4500 NORTH WEST AVE. • P. O. BOX 231 • EL DORADO, AR 71731 • (870) 863-1400



November 21, 2013

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 October 31, 2013.

Enclosed you will find the Discharge Monitoring Reports ending October 31, 2013. 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 Larken Pennington at (870) 863-1125.

Sincerely,

Greg Withrow

General Manager

**Enclosures** 

### **NON-COMPLIANCE REPORT**

AFIN:

Facility Name:

El Dorado Chemical Company

Permit Number:

AR0000752

70-00040

Month / Year:

Oct-13

10.3 su Maximum  10.3 su Maximum  12 mg/L Monthly Average / 18 mg/L Daily Max  26.3 mg/L Monthly Average  8 ug/L Monthly Average / 7.62 ug/L Daily Max  12.2 ug/L Monthly Average  7.35 lb/day Monthly Average Loading	10/31/2013  10/31/2013  10/31/2013  10/31/2013  10/31/2013  10/31/2013  10/31/2013	Cause of Violation  Heavy rainfall in a short period of time caused Outfall 002 to discharge.  Heavy rainfall in a short period of time caused Outfall 002 to discharge.  Heavy rainfall in a short period of time caused Outfall 002 to discharge.  Heavy rainfall in a short period of time caused Outfall 002 to discharge.  Heavy rainfall in a short period of time caused Outfall 002 to discharge.  Unknown	Discharges from Outfall 002 consist of an overflow from the stabilization/pretreatment basin within the wastewater treatment process during periods of excessive rainfall. The background concentrations from the creek upstream of Outfall 002 could have influenced the results.  Discharges from Outfall 002 consist of an overflow from the stabilization/pretreatment basin within the wastewater treatment process during periods of excessive rainfall. The background concentrations from the creek upstream of Outfall 002 consist of an overflow from the stabilization/pretreatment basin within the wastewater treatment process during periods of excessive rainfall. The background concentrations from the creek upstream of Outfall 002 consist of an overflow from the stabilization/pretreatment basin within the wastewater treatment process during periods of excessive rainfall. The background concentrations from the creek upstream of Outfall 002 consist of an overflow from the stabilization/pretreatment basin within the wastewater treatment process during periods of excessive rainfall. The background concentrations from the creek upstream of Outfall 002 condid have influenced the results.  Discharges from Outfall 002 consist of an overflow from the stabilization/pretreatment basin within the wastewater treatment process during periods of excessive rainfall. The background concentrations from the creek upstream of Outfall 002 consist of an overflow from the stabilization/pretreatment basin within the wastewater treatment process during periods of excessive rainfall. The background concentrations from the creek upstream of Outfall 002 could have influenced the results.
12 mg/L Monthly Average / 18 mg/L Daily Max  26.3 mg/L Monthly Average  8 ug/L Monthly Average / 7.62 ug/L Daily Max  12.2 ug/L Monthly Average  7.35 lb/day Monthly Average Loading	10/31/2013 10/31/2013 10/31/2013 10/31/2013	period of time caused Outfall 002 to discharge.  Heavy rainfall in a short period of time caused Outfall 002 to discharge.  Heavy rainfall in a short period of time caused Outfall 002 to discharge.  Heavy rainfall in a short period of time caused Outfall 002 to discharge.  Heavy rainfall in a short period of time caused Outfall 002 to discharge.  Heavy rainfall in a short period of time caused Outfall 002 to discharge.	stabilization/pretreatment basin within the wastewater treatment process during periods of excessive rainfall. The background concentrations from the creek upstream of Outfall 002 could have influenced the results.  Discharges from Outfall 002 consists of an overflow from the stabilization/pretreatment basin within the wastewater treatment process during periods of excessive rainfall. The background concentrations from the creek upstream of Outfall 002 could have influenced the results.  Discharges from Outfall 002 consist of an overflow from the stabilization/pretreatment basin within the wastewater treatment process during periods of excessive rainfall. The background concentrations from the creek upstream of Outfall 002 could have influenced the results.  Discharges from Outfall 002 consist of an overflow from the stabilization/pretreatment basin within the wastewater treatment process during periods of excessive rainfall. The background concentrations from the creek upstream of Outfall 002 could have influenced the results.  Discharges from Outfall 002 condit have influenced the results.  Discharges from Outfall 002 consist of an overflow from the stabilization/pretreatment basin within the wastewater treatment process during periods of excessive rainfall. The background concentrations from the creek upstream of Outfall 002 consist of an overflow from the precedent of excessive rainfall. The background concentrations from the creek upstream of excessive rainfall. The background concentrations from the creek
18 mg/L Daily Max  26.3 mg/L Monthly Average  8 ug/L Monthly Average / 7.62 ug/L Daily Max  12.2 ug/L Monthly Average  7.35 lb/day Monthly Average Loeding	10/31/2013 10/31/2013 10/31/2013	period of time caused Cutfail 002 to discharge.  Heavy rainfall in a short period of time caused Cutfail 002 to discharge.  Heavy rainfail in a short period of time caused Cutfail 002 to discharge.  Heavy rainfail in a short period of time caused Outfail 002 to discharge.	stabilization/pretreatment basin within the wastewater treatment process during periods of excessive reinfall. The background concentrations from the creek upstream of Outfall 002 could have influenced the results.  Discharges from Outfall 002 consist of an overflow from the stabilization/pretreatment basin within the wastewater treatment process during periods of excessive rainfall. The background concentrations from the creek upstream of Outfall 002 could have influenced the results.  Discharges from Outfall 002 consist of an overflow from the stabilization/pretreatment basin within the wastewater treatment process during periods of excessive rainfall. The background concentrations from the creek upstream of Outfall 002 cond have influenced the results.  Discharges from Outfall 002 consist of an overflow from the stabilization/pretreatment basin within the wastewater treatment process during periods of excessive rainfall. The background concentrations from the creek periods of excessive rainfall. The background concentrations from the creek
8 ug/L Monthly Average / 7.62 ug/L Daily Max 12.2 ug/L Monthly Average 7.35 lb/day Monthly Average Loeding	10/31/2013 10/31/2013 10/9/2013	period of time caused Outfail 002 to discharge. Heavy rainfail in a short period of time caused Outfail 002 to discharge. Heavy rainfall in a short period of time caused Outfail 002 to discharge.	stabilization/pretreatment basin within the wastewater treatment process during periods of excessive rainfall. The background concentrations from the creek upstream of Outfall 002 could have influenced the results.  Discharges from Outfall 002 consist of an overflow from the stabilization/pretreatment basin within the wastewater treatment process during periods of excessive rainfall. The background concentrations from the creek upstream of Outfall 002 could have influenced the results.  Discharges from Outfall 002 consist of an overflow from the stabilization/pretreatment basin within the wastewater treatment process during periods of excessive rainfall. The background concentrations from the creek
ug/L Daily Max  12.2 ug/L Monthly Average  7.35 lb/day Monthly Average Loading	10/31/2013	period of time caused Outfall 002 to discharge.  Heavy rainfell in a short period of time caused Outfall 002 to discharge.	stabilization/pretreatment basin within the wastewater treatment process during periods of excessive rainfall. The background concentrations from the creek upstream of Outfall 002 could have influenced the results.  Discharges from Outfall 002 consist of an overflow from the stabilization/pretreatment basin within the wastewater treatment process during periods of excessive rainfall. The background concentrations from the creek
7.35 lb/day Monthly Average Loading	10/9/2013	period of time caused Outfall 002 to discharge.	stabilization/pretreatment basin within the wastewater treatment process during periods of excessive rainfall. The background concentrations from the creek
Loading		Unknown.	
15.62 ug/L Monthly Average	10/1/2013, 10/31/13		
		Unknown	EDCC continues to monitor and evaluate potential sources of the Zinc excursion
3.8 ug/L Monthly Average	10/1/2013, 10/31/13	Unknown	EDCC continues to monitor and evaluate potential sources of the Lead excursion.
7.62 ug/L Daily Max	10/1/2013	Unknown	EDCC continues to monitor and evaluate potential sources of the Lead excursion.
291 mg/L Monthly Average	10/1/2013	Unknown	EDCC has land applied pelletized time in the area of outfall 006 in an effort to promote vegetative cover.
436.5 mg/L Daily Max	10/1/2013	Unknown	EDCC has land applied pelletized lime in the area of outfall 006 in an effort to promote vegetative cover.
115.62 ug/L Monthly Average	10/1/2013, 10/31/13	Unknown	EDCC continues to monitor and evaluate potential sources of the Zinc excursion
3.8 ug/L Monthly Average	10/1/2013, 10/31/13	Unknown	EDCC continues to monitor and evaluate potential sources of the Lead excursion.
7.62 ug/L Daily Max	10/1/2013	Unknown	EDCC continues to monitor and evaluate potential sources of the Lead excursion.
291 mg/L Monthly Average	10/1/2013	Unknown	EDCC has land applied pelletized time in the area of outfall 007 in an effort to promote vegetative cover.
436,5 mg/L Daily Max	10/1/2013	Unknown	EDCC has land applied pelletized lime in the area of outfall 007 in an effort to promote vegetative cover.
ITTED HEREIN; AND BASEL SIBLE FOR OBTAINING THI CCURATE AND COMPLETE ITING FALSE INFORMATION U.S.C 1001 AND 33 U.S.C.	D ON MY INQUIRY OF THE INFORMATION, I BELIF E. I AM AWARE THAT TH N, INCLUDING THE POS 1319. (Penalties under the	HOSE INDIVIDUALS EVE THE SUBMITTED IERE ARE SIGNIFICANT SIBILITY OF FINE AND ese statutes may include	Mr. Cal Follow
2 III SICCITI	7.62 ug/L Daily Max  191 mg/L Monthly Average  436.5 mg/L Daily Max  5.62 ug/L Monthly Average  3.8 ug/L Monthly Average  7.62 ug/L Daily Max  191 mg/L Monthly Average  436.5 mg/L Daily Max  436.5 mg/L Daily Max  LALTY OF LAW THAT I HA TED HEREIN; AND BASE  IBLE FOR OBTAINING TH CURATE AND COMPLETI ING FALSE INFORMATIO J.S.C 1001 AND 33 U.S.C.	7.62 ug/L Daily Max 10/1/2013  91 mg/L Monthly Average 10/1/2013  436.5 mg/L Daily Max 10/1/2013, 10/31/13  5.62 ug/L Monthly Average 10/1/2013, 10/31/13  3.8 ug/L Monthly Average 10/1/2013, 10/31/13  7.62 ug/L Daily Max 10/1/2013  91 mg/L Monthly Average 10/1/2013  436.5 mg/L Daily Max 10/1/2013  436.5 mg/L Daily Max 10/1/2013  437.5 mg/L Daily Max 10/1/2013  438.5 mg/L Daily Max 10/1/2013  438.5 mg/L Daily Max 10/1/2013  438.5 mg/L Daily Max 10/1/2013	7.62 ug/L Daily Max 10/1/2013 Unknown  191 mg/L Monthly Average 10/1/2013 Unknown  436.5 mg/L Daily Max 10/1/2013 Unknown  5.62 ug/L Monthly Average 10/1/2013, 10/31/13 Unknown  3.8 ug/L Monthly Average 10/1/2013, 10/31/13 Unknown  7.62 ug/L Daily Max 10/1/2013 Unknown  191 mg/L Monthly Average 10/1/2013 Unknown

Bio-Analytical Laboratories (BAL) ADEQ#88-0630 Project X5256

### **Bio-Analytical Laboratories' Executive Summary**

Permittee:

El Dorado Chemical Company

P.O. Box 231

El Dorado, AR 71731

Project #:

X5256

Outfall:

Outfall 002 (overflow pond for process water and storm water)

Permit #:

AR0000752/ AFIN #70-00040

Contact:

Ms. Larken Pennington

**Test Dates:** 

November 1 - 3, 2013

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.
- 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%.

### 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.
- 2. Report the NOEC for survival, Parameter TOM3D -0.0%.
- 3. Report the highest (critical dilution or control) Coefficient of Variation, Parameter TQM3D 7.62%.

This report contains a total of 35 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**

3240 Spurgin Road Post Office Box 527 Doyline, LA 71023 (318) 745-2772 1-800-259-1246 Fax: (318) 745-2773

# THE RESULTS OF TWO 48-HOUR ACUTE TOXICITY TESTS FOR OUTFALL 002 AT

EL DORADO CHEMICAL COMPANY El Dorado, Arkansas

> NPDES #AR0000752 AFIN #70-00040

EPA Methods 2000.0 and 2021.0

Project X5256

Test Dates: November 1 - 3, 2013 Report Date: November 18, 2013

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

### TABLE OF CONTENTS

1.0 Introduction	4
2.0 Methods and Materials	4
2.1 Test Methods	4
2.2 Test Organisms	4
2.3 Dilution Water	5
2.4 Test Concentrations	5
2.5 Sample Collection	5
2.6 Sample Preparation	5
2.7 Monitoring of the Tests	5
2.8 Data Analysis	6
3.0 Results and Discussion	6.
4.0 Conclusions	7
5.0 References	8
Appendices	
A- Chain-of-Custody Documents	9
B- Raw Data Sheets	11
C- Statistical Analysis	21
D- Quality Assurance Charts	26
E- Agency Forms	29
F- Report Quality Assurance Form	34

### 1.0 Introduction

Bio-Analytical Laboratories (BAL), Doyline, Louisiana conducted two 48-hour acute toxicity tests for Outfall 002 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<sub>50</sub>, 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), and BAL's standard operating procedures.

### 2.2 Test Organisms

The fathead minnows were raised in-house and were approximately two days old at test initiation. The *Daphnia pulex* test organisms were raised in-house 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.

### 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 tests were 100.0, 75.0, 56.0, 42.0 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 002 was collected by El Dorado Chemical personnel on October 31, 2013. Upon completion of collection, the sample was packed in ice and delivered to Bio-Analytical Laboratories by BAL personnel. The temperature upon arrival was -0.4° 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  $25\pm1^{0}$  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 initial pH of the sample was greater than 9.0; therefore, a portion of the sample was adjusted to a pH range of 6.0-9.0 using 1.0 Normal Hydrochloric Acid (1.0N HCl). An extra 100.0 percent pH-adjusted dilution was run with the 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° 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.

### 2.8 Data Analysis

The NOEC and  $LC_{50}$  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 only 24 hours (p=.05). The NOEC value for both tests was zero percent effluent (p=.05). The 48-hour  $LC_{50}$  value for the fathead minnow test and the *Daphnia pulex* test was 16.0 and 16.4 percent effluent, respectively. Adjusting the pH of the sample did not reduce the toxicity. See Appendix C- Statistical Analysis, for more information.

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

Toggnering		ta contisting mark
Test Organism	Pimephales promelas	Daphnia pulex
Control	100.0	95.0
32.0	0.0	2.5
42.0	0.0	0.0
56.0	0.0	0.0
75.0	0.0	0.0
100.0	0.0	0.0

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.

### 4.0 Conclusions

The sample of Outfall 002 collected from El Dorado Chemical Company, El Dorado, Arkansas, on October 31, 2013, was found to be lethally toxic to the fathead minnow test organisms and the *Daphnia pulex* test organisms in the 100 percent critical dilution after 24 hours of exposure (p=.05). The 48-hour  $LC_{50}$  value for the fathead minnow test and the *Daphnia pulex* test was 16.0 and 16.4 percent effluent, respectively (p=.05). Adjusting the pH of the sample did not reduce the toxicity.

#### 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. 20th Edition.

# APPENDIX A CHAIN-OF-CUSTODY DOCUMENTS



### Bio-Analytical Laboratories

3240 Spurgin Road Post Office Box 52: Doyline, LA 71028 (218) 746-27 1-800-259-12 Fax: (318) 748-27

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

2														Lal	oratory Use Only:
Company:	hemical Compar	LV		Phone: (870) 863-1484			An	alysis	:						Project Number:
Address:	t Ave., El Dorad		7173	Fax: 1 (870) 863-7499	· · · · · · · · · · · · · · · · · · ·		Chronic	Chroni	Acute 1	Acute 1	Acute Mysid	Acute (	Fecal C		X2921
Permit #: AR0000752/	AFIN 70-00040			Purchase Order:			c Ceriodaphnia	Chronic minnow	mimnow(	Acute Daphnia species	Mysid	Acute Ceriodaphnia	Fecal Coliform	Temperatu	Temp. upon arrival: re upon grr
c() .	gnature/Printed	1 .		iation: Ken lenn'ino	on ED	((	iphnia		Acute minnow(fresh/marine)	pecies		mia		Thermome Tech: Date:	I
<u>Date Start</u> Date End	Time Start Time End	С	G	# and type of container	Sample Identific	cation			3)					Lab Control Number:	(below)
1931/13	815-19:15	Χ		6 half gallon	002				X	X				C8154	FCe
·		_	_				_								
		-		; 	<u>.</u>										
	by/Affiliation:	na	SIN.	Exce	Date:	Time:	Red	celvec	i bysta	ffilia	100	י כיר		Date:	Time: 5906
X	by/Affiliation:		Date:	Time:	Red	ceived	i by/A	ffilia	tion:			Date:	Time:		
Relinquished	by/Affiliation:/	3		55	Date: )	Time: 1200	Re	effec X (			tion:			Date: //3	Time: /200
Method of Sh Comments:	nipment:	/Lab		Bus Fed Ex	DHL _	UPS _		Clier	nt	_(oh	her	Trac	king #	)	
COC Rev. 3.	0			ş.											

# APPENDIX B RAW DATA SHEETS

Project#_X	<u>(59:</u>	56								·					
Client: EDG	CC/El	Dorac	lo Cì	nemi	cal Co	mpany									
Address: 4	500 N	orthwe	est A	<u>lve</u>	El Dor	ado AR	71731								
NPDES#AR00	00752		C	Outf	all <u>00</u>	<u>)2</u>									
Technicians	s: <u>EG</u>	B/AH/I	<u>LC</u>												
Test initia	ated:	I	Date_	ıψ	13	Time_	1405								
Test termin Dissolved ( pH Meter: Conductivity Amperometr:	Oxyge: ty Me	n Mete l ter: 1	er: Model Model C: Mo	Mod L #C L # odel	rion 2 Contro #Fisc	KSI 55D 230A+ ol Co. cher-Po	Seria Seria rter Se	al # al #	‡105 ‡802	525 277	3 '924				
Sample Information  Sample Initial D.O. Minutes/ Minutes/ Final D.O(mg/L and %) 8.1/98.1% 20.01 NO 10.0 N/A 48.0 100.0 XC 9.1 40.2% 8.1/98.1% 20.01 NO 10.0 N/A 48.0 100.0 XC 9.1 40.00 N/A 48.0															
(mg/L and %) Pinel D.0(mg/L) Chlorine (mg/L) mg/L P (mg/L) P (mg/L															
9.0/13	18154 9.3/1889 8.185.18 40.01 NO 60.0 N/A 48.0 100.0 XC 9.														
	Dilution Water Information														
Dilution Water Information  Dilution Water ID# Initial D.O (mg/L & %) Aerate? Minutes/D.O (mg/L & %) (mg/L) Residual (NH3) mg/L (mg/L) mg/L Tech inity															
Soft H2O	3512	NA	r	٨	214-	NA	NA	7.4	48	٠c	33.0	y XC			
<b>V</b>	335	-			<u> </u>	<u> </u>	V	7.3	48	.0	32.0	XC.			
	-					Informa P. prometos				T			1		
Test Species In		ID#: DF	UKIL	عاماء	1D# : AA(	/103013	Species: ID#:				ecies:				
Age Test Container	Size		1hrs	>	0 -	ays om!				┝					
Test volume	0100		0m	I	300.										
Feeding: Type		Algar	JAC	T		mia			,						
Amount		Feb	<u> 2.0</u>	ho		efore	initia	tio	<u>^</u>	igdash					
Aeration? Amount		<b>├</b>	/P;	<del></del>	<b></b>	) <b>//</b>				$\vdash$					
Condition of su	rvivors		· Ge		EG	B11/3	1/3								

Project#	X505	خاد		X						Te	st s	tart	ed:	Date	المبلين	3		Time	190	28		
Client_E										Te	st e	nded	l:	Date	11/3	3/13		Time	10	20		
	scription n:	Ohour 14 Ohour 20	2 05 17	24ho 24ho 24ho	ur d ur d	2C 040 14:1	48h _48h _48h	our our	766 153 241	Ter 72 0 72 2 72	st S hour hour	peci	ев <u>Ј</u>	6Hou 6Hou 6Hou 6Hou	1r_ 1r_ 1r_	<u> </u>		ID	# <u>B</u>	AY	Kib.	-h6
Test Dilution	Replicate	Test Salinity		∯ ľųA	e Org	anism	8	7	Diss	olved	Ожуде	m		·	рH	! 			C	onduct	ivity	
0/0			0 hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
0	A	NIA	8	7	1			8. 1	8/4	8.4			7.4	71	7,5			194.6	184	<b>255</b>		
	В	1	8	7	7																	
	C		8	8	8																	
	.D		8	8	B														ļ			
·	£		8	8	8																	
				8	692									G			<u> </u>		103			
32.0	А		8	6	PS C			8.5	1/3	8.3			9.1	<b>X</b> 1	7.6		<u> </u>	338	303	36?	<b> </b>	
	8	·	8	7	1							<u> </u>	<u> </u>									
	C		8	8	0													ļ	ļ			
	D		8	9	0							'-	;					_	<u> </u>	_		
	£		8	٦	0								-	_				-				
	prere	nemistry :	ech renew	ral.				xc	12	Ebst	<b>-</b>		LC	1/20	EB	<b>)</b>		£	%c	ESE ESE		

Droject#	KZSZ	٠								Te	st s	tart	ed:	Date	प्रदेश	3			140			
gliont F	DCC						<del></del> ,			TO	et e	hahn		Date	n/3	113	i	Time	153	30		
	scription n:		7 X Y Y Y 1	24ho 24ho 24ho	ur J ur J	140 141	48h	our our our	FGP 530 244	Te 2 72 2 72 2 72	st Si hour hour hour	peci		6hou		<u> </u>		ID	···		(110-4	
Test Dilution	Replicate	Test Salinit		# Liv				;	Diss	olved	Oxtyge	n.			pH				C	onduct	ivity	
O/O		Samme	0 hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
42.0	A	NA	8	5	0			8.1	3	7.9			9.2	3	7.6			314	35	408		
	В	1	8	ما	0																	
	C		8	4	0														-			
	D		8	3	0															<u> </u>		
	E		8	5	0												-	_			_	
									9.				_	a				100	10	(12)		
56.0	A		8	1	0			81	1/2	1.8			9,3	42	7.7		ļ	430	411	474	1	
	В		8	0	0													_	<u> </u>	<del>                                     </del>	<u> </u>	
	C		8	4	0								<u> </u>				_		<u> </u>	<b> </b>	<u> </u>	
	D		8	U	ව								-					ļ	<u> </u>	<u> </u>	<del> </del>	
	E		8	0	0							_	_				-	-	<del> </del>	<u> </u>		
														1800			ļ	<u> </u>		-	_	
	prere	nemistry newal/po	recn strene	val				ЖC					30	%	EW	<u> </u>		&C	X.	Pr	<u>l</u>	

ACUTE2 Rev 1.0

Project#_	X592	6								Te	st s	tart	.ed:	Date	ulț	[i]			140			
<b></b>	. ~ ~ ~		2				<del></del> .			Те	st e	nded	l <b>:</b>	Date	11/3	3/13		Time	<u> 152</u>			
Sample Der Technician Time: Temperatur	scription n: re (°C):	Ohour Cohour Coh		24ho 24ho 24ho	ur d ur d	ec ouv 4.7	481 481 481	nour nour	EB 1530 341	Te 72 72 2 72	st S hour hour hour	peci	es_ <u>J</u>	). C 96hou 96hou 96hou	)(1) !r !r	<u>=</u>		ID			16-61	
Test Dilution	Replicate	Test Salinity		# Liv	e Org	anism	s 	;	Diss	olveđ	Oxyge	n.			pI	i 			c	onduc	tivity	
010	·		0 hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
75.0	A	NIA	8	0				8.0	8.0				9,4	8.0				308	547		ļ <u>.</u>	
	В	1	8	0							<u> </u>	<u> </u>					ļ				<u> </u>	
	C		8	0													ļ					
	D		8	0																	<u> </u>	
	E		8	0				<u> </u>									<u> </u>					
									0			_		0					2		<del> </del>	
100.0	A		8	0				8.1	8.0				9.6			_	-	<u> </u>	49		<del> </del>	
	B		8	0							ļ			<u> </u>			ļ			ļ		
	C		8	0										<u> </u>			<u> </u>	<u> </u>	<u> </u>	<u> </u>	<del> </del>	-
	7		8	0								<u>.</u>	-		<u> </u>			<u> </u>	<u> </u>		<u> </u>	
	E		8	0																<u> </u>	<u> </u>	
															(Circumore)							
	prere	nemistry i newal/post	ech renev	val				ЯC	The state				de	1/2	<u> </u>			x	1			
ACUTE2 Rev	v 1.0			i					O					<b>-</b>								

	BTO-WWY	"T.T.		, Trez	DOTA	1101	·									1 1	. 3		_	KLA	<b>(</b>		
Proiect#_	XZSEG							_						ed: 1						140-			
Client	EDCC										Tea	st er	aded	. <b>.</b> :	Date	113	[13	•	Time	153 #131	? 		
	scription		102	7	7		10		_	· c (2	Tes	st Sp	peci	ев	9	للبد	M -		ID	#1319	LK	المرحا	16
Sample Des Technicias	u: scriberoif	Ohou	r Ir JY	05	24ho	ur 0	UV	48h	our	132 530	_ 72 72	hour hour	士	9	6hou	ır							
Time: Temperatu	n: re (°C):	Ohou	r dy	F.7	24ho	ur a	Ų.7	48h	our	24.1	72 ع	hour	$\bot$	9	6hou				1				
Test	Replicate	TO			# Liv	e Orga	mism	5	,	Diss	olved	Oxyge	n.			рН				Co	onduct	IVICY	
Dilution			-1	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
		N	Ω	hr	ļ,					CAR				<u> </u>	4	1		-	1.05	1000	52		
PH Adj	A			8	4	0			1.8	8/2	8.0			90	10	7.6			U4	Van	000	,	
	B			8	3	0													ļ				
	C			8	0	0				_													
				8	2	0												1					
	D				8									<del>                                     </del>									
	E	1	<u>ر</u>	8		0												<u> </u>					
										/													
		-			1		_																
					-	-		<del> </del>	-		<del>                                     </del>		·,					<del>                                     </del>	1				
					-		<u> </u>	<del> </del>		<u> </u>			╂	-		-	+-		<del>                                     </del>			<del></del>	
										ļ				-			├	-	-	-		-	
																				10			
	prere	nemis newal	try 'I ./post	ech rene	/al				Ac	The	808	<b>\</b>		XC	1/2	668	<u>}</u>		SC	age.	868		

ACUTE2 Rev 1.0

Project#_	<u> 1263X</u>								Te	st s	tart	ed:	Date	1111	10	,	Time			:			
Client_E	DCC	<u> </u>			•		<u>.</u>	<del>.</del> .			Te	st e	nded	l: -	Date	गीर	113,	770 TY	Time ~210	5		•	
Sample De Technician Time: Temperatu	scription	Ohou: Ohou: Ohou:	0 r 20 r 14 r 24	30	24hc 24hc 24ho	ur_c	34.7	481 481	nour nour	6P) 152 24 (	<u>ρ</u> 72	hour			6hou	ır		10k	ID 31			103(	
Test Dilution	Replicate	Tes Salir	t nity		# Ldv	e Org	anism	B	,	Diss	olved	OxCABe			<del></del>	pH 					_		
0/0				0 hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
0	A	NI	A	8	8	8			8.1	134	8.1			ባ.ዛ <u>"</u>	7.4	1,6			164,0	23 /3 1840	201		
	B	1		8	8	8									<u> </u>								
	C			8	8	8																	
	D			8	8	8																	
	E			8	8	8																_	
										4					0			·	200	374		_	
32.0	A	•		8	0				81	<u> </u>				q.1	*				338	2/		ļ	
	В			8	0													ļ				<u> </u>	
	C			8	0																	<u> </u>	
	D			δ	0								, ·						_				
	E			8	0																		
			1												717					7			
	prere	nemist newal/	ry Tost	renew ecn	al			,	JC.	龙	88			H	ZC.	EB			XC.	從	EDE		

Project#	X3956	, ·			·										Date	1	1 .			143	<u>'</u> ~~		
Client	DCC	,						<u> </u>			Te	st e	nded	l:	Date Date	11/3	3/13	ء ۔ ١	Time	10	<u>a</u> c	<b>&gt;</b>	
	scription n:			<u>5</u>	24ho 24ho 24ho	ur_s ur_II	10 250 4.7	481 _ 481 _ 481	our iour	5/A 1521 24.1	Te ) 7: ) 7: 2 7:	st S 2hour 2hour 2hour	peci	.es_\	Of 96hou 96hou 96hou	Or 1r_ 1r_	<u>9</u>	105	)_ID	#01	4102	30L3 ·	
Test Dilution	Replicate	Tes	t		# Liv				,			Oxyge				ΙΏ	<b>E</b>			C	onduc	tivity	,
O/O		Saili	iicy	0 br	24	48	72	96	0	24	48	72	96	o	24	48	72	96	0	24	48	72	96
42.0	A	NI	A	8	0				81.	13/	_	_		q.F			_	<u> </u>	376		-		
	В	1		8	0						<u> </u>		<u> </u>					<u> </u>	<u> </u>	ļ	-	<u> </u>	
	C			8	0						<u> </u>	<u> </u>											
	A			8	0										ļ							├	
	£			8	0								_									-	
										1			_		37/				100	del	ļ	<del> </del>	
56.0	A			8	0				8.1	12				9-3	b-/				430	7		├	
<u> </u>	В			8	0						ļ						-	-	<u> </u>		-	╀—	<b></b>
	C			8	0						ļ	<u> </u>		ļ.,	<u> </u>		-	-	-		├-	┼	
	$\mathcal{T}$			8	0				<u> </u>	<u> </u>		-		,			-	-	_		├-	├─	
	E			8	0					_	_		_		-				-		-	_	
			ĭ	A A IA											W.	1				1			
	prere	nemist newal/	ry T /post	Leven ACII	ral				oc	AC.				ダ	Ac		<u></u>	<u> </u>	<b>AC</b>	Ac.		<u></u>	

ACUTE2 Rev 1.0

D	x5921	2		· ·						Te	st s	tart	eđ:	Date	սկի	3		Time	143	0		
client E	DCC	00	2				<u> </u>			Te	st e	nded	l: (	Date	11/3	[13	١٨٢	Time	150	30 30	_ "	•
Project#_Client_	scription_ 1:	Ohour X Ohour I Y	30	24ho 24ho 24ho	ur V ur I	e 050 34:1	481 481 481	our iour	552 153 24.	7: 2 7: 2 7: 2 7:	est S 2hou 2hou 2hou	peci 	.es	6hor	r	ne	14	)_ID	# <u>(5</u> 17	2/10	130L	<i>,</i>
Temperatur Test Dilution	Replicate	Test		# Liv	e Org	anism	s	,	Diss	olved	Oxyge	an.			χJ	r.			C	onduc	:ivity	
Dilution O		Salinity	0 hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
75.0	А	NIA	8	0				6.0	12.5				9.4	13/			-	508	7			
	B	1	8	0	i				ļ				ļ					-			<del> </del>	
	C		8	0							-					ļ	_				<u> </u>	
	D		8	0				<u> </u>			_	_	_				_	-	-	-		
	E		8	0				_				-		-		-		-	-		-	
									<u>م</u>		-	-	2 (	5.5	-	-	-	1.00	418	_	<del>                                     </del>	
100.0	A		8	0				8.1		-	<u> </u>	-	9,6		-	<u> </u>	_	ggm	7		├-	
	B		8	0							-	_	-			-	-	-	-		-	
	C		8	0						ļ		<del> -</del> -	<del>  .</del>	<u> </u>	-	-		-	-		-	
	D		8	0					<u> </u>			<u> </u>	<i>'</i>	-		-	-		+-	-	-	
	E		8	0					<u> </u>	-	-	├-		-				+-		<del> </del>	+-	
		hemistry	1965							1		<u> </u>		121	-			120	27	-	-	
	prere	nemistry newal/pos	trenev	val.	ir			SC	1	<u> </u>			1XC	Ac	<u> </u>		<u> </u>	<b>b</b> /	14c			

