	0	once/month	24 hr comp
	PERMIT REQUIREMENT	0.82 mo avg	1.65 daily max		N/A	N/A	N/A			once/month	24 hr comp

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER  
 Greg Withrow-General Manager  
 TYPED OR PRINTED

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*Greg Withrow*  
 SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE 870 863-1400  
 DATE 14 03 24  
 AREA CODE NUMBER YEAR MO DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

American Interplex 501-224-5060

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)  
 NAME El Dorado Chemical Co.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
 DISCHARGE MONITORING REPORT (DMR)

CORRECTED COPY

Form Approved.  
 OMB No. 2040-0004

ADDRESS P.O. Box 231  
 El Dorado, AR 71730  
 El Dorado Chemical Co.

AR0000752  
 PERMIT NUMBER

010-A  
 DISCHARGE NUMBER

010-MONTHLY-PROCESS WASTEWATER

FACILITY LOCATION 4500 Northwest Ave  
 El Dorado, AR 71730

MONITORING PERIOD						
YEAR	MO	DAY	TO	YEAR	MO	DAY
14	01	01		14	01	31

Check here if No Discharge

NOTE: Read Instructions before completing this form

PARAMETER	SAMPLE MEASUREMENT / PERMIT REQUIREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX.	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Total Phosphorus	SAMPLE MEASUREMENT	-----	-----		-----	0.08	0.11	mg/L	0	Daily	24 hr composite
	PERMIT REQUIREMENT	-----	-----			Report mo avg	Report Daily Max			Daily	24 hr comp
Fecal Coliform Bacteria (FCB)	SAMPLE MEASUREMENT	-----	-----		-----	8.96	110.0	col/100ml	0	Daily	Grab
	PERMIT REQUIREMENT	-----	-----		-----	Report mo avg	Report daily max			Daily	Grab
pH	SAMPLE MEASUREMENT	-----	-----		6.89	-----	7.42	SU	0	Daily	Grab
	PERMIT REQUIREMENT	-----	-----		6 minimum	-----	9 maximum			Daily	Grab
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER  
 Greg Withrow-General Manager  
 TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

*Greg Withrow*

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
870	863-1400	14	02	24
AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

American Interplex 501-224-5060

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
DISCHARGE MONITORING REPORT (DMR)

Form Approved  
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME: EL DORADO CHEMICAL CO.  
ADDRESS: P.O. BOX 231  
FACILITY: EL DORADO, AR 717310231  
EL DORADO CHEMICAL CO., INC.  
LOCATION: 4500 NORTHWEST AV  
EL DORADO, AR 71730  
ATTN: DAVID SARTAIN/GREG WITHROW

AR0000752  
PERMIT NUMBER

011-A  
DISCHARGE NUMBER


MONITORING PERIOD  
MM/DD/YYYY  
2/1/2014  
MM/DD/YYYY  
2/28/2014

DMR Mailing ZIP CODE: 717310231  
MAJOR

011-MONTHLY-PROCESS/STORMWATER  
External Outfall

No Discharge

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
pH	SAMPLE MEASUREMENT	*****	*****	*****		*****					
	PERMIT REQUIREMENT	*****	*****	*****	6 MINIMUM	*****	9 MAXIMUM	SU		Daily	GRAB
00400 1 0 Effluent Gross	SAMPLE MEASUREMENT				*****						
	PERMIT REQUIREMENT	Req. Mon. MO AVG	Req. Mon. DAILY MX	lb/d	*****	30 MO AVG	45 DAILY MX	mg/L		Three Per Week	COMP24
Solids, total suspended	SAMPLE MEASUREMENT				*****						
	PERMIT REQUIREMENT	Req. Mon. MO AVG	Req. Mon. DAILY MX	lb/d	*****	30 MO AVG	45 DAILY MX	mg/L		Three Per Week	COMP24
00530 1 0 Effluent Gross	SAMPLE MEASUREMENT				*****						
	PERMIT REQUIREMENT	265.7 MO AVG	811.84 DAILY MX	lb/d	*****	Req. Mon. MO AVG	Req. Mon. DAILY MX	mg/L		Three Per Week	COMP24
Nitrogen, ammonia total (as N)	SAMPLE MEASUREMENT				*****						
	PERMIT REQUIREMENT	405.02 MO AVG	1153.73 DAILY MX	lb/d	*****	Req. Mon. MO AVG	Req. Mon. DAILY MX	mg/L		Three Per Week	COMP24
00610 1 0 Effluent Gross	SAMPLE MEASUREMENT				*****						
	PERMIT REQUIREMENT	405.02 MO AVG	1153.73 DAILY MX	lb/d	*****	Req. Mon. MO AVG	Req. Mon. DAILY MX	mg/L		Three Per Week	COMP24
Nitrogen, nitrate total (as N)	SAMPLE MEASUREMENT				*****						
	PERMIT REQUIREMENT	405.02 MO AVG	1153.73 DAILY MX	lb/d	*****	Req. Mon. MO AVG	Req. Mon. DAILY MX	mg/L		Three Per Week	COMP24
00620 1 0 Effluent Gross	SAMPLE MEASUREMENT				*****						
	PERMIT REQUIREMENT	405.02 MO AVG	1153.73 DAILY MX	lb/d	*****	Req. Mon. MO AVG	Req. Mon. DAILY MX	mg/L		Three Per Week	COMP24
Flow, in conduit or thru treatment plant	SAMPLE MEASUREMENT				*****						
	PERMIT REQUIREMENT	Req. Mon. MO AVG	2 DAILY MX	MGD	*****	*****	*****	*****		Continuous	RCORDR
50050 1 0 Effluent Gross	SAMPLE MEASUREMENT				*****						
	PERMIT REQUIREMENT	Req. Mon. MO AVG	2 DAILY MX	MGD	*****	*****	*****	*****		Continuous	RCORDR

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.		TELEPHONE		DATE
Greg Withrow-General Manager					03/24/2014
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code		NUMBER

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

REPORT FLOW AS MONTHLY AVG. & DAILY MAX. IN MGD (MILLION GALLONS/DAY). PERMIT APPEALED 06/27/02. COMPLY WITH THE CONDITIONS OF THE EXISTING PERMIT THAT CORRESPOND TO THE CONDITIONS BEING STAYED UNTIL PERMIT MODIFICATION EFFECTIVE 06/01/04.

70-00040



NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
DISCHARGE MONITORING REPORT (DMR)

Form Approved  
EPA No. 2040-0004

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME: EL DORADO CHEMICAL CO.  
ADDRESS: P.O. BOX 231  
FACILITY: EL DORADO, AR 717310231  
EL DORADO CHEMICAL CO., INC.  
LOCATION: 4500 NORTHWEST AV  
EL DORADO, AR 71730  
ATTN: DAVID SARTAIN/GREG WITHROW

AR0000752  
PERMIT NUMBER

SUM-A  
DISCHARGE NUMBER

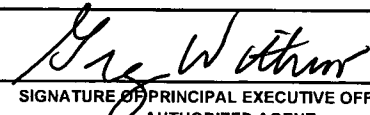
DMR Mailing ZIP CODE: 717310231  
MAJOR

MONITORING PERIOD  
MM/DD/YYYY MM/DD/YYYY  
2/1/2014 2/28/2014

001 + 002-MONTHLY-OUTFALL SUM  
External Outfall

No Discharge

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Nitrogen, ammonia total (as N) 00610 S 0 See Comments	SAMPLE MEASUREMENT				*****						
	PERMIT REQUIREMENT	265.7 MO AVG	811.84 DAILY MX	lb/d	*****	12 MO AVG	18 DAILY MX	mg/L		Daily	CALCTD
Nitrogen, nitrate total (as N) 00620 S 0 See Comments	SAMPLE MEASUREMENT				*****						
	PERMIT REQUIREMENT	405.02 MO AVG	1153.73 DAILY MX	lb/d	*****	26.3 MO AVG	74.9 DAILY MX	mg/L		Daily	CALCTD
Flow, in conduit or thru treatment plant 50050 S 0 See Comments	SAMPLE MEASUREMENT				*****	*****	*****	*****			
	PERMIT REQUIREMENT	Req. Mon. MO AVG	Req. Mon. DAILY MX	MGD	*****	*****	*****	*****		Daily	CALCTD

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	 SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE	DATE	
Greg Withrow-General Manager				03/24/2014	
TYPED OR PRINTED				AREA Code	NUMBER

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

OUTFALL SUM: WHEN OUTFALL 002 HAS A DISCHARGE, REPORT THE COMBINATION OF PARAMETERS FROM OUTFALLS 001 & 002. SEE PART III, CONDITION #8. REPORT FLOW AS MONTHLY AVG. & DAILY MAX. IN MGD (MILLION GALLONS/DAY). PERMIT APPEAL 06/27/97 STAYS PERMIT UNTIL PERMIT MODIFICATION EFFECTIVE 06/01/04. 70-00040

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
DISCHARGE MONITORING REPORT (DMR)

Form Approved  
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME: EL DORADO CHEMICAL CO.  
ADDRESS: P.O. BOX 231  
FACILITY: EL DORADO, AR 717310231  
EL DORADO CHEMICAL CO., INC.  
LOCATION: 4500 NORTHWEST AV  
EL DORADO, AR 71730  
ATTN: DAVID SARTAIN/GREG WITHROW

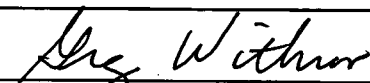
AR0000752	TX1-A
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
2/1/2014	2/28/2014

DMR Mailing ZIP CODE: 717310231  
MAJOR

001-MONTHLY-W.E.T. REPORT  
External Outfall

No Discharge

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Whole effluent toxicity	SAMPLE MEASUREMENT	*****	*****	*****		*****	*****				
22414 T 0 See Comments	PERMIT REQUIREMENT	*****	*****	*****	100 7 DA MIN	*****	*****	%		Monthly	COMP24
Whole effluent toxicity	SAMPLE MEASUREMENT	*****	*****	*****		*****	*****				
22414 U 0 See Comments	PERMIT REQUIREMENT	*****	*****	*****	100 DLYAVMIN	*****	*****	%		Monthly	COMP24
Pass/Fail Static Renewal 7 Day Chronic Ceriodaphnia	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****				
TGP3B 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	Req. Mon. 7 DA AVG	*****	pass=0/fail= 1		Monthly	COMP24
Pass/Fail Stare 7Day Chronic Pimephales Promelas	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****				
TGP6C 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	Req. Mon. 7 DA AVG	*****	pass=0/fail= 1		Monthly	COMP24
Low Flow Pass/Fail Survival Test Static Renewal 7 Day Chronic Ceriodaphnia dubia TLP3B 1 0 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****				
	PERMIT REQUIREMENT	*****	*****	*****	*****	Req. Mon. 7 DA AVG	*****	pass=0/fail= 1		Monthly	COMP24
Low Flow Pass/Fail Survival Test Static Renewal 7 Day Chronic Pimephales promelas TLP6C 1 0 Effluent Gross	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****				
	PERMIT REQUIREMENT	*****	*****	*****	*****	Req. Mon. 7 DA AVG	*****	pass=0/fail= 1		Monthly	COMP24
NOEC Lethal Static Renewal 7 Day Chronic Ceriodaphnia dubia	SAMPLE MEASUREMENT	*****	*****	*****	*****	*****	*****				
TOP3B 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	Req. Mon. 7 DA AVG	*****	%		Monthly	COMP24

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	TELEPHONE	DATE	
Greg Withrow-General Manager		 SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		03/24/2014
TYPED OR PRINTED			AREA Code	NUMBER

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

(PASS=0 FAIL=1) REPORT "1" IF THE NOEC VALUE IS LESS THAN THE CRITICAL DILUTION; OTHERWISE, REPORT "0".SEE PART III, CONDITION #3. PERMITAPPEALED 06/27/02. ENTIRE PERMIT CONTESTED. SEE TX1Q FOR REPORTINGUNDER STAY UNTIL PERMIT MODIFICATION EFFECTIVE 06/01/04.

70-0004

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

Form Approved  
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME: EL DORADO CHEMICAL CO.  
ADDRESS: P.O. BOX 231  
FACILITY: EL DORADO, AR 717310231  
EL DORADO CHEMICAL CO., INC.  
LOCATION: 4500 NORTHWEST AV  
EL DORADO, AR 71730

AR0000752	TX1-A
PERMIT NUMBER	DISCHARGE NUMBER
MONITORING PERIOD	
MM/DD/YYYY	MM/DD/YYYY
2/1/2014	2/28/2014


DMR Mailing ZIP CODE: 717310231  
MAJOR

001-MONTHLY-W.E.T. REPORT  
External Outfall

No Discharge

ATTN: DAVID SARTAIN/GREG WITHROW

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
NOEC Lethal Static Renewal 7 Day Chronic Pimephales promelas	SAMPLE MEASUREMENT	*****	*****	*****	*****						
TOP6C 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	Req. Mon. 7 DA AVG	*****	%		Monthly	COMP24
NOEC Sub-Lethal Static Renewal 7 Day Chronic Ceriodaphnia dubia	SAMPLE MEASUREMENT	*****	*****	*****	*****						
TPP3B 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	Req. Mon. 7 DA AVG	*****	%		Monthly	COMP24
NOEC Sub-Lethal Static Renewal 7 Day Chronic Pimephales promelas	SAMPLE MEASUREMENT	*****	*****	*****	*****						
TPP6C 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	Req. Mon. 7 DA AVG	*****	%		Monthly	COMP24
Coef Of Var Statre 7Day Chronic Ceriodaphnia	SAMPLE MEASUREMENT	*****	*****	*****	*****						
TQP3B 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	Req. Mon. 7 DA AVG	*****	%		Monthly	COMP24
Coef Of Var Statre 7Day Chronic Pimephales	SAMPLE MEASUREMENT	*****	*****	*****	*****						
TQP6C 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	Req. Mon. 7 DA AVG	*****	%		Monthly	COMP24

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	 SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE	DATE	
Greg Withrow-General Manager				03/24/2014	
TYPED OR PRINTED				AREA Code	NUMBER

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

(PASS=0 FAIL=1) REPORT "1" IF THE NOEC VALUE IS LESS THAN THE CRITICAL DILUTION; OTHERWISE, REPORT "0".SEE PART III, CONDITION #3. PERMITAPPEALED 06/27/02. ENTIRE PERMIT CONTESTED. SEE TX1Q FOR REPORTINGUNDER STAY UNTIL PERMIT MODIFICATION EFFECTIVE 06/01/04.

70-0004

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
DISCHARGE MONITORING REPORT (DMR)

Form Approved  
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME: EL DORADO CHEMICAL CO.  
ADDRESS: P.O. BOX 231  
FACILITY: EL DORADO, AR 717310231  
EL DORADO CHEMICAL CO., INC.  
LOCATION: 4500 NORTHWEST AV  
EL DORADO, AR 71730

AR0000752  
PERMIT NUMBER

TX2-B  
DISCHARGE NUMBER

DMR Mailing ZIP CODE: 717310231  
MAJOR

MONITORING PERIOD  
MM/DD/YYYY MM/DD/YYYY  
2/1/2014 2/28/2014

002-MONTHLY-ACUTE TOXICITY  
External Outfall

ATTN: DAVID SARTAIN/GREG WITHROW

No Discharge

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
LF Pass/Fail Statre 48Hr Acute Daphnia Pulex	SAMPLE MEASUREMENT	*****	*****	*****		*****	*****				
TEM3D 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. 48HR MIN	*****	*****	pass=0/fail=1		Monthly	COMP24
LF Pass/Fail Statre 48Hr Acute Pimephales Promela	SAMPLE MEASUREMENT	*****	*****	*****		*****	*****				
TEM6C 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. 48HR MIN	*****	*****	pass=0/fail=1		Monthly	COMP24
NOEC Lethal Static Renewal 48HR Acute Daphnia pulex	SAMPLE MEASUREMENT	*****	*****	*****		*****	*****				
TOM3D 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. 48HR MIN	*****	*****	%		Monthly	COMP24
NOEC Lethal Static Renewal 48HR Acute Pimephales promelas	SAMPLE MEASUREMENT	*****	*****	*****		*****	*****				
TOM6C 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. 48HR MIN	*****	*****	%		Monthly	COMP24
Coef Of Var Statre 48Hr Acute D. Pulex	SAMPLE MEASUREMENT	*****	*****	*****		*****	*****				
TQM3D 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. 48HR MIN	*****	*****	%		Monthly	COMP24
Coef Of Var Statre 48Hr Acute Pimephales	SAMPLE MEASUREMENT	*****	*****	*****		*****	*****				
TQM6C 10 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. 48HR MIN	*****	*****	%		Monthly	COMP24

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE	DATE	
Greg Withrow-General Manager				03/24/2014	
TYPED OR PRINTED				AREA Code	NUMBER

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

(PASS=0/FAIL=1) IF THE NOEC VALUE IS LESS THAN THE CRITICAL DILUTION,REPORT "1"; OTHERWISE, REPORT "0".SEE PART III, CONDITION #15. ACUTEBIOMONITORING REPLACES CHRONIC BIOMONITORING VIA PERMIT MODIFICATIONEFFECTIVE 06/01/04.

70-00040

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
DISCHARGE MONITORING REPORT (DMR)

Form Approved  
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME: EL DORADO CHEMICAL CO.  
ADDRESS: P.O. BOX 231  
FACILITY: EL DORADO, AR 717310231  
EL DORADO CHEMICAL CO., INC.  
LOCATION: 4500 NORTHWEST AV  
EL DORADO, AR 71730  
ATTN: DAVID SARTAIN/GREG WITHROW

AR0000752  
PERMIT NUMBER

TX6-B  
DISCHARGE NUMBER

DMR Mailing ZIP CODE: 717310231  
MAJOR

MONITORING PERIOD  
MM/DD/YYYY  
2/1/2014  
MM/DD/YYYY  
2/28/2014

006-MONTHLY-ACUTE TOXICITY  
External Outfall

No Discharge

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
LF Pass/Fail Statre 48Hr Acute Daphnia Pulex	SAMPLE MEASUREMENT	*****	*****	*****	0	*****	*****		0	Monthly	COMP24
TEM3D 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. 48HR MIN	*****	*****	pass=0/fail=1		Monthly	COMP24
LF Pass/Fail Statre 48Hr Acute Pimephales Promela	SAMPLE MEASUREMENT	*****	*****	*****	0	*****	*****		0	Monthly	COMP24
TEM6C 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. 48HR MIN	*****	*****	pass=0/fail=1		Monthly	COMP24
NOEC Lethal Static Renewal 48HR Acute Daphnia pulex	SAMPLE MEASUREMENT	*****	*****	*****	100	*****	*****		0	Monthly	COMP24
TOM3D 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. 48HR MIN	*****	*****	%		Monthly	COMP24
NOEC Lethal Static Renewal 48HR Acute Pimephales promelas	SAMPLE MEASUREMENT	*****	*****	*****	100	*****	*****		0	Monthly	COMP24
TOM6C 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. 48HR MIN	*****	*****	%		Monthly	COMP24
Coef Of Var Statre 48Hr Acute D. Pulex	SAMPLE MEASUREMENT	*****	*****	*****	0	*****	*****		0	Monthly	COMP24
TQM3D 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. 48HR MIN	*****	*****	%		Monthly	COMP24
Coef Of Var Statre 48Hr Acute Pimephales	SAMPLE MEASUREMENT	*****	*****	*****	0	*****	*****		0	Monthly	COMP24
TQM6C 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. 48HR MIN	*****	*****	%		Monthly	COMP24

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	TELEPHONE	DATE
Greg Withrow-General Manager			03/24/2014
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

(PASS=0/FAIL=1) IF THE NOEC VALUE IS LESS THAN THE CRITICAL DILUTION, REPORT "1"; OTHERWISE, REPORT "0". SEE PART III, CONDITION #4. ACUTE BIOMONITORING REPLACES CHRONIC BIOMONITORING VIA PERMIT MODIFICATION EFFECTIVE 06/01/04. 70-00040

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
DISCHARGE MONITORING REPORT (DMR)

Form Approved  
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME: EL DORADO CHEMICAL CO.  
ADDRESS: P.O. BOX 231  
FACILITY: EL DORADO, AR 717310231  
EL DORADO CHEMICAL CO., INC.  
LOCATION: 4500 NORTHWEST AV  
EL DORADO, AR 71730  
ATTN: DAVID SARTAIN/GREG WITHROW

AR0000752  
PERMIT NUMBER

TX7-B  
DISCHARGE NUMBER

DMR Mailing ZIP CODE: 717310231  
MAJOR

MONITORING PERIOD  
MM/DD/YYYY  
2/1/2014  
MM/DD/YYYY  
2/28/2014

007-MONTHLY-ACUTE TOXICITY  
External Outfall

No Discharge

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
LF Pass/Fail Statre 48Hr Acute Daphnia Pulex	SAMPLE MEASUREMENT	*****	*****	*****	1	*****	*****		0	Monthly	COMP 24
TEM3D 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. 48HR MIN	*****	*****	pass=0/fail=1		Monthly	COMP24
LF Pass/Fail Statre 48Hr Acute Pimephales Promela	SAMPLE MEASUREMENT	*****	*****	*****	1	*****	*****		0	Monthly	COMP 24
TEM6C 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. 48HR MIN	*****	*****	pass=0/fail=1		Monthly	COMP24
NOEC Lethal Static Renewal 48HR Acute Daphnia pulex	SAMPLE MEASUREMENT	*****	*****	*****	0	*****	*****		0	Monthly	COMP 24
TOM3D 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. 48HR MIN	*****	*****	%		Monthly	COMP24
NOEC Lethal Static Renewal 48HR Acute Pimephales promelas	SAMPLE MEASUREMENT	*****	*****	*****	0	*****	*****		0	Monthly	COMP 24
TOM6C 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. 48HR MIN	*****	*****	%		Monthly	COMP24
Coef Of Var Statre 48Hr Acute D. Pulex	SAMPLE MEASUREMENT	*****	*****	*****	0	*****	*****		0	Monthly	COMP 24
TQM3D 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. 48HR MIN	*****	*****	%		Monthly	COMP24
Coef Of Var Statre 48Hr Acute Pimephales	SAMPLE MEASUREMENT	*****	*****	*****	0	*****	*****		0	Monthly	COMP
TQM6C 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	Req. Mon. 48HR MIN	*****	*****	%		Monthly	COMP24

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	TELEPHONE	DATE
Greg Withrow-General Manager			03/24/2014
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA Code
			MM/DD/YYYY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

(PASS=1/FAIL=0) IF THE NOEC VALUE IS LESS THAN THE CRITICAL DILUTION, REPORT "1"; OTHERWISE, REPORT "0". SEE PART III, CONDITION #4. ACUTE BIOMONITORING REPLACES CHRONIC BIOMONITORING VIA PERMIT MODIFICATION EFFECTIVE 06/01/04.