ACUTE2 Rev 1.0

Project#	XSQSI	<u>. e</u>									Te	st s	tart	ed:	Date	<u>11)-/</u>	13	i	Time	143	Q		
Client											Te	st e	nded	l:	Date	11/3	引つ	,	Time	150	) ) 20	10	ı
Sample De Technicia: Time:	scription n: re (°C):	Ohou Ohou		30	24ho 24ho 24ho	ur J ur [] ur []	150 4.1	481 481 481	our our	941 129 500	Te 72 0 72 0 72	st S hour hour	peci	es_{	Sehou Sehou Sehou	ON ir_ ir_ ir_	<u>t</u>	22	ID	152 #BA	10	3013	)
Test	Replicate	Te	st nity		# Liv	e Org	anism	s	7	Diss	olved	Oxyge	n			pΙ	I			C	onduc	ivity	
Dilution		N	_	0 hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
DH HAJ.	A			8	0				8.1	18				9,0	8.7				(AS	100			
	В			8	0																		
	C			8	0	<u> </u>																	
	D			8	0																		
	E.		,	8	0																		
					-																		
					,																		
						-		-					· ·	7									
												-											
	prere	iemis iewal	try T /post	ech renew	val			المسار	XC	#		72.00		<b>XC</b>	1/2 C				XC	#C			

### APPENDIX C STATISTICAL ANALYSIS

				Dap	hnid Acute T	est-48 Hr Survival		Page //
Start Date:	11/1/2013		Test ID:	X5256DP		Sample ID:	AR0000752 002	
End Date:	11/3/2013		Lab ID:	ADEQ880	630	Sample Type:	EFF2-Industrial	
Sample Date:	10/31/2013	}	Protocol:	EPAAW02	2-EPA/821/R-0	02-01 Test Species:	DP-Daphnia pulex	
Comments:						·		
Conc-%	1	2	3	4	5			
D-Control	0.8750	0.8750	1.0000	1.0000	1.0000			
32	0.0000	0.1250	0.0000	0.0000	0.0000			
42	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			
100 PH	0.0000	0.0000	0.0000	0.0000	0.0000			

			Tn	ansform:	Arcsin Sc	uare Root		1-Tailed		
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD
D-Control	0.9500	1.0000	1.3196	1.2094	1.3931	7.623	5			
*32	0.0250	0.0263	0.2144	0.1777	0.3614	38.301	5	19.029	1.860	0.1080
42	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			
100 PH	0.0000	0.0000	0.1777	0.1777	0.1777	0.000	5			

Auxiliary Tests	Statistic		Critical		Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.05)	0.89039		0.842		0.3182	-1.0157
F-Test indicates equal variances (p = 0.70)	1.5		23.1545			
Hypothesis Test (1-tall, 0.05)	MSDu	MSDp	MSB	MSE	F-Prob	df
Homoscedastic t Test indicates significant differences	0.06178	0.06585	3.05356	0.00843	6.0E-08	1, 8
Treatments vs D-Control						

				Dap	hnid Acute T	est-48 Hr Survival		
Start Date:	11/1/2013		Test ID:	X5256DP		Sample ID:	AR0000752 002	
End Date:	11/3/2013		Lab ID:	ADEQ880	630	Sample Type:	EFF2-Industrial	
Sample Date:	10/31/2013		Protocol:	EPAAW02	-EPA/821/R-	02-01 Test Species:	DP-Daphnia pulex	
Comments:								
Conc-%	1	2	3	4	5			
D-Control	0.8750	0.8750	1.0000	1.0000	1.0000			
32	0.0000	0.1250	0.0000	0.0000	0.0000			
42	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			
100 PH	0.0000	0.0000	0.0000	0.0000	0.0000			

			Tra	ansform:	Arcsin Sc	uare Roo		isoto	nic
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Mean I	N-Mean
D-Control	0.9500	1.0000	1.3196	1.2094	1.3931	7.623	5	0.9500	1.0000
32	0.0250	0.0263	0.2144	0.1777	0.3614	38.301	5	0.0250	0.0263
42	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
100 PH	0.0000	0.0000	0.1777	0.1777	0.1777	0.000	5		

Auxiliary Tests	Statistic	Critical	Skew K	urt
Shapiro-Wilk's Test Indicates normal distribution (p > 0.05)	0.92295	0.881	0.36633 0	.28
Equality of variance cannot be confirmed				

Linear Interpolation (200 Resamples) SD 95% CL(Exp) Skew **Point** IC05\* 1.643 0.042 0.9816 1.578 1.784 3.286 IC10\* 0.084 3.157 3.568 0.9816 5.353 IC15\* 4.930 0.126 4.735 0.9816 IC20\* 6.573 0.168 6.314 7.137 0.9816 IC25\* 8.216 0.209 7.892 8.921 0.9816 IC40\* 13.146 0.335 12.627 14.274 0.9816 IC50\* 15.784 17.842 16.432 0.419 0.9816 \* indicates IC estimate less than the lowest concentration

<sup>1.0</sup> 0.9 0.8 0.7 9 0.6 0.5 9 0.4 0.3 0.2 0.1 0.0 0 50 100 150 Dose %

				Ac	ute Fish Tes	t-48 Hr Survival		
Start Date: End Date: Sample Date: Comments:	11/1/2013 11/3/2013 10/31/2013		Lab ID:	X5256PP ADEQ8800 EPAAW02		Sample ID: Sample Type: 02-01 Test Species:	AR0000752 002 EFF2-Industrial PP-Pimephales promelas	
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			
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			
100 PH	0.0000	0.0000	0.0000	0.0000	0.0000			

			Tra	ansform:	Arcsin Sc	uare Root	Rank	1-Talled		
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	
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	15.00	16.00	
*42	0.0000	0.0000	0.1777	0.1777	0.1777	0.000	5	15.00	16.00	
*56	0.0000	0.0000	0.1777	0.1777	0.1777	0.000	5	15.00	16.00	
*75	0.0000	0.0000	0.1777	0.1777	0.1777	0.000	5	15.00	16.00	
*100	0.0000	0.0000	0.1777	0.1777	0.1777	0.000	5	15.00	16.00	
*100 PH	0.0000		0.1777	0.1777	0.1777	0.000	5	15.00	16.00	

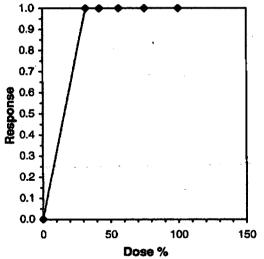
Auxillary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.05)	1	0.934		
Equality of variance cannot be confirmed				
Hypothesis Test (1-tail, 0.05)				
Steel's Many-One Rank Test Indicates significant differences				
Treatments vs D-Control				

				A	cute Fish Tes	rt-48 Hr Survival		-298-45-01-
Start Date:	11/1/2013		Test ID:	X5256PP		Sample ID:	AR0000752 002	
End Date:	11/3/2013		Lab ID:	ADEQ880	630	Sample Type:	EFF2-Industrial	
Sample Date:	10/31/2013	1	Protocol:	EPAAW02	2-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			
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			
100 PH	0.0000	0.0000	0.0000	0.0000	0.0000			

		•				N 54 '	Tı	ansform:	Arcsin S	quare Roc	it	Isotonic	>
Conc-%	Mean	N-Mean	Mean	Min	Max	ÇV%	N	Mean N-I	Mean				
		<del></del>			***************************************			1.0000 1	.0000				
								0.0000 0	.0000				
							•	0.0000 0	.0000				
								0.0000 0	.0000				
								0.0000 0	.0000				
									.0000				

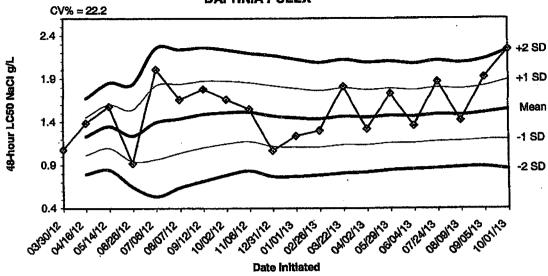
<b>Auxiliary To</b>	ests					Statistic	Skew	Kurt	
Shapiro-Wil	k's Test indica	ites norma	al distribution	on (p > 0	.05)	1	0.934		
Equality of v	variance canno	ot be conf	Irmed		·				
				Linea	r interpolatio	n (200 Resamples)			
Point	%	SD	95% CL(	(Exp)	Skew				
IC05*	1.600	0.000	1.600	1.600	#DIV/0!	•			
IC10*	3.200	0.000	3.200	3.200	-1.0076				
IC15*	4.800	0.000	4.800	4.800	1.0076	1.0	<del></del>		
IC20*	6.400	0.000	6.400	6.400	-1.0076	1	1		

IC20 IC25\* 8.000 0.000 8.000 8.000 12.800 IC40\* 0.000 12.800 12.800 -1.0076 16.000 IC50\* 0.000 16.000 16.000 #DIV/01 \* indicates IC estimate less than the lowest concentration



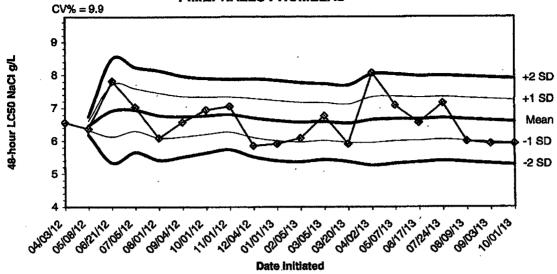
# APPENDIX D QUALITY ASSURANCE CHARTS

# 2013 48-HOUR ACUTE REFERENCE TOXICANT TEST RESULTS FOR DAPHNIA PULEX



Dates	Values	Mean	-1 SD	-2 SD	+1 SD	+2 SD
03/30/12	1.0800					
04/16/12	1.3900	1.2350	1.0158	0.7966	1.4542	1.6734
05/14/12	1.5800	1.3500	1.0976	0.8452	1.6024	1.8548
. 06/26/12	0.9200	1.2425	0.9447	0.6469	1.5403	1.8381
07/06/12	2.0100	1.3960	0.9667	0.5373	1.8253	2.2547
08/07/12	1.6600	1.4400	1.0412	0.6423	1.8388	2.2377
09/12/12	1.7800	1.4886	1.1025	0.7164	1.8747	2.2608
10/02/12	1.6600	1.5100	1.1474	0.7849	1.8726	2.2351
11/06/12	1.5500	1.5144	1.1750	0.8356	1.8539	2,1933
12/31/12	1.0700	1.4700	1.1205	0.7710	1.8195	2.1690
01/01/13	1.2400	1.4491	1.1103	0.7716	1.7878	2.1266
02/26/13	1.3000	1.4367	1.1108	0.7850	1.7625	2.0883
03/22/13	1.8100	1.4654	1,1367	0.8080	1.7941	2.1228
04/02/13	1.3200	1.4550	1.1368	0.8186	1.7732	2.0914
05/29/13	1.7300	1.4733	1.1586	0.8439	1.7881	2.1028
06/04/13	1.3600	1.4663	1.1609	0.8555	1.7716	2.0770
07/24/13	1.8700	1.4900	1.1785	0.8671	1.8015	2.1129
08/09/13	1.4200	1.4861	1.1835	0.8809	1.7887	2.0913
09/05/13	1.9200	1.5089	1.1985	0.8880	1.8194	2.1299
10/01/13	2.2400	1.5455	1.2019	0.8583	1.8891	2.2327

## 2013 48-HOUR ACUTE REFERENCE TOXICANT TEST RESULTS FOR PIMEPHALES PROMELAS



Dates	Values	Mean	-1 SD	-2 SD	+1 SD	+2 SD
04/03/12	6.5600					
05/08/12	6.3700	6.4650	6.3306	6.1963	6.5994	6.7337
06/21/12	7.8200	6.9167	6.1286	5.3406	7.7047	8.4928
07/05/12	7.0300	6.9450	6.2991	5.6531	7.5909	8.2369
08/01/12	6.0900	6.7740	6.0964	5.4188	7.4516	8.1292
09/04/12	6.5700	6.7400	6.1282	5.5165	7.3518	7.9635
10/01/12	6.9500	6.7700	6.2059	5.6419	7.3341	7.8981
11/01/12	7.0600	6.8063	6.2741	5.7419	7.3384	7.8706
12/04/12	5.8600	6.7011	6.1118	5.5224	7.2904	7.8798
01/01/13	5.9200	6.6230	6.0149	5.4069	7.2311	7.8391
02/05/13	6.0900	6.5745	5.9757	5.3769	7.1734	7.7722
03/05/13	6.7700	6.5908	6.0171	5.4434	7.1646	7.7383
03/20/13	5.9200	6.5392	5.9593	5.3793	7.1192	7.6992
04/02/13	8.0700	6.6486	5.9573	5.2660	7.3398	8.0311
05/07/13	7.0900	6.6780	6.0022	5.3264	7.3538	8.0296
06/17/13	6.5600	6.6706	6.0171	5.3635	7.3242	7.9777
07/24/13	7.1600	6.6994	6.0556	5.4117	7.3433	7.9871
08/09/13	6.0000	6.6606	6.0145	5.3685	7.3066	7.9526
09/03/13	5.9200	6.6216	5.9712	5.3208	7.2720	7.9224
10/01/13	5.9200	6.5865	5.9343	5.2821	7.2387	7.8909

APPENDIX E AGENCY FORMS

# Acute Forms <u>Daphnia pulex</u> Survival

Permittee: El Dorado Chemical - Outfall 002

NPDES Permit Number: AR0000752/ AFIN 70-00040

**Composite Collected** 

From: 10/31/13

To: 10/31/13

From:

To:

Test Initiated: 11/1/13

**Dilution Water Used:** 

**Receiving Water** 

**X** Reconstituted Water

TIME OF READING REP 32.0 42.0 56.0 75.0 100.0 100.0 pH. 24-hour A 87.5 75.0 62.5 25.0 0.0 0.0 50.0 В 87.5 87.5 75.0 0.0 0.0 0.0 37.5  $\mathbf{C}$ 100.0 100.0 50.0 50.0 0.0 0.0

**Dilution Series Results - Percent Survival** 

0.0 D 100.0 75.0 37.5 50.0 0.0 25.0 0.0 E 100.0 87.5 75.0 0.0 0.0 0.0 12.5 48-hour A 87.5 0.0 0.0 0.0 0.0 0.0 0.0 В 87.5 12.5 0.0 0.0 0.0 0.0 0.0 C 0.0 0.0 100.0 0.0 0.0 0.0 0.0 D 100.0 0.0 0.0 0.0 0.0 0.0 0.0

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:

0.0

2.5

0.0

0.0

0.0

0.0

0.0

0.0

0.0

0.0

0.0

0.0

a.) LOW FLOW OR CRITICAL DILUTION (100%) X YES NO b.)½ LOW FLOW OR 2X CRITICAL DILUTION (N/A%) YES NO

100.0

95.0

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

Mean

 $LC_{50} = 16.43\%$  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 48 hour Acute Static Renewal Chemical Parameters Chart\*

Permittee: El Dorado Chemical Outfall 002 NPDES Number: AR0000752/ AFIN 70-00040

Contact: Larken Pennington

Analyst: Briggs, Cotty

Sample Collected

To:

From:

Date 10/31/13 Date 10/31/13 Time 0815 Time 1015

Date 11/1/13\_ Date 11/3/13

Time 1405 Time 1530

Test Begin Test End

Parameter		D.O.			<b>Femperatur</b>	e		Alkalinity			Hardness			pН	
	Ohrs.	24hrs	48hrs	Ohrs	24hrs	48hrs	.Ohrs	24hrs	48hrs	Ohrs	24hrs	48hrs	Ohrs	24hrs	48hrs
0	8.1	8.4	8.4	24.7	24.7	24.6	32.0	32.0		48.0	48.0	÷	7.4	7.4	7.5
32.0	8.1	8.3	8.3	24.7	24.7	24.6			2		ragin der rag	1 1 2	9.1	9.1	7.6
42.0	8.1	8.3	7.9	24.7	24.7	24.6	!	4			* *		9.2	9.3	7.6
56.0	8.1	8.2	7.8	24.7	24.7	24.6							9.3	9.3	7.7
75.0	8.0	8.0		24.7	24.7			· ·			1	7 * 1 2 u	9.4	8.0	
100.0	8.1	8.0		24.7	24.7		100.0			48.0	• • 1 ()	5 <b>. V</b>	9.6	8.0	
100.0 pH	8.1	8.2	8.0	24.7	24.7	24.6		",				•	9.0	8.6	7.6

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

Bio-Analytical Laboratories (BAL)
ADEQ#88-0630
Project X5228

### **Bio-Analytical Laboratories' Executive Summary**

Permittee:

El Dorado Chemical Company

P.O. Box 231

El Dorado, AR 71731

Project #:

X5228

Outfall:

Outfall 006 (contaminated storm water)

Permit #:

AR0000752/ AFIN #70-00040

Contact:

Ms. Larken Pennington

**Test Dates:** 

October 2 - 4, 2013

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 7.62%.

This report contains a total of 33 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**

3240 Spurgin Road Post Office Box 527 Doyline, LA 71023 (318) 745-2772 1-800-259-1246 Fax: (318) 745-2773

# 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 X5228** 

Test Dates: October 2 - 4, 2013 Report Date: October 14, 2013

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

### TABLE OF CONTENTS

TIDES OF COLUMN							
1.0 Introduction	4						
2.0 Methods and Materials							
2.1 Test Methods							
2.2 Test Organisms							
2.3 Dilution Water							
2.4 Test Concentrations							
2.5 Sample Collection							
2.6 Sample Preparation							
2.7 Monitoring of the Tests							
2.8 Data Analysis							
3.0 Results and Discussion							
4.0 Conclusions							
5.0 References	8						
Appendices							
A- Chain-of-Custody Documents							
B- Raw Data Sheets							
C- Statistical Analysis							
D- Quality Assurance Charts							
E- Agency Forms	27						
F- Report Quality Assurance Form	32						

#### 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<sub>50</sub>, 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).

### 2.2 Test Organisms

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

#### 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 tests were 100.0, 75.0, 56.0, 42.0, 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 October 1, 2013. Upon completion of collection, the sample was chilled and delivered to Bio-Analytical Laboratories by BAL personnel. The sample temperature upon arrival was 1,2° 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  $25\pm1^{\circ}$  Celsius. The total residual chlorine level was measured with a Capital Controls<sup>R</sup> amperometric titrator and recorded if present. Dissolved oxygen, pH and conductivity measurements were taken on the control and each test concentration at test initiation, at each renewal and at test termination. Alkalinity and hardness 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° 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.

### 2.8 Data Analysis

The NOEC and  $LC_{50}$  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 100 percent critical dilution after 48 hours of exposure (p=.05). The NOEC value for both tests was 100.0 percent effluent (p=.05). The 48-hour  $LC_{50}$  values could not be determined because greater than 50.0 percent survival occurred in the 100.0 percent dilution.

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

Revenikingeni	of the 48-nour Acute Dem	ensoboanb \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Test Organism	Pimephales promelas (Fathead Minnow)	Daphnia pulex
Control	100.0	97.5
22.0	100.0	97.5
32.0	100.0	100.0
42.0	100.0	92.5
56.0	97.5	100.0
75.0	100.0	95.0
100.0	100.0	95.0

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.

### **4.0 Conclusions**

The sample of Outfall 006 collected from El Dorado Chemical Company, El Dorado, Arkansas, on October 1, 2013, was not found to be lethally toxic to the *Daphnia pulex* test organisms nor the fathead minnow test organisms in the 100.0 percent critical dilution after 48 hours of exposure (p=.05).

### 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, 20th Edition.

### APPENDIX A CHAIN-OF-CUSTODY DOCUMENTS



### **Bio-Analytical Laboratories**

3240 Spurger Road Post Office Box 527 Doyfine, LA 71023 (318) 748-277 1-800-289-124 Servi (318) 745-277

#### NELAP/LELAP 01975, ADEO 88-0630, TCEO T104704278

72	~&)													Lal	boratory Use Only:	_
Company: El Dorado Cl	hemical Compar	ıy		Phone: (870) 863-1484			An	alysis	:	-					Project Number:	
Address: 4500 Norwest	Ave., El Dorad	o, AF	t 7173	Fax: 1 (870) 863-7499			Chronic	Chron	Acute	Acute	Acute	Acute	Fecal		X5308	
Permit #: AR0000752/A	FIN 70-00040			Purchase Order:				Chronic minnow	minnow	Acute Daphnia species	Acute Mysid	Acute Ceriodaphnia	Fecal Coliform	Temperat	Temp. upon ufe Upon an	ival
$\mathcal{D} \subset \mathcal{O}$	mature/Printed	_		iation: n Ponnington	KDC		Ceriodaphnia	₩	Acute minnow(fresh/marine)	species		phnia	_	Thermom Tech: 6 Date:	ater #: 29 10 2 /3	
Date Start Date Rnd	Time Start Time End	ć	G	# and type of container	Sample Identifi	cation			ie)					Lab Control Number:	Preservative: (below)	
10-1-13-	7:350m 9:35pm	X		6 half gallon	006				X	x				J8090	18	i !
				<u> </u>		- <del> </del>										į
		-		·												: !
$\mathcal{J}^{-}$	by/Affiliation:	w w		ance	Date: [0/2/13	Time:	Rea	ceived	by/A		jion:	,		Date: /6/2/13	Time:	
	by/Affiliation:		7	ŝ	Date:	Time:	Rec	eived	by/A	ffiliat	ion:			Date:	Time:	
Relinguished l	by/Affiliation:	1	7	3.4	Date:   [0]/13	Time:	Rec	xefved	C/C					Date: 1/3	Time: 3	
Method of Shi Comments:	pment:	Lab	<u>′</u>	Bus Fed Ex _	DHL _	UPS _		Clien	t	_Ott		Tracl	cing #			
COC Rev. 3.0																

### APPENDIX B RAW DATA SHEETS

Project# <u>X5228</u>	· · · · · · · · · · · · · · · · · · ·
Client: EDCC/El Dorado Chemical Company	
Address: 4500 Northwest Ave El Dorado AR 71731	
NPDES# <u>AR0000752</u> Outfall <u>006</u>	
Technicians: EGB/AH/LC/GW	
Test initiated: Date 10 3 13 Time 1355	
Test terminated: Date 101413 Time 1225  Dissolved Oxygen Meter: Model # YSI 55D Serial #06E20  pH Meter: Model #Orion 230A+ Serial #10525  Conductivity Meter: Model # Control Co. Serial #80277  Amperometric Titrator: Model #Fischer-Porter Serial #92  Sample Information	089 AU 53 7924 2W445766
ID# D.O. Minutes/ Residual inated? (NH3) ness ini (mg/L Final Chlorine Amount? mg/L and %) D.O(mg/L (mg/L)	tal- Tech ty
CSOSIGRAJION 38/18 0/8 1/0 N/A 12.0 2	8.0 &C
J 8-6/101.76 8.2/97.7% J	बट
Dilution Water Information	
Dilution Water ID# Initial D.O (mg/L & %) Minutes/D.O (mg/L & %) Chlorine (mg/L & %) Chlorine (mg/L & %) (mg/L & %) Chlorine (mg/L & %) (mg/L & %) (mg/L & %)	Alkal- Tech inity
	360 EGB
Soft H20 3213 7.5144.0	30.0 000
Test Species Information	<u></u>
Test Species Info. Species Species Species: Spec	ecies:
Age Lauh Udays	)#: 
Test Container Size 30ml 250ml	
Test volume 35mi 300mi	
Feeding: Type VCT: Algae Artenna	
Amount Fed This proor to test initiation	
Amount HA	
Condition of survivors	
Comments: 101413	

Project#_	 X5225	g									Te	st s	tart	ed:	Date	0/2	13		_	เปน	-		
Client E	Domo	10	'h€	À.	ico			<b></b> ,				st e			Date					1996			
Sample Der Technician Time: Temperatur	scription	Ohour	JAN.				215 44	481 481 481	our our our	95. 95. 94.	Te 72 5 72 2 72	st S hour hour	peci		6hou 6hou 6hou	r	X .		ID	# <u>BR</u>			
Test	Replicate	Test			# Liv				7		olved					Hq				C	onduct	ivity	
Dilution %		WE	Ī	o rx	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
0	A			8	8	X			8.3	84	8.1			1.5	733	11			184.1	07.6	210		
	B			8	8	8			<u> </u>														
	С			8	8	8																	
	Ŋ			8	8	8												<u> </u>	_				
	E			8	8	コ													<u> </u>				
					,										517			_		3			
22	A			8	8	8			83	X,u	1.8			7.4	1/2	13		_	319	邓	1900		
	B			8	8	8													_				
	C			8	8	7							<u> </u>	<u> </u>				ļ	_				
	n			8	8	8							<u> </u>	!						-		_	
	E			8	8	8												_		<u> </u>	ļ	_	
													<u> </u>							1 - 547			
	prere	nemistr newal/r	y Te postr	ch enew	al				or	AL.	AH			xc	從	AH			30	The	1744		

•	PTO-1747			· .						Te	st s	tart	.ed:	Date	0 2	3	•	Time	1415	<u>.</u>		
Project#_	X500X	io Ch		im				٠			st e		l <b>:</b>	Date	194	13	,	Time	122	25		•
Client E										Te	st S	peci	es C	G .C	ىلى			ID	# <i>B</i> R	12	2	
Sample Dea	scription_ n:	Ohour f	H	24ho	ur_{	M.	481	our	<b>SH</b>	72	hou			6hou	IT							
Sample Des Technician Time: Temperatu	re (°C):	Ohour_G	110	24ho 24ho	ur_2	77	48b	our_	ali	2 72	hour			6hou				T		onduct		
Test	Replicate	Test Salinity		# Lilv	e Orga	anism	8	7	Diss	olved	Oxyge	m.	·		Eq							
Dilution %			o hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
10		NA			<u> </u>			83	dy	19			7.4	13	ムイ			219	324	389	,	
32	A		8	8	8			0.3	283	140			<del> </del>	7	1				34	1		
	B		8	8	8							├	-			-	-	-				
	C		8	8	8								-				-	-			_	
	n		8	8	8																	
	E		8	8	4																<b>.</b>	
				10												·						
			6	.0	7			83	1/3	14			7:4	1/3	4.1			436	200	103		
42	A	-	18	8	1	╁─╴	-	-	0-	+		十一	'									
	3		8	17		<u> </u>		<b>├</b> ─	_		<del> </del>	-	-		-	$\dagger$	+-	+-				
	C		8	8	8		<u> </u>			ļ	<del> </del>	<del>  .</del>	<del>  .</del>			├	╂	┼	-	╂	-	
	n		8	7	1				<u> </u>			_	1			-	-	+-	-	-	-	<b> </b>
	F		8	8	8							_				_	-			-		
	<del> </del>	1			1																<u> </u>	
	prere	newistry newal/pos	rech trenev	ral				de	W.	PA			3C	X	PAR			X	X	CH		

	くこうしゅ									Te	st s	tart	ed:	Date	10 91	13		rime_	717	2		
Project#_	X5228		31-0-	- 2000	<u> </u>					Te	st e	nded	:	Date	0141	13	,	Time	193	_5		•
Client E	Domoc			טוכר	<u> </u>										ىكى			ID	# <u>BBL</u>	INI	<u>.</u>	
Sample De	scription	$\infty$		24hc	nir	מע י	481	our_	<del>- 19</del>	. 72	hanr	^ .		bnot	1X					•		
Technician Time:	-•	Oponi	1016 910	24h	url	SOS	_ 48k	our_	197	$\frac{0}{2}$ 72	hour			6hou								
Temperatu					re Org			,	Diss	olved	Oxyge	m m	Ī		рH				Co	mauct	ivity	
Test Dilution	Replicate	Test Salini		* LL.	re org			<u> </u>	<u> </u>				0	24	48	72	96	0	24	48	72	96
%			0 hr	24	48	72	96	O	24	48	72	96	U	24	40				2			
10		14		+-	1			0.3	47	19			7.4	<b>NY</b>	45			509	5%1	h		
56	A		_ 8	18	8	ļ	<u> </u>	8~	183	1.		<del> </del>	" '	7.1	1	-	<del>                                     </del>	<del>                                     </del>	8.			
	B		8	8	8																	
			8	7	8																	
		┞──┼				<del> </del>	<del> </del>														İ	
	0		_ 8	8	8	<del>                                     </del>		-		-	ļ	-				-		-			-	
	E		8	8	8	<u> </u>						_				<b> </b>	<b> </b>	ļ	<del> </del>			
																			١			
				+-	+_	<del>                                     </del>	+	00	CY.	80			7.4	14	人心			1007	138	37		
75	A		8		17	1	ļ	187	180	100	<b>├</b> ─	┼-	11.7	11	-	╫┈	+-	<del>-</del>	VID	F^-	<del>                                     </del>	
	B		8	1	17													<u> </u>	<del> </del>		├—	
		-			8			T				}										
	<u> </u>		1 2	18	1	┼-	╂	╂─	<del> </del>	+	1	<b>-</b>	17									
	D		2	18	18			1_	-			<del> </del>	<del> </del>	<b> </b>	-	-	-	+	+	一	<del> </del>	
	F		8	8	18								<u> </u>						<del> </del>	<del> </del>	<del> </del>	
	ļ			1	1	1	1	T														
		nomi er	zy Tech		<u></u>		ــــــــــــــــــــــــــــــــــــــ	1.00	100	7	1			PAT	1			40	PAY	OH		
	prere	newal/	postren	ewal				oc	TAC.	AH			x	Ac	PH2			PC	M			

,	(C)				i						Te	st s	tart	ed:	Date	dal	13			ताट			
Project#_>	(5228		7h	<u> </u>	:~							st e				1014		•	rime.	199	5		•
Client E	Domoc				מככי	<i></i>										ىقى			ID	#BBL	JNI	2	
Sample De	scription_	Ohou			24ho	ur ¥	<b>344</b>	481	iour_	MH	72	hour		5	) 6 noi	IT	<del></del>				•		
Technicia	m: -	Ohous	TUS	15	24ho	ur 🔀	95	481	our	33	5 72 g 72	hour			6hou								
Temperatu		Ohour			# I.i.∧				Γ.		olved			Ī .		рH				Co	nduct	ivity	
Test Dilution	Replicate	Tes Salin	i ity		* III.v	e org				· ·			96	0	24	48	72	96	0	24	48	72	96
%	·	Li	<b>a</b>	0 hr	24	48	72	96	0	24	48	72	96					-		_,,			
	· ·			8	8	-			8,4	<b>%</b> 3	43			7.4		14			118	<b>1</b> /46	90		
100	A_				<u> </u>					78.5	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \												
	B			8	8	8							<b>-</b>			-	-		-				
	C			8	8	8																	<b></b>
	2			8	8	-																	
	0					-1		<del>                                     </del>															
	E			8	8	8				-			-	-	-							<del>                                     </del>	
		'										<u> </u>			L			-	<del>                                     </del>	<del>                                     </del>			
	<u> </u>			Я	. "																		
	105 H		-		-		<b> </b>			ĺ													
	DO BY		<u> </u>	8			-	-	-	<del> </del>	-	-	-	-		-		<del>                                     </del>		-			
,	C	440		8							<u> </u>		_	<b> </b>		ļ		<b>├</b>	-				
	7	19	(S)	-0										1		l							<b></b>
	<u> </u>	-	174		-	-				<u> </u>	1												
	E		_	8		$\vdash$	-	-	├-		+	-	+-	-		1		-					
										1012		<u> </u>		<del> </del>	100			-		DW/			
	prere	newal/	post	rech	ra1				X	12°	PH			HC.	1XC	PH	1		JC.	AC.	M		

Project#	86623				· 						Te	st s	tart			1019				135			
Client F	Doroc	0	Ct	nen	صن	لع					Te	st e	nded	l:	Date	1014	13		Time	1990	2		
Sample De	intion	Ohou	Oly	2				481 481 481	our our ouré	4c 	Te: 72 72 72 72	st S hour hour hour	peci		6hou	ir	<u>=</u>	2	ID		198		
Test Dilution	Replicate	Tes Salir	t:		# Liv				,		olved			·		рH		·		C	onduct	ivity	
%		u		0 hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
0	A			8	8	8			8.3	8/4	19			1,5	1/3	7.60			184	1816	1901		
	B			8	8	8																	
	C			8	8	8																	
	5			8	8	8																	
	F			8	8	8																	
				- 1- 1																			
ನ್ನ	A			8	8	8			3	8/4	19			1.4	7,3	1.6			319	33/1	334		
SC	B			8	8	8																	
	C,			8	8	8																	
	D			8	8	8							·	;				_					
	E			8	8	8																	
	. breier	emist newal/	ry T post	ecn renew	al				SH	39 20	JC.			PH	器	<b>XC</b>			AH	X.	HC.		

Prodest#	X5228							_			Te	st s	tart	.ed:	Date	10/2	13		Time	135	5		
	Doroc	10	Cr	hen	ΛiC	لح					Te	st e	nded	l:	Date	MO	<u>2</u>	į	Time	1996	<u>)</u>		
	scription n:	_		} टॅर	245-	<u>.</u>	<u> </u>	481 481 481	our_	フル: / 1994 名の	Te 72 2 72 4 72	:nour		es_E	6hou		<i>e</i> 10	25	ID				
Test	Replicate	Tes Sali	t		# Liv	e Org	ani sm	s	;	Diss	olved	Coxyge	n			рĦ				Ç	onduct	ivity	
Dilution %		u	_	0 hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
32	A			8	8	8			8.3	8/3	18			14	1/3	1.6			3	334	370		
	В			8	8	8					ļ												
	. 0			8	8	8					<u> </u>			ļ									
	0			8	8	8																	
	E			8	8	8																	
																				154	-0	<u> </u>	
U2	A			8	8	8			83	8×2	18			4.4	1,3	7.00			130	15/	7788		
<u> </u>	B			8	8	8					<u> </u>												
	C			X	8	8																	
	0			8	8	8								;								<u> </u>	
	E			8	8	8																_	
				<u> </u>																70 /			
	. prere	nemis newal/	Ty T post	ech renew	al				PH	從	KC			AH	TC.	XC			AH	The Care	AC.	<u> </u>	

	<u> </u>	•									Te	st s	tart	ed:	Date	Idal	3		Time	132.	2		
Project#_	Dorrac	0	Ct	ren	oiC	لع					Te	st e	nded	:	Date	ग्गत	[13		Time	199	Ō		
			OL											es (-	, or	SOC	حام	25	ID	# <i>G</i>	ept	813	
Technicia		Ohou	75 I ~	<u>e</u>	24ho	ur l	<u> </u>	481 481	our_		Te 72 72 72 72	hour			6hou	IT_							
Time: Temperatu		Ohou	is.						our,	74.1	0 72	hour			6hou	rph			T	C	mduct	ivity	
Test Dilution	Replicate	Tes Salir			# Liv	e Org	anism	s ————	;	Diss	olved	Oxyge	n 										
0/0				0 hr	24	48	72	96	0	24	48	72	96	0	24	48	72	96	O	24	48	72	96
10		1	9_				-		-3	89	7.8			لمنا	1.5/	1.5			A	<b>%</b>	158		
56	A			8		1			8.2	1/3/2	1,0			1/2.	4.	-			۳_	on.	<u> </u>	<del> </del>	
	В			8	8	8												ļ	_			<u></u>	
	C			8	8	8																	
	0	-		ابرا	8	8																	
	0			8							├─		-				_		-	<del>                                     </del>			
	E			8	8	8						·	<u> </u>					<u> </u>	<del>                                     </del>				
				8	8	8			(3	<b>1</b> /3/	18			74	1/	25			63	1800	213		
75	A_			Δ					10.	1/8.0	<del>  ``</del>			Ė									
	B			8	8	8					-		-	ļ		-	-	-	-			-	
	C.			8	8	8												<u> </u>	-	ļ			
				8	8	8								;									
	0				-					<del>                                     </del>	<del>                                     </del>												
	E			8	8	8					-	├─	-	-	-	<del>                                     </del>			1		1		
										100		<u> </u>	<u> </u>	<u> </u>	1/2	-		+-	+	100	00		
	prere	emist newal/	ry T post	ech renew	al				442	<i>7</i> /2	JEC.	1		8H	AC	AC.	<u> </u>		PH	AC.	PC.		

	15008						•				Te	st s	tart	ed:	Date	विधा	$\mathcal{E}_{\mathbf{I}}$			1355			
Project#_	DOLOC	10	Ck	-en	Sic	) O (							nded	l:	Date	104	[13	•	Time	090	5		
			$\frac{\mathcal{S}}{\mathcal{S}}$								me.	C	neci						ID	#EPK	109	813	
Sample Des Technicias	scription	Obou		2	24ho	ur o	/C	481	our_	AC.	. 72	hour	• .		6hou	1Y							
mi ma •		Opon Opon Opon	<u>r ]3</u>	<u> </u>	24ho	ur_j	300 V.V	_ 481 481	ourj	36.1	<u>)</u> 72 <u>0</u> 72	hour			6hou							•	
Temperatu	Replicate	Tes			‡ Iri∧				T :		olved					рĦ				C	onduct	ivity	
Test Dilution	Replicate	Sali			<del>نسمي</del>		كندم	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
°/0			മ	pr.	24	48	72	96	۳	24	40	/2			L,					,4,			
				0	8	8			14	1/2	n.5			1.4	Ŋχ	7.4			Krs	AB	808		
100	A			X_				<b></b>	8.	140	1,-			-	4	i -				•			
	B			8	8	8													ļ				
	C			8	8	8																	
	<u> </u>		-			8																	
	0			8	8			ļ						ļ		-			╂				
	=			ጸ	8	8																	
		ļ	_				<b> </b>	<del> </del>		-			╁	<b> </b>	7					7			
	l A			8									<u> </u>		<u> </u>				-	$\leftarrow$	<del> </del>		
V	WB			8									<u> </u>										
	14 D		-																				
	20			8				<u> </u>			-			+	-			<del>                                     </del>	<del>                                     </del>				
	100	b/_		8																		<u> </u>	ļ
	-	7		8																			
	E			Δ	<u> </u>	-	-	-	<del>                                     </del>				T										
		nemis								102	. 00		<del> </del>		14				1	JY AC	10		
	brere	newal,	/post	Lebea	ra1				Ph	延	JXC			PH	AC	が と			Uh	AC			

APPENDIX C STATISTICAL ANALYSIS

				Dap	hnid Acute T	est-48 Hr Survival		
Start Date: End Date: Sample Date: Comments:	10/2/2013 10/4/2013 10/2/2013		Lab iD:	X5228DP ADEQ880 EPAAW02		Sample ID: Sample Type: 02-01 Test Species:	6 EFF2-Industrial CD-Ceriodaphnia dubia	
Conc-%	1	2	3	4	5			
D-Control	1.0000	1.0000	1.0000	1.0000	0.8750			
22	1.0000	1.0000	0.8750	1.0000	1.0000			
32	1.0000	1.0000	1.0000	1.0000	1.0000			
42	0.8750	0.8750	1.0000	0.8750	1.0000			
56	1.0000	1.0000	1.0000	1.0000	1.0000			
75	0.8750	0.8750	1.0000	1.0000	1.0000			
100	0.8750	1.0000	1.0000	0.8750	1.0000			

		_	Tr	ansform:	Arcsin Sc	uare Root	ł	Rank	1-Tailed	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	
D-Control	0.9750	1.0000	1.3564	1.2094	1.3931	6.055	5			
22	0.9750	1.0000	1.3564	1.2094	1.3931	6.055	5	27.50	16.00	
32	1.0000	1.0256	1.3931	1.3931	1.3931	0.000	5	30.00	16.00	
42	0.9250	0.9487	1.2829	1.2094	1.3931	7.841	5	22.50	16.00	
56	1.0000	1.0256	1.3931	1.3931	1.3931	0.000	5	30.00	16.00	
75	0.9500	0.9744	1.3196	1.2094	1.3931	7.623	5	25.00	16.00	
100	0.9500	0.9744	1.3196	1.2094	1.3931	7.623	5	25.00	16.00	

Auxiliary Tests					Statistic	Critical	Skew	Kurt -0.5235
Shapiro-Wilk's Test indicates non	-normal dis	stribution (	p <= 0.05)		0.89848	0.934	-0.6258	
Equality of variance cannot be co			•					
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU				
Steel's Many-One Rank Test	100	>100		1				
Treatments vs D-Control								

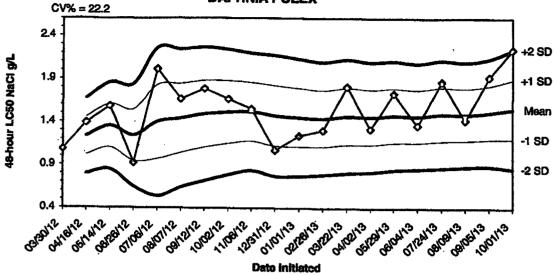
				Ac	cute Fish Tea	rt-48 Hr Survival	
Start Date:	10/2/2013		Test ID:	X5228PP		Sample ID:	6
End Date:	10/4/2013		Lab ID:	ADEQ880	630	Sample Type:	EFF2-Industrial
Sample Date:	10/2/2013		Protocol:	EPAAW02	-EPA/821/R-0	02-01 Test Species:	PP-Pirnephales prometas
Comments:							
Conc-%	1	2	3	4	5		
D-Control	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		
42	1.0000	1.0000	1.0000	1.0000	1.0000		
56	0.8750	1.0000	1.0000	1.0000	1.0000		
75	1.0000	1.0000	1.0000	1.0000	1.0000		
100	1.0000	1.0000	1,0000	1.0000	1.0000		•

			Transform: Arcsin Square Root				Rank	1-Tailed		
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	
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	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	0.9750	0.9750	1.3564	1.2094	1.3931	6.055	5	25.00	16.00	
75	1.0000	1.0000	1.3931	1.3931	1.3931	0.000	5	27.50	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 dis	stribution (	0 <= 0.05		0.38831	0.934	-4.1486	23.0852
Equality of variance cannot be co		`	•					
Hypothesis Test (1-tall, 0.05)	NOEC	LOEC	ChV	TU			· · · · · · · · · · · · · · · · · · ·	
Steel's Many-One Rank Test	100	>100		1				
Treatments vs D-Control								

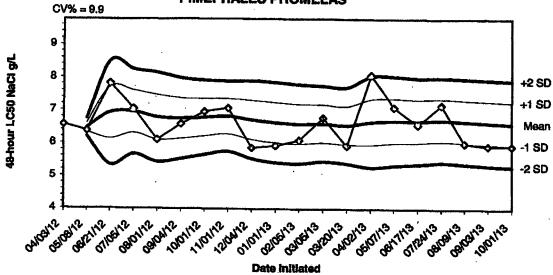
### APPENDIX D QUALITY ASSURANCE CHARTS

### 2013 48-HOUR ACUTE REFERENCE TOXICANT TEST RESULTS FOR DAPHNIA PULEX



Dates	Values	Mean	-1 SD	-2 SD	+1 SD	+2 SD
03/30/12	1.0800					12 00
04/16/12	1.3900	1.2350	1.0158	0.7966	1.4542	1.6734
05/14/12	1.5800	1.3500	1.0976	0.8452	1.6024	1.8548
06/26/12	0.9200	1.2425	0.9447	0.6469	1.5403	1.8381
07/06/12	2.0100	1.3960	0.9667	0.5373	1.8253	2.2547
08/07/12	1.6600	1.4400	1.0412	0.6423	1.8388	2.2377
09/12/12	1.7800	1.4886	1.1025	0.7164	1,8747	2.2608
10/02/12	1.6600	1.5100	1.1474	0.7849	1.8726	2.2351
11/06/12	1.5500	1.5144	1.1750	0.8356	1.8539	2.1933
12/31/12	1.0700	1.4700	1.1205	0.7710	1.8195	2.1690
01/01/13	1.2400	1.4491	1.1103	0.7716	1.7878	2.1266
02/26/13	1.3000	1.4367	1.1108	0.7850	1.7625	2.0883
03/22/13	1.8100	1.4654	1,1367	0.8080	1.7941	2.1228
04/02/13	1.3200	1.4550	1.1368	0.8186	1.7732	2.0914
05/29/13	1.7300	1.4733	1.1586	0.8439	1.7881	2.1028
06/04/13	1.3600	1.4663	1.1609	0.8555	1.7716	2.0770
07/24/13	1.8700	1.4900	1.1785	0.8671	1.8015	2.1129
08/09/13	1.4200	1.4861	1.1835	0.8809	1.7887	2.0913
09/05/13	1.9200	1.5089	1.1985	0.8880	1.8194	2.1299
10/01/13	2.2400	1.5455	1.2019	0.8583	1.8891	2.2327

### 2013 48-HOUR ACUTE REFERENCE TOXICANT TEST RESULTS FOR PIMEPHALES PROMELAS



Dates	Values	Mean	-1 SD	-2 SD	+1 SD	+2 SD
04/03/12	6.5600					12 05
05/08/12	6.3700	6.4650	6.3306	6.1963	6.5994	6.7337
06/21/12	7.8200	6.9167	6.1286	5.3406	7.7047	8,4928
07/05/12	7.0300	6.9450	6.2991	5.6531	7.5909	8.2369
08/01/12	6.0900	6.7740	6.0964	5.4188	7.4516	8.1292
09/04/12	6.5700	6.7400	6.1282	5.5165	7.3518	7.9635
10/01/12	6.9500	6.7700	6.2059	5.6419	7.3341	7.8981
11/01/12	7.0600	6.8063	6.2741	5.7419	7.3384	7.8706
12/04/12	5.8600	6.7011	6.1118	5.5224	7.2904	7,8798
01/01/13	5.9200	6.6230	6.0149	5.4069	7.2311	7.8391
02/05/13	6.0900	6.5745	5.9757	5.3769	7.1734	7.7722
03/05/13	6.7700	6.5908	6.0171	5,4434	7.1646	7.7383
03/20/13	5.9200	6.5392	5.9593	5.3793	7.1192	7.6992
04/02/13	8.0700	6.6486	5.9573	5.2660	7.3398	8.0311
05/07/13	7.0900	6.6780	6.0022	5.3264	7.3538	8.0296
06/17/13	6.5600	6.6706	6.0171	5.3635	7.3242	7,9777
07/24/13	7.1600	6.6994	6.0556	5.4117	7.3433	7.9871
08/09/13	6.0000	6.6606	6.0145	5.3685	7.3066	7.9526
09/03/13	5.9200	6.6216	5.9712	5.3208	7.2720	7.9224
10/01/13	5.9200	6.5865	5.9343	5.2821	7.2387	7.8909

### APPENDIX E AGENCY FORMS

### Acute Forms <u>Daphnia pulex</u> Survival

Permittee: El Dorado Chemical - Outfall 006

NPDES Permit Number: AR0000752/ AFIN 70-00040

**Composite Collected** 

From: 10/1/13

To: 10/1/13

From:

To:

Test Initiated: 10/2/13

**Dilution Water Used:** 

**Receiving Water** 

Reconstituted Water

**Dilution Series Results - Percent Survival** 

	Diluti	T. Derres	Kesuits	1 01 0011	Dui VIVA			43 34 34 3
TIME OF READING	REP	0	22	32	42	56	75	100
24-hour	A	100.0	100.0	100.0	100.0	100.0	87.5	100.0
	В	100.0	100.0	100.0	87.5	100.0	87.5	100.0
	C	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	D	100.0	100.0	100.0	87.5	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	87.5	100.0	87.5	87.5
	В	100.0	100.0	100.0	87.5	100.0	87.5	100.0
	С	100.0	87.5	100.0	100.0	100.0	100.0	100.0
	D	100.0	100.0	100.0	87.5	100.0	100.0	87.5
	E	87.5	100.0	100.0	100.0	100.0	100.0	100.0
	Mean	97.5	97.5	100.0	92.5	100.0	95.0	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%)

YES

X NO

b.)½ LOW FLOW OR 2X CRITICAL DILUTION (N/A%)

YES

NO

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

 $LC_{so} =$ 

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 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, Cotty

Sample Collected From:

Date 10/1/13

Time 1935

To:

Date 10/1/13

Time 2135 Time 1415

Test Begin Test End Date 10/2/13 Date 10/4/13

Time 1225

Parameter		D.O. Temperatur				Alkalinity		Hardness			pH				
Dilut/Time	Ohrs.	24hrs	48hrs	Ohrs	24hrs	48hrs	Ohre	24hrs	48hrs	Ohrs	24hrs	48hrs	Ohrs	24hrs	48hrs
0	8.3	8.4	8.1	24.6	24.4	24.6	36.0	·		44.0			7.5	7.5	7.1
22	8.3	8.4	7.8	24.6	24.4	24.6							7.4	7.2	7.3
32	8.3	8.3	7.8	24.6	24.4	24.6							7.4	7.2	7.4
42	8.3	8.3	7.8	24.6	24.4	24.6							7.4	7.2	7.4
56	8.3	8.3	7.9	24.6	24.4	24.6							7.4	7.1	7.5
75	8.3	8.2	8.0	24.6	24.4	24.6							7.4	7.1	7.4
100	8.4	8.2	8.2	24.6	24,4	24.6	28.0			172.0			7.4	7.1	7.4

<sup>\*</sup>This Form is to be submitted with each DMR.6.6
Alkalinity and hardness to be reported as mg/l CaCO<sub>3</sub>

### **Acute Forms Fathead Minnow Survival**

Permittee: El Dorado Chemical - Outfall 006

NPDES Permit Number: AR0000752/ AFIN 70-00040

**Composite Collected** 

From: 10/1/13

To: 10/1/13

From:

To:

Test Initiated: 10/2/13

**Dilution Water Used:** 

**Receiving Water** 

Reconstituted Water

Dilution Series Results - Percent Survival

TIME OF READING	REP	in Series	22	32	42	56	75	100
	1	0		2011/2015/1996			· · · · · · · · · · · · · · · · · · ·	<del> </del>
24-hour	A	100.0	100.0	100.0	100.0	87.5	100.0	100.0
	В	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	C	100.0	100.0	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	87.5	100.0	100.0
	В	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	С	100.0	100.0	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	100.0	100.0	100.0	97.5	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%)

YES YES X NO NO

b.)½ LOW FLOW OR 2X CRITICAL DILUTION (N/A%) 2. Enter percent effluent corresponding to the LC<sub>50</sub> below:

LC<sub>so</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 Fathead Minnow 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, Cotty

Sample Collected

From:

Date 10/1/13

Time 1935

. .

To:

Date 10/1/13

Time 2135

Test Begin Test End Date 10/2/13 Date 10/4/13 Time 1355 Time 1220

Parameter		D.O.			l'emperatur	<b>e</b>		Alkalinity			Hardness			pН	
Dilut/Time	Ohrs.	24hrs	48hrs	Ohrs	24hrs	48hrs	Ohrs	24hrs	48hrs	Ohrs	24hrs	48hrs	Ohrs :	24hrs	48hrs
0	8.3	8.4	7.9	24.4	24.4	24.6	36.0			44.0			7.5	7.5	7.6
22	8.3	8.4	7.9	24.4	24.4	24.6							7.4	7.2	7.6
32	8.3	8.3	7.8	24.4	24.4	24.6							7.4	7.2	7.6
42	8.3	8.3	7.8	24.4	24.4	24.6							7.4	7.2	7.6
56	8.3	8.3	7.8	24.4	24.4	24.6							7.4	7.1	7.5
75 -	8.3	8.2	7.8	24.4	24.4	24.6							7.4	7.1	7.5
100	8.4	8.2	7.5	24.4	24.4	24.6	28.0			172.0			7.4	7.1	7.4

<sup>\*</sup>This Form is to be submitted with each DMR.6.6
Alkalinity and hardness to be reported as mg/l CaCO<sub>3</sub>

# APPENDIX F REPORT QUALITY ASSURANCE FORM



### **Bio-Analytical Laboratories**

3240 Spurgin Road Post Office Box 527 Doyline, LA 71023 (318) 746-2772 1-800-259-1246 Fax: (318) 745-2773

### REPORT QUALITY ASSURANCE FORM

Client: EDCC DO
Project#: <u>X5238</u>
Chain of Custody Documents Checked by: At 107113  Technician/Date
Raw Data Documents Checked by:
Statistical Analysis Package Checked by: 66 10/8/13  Quality Manager/Date
Quality Control Data Checked by: E66 10 8 13  Quality Manager/Date
Report Checked by: EB 101413  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.
Clin & Brights 10/4/13  Quality Manager  Date

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

Report Rev. 3.0

Bio-Analytical Laboratories (BAL) ADEQ#88-0630 Project X5229

### **Bio-Analytical Laboratories' Executive Summary**

Permittee:

El Dorado Chemical Company

P.O. Box 231

El Dorado, AR 71731

Project #:

X5229

Outfall:

Outfall 007 (contaminated storm water)

Permit #:

AR0000752/ AFIN #70-00040

Contact:

Ms. Larken Pennington

**Test Dates:** 

October 2 - 4, 2013

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 75.0%.
- 3. Report the highest (critical dilution or control) Coefficient of Variation, Parameter TQM6C 6.06%.

#### 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 75.0%.
- 3.Report the highest (critical dilution or control) Coefficient of Variation, Parameter TQM3D 6.06%.

Note: Initial pH of the sample was 6.4; therefore, it was not adjusted because it was within method range (6.0-9.0). The pH drifted during testing to as low as 4.5.

This report contains a total of 35 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**

3240 Spurgin Road Post Office Box 527 Doyline, LA 71023 (318) 745-2772 1-800-259-1246 Fax: (318) 745-2773

# 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 X5229

Test Dates: October 2 - 4, 2013 Report Date: October 14, 2013

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

### TABLE OF CONTENTS

1.0 Introduction	4	
2.0 Methods and Materials	4	
2.1 Test Methods		
2.2 Test Organisms		
2.3 Dilution Water	5	
2.4 Test Concentrations	5	
2.5 Sample Collection	5	
2.6 Sample Preparation	5	
2.7 Monitoring of the Tests	5	
2.8 Data Analysis	5	
3.0 Results and Discussion	6	
4.0 Conclusions		
5.0 References		
Appendices		
A- Chain-of-Custody Documents		
B- Raw Data Sheets	11	
C- Statistical Analysis	21	
D- Quality Assurance Charts		
E- Agency Forms		
F- Report Quality Assurance Form		

#### 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<sub>50</sub>, 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).

#### 2.2 Test Organisms

The fathead minnows were raised in-house at test temperature and were approximately four 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 were conducted monthly in order to document organism sensitivity and demonstration of capability.

#### 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 tests were 100.0, 75.0, 56.0, 50.0, 42.0 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 October 1, 2013. Upon completion of collection, the sample was chilled and delivered to Bio-Analytical Laboratories by BAL personnel. The sample temperature upon arrival was 0.9° 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  $25\pm1^{\circ}$  Celsius. The total residual chlorine level was measured with a Capital Controls<sup>R</sup> amperometric titrator and recorded if present. Dissolved oxygen, pH and conductivity measurements were taken on the control and each test concentration at test initiation, at each renewal and at test termination. Alkalinity and hardness 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° 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.

#### 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 100 percent critical dilution after 48 hours of exposure (p=.05). The NOEC value for both the *Daphnia pulex* test and the fathead minnow test was 75.0 percent effluent (p=.05). The 48-hour  $LC_{50}$  value for the *Daphnia pulex* test and the fathead minnow test was 85.46 and 86.10 percent effluent, respectively (p=.05).

The sample's pH drifted during testing and dropped to 4.5 in the 100.0 percent dilution.

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

1 able 1: Results of the 48-nour Acute Definitive Toxicity Tests			
Proceeding inframe		itussais Anadtvalt	
Test Organism	Pimephales promelas (Fathead Minnow)	Daphnia pulex	
Control	100.0	97.5	
32.0	100.0	92.5	
42.0	100.0	97.5	
50.0	100.0	97.5	
56.0	100.0	97.5	
75.0	97.5	92.5	
100.0	0.0	0.0	

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.

BAL ADEQ #88-0630 Project X5229

### 4.0 Conclusions

The sample of Outfall 007 collected from El Dorado Chemical Company, El Dorado, Arkansas, on October 1, 2013, was found to be lethally toxic to the *Daphnia pulex* test organisms and the fathead minnow test organisms in the 100.0 percent critical dilution after 48 hours of exposure (p=.05). The pH of the sample drifted during testing and dropped to as low as 4.6 in the 100.0 percent critical dilution.

BAL ADEQ #88-0630 Project X5229

#### 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. 20th Edition.

## APPENDIX A CHAIN-OF-CUSTODY DOCUMENTS



## **Bio-Analytical Laboratories**

3240 Spurgin Road Post Office Box 527 Doyline, LA 71023 (318) 748-277; 1-800-259-124 Paix: (318) 748-277;

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

						1								Lal	ooratory Use Only:
Company: El Dorado Chem	ical Compan	y		Phone: (870) 863-1484		•	An	alysis	•						Project Number:
Address: 4500 Norwest Av	e., El Dorado	, AR	7173	Fax: 1 (870) 863-7499			Chronic	Chronic	Acute 1	Acute I	Acute Mysid	Acute (	Fecal C		X52299
Permit #: AR0000752/AFI	Y 70-00040			Purchase Order			Chronic Ceriodaphnia	Chronic minnow	ninnow(t	Acute Daphnia species	Муsid	Acute Ceriodaphnia	Fecal Coliform		Temp. upon arrival: re upon arriv ter #: 8-9
Sampler's Signat	ture/Printed 1	Name M_	Affil	lation: Arken Penr	rington	Exc	phnia	,	Acute minnow(fresh/marine)	pecies		mia			2/13 Preservative:
	ime Start ime End	С	Ğ	# and type of container	Sample Identific	ation			e)					Lab Control Number:	(below)
10-1-13 7.	40pm - 9.40pm	X		6 half gallon	00	7			X	X				C8097	1CE
Relinquished by	Affiliation:	ln	_  8	DCC	Date: 10/2/13	Time:	Rea	ceive	by/A	ffilial	ion:			Date: 10/2/13	Time:
Relinquished by/	Affiliation:				Date:	Time:	Re	ceived	/by/A	ffika	tion:		•	Date:	Time:
Relinquished by/	Affiliation	- 2	B	>> ^	Date: / 3	Time:	Rec	reixed X (	l by/4		rton:			Date: 100/13	Time:
Method of Shipm Comments:	nent:	Lab		Bus Fed Ex	DHL _	UPS _	. ·v=·	Clien	nt	<del>(%</del> 1	her	Trac	king #	ł	
COC Rev. 3.0															

# APPENDIX B RAW DATA SHEETS

Project# <u>X5</u> 3	99			<del> </del>		<del></del>			
Client: <u>EDCC/El</u>	Dorado Ch	emi	cal Co	mpany					
Address: <u>4500 N</u>	orthwest A	we ]	El Dor	ado AR	71731				
NPDES#AR0000752	Outfal	.1 0	<u>07</u>						
rechnicians: EG		J							
		<b>-</b>	1.5		122				
Test initiated:						<del></del>			
Test terminated Dissolved Oxyge pH Meter: Conductivity Me	: Date n Meter: Model	Mod #0:	# Y rion 2	Time_ SI 55D	Seria Seria	al #	‡06E ‡105	2089 <i>F</i> 253	ŭ
Conductivity Me Amperometric Ti	ter: Model trator: Mo	l # ' odel	Contro Fisc#	or co. cher-Po	Seria rter Se	aı 7 eria	f80∠ al #	://924 :92W445	766
				ormatio					
ID# D.O. Mi (mg/L Fi and %) D	erate? Total inutes/ Resid inal Chlor .O(mg/L (mg/L	ual ine	Dechlor inated? Amount?	Ammonia (NH3) mg/L	Salinity	Har nes	-	Alkal- inity	Tech
	30 8.5% KO.	)	NO	6.0	N/A	20	0.2	40	XC
J 88/104.1% 8.	10 267.7%	,				1	31.0	1.0	4C
10-13/20 2.	35(11.0)		<b>+</b>		1	1	1		
	Dilut	ion	Water	Inform	nation				<u>                                     </u>
Dilution Water ID#	Initial D.O (mg/L & %)		te? tes/D.o	Total Residual Chlorine	Ammonia (NH3) mg/L	рн	Hard ness		
Soft H20 3543	1			(=30-31-3		75	36	.044	DEAR
7						,			
	Test	Spe		Informa					
Test Species Info.	Species: ID#: PPU M		Species:	onnelos 192813	Species: ID#:			Species: ID#:	
Age	424h			aus		-			
Test Container Size	3000		a.	DA					
Test volume	35m		<u> </u>	Dm1					
Feeding: Type Amount	YCT: Algo Fed 2hr			MIB.	mittat	-in-			
Aeration?	110	3 P		10	TO STREET	, HUIL'S			
Amount	Mil			91					
Condition of survivors		Go	್ದ್ರಹ '						
COMMERCED OF CHILDREN									

	4500a			1						Te	st s	tart	.ed:	Date	obli	3	1	Time	1439	2		
Project#_) Client_E	000	(	3 hon	$\sim i \alpha$			_				st e		l:	Date	19/n	13	1	Time	123	30		•
		~ ~	_			·				m_	a+ @	nedi	es (	<u>a.c</u>	w			ID	# <i>BB</i>	11/1	<b>a</b>	
Sample Des Techniciar	scription_ 1:	Ohour.	PH	24hc	ur [	举	481	our_	場	$\frac{72}{5}$	hour	-		6hou 6hou	1.T							
Time: Temperatu	re (°C):	Ohour Ohour Ohour	04.6	24ho	nr g	Til	48h	iour_	III	2 72	hour			6hou	<u>r</u>							
Test	Replicate	Test Salini		# Liv	e Org	makne	đ	;	Diss	olved	Oxyge	<b>20</b> .			Hq				C	onduct	TATCA	
Dilution		Salini	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
%		ME	hr		ļ				-	. 1	-	-	-1	13	12	-	<del>                                     </del>	1801	0%	00		
)	A		8	8	7			83	84	8.1			7.4	14.16	1.2			100.	201	DW .		
<u> </u>	B		5	8	V																	
		╀╌┼			2												:					
	C	<del>                                     </del>	_ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	18	18	<u>-</u> ;	-	<del> </del>	-		1	一										
	D		_ \	18	8							-						<del>                                     </del>				
	E		5	3 8	8							<u> </u>	<u> </u>			<u> </u>	-	<del> </del>				
						<b>\</b>		İ											1410	-71		
	- n		5	7 0	Q			83	7.3 7.3	81			71	123	13			452	187	3		
32	A	-		)   A	*			<u> </u>	<u> </u>													
	3		2	8 18	-	ļ	-	-	-	-	┼	╁─		<del> </del>	-		1.	1				
	C		5	3 8	8				<u> </u>	<b> </b>		<del> </del>	+	ļ. 	<del>                                     </del>	-	-	┼		-	╂─	
	n		5	7 7	17												<u> </u>		-	<u> </u>		<del>  </del>
		<del>                                     </del>	5		-									L_						<u> </u>		
<u> </u>	E	╂╌┤		1-0	<del>                                     </del>	1	<del>                                     </del>	1														
	prere	nemist newal/	ry Tech postrem	l lewal	1			£	Ac.	PH			£c	PX AC	, All			LC	PX	PH		