70-00040

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)  
 NAME El Dorado Chemical Co

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
 DISCHARGE MONITORING REPORT (DMR)

Form Approved.  
 OMB No. 2040-0004

ADDRESS P.O. Box 231  
 El Dorado, AR 717310231  
 El Dorado Chemical Co.

AR0000752  
 PERMIT NUMBER

010-A  
 DISCHARGE NUMBER

010-QUARTERLY-W.E.T. Report

FACILITY LOCATION 4500 Northwest Ave  
 El Dorado, AR 71730

MONITORING PERIOD					
YEAR	MO	DAY	YEAR	MO	DAY
FROM 14	01	01	TO 14	03	31

Check here if No Discharge

NOTE: Read Instructions before completing this form

PARAMETER	SAMPLE MEASUREMENT / PERMIT REQUIREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
Whole effluent toxicity 22414 T O	SAMPLE MEASUREMENT	-----	-----	-----	100%	-----	-----	%	0	Quarterly	COMP 24
	PERMIT REQUIREMENT	-----	-----	-----	Report	-----	-----	-----		Quarterly	COMP 24
Whole effluent 22414 U O	SAMPLE MEASUREMENT	-----	-----	-----	100%	-----	-----	%	0	Quarterly	COMP 24
	PERMIT REQUIREMENT	-----	-----	-----	Report	-----	-----	-----		Quarterly	COMP 24
TGP3B	SAMPLE MEASUREMENT	-----	-----	-----	-----	0	-----	pass=0/fail=1	0	Quarterly	COMP 24
	PERMIT REQUIREMENT	-----	-----	-----	-----	Req. Mon 7 DA AVG	-----	-----		Quarterly	COMP 24
TGP6C	SAMPLE MEASUREMENT	-----	-----	-----	-----	0	-----	pass=0/fail=1	0	Quarterly	COMP 24
	PERMIT REQUIREMENT	-----	-----	-----	-----	Req. Mon 7 DA AVG	-----	-----		Quarterly	COMP 24
TLP3B	SAMPLE MEASUREMENT	-----	-----	-----	-----	0	-----	pass=0/fail=1	0	Quarterly	COMP 24
	PERMIT REQUIREMENT	-----	-----	-----	-----	Req. Mon 7 DA AVG	-----	-----		Quarterly	COMP 24
TLP6C	SAMPLE MEASUREMENT	-----	-----	-----	-----	0	-----	pass=0/fail=1	0	Quarterly	COMP 24
	PERMIT REQUIREMENT	-----	-----	-----	-----	Req. Mon 7 DA AVG	-----	-----		Quarterly	COMP 24
TOP3B	SAMPLE MEASUREMENT	-----	-----	-----	-----	2.1%	-----	%	0	Quarterly	COMP 24
	PERMIT REQUIREMENT	-----	-----	-----	-----	Req. Mon 7 DA AVG	-----	-----		Quarterly	COMP 24

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER  
 Greg Withrow-General Manager  
 TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

*Greg Withrow*  
 SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE 870 863-1400  
 DATE 14 01 20  
 AREA CODE NUMBER YEAR MO DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

American Interplex 501-224-5060



February 14, 2014

Test Results of  
First Quarter  
Chronic 7-Day Renewal  
Biomonitoring Testing  
for  
Outfall 010  
El Dorado, AR

Control No. 175032-1

Prepared for:

Ms. Larken Pennington  
El Dorado Chemical Company  
4500 North West Avenue  
El Dorado, AR 71730

Prepared by:

AMERICAN INTERPLEX CORPORATION  
8600 Kanis Road  
Little Rock, AR 72204-2322



El Dorado Chemical Company  
ATTN: Ms. Larken Pennington  
4500 North West Avenue  
El Dorado, AR 71730

Re: Chronic 7-Day Renewal utilizing *Pimephales promelas* (Fathead minnow) and *Ceriodaphnia dubia*  
Outfall 010 - El Dorado, AR  
NPDES Permit No. AR0000752

Dear Ms. Larken Pennington:

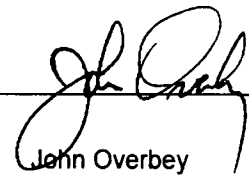
This report is the analytical results and supporting information for the samples submitted to American Interplex Corporation (AIC). The following results are applicable only to the sample identified by the control number referenced above. Accurate assessment of the data requires access to the entire document. Each section of the report has been reviewed and approved by the laboratory director or qualified designee.

Testing procedures and Quality Assurance were in accordance with "Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms" EPA-821-R-02-013, Fourth Edition, October 2002. Test results are summarized below:

Method 1000.0 Chronic *Pimephales promelas* (Fathead minnow) Survival and Growth Test: The No Observable Effects Concentration (NOEC) for survival occurred at 2.1 % effluent, which is above the critical dilution of 1.6 %. The NOEC for growth occurred at 2.1 % effluent, which is above the critical dilution of 1.6 %. **The sample, therefore, PASSED both lethal and sub-lethal effects for the Fathead minnow test.**

Method 1002.0 Chronic *Ceriodaphnia dubia* Survival and Reproduction Test: The No Observable Effects Concentration (NOEC) for survival occurred at 2.1 % effluent, which is above the critical dilution of 1.6 %. Any statistical difference with sublethal effects cannot be considered toxic due to the minimum significant difference (PMSD) calculated result being below the lower PMSD bounds. **The sample, therefore PASSED both lethal and sub-lethal effects for the *Ceriodaphnia dubia* test.**

AMERICAN INTERPLEX CORPORATION

  
\_\_\_\_\_  
John Overbey  
Laboratory Director



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I. Control Acceptance Criteria

*Pimephales promelas* (Fathead minnow) Method 1000.0

CRITERIA	RESULTS	PASS/FAIL
Control Survival > or = 80%	100	PASS
Control Growth > or = 0.25 mg per Surviving minnow	0.330	PASS
Control Growth CV < or = 40%	5.81	PASS
Growth Minimum Significant Difference 12 to 30%	12.0	PASS
Critical Dilution CV < or = 40%	7.59	PASS

*Ceriodaphnia dubia* Method 1002.0

CRITERIA	RESULTS	PASS/FAIL
Control Survival > or = 80%	100	PASS
Control Reproduction > or = 15 per Surviving Female	26.7	PASS
Control CV < or = 40% per Surviving Female	8.66	PASS
Reproduction Minimum Significant Difference 13 to 47%	10.3	BELOW
Critical Dilution CV < or = 40%	6.05	PASS

II. Outlined Report

A. Introduction

1. Permit Number: AR0000752
2. Test Requirements: Test Methods 1000.0 and 1002.0
3. Receiving Stream:

B. Source of Effluent/Dilution Water

1. Effluent Samples:
  - a. Sampling Point: Outfall 010
  - b. Chemical Data:

Analysis	Sample 1	Sample 2	Sample 3
Dissolved oxygen (mg/l)	8.4	9.0	8.8
pH (standard units)	7.2	7.3	7.2
Alkalinity (mg/l as CaCO <sub>3</sub> )	31	33	28
Hardness (mg/l as CaCO <sub>3</sub> )	35	35	35
Conductivity (umhos/cm)	330	350	380
Residual Chlorine (mg/l)	<0.05	<0.05	<0.05
Ammonia as N (mg/l)	7.1	7.5	6.9

2. Dilution Water Samples: Synthetic soft water #4062

- a. Dates Prepared: January 30 through February 13, 2014
- b. Chemical Data:

Analysis	Sample 1	Sample 2	Sample 3
Dissolved oxygen (mg/l)	8.5	8.9	8.9
pH (standard units)	7.4	7.4	7.5
Alkalinity (mg/l as CaCO <sub>3</sub> )	31	31	31
Hardness (mg/l as CaCO <sub>3</sub> )	46	48	46
Conductivity (umhos/cm)	140	150	150
Residual Chlorine (mg/l)	<0.05	<0.05	<0.05

### C. Test Methods

#### 1. Test methods used:

Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, EPA-821-R-02-013; test Methods 1000.0 and 1002.0, Fathead Minnow Survival and Growth and *Ceriodaphnia dubia* Survival and Reproduction.

#### 2. Endpoint: No Observable Effects Concentration (NOEC)

#### 3. Test Conditions:

##### *Pimephales promelas* (Fathead minnow) Survival and Growth Method 1000.0

Date & Time Test Initiated: February 4, 2014 at 1115  
Date & Time Test Terminated: February 11, 2014 at 1300  
Type & Volume of Test Chamber: 500 ml disposable beaker  
Volume of Sample: 250 ml  
Number of Organisms per replicate: 8  
Number of Replicates per dilution: 5

##### *Ceriodaphnia dubia* Survival and Growth Method 1002.0

Date & Time Test Initiated: February 4, 2014 at 1510  
Date & Time Test Terminated: February 11, 2014 at 1510  
Type & Volume of Test Chamber: 30 ml disposable beaker  
Volume of Sample: 15 ml  
Number of Organisms per replicate: 1  
Number of Replicates per dilution: 10

#### 4. Acclimation of test organisms: Obtained from in-house cultures

#### 5. Test Temperature: 25 +/- 1 degree Celsius

### D. Test Organisms

#### 1. Scientific Name

- a. Test 1000.0 *Pimephales promelas*
- b. Test 1002.0 *Ceriodaphnia dubia*

### III. Data Analysis

The data was analyzed using American Interplex Corporation's Laboratory Information Management Software based on Toxstat.

*Pimephales promelas* (Fathead minnow) survival data was transformed using the Arc Sine transformation. Normality and homogeneity of variance were checked using Shapiro-Wilk's. The survival data was then analyzed using Steel's Many-One Rank Test to determine the No Observable Effects Concentration (NOEC).

Fathead minnow growth data was analyzed for normality and homogeneity of variance using Shapiro-Wilk's and Bartlett's test. Dunnett's Test was used to determine the No Observable Effects Concentration (NOEC) for growth.

*Ceriodaphnia dubia* survival data was analyzed with Fisher's Exact Test. Reproduction data was analyzed using Kolmogorov's Test for Normality and Bartlett's test and analyzed with Dunnett's Test to determine the No Observable Effects Concentration (NOEC) for Reproduction.

IV. Standard Reference Toxicants

American Interplex Corporation has an ongoing test organism culturing program. The sensitivity of the offspring is determined by performing a standard reference toxicant test with each effluent test. Sodium chloride in synthetic moderately hard water is used as prescribed in EPA-821-R-02-013.

*Pimephales promelas* (Fathead minnow)

Chronic reference tests are performed monthly.

A chronic reference test was performed on January 21, 2014 at 1600 to January 28, 2014 at 1420

The results were as follows: (Control No. 174665-1.)

Survival LC-50: 4325 mg/l

Growth IC-25: 2888 mg/l

Growth PMSD: 17.3

*Ceriodaphnia dubia*

Chronic reference tests are performed monthly.

A chronic reference test was performed on January 21, 2014 at 1640 to January 28, 2014 at 1645

The results were as follows: (Control No. 174665-2.)

Survival LC-50: 1957 mg/l

Growth IC-25: 1292 mg/l

Growth PMSD: 6.71

V. Chemical Analysis/Quality Control

Parameter	Method	% Recovery	Relative % Difference
Alkalinity	SM 2320 B	NA	1.49
Hardness	EPA 200.7	102	2.20
pH	SM 4500-H+ B	102	0.938
Conductivity	EPA 120.1	101	5.23

VI. Organism History

*Pimephales promelas* (Fathead minnow)

Date: February 4, 2014

Age: <24 hours

Source: In-house culture

Water Chemistry Record:

Alkalinity: 57-64 mg/l

Hardness: 80-100 mg/l

Temperature: 25 deg.C

*Ceriodaphnia dubia*

Date: February 4, 2014

Age: <24 hours

Source: In-house culture

Water Chemistry Record:

Alkalinity: 57-64 mg/l

Hardness: 80-100 mg/l

Temperature: 25 deg.C

VII. Results Summary *Pimephales promelas*, Fathead minnow Larval Survival and Growth Test -- Method 1000.0

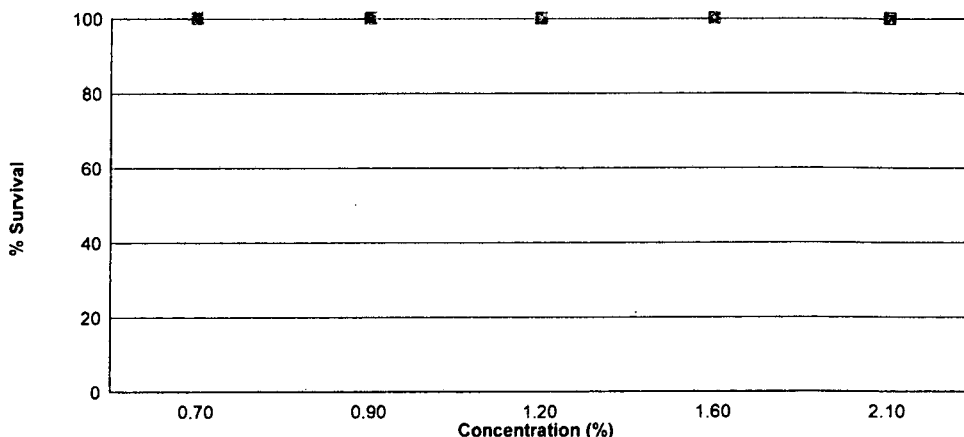
Larvae are exposed in a static renewal system for seven days to different concentrations of effluent with dilution water. Test results are based on the survival and growth (increase in weight) of the larvae.

Effluent dilutions for this test were 0.7 %, 0.9 %, 1.2 %, 1.6 %, 2.1 % in accordance with the NPDES permit.

The low flow or 'critical' dilution is specified in the NPDES permit as 1.6 % effluent.

The test was initiated on February 4, 2014 at 1115 and continued through February 11, 2014 at 1300. Statistical analyses were performed on the observed data and the no observable effects concentrations (NOECs) were as follows:

- a.) NOEC survival = 2.1 % effluent
- b.) NOEC growth = 2.1 % effluent



Summary of the 7-day Fathead Minnow Survival and Growth		
Concentration	Percent Survival	Mean Growth (mg)
Control	100	0.330
0.7 %	100	0.348
0.9 %	100	0.364
1.2 %	100	0.353
1.6 %	100	0.343
2.1 %	100	0.335

VII. Results Summary *Ceriodaphnia dubia*, Cladoceran Survival and Reproduction Test -- Method 1002.0

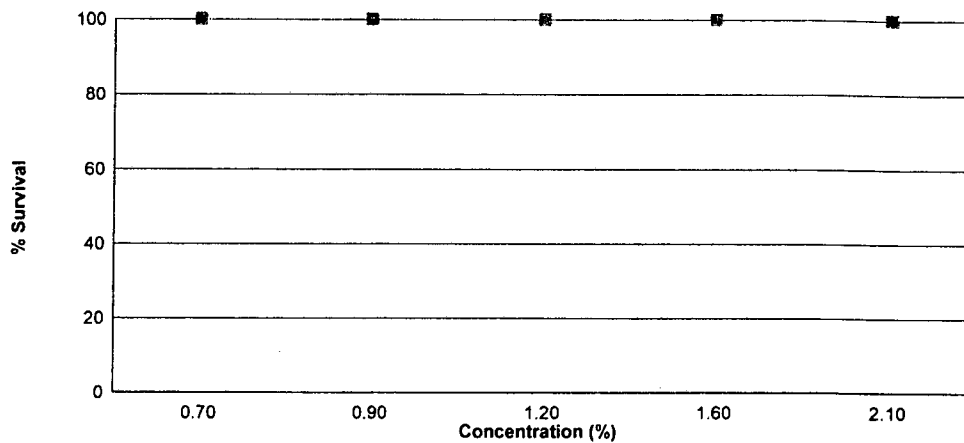
Neonates are exposed in a static renewal system to different concentrations of effluent with dilution water until 60% of surviving control organisms have three broods of offspring with an average of at least 15 young per female.

Effluent dilutions for this test were 0.7 %, 0.9 %, 1.2 %, 1.6 %, 2.1 % in accordance with the NPDES permit.

The low flow or 'critical' dilution is specified in the NPDES permit as 1.6 % effluent.

The test was initiated on February 4, 2014 at 1510 and continued through February 11, 2014 at 1510. Statistical analyses were performed on the observed data and the no observable effects concentrations (NOECs) were as follows:

- a.) NOEC survival = 2.1 % effluent
- b.) NOEC reproduction = 2.1 % effluent



Concentration	Percent Survival	Mean Reproduction
Control	100	26.7
0.7 %	100	28.8
0.9 %	100	30.0
1.2 %	100	29.1
1.6 %	100	30.4
2.1 %	100	30.7



Appendix A1: Test 1000.0

*Pimephales promelas* (Fathead Minnow) 7-Day Survival

Date and Time Test Initiated: February 4, 2014 at 1115  
Date and Time Test Terminated: February 11, 2014 at 1300

Concentration Replicate		Number of Survivors						
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Control	A	8	8	8	8	8	8	8
	B	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8
0.7 %	A	8	8	8	8	8	8	8
	B	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8
0.9 %	A	8	8	8	8	8	8	8
	B	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8
1.2 %	A	8	8	8	8	8	8	8
	B	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8
1.6 %	A	8	8	8	8	8	8	8
	B	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8
2.1 %	A	8	8	8	8	8	8	8
	B	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8

Appendix A1: Test 1000.0

*Pimephales promelas* (Fathead Minnow) 7-Day Growth

Test Initiated: February 4, 2014 at 1115  
Test Terminated: February 11, 2014 at 1300

Drying Started: February 5, 2014 at 1630  
Drying Ended: February 12, 2014 at 1430

Concentration	Replicate	Weight of pan	Weight of pan + fish	Total weight of fish (g)	Original # of fish	Mean dry weight (mg)
Control	A	.91330	.91595	0.00265	8	0.331
	B	.91461	.91725	0.00264	8	0.330
	C	.91605	.91846	0.00241	8	0.301
	D	.91520	.91804	0.00284	8	0.355
	E	.91757	.92023	0.00266	8	0.332
0.7 %	A	.91744	.92025	0.00281	8	0.351
	B	.91542	.91804	0.00262	8	0.328
	C	.91362	.91640	0.00278	8	0.348
	D	.91243	.91541	0.00298	8	0.372
	E	.91241	.91514	0.00273	8	0.341
0.9 %	A	.91652	.91934	0.00282	8	0.352
	B	.92091	.92375	0.00284	8	0.355
	C	.92101	.92390	0.00289	8	0.361
	D	.93090	.93390	0.00300	8	0.375
	E	.93288	.93588	0.00300	8	0.375
1.2 %	A	.93079	.93312	0.00233	8	0.291
	B	.93220	.93516	0.00296	8	0.370
	C	.93184	.93454	0.00270	8	0.338
	D	.93225	.93527	0.00302	8	0.378
	E	.93234	.93546	0.00312	8	0.390
1.6 %	A	.93192	.93434	0.00242	8	0.302
	B	.93108	.93375	0.00267	8	0.334
	C	.92941	.93226	0.00285	8	0.356
	D	.92636	.92923	0.00287	8	0.359
	E	.92609	.92902	0.00293	8	0.366
2.1 %	A	.92626	.92876	0.00250	8	0.312
	B	.92534	.92790	0.00256	8	0.320
	C	.92493	.92733	0.00240	8	0.300
	D	.92481	.92774	0.00293	8	0.366
	E	.92077	.92380	0.00303	8	0.379

Appendix A1: Test 1002.0

*Ceriodaphnia dubia* Survival and Reproduction

Date and Time Test Initiated: February 4, 2014 at 1510  
Date and Time Test Terminated: February 11, 2014 at 1510

Concentration: Control														
Day	Replicate										No. of Young	No. of Adults	Young per Adult	
	1	2	3	4	5	6	7	8	9	10				
1	0	0	0	0	0	0	0	0	0	0	0	0	10	0.00
2	0	0	0	0	0	0	0	0	0	0	0	0	10	0.00
3	0	0	0	0	0	0	0	0	0	0	0	0	10	0.00
4	4	4	4	4	4	4	4	5	4	2	39	10	3.90	
5	8	11	7	9	10	8	9	11	11	8	92	10	9.20	
6	0	0	0	0	0	0	0	0	0	0	0	10	0.00	
7	13	13	13	14	13	14	15	15	13	13	136	10	13.6	
8														
TOTAL	25	28	24	27	27	26	28	31	28	23	267	10	26.7	

Concentration: 0.7 %														
Day	Replicate										No. of Young	No. of Adults	Young per Adult	
	1	2	3	4	5	6	7	8	9	10				
1	0	0	0	0	0	0	0	0	0	0	0	10	0.00	
2	0	0	0	0	0	0	0	0	0	0	0	10	0.00	
3	0	0	0	0	0	0	0	0	0	0	0	10	0.00	
4	2	5	5	4	5	3	3	4	3	5	39	10	3.90	
5	9	11	10	10	10	9	11	9	11	11	101	10	10.1	
6	0	0	0	0	0	0	0	0	0	14	14	10	1.40	
7	13	16	18	17	13	15	16	11	15	0	134	10	13.4	
8														
TOTAL	24	32	33	31	28	27	30	24	29	30	288	10	28.8	

Concentration: 0.9 %														
Day	Replicate										No. of Young	No. of Adults	Young per Adult	
	1	2	3	4	5	6	7	8	9	10				
1	0	0	0	0	0	0	0	0	0	0	0	10	0.00	
2	0	0	0	0	0	0	0	0	0	0	0	10	0.00	
3	0	0	0	0	0	0	0	0	0	0	0	10	0.00	
4	4	5	4	4	4	5	5	5	3	4	43	10	4.30	
5	10	11	12	10	11	10	11	10	10	9	104	10	10.4	
6	0	0	0	0	0	0	0	0	0	0	0	10	0.00	
7	17	17	16	15	17	15	14	14	15	13	153	10	15.3	
8														
TOTAL	31	33	32	29	32	30	30	29	28	26	300	10	30.0	

Appendix A1: Test 1002.0

*Ceriodaphnia dubia* Survival and Reproduction

Date and Time Test Initiated: February 4, 2014 at 1510  
Date and Time Test Terminated: February 11, 2014 at 1510

Concentration: 1.2 %														
Day	Replicate										No. of Young	No. of Adults	Young per Adult	
	1	2	3	4	5	6	7	8	9	10				
1	0	0	0	0	0	0	0	0	0	0	0	0	10	0.00
2	0	0	0	0	0	0	0	0	0	0	0	0	10	0.00
3	0	0	0	0	0	0	0	0	0	0	0	0	10	0.00
4	2	3	4	3	5	3	3	5	5	5	38	10	3.80	
5	8	11	12	9	11	12	10	10	10	13	106	10	10.6	
6	0	0	0	0	0	14	0	0	0	0	14	10	1.40	
7	11	16	16	15	15	0	14	16	13	17	133	10	13.3	
8														
TOTAL	21	30	32	27	31	29	27	31	28	35	291	10	29.1	

Concentration: 1.6 %														
Day	Replicate										No. of Young	No. of Adults	Young per Adult	
	1	2	3	4	5	6	7	8	9	10				
1	0	0	0	0	0	0	0	0	0	0	0	10	0.00	
2	0	0	0	0	0	0	0	0	0	0	0	10	0.00	
3	0	0	0	0	0	0	0	0	0	0	0	10	0.00	
4	2	5	4	4	4	4	4	5	4	6	42	10	4.20	
5	11	11	9	10	11	10	12	11	12	11	108	10	10.8	
6	0	0	0	0	0	0	0	0	0	0	0	10	0.00	
7	15	13	17	15	17	14	15	17	16	15	154	10	15.4	
8														
TOTAL	28	29	30	29	32	28	31	33	32	32	304	10	30.4	

Concentration: 2.1 %														
Day	Replicate										No. of Young	No. of Adults	Young per Adult	
	1	2	3	4	5	6	7	8	9	10				
1	0	0	0	0	0	0	0	0	0	0	0	10	0.00	
2	0	0	0	0	0	0	0	0	0	0	0	10	0.00	
3	0	0	0	0	0	0	0	0	0	0	0	10	0.00	
4	4	4	3	4	4	5	6	6	3	4	43	10	4.30	
5	11	11	8	11	12	11	11	13	9	13	110	10	11.0	
6	0	0	0	0	0	0	0	0	0	0	0	10	0.00	
7	16	16	15	15	17	14	15	15	16	15	154	10	15.4	
8														
TOTAL	31	31	26	30	33	30	32	34	28	32	307	10	30.7	

Appendix A2: Statistics

*Pimephales promelas* (Fathead minnow) Survival

Transformation of Data				Transform: Arc Sin(Square Root(Y))	
Group	Identification	Rep	Value	Transformed	
1	Control	1	1.00000	1.39310	
1	Control	2	1.00000	1.39310	
1	Control	3	1.00000	1.39310	
1	Control	4	1.00000	1.39310	
1	Control	5	1.00000	1.39310	
2	0.7 %	1	1.00000	1.39310	
2	0.7 %	2	1.00000	1.39310	
2	0.7 %	3	1.00000	1.39310	
2	0.7 %	4	1.00000	1.39310	
2	0.7 %	5	1.00000	1.39310	
3	0.9 %	1	1.00000	1.39310	
3	0.9 %	2	1.00000	1.39310	
3	0.9 %	3	1.00000	1.39310	
3	0.9 %	4	1.00000	1.39310	
3	0.9 %	5	1.00000	1.39310	
4	1.2 %	1	1.00000	1.39310	
4	1.2 %	2	1.00000	1.39310	
4	1.2 %	3	1.00000	1.39310	
4	1.2 %	4	1.00000	1.39310	
4	1.2 %	5	1.00000	1.39310	
5	1.6 %	1	1.00000	1.39310	
5	1.6 %	2	1.00000	1.39310	
5	1.6 %	3	1.00000	1.39310	
5	1.6 %	4	1.00000	1.39310	
5	1.6 %	5	1.00000	1.39310	
6	2.1 %	1	1.00000	1.39310	
6	2.1 %	2	1.00000	1.39310	
6	2.1 %	3	1.00000	1.39310	
6	2.1 %	4	1.00000	1.39310	
6	2.1 %	5	1.00000	1.39310	

Appendix A2: Statistics

*Pimephales promelas* (Fathead minnow) Survival

Shapiro - Wilk's Test for Normality		Transform: Arc Sin(Square Root(Y))
D = 0 W = 0 Critical W = 0.9                      (alpha = 0.01, N = 30) Critical W = 0.927                    (alpha = 0.05, N = 30)		
Data FAIL normality test (alpha = 0.01).		

Steel's Many-One Rank Test				Transform: Arc Sin(Square Root(Y))	
Ho: Control < Treatment					
Group	Identification	Rank Sum	Critical Value	DF	Sig 0.05
1	Control				
2	0.7 %	27.50	16.00	5.00	
3	0.9 %	27.50	16.00	5.00	
4	1.2 %	27.50	16.00	5.00	
5	1.6 %	27.50	16.00	5.00	
6	2.1 %	27.50	16.00	5.00	
Critical values are 1 tailed (k=5)					

Appendix A2: Statistics

*Pimephales promelas* (Fathead minnow) Growth

Shapiro - Wilk's Test for Normality	No Transformation
<p>D = 0.01692 W = 0.9813 Critical W = 0.9 (alpha = 0.01, N = 30) Critical W = 0.927 (alpha = 0.05, N = 30)</p> <p>Data PASS normality test (alpha = 0.01).</p>	

Bartlett's Test for Homogeneity of Variance	No Transformation
<p>Calculated B1 statistic = 7.707 Critical B = 15.086 (alpha = 0.01, df = 5)</p> <p>Data PASS B1 homogeneity test at 0.01 level.</p>	

Appendix A2: Statistics

*Pimephales promelas* (Fathead minnow) Growth

ANOVA Table				No Transformation	
SOURCE	DF	SS	MS	F	
Between	5	0.003746	0.0007492	1.063	
Within (Error)	24	0.01692	0.000705		
Total	29	0.02067			
Critical F = 3.9 (alpha = 0.01, df = 5,24)					
2.62 (alpha = 0.05, df = 5,24)					
Since F < Critical F FAIL TO REJECT Ho: All equal (alpha = 0.05)					

Dunnett's Test - Table 1 of 2					No Transformation	
Ho:Control<Treatment						
Group	Identification	Transformed Mean	Mean In Original Units	T Stat	Sig 0.05	
1	Control	0.3298	0.3298			
2	0.7 %	0.348	0.348	-1.084		
3	0.9 %	0.3636	0.3636	-2.013		
4	1.2 %	0.3534	0.3534	-1.405		
5	1.6 %	0.3434	0.3434	-0.8099		
6	2.1 %	0.3354	0.3354	-0.3335		
Dunnett's critical value = 2.36 (1 Tailed, alpha = 0.05, df = 5,24)						

Dunnett's Test - Table 2 of 2					No Transformation	
Ho:Control<Treatment						
Group	Identification	Num of Reps	Min Sig Diff (In Orig. Units)	% of Control	Difference From Control	
1	Control	5				
2	0.7 %	5	0.03963	12	-0.0182	
3	0.9 %	5	0.03963	12	-0.0338	
4	1.2 %	5	0.03963	12	-0.0236	
5	1.6 %	5	0.03963	12	-0.0136	
6	2.1 %	5	0.03963	12	-0.0056	



Appendix A2: Statistics

*Ceriodaphnia dubia* Survival

Fisher's Exact Test			
Identification	Alive	Dead	Total Animals
Control	10	0	10
0.7 %	10	0	10
Total	20	0	20

Critical Fisher's value (10,10,10) (alpha=0.05) is 6. b value is 10. Since b is greater than 6 there is NO SIGNIFICANT DIFFERENCE between CONTROL and TREATMENT at the 0.05 level.

Fisher's Exact Test			
Identification	Alive	Dead	Total Animals
Control	10	0	10
0.9 %	10	0	10
Total	20	0	20

Critical Fisher's value (10,10,10) (alpha=0.05) is 6. b value is 10. Since b is greater than 6 there is NO SIGNIFICANT DIFFERENCE between CONTROL and TREATMENT at the 0.05 level.

Fisher's Exact Test			
Identification	Alive	Dead	Total Animals
Control	10	0	10
1.2 %	10	0	10
Total	20	0	20

Critical Fisher's value (10,10,10) (alpha=0.05) is 6. b value is 10. Since b is greater than 6 there is NO SIGNIFICANT DIFFERENCE between CONTROL and TREATMENT at the 0.05 level.

Fisher's Exact Test			
Identification	Alive	Dead	Total Animals
Control	10	0	10
1.6 %	10	0	10
Total	20	0	20

Critical Fisher's value (10,10,10) (alpha=0.05) is 6. b value is 10. Since b is greater than 6 there is NO SIGNIFICANT DIFFERENCE between CONTROL and TREATMENT at the 0.05 level.

Appendix A2: Statistics

*Ceriodaphnia dubia* Survival

Fisher's Exact Test			
Identification	Alive	Dead	Total Animals
Control	10	0	10
2.1 %	10	0	10
Total	20	0	20

Critical Fisher's value (10,10,10) (alpha=0.05) is 6. b value is 10. Since b is greater than 6 there is NO SIGNIFICANT DIFFERENCE between CONTROL and TREATMENT at the 0.05 level.

Summary of Fisher's Exact Test				
Group	Identification	Exposed	Dead	Sig 0.05
0	Control	10	0	
1	0.7 %	10	0	
2	0.9 %	10	0	
3	1.2 %	10	0	
4	1.6 %	10	0	
5	2.1 %	10	0	

Appendix A2: Statistics

*Ceriodaphnia dubia* Reproduction

Kolmogorov Test for Normality	No Transformation
<p>D = 0.0808 D* = 0.6339 Critical D* = 1.035 (alpha = 0.01, N = 60)</p> <p>Data PASS normality test (alpha = 0.01).</p>	

Bartlett's Test for Homogeneity of Variance	No Transformation
<p>Calculated B1 statistic = 6.247 Critical B = 15.086 (alpha = 0.01, df = 5)</p> <p>Data PASS B1 homogeneity test at 0.01 level.</p>	

Appendix A2: Statistics

*Ceriodaphnia dubia* Reproduction

ANOVA Table				No Transformation	
SOURCE	DF	SS	MS	F	
Between	5	107.1	21.42	3.035	
Within (Error)	54	381.1	7.057		
Total	59	488.2			
Critical F = 3.38 (alpha = 0.01, df = 5,54)					
2.38 (alpha = 0.05, df = 5,54)					
Since F > Critical F REJECT Ho: All equal (alpha = 0.05)					

Dunnett's Test - Table 1 of 2					No Transformation	
Ho:Control<Treatment						
Group	Identification	Transformed Mean	Mean In Original Units	T Stat	Sig 0.05	
1	Control	26.7	26.7			
2	0.7 %	28.8	28.8	-1.768		
3	0.9 %	30	30	-2.778		
4	1.2 %	29.1	29.1	-2.02		
5	1.6 %	30.4	30.4	-3.114		
6	2.1 %	30.7	30.7	-3.367		
Dunnett's critical value = 2.31 (1 Tailed, alpha = 0.05, df [used] = 5,40) (Actual df = 5,54)						

Dunnett's Test - Table 2 of 2					No Transformation	
Ho:Control<Treatment						
Group	Identification	Num of Reps	Min Sig Diff (In Orig. Units)	% of Control	Difference From Control	
1	Control	10				
2	0.7 %	10	2.744	10.3	-2.1	
3	0.9 %	10	2.744	10.3	-3.3	
4	1.2 %	10	2.744	10.3	-2.4	
5	1.6 %	10	2.744	10.3	-3.7	
6	2.1 %	10	2.744	10.3	-4	

Appendix A3: Water Chemistry

Routine Chemical and Physical Data

Date and Time Test Initiated: February 4, 2014 at 1325  
Date and Time Test Terminated: February 11, 2014 at 1510

Effluent Conc.: Control		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
DO, mg/l	Initial	8.5	7.9	8.9	8.6	8.9	8.1	8.5
	Final *1	7.7	8.0	7.9	7.8	7.0	7.7	7.4
	Final *2	8.2	8.3	8.3	8.4	8.1	8.2	8.4
pH, units	Initial	7.4	7.3	7.4	7.3	7.5	7.4	7.3
	Final *1	7.2	7.3	7.1	7.4	7.1	7.3	7.0
	Final *2	7.6	7.8	7.7	7.5	7.8	7.6	7.5
Alkalinity, mg CaCO <sub>3</sub> /l	31	NA	31	NA	31	NA	NA	NA
Hardness, mg CaCO <sub>3</sub> /l	46	NA	48	NA	46	NA	NA	NA
Conductivity, umhos/cm	140	150	150	160	150	160	150	150
Res. Chlorine, mg/l	<0.05	NA	<0.05	NA	<0.05	NA	NA	NA

Effluent Conc.: 0.7 %		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
DO, mg/l	Initial	8.6	8.1	8.9	8.6	8.8	8.3	8.6
	Final *1	7.6	7.9	7.5	7.8	7.0	7.8	9.0
	Final *2	8.3	8.3	8.3	8.5	8.2	8.4	8.4
pH, units	Initial	7.4	7.4	7.3	7.2	7.4	7.4	7.2
	Final *1	7.2	7.3	7.0	7.4	7.2	7.4	7.0
	Final *2	7.7	7.8	7.6	7.6	7.9	7.7	7.6

Effluent Conc.: 0.9 %		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
DO, mg/l	Initial	8.5	8.0	8.9	8.6	8.7	8.3	8.6
	Final *1	8.0	8.1	8.0	7.8	6.6	7.7	8.8
	Final *2	8.4	8.0	8.3	8.6	8.3	8.2	8.4
pH, units	Initial	7.4	7.4	7.3	7.2	7.4	7.4	7.4
	Final *1	7.2	7.3	7.1	7.4	7.1	7.4	7.0
	Final *2	7.8	7.8	7.7	7.7	7.9	7.7	7.6

Appendix A3: Water Chemistry

Routine Chemical and Physical Data

Date and Time Test Initiated: February 4, 2014 at 1325  
Date and Time Test Terminated: February 11, 2014 at 1510

Effluent Conc.: 1.2 %		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
DO, mg/l	Initial	8.5	8.1	8.9	8.5	8.9	8.0	8.6
	Final *1	7.8	8.1	7.9	7.2	6.7	7.4	8.7
	Final *2	8.3	8.0	8.4	8.4	8.5	8.3	8.5
pH, units	Initial	7.4	7.3	7.3	7.2	7.4	7.5	7.3
	Final *1	7.2	7.3	7.2	7.3	7.1	7.2	7.0
	Final *2	7.8	7.8	7.7	7.7	7.9	7.8	7.7

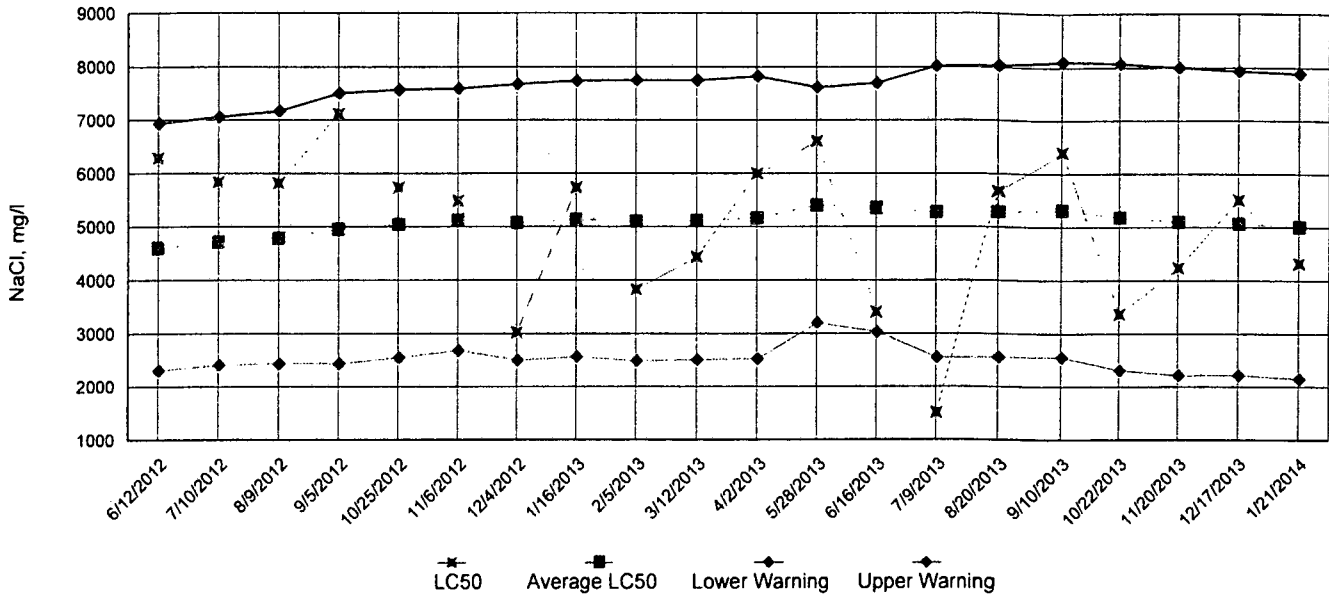
Effluent Conc.: 1.6 %		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
DO, mg/l	Initial	8.5	8.2	8.9	8.6	8.9	7.9	8.6
	Final *1	7.9	7.9	7.8	8.0	7.0	7.9	8.6
	Final *2	8.4	8.1	8.6	8.6	8.3	8.3	8.1
pH, units	Initial	7.4	7.4	7.3	7.2	7.4	7.5	7.3
	Final *1	7.2	7.3	7.2	7.4	7.1	7.4	7.0
	Final *2	7.8	7.9	7.7	7.7	7.9	7.8	7.7
Alkalinity, mg CaCO <sub>3</sub> /l	37	NA	32	NA	31	NA	NA	NA
Hardness, mg CaCO <sub>3</sub> /l	49	NA	47	NA	45	NA	NA	NA
Conductivity, umhos/cm	140	160	150	160	150	160	150	150
Res. Chlorine, mg/l	<0.05	NA	<0.05	NA	<0.05	NA	NA	NA

Effluent Conc.: 2.1 %		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
DO, mg/l	Initial	9.0	8.0	9.0	8.7	8.9	8.1	8.6
	Final *1	7.3	7.4	7.5	7.7	7.2	7.3	8.5
	Final *2	8.4	8.1	8.4	8.8	8.3	8.4	8.2
pH, units	Initial	7.4	7.4	7.3	7.2	7.4	7.4	7.4
	Final *1	7.0	7.2	7.2	7.4	7.2	7.3	7.0
	Final *2	7.8	7.9	7.8	7.8	8.0	7.9	7.7

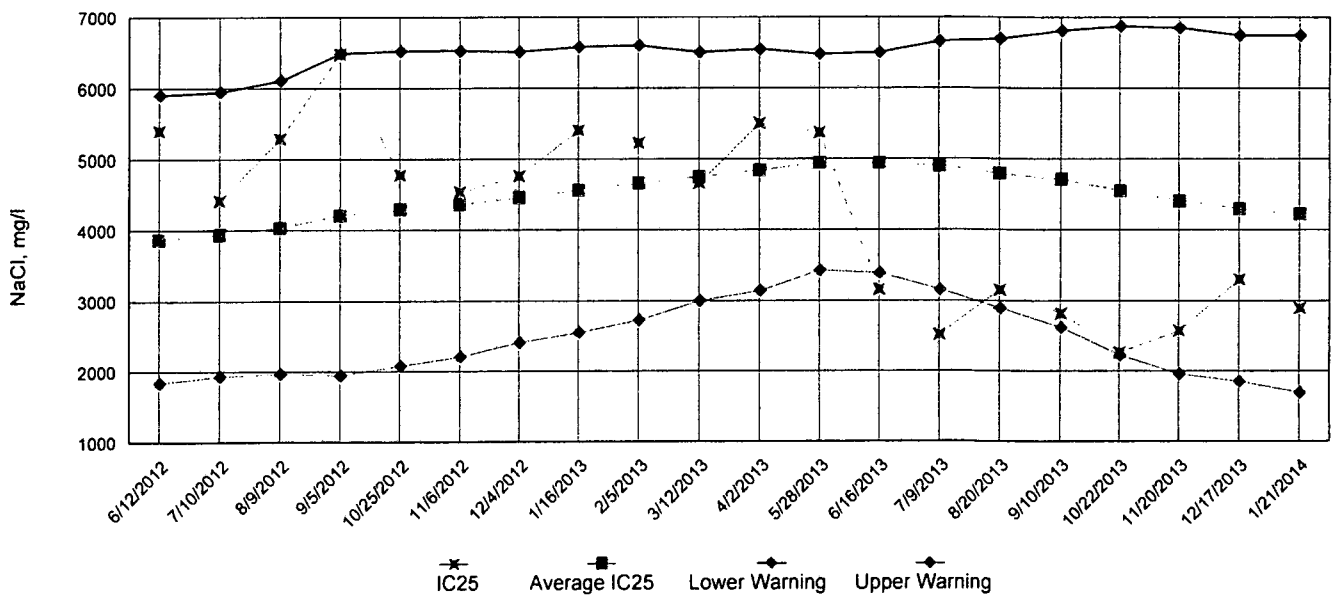
\*1 = data from the *Pimephales promelas* (Fathead Minnow) test      \*2 = data from the *Ceriodaphnia dubia* test