	J=00C	<b>.</b>			•						Te	st si	tart	ed: 1	Date.	10/2/1	3			<u>43</u> 5			
Project#	x599°	1	31-		100							st e			Date	ार्थ	13	•	rime	123	D		•
Client E		~~~	_				1				πа			es_C	G .C	نلى	X.		ID	#BA	4001	<b>a</b>	
Sample Des	scription_	Ohour Ohour Ohour	) [	<b>H</b>	24ho	ur_F	<i>Ă1.</i>	481	our_	H	72	hour	٠	و	6hou								
Techniciar Time:	υ: 	Ohour	प्रिट	5	24ho		3	_ 481 _ 481	our_	37.70	72	hour			6hou							•	
Temperatu	Replicate	Test	-		# Liv	e Org	miem	8	,	Diss	olved	Oxyge	n			рĦ	;			C	onduct	ivity	
Test Dilution	Kebircare	Salin	ity			48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
%		N.	1.	Dr Dr	24	40									<i>1</i> 2			ļ	-3	A	1		-
	n			8	8	7			8.3	<b>%</b> 3	1.8			7.1	13	1.1			533	383	450		
42		<del>                                     </del>			-	C)																	
	B_	1	_	8	8	8			┼		-												
	C			8	8	8						<u> </u>							-	<u> </u>			
	n			ጽ	8	8	,											ļ		-	<del> </del>		
	E			8	8	8																	<del> </del>
		-																			١.	<u>.</u>	
		ļ					-		122	4.3			$\vdash$	10	120	1			404	951	834		
50	A			8	8	8			8-3	<b>X</b> 3	19.0	]	-	1.0	/30	11.	-	-	<del>ا</del> ا	7801	100	$\vdash$	<del>                                     </del>
	B			8	8	8										ļ		<b>_</b>	-	┼	-	┼	
					8	8															<u> </u>		
	C	-		8	1		-	-	<del> </del>		†	<b> </b>	1.	7						1	1	1	
	0			Ø	8	8			╁	ļ . ·	-	+-	+-			┼	-		+-	1	<u> </u>	1	
	E			8	8	17						<u> </u>	<del> </del>		<del> </del>	-		-		-	+	+-	+
		1																	_	1		<u> </u>	<b>_</b>
	prere	hemist mewal/	ry T post	ech renev	val		A		£	1	A			£	1	put			X	T.C.	AM		
	· prere	hemist mewal/	ry To	ech renev	val		1		£	W.	PH			x	X	ph			X	C	FAM	<u> </u>	

					į						Tes	st si	tart	ed: :	Date	NO	LZ	•	T.Jwel	439	_		
Project#	K5990		71.		1,000	ı	<del></del>	<del></del>					nded		Date				Time	( <del>2</del> 3	Q		
Client El											m.	- 4a CI	naai	ев_С					ID:	# <i>BB</i> L	1mi	ə	
Sample Des Technician Time: Temperatur	cription	Ohour		<del>M</del>	24ho	ur_f	711	481	our_	DH	72	hour		9	6hou	<u> </u>					1		
lechnician Lime:	(9a) · ·	Ohour	R	<u> </u>	24hou 24hou	ir D	10	48h	our_	211	2 72 2 72	hour			6hou			<del></del>				•	
	Replicate	most	- 1		# Live	Orga	misms	3	,	Diss	olved	OxfAde	m.			ДĘ				C	onduct	ivity	
Dilution		Salin	F	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
%		LE	- 1	hr						30					AV				648	18	1		
56	A			8	7	7			8.4	183°	8.9			1.0	<u></u> ga	√./			640	188	8		
00	B			Я	8	8																	
					Sa	8																	
	<u> </u>	┝╼┤		8	1																		
	0			8	8	8							-					-					
	E			8	8	8							-					-		-			
																			<u> </u>	10			
	<u> </u>	-		8	X	X.			8.4	13	8.2			6.8	1/2/1	3			188	7008	1194		
75	<u>A</u>	-	1-1				<del>                                     </del>																
	<u>B</u>	<b> </b>		8	8	8					-		╁	<del>                                     </del>				-					
	C			8	8	10			ļ	ļ			<del> </del>	<del>                                     </del>				+	-	-			
	5			8	8	8								-		<u> </u>		<del> </del>	↓		<u> </u>	-	<del> </del>
		<del> </del>			8	-																	
	E_	<del> </del>	-	8	0	┝┵		-	-	-	<del>                                     </del>		<b>†</b>	<b> </b>									
		nemist		50 h						I W	-			0.0	*Zec	212			20	PYC	hut		
	prere	newal/	post:	renew	ral				£	//c	AL			1xc	AC	HHH.			100	1/gc	<u> </u>		<u> </u>

					1						Te	st st	tart	ed:	Date	<u>o a </u>	$\mathcal{E}_{\mathbf{L}}$	7	rime_	436	5		
Project#	X5220		31		<u></u> +							st e		:	Date	ामा	Z.	ŗ	rime	2	Q		•
Client E	Domoc	10	מי	500		77_		,								بكي			ID	BA	dm r	3	
Samole Des	scription_	$\alpha$	) ]	.33	24ho	177 (	<del>Au</del>	481	our_	<del>O</del> H	Te: 72	hour	bec 1	2	6hou	L							
Technicia:	a:	Ohour Ohour Ohour	立	35	24ho	ur I	3 <b>2</b> C	481 481	our	33	2 72 0 72	hour hour			6hou							•	
Temperatu				tio i	# Liv	o Oxu	aniem	я - <del> </del>	T .	Diss	olved	Oxyge	n			рН				C	manct	ivity	
Test Dilution	Replicate	Test Salin	ity		* 171.4		_				48	72	96	0	24	48	72	96	0	24	48	72	96
%		LIK	_	0 hr	24	48	72	96	0	24.	48	/2		]					-	do	7		
		1	-	0	8	0			8.4	13	3			64	2/3	50			986	131	50		
100	<u>A</u>			8		<u> </u>		<del>                                     </del>	Ť	N-	<u> </u>					•							
	B_			8	8	0			_					<u> </u>	_								
	C			8	8	0													-	-			
	n			×	8	0						<u> </u>						-					
	<u>-</u> -																	1					
	E			8	8	10	-		-	-	-												
						<b> </b>	<b> </b>	-	┼-	-	+-	-	┼─	<del>                                     </del>	1	1	$\vdash$		1	7			
	l A			8	·					$V_{-}$	<u> </u>		—	_	<u> </u>	├	┼─		<del>                                     </del>	<del> </del>	-	<del>                                     </del>	
	D 3			8													<b>_</b>	-		ļ	-	├	ļ. ——
	1	1	┼─	10	<b> </b>	-												'					
	C	14	<b>1</b> 2	1 X	<b>-</b>	-		-	-	-	╁──	╁	+	17									
	0	4/1	V	1					_	<del> </del>	-	<del> </del>	-	<del>                                     </del>	-		-	-	+-	+		<del>                                     </del>	
	F			8		1								-	ļ		┼	+-	+-	-	-	-	+-
	<del>                                     </del>	1	1	1															<u> </u>	1-10	<del> </del>	<b>-</b>	<del> </del>
the state of the s		hemis	L Ty	rech	<u>1</u>				A	P	TXI^			AC	P	AKE			A.	Z.	, KSH		
	· prere	enewal	/post	trene	M.STT	·			<u> </u>	1/35	15,4			<u> </u>	VAL	4		<u></u>	<u></u>	XII.	سيدياد	السيديني	

	VED 20			į						Te	st s	tart	ed:	Date	ıdal	13	,	Time	19	2.		
Project#_	X5239 Dorad	0	her	VIC	1					Te	st e	nded	l:	Date	Jole	<b>1</b> 13	,	Time	1930	2.		
							<del>-</del> .			_			es (	), pr	200			ID	#00	1 9	)81 3	
Sample Des Technicias				24ho	ur j		481	our	<u>30</u>	72	hou		. !	96ho	ır ı						- • • •	
Time: Temperatu		Ohour Ohour	11 <u>1</u>	24ho 24ho 24ho	ur <u>Ə</u>	4.4	481	our,	<b>V.</b> C	72	hour			6hou							•	
Temperatu	Replicate	Test		# Liv				;	Disa	olved	<b>රාද</b> yge	m		,	ρĒ	1			C	onduct	ivity	
Dilution		Salinity	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
%		Ma	hr							<u></u>			<del>                                     </del>	-			-	-	23/			
	A		8	8	8	1		(3	8:14	8.1			7.4	1/4	7.5			40.	1861	195.0		
	В		8	8	8								<u> </u>						<u></u>			
	C		8	8	8																	
	<u> </u>	<del> </del>						$\vdash$														
	0		8	8	8			_			-	-										
	F		8	8	8								<u> </u>					<u> </u>				
				,																		
			-	8	8	<u> </u>		02	8/3	ha			11	1/2/5	7.2			452	فالأفاد	600		
32	A		8	-		<b> </b> -		1X-~	18.	V	-	-	1	T W								
	B		8	8	8					<u> </u>		<u> </u>		ļ			<u> </u>	-				ļ
	C		8	8	8																	
				8	8							· ·	;									
	0		8		4	-		<del>                                     </del>	·				<del>                                     </del>									
	E		8	8	8	-	<u> </u>	ļ		<u> </u>	-	├-	-	<del> </del>	-		-	$\vdash$	-	<del>                                     </del>		
				1							72.00			1 7/1-7				<u> </u>	100			<u> </u>
	prere	nemistry newal/pos	Tech strenev	val		ر مینون به در در در در در در در در در در در در در		W	Ac	LC	,		DAY	1/2C	XC.	<u> </u>		ph	#C	XC.		

	X5229										Te	st s	tart	ed:	Date	<b>iola</b>	<i>al</i>		Time	1490	2		
Project#_	1 Donoc	10	Ck	neh	ΩiC	Da	1				Te	st e	nded	l:	Date	WHO	[D		Time	193	Ō		
Sample De	scription			<u> </u>	24ho	ur ð	rc -	 	our	yc	Те. 72	st S bour	peci	.es_[	), Or 6ho	m		ìS	ID	#574	199	क्षाउ	
Technicia Time:	n:	Ohour Ohour Ohour	14	30	24ho	ur 3	1 <u>5</u>	481 481	our	133C 34. V	) 72 0 72	hour			6hou							.•	
Temperatu	re (°C):	Test	t.			e Org			,	Diss	olved	ටාද <u>ා</u> ල	200.			ρI	I.			C	onduct	ivity	,
Dilution		Salin	ity	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
%		140	<u>a_</u>	hx							-		-		h.\/	- a		<del> </del>	100	08/		-	
42	A			8		8			8.0	3	14			1.1	13.1	GQ.	_		63	2/60	140		
	B			8	8	8							_				<b>_</b>		-			<u> </u>	
	C			8	8	8											_		-	<u> </u>			
	5			8	8	8													ļ	<u> </u>	ļ		
	F			8	8	8								<u> </u>									
																		<u>.</u>					
H10	A			8	8	8			83	5/23	79			7.0	2/9	70			bat	200	801		
50	R			8	8	8																	
				8	8	8																	ļ
				8	8	8							· -	7									
	0	-			8	8	-	-		<del>  `</del>													
	E		<u> </u>	8	0	10		-	-				-	<del> </del>	-				1				
		hemust	ry T	ecn						£4	Ser			DIY.	44	42			av	14	Ro		
	prere	newal/	post	renew	ral.			اسسیں	by	K	joc		<u> </u>	1xx	AC	pc	1		1	AC	<u> </u>		<u> </u>

	V=200	) ·			•			_			Te	st s	tart	.ed:	Date	1019	13			<u>1490</u>			
Project#	X52299 LOorac	1	つ レ		~:C	0 1		<del></del>				st e			Date			1	Time	128	D		
Client	LOVOC		<u> </u>		<i>- 117</i>	<u> </u>	<del></del>			_								25	ID	# PY24	199	क्षड	
Sample De	scription_	Ohour	) Y	<u></u>	24ho	urd	<u> </u>	481	our_	AC.	72	hour	bec 7		) bhoi	ш		2.A. T			_,		
Technicia Time:	_,	Obour	- IU	30	24ho	ur Į	<u>315</u>	_ 481 _ 481	our	1930 2011	Te 72 72 6 72	hour			6hou								
Temperatu		Ohour			* I.i.v						olved					ρĒ	[			C	onduct	ivity	
Test Dilution	Replicate	Test Salin			* 177.0	e ora				· ·					24	48	72	96	0	24	48	72	96
%		١.,		0 hr	24	48	72	96	0	24	48	72	96	0	24	40	′*	"	Ι.				
/0		1	3			_	<del> </del> -		1.		1			70	1/4	20			84	~X	808		
56	A			8	8	8		<u> </u>	K.	8/3	177	ļ		11,0	13.	-	<u> </u>	-	ע	80	0		
	В			8	8	8					1												
	<u> </u>	<del>                                     </del>		_				-			<del>                                     </del>												
	0			X	8	8					ļ			_			<del> </del>	-	-	<b> </b>		<del> </del>	
	10			×	8	8								1									
	<u> </u>	┟╾┽						-		1			F										
	F			8	8	8				ļ	<u> </u>			<b> </b>	ļ		<del> </del>	-	├	├─			
						· .			1					İ									
		<del>  </del>				2			رادير	183	1/2			ba.	<b>小</b> 次	6.			82h	8/08	191		
75	l A			8	8	8		<u> </u>	24	145	TV.			W	15°	- ·	-	-	110.	MA	<del>                                     </del>	<del>                                     </del>	
	B			8	8	-												<u> </u>			<u> </u>		ļ
	<u> </u>					<u> </u>			<del>                                     </del>												1		İ
	C			8	8	8	<u> </u>	ļ	<u> </u>		<del> </del>	-	<del>                                     </del>	├-			-	+-		<del>                                     </del>	$\vdash$		
	0			8	8	8								-						<u> </u>	<del> </del>	<u> </u>	<u> </u>
	1 U				1	8				<u> </u>													
	E			8	8	δ		<del> </del>	-		-	-	┼	-	├		+-	1-	1		<b>†</b>		
																		<del>                                     </del>		1.00	<del>                                     </del>	<del> </del>	<b></b>
	C	nemist	ry T	ecn	1		Time & Time II		pi	45	20			at	AC	2			at	2	XC.	ł	
H	prere	newal/	post	Tenem	ia.				44	MC	100	1	<u> </u>	1	M	坚	<u> </u>	<u> </u>	1			<del></del>	

Project#_	X522	<del>?</del> ·					<del></del>			Te	st s	tart	ed:	Date	alon	IB.		Time.				
Client_	1 Divoc	40 C	Ther	γiĆ	LOS		<u></u>			Te	st e	nded	l:	Date	John	ઇત્		Time	<b>130</b>	7		
Client	<u>, unc</u>			}					• •	Τе	st S	neci	es C	); pr	$\infty \sigma$	elo	25_	ID	#52	193	£18€	
Sample De	scription	Ohour	युट _	24hc	ur &	ور	48ì	our_	<u>LC</u>	72	hour		;	6ho	1r						,	
Time:		Ohour 1	130 50.0	24hc	ur J	<u>312</u>	_ 481 481	our	30.1	$\frac{1}{2}$ $\frac{72}{2}$	hour			6hot	ir							
Client Sample Der Technician Time: Temperatu	re (°C):	Onour_		# 7.iv	e Ora	anism	8	Τ.	Diss	olved	Oxyge	n			pE	:			C	onduct	ivity	•
Test Dilution	Replicate	Test Salinit	.y			_					72	96		24	48	72	96	0	24	48	72	96
%		l Ua	0 hr	24	48	72	96	0	24	48	72					<u> </u>	1 -		200/			
100	A		8	8	0			8.4	<b>%</b>	7.8			6.4	33	4.9		<u> </u>	OBC	<u>%</u> `	429		
100	В		8	8	0		·											<u> </u>			<u> </u>	
	C		8	8	0													<u> </u>				
	<del>                                     </del>	<del>                                     </del>			0																ļ	
	0		8	8			<b> </b>		<u> </u>	<del> </del>		-	-		<del> </del>		-	-	<u> </u>			
	F		8	8	0										<u>.</u>		-				<del> </del>	
																	·	ļ	Ĺ.,		<u> </u>	
	A	11	8																			
<del></del>	_ <del></del>	+		1	1	-																
Va p	8		8	ļ	<u> </u>	<u> </u>	<b> </b>	<u> </u>	<u> </u>	ļ	<b> </b>	<b> </b>			-	┼─	-	十一	<u> </u>	-		1
		1 1	8							İ									<u> </u>		<u> </u>	
	HIC.	+-+		1	1							٠, -	1									
_	XZG		8	<u> </u>	ļ		<del> </del>		<del> </del>	<del>                                     </del>			-		-	-	+	<del>                                     </del>			<del>                                     </del>	
	T I		8														<b> </b>	<del>  -</del>		<u> </u>	<del> </del>	
																	<u></u>					
		nemustr	Tech						10	Ju.			PHA	44	Les			NIX	#	XC	-	
	prere	newal/po	strene	val				by,	Vác	pc.	<u> </u>	<u> </u>	HA	AC		1	<u> </u>	1840	<i>ac</i>	<u> </u>		<u> </u>

### APPENDIX C STATISTICAL ANALYSIS

								Page 22 of 35
				Dap	hnid Acute	Test-48 Hr Survival		
Start Date:	10/2/2013		Test ID:	X5229DP		Sample ID:	7	
End Date:	10/4/2013		Lab ID:	ADEQ880	630	Sample Type:	EFF2-Industrial	
Sample Date: Comments:	10/2/2013		Protocol:	EPAAW02	2-EPA/821/R	-02-01 Test Species:	CD-Ceriodaphnla dubia	
Conc-%	1	2	3	4	5			
D-Control	0.8750	1.0000	1.0000	1.0000	1.0000	······································		<del></del>
32	1.0000	0.8750	1.0000	0.8750	0.8750			
42	0.8750	1.0000	1.0000	1.0000	1.0000			
50	1.0000	1.0000	1.0000	1.0000	0.8750			
56	0.8750	1.0000	1.0000	1.0000	1.0000			
75	1.0000	1.0000	0.7500	1.0000	0.8750			
100	0.0000	0.0000	0.0000	0.0000	0.0000			

_		_	Tr	ansform:	Arcsin Sc	quare Root	}	Rank	1-Tailed	-
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	
D-Control	0.9750	1.0000	1.3564	1.2094	1.3931	6.055	5			
32	0.9250	0.9487	1.2829	1.2094	1.3931	7.841	5	22.50	16.00	
42	0.9750	1.0000	1.3564	1.2094	1.3931	6.055	5	27.50	16.00	
50	0.9750	1.0000	1.3564	1.2094	1.3931	6.055	5	27.50	16.00	
56	0.9750	1.0000	1.3564	1.2094	1.3931	6.055	5	27.50	16.00	
75	0.9250	0.9487	1.2872	1.0472	1.3931	12,116	5	24.50	16.00	
100	0.0000	0.0000	0.1777	0.1777	0.1777	0.000	5	3	· · · · ·	

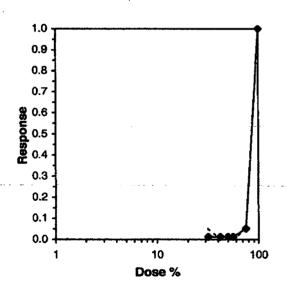
Auxiliary Tests					Statistic	Critical	Skew	Kurt	
Shapiro-Wilk's Test indicates nor	n-normal dis	stribution	)	0.81772	0.927	-1.0012	0.21204		
Bartlett's Test indicates equal var	iances (p =	0.70)	•	•	2.9701	15.0863			
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU			·	······································	
Steel's Many-One Rank Test	75	100	86.6025	1.33333					
Treatments vs D-Control									

				Dap	hnid Acute T	est-48 Hr Survival		
Start Date:	10/2/2013		Test ID:	X5229DP		Sample ID:	7	
End Date:	10/4/2013		Lab ID:	ADEQ880	630	Sample Type:	EFF2-Industrial	
Sample Date: Comments:	10/2/2013		Protocol:	EPAAW02	2-EPA/821/R-0	02-01 Test Species:	CD-Ceriodaphnia dubia	
Conc-%	1	2	3	4	5			
D-Control	0.8750	1.0000	1.0000	1.0000	1.0000			
32	1.0000	0.8750	1.0000	0.8750	0.8750			
42	0.8750	1.0000	1.0000	1.0000	1.0000			
50	1.0000	1.0000	1.0000	1.0000	0.8750			
56	0.8750	1.0000	1.0000	1.0000	1.0000			
75	1.0000	1.0000	0.7500	1.0000	0.8750			
100	0.0000	0.0000	0.0000	0.0000	0.0000			•

	Transform: Arcsin Square Root							Number Tota
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Resp Numb
D-Control	0.9750	1.0000	1.3564	1.2094	1.3931	6.055	5	1
32	0.9250	0.9487	1.2829	1.2094	1.3931	7.841	5	3
42	0.9750	1.0000	1.3564	1.2094	1.3931	6.055	5	1
50	0.9750	1.0000	1.3564	1.2094	1.3931	6.055	5	1
56	0.9750	1.0000	1.3564	1.2094	1.3931	6.055	5	1
75	0.9250	0.9487	1.2872	1.0472	1.3931	12.116	5	3
100	0.0000	0.0000	0.1777	0.1777	0.1777	0.000	5	40

Auxiliary Tests	Statistic	Critical	Skew	Kurt					
Shapiro-Wilk's Test Indicates non-normal distribution (p <= 0.05)	0.81772	0.927	-1.0012	0.21204					
Bartlett's Test indicates equal variances (p = 0.70)	2.9701	15.0863	•						
Trimmed Spearman-Karber									

Trim Level	EC50	95%	CL
0.0%			
5.0%	85.931	83.140	88.816
10.0%	85.932	84.979	86.895
20.0%	85.932	84.979	86.895
Auto-1.3% [	<b>85.457</b>	83.646	87.308



		• •	Ac	ute Fish T	est-48 Hr Survival		
0/2/2013		Test ID:	X5229PP		Sample ID:	7	
0/4/2013		Lab ID:	ADEQ880	630	Sample Type	: EFF2-industrial	
0/2/2013		Protocol:	EPAAW02	-EPA/821/F	R-02-01 Test Species:	PP-Pimephales promeias	
					•		
1	2	3	4	5			
0.8750	1.0000	1.0000	1.0000	1.0000			
1.0000	1.0000	1.0000	1.0000	1.0000			
1.0000	1.0000	1.0000	1.0000	1.0000			
1.0000	1.0000	1.0000	1.0000	1.0000			
1.0000	1.0000	1.0000	1.0000	1.0000			
1.0000	0.8750	1.0000	1.0000	1.0000			
0.0000	0.0000	0.0000	0.0000	0.0000			
	0/4/2013 0/2/2013 1 0.8750 1.0000 1.0000 1.0000 1.0000	0/4/2013 0/2/2013 1 2 0.8750 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.8750	0/4/2013         Lab ID:           0/2/2013         Protocol:           1         2           0.8750         1.0000         1.0000           1.0000         1.0000         1.0000           1.0000         1.0000         1.0000           1.0000         1.0000         1.0000           1.0000         1.0000         1.0000           1.0000         1.0000         1.0000           1.0000         0.8750         1.0000	0/2/2013         Test ID:         X5229PP           0/4/2013         Lab ID:         ADEQ8800           0/2/2013         Protocol:         EPAAW02           1         2         3         4           0.8750         1.0000         1.0000         1.0000           1.0000         1.0000         1.0000         1.0000           1.0000         1.0000         1.0000         1.0000           1.0000         1.0000         1.0000         1.0000           1.0000         1.0000         1.0000         1.0000           1.0000         0.8750         1.0000         1.0000	0/2/2013         Test ID:         X5229PP           0/4/2013         Lab ID:         ADEQ880630           0/2/2013         Protocol:         EPAAW02-EPA/821/F           1         2         3         4         5           0.8750         1.0000         1.0000         1.0000         1.0000           1.0000         1.0000         1.0000         1.0000         1.0000           1.0000         1.0000         1.0000         1.0000         1.0000           1.0000         1.0000         1.0000         1.0000         1.0000           1.0000         1.0000         1.0000         1.0000         1.0000           1.0000         0.8750         1.0000         1.0000         1.0000	0/2/2013         Test ID:         X5229PP         Sample ID:           0/4/2013         Lab ID:         ADEQ880630         Sample Type           0/2/2013         Protocol:         EPAAW02-EPA/821/R-02-01 Test Species:           1         2         3         4         5           0.8750         1.0000         1.0000         1.0000         1.0000           1.0000         1.0000         1.0000         1.0000           1.0000         1.0000         1.0000         1.0000           1.0000         1.0000         1.0000         1.0000           1.0000         1.0000         1.0000         1.0000           1.0000         0.8750         1.0000         1.0000         1.0000	0/2/2013         Test ID:         X5229PP         Sample ID:         7           0/4/2013         Lab ID:         ADEQ880630         Sample Type:         EFF2-Industrial           0/2/2013         Protocol:         EPAAW02-EPA/821/R-02-01 Test Species:         PP-Pimephales promelas           1         2         3         4         5           0.8750         1.0000         1.0000         1.0000         1.0000           1.0000         1.0000         1.0000         1.0000           1.0000         1.0000         1.0000         1.0000           1.0000         1.0000         1.0000         1.0000           1.0000         1.0000         1.0000         1.0000           1.0000         1.0000         1.0000         1.0000           1.0000         0.8750         1.0000         1.0000

			Tra	ansform:	Arcsin S	quare Root	Rank	1-Tailed		
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	
D-Control	0.9750	1.0000	1.3564	1.2094	1.3931	6.055	5			
32	1.0000	1.0256	1.3931	1.3931	1.3931	0.000	5	30.00	16.00	
42	1.0000	1.0256	1.3931	1.3931	1.3931	0.000	5	30.00	16.00	
50	1.0000	1.0256	1.3931	1.3931	1.3931	0.000	5	30.00	16.00	
56	1.0000	1.0256	1.3931	1.3931	1.3931	0.000	5	30.00	16.00	
75	0.9750	1.0000	1.3564	1.2094	1.3931	6.055	5	27.50	16.00	
100	0.0000	0.0000	0.1777	0.1777	0.1777	0.000	5			

Auxiliary Tests					Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates nor	-normal dis	stribution	(p <= 0.05)	)	0.5466	0.927	-2.7369	8.25694
Equality of variance cannot be co	nfirmed		•			•		
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	· · · · · · · · · · · · · · · · · · ·			
Steel's Many-One Rank Test	75	100	86.6025	1.33333	<del></del>			
Treatments vs D-Control								

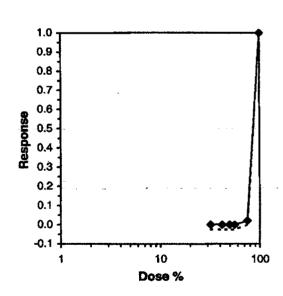
				A	cute Fish Test	-48 Hr Survival		
Start Date:	10/2/2013		Test ID:	X5229PP		Sample ID:	7	
End Date:	10/4/2013		Lab ID:	ADEQ880	630	Sample Type:	EFF2-industrial	
Sample Date: Comments:	10/2/2013		Protocol:	EPAAW02	2-EPA/821/R-0	2-01 Test Species:	PP-Pimephales promelas	
Conc-%	1	2	3	4	5			
D-Control	0.8750	1.0000	1.0000	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			
50	1.0000	1.0000	1.0000	1.0000	1.0000			
56	1.0000	1.0000	1.0000	1.0000	1.0000			
75	1.0000	0.8750	1.0000	1.0000	1.0000			
100	0.0000	0.0000	0.0000	0.0000	0.0000			

	Transform: Arcsin Square Root							Number Total
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Resp Number
D-Control	0.9750	1.0000	1.3564	1.2094	1.3931	6.055	5	1 40
32	1.0000	1.0256	1.3931	1.3931	1.3931	0.000	5	0 40
42	1.0000	1.0256	1.3931	1.3931	1.3931	0.000	5	0 40
50	1.0000	1.0256	1.3931	1.3931	1.3931	0.000	5	0 40
56	1.0000	1.0256	1.3931	1.3931	1.3931	0.000	5	0 40
75	0.9750	1.0000	1.3564	1.2094	1.3931	6.055	5	1 40
100	0.0000	0.0000	0.1777	0.1777	0.1777	0.000	5	40 40

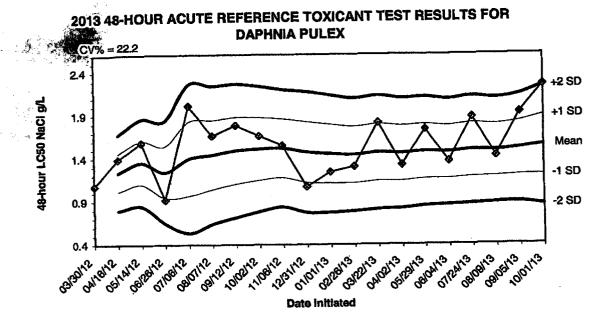
Auxiliary Tests	Statistic	Critical	Skew Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05)	0.5466	0.927	-2.7369 8.25694
Equality of variance cannot be confirmed			

Trimmed Spearman-Karber

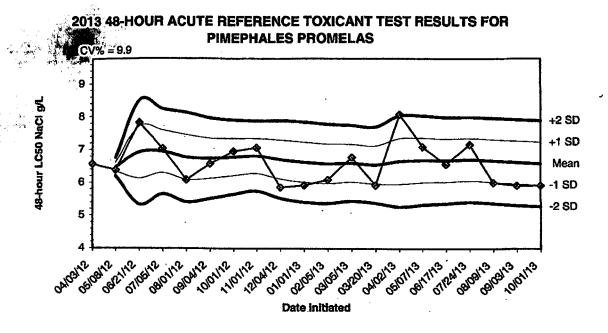
Trim Level	EC50	95%	CL	
0.0%	86.099	84.999	87.214	_
5.0%	86.347	85.775	86.923	
10.0%	86.347	85.775	86.923	
20.0%	86.347	85.775	86.923	
Auto-0.0%	86.099	84.999	87.214	



APPENDIX D **QUALITY ASSURANCE CHARTS** 



Dates	Values	Mean	-1 SD	-2 SD	+1 SD	+2 SD
03/30/12	1.0800					4.0704
04/16/12	1.3900	1.2350	1.0158	0.7966	1.4542	1.6734
05/14/12	1.5800	1.3500	1.0976	0.8452	1.6024	1.8548
06/26/12	0.9200	1.2425	0.9447	0.6469	1.5403	1.8381
07/06/12	2.0100	1.3960	0.9667	0.5373	1.8253	2.2547
08/07/12	1.6600	1.4400	1.0412	0.6423	1.8388	2.2377
09/12/12		1.4886	1.1025	0.7164	1.8747	2.2608
10/02/12	i	1.5100	1.1474	0.7849	1.8726	2.2351
11/06/12	1	1.5144	1.1750	0.8356	1.8539	2.1933
12/31/12	i	1.4700	1.1205	0.7710	1.8195	2.1690
01/01/13		1.4491	1.1103	0.7716	1.7878	2.1266
02/26/13		1.4367	1.1108	0.7850	1.7625	2.0883
03/22/13		1.4654	1,1367	0.8080	1.7941	2.1228
04/02/13	11	1,4550	1,1368	0.8186	1.7732	2.0914
05/29/13	1	1.4733	1.1586	0.8439	1.7881	2.1028
06/04/13		1.4663	1.1609	0.8555	1.7716	1
07/24/13	1	1.4900		0.8671	1.8015	1
08/09/13		1.4861	1.1835	0.8809	1.7887	2.0913
09/05/13	1	1.5089			1.8194	2.1299
10/01/13	1			I		2.2327



Dates	Values	Mean	-1 SD	-2 SD	+1 SD	+2 SD
04/03/12	6.5600	·	•			
05/08/12	6.3700	6.4650	6.3306	6.1963	6.5994	6.7337
06/21/12	7.8200	6.9167	6.1286	5.3406	7.7047	8.4928
07/05/12	7.0300	6.9450	6.2991	5.6531	7.5909	8.2369
08/01/12	6.0900	6.7740	6.0964	5.4188	7.4516	8.1292
09/04/12	6.5700	6.7400	6.1282	5.5165	7.3518	7.9635
10/01/12	6.9500	6.7700	6.2059	5.6419	7.3341	7.8981
11/01/12	7.0600	6.8063	6.2741	5.7419	7.3384	7.8706
12/04/12	5.8600	6.7011	6.1118	5.5224	7.2904	7.8798
01/01/13	5.9200	6.6230	6.0149	5.4069	7.2311	7.8391
02/05/13	6.0900	6.5745	5.9757	5.3769	7.1734	7.7722
03/05/13	6.7700	6.5908	6.0171	5.4434	7.1646	7.7383
03/20/13	5.9200	6.5392	5.9593	5.3793	7.1192	7.6992
04/02/13	8.0700	6.6486	5.9573	5.2660	7.3398	8.0311
05/07/13	7.0900	6.6780	6.0022	5.3264	7.3538	8.0296
06/17/13	6.5600	6.6706	6.0171	5.3635	7.3242	7.9777
07/24/13	7.1600	6,6994	6.0556	5.4117	7.3433	7.9871
08/09/13	6.0000	6.6606	6.0145	5.3685	7.3066	7.9526
09/03/13	5.9200	6.6216	5.9712	5.3208	7.2720	7.9224
10/01/13	5.9200	6.5865	5.9343	5.2821	7.2387	7.8909

### 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: 10/1/13

From:

To: 10/1/13

To:

Test Initiated: 10/2/13

**Dilution Water Used:** 

**Receiving Water** 

Reconstituted Water

### **Dilution Series Results - Percent Survival**

TIME OF READING	REP	0	32	42	<b>5</b> 0	56	75	100
24-hour	A	100.0	100.0	100.0	100.0	87.5	100.0	100.0
	В	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	С	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	D	100.0	87.5	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	87.5	100.0	87.5	100.0	87.5	100.0	0.0
	В	100.0	87.5	100.0	100.0	100.0	100.0	0.0
	C	100.0	100.0	100.0	100.0	100.0	75.0	0.0
	D	100.0	87.5	100.0	100.0	100.0	100.0	0.0
	E	100.0	87.5	100.0	87.5	100.0	87.5	0.0
	Mean	97.5	92.5	97.5	97.5	97.5	92.5	0.0

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%)

X YES

NO

b.)½ LOW FLOW OR 2X CRITICAL DILUTION (N/A%) YES

NO

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

 $LC_{50} =$ 

85.46% effluent

95 % confidence limits: 87.31 - 83.65%

Method of LC<sub>50</sub> calculation: Spearman Karber

- 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 48 hour Acute Static Renewal Chemical Parameters Chart\*

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

Contact: Larken Pennington Analyst: Cotty, Haughton

Sample Collected

From: To: Date 10/1/13 Date 10/1/13 Time 1940 Time 2140

**Test Begin** 

Date 10/2/13

Time 1435

**Test End** 

Date 10/4/13

Time 1230

Parameter .		D.O.			Temperatur	<b>e</b>		Alkalinity			Hardness	fafar i sa Unitario da		рH	
Dilut/Time	Ohrs.	24hrs	48hrs	Ohrs :	24hrs	48hrs	Ohrs	24hrs	48hrs	Ohrs	24hrs	48hrs	Ohrs	24hrs	48hrs
0	8.3	8.4	8.1	24.6	24.4	24.6	44.0			36.0			7.4	7.6	7.2
32	8.3	8.3	8.1	24.6	24.4	24.6							7.1	6.5	7.3
42	8.3	8.3	8.1	24.6	24.4	24.6							<b>7.</b> I	5.7	7.1
50	8.3	8.3	8.2	24.6	24.4	24.6							7.0	5.6	7.1
56	8.4	8.3	8.2	24.6	24.4	24.6							7.0	5.9	7.1
75	8.4	8.3	8.2	24.6	24.4	24.6		,					6.8	5.4	6.3
100	8.4	8.2	8.3	24.6	24.4	24.6	4.0			228.0			6.4	4.5	5.2

<sup>\*</sup>This Form is to be submitted with each DMR.6.6
Alkalinity and hardness to be reported as mg/l CaCO<sub>3</sub>



## Acute Forms Fathead Minnow Survival

Permittee: El Dorado Chemical - Outfall 007

NPDES Permit Number: AR0000752/ AFIN 70-00040

**Composite Collected** 

From: 10/1/13

To: 10/1/13

From:

To:

Test Initiated: 10/2/13

**Dilution Water Used:** 

**Receiving Water** 

Reconstituted Water

#### **Dilution Series Results - Percent Survival**

TIME OF READING	REP	0	32	42	<b>50</b> §	56	75	100
24-hour	A	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	В	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	С	100.0	100.0	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	100.0	0.0
	В	100.0	100.0	100.0	100.0	100.0	87.5	0.0
	C	100.0	100.0	100.0	100.0	100.0	100.0	0.0
	D	100.0	100.0	100.0	100.0	100.0	100.0	0.0
	E	100.0	100.0	100.0	100.0	100.0	100.0	0.0
	Mean	100.0	100.0	100.0	100.0	100.0	97.5	0.0

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%)

X YES

NO

b.)½ LOW FLOW OR 2X CRITICAL DILUTION (N/A%)

YES

NO

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

 $LC_{50} =$ 

86.10% effluent

95 % confidence limits: 87.21 - 85.00%

Method of LC<sub>50</sub> calculation: Spearman Karber

- 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: Cotty, Haughton

Sample Collected

From: To:

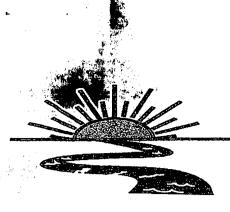
Date 10/1/13 Date 10/1/13 Time 1940 Time 2140

Test Begin Test End Date 10/2/13 Date 10/4/13 Time 1420 Time 1230

Parameter.		D.O.			<b>Temperatur</b>	e		Alkalinity			Hardness:			рĦ	
Dilut/Time	Ohrs:	24hrs	48hrs	Ohrs	24hrs-	48hrs	Section States of	24hrs	48hrs	Ohrs	24hrs	48hrs	Ohrs	24hrs	48hrs
0	8.3	8.4	8.1	24.4	24.4	24.6	44.0			36.0			7.4	7.6	7.5
32	8.3	8.3	7.9	24.4	24.4	24.6							7.1	6.5	7.2
42	8.3	8.3	7.9	24.4	24.4	24.6							7.1	5.7	6.9
50	8.3	8.3	7.9	24.4	24.4	24.6							7.0	5.6	7.0
56	8.4	8.3	7.9	24.4	24.4	24.6							7.0	5.9	7.0
75	8.4	8.3	7.9	24.4	24.4	24.6							6.8	5.4	6.7
100	8.4	8.2	7.8	24.4	24.4	24.6	4.0		,	228.0			6.4	4.5	4.9

<sup>\*</sup>This Form is to be submitted with each DMR.6.6
Alkalinity and hardness to be reported as mg/l CaCO<sub>3</sub>

# APPENDIX F REPORT QUALITY ASSURANCE FORM



## **Bio-Analytical Laboratories**

3240 Spurgin Road Post Office Box 527 Doyline, LA 71023 (318) 745-2772 1-600-259-1246 Fex: (316) 745-2773

### REPORT QUALITY ASSURANCE FORM

Client: EOCC 007
Project#: <u>X5229</u>
Chain of Custody Documents Checked by: 10/7/3 Technician/Date
Raw Data Documents Checked by: + 10 7 13  Technician/Date
Statistical Analysis Package Checked by: SGS 10/8/13  Quality Manager/Date
Quality Control Data Checked by: EGO 10 8 13  Quality Manager/Date
Report Checked by: SS 10 14 13  Quality Manager/Date
I certify that this document was prepared under my direction or supervision in accordance with a

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.

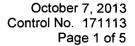
Quality Manager

Suppose Suppo

10/14/13 Date

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

Report Rev. 3.0





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

This report contains the analytical results and supporting information for samples submitted on October 1, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

John Overbey
Laboratory Director

This document has been distributed to the following:

PDF co

El Dorado Chemical Company ATTN: Ms. Larken Pennington Ipennington@edc-ark.com

El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc. ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com



### SAMPLE INFORMATION

### **Project Description:**

Two (2) water sample(s) received on October 1, 2013 Daily, Weekly-Permit AR0000752 P.O. No. 357042

#### **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest. Ice chest #1 was delivered with a custody seal intact and signed

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

#### Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time Notes
171113-1	010 9/30/13 9:55am 10/1/13 9:55am	01-Oct-2013 0955
171113-2	010 10/1/13 9:55am	01-Oct-2013 0955

#### Qualifiers:

D Result is from a secondary dilution factor

#### References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

"Standard Methods for the Examination of Water and Wastewaters", 21st edition.

"American Society for Testing and Materials" (ASTM).

"Association of Analytical Chemists" (AOAC).



### **ANALYTICAL RESULTS**

AIC No. 171113-1

Sample Identification: 010 9/30/13 9:55am 10/1/13 9:55am

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillar SM 4500-NH3 B,G	t <b>ion</b> Prep: 02-Oct-2013 0937 by 93	<b>2.0</b> Analyzed: 03-0	0.1 Oct-2013 1223 by 93	mg/l Batch: W45118	-
Carbonaceous BOD 5-day SM 5210 B	Prep: 02-Oct-2013 0808 by 285	< 2 Analyzed: 07-0	2 Oct-2013 1138 by 285	<b>mg/l</b> Batch: W45114	
Total Suspended Solids USGS 3765	Prep: 02-Oct-2013 0836 by 285	<b>14</b> Analyzed: 02-0	4 Oct-2013 1502 by 285	<b>mg/l</b> Batch: W45117	
Phosphorus EPA 200.7	Prep: 01-Oct-2013 1439 by 271	<b>0.095</b> Analyzed: 02-C	0.02 Oct-2013 1737 by 305	<b>mg/l</b> Batch: S35503	

**AIC No.** 171113-2

Sample Identification: 010 10/1/13 9:55am

Analyte		Result	RL	Units	Qualifier
Total Dissolved Solids SM 2540 C	Prep: 03-Oct-2013 1007 by 285	<b>220</b> Analyzed: 04-0	10 Oct-2013 1407 by 285	mg/l Batch: W45140	
Chloride EPA 300.0	Prep: 01-Oct-2013 1428 by 07	<b>17</b> Analyzed: 01-0	0.2 Oct-2013 1552 by 07	<b>mg/l</b> Batch: C16081	
Sulfate EPA 300.0	Prep: 01-Oct-2013 1428 by 07	<b>28</b> Analyzed: 01-0	0.2 Oct-2013 1552 by 07	<b>mg/l</b> Batch: C16081	
<b>Oil and Grease</b> EPA 1664A	Prep: 02-Oct-2013 0847 by 295	< 5 Analyzed: 03-0	5 Oct-2013 0828 by 295	<b>mg/l</b> Batch: B8579	
Fecal Coliform SM 9222 D		66 Analyzed: 01-0	1 Oct-2013 1435 by 304	/ <b>100ml</b> Batch: M4002	



### **DUPLICATE RESULTS**

A 4-		410 11-	D 16	222	RPD		A		
Analyte		AIC No.	Result	RPD	Limit	Preparation Date	Analysis Date	<u>Dil</u>	Qual
Carbonaceous BOD 5-day		171073-1	< 2 mg/l			02Oct13 0808 by 285	07Oct13 1124 by 285		
	Batch: W45114	Duplicate	< 2 mg/l	0.00	20.0	02Oct13 0808 by 285	07Oct13 1126 by 285		
Total Suspended Solids		171077-1	< 4 mg/l			02Oct13 0836 by 285	02Oct13 1502 by 285		
	Batch: W45117	Duplicate	< 4 mg/l	0.00	20.0	02Oct13 0837 by 285	02Oct13 1502 by 285		
Total Suspended Solids		171078-1	6.4 mg/l			02Oct13 0836 by 285	02Oct13 1502 by 285		
	Batch: W45117	Duplicate	6.8 mg/l	6.06	20.0	02Oct13 0837 by 285	02Oct13 1502 by 285		
Total Dissolved Solids		171086-1	1300 mg/l			03Oct13 1007 by 285	04Oct13 1407 by 285		
	Batch: W45140	Duplicate	1300 mg/l	1.66	10.0	03Oct13 1007 by 285	04Oct13 1407 by 285		

### **LABORATORY CONTROL SAMPLE RESULTS**

Analyte	Spike Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	112	80.0-120			W45118	02Oct13 0938 by 93	03Oct13 1221 by 93	. <del>- ::-</del>	
Carbonaceous BOD 5-day	200 mg/l	104	84.5-115			W45114	02Oct13 0808 by 285	07Oct13 1123 by 285		
Phosphorus	5 mg/l	102	85.0-115			S35503	01Oct13 1337 by 271	02Oct13 1517 by 305		
Chloride	20 mg/l	92.0	90.0-110			C16081	01Oct13 1108 by 07	01Oct13 1142 by 07		
Sulfate	20 mg/l	92.0	90.0-110			C16081	01Oct13 1108 by 07	01Oct13 1142 by 07		
Oil and Grease	40 mg/l 40 mg/l	97.0 88.0	78.0-114 78.0-114	9.73	20.0	B8579 B8579	02Oct13 0848 by 295 02Oct13 0848 by 295	03Oct13 0828 by 295 03Oct13 0828 by 295		

### **MATRIX SPIKE SAMPLE RESULTS**

Analyte	Sample	Spike Amount	-% * :	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	171113-1	1 mg/l	85.4	80.0-120	W45118	02Oct13 0938 by 93	03Oct13 1307 by 93	5	D
	171113-1	1 mg/l	85.6	80.0-120	W45118	02Oct13 0938 by 93	03Oct13 1309 by 93	5	D
	Relative Pe	rcent Difference:	0.0496	25.0	W45118				D
Phosphorus	17:1073-1	5 mg/l-	-104	75.0-125	S35503	01Oct13 1337 by 271	02Oct13 1521 by 305		· • · · ·
•	171073-1	5 mg/l	106	75.0-125	S35503	01Oct13 1337 by 271	02Oct13 1539 by 305		
	Relative Pe	cent Difference:	1.62	20.0	S35503				
Chloride	171089-3	20 mg/l	93.4	80.0-120	C16081	01Oct13 1108 by 07	01Oct13 1329 by 07		
	171089-3	20 mg/l	96.3	80.0-120	C16081	01Oct13 1108 by 07	01Oct13 1356 by 07		
	Relative Per	rcent Difference:	2.57	10.0	C16081				
Sulfate	171089-3	20 mg/l	92.1	80.0-120	C16081	01Oct13 1108 by 07	01Oct13 1329 by 07		
	171089-3	20 mg/l	94.4	80.0-120	C16081	01Oct13 1108 by 07	01Oct13 1356 by 07		
	Relative Per	rcent Difference:	2.40	10.0	C16081				



### **LABORATORY BLANK RESULTS**

				QC			
Analyte	Result	RL	PQL	Sample	<b>Preparation Date</b>	Analysis Date	Qual
Total Dissolved Solids	< 10 mg/l	10	10	W45140-1	03Oct13 1007 by 285	04Oct13 1407 by 285	
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45118-1	02Oct13 0938 by 93	03Oct13 1219 by 93	
Carbonaceous BOD 5-day	< 2 mg/l	2	2	W45114-1	02Oct13 0808 by 285	07Oct13 1122 by 285	
Total Suspended Solids	< 4 mg/l	4	4	W45117-1	02Oct13 0837 by 285	02Oct13 1502 by 285	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35503-1	01Oct13 1337 by 271	02Oct13 1513 by 305	
Chloride	< 0.2 mg/l	0.2	0.2	C16081-1	01Oct13 1108 by 07	01Oct13 1115 by 07	
Sulfate	< 0.2 mg/l	0.2	0.2	C16081-1	01Oct13 1108 by 07	01Oct13 1115 by 07	
Oil and Grease	< 2 mg/l	2	5	B8579-1	02Oct13 0848 by 295	03Oct13 0828 by 295	
Fecal Coliform	< 1 /100ml	1	1	M4002-1		01Oct13 1435 by 295	



### CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

		·· <del></del>																		PAGE	1 OF 1		
Client	b				PO	No.		NO				ANAL	YSE	SREC	UEST	ED					NTROL NO:		
Proje		do Chemical Company		1	ł			OF		1	8				1		ł	1	1		171113		
Reference: Daily - Permit AR0000752		-			В	<b>1</b>		Total Phosphoru					1		ł		JAIC PRO	OPOSAL NO:					
	Project			MAT		XIX	lo	<b>4</b>	ட	₹					1 1			-	Carrier:				
Mana	ger: Ms. L	arken Pennington			W			Т [	IS	Coli. F	<u>a</u>			1	ļ	}		ł		-	Gold Star		
Samp By: AIC	oled _		G R	00	A	S		T	CBOD, TSS,NOAN	Ŏ	. Tot										d Temperature (	5	
	Sample	Date/Time	1 A	М	E	1	1	E	8		NH3N,					1 1		ł		<del> </del>	1		
No.	Identification	Collected	В	Р	R	L		s	L		Ż			1	ļ			İ	ľ		Remarks		
	010	9:550m-9.550m		Х	х			1	X														
]	010	10/1/13	Х		х		,	1		X			-	<u> </u>	Ì					10 KS		_	
ļ	<del></del>	9:55an								<u> </u>										Outcal	U 010		
	010			×	х			1			x			l	1					TO'AS			
<b> </b>		9:05an-9.55a	-	-										ļ	ļ		—		<del>                                     </del>	OUTFAL	010		
		_		1													<u></u>			-			
																					*		
																				Field pH	calibration		
	•	Container Type							P	Р	Р.									on	@		
		Preservative							NO	T	S									Buffer:			
G = Glass P = Plastic								-	vials					ICI to							Thiosulfate		
NO = none S = Sulfuric acid pl							N = 1		acid p					aOH t		2	Z = Zinc acet			etate		_	
Turnaround Time Requested: (Please circle)						,				quishe	ď	^		Date/	Time		Rece	eived			Date/Time		
NORMAL or EXPEDITED IN DAYS								į	Ву:	46	INVa.	KINI	id m	101	1/12	9:15am	Ву:				1	ı	
Expedited results requested by:						_		}	<u> </u>	0 %		· total	adaul		<u>((D</u>	1.17 KLM	<u> </u>				<u></u>		
Who should AIC contact with questions: Phone 870-312-1752 Fax:										quishe	d		•	Date/	Time			ived in	n Lab		Date/Time		
Report Attention to: Ms. Larken Pennington									Ву:								BS.	_		<b>\</b>	1330		
	t Address to:	Post Office Box 23						ł	Comp	nents:				<u> </u>				m	Mr	- Joh	1250	$\dashv$	
	· • ·	El Dorado, AR 717							JUI 111									•	\	ì			
		Lpennington@edc-		om .																			

FORM 0060



## CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

					155											,			<del></del>		PAGE	1 OF 1
Client	El Dorado	o Chemical Company	,	:	PO	No.		NO OF	<u> </u>			ANA	LYSE	SREC	UES	TED			· -	<del>,</del>		NTROL NO:
Projec		o onemical company		-	1			J OF		, a		1								1		71113
Refere	ence: Week	ly - Permit AR000075	2	:	1			В	<u> 충</u>	(2 / Week)				1		1		1			AIC PR	OPOSAL NO:
	Project			L۸	/ATR	NX_	0	\ Ver		ł		İ				1	1			Carrier:		
Manag		arken Pennington	,		W			T T	(2 / Week)	🛪	l							1	1	1		Gold Star
Samp	ea		G	C	A	S		T	) 90	,CI,SO4				1			1					ed Temperature C
By: AIC	Sample	Date/Time	R	O M	TE	0		F	ŏ	O,	1	1			1			1	ŀ	1		3.7°C
No.	Identification	Callagrad	В	P	R			S		TDS,						1				ľ		
١	010	10/1/13	x	<u> </u>						<del></del>		<del>                                     </del>	$\vdash$	+	+	+	├	╁	+-	┿	LOAS	Remarks
	010	10/1/13 9:55an	_^_		X			1	X			1	ļ			1		1			1-	1010
i	010	10/11/13 9:55am	x		х			1		Х											ТООТТРА	
		11.516(0)		-							<del>                                     </del>	<u> </u>		<del> </del>	<del>                                     </del>	<del> </del>		+	<del>                                     </del>	+	<del> </del>	
<u> </u>		<del></del>													<u> </u>				1			
				1							ł	1										
				-				1							<del> </del>	<del> </del>		+	+	+	<u> </u>	
				,										<u> </u>		<u> </u>						
				:																	<u></u> .	
	<del>-</del>			1										i							Field pH	calibration
ij l		Container Type							Р	Р											on	@
		Preservative							S	ОИ									1		Buffer:	
1	G = GI	' ' '	-					/OA 1						ICI to					T = S	Sodium Thiosulfate		
Turnar	NO = r	none S = Sulfu	ric ac	id pl	12		N = 1	_						laOH t		2				inc ac	etate	
Turnaround Time Requested: (Please circle)									Relind		ď	_	_	Date/				Rece	ived			Date/Time
NORMAL or EXPEDITED IN DAYS Expedited results requested by:									Ву:	Чn.	Val	ZIII	م ا ،	101	117	(0:00	<b>7</b> 1	Ву:				
Who should AIC contact with questions:								ļ.,	Dalias	VW	<u> 4010</u>	<u>UMD</u>	nhvi	1-1	1112	(0.00	ωη					
Phone 870-312-1752 Fax;									Relinq By:	lnisue	Ü		·	Date/	ıme				ived in	1 Lab		Date/Time
Report Attention to: Ms. Larken Pennington								[	By:								(	7	1330			
Report	Address to:	Post Office Box 23						Į	Comm	ents:		_							3 (YTT)	~ 1C	<del></del>	, , , , , , ,
	El Dorado, AR 71731 Lpennington@edc-ark.com																	1		(		

FORM 0060



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

This report contains the analytical results and supporting information for samples submitted on October 2, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

Jøhn Overbey Laboratory Directør

This document has been distributed to the following:

PDF cc: El Dorado Chemical Company

ATTN: Ms. Larken Pennington lpennington@edc-ark.com

El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc. ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com



#### **SAMPLE INFORMATION**

## **Project Description:**

Two (2) water sample(s) received on October 2, 2013 Daily-Permit AR0000752 P.O. No. 357042

### **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest. Ice chest #1 was delivered with a custody seal intact and signed with shipping documentation.

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

### **Sample Identification:**

Laboratory ID	Client Sample ID	Sampled Date/Time Notes
171143-1	010 10/1/13 9:55am 10/2/13 9:55am	02-Oct-2013 0955
171143-2	010 10/2/13 9:55am	02-Oct-2013 0955

#### Qualifiers:

D Result is from a secondary dilution factor

H Analytical holding time exceeded regulatory requirements

### References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

"Standard Methods for the Examination of Water and Wastewaters", 21st edition.

"American Society for Testing and Materials" (ASTM).

"Association of Analytical Chemists" (AOAC).



### **ANALYTICAL RESULTS**

AIC No. 171143-1

Sample Identification: 010 10/1/13 9:55am 10/2/13 9:55am

Dample Identification. 0.0	10/1/10 0.000111 10/2/10 0.00	Juin			
Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distilla	tion	2.2	0.5	mg/l	D
SM 4500-NH3 B,G	Prep: 02-Oct-2013 1507 by 93	Analyzed: 03-Oc	t-2013 1310 by 93	Batch: W45118	Dil: 5
Carbonaceous BOD 5-day SM 5210 B	Prep: 03-Oct-2013 0810 by 285	< 2 Analyzed: 08-Od	2 at-2013 0852 by 285	<b>mg/l</b> Batch: W45132	
Total Suspended Solids USGS 3765	Prep: 02-Oct-2013 1548 by 285	13 Analyzed: 03-Oc	4 st-2013 1340 by 285	<b>mg/l</b> Batch: W45123	
Phosphorus EPA 200.7	Prep: 02-Oct-2013 1504 by 311	<b>0.11</b> Analyzed: 03-Od	0.02 t-2013 1413 by 305	<b>mg/l</b> Batch: S35513	

AIC No. 171143-2

Sample Identification: 010 10/2/13 9:55am

Analyte	Result RL	Units	Qualifier
Fecal Coliform	84 1	/100ml	
SM 9222 D	Analyzed: 02-Oct-2013 141	14 by 295 Batch: M4008	



# **DUPLICATE RESULTS**

				•	RPD				
Analyte		AIC No.	Result	RPD	Limit	Preparation Date	Analysis Date	Dil	Quai
Total Suspended Solids		171043-1	660 mg/l			02Oct13 1548 by 285	03Oct13 1340 by 285		H
	Batch: W45123	Duplicate	670 mg/l	0.900	20.0	02Oct13 1548 by 285	03Oct13 1340 by 285		н
Total Suspended Solids		171043-2	81 mg/l			02Oct13 1548 by 285	03Oct13 1340 by 285		н
	Batch: W45123	Duplicate	82 mg/l	0.980	20.0	02Oct13 1548 by 285	03Oct13 1340 by 285		Н
Carbonaceous BOD 5-day		171154-1	< 2 mg/l			03Oct13 0810 by 285	08Oct13 0846 by 285		
	Batch: W45132	Duplicate	< 2 mg/l	0.00	20.0	03Oct13 0810 by 285	08Oct13 0848 by 285		

# **LABORATORY CONTROL SAMPLE RESULTS**

	Spike									
Analyte	Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	112	80.0-120			W45118	02Oct13 0938 by 93	03Oct13 1221 by 93		
Carbonaceous BOD 5-day	200 mg/l	107	84.5-115			W45132	03Oct13 0810 by 285	08Oct13 0844 by 285		
Phosphorus	5 mg/l	101	85.0-115			S35513	02Oct13 1505 by 311	03Oct13 1310 by 305		

# **MATRIX SPIKE SAMPLE RESULTS**

		Spike							
Analyte	Sample	Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	171113-1	1 mg/l	85.4	80.0-120	W45118	02Oct13 0938 by 93	03Oct13 1307 by 93	5	D
	171113-1	1 mg/l	85.6	80.0-120	W45118	02Oct13 0938 by 93	03Oct13 1309 by 93	5	D
	Relative Pe	rcent Difference:	0.0496	25.0	W45118				D
Phosphorus	171122-1	5 mg/l	105	75.0-125	S35513	02Oct13 1505 by 311	03Oct13 1313 by 305		
	171122-1	5 mg/l	106	75.0-125	S35513	02Oct13 1505 by 311	03Oct13 1317 by 305		
	Relative Pe	rcent Difference:	0.820	20.0	S35513				

# **LABORATORY BLANK RESULTS**

The state of the s	· <b>*</b> · · · · · · · · · · · · · · · · · · ·			QC			
Analyte	Result	RL	PQL	Sample	Preparation Date	Analysis Date	Qual
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45118-1	02Oct13 0938 by 93	03Oct13 1219 by 93	
Carbonaceous BOD 5-day	< 2 mg/l	2	2	W45132-1	03Oct13 0810 by 285	08Oct13 0843 by 285	
Total Suspended Solids	< 4 mg/l	4	4	W45123-1	02Oct13 1548 by 285	03Oct13 1340 by 285	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35513-1	02Oct13 1505 by 311	03Oct13 1307 by 305	
Fecal Coliform	< 1 /100ml	1	1	M4008-1		02Oct13 1156 by 295	



# CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

					00				<del></del>											PAGE	1 OF 1	
Client		o Chemical Company	,		POI	No.		NO.		Γ	Ē	ANAI	YSE.	SREC	UEST	ED	<del></del>	<del></del>	<del></del>		NTROL NO:	
Proje	ct			•				-			Total Phosphoru										POSAL NO:	
Refer		Permit AR0000752		i .				В	က္သ	1	gs				1					INIO I IX	DE OSAL IVO:	
Projec				ı		IATR	IX	0	13	11.	Ĕ		1	ì	1			-	İ	Carrier:		
Mana		arken Pennington	T = 1		W			Т	ă	Soli:	l ig			1							Gold Star	
Samp Bv:	ied		G R	CO	A	S		T	CBOD, TSS	0					İ					Receive	d Temperatur	e C
By: AIC	Sample	Date/Time		М	E	ĭ		E		1	Z Z			1						ļ	<u>3,2°C</u> _	
No.	Identification	Collected	В	Р	R	Ŀ		s			NH3N,										<b>-</b> .	
1.	010	101/12-10/2/13 9:53ah-9:550m		Х	Х			1	Х								-		<u> </u>	ļ	Remarks	
	010	102/13 9:57an	X		х			1		х								<del>                                     </del>		<b> </b>		
	010	13/113-13/2/19 9105am-8156		Х	×			1			х							<del>                                     </del>			<u></u>	
																					•	
						_	<u> </u>															
									<b></b>										<u> </u>			
		<u> </u>									<u> </u>									Field pH	calibration	
		Container Type	$\sqcup$					_	Р	Р	Р			<u> </u>						on	@	
		Preservative	Ш	لــــــــــــــــــــــــــــــــــــــ	لـــا			l	NO	T	s									Buffer:		
	G = GI						V = V							ICI to				T = S	odium	Thiosulfa	ite	
Turno	NO = r		iric ac	id b	-12		N = N						8 = 1	laOH 1		2			inc ac	etate		
	round Time Request									quishe	d			Date/			Rece	eived			Date/Time	
Exped	RMAL or EXPEDIT ited results requeste	ed by:			·	_			Ву:	Harl	ant	in i	m	10	2113	10:00	Ву:					:
	hould AIC contact w	vith questions:						ſ	Reline	quishe	d.	0		Date/	Time		Rece	eived in	Lab		Date/Time	
	870-312-1752 Fax:				ì				Ву:		,						BV:	1		$\overline{}$	Date/Time	and the state of t
	t Attention to:	Ms. Larken Pennin						Ļ						<u> </u>			_	fring	$m$ $^{1}$	اسلما	1315	
Repor	t Address to:	Post Office Box 23 El Dorado, AR 717 Lpennington@edc	731	om	ļ				Comn	nents:	Ì							1	1			
		·			i						i	·•	<u>,</u>		<del></del>	·		············	<del></del>	<del></del>	FORM 0060	



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

This report contains the analytical results and supporting information for samples submitted on October 3, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

Jøhn Overbey | Laboratory Directør

This document has been distributed to the following:

PDF cc: El Dorado Chemical Company

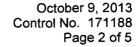
ATTN: Ms. Larken Pennington Ipennington@edc-ark.com

El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc. ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com





### **SAMPLE INFORMATION**

### **Project Description:**

Two (2) water samlple(s) received on October 3, 2013 Daily-Permit AR0000752 Weekly-Permit AR0000752 P.O. No. 357042

#### **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest. Ice chest #1 was delivered with a custody seal intact and signed with shipping documentation.

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

#### Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time Notes
171188-1	010 10/3/13 945AM	03-Oct-2013 0945
171188-2	010 10-3/-3 9:45AM	03-Oct-2013 0945

### Qualifiers:

D Result is from a secondary dilution factor

#### References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

"Standard Methods for the Examination of Water and Wastewaters", 21st edition.

"American Society for Testing and Materials" (ASTM).

"Association of Analytical Chemists" (AOAC).