Appendix A4: Test 1000.0  
Chronic Reference Toxicant, *Pimephales promelas* (Fathead Minnow)

LC50 Survival Data

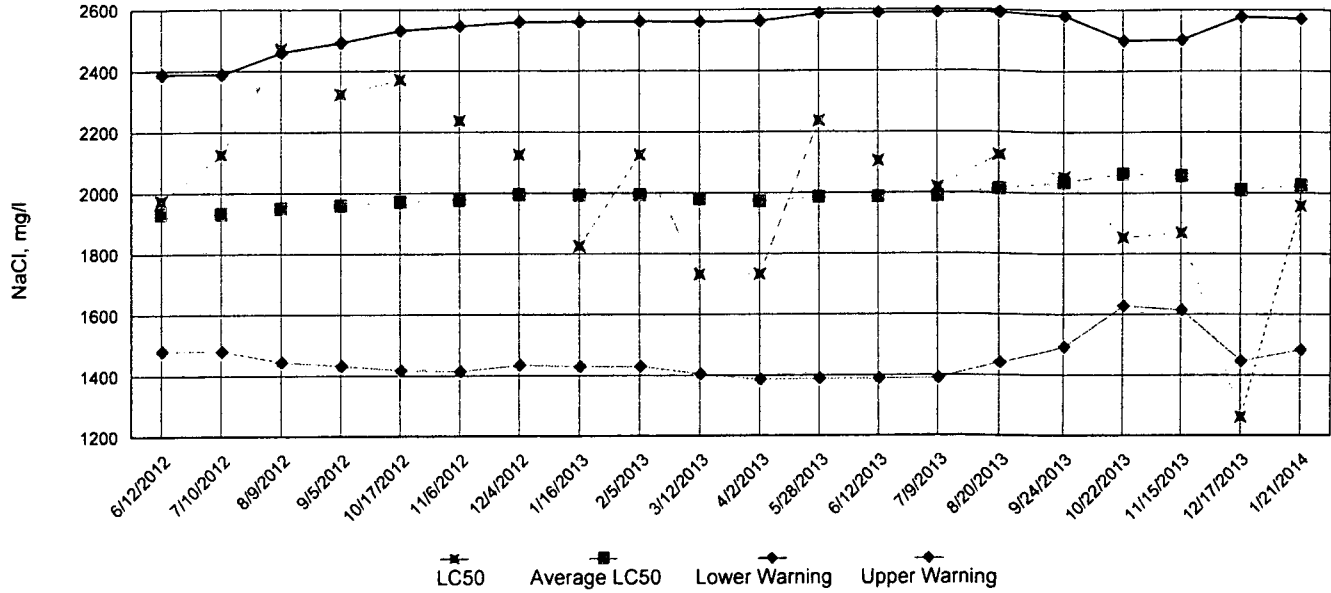


IC25 Growth Data

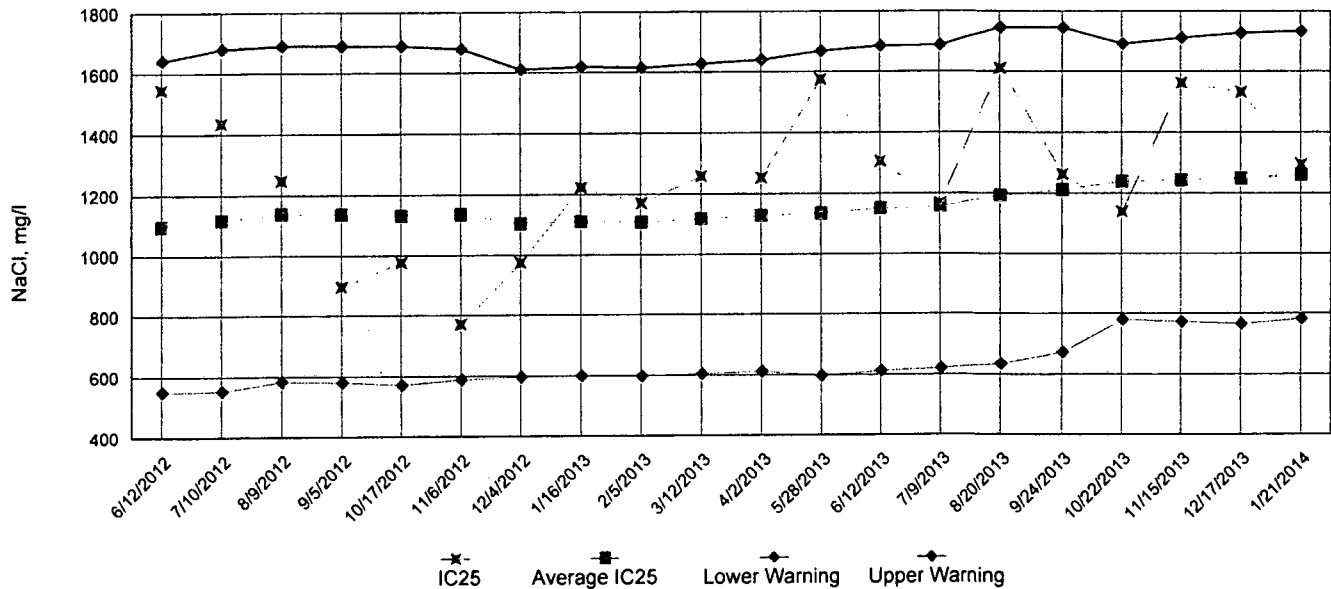


Appendix A4: Test 1002.0  
Chronic Reference Toxicant, *Ceriodaphnia dubia*

LC50 Survival Data



IC25 Reproduction Data





Appendix B: Test 1000.0

SUMMARY REPORTING FORMS  
CHRONIC BIOMONITORING  
*Pimephales promelas* (Fathead Minnow)  
SURVIVAL AND GROWTH

Permittee: El Dorado Chemical Company

NPDES No.: AR0000752

Date and Time Test Initiated: February 4, 2014 at 1115

Date and Time Test Terminated: February 11, 2014 at 1300

Dilution water used: Synthetic soft water #4062

DATA TABLE FOR SURVIVAL

Effluent Conc. %	Percent Survival in replicate chambers					Mean percent survival			CV%
	A	B	C	D	E	24 hr	48 hr	7 days	
Control	100	100	100	100	100	100	100	100	0.00
0.7 %	100	100	100	100	100	100	100	100	0.00
0.9 %	100	100	100	100	100	100	100	100	0.00
1.2 %	100	100	100	100	100	100	100	100	0.00
1.6 %	100	100	100	100	100	100	100	100	0.00
2.1 %	100	100	100	100	100	100	100	100	0.00

DATA TABLE FOR GROWTH

Effluent Conc. %	Average dry weight, mg replicate chambers					Mean dry weight, mg	CV%
	A	B	C	D	E		
Control	0.331	0.330	0.301	0.355	0.332	0.33	5.81
0.7 %	0.351	0.328	0.348	0.372	0.341	0.348	4.62
0.9 %	0.352	0.355	0.361	0.375	0.375	0.364	3.00
1.2 %	0.291	0.370	0.338	0.378	0.390	0.353	11.3
1.6 %	0.302	0.334	0.356	0.359	0.366	0.343	7.59
2.1 %	0.312	0.320	0.300	0.366	0.379	0.335	10.4

CV = Coefficient of variation = standard deviation \* 100 / mean

Appendix B: Test 1000.0

SUMMARY REPORTING FORMS  
CHRONIC BIOMONITORING  
*Pimephales promelas* (Fathead Minnow)  
SURVIVAL AND GROWTH

1. Steel's Many-One Rank Test:

Is the mean survival significantly different ( $p=0.05$ ) than the control survival for the % effluent corresponding to (lethality):

a.) LOW FLOW OR CRITICAL DILUTION	(1.6 %)	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
b.) 1/2 LOW FLOW DILUTION	(NA)	<input type="checkbox"/> YES	<input type="checkbox"/> NO

2. Dunnett's Test:

Is the mean dry weight (growth) significantly different ( $p=0.05$ ) than the control's dry weight (growth) for the % effluent corresponding to (significant non-lethal effects):

a.) LOW FLOW OR CRITICAL DILUTION	(1.6 %)	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
b.) 1/2 LOW FLOW DILUTION	(NA)	<input type="checkbox"/> YES	<input type="checkbox"/> NO

3. If you answered NO to 1.a) enter [0] otherwise enter [1]: 0 (TLP6C)
4. If you answered NO to 2.a) enter [0] otherwise enter [1]: 0 (TGP6C)
5. NOEC Pimephales Lethality: 2.1 % (TOP6C)
6. LOEC Pimephales Lethality: 2.1 % (TXP6C)
7. NOEC Pimephales Sublethality: 2.1 % (TPP6C)
8. LOEC Pimephales Sublethality: 2.1 % (TYP6C)
9. Coefficient of variation for Pimephales growth: 7.59 (TQP6C)

Appendix B: Test 1000.0

CHRONIC TOXICITY SUMMARY FORM  
*Pimephales promelas* (Fathead minnow)  
CHEMICAL PARAMETERS CHART

PERMITTEE: El Dorado Chemical Company  
NPDES NO.: AR0000752  
CONTACT: Ms. Larken Pennington  
ANALYST: 280, 298, 304, 307

SAMPLE No. 3 COLLECTED ending: DATE: February 7, 2014 TIME: 0945  
Test Initiated: DATE: February 4, 2014 TIME: 1115  
Test Terminated: DATE: February 11, 2014 TIME: 1300

DILUTION Control	DAY						
	1	2	3	4	5	6	7
D.O. Initial	8.5	7.9	8.9	8.6	8.9	8.1	8.5
Final	7.7	8.0	7.9	7.8	7.0	7.7	7.4
pH Initial	7.4	7.3	7.4	7.3	7.5	7.4	7.3
Final	7.2	7.3	7.1	7.4	7.1	7.3	7.0
Alkalinity	31	NA	31	NA	31	NA	NA
Hardness	46	NA	48	NA	46	NA	NA
Conductivity	140	150	150	160	150	160	150
Chlorine	<0.05	NA	<0.05	NA	<0.05	NA	NA

DILUTION 0.7 %	DAY						
	1	2	3	4	5	6	7
D.O. Initial	8.6	8.1	8.9	8.6	8.8	8.3	8.6
Final	7.6	7.9	7.5	7.8	7.0	7.8	9.0
pH Initial	7.4	7.4	7.3	7.2	7.4	7.4	7.2
Final	7.2	7.3	7.0	7.4	7.2	7.4	7.0
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	140	160	150	150	150	160	150
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION 0.9 %	DAY						
	1	2	3	4	5	6	7
D.O. Initial	8.5	8.0	8.9	8.6	8.7	8.3	8.6
Final	8.0	8.1	8.0	7.8	6.6	7.7	8.8
pH Initial	7.4	7.4	7.3	7.2	7.4	7.4	7.4
Final	7.2	7.3	7.1	7.4	7.1	7.4	7.0
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	140	160	150	150	150	160	150
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION 1.2 %	DAY						
	1	2	3	4	5	6	7
D.O. Initial	8.5	8.1	8.9	8.5	8.9	8.0	8.6
Final	7.8	8.1	7.9	7.2	6.7	7.4	8.7
pH Initial	7.4	7.3	7.3	7.2	7.4	7.5	7.3
Final	7.2	7.3	7.2	7.3	7.1	7.2	7.0
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	140	160	150	150	150	160	150
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION 1.6 %	DAY						
	1	2	3	4	5	6	7
D.O. Initial	8.5	8.2	8.9	8.6	8.9	7.9	8.6
Final	7.9	7.9	7.8	8.0	7.0	7.9	8.6
pH Initial	7.4	7.4	7.3	7.2	7.4	7.5	7.3
Final	7.2	7.3	7.2	7.4	7.1	7.4	7.0
Alkalinity	37	NA	32	NA	31	NA	NA
Hardness	49	NA	47	NA	45	NA	NA
Conductivity	140	160	150	160	150	160	150
Chlorine	<0.05	NA	<0.05	NA	<0.05	NA	NA

DILUTION 2.1 %	DAY						
	1	2	3	4	5	6	7
D.O. Initial	9.0	8.0	9.0	8.7	8.9	8.1	8.6
Final	7.3	7.4	7.5	7.7	7.2	7.3	8.5
pH Initial	7.4	7.4	7.3	7.2	7.4	7.4	7.4
Final	7.0	7.2	7.2	7.4	7.2	7.3	7.0
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	140	160	160	160	160	170	150
Chlorine	NA	NA	NA	NA	NA	NA	NA

Appendix B: Test 1002.0  
SUMMARY REPORTING FORMS  
CHRONIC BIOMONITORING  
*Ceriodaphnia dubia*  
SURVIVAL AND REPRODUCTION

Permittee: El Dorado Chemical Company

NPDES No.: AR0000752

Date and Time Test Initiated: February 4, 2014 at 1510

Date and Time Test Terminated: February 11, 2014 at 1510

Dilution water used: Synthetic soft water #4062

PERCENT SURVIVAL

Time of Reading	Control	Percent Effluent				
		0.7 %	0.9 %	1.2 %	1.6 %	2.1 %
24 hour	100	100	100	100	100	100
48 hour	100	100	100	100	100	100
7 day	100	100	100	100	100	100

NUMBER OF YOUNG PRODUCED PER FEMALE @ 7 DAYS

Replicates	Control	Percent Effluent				
		0.7 %	0.9 %	1.2 %	1.6 %	2.1 %
A	25	24	31	21	28	31
B	28	32	33	30	29	31
C	24	33	32	32	30	26
D	27	31	29	27	29	30
E	27	28	32	31	32	33
F	26	27	30	29	28	30
G	28	30	30	27	31	32
H	31	24	29	31	33	34
I	28	29	28	28	32	28
J	23	30	26	35	32	32
Mean per Adult	26.7	28.8	30.0	29.1	30.4	30.7
Mean per Surviving Adult	26.7	28.8	30.0	29.1	30.4	30.7
CV %	8.66	10.7	7.03	12.9	6.05	7.69

CV = Coefficient of variation = standard deviation \* 100 / mean  
(calculated based on young produced by surviving females)

Appendix B: Test 1002.0  
SUMMARY REPORTING FORMS  
CHRONIC BIOMONITORING  
*Ceriodaphnia dubia*  
SURVIVAL AND REPRODUCTION

1. Fisher's Exact Test:

Is the mean survival significantly different ( $p=0.05$ ) than the control survival for the % effluent corresponding to (lethality):

a.) LOW FLOW OR CRITICAL DILUTION	(1.6 %)	<u>          </u> YES	<u>  X  </u> NO
b.) 1/2 LOW FLOW DILUTION	(NA)	<u>          </u> YES	<u>          </u> NO

2. Dunnett's Test:

Is the mean number of young produced per female significantly different ( $p=0.05$ ) than the control's number of young per female for the % effluent corresponding to (significant non-lethal effects):

a.) LOW FLOW OR CRITICAL DILUTION	(1.6 %)	<u>          </u> YES	<u>  X  </u> NO
b.) 1/2 LOW FLOW DILUTION	(NA)	<u>          </u> YES	<u>          </u> NO

3. If you answered NO to 1.a) enter [0] otherwise enter [1]:   0   (TLP3B)
4. If you answered NO to 2.a) enter [0] otherwise enter [1]:   0   (TGP3B)
5. NOEC *Ceriodaphnia* Lethality:   2.1 %   (TOP3B)
6. LOEC *Ceriodaphnia* Lethality:   2.1 %   (TXP3B)
7. NOEC *Ceriodaphnia* Sublethality:   2.1 %   (TPP3B)
8. LOEC *Ceriodaphnia* Sublethality:   2.1 %   (TYP3B)
9. Coefficient of variation for *Ceriodaphnia* Reproduction:   8.66   (TQP3B)

Appendix B: Test 1002.0  
CHRONIC TOXICITY SUMMARY FORM  
*Ceriodaphnia dubia*  
CHEMICAL PARAMETERS CHART

PERMITTEE: El Dorado Chemical Company  
NPDES NO.: AR0000752  
CONTACT: Ms. Larken Pennington  
ANALYST: 280, 298, 304, 307

SAMPLE No. 3 COLLECTED ending: DATE: February 7, 2014 TIME: 0945  
Test Initiated: DATE: February 4, 2014 TIME: 1510  
Test Terminated: DATE: February 11, 2014 TIME: 1510

DILUTION Control	DAY						
	1	2	3	4	5	6	7
D.O. Initial	8.5	7.9	8.9	8.6	8.9	8.1	8.5
Final	8.2	8.3	8.3	8.4	8.1	8.2	8.4
pH Initial	7.4	7.3	7.4	7.3	7.5	7.4	7.3
Final	7.6	7.8	7.7	7.5	7.8	7.6	7.5
Alkalinity	31	NA	31	NA	31	NA	NA
Hardness	46	NA	48	NA	46	NA	NA
Conductivity	140	150	150	160	150	160	150
Chlorine	<0.05	NA	<0.05	NA	<0.05	NA	NA

DILUTION 0.7 %	DAY						
	1	2	3	4	5	6	7
D.O. Initial	8.6	8.1	8.9	8.6	8.8	8.3	8.6
Final	8.3	8.3	8.3	8.5	8.2	8.4	8.4
pH Initial	7.4	7.4	7.3	7.2	7.4	7.4	7.2
Final	7.7	7.8	7.6	7.6	7.9	7.7	7.6
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	140	160	150	150	150	160	150
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION 0.9 %	DAY						
	1	2	3	4	5	6	7
D.O. Initial	8.5	8.0	8.9	8.6	8.7	8.3	8.6
Final	8.4	8.0	8.3	8.6	8.3	8.2	8.4
pH Initial	7.4	7.4	7.3	7.2	7.4	7.4	7.4
Final	7.8	7.8	7.7	7.7	7.9	7.7	7.6
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	140	160	150	150	150	160	150
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION 1.2 %	DAY						
	1	2	3	4	5	6	7
D.O. Initial	8.5	8.1	8.9	8.5	8.9	8.0	8.6
Final	8.3	8.0	8.4	8.4	8.5	8.3	8.5
pH Initial	7.4	7.3	7.3	7.2	7.4	7.5	7.3
Final	7.8	7.8	7.7	7.7	7.9	7.8	7.7
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	140	160	150	150	150	160	150
Chlorine	NA	NA	NA	NA	NA	NA	NA

DILUTION 1.6 %	DAY						
	1	2	3	4	5	6	7
D.O. Initial	8.5	8.2	8.9	8.6	8.9	7.9	8.6
Final	8.4	8.1	8.6	8.6	8.3	8.3	8.1
pH Initial	7.4	7.4	7.3	7.2	7.4	7.5	7.3
Final	7.8	7.9	7.7	7.7	7.9	7.8	7.7
Alkalinity	37	NA	32	NA	31	NA	NA
Hardness	49	NA	47	NA	45	NA	NA
Conductivity	140	160	150	160	150	160	150
Chlorine	<0.05	NA	<0.05	NA	<0.05	NA	NA

DILUTION 2.1 %	DAY						
	1	2	3	4	5	6	7
D.O. Initial	9.0	8.0	9.0	8.7	8.9	8.1	8.6
Final	8.4	8.1	8.4	8.8	8.3	8.4	8.2
pH Initial	7.4	7.4	7.3	7.2	7.4	7.4	7.4
Final	7.8	7.9	7.8	7.8	8.0	7.9	7.7
Alkalinity	NA	NA	NA	NA	NA	NA	NA
Hardness	NA	NA	NA	NA	NA	NA	NA
Conductivity	140	160	160	160	160	170	150
Chlorine	NA	NA	NA	NA	NA	NA	NA

CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

175032

PAGE 1 OF 1

El Dorado Chemical Company		PO No.		ANALYSES REQUESTED												AIC CONTROL NO: 175030-517246								
Daily - Permit AR0000752		MATRIX		NO OF BOTTLES	CBOD, TSS	Coli. F	NH3N, Total Phosphoru									AIC PROPOSAL NO: 2-3-14								
Ms. Larken Pennington		W	S													Carrier: Gold Star								
Larken Pennington		G	C	S	O	I	L	S	S	S	S	S	S	S	S	S	Received Temperature C 0.6°C							
Sample Identification	Date/Time Collected	A	O														Remarks							
010	2/2/14-2/3/14 945-945	X	X	1	X												TSS: OUTSIDE OIL							
010	2/3/14 945	X		1		X																		
010	2/2/14-2/3/14 945-945		X	1			X																	
Container Type					P	P	P										Field pH calibration on _____ @ _____							
Preservative					NO	T	S										Buffer:							
G = Glass		P = Plastic		V = VOA vials			H = HCl to pH2			T = Sodium Thiosulfate			NO = none			S = Sulfuric acid pH2		N = Nitric acid pH2		B = NaOH to pH12			Z = Zinc acetate	

Turnaround Time Requested: (Please circle)  
 RMAL or EXPEDITED IN \_\_\_\_\_ DAYS  
 Expedited results requested by: \_\_\_\_\_  
 Should AIC contact with questions:  
 ☎ 870-312-1752 Fax:  
 Attention to: Ms. Larken Pennington  
 Address to: Post Office Box 231  
 El Dorado, AR 71731  
 Lpennington@edc-ark.com

Relinquished By: Larken Pennington	Date/Time: 2/3/14 1000	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received in Lab By: Pennington Day	Date/Time: 2/3/14 1325
Comments: * Bio not received. Taken from composted CBOD, TSS			



CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

Client: El Dorado Chemical Company			PO No.		NO OF BOTTLES	ANALYSES REQUESTED										AIC CONTROL NO: 175032		
Project Reference: Quarterly - Permit AR0000752			MATRIX			Chronic - CD, FH											AIC PROPOSAL NO:	
Project Manager: Ms. Larken Pennington			WATER	SOIL													Carrier: Gold Star	
Sampled By: D. SARTAIN			G R A B	C O M P														Received Temperature C 1.2
AIC No.	Sample Identification	Date/Time Collected																Remarks
2	010	2-5-14 0930	X	X				1	X									
		Container Type																Field pH calibration on _____ @ _____
		Preservative																Buffer:
		G = Glass NO = none		P = Plastic S = Sulfuric acid pH2		V = VOA vials N = Nitric acid pH2		H = HCl to pH2 B = NaOH to pH12		T = Sodium Thiosulfate Z = Zinc acetate		A = (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> , NH <sub>4</sub> OH						
Turnaround Time Requested: (Please circle) <u>NORMAL</u> or EXPEDITED IN ____ DAYS					Relinquished By: <i>[Signature]</i>		Date/Time: 2-5-14 1010		Received By: <i>[Signature]</i>		Date/Time							
Expedited results requested by: _____					Relinquished By:		Date/Time:		Received in Lab By: <i>[Signature]</i>		Date/Time: 2-5-14 13:45pm							
Who should AIC contact with questions: Phone 870-312-1752 Fax: Report Attention to: Ms. Larken Pennington Report Address to: Post Office Box 231 El Dorado, AR 71731 Lpennington@edc-ark.com					Comments:													





CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

Client: El Dorado Chemical Company			PO No.		NO OF BOTTLES	ANALYSES REQUESTED										AIC CONTROL NO: 175032					
Project Reference: Quarterly - Permit AR0000752			MATRIX			Chronic - CD, FH													AIC PROPOSAL NO:		
Project Manager: Ms. Larken Pennington			G R A B	C O M P	W A T E R		S O I L	NO OF BOTTLES	Chronic - CD, FH											Carrier: Gold Star	
Sampled By: Larken Pennington																					
AIC No.	Sample Identification	Date/Time Collected																		Remarks	
3	010	2/10/14 - 2/17/14 945-945		X	X			1	X												
		Container Type																		Field pH calibration on _____ @ _____	
		Preservative																		Buffer:	
G = Glass NO = none			P = Plastic S = Sulfuric acid pH2			V = VOA vials N = Nitric acid pH2			H = HCl to pH2 B = NaOH to pH12			T = Sodium Thiosulfate Z = Zinc acetate			A = (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> , NH <sub>4</sub> OH						
Turnaround Time Requested: (Please circle) NORMAL or EXPEDITED IN _____ DAYS						Relinquished By: Larken Pennington		Date/Time: 2/7/14 1000		Received By:		Date/Time:									
Expedited results requested by: _____						Relinquished By:		Date/Time:		Received in Lab By: Larken Pennington		Date/Time: 2-7-14 1345									
Who should AIC contact with questions: _____						Comments:															
Phone 870-312-1752 Fax: _____																					
Report Attention to: Ms. Larken Pennington																					
Report Address to: Post Office Box 231																					
El Dorado, AR 71731																					
Lpennington@edc-ark.com																					

Bio-Analytical Laboratories (BAL)  
ADEQ#88-0630  
Project X5339

### Bio-Analytical Laboratories' Executive Summary

**Permittee:** El Dorado Chemical Company  
P.O. Box 231  
El Dorado, AR 71731

**Project #:** X5339

**Outfall:** Outfall 007 (contaminated storm water)

**Permit #:** AR0000752/ AFIN #70-00040

**Contact:** Ms. Larken Pennington

**Test Dates:** February 3 - 5, 2014

**Test Type:** 48-hour acute toxicity test using *Pimephales promelas* (EPA 2000.0).  
48-hour acute toxicity test using *Daphnia pulex* (EPA 2021.0)

#### Results:

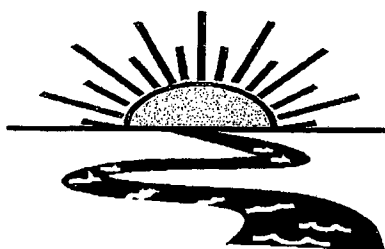
##### For *Pimephales promelas*:

1. If the NOEC for survival is less than the critical dilution (100.0%), enter a "1"; otherwise, enter a "0" for Parameter No. TEM6C- 1 - **Fail**
  2. Report the NOEC for survival, Parameter TOM6C - 0.0%.
  3. Report the highest (critical dilution or control) Coefficient of Variation, Parameter TQM6C - 0.00%.
- 95.0% survival occurred when the pH in the 100% effluent concentration was adjusted to a range of 6.0-9.0.

##### For *Daphnia pulex*:

1. If the NOEC for survival is less than the critical dilution (100.0%), enter a "1"; otherwise, enter a "0" for Parameter No. TEM3D- 1-**Fail**.
  2. Report the NOEC for survival, Parameter TOM3D -0.0%.
  3. Report the highest (critical dilution or control) Coefficient of Variation, Parameter TQM3D - 0.00%.
- 87.5% survival occurred when the pH in the 100% effluent concentration was adjusted to a range of 6.0-9.0.

**This report contains a total of 34 pages, including this page. The results pertain only to the samples listed in the chain of custody documents in Appendix A. The information contained within meets the requirements set forth by ADEQ. The chemical data in this report is for monitoring purposes only and should not be reported on discharge monitoring reports.**



## **Bio-Analytical Laboratories**

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Doyline, LA 71023

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1-800-259-1246  
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**THE RESULTS OF TWO 48-HOUR ACUTE  
TOXICITY TESTS  
FOR OUTFALL 007  
AT**

**EL DORADO CHEMICAL COMPANY  
El Dorado, Arkansas**

**NPDES #AR0000752  
AFIN #70-00040**

**EPA Methods 2000.0 and 2021.0**

**Project X5339**

**Test Dates: February 3 - 5, 2014  
Report Date: February 17, 2014**

**Prepared for:**  
Ms. Larken Pennington  
El Dorado Chemical Company  
P.O. Box 231  
El Dorado, AR 71731

**Prepared by:**  
Ginger Briggs  
Bio-Analytical Laboratories  
P.O. Box 527  
Doyline, LA 71023  
ADEQ #88-0630

BAL  
ADEQ #88-0630  
Project X5339

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BAL  
ADEQ #88-0630  
Project X5339

## 1.0 Introduction

Bio-Analytical Laboratories (BAL), Doyline, Louisiana conducted two 48-hour acute toxicity tests for Outfall 007 at El Dorado Chemical Company, El Dorado, Arkansas. The test organisms used were the fathead minnow, *Pimephales promelas* and the cladoceran, *Daphnia pulex*. The purpose of this study is to determine if an appropriately dilute effluent sample adversely affects the survival of the test organism. Toxicity is defined as a statistically significant difference at the 95 percent confidence level between the survival of the test organisms in the critical dilution (the effluent concentration representative of the proportion of effluent in the receiving water during critical low flow or critical mixing conditions) compared to the survival of the test organisms in the control. The test endpoints are the No-Observed-Effect-Concentration (NOEC), which is defined as the highest effluent concentration that is not statistically different from the control, and the 48-hour  $LC_{50}$ , the concentration in which 50 percent of the test organisms died.

## 2.0 Methods and Materials

### 2.1 Test Methods

All methods followed were according to the latest edition of "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA-821-R-02-012), "Standard Methods for The Examination of Water and Wastewater. 20<sup>th</sup> Edition" (APHA 1998. Chemical results using this edition are listed in the report as SM 1997), and BAL's standard operating procedures.

### 2.2 Test Organisms

The fathead minnows were raised in-house at test temperature and were approximately thirteen days old at test initiation. The *Daphnia pulex* test organisms were also raised in-house at test temperature and were less than 24 hours old at test initiation. Forty-eight hour reference toxicant tests, using sodium chloride (NaCl), were conducted monthly in order to document organism sensitivity and demonstration of capability.

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Project X5339

### 2.3 Dilution Water

Soft reconstituted water made per EPA guidelines was used as the dilution water and the control for the acute tests.

### 2.4 Test Concentrations

The test concentrations used in the fathead minnow test were 100.0, 75.0, 56.0, 50.0, 42.0 and 32.0 percent effluent and a reconstituted water control. Due to the lack of available *Daphnia pulex* neonates, the test concentrations used in the daphnid test were 100.0, 50.0 and 32.0 percent effluent and a reconstituted water control. The critical dilution was defined as 100.0 percent effluent. The tests were conducted using five replicates of eight animals each for a total of 40 animals per concentration.

### 2.5 Sample Collection

One sample of Outfall 007 was collected by El Dorado Chemical personnel on February 2, 2014. Upon completion of collection, the sample was packed in ice and delivered to the laboratory by BAL personnel. The temperature upon arrival was 1.6<sup>0</sup> Celsius.

### 2.6 Sample Preparation

Upon arrival, the sample was logged in, given an identification number and refrigerated unless needed. Prior to use, the sample was warmed to 25±1<sup>0</sup> Celsius. The total residual chlorine level (SM4500-Cl D 1997) was measured with a Capital Controls<sup>R</sup> amperometric titrator and recorded if present. The total ammonia level was measured using a HACH<sup>R</sup> test strip. The pH of the effluent was adjusted from an initial pH of 4.0 to a pH range of 6.0-9.0, using 1.0 Normal Sodium Hydroxide solution (NaOH). An extra pH-adjusted 100.0 percent concentration was added to each test. Dissolved oxygen (SM4500-O G 1997), pH (SM4500-H+ B 1997) and conductivity (SM2510-B 1997) measurements were taken on the control and each test concentration at test initiation, at each renewal and at test termination. Alkalinity (SM2320-B 1997) and hardness (SM2340-C 1997) levels were measured on the control and the highest effluent concentration.

### 2.7 Monitoring of the Tests

The tests were run in a Precision<sup>R</sup> dual controlled illuminated incubator at a temperature of 25±1<sup>0</sup> Celsius. An AEMC<sup>R</sup> data logger was used to monitor diurnal temperature throughout the testing period. Light cycle and intensity were recorded twice a month.

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ADEQ #88-0630  
Project X5339

## 2.8 Data Analysis

The NOEC and LC<sub>50</sub> values values were obtained by approved EPA methods of analysis, using the ToxCalc statistical program.

## 3.0 Results and Discussion

The results of the tests can be found in Table 1. Significant differences in survival were noted in the critical dilution in both tests after 24 hours of exposure (p=.05). The NOEC value for the *Daphnia pulex* and the fathead minnow test was zero percent effluent (p=.05). The 48-hour LC<sub>50</sub> value for the *Daphnia pulex* and the fathead minnow test was 16.0 percent effluent. Adjusting the pH to neutral significantly reduced the mortality in both tests. See Appendix C-Statistical Analysis, for more information.

**Table 1: Results of the 48-hour Acute Definitive Toxicity Tests**

Percent Effluent	Percent Survival	
	<i>Pimephales promelas</i>	<i>Daphnia pulex</i>
Test Organism	<i>Pimephales promelas</i>	<i>Daphnia pulex</i>
Control	100.0	100.0
32.0	0.0	0.0
42.0	0.0	-----
50.0	0.0	0.0
56.0	0.0	-----
75.0	0.0	-----
100.0	0.0	0.0
100.0 pH adjusted	95.0	87.5

The 48-hour reference toxicant test results indicate that the test organisms were within the respective sensitivity range. The graphs of the acute reference toxicant tests can be found in Appendix D.

BAL  
ADEQ #88-0630  
Project X5339

#### 4.0 Conclusions

The sample of Outfall 007 collected from El Dorado Chemical Company, El Dorado, Arkansas, on February 2, 2014, was found to be lethally toxic to the fathead minnow test organisms and the *Daphnia pulex* test organisms in the 100.0 percent critical dilution after 48 hours of exposure ( $p=.05$ ). The 48-hour  $LC_{50}$  value for the *Daphnia pulex* and fathead minnow tests was 16.0 percent effluent ( $p=.05$ ). Adjusting the pH to a range of 6.0-9.0 significantly reduced the toxicity of the sample.



BAL  
ADEQ #88-0630  
Project X5339

### 5.0 References

- EPA, 2002. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition. EPA-821-R-02-012, Office of Water.
- EPA, 2000. Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the National Pollutant Discharge Elimination System. EPA-833-R-00-003, Office of Wastewater Management.
- EPA, 2000. Method Guidance and Recommendations for Whole Effluent (WET) Testing. EPA-821-B-00-04, Office of Water
- APHA, 1998. Standard Methods for The Examination of Water and Wastewater. 20<sup>th</sup> Edition.

**APPENDIX A**  
**CHAIN-OF-CUSTODY DOCUMENTS**



**Bio-Analytical Laboratories**

3240 Spurgin Road  
Post Office Box 527  
Doyline, LA 71023

(510) 743-2772  
7-800-258-1248  
Fax: (510) 743-2773

NELAP/LELAP 01975, ADEQ 88-0630, TCEQ T104704278

Laboratory Use Only:

<b>Company:</b> El Dorado Chemical Company		<b>Phone:</b> (870) 863-1484		<b>Analysis:</b>					<b>Project Number:</b>  X5339				
<b>Address:</b> 4500 Norwest Ave., El Dorado, AR 71731		<b>Fax:</b> (870) 863-7499		Chronic Ceriodaphnia	Chronic minnow	Acute minnow(fresh/marine)	Acute Daphnia species	Acute Mysid		Acute Ceriodaphnia	Fecal Coliform	<b>Temp. upon arrival:</b> 1.6°C	
<b>Permit #:</b> AR0000752/AFIN 70-00040		<b>Purchase Order:</b>											<b>Lab Control Number:</b>
<b>Sampler's Signature/Printed Name/Affiliation:</b> Larken Pennington / Larken Pennington / EDCC									08597				
<b>Date Start</b> Date End	<b>Time Start</b> Time End	<b>C</b>	<b>G</b>	<b># and type of container</b>	<b>Sample Identification</b>								
2/2/14- 2/2/14	9:20-11:20 am 5:00pm-7:25 pm			6 half gallon	007								
<b>Relinquished by/Affiliation:</b> Larken Pennington / EDCC				<b>Date:</b> 2/3/14	<b>Time:</b> 1000	<b>Received by/Affiliation:</b> J B		<b>Date:</b> 2/3/14	<b>Time:</b> 1000				
<b>Relinquished by/Affiliation:</b>				<b>Date:</b>	<b>Time:</b>	<b>Received by/Affiliation:</b>		<b>Date:</b>	<b>Time:</b>				
<b>Relinquished by/Affiliation:</b> J B				<b>Date:</b> 2/3/14	<b>Time:</b> 1200	<b>Received by/Affiliation:</b> O. J. Orupp		<b>Date:</b> 2/3/14	<b>Time:</b> 1500				
<b>Method of Shipment:</b> <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Bus <input type="checkbox"/> Fed Ex <input type="checkbox"/> DHL <input type="checkbox"/> UPS <input type="checkbox"/> Client <input type="checkbox"/> Other <b>Tracking #</b> _____													
<b>Comments:</b>													
COC Rev. 3.0													

**APPENDIX B**  
**RAW DATA SHEETS**

BIO-ANALYTICAL LABORATORIES  
ACUTE TOXICITY TEST WATER QUALITY DATA

Project# X5339

Client: EDCC/El Dorado Chemical Company

Address: 4500 Northwest Ave El Dorado AR 71731

NPDES#AR0000752 Outfall 007

Technicians: EGB/AH/RC

Test initiated: Date 2/3/14 Time 1400

Test terminated: Date 2/5/14 Time 1355

Dissolved Oxygen Meter: Model # YSI 55D Serial #06E2089 AU

pH Meter: Model #Orion 230A+ Serial #105253

Conductivity Meter: Model # Control Co. Serial #80277924

Amperometric Titrator: Model #Fischer-Porter Serial #92W445766

Sample Information

Sample ID#	Initial D.O. (mg/L and %)	Aerate? Minutes/Final D.O.(mg/L & %)	Total Residual Chlorine (mg/L)	Dechlorinated? Amount?	Ammonia (NH3) mg/L	Salinity	Hardness	Alkalinity	Tech
C8597	10.5 / 130.8%	7.9 / 9.1%	40.01	NO	3.0	N/A	584.0		AH
↓	8.9 / 10.6%	8.9 / 15.5%	↓	↓	↓	↓			

Dilution Water Information

Dilution Water	ID#	Initial D.O (mg/L & %)	Aerate? Minutes/D.O (mg/L & %)	Total Residual Chlorine (mg/L)	Ammonia (NH3) mg/L	pH	Hardness	Alkalinity	Tech
Soft H2O	3583	NA	NA	NA	NA	7.2	20.0	28.0	EGB
↓									

Test Species Information

Test Species Info.	Species: <u>P. rubic</u> ID#: <u>011 ECT</u>	Species: <u>P. promelas</u> ID#: <u>011 12114</u>	Species: ID#:	Species: ID#:
Age	<u>24h</u>	<u>~13d</u>		
Test Container Size	<u>30ml</u>	<u>250ml</u>		
Test volume	<u>25ml</u>	<u>200ml</u>		
Feeding: Type	<u>VCT: Algae Artemia</u>			
Amount	<u>Fed 7hrs prior to test initiation</u>			
Aeration?	<u>NA</u>	<u>NA</u>		
Amount				
Condition of survivors	<u>Good AH 2/5/14</u>	<u>Good AH 2/5/14</u>		

Comments: pH → 4.0

BIO-ANALYTICAL LABORATORIES ACUTE TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Project# X5339

Test started: Date 2/3/14 Time 1400

Client El Dorado Chemical

Test ended: Date 2/5/14 Time 1330

Sample Description 007

Test Species D. Dux ID# BAU5CT

Technician: 0hour AH 24hour AH 48hour AH 72hour     96hour      
 Time: 0hour 1400 24hour 1440 48hour 1330 72hour     96hour      
 Temperature (°C): 0hour 24.7 24hour 24.0 48hour 24.2 72hour     96hour    

Test Dilution %	Replicate	Test Salinity	# Live Organisms					Dissolved Oxygen					pH					Conductivity					
			0 hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	
0	A	N/A	8	8	8			8.2	<del>8.1</del>	7.9			7.3	<del>7.1</del>	7.1			179.1	<del>233</del>	171.3	222		
	B		8	8	8																		
	C		8	8	8																		
	D		8	8	8																		
	E		8	8	8																		
32	A		8	0	0			8.1	<del>8.2</del>	4.2			4.2	<del>5.0</del>			82.1	<del>79.9</del>					
	B		8	0	0																		
	C		8	0	0																		
	D		8	0	0																		
	E		8	0	0																		
Chemistry Tech prerenewal/postrenewal								AH	<del>AH</del>	RC	AH		AH	<del>AH</del>	RC	AH		AH	<del>AH</del>	RC	AH		

BIO-ANALYTICAL LABORATORIES ACUTE TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Project# X5339

Test started: Date 2/3/14

Time 1400

Client El Dorado Chemical

Test ended: Date 2/5/14

Time 1330

Sample Description 007

Test Species D. Pulex

ID# BAL ECT

Technician: 0hour AH 24hour AH 48hour AH 72hour     96hour    

Time: 0hour 1400 24hour 1440 48hour 1330 72hour     96hour    

Temperature (°C): 0hour 24.7 24hour 24.0 48hour 24.2 72hour     96hour    

Test Dilution %	Replicate	Test Salinity	# Live Organisms					Dissolved Oxygen					pH					Conductivity					
			0 Hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	
50 42 pH 2/3/14	A	N/A	∞	0	0			8.0	8.2			4.1	4.2			1130	1102						
	B		∞	0	0																		
	C		∞	0	0																		
	D		∞	0	0																		
	E		∞	0	0																		
100 100 pH 2/3/14	D		∞	0	0			7.8	8.2			4.0	4.0			2110	1932						
	B		∞	0	0																		
	C		∞	0	0																		
	D		∞	0	0																		
	E		∞	0	0																		
Chemistry Tech prerenewal/postrenewal																							
							AH	AH	RC			AH	AH	RC			AH	AH	RC				

BIO-ANALYTICAL LABORATORIES ACUTE TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Project# X5339

Test started: Date 2/3/14

Time 1400

Client El Dorado Chemical

Test ended: Date 2/5/14

Time 1330

Sample Description 007

Test Species D. Pulex

ID# BAU ECT

Technician: Ohour AH 24hour AH 48hour AH 72hour     96hour    

Time: Ohour 1400 24hour 1440 48hour 1530 72hour     96hour    

Temperature (°C): Ohour 24.7 24hour 24.0 48hour 24.2 72hour     96hour    

Test Dilution %	Replicate	Test Salinity	# Live Organisms					Dissolved Oxygen					pH					Conductivity						
			0 hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96		
100 PH 100%	A	N/A	8	8	7			18.8	19.1	19			7.7	7.7	7.0			2200	2200	2270	2300			
	B		8	8	7																			
	C		8	7	7																			
	D		8	8	8																			
	E		8	7	6																			
	A		8					/					/					/						
	B		8																					
	C		8																					
	D		8																					
	E		8																					
Chemistry Tech prerenewal/postrenewal																								

ACUTE2 Rev 1.0



BIO-ANALYTICAL LABORATORIES ACUTE TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Project# X5339

Test started: Date 2/3/14

Time 1445

Client El Dorado Chemical

Test ended: Date 2/5/14

Time 1355

Sample Description 007

Test Species P. promelas

ID# BRU12114

Technician: Ohour RC 24hour RC 48hour AM 72hour     96hour    

Time: Ohour 1445 24hour 1340 48hour 1355 72hour     96hour    

Temperature (°C): Ohour 24.7 24hour 24.2 48hour 24.2 72hour     96hour    

Test Dilution %	Replicate	Test Salinity	# Live Organisms					Dissolved Oxygen					pH					Conductivity													
			0 hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96									
0	A	N/A	8	8	8						8.2	7.7				7.3	7.1				179	171	173	172							
	B		8	8	8																										
	C		8	8	8																										
	D		8	8	8																										
	E		8	8	8																										
32	A		8	0	0					8.1	8.0	—			7.4	4.5	—				82	83	—								
	B		8	0	0						8.0	—			7.4	4.5	—				82	83	—								
	C		8	0	0																										
	D		8	0	0																										
		Chemistry Tech prerenewal/postrenewal									AM	RC	AM			AM	RC	AM				AM	RC	AM							

BIO-ANALYTICAL LABORATORIES ACUTE TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Project# X5339