October 9, 2013 Control No. 171188 Page 3 of 5

# **ANALYTICAL RESULTS**

AIC No. 171188-1

Sample Identification: 010 10/3/13 945AM

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distilla SM 4500-NH3 B,G	tion Prep: 03-Oct-2013 1502 by 93	<b>2.3</b> Analyzed: 03-0	0.5 Oct-2013 1846 by 93	<b>mg/l</b> Batch: W45144	D Dil: 5
Carbonaceous BOD 5-day SM 5210 B	Prep: 03-Oct-2013 1530 by 285	< <b>2</b> Analyzed: 08-0	2 Oct-2013 0914 by 285	<b>mg/l</b> Batch: W45132	
Total Suspended Solids USGS 3765	Prep: 03-Oct-2013 1607 by 285	<b>12</b> Analyzed: 04-0	4 Oct-2013 1151 by 285	<b>mg/l</b> Batch: W45147	
Phosphorus EPA 200.7	Prep: 03-Oct-2013 1542 by 311	<b>0.094</b> Analyzed: 04-0	0.02 oct-2013 1351 by 305	<b>mg/l</b> Batch: \$35521	

AIC No. 171188-2

Sample Identification: 010 10-3/-3 9:45AM

Analyte		Result	RL	Units	Qualifier
Total Dissolved Solids SM 2540 C	Prep: 07-Oct-2013 1421 by 285	<b>160</b> Analyzed: 08-0	10 Oct-2013 1520 by 285	<b>mg/i</b> Batch: W45173	
Chloride EPA 300.0	Prep: 03-Oct-2013 1548 by 07	<b>17</b> Analyzed: 03-0	0.2 Oct-2013 2344 by 07	<b>mg/l</b> Batch: C16095	
Sulfate EPA 300.0	Prep: 03-Oct-2013 1548 by 07	<b>29</b> Analyzed: 03-0	0.2 Oct-2013 2344 by 07	<b>mg/l</b> Batch: C16095	
Oil and Grease EPA 1664A	Prep: 04-Oct-2013 0820 by 295	< <b>5</b> Analyzed: 04-0	5 Oct-2013 1227 by 295	<b>mg/l</b> Batch: B8586	
Fecal Coliform SM 9222 D		<b>11</b> Analyzed: 03-0	1 Oct-2013 1426 by 304	<b>/100ml</b> Batch: M4012	



# **DUPLICATE RESULTS**

					RPD				
Analyte		AIC No.	Result	RPD	Limit	<b>Preparation Date</b>	Analysis Date	Dil	Qual
Carbonaceous BOD 5-day		171154-1	< 2 mg/l			03Oct13 0810 by 285	08Oct13 0846 by 285		
·	Batch: W45132	Duplicate	< 2 mg/l	0.00	20.0	03Oct13 0810 by 285	08Oct13 0848 by 285		
Total Suspended Solids		171106-1	< 4 mg/l			03Oct13 1607 by 285	04Oct13 1151 by 285		
	Batch: W45147	Duplicate	< 4 mg/l	0.00	20.0	03Oct13 1607 by 285	04Oct13 1151 by 285		
Total Suspended Solids		171106-2	< 4 mg/l			03Oct13 1607 by 285	04Oct13 1151 by 285		
•	Batch: W45147	Duplicate	< 4 mg/l	0.00	20.0	03Oct13 1607 by 285	04Oct13 1151 by 285		
Total Dissolved Solids		171120-1	54 mg/l			07Oct13 1421 by 285	08Oct13 1520 by 285		
	Batch: W45173	Duplicate	52 mg/l	3.77	10.0	07Oct13 1421 by 285	08Oct13 1520 by 285		

# **LABORATORY CONTROL SAMPLE RESULTS**

Analyte	Spike Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	97.9	80.0-120		_	W45144	03Oct13 1503 by 93	03Oct13 1804 by 93		
Carbonaceous BOD 5-day	200 mg/l	107	84.5-115			W45132	03Oct13 0810 by 285	08Oct13 0844 by 285		
Phosphorus	5 mg/l	101	85.0-115			S35521	03Oct13 1542 by 311	04Oct13 1327 by 305		
Chloride	20 mg/l	95.0	90.0-110			C16095	03Oct13 1548 by 07	03Oct13 1625 by 07		
Sulfate	20 mg/l	93.2	90.0-110			C16095	03Oct13 1548 by 07	03Oct13 1625 by 07		
Oil and Grease	40 mg/l 40 mg/l	97.0 92.0	78.0-114 78.0-114	5.29	20.0	B8586 B8586	04Oct13 0821 by 295 04Oct13 0821 by 295	04Oct13 1227 by 295 04Oct13 1227 by 295		

# **MATRIX SPIKE SAMPLE RESULTS**

Analyte	Sample	Spike Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	171158-2	1 mg/l	90.2	80.0-120	W45144	03Oct13 1503 by 93	03Oct13 1808 by 93		- —
	171158-2	1 mg/l	89.9	80.0-120	W45144	03Oct13 1503 by 93	03Oct13 1809 by 93		
	Relative Pe	rcent Difference:	0.209	25.0	W45144				
Phosphorus	171158-2	. 5 mg/l	98.7	75.0-125	- S35521	03Oct13 1542 by 311	04Oct13 1330 by 305		
	171158-2	5 mg/l	99.1	75.0-125	S35521	03Oct13 1542 by 311	04Oct13 1333 by 305		
	Relative Pe	rcent Difference:	0.204	20.0	S35521				
Chloride	171179-1	20 mg/l	99.6	80.0-120	C16095	03Oct13 1548 by 07	03Oct13 1808 by 07		
	171179-1	20 mg/l	103	80.0-120	C16095	03Oct13 1548 by 07	03Oct13 1834 by 07		
	Relative Pe	rcent Difference:	2.67	10.0	C16095				
Sulfate	171179-1	20 mg/l	96.8	80.0-120	C16095	03Oct13 1548 by 07	03Oct13 1808 by 07		
	171179-1	20 mg/l	100	80.0-120	C16095	03Oct13 1548 by 07	03Oct13 1834 by 07		
	Relative Pe	rcent Difference:	3.37	10.0	C16095				



# **LABORATORY BLANK RESULTS**

				QC			
Analyte	Result	RL	PQL	Sample	Preparation Date	Analysis Date	Quai
Total Dissolved Solids	< 10 mg/l	10	10	W45173-1	07Oct13 1421 by 285	08Oct13 1520 by 285	. —
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45144-1	03Oct13 1503 by 93	03Oct13 1802 by 93	
Carbonaceous BOD 5-day	< 2 mg/l	2	2	W45132-1	03Oct13 0810 by 285	08Oct13 0843 by 285	
Total Suspended Solids	< 4 mg/l	4	4	W45147-1	03Oct13 1607 by 285	04Oct13 1151 by 285	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35521-1	03Oct13 1542 by 311	04Oct13 1324 by 305	
Chloride	< 0.2 mg/l	0.2	0.2	C16095-1	03Oct13 1548 by 07	03Oct13 1559 by 07	
Sulfate	< 0.2 mg/l	0.2	0.2	C16095-1	03Oct13 1548 by 07	03Oct13 1559 by 07	
Oil and Grease	< 2 mg/l	2	5	B8586-1	04Oct13 0821 by 295	04Oct13 1227 by 295	
Fecal Coliform	< 1 /100ml	1	1	M4012-1		03Oct13 1250 by 295	



# CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

			_								1					-						1 OF 1	-
				- 1	POI	No.		0				ANA	LYSES	REQ	UEST	ED						NTROL NO:	,
Client		o Chemical Company						F					ļ					Ì	1		1	71188	
Projec		D'\ AD0000750		1							Total Phosphoru								ļ		AIC PRO	OPOSAL NO	):
Refer Projec		Permit AR0000752	-	-		IATRI		B	SS	١.,	ြို့				ļ						Carrier:		
Mana		arken Pennington		4	W	IAIRI		ĭ	CBOD, TSS	: <u>::</u>	<u> </u>				ĺ				ļ		Carrier.	Gold Star	
Samp		arken i emington	G	Ç	A	s		<del>-</del>	ğ	Coli.	eg						i	1	ĺ		Receive	d Temperati	ıré C
			R	ō	T	اها		L	2						İ	1						3.2°C	
By: AIC	Sample	Date/Time	Α	M	E			Ε			NH3N,	1					-		i		-	,	
No.	Identification	Collected	В	Р	R	L		s			Ż			<u></u>	<u> </u>	<u>                                     </u>						Remarks	20,7
	010	10/3/13/1945A		Х	х			1	Х														
	010	10/3/13/9454			x			1		Х												<b>1</b>	ζ.
-	010	0/3/13/945A		X	Х			1			×											Q	
																						His	
											,												
							<del></del>	1													Field ph	l calibration	
		Container Type							æ	Р	P					], ]					on	@	
		Preservative							NO	Ţ	S		1		1						Buffer:		
	G = G	lass P = Plast	ic		4		V = V(	)A v	vials			•	H = 1	HCI to	pH2				T = S	odium	Thiosul	ate	
	NO =		ıric a	cid p	H2		N = Ni				· · · · ·		B = 1	VaOH		12				inc ac	etate		
	round Time Reques				,			F	Reline	quish	ed			Date	/Time			Receiv	ved			Date/Time	
	RMAL or EXPEDIT dited results request							E	By:	11	B:1	la	ua /	10/	/2/1	<b>~</b>		Ву:					
	should AIC contact v		•							quish	ed	$\theta$	<del>/</del>	Date	/Time			Receiv	ved in	Lab		Date/Time	
11	e 870-312-1752 Fax:	mitir questions.							By:	quisii					, , , , , , ,			BØ: \			_	10/3/1	3
II	rt Attention to:	Ms. Larken Pennin	aton					- [	-,.		٠,							7	-Sm	ma (	Dan	10/3/1	5
, ,	rt Address to:	Post Office Box 23 El Dorado, AR 71	1 731					7	Comr	ments	:						<u>-</u>		, , , , ,	_/		•	
		Lpennington@edc	-ark.c	com				- 1															

FORM 0060



# CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

																						1 OF 1
Client:	El Dorado	Chemical Company			РО	No.		NO OF		1 3	т	ANA	LYSE	SREC	UES1	ED	1	<u> </u>	T			NTROL NO: 71188
Projec		Chemical Company			1			OF		(2 / Week)						ŀ	}					POSAL NO:
Refere		y - Permit AR000075	2					В	ek)	₹ .	The state of the s											J. 00.12.110.
Projec						ATE	RIX	0	(2 / Week)	2	1		1	İ				1			Carrier:	
Manag Sampl	ger: Ms. La	rken Pennington	G	<u> </u>	W	۰		T	(2)	9	1		1				İ					Gold Star
By:	eu		R	CO	A	S		<u> </u>	90	TDS,CI,SO4	II										Receive	d Temperature C
AIC	Sample	Date/Time	A	М	E	Ĭ		Ē	Ÿ	SC,	<b>1</b>						1	İ				3.2
No.	Identification	Collected	В	P	R	L		S		F	<u> </u>	ļ					<u> </u>	ļ		1 7		Remarks
<u>)                                    </u>	010	10/3/13/945A	Х		X			1	×													
	010	10/3/3/945A	X	,_	х			1		×		<u></u>										
	840-			<b>X</b>	*	!		*			₩											
									•													
						ļ													<del> </del>			
																					Field oH	calibration
		Container Type							P	Р	Р	Р		1		1		<del>                                     </del>	1	<u> </u>	on	
L		Preservative							S	NO	NO	NO			İ						Buffer:	
	G = GI						V = \							ICI to			*	•			Thiosulfa	ate
ļ	NO = r		ric a	cid p	H2		N = 1		acid		·		B = 1	VaOH (		12		1-		inc ac	etate	T
	ound Time Request									quishe	ed			Date/	Time			Rece	eived			Date/Time
	ited results requeste			:					By:	N	b	Ma		16/	13	/		By:				
	hould AIC contact w					_		ł	Relin	quishe	ed (	1	7	Date/	<u> 10/</u> Time			Rece	eived ir	lah		Date/Time
	870-312-1752 Fax:	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						- 1	By:	40.0	,		0					التركما				Date/Time
Report	Attention to:	Ms. Larken Pennin	gton					Į											r C	u k	bu	1325
Report	Address to:	Post Office Box 23							Comr	nents				-					-	1		
		El Dorado, AR 717		ļ																		
<u> </u>		Lpennington@edc	ark.c	<u>com</u>	<del></del>		<del></del>						<del></del>							<del></del>		
																						FORM 0060



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

This report contains the analytical results and supporting information for samples submitted on October 4, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

Jøhn Overbey Laboratory Director

This document has been distributed to the following:

PDF cc: El Dorado Chemical Company

ATTN: Ms. Larken Pennington Ipennington@edc-ark.com

El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc. ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com



October 9, 2013 Control No. 171253 Page 2 of 4

### **SAMPLE INFORMATION**

### **Project Description:**

Two (2) water sample(s) received on October 4, 2013 Daily - Permit AR0000752 P.O. No. 357042

### **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest.

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

### Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time Notes	
171253-1	010 10/4/13 930am	04-Oct-2013 0930	
171253-2	010 10/4/13 925am	04-Oct-2013 0925	

### Qualifiers:

D Result is from a secondary dilution factor

#### References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

<sup>&</sup>quot;Standard Methods for the Examination of Water and Wastewaters", 21st edition.

<sup>&</sup>quot;American Society for Testing and Materials" (ASTM).

<sup>&</sup>quot;Association of Analytical Chemists" (AOAC).



# **ANALYTICAL RESULTS**

AIC No. 171253-1

Sample Identification: 010 10/4/13 930am

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillat SM 4500-NH3 B,G	t <b>ion</b> Prep: 04-Oct-2013 1514 by 93	<b>2.1</b> Analyzed: 07-0	0.5 Oct-2013 1439 by 308	<b>mg/l</b> Batch: W45161	D Dil: 5
Carbonaceous BOD 5-day SM 5210 B	Prep: 04-Oct-2013 1602 by 285	< 2 Analyzed: 09-0	2 Oct-2013 1033 by 285	<b>mg/l</b> Batch: W45153	
Total Suspended Solids USGS 3765	Prep: 08-Oct-2013 0942 by 285	<b>11</b> Analyzed: 08-0	4 Oct-2013 1549 by 285	<b>mg/l</b> Batch: W45184	
Phosphorus EPA 200.7	Prep: 07-Oct-2013 1133 by 271	<b>0.11</b> Analyzed: 07-0	0.02 Oct-2013 2109 by 305	<b>mg/l</b> Batch: S35539	
Nitrate as N EPA 300.0	Prep: 04-Oct-2013 1414 by 07	<b>9.2</b> Analyzed: 04-0	0.05 Oct-2013 2126 by 07	<b>mg/l</b> Batch: C16098	

**AIC No.** 171253-2

Sample Identification: 010 10/4/13 925am

Analyte	Result	RL	Units	Qualifier
Fecal Coliform	380	3	/100ml	_ <u>D</u>
SM 9222 D	Analyzed: 04-Oc	t-2013 1503 by 304	Batch: M4014	Dil: 2.5



### **DUPLICATE RESULTS**

					RPD				
Analyte		AIC No.	Result	RPD	Limit	Preparation Date	Analysis Date	Dil	Qual
Carbonaceous BOD 5-day		171195-1	< 2 mg/l			04Oct13 0805 by 285	09Oct13 0947 by 93		
	Batch: W45153	Duplicate	< 2 mg/l	0.00	20.0	04Oct13 0805 by 285	09Oct13 0949 by 285		
Total Suspended Solids		171263-1	< 4 mg/l			08Oct13 0942 by 285	08Oct13 1549 by 285		
	Batch: W45184	Duplicate	< 4 mg/l	0.00	20.0	08Oct13 0942 by 285	08Oct13 1549 by 285		
Total Suspended Solids		171268-1	64 mg/l			08Oct13 0942 by 285	08Oct13 1549 by 285		
	Batch: W45184	Duplicate	66 mg/l	1.54	20.0	08Oct13 0942 by 285	08Oct13 1549 by 285		

# **LABORATORY CONTROL SAMPLE RESULTS**

Analyte	Spike Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	90.8	80.0-120	<u> </u>		W45161	04Oct13 1515 by 93	07Oct13 1403 by 308		
Carbonaceous BOD 5-day	200 mg/l	101	84.5-115			W45153	04Oct13 0805 by 285	09Oct13 0945 by 285		
Phosphorus	5 mg/l	104	85.0-115			S35539	07Oct13 1131 by 271	08Oct13 1520 by 305		
Nitrate as N	4 mg/l	95.9	90.0-110			C16098	04Oct13 1414 by 07	04Oct13 1510 by 07		

# **MATRIX SPIKE SAMPLE RESULTS**

Analyte	Sample	Spike Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	171252-1	1 mg/l	89.3	80.0-120	W45161	04Oct13 1515 by 93	07Oct13 1406 by 308		
	171252-1	1 mg/l	102	80.0-120	W45161	04Oct13 1515 by 93	07Oct13 1408 by 308		
	Relative Pe	rcent Difference:	12.1	25.0	W45161				
Phosphorus	171222-1	5 mg/l	103	75.0-125	S35539	07Oct13 1131 by 271	08Oct13 1523 by 305		
	171222-1	5 mg/l	104	75.0-125	S35539	07Oct13 1131 by 271	08Oct13 1526 by 305		
e e	Relative Pe	rcent Difference:	0.231	20.0	S35539				
Nitrate as N	171215-1	4 mg/l	97.3	80.0-120	C16098	04Oct13 1414 by 07	04Oct13 1537 by 07		
	171215-1	4 mg/l	97.8	80.0-120	C16098	04Oct13 1414 by 07	04Oct13 1604 by 07		
_	Relative Pe	rcent Difference:	0.564	10.0	C16098	- g - was			a committee

# **LABORATORY BLANK RESULTS**

				QC			
Analyte	Result	RL	PQL	Sample	Preparation Date	Analysis Date	Qual
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45161-1	04Oct13 1515 by 93	07Oct13 1401 by 308	
Carbonaceous BOD 5-day	< 2 mg/l	2	2	W45153-1	04Oct13 0805 by 285	09Oct13 0945 by 285	
Total Suspended Solids	< 4 mg/l	4	4	W45184-1	08Oct13 0942 by 285	08Oct13 1549 by 285	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35539-1	07Oct13 1131 by 271	08Oct13 1517 by 305	
Nitrate as N	< 0.05 mg/l	0.05	0.05	C16098-1	04Oct13 1414 by 07	04Oct13 1443 by 07	
Fecal Coliform	< 1 /100ml	1	1	M4014-1		04Oct13 1238 by 295	



# CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

<del></del>					,						·										1 OF 1		
Client	. El Dorado	Chamical Carrage		1	PO	No.		NO		· ·	7-2-	ANA	LYSE	SREC	UEST	ED	- ,			AIC CO	VTROL NO:		
Client: Projec	t El Dolago	Chemical Company		<del>-,</del>	┨			OF	1 20	'	8		l					ļ			71253		
Refere		Permit AR0000752			<u> </u>		{	В	CBOD, TSS, NOTA		Total Phosphoru	İ	İ		1			İ		AIC PRO	POSAL NO:		
Projec	t				IN	MATRIX		Ō	l Š	L	1 8		ļ			l i				Carrier:			
Manag		rken Pennington			W	i -		T	Ġ			Coli.							- 1	1			Gold Star
Sampl	ed		G	С	] A	S	1	T	8	Ŭ	Į				l	1	-		Ì	Receive	Temperature C		
By: AIC	10	T	R	0	T	0		L	ျပ	1	z	ľ	ŀ	1	ľ	1					3,2		
No.	Sample Identification	Date/Time	A	M	E	1		E	ļ		NH3N.	1	ł					}					
1		Collected	В	Р	R	L		s		_	Z	<del> </del> _		ļ	ļ	-			<u> </u>		Remarks		
	010	10/4/12/030AM	,	X	X			1	Х														
2	010	10/4/13/30W	, X	1	Х			1		Χ,										Tone	0925		
)	010	10/4/13/AJAM		X	Х			1			×												
				1-																			
	· · · · · · · · · · · · · · · · · · ·																	1					
				1																			
				₹ 4																Field pH	calibration		
		Container Type							Р	Р	Р								1	on			
		Preservative							NO	Т	S							1	-	Buffer:			
	G = Gla		С			•	V = V	ΌA	vials				H = H	iCl to	H2		<u> </u>	T = S		Thiosulfa	te		
	NO = n		ric ac	id pl	<del>1</del> 2		N = N		acid p				B = N	aOH t		2		Z = Z	inc ace	etate			
	ound Time Requeste						1		Relind	•				Date/			Rec	eived			Date/Time		
	MAL or EXPEDITE								By: 🗙	1 1	2/1	<u></u>	٠.	10/	1/12		Ву:						
	Expedited results requested by:				;					em	7_			<u> </u>									
	Who should AIC contact with questions:					l l	Relino	quishe	d	`		Date/	Time		Rec	eived ir	1 Lab	ļ	Date/Time /0-4-13				
	Phone 870-312-1752 Fax:  Ms. Larkon Repaired to				ı	Ву:								By:	eived in	Herr	2						
Report Attention to: Ms. Larken Pennington Report Address to: Post Office Box 231			ŀ	C					L			1 4	rgac_	47		1340							
ιτομοίτ	/ WI C33 W.	El Dorado, AR 717		Š					Comn	nents:													
	Lpennington@edc-ark.com					ŀ																	

FORM 0060



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

This report contains the analytical results and supporting information for samples submitted on October 5, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

John Overbey ) aboratory Director

This document has been distributed to the following:

PDF cc: El Dorado Chemical Company

ATTN: Ms. Larken Pennington Ipennington@edc-ark.com

El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc. ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com



October 11, 2013 Control No. 171280 Page 2 of 4

#### **SAMPLE INFORMATION**

### **Project Description:**

Two (2) water sample(s) received on October 5, 2013 Daily - Permit AR0000752 P.O. No. 357042

### **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest. Ice chest #1 was delivered with a custody seal intact and signed

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

### Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time Note:	s
171280-1	010 10/4/13 9:55am - 10/5/13 9:55am	05-Oct-2013 0955	
171280-2	010 10/5/13 9:55am	05-Oct-2013 0955	

### Qualifiers:

D Result is from a secondary dilution factor

## References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

"Standard Methods for the Examination of Water and Wastewaters", 21st edition.

"American Society for Testing and Materials" (ASTM).

"Association of Analytical Chemists" (AOAC).



October 11, 2013 Control No. 171280 Page 3 of 4

# **ANALYTICAL RESULTS**

AIC No. 171280-1

Sample Identification: 010 10/4/13 9:55am - 10/5/13 9:55am

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillat SM 4500-NH3 B,G	tion Prep: 07-Oct-2013 1027 by 302	<b>2.4</b> Analyzed: 08-C	0.5 Oct-2013 2259 by 302	<b>mg/l</b> Batch: W45172	D Dil: 5
Carbonaceous BOD 5-day SM 5210 B	Prep: 06-Oct-2013 1800 by 302	< <b>2</b> Analyzed: 11-0	2 Oct-2013 1002 by 302	<b>mg/l</b> Batch: W45168	
Total Suspended Solids USGS 3765	Prep: 08-Oct-2013 1128 by 285	<b>12</b> Analyzed: 09-0	4 Oct-2013 1325 by 285	<b>mg/l</b> Batch: W45189	
Phosphorus EPA 200.7	Prep: 07-Oct-2013 1135 by 271	<b>0.11</b> Analyzed: 07-0	0.02 Oct-2013 2103 by 305	<b>mg/l</b> Batch: S35540	

**AIC No.** 171280-2

Sample Identification: 010 10/5/13 9:55am

Analyte	Result	RL	Units	Qualifier
Fecal Coliform	140	1	/100ml	
SM 9222 D	Analyzed: 05-Oct-20	13 1400 by 304	Batch: M4018	



# **DUPLICATE RESULTS**

					RPD				
Analyte		AIC No.	Result	RPD	Limit	<b>Preparation Date</b>	Analysis Date	Dil	Qual
Carbonaceous BOD 5-day		171281-1	< 2 mg/l		1	06Oct13 1800 by 302	11Oct13 0948 by 93		
	Batch: W45168	Duplicate	< 2 mg/l	0.00	20.0	06Oct13 1800 by 302	11Oct13 0958 by 302		
Total Suspended Solids		171273-1	10 mg/l			08Oct13 1128 by 285	09Oct13 1325 by 285		
	Batch: W45189	Duplicate	9.6 mg/l	4.08	20.0	08Oct13 1128 by 285	09Oct13 1325 by 285		
Total Suspended Solids		171273-2	< 4 mg/l			08Oct13 1128 by 285	09Oct13 1325 by 285		
	Batch: W45189	Duplicate	< 4 mg/l	0.00	20.0	08Oct13 1128 by 285	09Oct13 1325 by 285		

# **LABORATORY CONTROL SAMPLE RESULTS**

	Spike									
Analyte	Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	100	80.0-120	'		W45172	07Oct13 1028 by 302	08Oct13 2042 by 302		
Carbonaceous BOD 5-day	200 mg/l	87.7	84.5-115			W45168	06Oct13 1800 by 302	11Oct13 0946 by 302		
Phosphorus	5 mg/l	109	85.0-115			S35540	07Oct13 1134 by 271	07Oct13 1922 by 305		

### **MATRIX SPIKE SAMPLE RESULTS**

		Spike							
Analyte	Sample	Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	171279-1	1 mg/l	89.7	80.0-120	W45172	07Oct13 1028 by 302	08Oct13 2045 by 302		
	171279-1	1 mg/l	81.7	80.0-120	W45172	07Oct13 1028 by 302	08Oct13 2047 by 302		
	Relative Pe	rcent Difference:	8.02	25.0	W45172				
Phosphorus	171254-1	5 mg/l	106	75.0-125	S35540	07Oct13 1134 by 271	07Oct13 1925 by 305		
	171254-1	5 mg/l	106	75.0-125	S35540	07Oct13 1134 by 271	07Oct13 1928 by 305		
	Relative Pe	rcent Difference:	0.216	20.0	S35540		_		

### LABORATORY BLANK RESULTS

				QC			
Analyte	Result	RL	PQL	Sample	Preparation Date	Analysis Date	Qual
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45172-1	07Oct13 1028 by 302	08Oct13 2040 by 302	
Carbonaceous BOD 5-day	< 2 mg/l	2	2	W45168-1	06Oct13 1800 by 302	11Oct13 0945 by 302	
Total Suspended Solids	< 4 mg/l	4	4	W45189-1	08Oct13 1128 by 285	09Oct13 1325 by 285	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35540-1	07Oct13 1134 by 271	07Oct13 1919 by 305	
Fecal Coliform	< 1 /100ml	1	1	M4018-1		05Oct13 1400 by 310	



# CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

				<del></del>													PAGE	1 OF 1
Client:		Chemical Company		PO	No.	NO OF	孤	Γ	ş	ANAL		REQU	JEST	ED		T - T -	AIC CO	NTROL NO:
Projec Refere	nce: Daily -	Permit AR0000752		-	<del></del>	В	要		Spho		#						AIC PR	OPOSAL NO:
Projec Manag	ger: Ms. La	rken Pennington		W	MATRIX		2BOD, TS	Coli. F	F Pho	# F	體						Carrier:	Gold Star
Sampl By:	ed		G C		S	T	CBO	ပိ	NH3N, Total Phosphoru	#	STATE OF THE PARTY						Receive	ed Temperature C
AIC	Sample Identification	Date/Time Collected	A N B P		L	E .S			NH3N		#							Remarks
1	010	10/4/13-19/13 9:550m 9:550m	Х	X		1	х											
٦	010	195(13 9: TOWN	X	×		1		×										
1	010	10/4/13-10/5-113 9:550m-9:55m		×		1			х									
									<u> </u>								-	•
															<u> </u>		<del> </del>	
									1									
		·	_	İ													Field pl-	calibration
		Container Type		1			Р	Ρ	Р						<del> </del>		on	@
	G = Gl	Preservative ass P = Plast	<u> </u>	ــــــلـــــ	<del></del>	= VOA	NO	T	S		11 - 11	<u> </u>	0				Buffer:	
	NO = n			H2		= Nitric		nH2				CI to p aOH to		2 ·		T = Sodiur Z = Zinc a		ate
	ound Time Request MAL or EXPEDIT	ed: (Please circle)					Reline	quishe	ed ,			D-4-6		0:0000	Rece By:		cerate	Date/Time
Expedi	ted results requeste	d by:				:		ack	in A	) MUMO	to	10/1	(3 (	0.0-	1			1240.5
Who should AIC contact with questions:				:			Relinquished Date/Time Received in Lab						ived in Lab	94310	Date/Time			
ı	870-312-1752 Fax: Attention to:	Ms. Larken Pennin	aton				By: G	ald	186	٠,			3-1 246		ByQ	011	<u>.</u>	10.5.13
•	Address to:	Post Office Box 23					Comr	nents:	+				1-10		1 1	COM	****	1240
		El Dorado, AR 717 Lpennington@edc-	31				JUI111		ţ	!								
														<u> </u>				

FORM 0060



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

This report contains the analytical results and supporting information for samples submitted on October 7, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

Jøhn Overbey | Laboratory Directør

This document has been distributed to the following:

PDF cc: EI Do

El Dorado Chemical Company ATTN: Ms. Larken Pennington lpennington@edc-ark.com

El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc. ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com



October 14, 2013 Control No. 171288 Page 2 of 4

#### **SAMPLE INFORMATION**

### **Project Description:**

Two (2) water sample(s) received on October 7, 2013 Daily - Permit AR0000752 P.O. No. 357042

### **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest. Ice chest #1 was delivered with a custody seal intact and signed

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

# Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time	Notes
171288-1	010 10/5/13 9:55am - 10/6/13 9:55am	06-Oct-2013 0955	
171288-2	010 10/6/13 9:55am	06-Oct-2013 0955	

### Qualifiers:

D Result is from a secondary dilution factor

#### References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

"Standard Methods for the Examination of Water and Wastewaters", 21st edition.

"American Society for Testing and Materials" (ASTM).

"Association of Analytical Chemists" (AOAC).



### **ANALYTICAL RESULTS**

AIC No. 171288-1

Sample Identification: 010 10/5/13 9:55am - 10/6/13 9:55am

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillar SM 4500-NH3 B,G	tion Prep: 07-Oct-2013 1027 by 302	<b>2.7</b> Analyzed: 08-O	0.5 ct-2013 2301 by 302	<b>mg/l</b> Batch: W45172	D Dil: 5
Carbonaceous BOD 5-day SM 5210 B	Prep: 07-Oct-2013 1425 by 285	< 2 Analyzed: 12-0	2 oct-2013 1309 by 285	<b>mg/l</b> Batch: W45178	
Total Suspended Solids USGS 3765	Prep: 08-Oct-2013 1128 by 285	<b>11</b> Analyzed: 09-0	4 ct-2013 1325 by 285	<b>mg/l</b> Batch: W45189	
Phosphorus EPA 200.7	Prep: 08-Oct-2013 0946 by 271	<b>0.097</b> Analyzed: 09-0	0.02 oct-2013 1406 by 235	<b>mg/l</b> Batch: S35543	

AIC No. 171288-2

Sample Identification: 010 10/6/13 9:55am

Analyte	Result	RL	Units	Qualifier
Fecal Coliform	27	1	/100ml	
SM 9222 D	Analyzed: 06-Oct-20	13 1400 by 304	Batch: M4019	



# **DUPLICATE RESULTS**

					RPD				
Analyte		AIC No.	Result	RPD	Limit	Preparation Date	Analysis Date	Dil	Qual
Carbonaceous BOD 5-day		171284-1	< 2 mg/l			07Oct13 1425 by 285	12Oct13 1259 by 285		
	Batch: W45178	Duplicate	< 2 mg/l	0.00	20.0	07Oct13 1425 by 285	12Oct13 1315 by 285		
Total Suspended Solids		171273-1	10 mg/l			08Oct13 1128 by 285	09Oct13 1325 by 285		
	Batch: W45189	Duplicate	9.6 mg/l	4.08	20.0	08Oct13 1128 by 285	09Oct13 1325 by 285		
Total Suspended Solids		171273-2	< 4 mg/l			08Oct13 1128 by 285	09Oct13 1325 by 285		
	Batch: W45189	Duplicate	< 4 mg/l	0.00	20.0	08Oct13 1128 by 285	09Oct13 1325 by 285		

# **LABORATORY CONTROL SAMPLE RESULTS**

Amalista	Spike	0/				5.4.1	Burner de la Bata	A	5	0 -1
Analyte	Amount	<u>%</u>	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	100	80.0-120	-		W45172	07Oct13 1028 by 302	08Oct13 2042 by 302		
Carbonaceous BOD 5-day	200 mg/l	115	84.5-115			W45178	07Oct13 1425 by 285	12Oct13 1258 by 285		
Phosphorus	5 mg/l	105	85.0-115			S35543	08Oct13 0946 by 271	09Oct13 1344 by 235		

# MATRIX SPIKE SAMPLE RESULTS

		Spike							
Analyte	Sample	Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	171279-1	1 mg/l	89.7	80.0-120	W45172	07Oct13 1028 by 302	08Oct13 2045 by 302		
	171279-1	1 mg/l	81.7	80.0-120	W45172	07Oct13 1028 by 302	08Oct13 2047 by 302		
	Relative Pe	rcent Difference:	8.02	25.0	W45172				
Phosphorus	171284-1	5 mg/l	102	75.0-125	S35543	08Oct13 0946 by 271	09Oct13 1348 by 235		
	171284-1	5 mg/l	100	75.0-125	S35543	08Oct13 0946 by 271	09Oct13 1352 by 235		
	Relative Pe	rcent Difference:	1.73	20.0	S35543				

# **LABORATORY BLANK RESULTS**

are the second of the second o				QC			
Analyte	Result	RL	PQL	Sample	Preparation Date	Analysis Date	Qual
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45172-1	07Oct13 1028 by 302	08Oct13 2040 by 302	
Carbonaceous BOD 5-day	< 2 mg/l	2	2	W45178-1	07Oct13 1425 by 285	12Oct13 1257 by 285	
Total Suspended Solids	< 4 mg/l	4	4	W45189-1	08Oct13 1128 by 285	09Oct13 1325 by 285	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35543-1	08Oct13 0946 by 271	09Oct13 1340 by 235	
Fecal Coliform	< 1 /100ml	1	1	M4019-1		06Oct13 1400 by 310	



# CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

										,											1 OF 1
05		4- Ob 1 - 1 - 0			PO	No.	•	NO		,		ANA	LYSE	S REC	UEST	ED					NTROL NO:
Client		io Chemical Company		1 -	1			OF		١,	5	•	1			1 1	1				11588
Projec Refere		- Permit AR0000752		Į.				В	CBOD, TSS, MOBAN	1	NH3N, Total Phosphorus						1.			AIC PRO	OPOSAL NO:
Projec	it				1 N	MATR	ıx	0	H	1, 3	۱ĕ				1					Carrier:	
Manag	ger: Ms. L	arken Pennington		i	W			Ť	SS	Coli. F	<u> </u>						1			Carner.	Gold Star
Sampl	ed		G	C	A	s		Ì	-	၂ ပိ	हिं		1	1		1 1		1		Receive	d Temperature C
By: AIC			R	0	Т	0		L	١ğ		📜							1			2.0
	Sample	Date/Time	) A	М	E	1		Ε	8		<u>ကို</u>		1		1						
No.	Identification	Collected	В	Р	R	L		S			Ż								1		Remarks
1	010	10/5/13-196/13 95502-915500		X	х			1	X												
2	010	10/10/10	Х		х			1		×											
1	010	14810-10/6/13 0:50x-9:50		X	Х			1			×										
						1.															· · · · · · · · · · · · · · · · · · ·
										·											
																				Field pH	calibration
	•	Container Type		:					Р	Р	Р	<b>.</b>			L_					on	@
		Preservative							NO	Т	S									Buffer:	
	G = G		•		,		V = \	VOA	vials				H = F	ICI to	pH2			T = \$	odium	n Thiosulfa	ate
	NO = 1		ric ac	id pl	H2	-	N = 1		acid				B = 1	łaOH t		2		Z = Z	inc ac	etate	
		ted: (Please circle)							Reline			1	1	Date/			Rece	eived			Date/Time
		TED IN DAYS		,					By: ,	المالة	. Q.	(	7	6/10	م داه	muscos	Ву:				
	ited results requeste								By:	run	W U	WUS	urs	1-1-							
	hould AIC contact w	vith questions:							Reline	quishe	d	U	ı	Date/	Time			eived ir	Lab		Date/Time
	870-312-1752 Fax:								Ву:								By			1	10-6-13
	Attention to:	Ms. Larken Penning	_							<del></del>		•		<u> </u>			للبلا	lene	_ <u>['1</u> ~	m-	12:30
Keport	Address to:	Post Office Box 231							Comr	nents:							-		•		
		El Dorado, AR 717						-													
		Lpennington@edc-	<u>ark.c</u>	om .														_			

FORM 0060



October 14, 2013 Control No. 171297 Page 1 of 4

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

This report contains the analytical results and supporting information for samples submitted on October 7, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

John Overbey ) aboratory Director

This document has been distributed to the following:

PDF cc: El Dorado Chemical Company

ATTN: Ms. Larken Pennington lpennington@edc-ark.com

El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc.

ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com



### SAMPLE INFORMATION

### **Project Description:**

Two (2) water sample(s) received on October 7, 2013 Daily-Permit AR0000752 P.O. No. 357042

#### **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest. Ice chest #1 was delivered with a custody seal intact and signed

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

### Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time Notes	
171297-1	010 10/6/13-10/7/13 9:55am-9:55am	07-Oct-2013 0955	
171297-2	010 10/6/13-10/7/13 9:55am-9:55am	07-Oct-2013 0955	

### Case Narrative:

There were no qualifiers for this data and all samples met quality control criteria.

### References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

"Standard Methods for the Examination of Water and Wastewaters", 21st edition.

"American Society for Testing and Materials" (ASTM).

"Association of Analytical Chemists" (AOAC).



October 14, 2013 Control No. 171297 Page 3 of 4

# **ANALYTICAL RESULTS**

AIC No. 171297-1

Sample Identification: 010 10/6/13-10/7/13 9:55am-9:55am

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distilla SM 4500-NH3 B,G	Ation Prep: 08-Oct-2013 1043 by 302	<b>2.0</b> Analyzed: 08-0	0.1 Oct-2013 2122 by 302	mg/l Batch: W45188	
Carbonaceous BOD 5-day SM 5210 B	Prep: 09-Oct-2013 0810 by 285	< <b>2</b> Analyzed: 14-0	2 Oct-2013 1036 by 93	<b>mg/l</b> Batch: W45203	
Total Suspended Solids USGS 3765	Prep: 09-Oct-2013 1023 by 285	<b>12</b> Analyzed: 10-0	4 Oct-2013 1436 by 285	<b>mg/l</b> Batch: W45209	
<b>Phosphorus</b> EPA 200.7	Prep: 08-Oct-2013 0946 by 271	<b>0.10</b> Analyzed: 09-0	0.02 Oct-2013 1457 by 235	<b>mg/l</b> Batch: S35543	
Nitrate as N EPA 300.0	Prep: 07-Oct-2013 1619 by 07	<b>9.6</b> Analyzed: 07-0	0.05 Oct-2013 2018 by 07	<b>mg/l</b> Batch: C16102	•

**AIC No.** 171297-2

Sample Identification: 010 10/6/13-10/7/13 9:55am-9:55am

Analyte	Result	RL	Units	Qualifier
Fecal Coliform	6.0	_ <u>1</u>	/100ml	
SM 9222 D	Analyzed: 07-Oct-	2013 1503 by 304	Batch: M4021	



# **DUPLICATE RESULTS**

					RPD				
Analyte		AIC No.	Result	RPD	Limit	Preparation Date	Analysis Date	Dif	Qual
Carbonaceous BOD 5-day		171295-1	< 2 mg/l			09Oct13 0810 by 285	14Oct13 1006 by 93		
	Batch: W45203	Duplicate	< 2 mg/l	0.00	20.0	09Oct13 0810 by 285	14Oct13 1032 by 93		
Total Suspended Solids		171298-1	< 4 mg/l			09Oct13 1023 by 285	10Oct13 1436 by 285		
	Batch: W45209	Duplicate	< 4 mg/l	0.00	20.0	09Oct13 1025 by 285	10Oct13 1436 by 285		
Total Suspended Solids		171354-1	< 4 mg/l			09Oct13 1023 by 285	10Oct13 1436 by 285		
	Batch: W45209	Duplicate	< 4 mg/l	0.00	20.0	09Oct13 1025 by 285	10Oct13 1436 by 285		

# **LABORATORY CONTROL SAMPLE RESULTS**

Analyte	Spike Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	95.7	80.0-120			W45188	08Oct13 1043 by 302	08Oct13 2110 by 302		
Carbonaceous BOD 5-day	200 mg/l	97.8	84.5-115			W45203	09Oct13 0810 by 285	14Oct13 1004 by 93		
Phosphorus	5 mg/l	105	85.0-115			S35543	08Oct13 0946 by 271	09Oct13 1344 by 235		
Nitrate as N	4 mg/l	95.7	90.0-110			C16102	07Oct13 1619 by 07	07Oct13 1835 by 07		

# **MATRIX SPIKE SAMPLE RESULTS**

Analyte	Sample	Spike Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	171295-1	1 mg/l	87.6	80.0-120	W45188	08Oct13 1043 by 302	08Oct13 2113 by 302		
	171295-1	1 mg/l	87.4	80.0-120	W45188	08Oct13 1043 by 302	08Oct13 2115 by 302		
	Relative Per	cent Difference:	0.223	25.0	W45188				
Phosphorus	171284-1	5 mg/l	102	75.0-125	S35543	08Oct13 0946 by 271	09Oct13 1348 by 235		
	171284-1	5 mg/l	100	75.0-125	S35543	08Oct13 0946 by 271	09Oct13 1352 by 235		
	Relative Per	cent Difference:	1.73	20.0	S35543				
Nitrate as N	171297-1	4 mg/l	96.8	80.0-120	C16102	07Oct13 1619 by 07	07Oct13 1901 by 07		
	171297-1	4 mg/l	95.0	80.0-120	C16102	07Oct13 1619 by 07	07Oct13 1926 by 07		
	Relative Per	cent Difference:	1.48	10.0	C16102			,	

# **LABORATORY BLANK RESULTS**

				QC			
Analyte	Result	RL	PQL	Sample	<b>Preparation Date</b>	Analysis Date	Qual
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45188-1	08Oct13 1043 by 302	08Oct13 2108 by 302	
Carbonaceous BOD 5-day	< 2 mg/l	2	2	W45203-1	09Oct13 0810 by 285	14Oct13 1003 by 93	
Total Suspended Solids	< 4 mg/l	4	4	W45209-1	09Oct13 1025 by 285	10Oct13 1436 by 285	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35543-1	08Oct13 0946 by 271	09Oct13 1340 by 235	
Nitrate as N	< 0.05 mg/l	0.05	0.05	C16102-1	07Oct13 1619 by 07	07Oct13 1809 by 07	
Fecal Coliform	< 1 /100ml	1	1	M4021-1		07Oct13 1504 by 295	



CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

	· · · · · · · · · · · · · · · · · · ·			•																1 OF 1
						No.	NO			_\_	ANALYS	SES F	REQUI	ESTED					AIC CON	ITROL NO:
Client:		Chemical Company		. !		4	OF	100		Š									(	71297
Projec				Å	ļ			CBOD, TSS,NO3-N		NH3N, Total Phosphoru				ŀ			1		AIC PRO	POSAL NO:
Refere		Permit AR0000752					В	SS		so					Ì				l	
Projec				i		ATRIX	] 0	22	LL.	Æ									Carrier:	
Manag		rken Pennington			W		T	Q	Coli.	ā			ı	1	}	1				Gold Star
Sampl	ed A mic a	. 2	G	C	Α	S	T	BO	Ü	Į				Ì					Received	Temperature C
Ву:	Lurke	n Pennington	R	0	T	0	L	ပ		z			•		ŀ				ļ	1.66
	Sample	Date/Time 🗸	Α	М	Ε	1 ]	E			<u> </u>				ļ						
No.	Identification	Collected	В	P	R	L	, S			Ž								İ		Remarks
(	010	10/6/13-10/7/13 7:55an-9:55an		Х	х		1	х												
N	010	10/7/13 9:55am	Х		Х		1		Х											
(	010	12/6/13-10/1/13 7:55am-9:55am		×	×	. !	1			Х			$\top$					551		
		1:330W-7.230W					<del> </del>				<del>  </del>				<del> </del>					·
			i			1 :	İ					j		- 1						
						<del>-                                     </del>	<del> </del>				<del> </del>		-							
							į					İ					ľ			
							1			<b></b>		_	_				$\dashv$			
							ļ							_						
																			Field.pH	calibration
		Container Type						Ъ	Р	Р							Î		on	
	}	Preservative						20	T	S				<u> </u>					Buffer:	
	G = Gla	ass P = Plast	ic		:	V =	VOA				Н	= HC	to ph	12	<del></del>	<u> </u>	T = S0			ta
	NO = n		ric ac	cid pl	H2								NaOH to pH12				T = Sodium Thiosulfate Z = Zinc acetate			
Turnar	ound Time Request	ed: (Please circle)						Relind		d.						Received				Date/Time
	MAL or EXPEDIT							D	D .	` ^		l.		_		D				
Expedited results requested by:						. (1	and	ui Kei	whole	n   1	0/7/	13 1	74771.60	-,.						
Who should AIC contact with questions:						Relina	uishe	d	<u> </u>		10/7/13 10:00am			Recei	ved in	lah		Date/Time		
Phone 870-312-1752 Fax:						Ву:	•	_	•					Ru		1		10-7-13		
Report Attention to: Ms. Larken Pennington						-,-				- 1				KY.		h, li	ین	Date/Time 10-7-13 18:30fm		
•	Address to:	Post Office Box 23	-		Ì			Comr	nents		<del></del> -					עבעו	ca.	אאו	<u> </u>	12.308/00
•		El Dorado, AR 717																		
Lpennington@edc-ark.com				ł					•											
		<del>-</del>																		

FORM 0060



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

This report contains the analytical results and supporting information for samples submitted on October 8, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

John Overbey aboratory Director

This document has been distributed to the following:

PDF cc: El Dorado Chemical Company

ATTN: Ms. Larken Pennington Ipennington@edc-ark.com

El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc. ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com



October 14, 2013 Control No. 171344 Page 2 of 5

### **SAMPLE INFORMATION**

# **Project Description:**

Two (2) water sample(s) received on October 8, 2013 Daily, Weekly-Permit AR0000752 P.O. No. 357042

### **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest. Ice chest #1 was delivered with a custody seal intact and signed

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

### Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time Notes
171344-1	010 10/7/13 9:55am 10/8/13 9:55am	08-Oct-2013 0955
171344-2	010 10/8/13 9:55am	08-Oct-2013 0955

### Qualifiers:

D Result is from a secondary dilution factor

#### References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

<sup>&</sup>quot;Standard Methods for the Examination of Water and Wastewaters", 21st edition.

<sup>&</sup>quot;American Society for Testing and Materials" (ASTM).

<sup>&</sup>quot;Association of Analytical Chemists" (AOAC).



# **ANALYTICAL RESULTS**

**AIC No.** 171344-1

Sample Identification: 010 10/7/13 9:55am 10/8/13 9:55am

Analyte		Result	RL	Units	Qualifier	
Ammonia as N with Distillar SM 4500-NH3 B,G	tion Prep: 09-Oct-2013 0927 by 302	<b>2.2</b> Analyzed: 09-0	0.5 Oct-2013 1203 by 302	mg/l Batch: W45208	D Dil: 5	
Carbonaceous BOD 5-day SM 5210 B	Prep: 09-Oct-2013 0810 by 285	< 2 Analyzed: 14-0	2 Oct-2013 1042 by 93	<b>mg/l</b> Batch: W45203		
Total Suspended Solids USGS 3765	Prep: 09-Oct-2013 1023 by 285	<b>9.2</b> Analyzed: 10-0	4 Oct-2013 1436 by 285	<b>mg/l</b> Batch: W45209		
Phosphorus EPA 200.7	Prep: 09-Oct-2013 1103 by 311	<b>0.091</b> Analyzed: 10-0	0.02 Oct-2013 1048 by 235	<b>mg/l</b> Batch: S35552		

**AIC No.** 171344-2

Sample Identification: 010 10/8/13 9:55am

Analyte		Result	RL	Units	Qualifier
Total Dissolved Solids SM 2540 C	Prep: 09-Oct-2013 1638 by 285	<b>250</b> Analyzed: 11-0	10 Oct-2013 0835 by 285	mg/l Batch: W45216	
Chloride EPA 300.0	Prep: 08-Oct-2013 1652 by 07	<b>18</b> Analyzed: 08-0	0.2 Oct-2013 1930 by 07	<b>mg/l</b> Batch: C16108	
Sulfate EPA 300.0	Prep: 08-Oct-2013 1652 by 07	<b>29</b> Analyzed: 08-0	0.2 Oct-2013 1930 by 07	<b>mg/l</b> Batch: C16108	
<b>Oil and Grease</b> EPA 1664A	Prep: 09-Oct-2013 0814 by 295	< <b>5</b> Analyzed: 09-0	5 Oct-2013 0958 by 295	<b>mg/l</b> Batch: B8592	
Fecal Coliform SM 9222 D		<b>73</b> Analyzed: 08-0	1 Oct-2013 1528 by 295	/100ml Batch: M4030	



# **DUPLICATE RESULTS**

		410.11	<b>-</b>		RPD				
Analyte		AIC No.	Result	RPD RPD	Limit	Preparation Date	Analysis Date	Dil	Qual
Oil and Grease		171369-2	< 5 mg/l			09Oct13 1327 by 295	09Oct13 1614 by 295		
	Batch: B8592	Duplicate	< 5 mg/l	0.00	20.0	09Oct13 1507 by 295	09Oct13 1614 by 295		
Carbonaceous BOD 5-day		171295-1	< 2 mg/l			09Oct13 0810 by 285	14Oct13 1006 by 93		
	Batch: W45203	Duplicate	< 2 mg/l	0.00	20.0	09Oct13 0810 by 285	14Oct13 1032 by 93		
Total Suspended Solids		171298-1	< 4 mg/l			09Oct13 1023 by 285	10Oct13 1436 by 285		
	Batch: W45209	Duplicate	< 4 mg/l	0.00	20.0	09Oct13 1025 by 285	10Oct13 1436 by 285		
Total Suspended Solids		171354-1	< 4 mg/l			09Oct13 1023 by 285	10Oct13 1436 by 285		
	Batch: W45209	Duplicate	< 4 mg/l	0.00	20.0	09Oct13 1025 by 285	10Oct13 1436 by 285		
Total Dissolved Solids		171344-2	250 mg/l			09Oct13 1638 by 285	11Oct13 0835 by 285		
	Batch: W45216	Duplicate	260 mg/l	5.03	10.0	09Oct13 1638 by 285	11Oct13 0835 by 285		
Total Dissolved Solids		171345-2	450 mg/l			09Oct13 1638 by 285	11Oct13 0835 by 285		
	Batch: W45216	Duplicate	460 mg/l	3.31	10.0	09Oct13 1638 by 285	11Oct13 0835 by 285		

# **LABORATORY CONTROL SAMPLE RESULTS**

Analyte	Spike Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	99.1	80.0-120			W45208	09Oct13 0928 by 302	09Oct13 1128 by 302	- = ::	
Carbonaceous BOD 5-day	200 mg/l	97.8	84.5-115			W45203	09Oct13 0810 by 285	14Oct13 1004 by 93		
Phosphorus	5 mg/l	104	85.0-115			S35552	09Oct13 1104 by 311	10Oct13 0953 by 235		
Chloride	20 mg/l	94.1	90.0-110			C16108	08Oct13 1653 by 07	08Oct13 1746 by 07		
Sulfate	20 mg/l	93.2	90.0-110			C16108	08Oct13 1653 by 07	08Oct13 1746 by 07		
Oil and Grease	40 mg/l 40 mg/l	95.5 98.0	78.0-114 78.0-114	2.58	20.0	B8592 B8592	09Oct13 0815 by 295 09Oct13 0815 by 295	09Oct13 0958 by 295 09Oct13 0958 by 295		
Oil and Grease	•			2.58	20.0		•	•		

# **MATRIX SPIKE SAMPLE RESULTS**

		Spike				une 13		. 9	en +
Analyte	Sample	Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	171344-1	1 mg/l	85.7	80.0-120	W45208	09Oct13 0928 by 302	09Oct13 1229 by 302	5	D
	171344-1	1 mg/l	91.5	80.0-120	W45208	09Oct13 0928 by 302	09Oct13 1207 by 302	5	D
	Relative Percent Difference:		1.88	25.0	W45208				D
Phosphorus	171346-1	5 mg/l	105	75.0-125	S35552	09Oct13 1104 by 311	10Oct13 0956 by 235		
	171346-1	5 mg/l	105	75.0-125	S35552	09Oct13 1104 by 311	10Oct13 1000 by 235		
	Relative Perc	ent Difference:	0.0151	20.0	S35552				
Chloride	171351-1	20 mg/l	100	80.0-120	C16108	08Oct13 1653 by 07	08Oct13 1812 by 07		
	171351-1	20 mg/l	100	80.0-120	C16108	08Oct13 1653 by 07	08Oct13 1838 by 07		
	Relative Percent Difference:		0.130	10.0	C16108				
Sulfate	171351-1	20 mg/l	99.3	80.0-120	C16108	08Oct13 1653 by 07	08Oct13 1812 by 07		
	171351-1	20 mg/l	99.3	80.0-120	C16108	08Oct13 1653 by 07	08Oct13 1838 by 07		
	Relative Perc	ent Difference:	0.0353	10.0	C16108				



October 14, 2013 Control No. 171344 Page 5 of 5

## **LABORATORY BLANK RESULTS**

				QC			
Analyte	Result	RL	PQL	Sample	<b>Preparation Date</b>	Analysis Date	Qual
Total Dissolved Solids	< 10 mg/l	10	10	W45216-1	09Oct13 1638 by 285	11Oct13 0835 by 285	
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45208-1	09Oct13 0928 by 302	09Oct13 1126 by 302	
Carbonaceous BOD 5-day	< 2 mg/l	2	2	W45203-1	09Oct13 0810 by 285	14Oct13 1003 by 93	
Total Suspended Solids	< 4 mg/l	4	4	W45209-1	09Oct13 1025 by 285	10Oct13 1436 by 285	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35552-1	09Oct13 1104 by 311	10Oct13 0950 by 235	
Chloride	< 0.2 mg/l	0.2	0.2	C16108-1	08Oct13 1653 by 07	08Oct13 1720 by 07	
Sulfate	< 0.2 mg/l	0.2	0.2	C16108-1	08Oct13 1653 by 07	08Oct13 1720 by 07	
Oil and Grease	< 2 mg/l	2	5	B8592-1	09Oct13 0815 by 295	09Oct13 0958 by 295	
Fecal Coliform	< 1 /100ml	1	1	M4030-1		08Oct13 1528 by 295	



		-															- X		PA		1 OF 1	
Client:	El Darada	Chaminal Camana			PO	No.		NO			,	ANA	YSES	REQ	UEST	ED			AIC		TROL NO:	
Projec		Chemical Company						OF			5			1					-		11344	
Refere		Permit AR0000752						В			NH3N, Total Phosphoru							1	AIC	; PRO	POSAL NO:	
Projec		0.1111.711.100007.02			l M	IATRI	<sub>  X</sub>	0	SS	۱.,	ု မို				1				Ca	rrier:		
Manag	er: Ms. La	rken Pennington			W		<u>'`</u>	T	CBOD, TSS	Coli. F	<u>-</u>							1	Ca		Gold Star	 
Sampl	ed		G	С	A	S	1	Т	301	ပိ	λö								Re		Temperature	$\overline{}$
By: AIC			R	0	Т	0		L	S												2, 9	
	Sample	Date/Time	Α	М	Е			Ε			] <u> </u>							ŀ				
No.	Identification	Collected	В	Р	R	L		<u>.</u> S_			ΪŽ			<u> </u>							Remarks	Î
1	010	9:55an-9:55an		Х	Х		, ]	1	X		,	<u> </u> •										
2	010	10/8/13 9:55am	×		Х			1		X	i											
1	010 ð	9:5500-9:500		Х	х			1			Х											$\neg$
		7.500										<del>                                     </del>					ļ		<del></del>		<del></del> · <u>,</u> .	
							-					-					<del> </del>	-	_			
			_										ļ <u>.</u>									
																j 			•			ļ
											<u>.                                    </u>								Fie	ld pH c	alibration	
		Container Type				_			Р	Р	Р						<u> </u>		on_		@	_
		Preservative	İ						NO	T	S	<u>.</u>							Buf	fer:		1
	G = Gla				; 		V = V							ICI to p					dium Thi		e	
T	NO = n		ric ac	id pl	<del>1</del> 2		N = N		acid p				<u>B = N</u>	IaOH t		2	Ţ		c acetate		····	
אורוםו	ound Time Requeste MAL or EXPEDITE	eo: (Please Circle)			<sup>2</sup> 1		į		Relino	quishe A	:d			Date/	Time		Rece	ived		[	Date/Time	
	ted results requeste						*		Ву:	Lary	<b>1</b> (	<u>)</u> ,,,	. +n	1019	8(3	9:5an	Ву:					
	hould AIC contact wi				<del>!</del>	_			Relino			Un	<u>krin</u>	Date/	T:	rean	-			<del> </del>	<u> </u>	
	870-312-1752 Fax:	iui questions.							Reinic By:	quisne	:a		J	Date	ıme		Rece	ived in L	l <sup>ab</sup>	Įt	Date/Time	
	Attention to:	Ms. Larken Pennin	note						ωy.								l <sup>o</sup> yh	- 11	l .	1	13:30	
•	Address to:	Post Office Box 23	_						Comn	nents	<del></del>			<u> </u>			$\perp \mathcal{L}_{\mathcal{X}}$	<del>on ful</del>			17/30	
•		El Dorado, AR 717							~ +*****													
		Lpennington@edc-		<u>om</u>																		

FORM 0060



r				<del></del> -	100																PAGE	1 OF 1
Client	El Dorad	o Chemical Company		3	PO	No.		ЙО			<u> </u>	ANA	LYSE	SREC	QUES	TED					AIC CO	NTROL NO:
Projec		J Chemical Company	<u></u>	-}-	ł		- [	OF		ğ	Ϊ.					1 1						(7134 Y
Refere		ly - Permit AR000075	:2		<del> </del>			اہ	9	(2 / Week)	\$	[			1			l	ļ		AIC PR	OPOSAL NO:
Projec		y Comit Artobooks		-1		MATRI	I	В	(2 / Week)	2/	≸	1				]			İ		L	
Manag		arken Pennington			W	<u> </u>	<u></u>	Ť	₹	<u> </u>	1		1		ļ	1 1				1	Carrier:	
Samp			G	С	A	s		Ť.		ٳؽٚٳ	3										<u></u>	Gold Star
By: AIC			R	Ō	T	ŏ		L	ဗ္ဗ	5	NO3N (3 / Week)			į	1				İ		Receive	ed Temperature C
	Sample	Date/Time	A	М	E	l id		Ē	O	\S. 1	¥		1		Ì			1		1		4.9
No.	Identification	Collected	В	Р	R			s		TDS,CI,SO4	ĺ	}		1		1			1		1	Operation
2	010	10013 9155ac	х		Х			1	х										<b>}</b>	1-		Remarks
1	010	10/8/13	х	:	Х			1	-	Х	<u> </u>		<u> </u>		<b> </b>	1	-				<del>                                     </del>	
	<del>810</del> -			×	Х		1	1			*	<b>†</b>	1			++				<del> </del>	<del> </del>	
		<del> </del>					$\dashv$	$\dashv$			<del>  \</del>		-		<b></b>	<del>  -</del>			<u> </u>	<u> </u>		
				ć.				-		, ,												
							ŀ			•												
				* * * *	Ĭ							_										
		Container Type		i				-+	<del>_</del> }			_	├	<del> </del>	ļ							calibration
							$\rightarrow$	-	Р	Р		Р	ļ		<b>-</b>				L_		on	@
	G = Gla	Preservative ass P = Plast				Щ,			S	NO	NO	NO		L		<u>L. L.</u>			<u></u>		Buffer:	
	NO = n			اما اما	40		V = V(							ICI to I		_					Thiosulfa	ate
Turnar	ound Time Request		nc ac	au pr	12		V = Ni				-1		R≃L	laOH t		2	,			inc ac	etate	
NOR	MAL or EXPEDITE	FD IN DAYS						;	Reling 3y: Y	u:sne )	a ,	$^{\wedge}$		Date/				Rece	ived			Date/Time
Expedi	ted results requeste	ed pv.				,			∍y: `∦	n at	10 l	≠n	water	10/	<b>W</b> 3	10:00	٨	By:				1
Who st	nould AIC contact w	ith questions:		- 1-		<del>-</del> ;		-				CUM	<u>Lugior</u>									
Phone	870-312-1752 Fax:	iai questions.				i			Relinq 3y:	uisne	u			Date/	Time			Hece	ive <b>d</b> in	ı Lab		Date/Time
	Attention to:	Ms. Larken Penning	nton	4					Jy.	,							]	<b>18</b> %	V	1		
	Address to:	Post Office Box 231						7	Comm	enta:				<u> </u>			ᆚ	OB	n th	حلك		13:30pm
•		El Dorado, AR 717						١,	20(1)(1)	ents:												
		om																				
		Lpennington@edc-					:															

FORM 0060



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

This report contains the analytical results and supporting information for samples submitted on October 9, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

John Overbey ) aboratory Director

This document has been distributed to the following:

PDF cc

El Dorado Chemical Company ATTN: Ms. Larken Pennington lpennington@edc-ark.com

El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc. ATTN: Ms. Amanda Gall.

ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com



October 15, 2013 Control No. 171378 Page 2 of 6

#### **SAMPLE INFORMATION**

## **Project Description:**

Two (2) water sample(s) received on October 9, 2013 Daily-Permit AR0000752 Monthly-Permit AR0000752 P.O. No. 357042

#### **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest. Ice chest #1 was delivered with a custody seal intact and signed

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

#### Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time Notes
171378-1	010 10/8/13 9:55am 10/9/13 9:55am	09-Oct-2013 0955
171378-2	010 10/9/13 9:55am	09-Oct-2013 0955

#### Qualifiers:

D Result is from a secondary dilution factor

#### References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

<sup>&</sup>quot;Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

<sup>&</sup>quot;Standard Methods for the Examination of Water and Wastewaters", 21st edition.

<sup>&</sup>quot;American Society for Testing and Materials" (ASTM).

<sup>&</sup>quot;Association of Analytical Chemists" (AOAC).