Test started: Date 2/3/14 Time 1445

Client El Dorado Chemical

Test ended: Date 2/5/14 Time 1355

Sample Description 007

Test Species P. promelas ID# BR112114

Technician: Ohour RC 24hour RC 48hour AH 72hour RC 96hour RC

Time: Ohour 1445 24hour 1340 48hour 1355 72hour RC 96hour RC

Temperature (°C): Ohour 24.7 24hour 24.2 48hour 24.2 72hour RC 96hour RC

Test Dilution %	Replicate	Test Salinity N/A	# Live Organisms					Dissolved Oxygen					pH					Conductivity				
			0 hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
42	A		8	0	0			8.08.0				4.1	4.3				1000					
	B		8	0	0																	
	C		8	0	0																	
	D		8	0	0																	
	E		8	0	0																	
50	A		8	0	0			8.08.1				4.1	4.3				1130					
	B		8	0	0																	
	C		8	0	0																	
	D		8	0	0																	
	E		8	0	0																	
Chemistry Tech prerenewal/postrenewal								AH	RC	RC								AH	RC	RC		

BIO-ANALYTICAL LABORATORIES ACUTE TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Project# X5339

Test started: Date 2/3/14 Time 1445

Client El Dorado Chemical

Test ended: Date 2/5/14 Time 1355

Sample Description 007

Test Species P. promelas ID# BRU 12114

Technician: Ohour RC 24hour RC 48hour AI 72hour RC 96hour RC

Time: Ohour 1445 24hour 1340 48hour 1255 72hour RC 96hour RC

Temperature (°C): Ohour 24.7 24hour 24.2 48hour 24.2 72hour RC 96hour RC

Test Dilution %	Replicate	Test Salinity	# Live Organisms					Dissolved Oxygen					pH					Conductivity					
			0 hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	
56	A	N/A	∞	0	0			80	81				41	43			1200	1205					
	B		∞	0	0																		
	C		∞	0	0																		
	D		∞	0	0																		
	E		∞	0	0																		
75	A		∞	0	0			79	81				41	41			1205	1201					
	B		∞	0	0																		
	C		∞	0	0																		
	D		∞	0	0																		
	E		∞	0	0																		
Chemistry Tech prerenewal/postrenewal								AI	RC				AI	RC			AI	RC					

BIO-ANALYTICAL LABORATORIES ACUTE TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Project# X5339

Test started: Date 2/3/14 Time 1445

Client El Dorado Chemical

Test ended: Date 2/10/14 Time 1355

Sample Description 007

Test Species P. promelas ID# BRM 12114

Technician: Ohour RC 24hour RC 48hour AH 72hour RC 96hour RC  
 Time: Ohour 1445 24hour 1340 48hour 1355 72hour RC 96hour RC  
 Temperature (°C): Ohour 24.7 24hour 24.2 48hour 24.2 72hour RC 96hour RC

Test Dilution %	Replicate	Test Salinity	# Live Organisms					Dissolved Oxygen					pH					Conductivity					
			0 hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	
100	A	N/A	8	0	0			78.0					40.4					2110	2100				
	B		8	0	0																		
	C		8	0	0																		
	D		8	0	0																		
	E		8	0	0																		
100 pH Adj.	A		8	8	8			78.7	79.74				7.755	7.710			2200	2180	2270	2350			
	B		8	8	8																		
	C		8	8	7																		
	D		8	8	7																		
	E		8	8	8																		
Chemistry Tech prerenewal/postrenewal																							

**APPENDIX C**  
**STATISTICAL ANALYSIS**

**Daphnid Acute Test-48 Hr Survival**

X5339

Start Date: 2/3/2014	Test ID: X5339DP	Sample ID: 7	Page 21 of 34
End Date: 2/5/2014	Lab ID: ADEQ880630	Sample Type: EFF2-Industrial	
Sample Date: 2/3/2014	Protocol: EPAAW02-EPA/821/R-02-01	Test Species: CD-Ceriodaphnia dubia	
Comments:			

Conc-%	1	2	3	4	5
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000
32	0.0000	0.0000	0.0000	0.0000	0.0000
50	0.0000	0.0000	0.0000	0.0000	0.0000
100	0.0000	0.0000	0.0000	0.0000	0.0000
100PHADJ	0.8750	0.8750	0.8750	1.0000	0.7500

Conc-%	Mean	N-Mean	Transform: Arcsin Square Root				N	Rank Sum	1-Tailed Critical
			Mean	Min	Max	CV%			
D-Control	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5		
32	0.0000	0.0000	0.1777	0.1777	0.1777	0.000	5		
50	0.0000	0.0000	0.1777	0.1777	0.1777	0.000	5		
100	0.0000	0.0000	0.1777	0.1777	0.1777	0.000	5		
*100PHADJ	0.8750	0.8750	1.2137	1.0472	1.3931	10.087	5	17.50 19.00	

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05)	0.67623	0.842	0.2947	4.53238
Equality of variance cannot be confirmed				

**Hypothesis Test (1-tail, 0.05)**

Wilcoxon Two-Sample Test indicates significant differences  
Treatments vs D-Control

Daphnid Acute Test-48 Hr Survival

X5339

Start Date: 2/3/2014 Test ID: X5339DP Sample ID: 7 Page 22 of 34  
 End Date: 2/5/2014 Lab ID: ADEQ880630 Sample Type: EFF2-Industrial  
 Sample Date: 2/3/2014 Protocol: EPAAW02-EPA/821/R-02-01 Test Species: CD-Ceriodaphnia dubia  
 Comments:

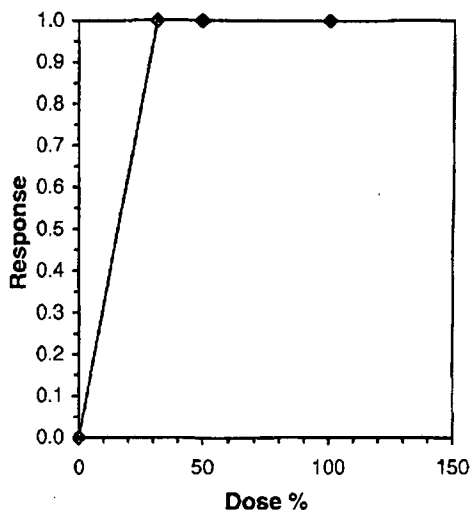
Conc-%	1	2	3	4	5
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000
32	0.0000	0.0000	0.0000	0.0000	0.0000
50	0.0000	0.0000	0.0000	0.0000	0.0000
100	0.0000	0.0000	0.0000	0.0000	0.0000
100PHADJ	0.8750	0.8750	0.8750	1.0000	0.7500

Conc-%	Mean	N-Mean	Transform: Arcsin Square Root					Isotonic	
			Mean	Min	Max	CV%	N	Mean	N-Mean
D-Control	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5	1.0000	1.0000
32	0.0000	0.0000	0.1777	0.1777	0.1777	0.000	5	0.0000	0.0000
50	0.0000	0.0000	0.1777	0.1777	0.1777	0.000	5	0.0000	0.0000
100	0.0000	0.0000	0.1777	0.1777	0.1777	0.000	5	0.0000	0.0000
100PHADJ	0.8750	0.8750	1.2137	1.0472	1.3931	10.087	5		

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05)	0.67623	0.842	0.2947	4.53238
Equality of variance cannot be confirmed				

Linear Interpolation (200 Resamples)				
Point	%	SD	95% CL(Exp)	Skew
IC05*	1.600	0.000	1.600	1.600 #DIV/0!
IC10*	3.200	0.000	3.200	3.200 -1.0076
IC15*	4.800	0.000	4.800	4.800 1.0076
IC20*	6.400	0.000	6.400	6.400 -1.0076
IC25*	8.000	0.000	8.000	8.000 #DIV/0!
IC40*	12.800	0.000	12.800	12.800 -1.0076
IC50*	16.000	0.000	16.000	16.000 #DIV/0!

\* indicates IC estimate less than the lowest concentration



ECB  
2/10/14

**Acute Fish Test-48 Hr Survival**

X5339  
Page 23 of 34

Start Date: 2/3/2014      Test ID: X5339PP      Sample ID: 7  
 End Date: 2/5/2014      Lab ID: ADEQ880630      Sample Type: EFF2-Industrial  
 Sample Date: 2/3/2014      Protocol: EPAAW02-EPA/821/R-02-01      Test Species: PP-Pimephales promelas

Comments:

Conc-%	1	2	3	4	5
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000
32	0.0000	0.0000	0.0000	0.0000	0.0000
42	0.0000	0.0000	0.0000	0.0000	0.0000
50	0.0000	0.0000	0.0000	0.0000	0.0000
56	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000
100	0.0000	0.0000	0.0000	0.0000	0.0000
100PHADJ	1.0000	1.0000	0.8750	0.8750	1.0000

Conc-%	Mean	N-Mean	Transform: Arcsin Square Root					N	Rank Sum	1-Tailed Critical
			Mean	Min	Max	CV%				
D-Control	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5			
32	0.0000	0.0000	0.1777	0.1777	0.1777	0.000	5			
42	0.0000	0.0000	0.1777	0.1777	0.1777	0.000	5			
50	0.0000	0.0000	0.1777	0.1777	0.1777	0.000	5			
56	0.0000	0.0000	0.1777	0.1777	0.1777	0.000	5			
75	0.0000	0.0000	0.1777	0.1777	0.1777	0.000	5			
100	0.0000	0.0000	0.1777	0.1777	0.1777	0.000	5			
100PHADJ	0.9500	0.9500	1.3196	1.2094	1.3931	7.623	5	22.50	19.00	

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05)	0.81451	0.842	-0.6847	-0.2143
Equality of variance cannot be confirmed				
<b>Hypothesis Test (1-tail, 0.05)</b>				
Wilcoxon Two-Sample Test indicates no significant differences				
Treatments vs D-Control				



**Acute Fish Test-48 Hr Survival**

X5339  
Page 24 of 34

Start Date: 2/3/2014      Test ID: X5339PP      Sample ID: 7  
 End Date: 2/5/2014      Lab ID: ADEQ880630      Sample Type: EFF2-Industrial  
 Sample Date: 2/3/2014      Protocol: EPAAW02-EPA/821/R-02-01      Test Species: PP-Pimephales promelas  
 Comments:

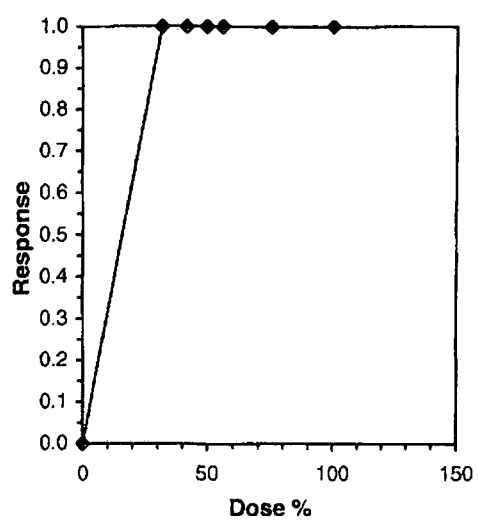
Conc-%	1	2	3	4	5
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000
32	0.0000	0.0000	0.0000	0.0000	0.0000
42	0.0000	0.0000	0.0000	0.0000	0.0000
50	0.0000	0.0000	0.0000	0.0000	0.0000
56	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000
100	0.0000	0.0000	0.0000	0.0000	0.0000
100PHADJ	1.0000	1.0000	0.8750	0.8750	1.0000

Conc-%	Mean	N-Mean	Transform: Arcsin Square Root					Isotonic	
			Mean	Min	Max	CV%	N	Mean	N-Mean
D-Control	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5	1.0000	1.0000
32	0.0000	0.0000	0.1777	0.1777	0.1777	0.000	5	0.0000	0.0000
42	0.0000	0.0000	0.1777	0.1777	0.1777	0.000	5	0.0000	0.0000
50	0.0000	0.0000	0.1777	0.1777	0.1777	0.000	5	0.0000	0.0000
56	0.0000	0.0000	0.1777	0.1777	0.1777	0.000	5	0.0000	0.0000
75	0.0000	0.0000	0.1777	0.1777	0.1777	0.000	5	0.0000	0.0000
100	0.0000	0.0000	0.1777	0.1777	0.1777	0.000	5	0.0000	0.0000
100PHADJ	0.9500	0.9500	1.3196	1.2094	1.3931	7.623	5	0.0000	0.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05)	0.81451	0.842	-0.6847	-0.2143
Equality of variance cannot be confirmed				

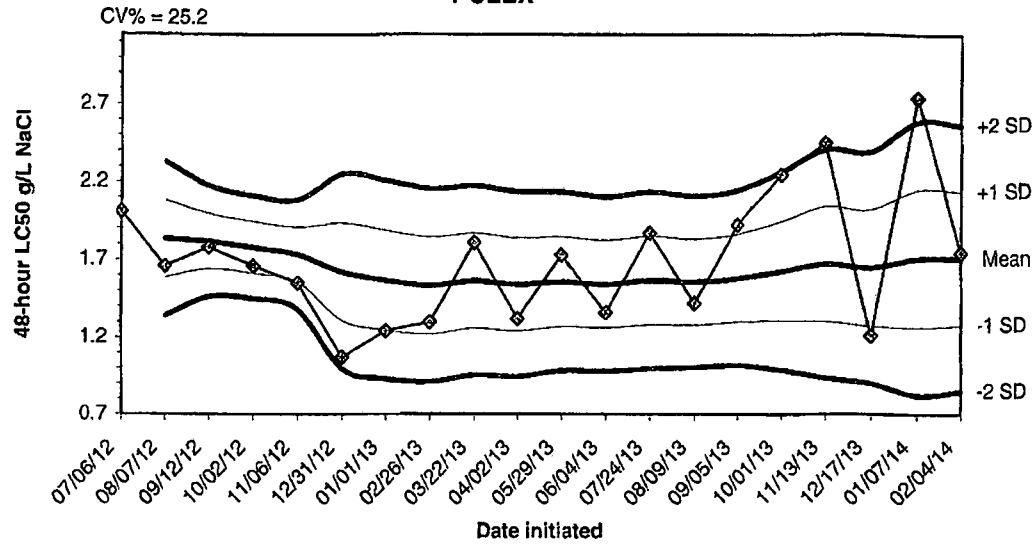
Linear Interpolation (200 Resamples)					
Point	%	SD	95% CL(Exp)	Skew	
IC05*	1.600	0.000	1.600	1.600	#DIV/0!
IC10*	3.200	0.000	3.200	3.200	-1.0076
IC15*	4.800	0.000	4.800	4.800	1.0076
IC20*	6.400	0.000	6.400	6.400	-1.0076
IC25*	8.000	0.000	8.000	8.000	#DIV/0!
IC40*	12.800	0.000	12.800	12.800	-1.0076
IC50*	16.000	0.000	16.000	16.000	#DIV/0!

\* indicates IC estimate less than the lowest concentration



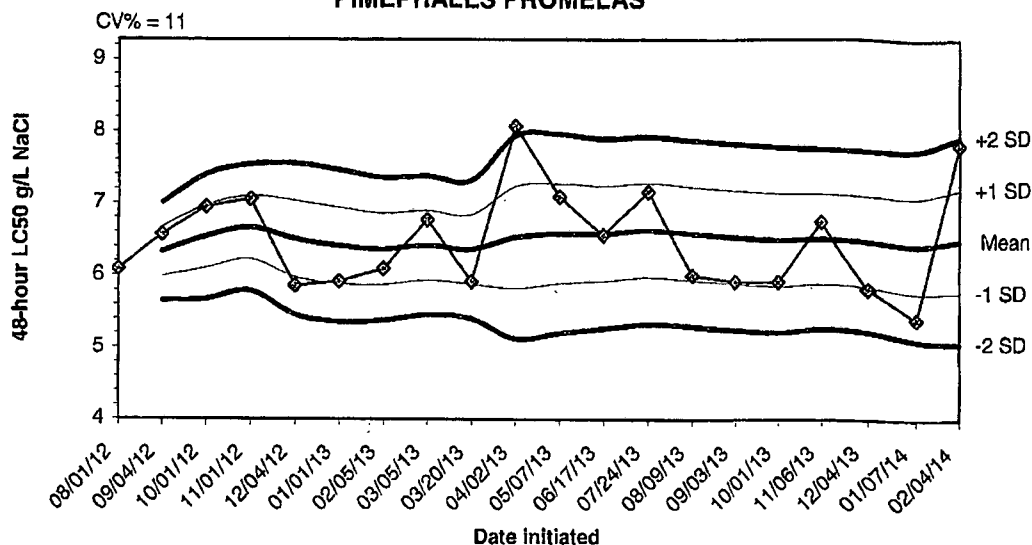
**APPENDIX D**  
**QUALITY ASSURANCE CHARTS**

**2014 48-HOUR REFERENCE TOXICANT TEST RESULTS FOR DAPHNIA PULEX**



Dates	Values	Mean	-1 SD	-2 SD	+1 SD	+2 SD
07/06/12	2.0100					
08/07/12	1.6600	1.8350	1.5875	1.3400	2.0825	2.3300
09/12/12	1.7800	1.8167	1.6388	1.4610	1.9945	2.1724
10/02/12	1.6600	1.7775	1.6125	1.4475	1.9425	2.1075
11/06/12	1.5500	1.7320	1.5566	1.3812	1.9074	2.0828
12/31/12	1.0700	1.6217	1.3092	0.9967	1.9342	2.2467
01/01/13	1.2400	1.5671	1.2475	0.9278	1.8868	2.2065
02/26/13	1.3000	1.5338	1.2231	0.9124	1.8444	2.1551
03/22/13	1.8100	1.5644	1.2596	0.9548	1.8693	2.1741
04/02/13	1.3200	1.5400	1.2424	0.9448	1.8376	2.1352
05/29/13	1.7300	1.5573	1.2692	0.9811	1.8454	2.1335
06/04/13	1.3600	1.5408	1.2603	0.9798	1.8214	2.1019
07/24/13	1.8700	1.5662	1.2825	0.9988	1.8498	2.1335
08/09/13	1.4200	1.5557	1.2804	1.0050	1.8311	2.1064
09/05/13	1.9200	1.5800	1.2985	1.0170	1.8615	2.1430
10/01/13	2.2400	1.6213	1.3032	0.9851	1.9393	2.2574
11/13/13	2.4500	1.6700	1.3022	0.9344	2.0378	2.4056
12/17/13	1.2100	1.6444	1.2715	0.8986	2.0174	2.3903
01/07/14	2.7400	1.7021	1.2611	0.8200	2.1431	2.5842
02/04/14	1.7400	1.7040	1.2747	0.8453	2.1333	2.5627

2014 48-HOUR ACUTE REFERENCE TOXICANT TEST RESULTS FOR  
PIMEPHALES PROMELAS



Dates	Values	Mean	-1 SD	-2 SD	+1 SD	+2 SD
08/01/12	6.0900					
09/04/12	6.5700	6.3300	5.9906	5.6512	6.6694	7.0088
10/01/12	6.9500	6.5367	6.1057	5.6747	6.9676	7.3986
11/01/12	7.0600	6.6675	6.2290	5.7905	7.1060	7.5445
12/04/12	5.8600	6.5060	5.9819	5.4579	7.0301	7.5541
01/01/13	5.9200	6.4083	5.8821	5.3558	6.9346	7.4608
02/05/13	6.0900	6.3629	5.8676	5.3724	6.8581	7.3533
03/05/13	6.7700	6.4138	5.9332	5.4526	6.8943	7.3749
03/20/13	5.9200	6.3589	5.8802	5.4015	6.8376	7.3163
04/02/13	8.0700	6.5300	5.8254	5.1208	7.2346	7.9392
05/07/13	7.0900	6.5809	5.8915	5.2020	7.2704	7.9598
06/17/13	6.5600	6.5792	5.9218	5.2644	7.2366	7.8940
07/24/13	7.1600	6.6238	5.9741	5.3244	7.2735	7.9232
08/09/13	6.0000	6.5793	5.9332	5.2871	7.2254	7.8715
09/03/13	5.9200	6.5353	5.8899	5.2444	7.1808	7.8262
10/01/13	5.9200	6.4969	5.8546	5.2124	7.1391	7.7814
11/06/13	6.7500	6.5118	5.8869	5.2620	7.1366	7.7615
12/04/13	5.8100	6.4728	5.8444	5.2160	7.1012	7.7295
01/07/14	5.4000	6.4163	5.7579	5.0995	7.0747	7.7331
02/04/14	7.8200	6.4865	5.7729	5.0593	7.2001	7.9137

**APPENDIX E**  
**AGENCY FORMS**

**Acute Forms  
Daphnia pulex Survival**

**Permittee: El Dorado Chemical - Outfall 007**  
**NPDES Permit Number: AR0000752/ AFIN 70-00040**

**Composite Collected From: 2/2/14 To: 2/2/14**  
**From: To:**

**Test Initiated: 2/3/14**

**Dilution Water Used: Receiving Water X Reconstituted Water**

**Dilution Series Results - Percent Survival**

TIME OF READING	REP	0	32.0	50.0	100.0	100.0 pH		
24-hour	A	100.0	100.0	0.0	0.0	100.0		
	B	100.0	100.0	0.0	0.0	100.0		
	C	100.0	100.0	0.0	0.0	87.5		
	D	100.0	100.0	0.0	0.0	100.0		
	E	100.0	100.0	0.0	0.0	87.5		
48-hour	A	100.0	0.0	0.0	0.0	87.5		
	B	100.0	0.0	0.0	0.0	87.5		
	C	100.0	0.0	0.0	0.0	87.5		
	D	100.0	0.0	0.0	0.0	100.0		
	E	100.0	0.0	0.0	0.0	75.0		
	Mean	100.0	0.0	0.0	0.0	87.5		

**1. Dunnett's Procedure or Steel's Many-One Rank Test as appropriate: Is the mean survival at 48 hours significantly different (p=.05) than the control survival for the % effluent corresponding to:**

- a.) **LOW FLOW OR CRITICAL DILUTION (100.0%)**    **X YES**                    **NO**  
b.) **1/2 LOW FLOW OR 2X CRITICAL DILUTION (N/A%)**    **YES**                    **NO**

**2. Enter percent effluent corresponding to the LC<sub>50</sub> below:**

LC<sub>50</sub> =        **16.0% effluent**

**95 % confidence limits: N/A**

**Method of LC<sub>50</sub> calculation: Graphical**

**3. If you answered NO to 1.a) enter (P) otherwise enter (F): F**

**4. Enter response to item 3 on DMR Form, parameter TEM3D**

**5. If you answered NO to 1.b) enter (P) otherwise enter (F): N/A**

**6. Enter response to item 5 on DMR Form, parameter TFM3D**

**Biomonitoring  
Daphnia pulex 48 hour Acute Static Renewal  
Chemical Parameters Chart\***

Permittee: El Dorado Chemical - Outfall 007  
 NPDES Number: AR0000752/ AFIN 70-00040  
 Contact: Larken Pennington  
 Analyst: Haughton

Sample Collected      From:      Date 2/2/14      Time 0920  
    To:      Date 2/2/14      Time 1320  
 Test Begin                              Date 2/3/14      Time 1400  
 Test End                                 Date 2/5/14      Time 1330

Parameter	D.O.			Temperature			Alkalinity			Hardness			pH			
	Dilut./Time	0hrs.	24hrs	48hrs	0hrs	24hrs	48hrs	0hrs	24hrs	48hrs	0hrs	24hrs	48hrs	0hrs	24hrs	48hrs
0		8.2	8.2	7.9	24.7	24.0	24.2	28.0			20.0			7.3	7.3	7.1
32.0		8.1	8.2		24.7	24.0								4.2	5.0	
50.0		8.0	8.2		24.7	24.0								4.1	4.3	
100.0		7.8	8.2		24.7	24.0		0			584.0			4.0	4.0	
100.0 pH		7.8	7.9	7.9	24.7	24.0	24.2							7.7	7.2	7.0

\*This Form is to be submitted with each DMR.  
 Alkalinity and hardness to be reported as mg/l CaCO<sub>3</sub>

**Acute Forms**  
**Pimephales promelas Survival**

Permittee: El Dorado Chemical - Outfall 007  
NPDES Permit Number: AR0000752/ AFIN 70-00040

Composite Collected      From: 2/2/14      To: 2/2/14  
From:      To:

Test Initiated: 2/3/14

Dilution Water Used:      Receiving Water       Reconstituted Water

**Dilution Series Results - Percent Survival**

TIME OF READING	REP	0	32.0	42.0	50.0	56.0	75.0	100.0	100.0 pH
24-hour	A	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
	B	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
	C	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
	D	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
	E	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
48-hour	A	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
	B	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
	C	100.0	0.0	0.0	0.0	0.0	0.0	0.0	87.5
	D	100.0	0.0	0.0	0.0	0.0	0.0	0.0	87.5
	E	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
	Mean	100.0	0.0	0.0	0.0	0.0	0.0	0.0	95.0

1. Dunnett's Procedure or Steel's Many-One Rank Test as appropriate: Is the mean survival at 48 hours significantly different ( $p=.05$ ) than the control survival for the % effluent corresponding to:

- a.) LOW FLOW OR CRITICAL DILUTION (100.0%)       YES      NO  
b.) 1/2 LOW FLOW OR 2X CRITICAL DILUTION (N/A %)      YES      NO

2. Enter percent effluent corresponding to the LC<sub>50</sub> below:

LC<sub>50</sub> =      16.0% effluent

95 % confidence limits: N/A

Method of LC<sub>50</sub> calculation: Graphical

3. If you answered NO to 1.a) enter (P) otherwise enter (F): F

4. Enter response to item 3 on DMR Form, parameter TEM3D

5. If you answered NO to 1.b) enter (P) otherwise enter (F): N/A

6. Enter response to item 5 on DMR Form, parameter TFM3D



**Biomonitoring  
Fathead minnow 48 hour Acute Static Renewal  
Chemical Parameters Chart\***

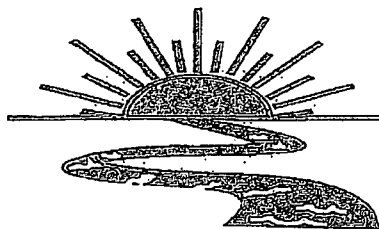
Permittee: El Dorado Chemical - Outfall 007  
 NPDES Number: AR0000752/ AFIN 70-00040  
 Contact: Larken Pennington  
 Analyst: Haughton, Callahan

Sample Collected	From:	Date 2/2/14	Time 0920
	To:	Date 2/2/14	Time 1320
Test Begin		Date 2/3/14	Time 1445
Test End		Date 2/5/14	Time 1355

Parameter	D.O.			Temperature			Alkalinity			Hardness			pH			
	Dilut./Time	0hrs.	24hrs	48hrs	0hrs	24hrs.	48hrs	0hrs	24hrs	48hrs	0hrs	24hrs	48hrs	0hrs	24hrs	48hrs
0	8.2	8.2	7.7	24.7	24.2	24.2	28.0				20.0			7.3	7.3	7.1
32.0	8.1	8.0		24.7	24.2									4.2	4.5	
42.0	8.0	8.0		24.7	24.2									4.1	4.3	
50.0	8.0	8.1		24.7	24.2									4.1	4.3	
56.0	8.0	8.1		24.7	24.2									4.1	4.3	
75.0	7.9	8.1		24.7	24.2									4.1	4.1	
100.0	7.8	8.0		24.7	24.2		0				584.0			4.0	4.1	
100.0 pH	7.8	7.9	7.4	24.7	24.2	24.2								7.7	7.2	7.0

\*This Form is to be submitted with each DMR.  
 Alkalinity and hardness to be reported as mg/l CaCO<sub>3</sub>

**APPENDIX F**  
**REPORT QUALITY ASSURANCE FORM**



## Bio-Analytical Laboratories

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Doyline, LA 71023

(318) 745-2772  
1-800-259-1246  
Fax: (318) 745-2773

### REPORT QUALITY ASSURANCE FORM

Client: El Dorado Chemical 007

Project#: X.5339

Chain of Custody Documents Checked by: AH 2/10/14  
Technician/Date

Raw Data Documents Checked by: AH 2/10/14  
Technician/Date

Statistical Analysis Package Checked by: EGB 2/10/14  
Quality Manager/Date

Quality Control Data Checked by: EGB 2/10/14  
Quality Manager/Date

Report Checked by: EGB 2/17/14  
Quality Manager/Date

I certify that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. The information contained in this document, to the best of my knowledge, is true, accurate and complete.

Kevin S. Seipp, BS  
Quality Manager

2/17/14  
Date

No part of this work may be altered in any form or by any means without written permission from Bio-Analytical Laboratories.

Bio-Analytical Laboratories (BAL)  
ADEQ#88-0630  
Project X5338

### Bio-Analytical Laboratories' Executive Summary

**Permittee:** El Dorado Chemical Company  
P.O. Box 231  
El Dorado, AR 71731

**Project #:** X5338

**Outfall:** Outfall 006 (contaminated storm water)

**Permit #:** AR0000752/ AFIN #70-00040

**Contact:** Ms. Larken Pennington

**Test Dates:** February 3 - 5, 2014

**Test Type:** 48-hour acute toxicity test using *Pimephales promelas* (EPA 2000.0).  
48-hour acute toxicity test using *Daphnia pulex* (EPA 2021.0)

**Results:**

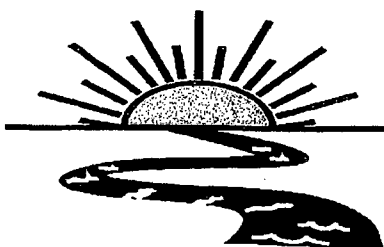
**For *Pimephales promelas*:**

1. If the NOEC for survival is less than the critical dilution (100.0%), enter a "1"; otherwise, enter a "0" for Parameter No. TEM6C- 0 - **Pass**
2. Report the NOEC for survival, Parameter TOM6C - 100.0%.
3. Report the highest (critical dilution or control) Coefficient of Variation, Parameter TQM6C - 0.00%.

**For *Daphnia pulex*:**

1. If the NOEC for survival is less than the critical dilution (100.0%), enter a "1"; otherwise, enter a "0" for Parameter No. TEM3D- 0-**Pass**.
2. Report the NOEC for survival, Parameter TOM3D -100.0%.
3. Report the highest (critical dilution or control) Coefficient of Variation, Parameter TQM3D - 0.00%.

**This report contains a total of 31 pages, including this page. The results pertain only to the samples listed in the chain of custody documents in Appendix A. The information contained within meets the requirements set forth by ADEQ. The chemical data in this report is for monitoring purposes only and should not be reported on discharge monitoring reports.**



## Bio-Analytical Laboratories

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**THE RESULTS OF TWO 48-HOUR ACUTE  
TOXICITY TESTS  
FOR OUTFALL 006  
AT**

**EL DORADO CHEMICAL COMPANY  
El Dorado, Arkansas**

**NPDES #AR0000752  
AFIN #70-00040**

**EPA Methods 2000.0 and 2021.0**

**Project X5338**

**Test Dates: February 3 - 5, 2014  
Report Date: February 17, 2014**

**Prepared for:**  
Ms. Larken Pennington  
El Dorado Chemical Company  
P.O. Box 231  
El Dorado, AR 71731

**Prepared by:**  
Ginger Briggs  
Bio-Analytical Laboratories  
P.O. Box 527  
Doyline, LA 71023  
ADEQ #88-0630

BAL  
ADEQ #88-0630  
Project X5338

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BAL  
ADEQ #88-0630  
Project X5338

## 1.0 Introduction

Bio-Analytical Laboratories (BAL), Doyline, Louisiana conducted two 48-hour acute toxicity tests for Outfall 006 at El Dorado Chemical Company, El Dorado, Arkansas. The test organisms used were the fathead minnow, *Pimephales promelas* and the cladoceran, *Daphnia pulex*. The purpose of this study is to determine if an appropriately dilute effluent sample adversely affects the survival of the test organism. Toxicity is defined as a statistically significant difference at the 95 percent confidence level between the survival of the test organisms in the critical dilution (the effluent concentration representative of the proportion of effluent in the receiving water during critical low flow or critical mixing conditions) compared to the survival of the test organisms in the control. The test endpoints are the No-Observed-Effect-Concentration (NOEC), which is defined as the highest effluent concentration that is not statistically different from the control, and the 48-hour  $LC_{50}$ , the concentration in which 50 percent of the test organisms died.

## 2.0 Methods and Materials

### 2.1 Test Methods

All methods followed were according to the latest edition of "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA-821-R-02-012), "Standard Methods for The Examination of Water and Wastewater. 20<sup>th</sup> Edition" (APHA 1998. Chemical results using this edition are listed in the report as SM 1997), and BAL's standard operating procedures.

### 2.2 Test Organisms

The fathead minnows were raised in-house at test temperature and were approximately thirteen days old at test initiation. The *Daphnia pulex* test organisms were also raised in-house at test temperature and were less than 24 hours old at test initiation. Forty-eight hour reference toxicant tests, using sodium chloride (NaCl), were conducted monthly in order to document organism sensitivity and demonstration of capability.

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ADEQ #88-0630  
Project X5338

### 2.3 Dilution Water

Soft reconstituted water made per EPA guidelines was used as the dilution water and the control for the acute tests.

### 2.4 Test Concentrations

The test concentrations used in the fathead minnow test were 100.0, 75.0, 56.0, 42.0, 32.0 and 22.0 percent effluent and a reconstituted water control. Due to the lack of available *Daphnia pulex* neonates, the test concentrations used in the daphnid test were 100.0, 32.0 and 22.0 percent effluent and a reconstituted water control. The critical dilution was defined as 100.0 percent effluent. The tests were conducted using five replicates of eight animals each for a total of 40 animals per concentration.

### 2.5 Sample Collection

One sample of Outfall 006 was collected by El Dorado Chemical personnel on February 2, 2014. Upon completion of collection, the sample was packed in ice and delivered to the laboratory by BAL personnel. The temperature upon arrival was 2.0<sup>o</sup> Celsius.

### 2.6 Sample Preparation

Upon arrival, the sample was logged in, given an identification number and refrigerated unless needed. Prior to use, the sample was warmed to 25±1<sup>o</sup> Celsius. The total residual chlorine level (SM4500-Cl D 1997) was measured with a Capital Controls<sup>R</sup> amperometric titrator and recorded if present. The total ammonia level was measured using a HACH<sup>R</sup> test strip. Dissolved oxygen (SM4500-O G 1997), pH (SM4500-H+ B 1997) and conductivity (SM2510-B 1997) measurements were taken on the control and each test concentration at test initiation, at each renewal and at test termination. Alkalinity (SM2320-B 1997) and hardness (SM2340-C 1997) levels were measured on the control and the highest effluent concentration.

### 2.7 Monitoring of the Tests

The tests were run in a Precision<sup>R</sup> dual controlled illuminated incubator at a temperature of 25±1<sup>o</sup> Celsius. An AEMC<sup>R</sup> data logger was used to monitor diurnal temperature throughout the testing period. Light cycle and intensity were recorded twice a month.



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ADEQ #88-0630  
Project X5338

## 2.8 Data Analysis

The NOEC and LC<sub>50</sub> values values were obtained by approved EPA methods of analysis, using the ToxCalc statistical program.

## 3.0 Results and Discussion

The results of the tests can be found in Table 1. Significant differences in survival were not noted in the critical dilution in either test after 48 hours of exposure (p=.05). The NOEC value for both tests was 100.0 percent effluent (p=.05). The 48-hour LC<sub>50</sub> values could not be determined because greater than 50.0 percent survival occurred in the tests. See Appendix C-Statistical Analysis, for more information.

**Table 1: Results of the 48-hour Acute Definitive Toxicity Tests**

Percent Effluent	Percent Survival	
	<i>Pimephales promelas</i>	<i>Daphnia pulex</i>
Test Organism	<i>Pimephales promelas</i>	<i>Daphnia pulex</i>
Control	100.0	100.0
22.0	100.0	100.0
32.0	100.0	100.0
42.0	100.0	-----
56.0	100.0	-----
75.0	100.0	-----
100.0	100.0	100.0

The 48-hour reference toxicant test results indicate that the test organisms were within the respective sensitivity range. The graphs of the acute reference toxicant tests can be found in Appendix D.

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ADEQ #88-0630  
Project X5338

#### 4.0 Conclusions

The sample of Outfall 006 collected from El Dorado Chemical Company, El Dorado, Arkansas, on February 2, 2014, was not found to be lethally toxic to the fathead minnow test organisms nor the *Daphnia pulex* test organisms in any of the effluent dilutions after 48 hours of exposure ( $p=.05$ ). The 48-hour  $LC_{50}$  values for the tests could not be determined ( $p=.05$ ).

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ADEQ #88-0630  
Project X5338

### 5.0 References

- EPA, 2002. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition. EPA-821-R-02-012, Office of Water.
- EPA, 2000. Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the National Pollutant Discharge Elimination System. EPA-833-R-00-003, Office of Wastewater Management.
- EPA, 2000. Method Guidance and Recommendations for Whole Effluent (WET) Testing. EPA-821-B-00-04, Office of Water
- APHA, 1998. Standard Methods for The Examination of Water and Wastewater. 20<sup>th</sup> Edition.

**APPENDIX A**  
**CHAIN-OF-CUSTODY DOCUMENTS**



**Bio-Analytical Laboratories**

3240 Spurgin Road (318) 745-2772  
 Post Office Box 527 1-800-259-1346  
 Doyline, LA 71023 Fax: (318) 745-2773

NELAP/LELAP 01975, ADEQ 88-0630, TCEQ T104704278

Laboratory Use Only:

<b>Company:</b> El Dorado Chemical Company		<b>Phone:</b> (870) 863-1484		<b>Analysis:</b>					<b>Project Number:</b> X5338  <b>Temp. upon arrival:</b> 2.0°C #29 208 2/3/14 <b>Preservative:</b> (below) ICE			
<b>Address:</b> 4500 Norwest Ave., El Dorado, AR 71731		<b>Fax:</b> (870) 863-7499		Chronic Ceriodaphnia	Chronic minnow	Acute minnow(fresh/marine)	Acute Daphnia species	Acute Mysid		Acute Ceriodaphnia	Fecal Coliform	<b>Lab Control Number:</b>
<b>Permit #:</b> AR0000752/AFIN 70-00040		<b>Purchase Order:</b>										
<b>Sampler's Signature/Printed Name/Affiliation:</b> Karen Pennington / Karen Pennington / EDCC												
<b>Date Start</b> Date End	<b>Time Start</b> Time End	C	G						<b># and type of container</b>			
2/21/14 - 2/21/14	9:15 am - 1:15 pm 5:30 pm - 7:30 pm		X	6 half gallon	006			X	X			C85916
<b>Relinquished by/Affiliation:</b> Karen Pennington / EDCC			<b>Date:</b> 2/3/14	<b>Time:</b> 1000	<b>Received by/Affiliation:</b> JBS			<b>Date:</b> 2/3/14	<b>Time:</b> 1000			
<b>Relinquished by/Affiliation:</b>			<b>Date:</b>	<b>Time:</b>	<b>Received by/Affiliation:</b>			<b>Date:</b>	<b>Time:</b>			
<b>Relinquished by/Affiliation:</b> JBS			<b>Date:</b> 2/3/14	<b>Time:</b> 1200	<b>Received by/Affiliation:</b> JBS			<b>Date:</b> 2/3/14	<b>Time:</b> 1200			
<b>Method of Shipment:</b> <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Bus <input type="checkbox"/> Fed Ex <input type="checkbox"/> DHL <input type="checkbox"/> UPS <input type="checkbox"/> Client <input type="checkbox"/> Other <b>Tracking #</b>												
<b>Comments:</b>												

COC Rev. 3.0

**APPENDIX B  
RAW DATA SHEETS**

BIO-ANALYTICAL LABORATORIES  
ACUTE TOXICITY TEST WATER QUALITY DATA

X5338  
Page 12 of 31

Project# X5338

Client: EDCC/El Dorado Chemical Company

Address: 4500 Northwest Ave El Dorado AR 71731

NPDES#AR0000752 Outfall 006

Technicians: EGB/AH/RC

Test initiated: Date 2/3/14 Time 1350

Test terminated: Date 2/5/14 Time 1410

Dissolved Oxygen Meter: Model # YSI 55D Serial #06E2089 AU

pH Meter: Model #Orion 230A+ Serial #105253

Conductivity Meter: Model # Control Co. Serial #80277924

Amperometric Titrator: Model #Fischer-Porter Serial #92W445766

Sample Information

Sample ID#	Initial D.O. (mg/L and %)	Aerate? Minutes/Final D.O.(mg/L & %)	Total Residual Chlorine (mg/L)	Dechlorinated? Amount?	Ammonia (NH3) mg/L	Salinity	Hardness	Alkalinity	Tech
C8596	9.9 / 122.1%	79 / 958%	40.01	NO	0.5	N/A	280.0	32.0	AH
↓	10.1 / 118.0%	8.4 / 96.4%	↓	↓	↓	↓			

Dilution Water Information

Dilution Water	ID#	Initial D.O. (mg/L & %)	Aerate? Minutes/D.O. (mg/L & %)	Total Residual Chlorine (mg/L)	Ammonia (NH3) mg/L	pH	Hardness	Alkalinity	Tech
Soft H2O	2583	NA	NA	NA	NA	7.2	20.0	28.0	ED
↓									

Test Species Information

Test Species Info.	Species: <u>Daphnia</u> ID#: <u>891 ECT</u>	Species: <u>P. promelas</u> ID#: <u>894 1214</u>	Species: ID#:	Species: ID#:
Age	424h	~13d		
Test Container Size	30ml	250ml		
Test volume	25ml	200ml		
Feeding: Type	VCT. Algae	Artemia		
Amount	Fed 2hrs prior to test initiation			
Aeration?	NA	NA		
Amount				
Condition of survivors	Good AH 2/5/14	Good RC 2/5/14		

Comments: pH → 6.8

BIO-ANALYTICAL LABORATORIES ACUTE TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Project# X5338

Test started: Date 2/3/14 Time 1350

Client El Dorado Chemical

Test ended: Date 2/6/14 Time 1325

Sample Description 006

Test Species D. pulex ID# BALECT

Technician: Ohour AH 24hour AH 48hour AH 72hour     96hour    

Time: Ohour 1350 24hour 1420 48hour 1325 72hour     96hour    

Temperature (°C): Ohour 24.7 24hour 24.0 48hour 24.2 72hour     96hour    

Test Dilution	Replicate	Test Salinity	# Live Organisms					Dissolved Oxygen					pH					Conductivity					
			0 hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	
0	A	N/A	8	8	8			8.2	8.2	8.0			7.3	7.2	7.3			174.3	174.5	174.5			
	B		8	8	8																		
	C		8	8	8																		
	D		8	8	8																		
	E		8	8	8																		
22	A		8	8	8			8.1	8.2	7.9			7.1	7.0	7.2			389	415	388	414		
	B		8	8	8																		
	C		8	8	8																		
	D		8	8	8																		
	E		8	8	8																		
Chemistry Tech prerenewal/postrenewal							AH	AH	RC	AH			AH	AH	RC	AH			AH	AH	RC	AH	



BIO-ANALYTICAL LABORATORIES ACUTE TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Project# X5338

Test started: Date 2/3/14 Time 1350

Client El Dorado Chemical

Test ended: Date 2/5/14 Time 1325

Sample Description 0016

Test Species D. pulex ID# BR1ECT

Technician: Ohour PH 24hour PH 48hour PH 72hour PH 96hour PH

Time: Ohour 1350 24hour 1430 48hour 1325 72hour PH 96hour PH

Temperature (°C): Ohour 24.7 24hour 24.0 48hour 24.2 72hour PH 96hour PH

Test Dilution %	Replicate	Test Salinity	# Live Organisms					Dissolved Oxygen					pH					Conductivity				
			0 hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
32	A	N/A	8	8	8			8.0	8.1	7.9			7.1	6.8	7.2			477	489	509		
	B		8	8	8																	
	C		8	8	8																	
	D		8	8	8																	
	E		8	8	8																	
100 <del>42</del> PH 2/3/14	A		8	8	8			7.9	8.0	7.8			7.2	6.8	6.9			1088	1081	1148		
	B		8	8	8			PH	PH	PH								PH	PH	PH		
	C		8	8	8																	
	D		8	8	8																	
	E		8	8	8																	
Chemistry Tech prerenewal/postrenewal							PH	PH	PH			PH	PH	PH			PH	PH	PH			

ACUTE2 Rev 1.0

BIO-ANALYTICAL LABORATORIES ACUTE TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Project# X5338

Test started: Date 2/3/14 Time 1420

Client El Dorado Chemical

Test ended: Date 2/5/14 Time 1410

Sample Description 006

Test Species P. ornamentalis ID# BAJ12114

Technician: Ohour AH 24hour RC 48hour RC 72hour RC 96hour RC

Time: Ohour 1420 24hour 1330 48hour 1410 72hour RC 96hour RC

Temperature (°C): Ohour 24.7 24hour 24.2 48hour 24.2 72hour RC 96hour RC

Test Dilution	Replicate	Test Salinity	# Live Organisms					Dissolved Oxygen					pH					Conductivity				
			0 hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
0	A	N/A	8	8	8			<del>8.2</del>	<del>7.6</del>			<del>7.3</del>	<del>7.2</del>	<del>7.0</del>			<del>174</del>	<del>145</del>	<del>145</del>	<del>150.3</del>		
	B		8	8	8																	
	C		8	8	8																	
	D		8	8	8																	
	E		8	8	8																	
22	A		8	8	8			<del>8.1</del>	<del>7.5</del>			<del>7.1</del>	<del>7.0</del>	<del>7.0</del>			<del>388</del>	<del>354</del>	<del>358</del>	<del>407</del>		
	B		8	8	8																	
	C		8	7	7																	
	D		8	8	8																	
	E		8	8	8																	
Chemistry Tech prerenewal/postrenewal								AH	RC	RC			AH	RC	RC			AH	RC	RC		

BIO-ANALYTICAL LABORATORIES ACUTE TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Project# X5338

Test started: Date 2/3/14 Time 1420

Client El Dorado Chemical

Test ended: Date 2/5/14 Time 1410

Sample Description 006

Test Species D. Dromelas ID# BAY12114

Technician: Ohour AH 24hour RC 48hour RC 72hour RC 96hour RC

Time: Ohour 1420 24hour 1330 48hour 1410 72hour RC 96hour RC

Temperature (°C): Ohour 24.7 24hour 24.2 48hour 24.2 72hour RC 96hour RC

Test Dilution %	Replicate	Test Salinity	# Live Organisms					Dissolved Oxygen					pH					Conductivity				
			0 hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
32	A	N/A	8	8	8			80	7.2	7.4			7.1	7.0	7.1			577	577	494		
	B		8	8	8																	
	C		8	8	8																	
	D		8	8	8																	
	E		8	8	8																	
42	A		8	8	8			80	7.3				7.1	7.1				571	571	584		
	B		8	8	8																	
	C		8	8	8																	
	D		8	8	8																	
	E		8	8	8																	
Chemistry Tech prerenewal/postrenewal								AH	RC	RC			AH	RC	RC			AH	RC	RC		

BIO-ANALYTICAL LABORATORIES ACUTE TOXICITY TEST SURVIVAL AND WATER QUALITY DATA

Project# X5338

Test started: Date 2/3/14 Time 1420

Client El Dorado Chemical

Test ended: Date 2/5/14 Time 1410

Sample Description 006

Test Species P. promelas ID# BAY12114

Technician: Ohour FN 24hour RC 48hour RC 72hour RC 96hour RC

Time: Ohour 1430 24hour 1330 48hour 1410 72hour RC 96hour RC

Temperature (°C): Ohour 24.7 24hour 24.2 48hour 24.2 72hour RC 96hour RC

Test Dilution %	Replicate	Test Salinity N/A	# Live Organisms					Dissolved Oxygen					pH					Conductivity					
			0 hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	
56	A		8	8	8			<del>8.0</del>	<del>7.2</del>				7.1	<del>6.8</del>	7.1			<del>87</del>	<del>64</del>	<del>69</del>	7.7		
	B		8	8	8																		
	C		8	8	8																		
	D		8	8	8																		
	E		8	8	8																		
75	A		8	6	6			<del>8.0</del>	<del>7.2</del>				7.2	<del>6.9</del>	7.1			<del>86</del>	<del>85</del>	<del>86</del>	8.2		
	B		8	8	8																		
	C		8	8	8																		
	D		8	8	8																		
	E		8	8	8																		
Chemistry Tech prerenewal/postrenewal								FN	RC	RC				FN	RC	RC				FN	RC	RC	



**APPENDIX C**  
**STATISTICAL ANALYSIS**

**Daphnid Acute Test-48 Hr Survival**

X5338

Start Date: 2/3/2014      Test ID: X5338DP      Sample ID: 6      Page 20 of 31  
 End Date: 2/5/2014      Lab ID: ADEQ880630      Sample Type: EFF2-Industrial  
 Sample Date: 2/3/2014      Protocol: EPAAW02-EPA/821/R-02-01      Test Species: CD-Ceriodaphnia dubia  
 Comments:

Conc-%	1	2	3	4	5
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000
22	1.0000	1.0000	1.0000	1.0000	1.0000
32	1.0000	1.0000	1.0000	1.0000	1.0000
100	1.0000	1.0000	1.0000	1.0000	1.0000

Conc-%	Mean	N-Mean	Transform: Arcsin Square Root					Rank Sum	1-Tailed Critical
			Mean	Min	Max	CV%	N		
D-Control	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5		
22	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5	27.50	17.00
32	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5	27.50	17.00
100	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5	27.50	17.00

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution ( $p > 0.05$ )	1	0.905		
Equality of variance cannot be confirmed				
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test	100	>100		1
Treatments vs D-Control				

**Acute Fish Test-48 Hr Survival**

X5338

Start Date: 2/3/2014      Test ID: X5338PP      Sample ID: 6      Page 21 of 31  
 End Date: 2/5/2014      Lab ID: ADEQ880630      Sample Type: EFF2-Industrial  
 Sample Date: 2/3/2014      Protocol: EPAAW02-EPA/821/R-02-01      Test Species: PP-Pimephales promelas  
 Comments:

Conc-%	1	2	3	4	5
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000
22	1.0000	1.0000	0.8750	1.0000	1.0000
32	1.0000	1.0000	1.0000	1.0000	1.0000
42	1.0000	1.0000	1.0000	1.0000	1.0000
56	1.0000	1.0000	1.0000	1.0000	1.0000
75	0.7500	1.0000	1.0000	1.0000	1.0000
100	1.0000	1.0000	1.0000	1.0000	1.0000

Conc-%	Mean	N-Mean	Transform: Arcsin Square Root					Rank Sum	1-Tailed Critical
			Mean	Min	Max	CV%	N		
D-Control	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5		
22	0.9750	0.9750	1.3564	1.2094	1.3931	6.055	5	25.00	16.00
32	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5	27.50	16.00
42	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5	27.50	16.00
56	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5	27.50	16.00
75	0.9500	0.9500	1.3239	1.0472	1.3931	11.684	5	25.00	16.00
100	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5	27.50	16.00

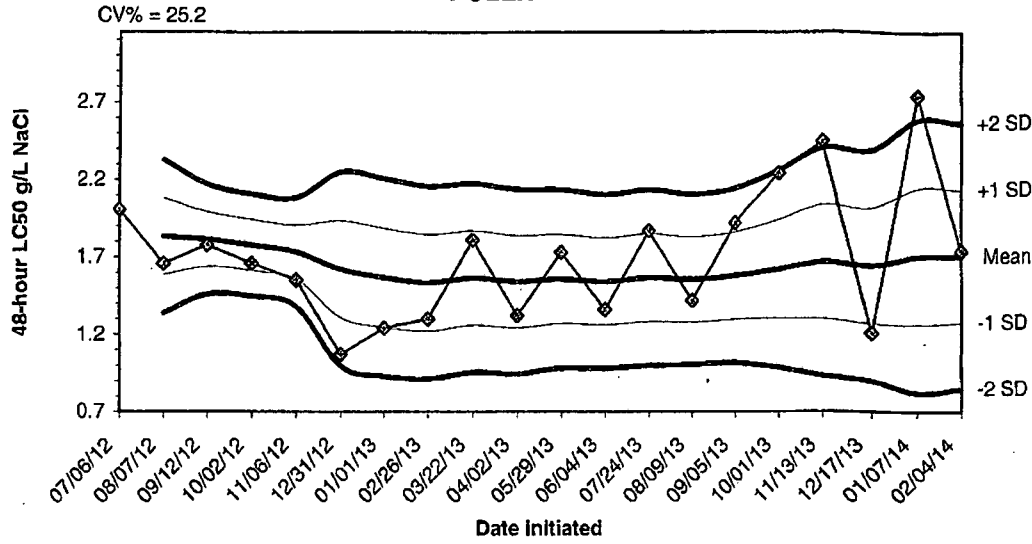
Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05)	0.54161	0.934	-3.2861	14.0375
Equality of variance cannot be confirmed				
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test	100	>100		1
Treatments vs D-Control				

*EGB*  
2/10/14



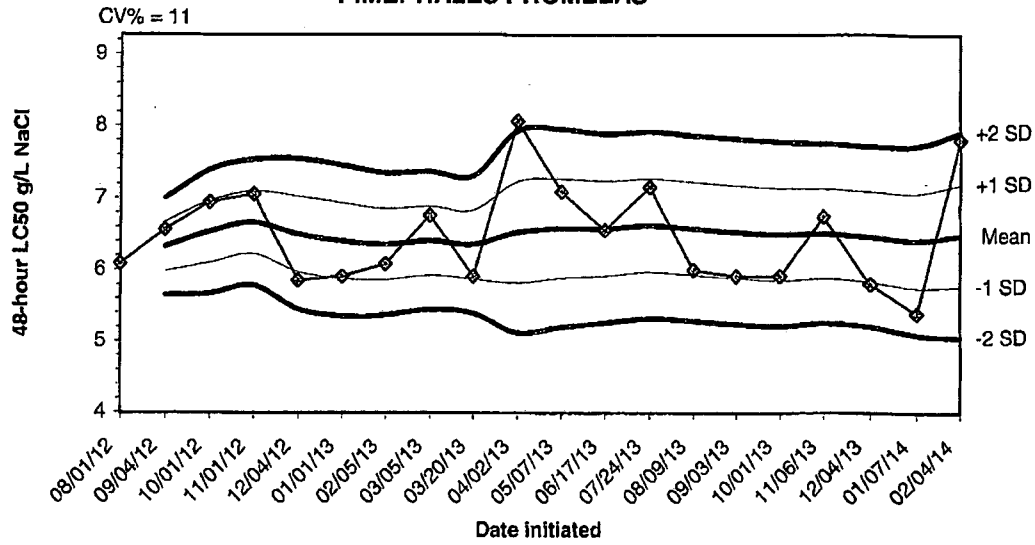
**APPENDIX D**  
**QUALITY ASSURANCE CHARTS**

2014 48-HOUR REFERENCE TOXICANT TEST RESULTS FOR DAPHNIA  
PULEX



Dates	Values	Mean	-1 SD	-2 SD	+1 SD	+2 SD
07/06/12	2.0100					
08/07/12	1.6600	1.8350	1.5875	1.3400	2.0825	2.3300
09/12/12	1.7800	1.8167	1.6388	1.4610	1.9945	2.1724
10/02/12	1.6600	1.7775	1.6125	1.4475	1.9425	2.1075
11/06/12	1.5500	1.7320	1.5566	1.3812	1.9074	2.0828
12/31/12	1.0700	1.6217	1.3092	0.9967	1.9342	2.2467
01/01/13	1.2400	1.5671	1.2475	0.9278	1.8868	2.2065
02/26/13	1.3000	1.5338	1.2231	0.9124	1.8444	2.1551
03/22/13	1.8100	1.5644	1.2596	0.9548	1.8693	2.1741
04/02/13	1.3200	1.5400	1.2424	0.9448	1.8376	2.1352
05/29/13	1.7300	1.5573	1.2692	0.9811	1.8454	2.1335
06/04/13	1.3600	1.5408	1.2603	0.9798	1.8214	2.1019
07/24/13	1.8700	1.5662	1.2825	0.9988	1.8498	2.1335
08/09/13	1.4200	1.5557	1.2804	1.0050	1.8311	2.1064
09/05/13	1.9200	1.5800	1.2985	1.0170	1.8615	2.1430
10/01/13	2.2400	1.6213	1.3032	0.9851	1.9393	2.2574
11/13/13	2.4500	1.6700	1.3022	0.9344	2.0378	2.4056
12/17/13	1.2100	1.6444	1.2715	0.8986	2.0174	2.3903
01/07/14	2.7400	1.7021	1.2611	0.8200	2.1431	2.5842
02/04/14	1.7400	1.7040	1.2747	0.8453	2.1333	2.5627

**2014 48-HOUR ACUTE REFERENCE TOXICANT TEST RESULTS FOR  
PIMEPHALES PROMELAS**



Dates	Values	Mean	-1 SD	-2 SD	+1 SD	+2 SD
08/01/12	6.0900					
09/04/12	6.5700	6.3300	5.9906	5.6512	6.6694	7.0088
10/01/12	6.9500	6.5367	6.1057	5.6747	6.9676	7.3986
11/01/12	7.0600	6.6675	6.2290	5.7905	7.1060	7.5445
12/04/12	5.8600	6.5060	5.9819	5.4579	7.0301	7.5541
01/01/13	5.9200	6.4083	5.8821	5.3558	6.9346	7.4608
02/05/13	6.0900	6.3629	5.8676	5.3724	6.8581	7.3533
03/05/13	6.7700	6.4138	5.9332	5.4526	6.8943	7.3749
03/20/13	5.9200	6.3589	5.8802	5.4015	6.8376	7.3163
04/02/13	8.0700	6.5300	5.8254	5.1208	7.2346	7.9392
05/07/13	7.0900	6.5809	5.8915	5.2020	7.2704	7.9598
06/17/13	6.5600	6.5792	5.9218	5.2644	7.2366	7.8940
07/24/13	7.1600	6.6238	5.9741	5.3244	7.2735	7.9232
08/09/13	6.0000	6.5793	5.9332	5.2871	7.2254	7.8715
09/03/13	5.9200	6.5353	5.8899	5.2444	7.1808	7.8262
10/01/13	5.9200	6.4969	5.8546	5.2124	7.1391	7.7814
11/06/13	6.7500	6.5118	5.8869	5.2620	7.1366	7.7615
12/04/13	5.8100	6.4728	5.8444	5.2160	7.1012	7.7295
01/07/14	5.4000	6.4163	5.7579	5.0995	7.0747	7.7331
02/04/14	7.8200	6.4865	5.7729	5.0593	7.2001	7.9137

**APPENDIX E**  
**AGENCY FORMS**

**Acute Forms**  
**Daphnia pulex Survival**

**Permittee: El Dorado Chemical - Outfall 006**

**NPDES Permit Number: AR0000752/ AFIN 70-00040**

**Composite Collected**      **From: 2/2/14**      **To: 2/2/14**  
    **From:**      **To:**

**Test Initiated: 2/3/14**

**Dilution Water Used:**      **Receiving Water**      **X Reconstituted Water**

**Dilution Series Results - Percent Survival**

<b>TIME OF READING</b>	<b>REP</b>	<b>0</b>	<b>22.0</b>	<b>32.0</b>	<b>100.0</b>			
24-hour	A	100.0	100.0	100.0	100.0			
	B	100.0	100.0	100.0	100.0			
	C	100.0	100.0	100.0	100.0			
	D	100.0	100.0	100.0	100.0			
	E	100.0	100.0	100.0	100.0			
48-hour	A	100.0	100.0	100.0	100.0			
	B	100.0	100.0	100.0	100.0			
	C	100.0	100.0	100.0	100.0			
	D	100.0	100.0	100.0	100.0			
	E	100.0	100.0	100.0	100.0			
	Mean	100.0	100.0	100.0	100.0			

**1. Dunnett's Procedure or Steel's Many-One Rank Test as appropriate: Is the mean survival at 48 hours significantly different (p=.05) than the control survival for the % effluent corresponding to:**

- a.) **LOW FLOW OR CRITICAL DILUTION (100.0%)**      **YES**      **X NO**  
 b.) **1/2 LOW FLOW OR 2X CRITICAL DILUTION (N/A %)**      **YES**      **NO**

**2. Enter percent effluent corresponding to the LC<sub>50</sub> below:**

LC<sub>50</sub> =      N/A % effluent

**95 % confidence limits: N/A**

**Method of LC<sub>50</sub> calculation: N/A**

**3. If you answered NO to 1.a) enter (P) otherwise enter (F): P**

**4. Enter response to item 3 on DMR Form, parameter TEM3D**

**5. If you answered NO to 1.b) enter (P) otherwise enter (F): N/A**

**6. Enter response to item 5 on DMR Form, parameter TFM3D**

**Biomonitoring  
Daphnia pulex 48 hour Acute Static Renewal  
Chemical Parameters Chart\***

**Permittee: El Dorado Chemical - Outfall 006  
NPDES Number: AR0000752/ AFIN 70-00040  
Contact: Larken Pennington**

**Analyst: Haughton**

**Sample Collected From: Date 2/2/14 Time 0915**

**To: Date 2/2/14 Time 1315**

**Test Begin Date 2/3/14 Time 1350**

**Test End Date 2/5/14 Time 1325**

Parameter	D.O.			Temperature			Alkalinity			Hardness			pH			
	Dilut/Time	0hrs.	24hrs	48hrs	0hrs	24hrs	48hrs	0hrs	24hrs	48hrs	0hrs	24hrs	48hrs	0hrs	24hrs	48hrs
0		8.2	8.2	8.0	24.7	24.0	24.2	28.0			20.0			7.3	7.2	7.3
22.0		8.1	8.1	7.9	24.7	24.0	24.2							7.1	7.0	7.2
32.0		8.0	8.0	7.9	24.7	24.0	24.2							7.1	7.0	7.2
100.0		7.9	8.0	7.8	24.7	24.0	24.2	32.0			280.0			7.2	7.0	6.9

\*This Form is to be submitted with each DMR.  
Alkalinity and hardness to be reported as mg/l CaCO<sub>3</sub>

**Acute Forms**  
**Pimephales promelas Survival**

**Permittee: El Dorado Chemical - Outfall 006**  
**NPDES Permit Number: AR0000752/ AFIN 70-00040**

**Composite Collected From: 2/2/14 To: 2/2/14**  
**From: To:**

**Test Initiated: 2/3/14**

**Dilution Water Used: Receiving Water X Reconstituted Water**

**Dilution Series Results - Percent Survival**

TIME OF READING	REP	0	22.0	32.0	42.0	56.0	75.0	100.0
24-hour	A	100.0	100.0	100.0	100.0	100.0	75.0	100.0
	B	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	C	100.0	87.5	100.0	100.0	100.0	100.0	100.0
	D	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	E	100.0	100.0	100.0	100.0	100.0	100.0	100.0
48-hour	A	100.0	100.0	100.0	100.0	100.0	75.0	100.0
	B	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	C	100.0	87.5	100.0	100.0	100.0	100.0	100.0
	D	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	E	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Mean	100.0	97.5	100.0	100.0	100.0	95.0	100.0

**1. Dunnett's Procedure or Steel's Many-One Rank Test as appropriate: Is the mean survival at 48 hours significantly different (p=.05) than the control survival for the % effluent corresponding to:**

- a.) **LOW FLOW OR CRITICAL DILUTION (100.0%)**      YES      X NO
- b.) **1/2 LOW FLOW OR 2X CRITICAL DILUTION (N/A %)**      YES      NO

**2. Enter percent effluent corresponding to the LC<sub>50</sub> below:**

LC<sub>50</sub> =      N/A % effluent  
95 % confidence limits: N/A  
Method of LC<sub>50</sub> calculation: N/A

**3. If you answered NO to 1.a) enter (P) otherwise enter (F): P**

**4. Enter response to item 3 on DMR Form, parameter TEM3D**

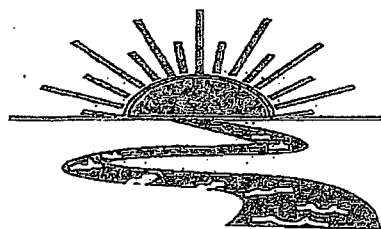
**5. If you answered NO to 1.b) enter (P) otherwise enter (F): N/A**

**6. Enter response to item 5 on DMR Form, parameter TFM3D**





**APPENDIX F**  
**REPORT QUALITY ASSURANCE FORM**



## Bio-Analytical Laboratories

3240 Spurgin Road  
Post Office Box 527  
Doyline, LA 71023

(318) 745-2772  
1-800-259-1248  
Fax: (318) 745-2773

### REPORT QUALITY ASSURANCE FORM

Client: El Dorado Chemical Co

Project#: X5338

Chain of Custody Documents Checked by: AH 2/10/14  
Technician/Date

Raw Data Documents Checked by: AH 2/10/14  
Technician/Date

Statistical Analysis Package Checked by: EGB 2/10/14  
Quality Manager/Date EGB

Quality Control Data Checked by: EGB 2/4/14 2/10/14  
Quality Manager/Date

Report Checked by: EGB 2/17/14  
Quality Manager/Date

I certify that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. The information contained in this document, to the best of my knowledge, is true, accurate and complete.

Terri S. Beaggs, BS  
Quality Manager

2/17/14  
Date

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From: (870) 863-1403  
David Sartain  
El Dorado Chemical Company  
4500 NW Ave

Origin ID: ELDA



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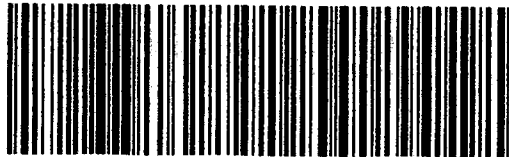
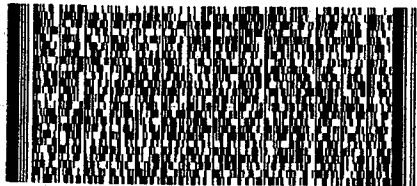
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