## **ANALYTICAL RESULTS**

AIC No. 171378-1

Sample Identification: 010 10/8/13 9:55am 10/9/13 9:55am

Analyte		Result	RL	Units	Qualifier
Chromium, Hexavalent SM 3500-Cr B	Prep: 11-Oct-2013 1340 by 308	< 0.007 Analyzed: 11-Oct-	0.007 2013 1500 by 308	<b>mg/l</b> Batch: W45239	
Ammonia as N with Distillat SM 4500-NH3 B,G	tion Prep: 09-Oct-2013 1520 by 302	<b>2.1</b> Analyzed: 09-Oct-	0.5 2013 1840 by 93	<b>mg/l</b> Batch: W45208	D Dil: 5
Carbonaceous BOD 5-day SM 5210 B	Prep: 10-Oct-2013 0859 by 285	< 2 Analyzed: 15-Oct-	2 2013 1000 by 285	<b>mg/l</b> Batch: W45221	
Total Suspended Solids USGS 3765	Prep: 10-Oct-2013 1522 by 308	<b>9.6</b> Analyzed: 11-Oct-	4 2013 0945 by 308	<b>mg/l</b> Batch: W45227	
Phosphorus EPA 200.7	Prep: 09-Oct-2013 1632 by 271	<b>0.085</b> Analyzed: 10-Oct-	0.02 2013 1508 by 235	<b>mg/l</b> Batch: S35564	
Mercury, low level EPA 245.7	Prep: 10-Oct-2013 0840 by 311	< 0.0050 Analyzed: 10-Oct-	0.0050 2013 0935 by 311	<b>ug/l</b> Batch: S35565	•
Nitrate as N EPA 300.0	Prep: 09-Oct-2013 1551 by 07	9.7 Analyzed: 09-Oct-	0.05 2013 2110 by 07	<b>mg/l</b> Batch: C16110	
Total Recoverable Trivalent Calculation	Chromium Prep: 10-Oct-2013 1112 by 271	< 0.007 Analyzed: 11-Oct-	0.007 2013 1255 by 305	<b>mg/l</b> Batch: S35569	
Total Recoverable Cadmiur EPA 200.8	n Prep: 10-Oct-2013 1112 by 271	< 0.0001 Analyzed: 11-Oct-	0.0001 2013 1255 by 305	<b>mg/l</b> Batch: S35569	
Total Recoverable Copper EPA 200.8	Prep: 10-Oct-2013 1112 by 271	<b>0.0065</b> Analyzed: 11-Oct-	0.001 2013 1255 by 305	<b>mg/l</b> Batch: S35569	
Total Recoverable Lead EPA 200.8	Prep: 10-Oct-2013 1112 by 271	<b>0.0031</b> Analyzed: 11-Oct-	0.001 2013 1255 by 305	<b>mg/l</b> Batch: S35569	
Total Recoverable Nickel EPA 200.8	Prep: 10-Oct-2013 1112 by 271	< 0.01 Analyzed: 11-Oct-	0.01 2013 1255 by 305	<b>mg/l</b> Batch: S35569	-
Total Recoverable Selenium EPA 200.8	n Prep: 10-Oct-2013 1112 by 271	< 0.002 Analyzed: 11-Oct-	0.002 2013 1255 by 305	mg/l Batch: \$35569	egg
Total Recoverable Silver EPA 200.8	Prep: 10-Oct-2013 1112 by 271	<b>0.00023</b> Analyzed: 11-Oct-	0.0002 2013 1255 by 305	<b>mg/l</b> Batch: S35569	
Total Recoverable Zinc EPA 200.8	Prep: 10-Oct-2013 1112 by 271	<b>0.47</b> Analyzed: 11-Oct-	0.002 2013 1255 by 305	<b>mg/l</b> Batch: S35569	

**AIC No.** 171378-2

Sample Identification: 010 10/9/13 9:55am

Analyte		Result	RL	Units	Qualifier
Total Cyanide SM 4500-CN C,E	Prep: 10-Oct-2013 0854 by 308	< 0.01 Analyzed: 10-0	0.01 Oct-2013 1619 by 308	<b>mg/l</b> Batch: W45219	
Fecal Coliform SM 9222 D		<b>54</b> Analyzed: 09-0	1 Oct-2013 1517 by 295	<b>/100ml</b> Batch: M4032	



October 15, 2013 Control No. 171378 Page 4 of 6

## **DUPLICATE RESULTS**

					RPD				
Analyte		AIC No.	Result	RPD	Limit	Preparation Date	Analysis Date	Dil	Qual
Carbonaceous BOD 5-day		171369-1	< 2 mg/l			10Oct13 0859 by 285	15Oct13 0948 by 285		
	Batch: W45221	Duplicate	< 2 mg/l	0.00	20.0	10Oct13 0859 by 285	15Oct13 0950 by 285		
Total Suspended Solids		171355-1	< 4 mg/l			10Oct13 1522 by 308	11Oct13 0945 by 308		
	Batch: W45227	Duplicate	< 4 mg/l	0.00	20.0	10Oct13 1522 by 308	11Oct13 0945 by 308		
Total Suspended Solids		171366-1	< 4 mg/l			10Oct13 1522 by 308	11Oct13 0945 by 308		
	Batch: W45227	Duplicate	< 4 mg/l	0.00	20.0	10Oct13 1612 by 308	11Oct13 0945 by 308		

## **LABORATORY CONTROL SAMPLE RESULTS**

Analyte	Spike Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Chromium, Hexavalent	0.05 mg/l	111	80.0-120		_	W45239	11Oct13 1341 by 308	11Oct13 1500 by 308		
Total Cyanide	0.1 mg/l	95.7	85.0-115			W45219	10Oct13 0854 by 308	10Oct13 1648 by 308		
Ammonia as N with Distillation	1 mg/l	99.1	80.0-120			W45208	09Oct13 0928 by 302	09Oct13 1128 by 302		
Carbonaceous BOD 5-day	200 mg/l	92.8	84.5-115			W45221	10Oct13 0859 by 285	15Oct13 0946 by 285		
Phosphorus	5 mg/l	105	85.0-115			S35564	09Oct13 1632 by 271	10Oct13 1448 by 235		
Mercury, low level	0.01 ug/l	85.2	76.0-113			S35565	10Oct13 0840 by 311	10Oct13 0940 by 311		
Nitrate as N	4 mg/l	95.4	90.0-110			C16110	09Oct13 1552 by 07	09Oct13 1626 by 07		
Total Recoverable Cadmium	0.05 mg/l	98.4	85.0-115			S35569	10Oct13 1112 by 271	11Oct13 1239 by 305		
Total Recoverable Copper	0.05 mg/l	99.5	85.0-115			S35569	10Oct13 1112 by 271	11Oct13 1239 by 305		
Total Recoverable Lead	0.05 mg/l	101	85.0-115			S35569	10Oct13 1112 by 271	11Oct13 1239 by 305	-	
Total Recoverable Nickel	0.05 mg/l	101	85.0-115			S35569	10Oct13 1112 by 271	11Oct13 1239 by 305		
Total Recoverable Selenium	0.05 mg/l	99.9	85.0-115			S35569	10Oct13 1112 by 271	11Oct13 1239 by 305		
Total Recoverable Silver	0.02 mg/l	93.1	85.0-115			S35569	10Oct13 1112 by 271	11Oct13 1239 by 305		
Total Recoverable Zinc	0.05 mg/l	101	85.0-115			S35569	10Oct13 1112 by 271	11Oct13 1239 by 305		



## **MATRIX SPIKE SAMPLE RESULTS**

Analyte	Spike Sample Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Chromium, Hexavalent	171378-1 0.05 mg/l 171378-1 0.05 mg/l Relative Percent Difference:	109 110 0.915	76.5-146 76.5-146 25.0	W45239 W45239 W45239	11Oct13 1341 by 308 11Oct13 1341 by 308	11Oct13 1500 by 308 11Oct13 1500 by 308		
Total Cyanide	171378-2 0.1 mg/l 171378-2 0.1 mg/l Relative Percent Difference:	83.8 94.2 11.7	75.0-125 75.0-125 20.0	W45219 W45219 W45219	10Oct13 0854 by 308 10Oct13 0854 by 308	10Oct13 1621 by 308 10Oct13 1623 by 308		
Ammonia as N with Distillation	171344-1 1 mg/l 171344-1 1 mg/l Relative Percent Difference:	85.7 91.5 1.88	80.0-120 80.0-120 25.0	W45208 W45208 W45208	09Oct13 0928 by 302 09Oct13 0928 by 302	09Oct13 1229 by 302 09Oct13 1207 by 302	5 5	D D D
Phosphorus	171374-1 5 mg/l 171374-1 5 mg/l Relative Percent Difference:	104 106 1.22	75.0-125 75.0-125 20.0	S35564 S35564 S35564	09Oct13 1632 by 271 09Oct13 1632 by 271	10Oct13 1451 by 235 10Oct13 1454 by 235		
Mercury, low level	171378-1 0.01 ug/l 171378-1 0.01 ug/l Relative Percent Difference:	101 96.9 2.92	63.0-111 63.0-111 18.0	S35565 S35565 S35565	10Oct13 0840 by 311 10Oct13 0840 by 311	10Oct13 0946 by 311 10Oct13 0951 by 311		
Nitrate as N	171374-2 4 mg/l 171374-2 4 mg/l Relative Percent Difference:	95.7 96.1 0.259	80.0-120 80.0-120 10.0	C16110 C16110 C16110	09Oct13 1552 by 07 09Oct13 1552 by 07	09Oct13 1652 by 07 09Oct13 1717 by 07		
Total Recoverable Cadmium	171378-1 0.05 mg/l 171378-1 0.05 mg/l Relative Percent Difference:	95.2 95.2 0.0196	75.0-125 75.0-125 20.0	S35569 S35569 S35569	10Oct13 1112 by 271 10Oct13 1112 by 271	11Oct13 1245 by 305 11Oct13 1250 by 305		
Total Recoverable Copper	171378-1 0.05 mg/l 171378-1 0.05 mg/l Relative Percent Difference:	96.3 107 9.87	75.0-125 75.0-125 20.0	S35569 S35569 S35569	10Oct13 1112 by 271 10Oct13 1112 by 271	11Oct13 1245 by 305 11Oct13 1250 by 305		
Total Recoverable Lead	171378-1 0.05 mg/l 171378-1 0.05 mg/l Relative Percent Difference:	96.3 96.7 0.404	75.0-125 75.0-125 20.0	S35569 S35569 S35569	10Oct13 1112 by 271 10Oct13 1112 by 271	11Oct13 1245 by 305 11Oct13 1250 by 305		
Total Recoverable Nickel	171378-1 0.05 mg/l 171378-1 0.05 mg/l Relative Percent Difference:	94.0 96.0 2.01	75.0-125 75.0-125 20.0	S35569 S35569 S35569	10Oct13 1112 by 271 10Oct13 1112 by 271	11Oct13 1245 by 305 11Oct13 1250 by 305		
Total Recoverable Selenium	171378-1 0.05 mg/l 171378-1 0.05 mg/l Relative Percent Difference:	96.6 97.2 0.647	75.0-125 75.0-125 - 20.0	S35569 S35569 S35569	10Oct13 1112 by 271 10Oct13 1112 by 271	11Oct13 1245 by 305 11Oct13 1250 by 305	mar s	o emperatorio e e e e e e e e e e e e e e e e e e e
Total Recoverable Silver	171378-1 0.02 mg/l 171378-1 0.02 mg/l Relative Percent Difference:	93.8 93.9 0.0904	75.0-125 75.0-125 20.0	S35569 S35569 S35569	10Oct13 1112 by 271 10Oct13 1112 by 271	11Oct13 1245 by 305 11Oct13 1250 by 305		
Total Recoverable Zinc	171378-1 0.05 mg/l 171378-1 0.05 mg/l Relative Percent Difference:	93.6 108 5.05	75.0-125 75.0-125 20.0	S35569 S35569 S35569	10Oct13 1112 by 271 10Oct13 1112 by 271	11Oct13 1245 by 305 11Oct13 1250 by 305		



October 15, 2013 Control No. 171378 Page 6 of 6

## **LABORATORY BLANK RESULTS**

				QC			
Analyte	Result	RL	PQL	Sample	Preparation Date	Analysis Date	Qual
Chromium, Hexavalent	< 0.007 mg/l	0.007	0.007	W45239-1	11Oct13 1341 by 308	11Oct13 1500 by 308	
Total Cyanide	< 0.01 mg/l	0.01	0.01	W45219-1	10Oct13 0854 by 308	10Oct13 1615 by 308	
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45208-1	09Oct13 0928 by 302	09Oct13 1126 by 302	
Carbonaceous BOD 5-day	< 2 mg/l	2	2	W45221-1	10Oct13 0859 by 285	15Oct13 0945 by 285	
Total Suspended Solids	< 4 mg/l	4	4	W45227-1	10Oct13 1522 by 308	11Oct13 0945 by 308	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35564-1	09Oct13 1632 by 271	10Oct13 1445 by 235	
Mercury, low level	< 0.0018 ug/l	0.0018	0.0050	S35565-1	10Oct13 0840 by 311	10Oct13 0925 by 311	
Nitrate as N	< 0.05 mg/l	0.05	0.05	C16110-1	09Oct13 1552 by 07	09Oct13 1600 by 07	
Fecal Coliform	< 1 /100ml	1	1	M4032-1		09Oct13 1206 by 295	
Total Recoverable Cadmium	< 0.0001 mg/l	0.0001	0.0001	S35569-1	10Oct13 1112 by 271	11Oct13 1234 by 305	
Total Recoverable Copper	< 0.001 mg/l	0.001	0.001	S35569-1	10Oct13 1112 by 271	11Oct13 1234 by 305	
Total Recoverable Lead	< 0.001 mg/l	0.001	0.001	S35569-1	10Oct13 1112 by 271	11Oct13 1234 by 305	
Total Recoverable Nickel	< 0.01 mg/l	0.01	0.01	S35569-1	10Oct13 1112 by 271	11Oct13 1234 by 305	
Total Recoverable Selenium	< 0.002 mg/l	0.002	0.002	S35569-1	10Oct13 1112 by 271	11Oct13 1234 by 305	
Total Recoverable Silver	< 0.0002 mg/l	0.0002	0.0002	S35569-1	10Oct13 1112 by 271	11Oct13 1234 by 305	
Total Recoverable Zinc	< 0.002 mg/l	0.002	0.002	S35569-1	10Oct13 1112 by 271	11Oct13 1234 by 305	



																					1 OF 1	
Client	El Docado	Chemical Company		.1	PO	No.		NO	<u>z</u>		T =	ANA	LYSE	S REQ	UEST	ED				VIC CO	VTROL NO	:_ ^
Projec		Criemical Company			$\{$			OF	30		§	İ						1	<u> </u>  -		< 17/3	218
Refere		Permit AR0000752						В	2		l ds			1	1 .				^	11/2/21/	POSAL N	<b>)</b> :
Projec	t			1	1 N	IATR	ΙX	ō	Į Š	ш	٤		1						l ta	Carrier:		
Manag		rken Pennington			W	[		Т	٥	Soli:	<u>m</u>			1							Gold Star	
Sampl	led Well	knigten	G	C.	A	S		Т	CBOD, TSS, NOS	ŭ	Total Phosphoru		İ				-		F	Receive	d Temperat	ure C
By: AIC	Sample	Date/Time	R	O M	T	0		<u> </u>	0		NH3N,								l ⊾		<u>4.3 °C</u>	
No.	Identification	Collected	A B	P	E R			E			一芸							l i	1 1			
	-	10/8/13-10/9/13	۲.								-	├	┼─-	$\vdash$		<del>                                     </del>		+		za 0.	Remarks	
<b>I</b>	010	A:55 pm 9: Tan		X	X			1	X												<u>il 010</u>	>
	010	10/0/13	х	1	Х			1		×										1	1	
	010	10/8/12-10/9/13 asstan		X	Х			1			×									Ĺ,		1
		<b></b>																				
										-												
										,									F	ield pH	calibration	
		Container Type							Р	Р	Р								0	n	@	
		Preservative							NO	Т	S									uffer:		
	G = Gla								vials			•		ICI to p					odium T		ite	
Turnar	NO = n		ric ac	id pl	<del>1</del> 2	<del></del>	N = 1		acid p				B = N	laOH t		2			nc aceta	ate		
NOD	ound Time Requeste MAL or EXPEDITE	EO IN DAYS							Reling	uishe	id ^			Date/			Rece	eived			Date/Time	1
	ited results requested								By: J	W	la le	Win	olen	100	1/13	(0):00 A	By:					Ī
	hould AIC contact wi					_			Relino			7 7 7 7	Λ	Date/	Time	( 01 - 07		eived in	Lab		Date/Time	
	870-312-1752 Fax:								Ву:								€y:	orred in	~		Date/Time	
Report	Attention to:	Ms. Larken Penning	gton	į.				- 1	•	1		_						m	$\mathcal{L}_{ij}$	la .	1330	
Report	Address to:	Post Office Box 23						ľ	Comn	nents:							1	<del> </del>	Tra	1.		
		El Dorado, AR 717								•							,		*	ı		
<u> </u>	<del></del>	Lpennington@edc-	ark.c	om :				i														

FORM 0060



					100				,		<u></u>								PAG	£1 OF 1	
Client	: El Dorad	do Chemical Compan	v		PO	NO.		NO OF	<u> </u>	<u></u>	·	AN	ALYSI	SRE	QUES	TED				CONTROL NO:	
Projec	at each and a second			٠,	-		1	QF.	ľ		İ	9					İ	1		<u>171378</u>	<u>,                                      </u>
Refere		hly - Permit AR00007	52	1				В			ł	Metals: See Comments		1				1 1	AIC F	PROPOSAL NO	):
Projec						MATR	:IX	0	ہـ ا			]	1						Carrie		
Manag Samp	ger: Ms. L	arken Pennington	<del></del>		W	, ,		Т	Hg.LL	<sup>န</sup> ှ	CN.T	رة ا	1						Came	er: Gold Star	
By:	Larken	Pennington	G	C	1 4	S	ı	T	I		10	l s				1			Rece	ived Temperatu	ıre C
AIC	Sample	Date/Time		О М	E			L				stats		1		1		1 1		43.6	
No.	Identification	Collected	В	P	R	1 [1	- 1	E S		}		¥	1		1	1		1 1			
Ì	010	10/8/13-13/9/13		×	X		_	T		<del>                                     </del>	<del> </del>	┼	╁	+	+	<del> </del>	┥—	+ +	<del>-</del>	Remarks	<u> </u>
	ļ	9:55an-9:55an	<u> </u>		<u>L^</u>			1	Х					1		1 1			10 6	•	_
	010	[3]1171.16/13	l	X	X			1		Х			1	1	1	† +	_	+	OUT	FALL OID	<u>'</u>
		9: 55am-9:58am	<del> </del>									<u> </u>					1	1		}	1
	010	9:55am	X	,	×		1	1			Х	ı	ļ								+
	010	10/8/13-10/9/13	1				$\dashv$	-				<del> </del>	┼	+	<del></del>						
	010	10/8/13-17/9/13		X	X			1				X	Ì						17		$T_{-}$
				i				Ť				<del>                                     </del>	<del>                                     </del>	+	<del> </del>	<del>  </del>	+-	+-+			
	<del></del>											Į		1		1 }	ł	1 1			
- 1			1 1				-		I								1	† †	_		
		<del>  -</del>			$\vdash$			$\dashv$				_		<u> </u>	<u></u>						
]			[ ]	4		ĺ	- 1	İ				•	ļ l		ļ				,		
		Container Type	1 1		-		$\neg +$	+	G	P		P	P	+	<del>                                     </del>		┿			H calibration	
		Preservative						$\dashv$	NO		В			<del> </del>		-		<del>                                     </del>	on	@	
	G = G	lass P = Plast	ic			─\	/ = V(	DA V	ials	Α			NO ICI to	<u> </u>	<u> </u>		<u> </u>		Buffer:		
	NO = 1		ric ac	id pł	<del>1</del> 2				acid p	H2 1				p⊓z to pH1	2		Sodium Zinc aci	Thiosulfa			
Furnard	ound Time Reques	ted: (Please circle)							Relinq	_				Date/			Recei		A=(NH	4)2SO4, NH4OH	
NOR	MAL or EXPEDIT	ED IN DAYS							3v. C.	) '.	Λ				-			ivea		Date/Time	
Expedit	ed results requeste	ed by:				_				W	inki	unel	M.	1/2/0	1113	1060200	. By:				
Who sh	ould AIC contact w	rith questions:				-		F	Relinq	uishe	j j	7	<u></u>	Date/			Pagai	iyed in La	h	Date/Time	
	870-312-1752 Fax:								By:	•		_		1			BV	-fryss	~	10/9/13	
	Attention to:	Ms. Larken Penning						L									-,-	mon	100mg	1320	ı
/eboil /	Address to:	Post Office Box 231		:				C	omm	entș:	Total f	₹ecov	erabl	e Meta	ls = A	g.LL, Cd.Ll	, Cr <sup>+3</sup> ,	Cu.LL, Ni	. Pb.LL. Se	e.LL. <i>7</i> n	
		El Dorado, AR 717 Lpennington@edc-								•							•		,, ••	<b>, -</b>	
		cheminidroumsoc-	ark.cc	JITT :																	
										i										FORM 0060	السنست



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

This report contains the analytical results and supporting information for samples submitted on October 10, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

John Overbey Laboratory Director

This document has been distributed to the following:

PDF cc: El Dorado Chemical Company

ATTN: Ms. Larken Pennington Ipennington@edc-ark.com

El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc. ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com



October 16, 2013 Control No. 171420 Page 2 of 5

#### **SAMPLE INFORMATION**

### **Project Description:**

Two (2) water sample(s) received on October 10, 2013 Daily / Weekly - Permit AR0000752 P.O. No. 357042

## **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest. Ice chest #1 was delivered with a custody seal intact and signed

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

#### Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time	Notes
171420-1	010 10/9/13 9:55am - 10/10/13 9:55am	10-Oct-2013 0955	
171420-2	010 10/10/13 9:55am	10-Oct-2013 0955	

#### **Qualifiers:**

D Result is from a secondary dilution factor

#### References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

"Standard Methods for the Examination of Water and Wastewaters", 21st edition.

"American Society for Testing and Materials" (ASTM).

"Association of Analytical Chemists" (AOAC).



### **ANALYTICAL RESULTS**

AIC No. 171420-1

Sample Identification: 010 10/9/13 9:55am - 10/10/13 9:55am

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillat SM 4500-NH3 B,G	tion Prep: 10-Oct-2013 1513 by 93	1.9 Analyzed: 11-Oct-2	0.1 2013 1143 by 93	<b>mg/l</b> Batch: W45226	
Carbonaceous BOD 5-day SM 5210 B	Prep: 10-Oct-2013 1559 by 285	2.2 Analyzed: 15-Oct-2	2 2013 1048 by 285	<b>mg/l</b> Batch: W45221	
Total Suspended Solids USGS 3765	Prep: 10-Oct-2013 1637 by 308	12 Analyzed: 11-Oct-2	4 2013 0955 by 308	<b>mg/l</b> Batch: W45233	
Phosphorus EPA 200.7	Prep: 11-Oct-2013 0900 by 271	<b>0.099</b> Analyzed: 11-Oct-2	0.02 2013 1557 by 305	<b>mg/l</b> Batch: S35573	

AIC No. 171420-2

Sample Identification: 010 10/10/13 9:55am

Analyte		Result	RL	Units	Qualifier
Total Dissolved Solids SM 2540 C	Prep: 14-Oct-2013 1549 by 285	240 Analyzed: 15-Oct	10 -2013 1629 by 285	mg/l Batch: W45257	
Chloride EPA 300.0	Prep: 10-Oct-2013 1455 by 07	18 Analyzed: 11-Oct	0.2 -2013 1037 by 07	<b>mg/l</b> Batch: C16114	
Sulfate EPA 300.0	Prep: 10-Oct-2013 1455 by 07	<b>29</b> Analyzed: 11-Oct	0.2 -2013 1037 by 07	<b>mg/l</b> Batch: C16114	
Oil and Grease EPA 1664A	Prep: 11-Oct-2013 0930 by 295	< 5 Analyzed: 11-Oct	5 -2013 1254 by 295	<b>mg/l</b> Batch: B8596	
Fecal Coliform SM 9222 D		<b>33</b> Analyzed: 10-Oct	3 -2013 1455 by 295	/ <b>100ml</b> Batch: M <b>4</b> 037	D Dil: 3



## **DUPLICATE RESULTS**

					RPD				
Analyte		AIC No.	Result	RPD	Limit	Preparation Date	Analysis Date	Dil	Qual
Oil and Grease		171415-2	< 5 mg/l	,		11Oct13 0930 by 295	11Oct13 1254 by 295		
	Batch: B8596	Duplicate	< 5 mg/l	0.00	20.0	11Oct13 1008 by 295	11Oct13 1254 by 295		
Carbonaceous BOD 5-day		171369-1	< 2 mg/l			10Oct13 0859 by 285	15Oct13 0948 by 285		
	Batch: W45221	Duplicate	< 2 mg/l	0.00	20.0	10Oct13 0859 by 285	15Oct13 0950 by 285		
Total Suspended Solids		171383-1	11 mg/l			10Oct13 1637 by 308	11Oct13 0955 by 308		
·	Batch: W45233	Duplicate	12 mg/l	3.51	20.0	10Oct13 1638 by 308	11Oct13 0955 by 308		
Total Suspended Solids		171385-7	6700 mg/l			10Oct13 1637 by 308	11Oct13 0955 by 308		
	Batch: W45233	Duplicate	7000 mg/l	3.36	20.0	10Oct13 1638 by 308	11Oct13 0955 by 308		
Total Dissolved Solids		171419-1	790 mg/l			14Oct13 1549 by 285	15Oct13 1629 by 285		
	Batch: W45257	Duplicate	780 mg/l	0.254	10.0	14Oct13 1550 by 285	15Oct13 1629 by 285		
Total Dissolved Solids		171418-2	700 mg/l			14Oct13 1549 by 285	15Oct13 1629 by 285		
	Batch: W45257	Duplicate	720 mg/l	2.25	10.0	14Oct13 1550 by 285	15Oct13 1629 by 285		

## LABORATORY CONTROL SAMPLE RESULTS

Analyte	Spike Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	86.6	80.0-120		_	W45226	10Oct13 1514 by 93	11Oct13 1132 by 93		
Carbonaceous BOD 5-day	200 mg/l	92.8	84.5-115			W45221	10Oct13 0859 by 285	15Oct13 0946 by 285		
Phosphorus	5 mg/l	105	85.0-115			S35573	11Oct13 0900 by 271	11Oct13 1514 by 305		
Chloride	20 mg/l	96.5	90.0-110			C16114	10Oct13 1323 by 07	10Oct13 1510 by 07		
Sulfate	20 mg/l	96.6	90.0-110			C16114	10Oct13 1323 by 07	10Oct13 1510 by 07		
Oil and Grease	40 mg/l 40 mg/l	107 104	78.0-114 78.0-114	2.84	20.0	B8596 B8596	11Oct13 0931 by 295 11Oct13 0931 by 295	11Oct13 1254 by 295 11Oct13 1254 by 295		

## **MATRIX SPIKE SAMPLE RESULTS**

		Spike					1.6	* - T	
Analyte	Sample 7	Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	171418-1	1 mg/l	91.0	80.0-120	W45226	10Oct13 1514 by 93	11Oct13 1136 by 93		
	171418-1 °	1 mg/l	96.2	80.0-120	W45226	10Oct13 1514 by 93	11Oct13 1138 by 93		
	Relative Perce	ent Difference:	4.40	25.0	W45226				
Phosphorus	171418-1	5 mg/l	102	75.0-125	S35573	11Oct13 0900 by 271	11Oct13 1517 by 305		
·	171418-1	5 mg/l	102	75.0-125	S35573	11Oct13 0900 by 271	11Oct13 1520 by 305		
	Relative Perce	ent Difference:	0.0437	20.0	S35573				
Chloride	171409-1 2	20 mg/l	95.5	80.0-120	C16114	10Oct13 1323 by 07	10Oct13 1656 by 07		
	171409-1 2	20 mg/l	96.3	80.0-120	C16114	10Oct13 1323 by 07	10Oct13 1721 by 07		
	Relative Perce	ent Difference:	0.872	10.0	C16114				
Sulfate	171409-1 2	20 mg/l	96.2	80.0-120	C16114	10Oct13 1323 by 07	10Oct13 1656 by 07		
	171409-1 2	20 mg/l	97.5	80.0-120	C16114	10Oct13 1323 by 07	10Oct13 1721 by 07		
	Relative Perce	ent Difference:	1.28	10.0	C16114				



October 16, 2013 Control No. 171420 Page 5 of 5

## **LABORATORY BLANK RESULTS**

				QC			
Analyte	Result	RL	PQL	Sample	Preparation Date	Analysis Date	Qual
Total Dissolved Solids	< 10 mg/l	10 .	10	W45257-1	14Oct13 1550 by 285	15Oct13 1629 by 285	
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45226-1	10Oct13 1514 by 93	11Oct13 1131 by 93	
Carbonaceous BOD 5-day	< 2 mg/l	2	2	W45221-1	10Oct13 0859 by 285	15Oct13 0945 by 285	
Total Suspended Solids	< 4 mg/l	4	4	W45233-1	10Oct13 1638 by 308	11Oct13 0955 by 308	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35573-1	11Oct13 0900 by 271	11Oct13 1511 by 305	
Chloride	< 0.2 mg/l	0.2	0.2	C16114-1	10Oct13 1323 by 07	10Oct13 1443 by 07	
Sulfate	< 0.2 mg/l	0.2	0.2	C16114-1	10Oct13 1323 by 07	10Oct13 1443 by 07	
Oil and Grease	< 2 mg/l	2	5	B8596-1	11Oct13 0931 by 295	11Oct13 1254 by 295	
Fecal Coliform	< 1 /100ml	1	1	M4037-1		10Oct13 1456 by 295	



						_ ;													_		1 OF 1
Client:	El Dorad	o Chemical Company	,		PO	No.		NO OF				ANAL	YSE	SREC	UEST	ED	<del></del>		<del></del>	AIC CO	NTROL NO: 71420
Projec		o onemical compan		<del></del>	1			UF		'	ğ		ł			}			ł		71720 DPOSAL NO:
Refere	ence: Daily -	Permit AR0000752						В	S	1	gb				Ė					INIC PRO	JPUSAL NO.
Projec		¥		1	N	MATR	IX.	0	TS	யத	꽃				1		12	<u>- </u>	-	Carrier:	
Manag	ger: Ms. La	arken Pennington			W			Т	Ŏ	Coli.	ā	1								<b>-</b>	Gold Star
Sampl By: AIC	ed Larken A	enningfun	G R	0	A T	S		T L	CBOD, TSS	)	NH3N, Total Phosphoru									Receive	d Temperature C
	Sample	Date/Time	Α	М	E	1		E			<u>က်</u>										
No.	Identification	Collected	В	P	R	L		S			Ż							1			Remarks
	010	10/9/13-10/10/13 9:55an-9:57am		х	Х			1	X												
$\supset$	010	10/10/13	х		X			1		х											
1	010	10/113-10/10/13 9:550n-9:5 Jan		Х	Х		j	1			Х									-	
				7																	<del>- 1</del>
											·										
																				Field pH	calibration
		Container Type							Р	Р	Р									on	@
		Preservative					[		NO	T	S									Buffer:	
	G = GI						V = V							fCl to p						Thiosulfa	ate
Tuesas	NO = r		ric ac	cid pl	12		<u>N = N</u>		acid p				<u>B = N</u>	laOH t		2			inc ac	etate	
I urnan	ound Time Request	ed: (Please circle)							_ //	uishe	Λ	_		Date/			Rece	eived			Date/Time
Expedi	MAL or EXPEDIT ted results requeste	ed by:			_			ĺ	ву:√	allu	n lei	unuel	M~	10/1	913	10:07am	Ву:				
	hould AIC contact w	ith questions:				_		Ī		uishe			<del></del>	Date/	Time	•	Rece	ived in	Lab	-	Date/Time
	870-312-1752 Fax:								Ву:			U					Ву:/	•	11	-7	10-10-13
	Attention to:	Ms. Larken Penning		!						· '				L			lug	ed	Ho	ho	1320
Report	Address to:	Post Office Box 23		'					Comn	nents:		_									
		El Dorado, AR 717																			•
		Lpennington@edc-	<u>ark.c</u>	<u>om</u>																	

FORM 0060



Client	El Dorac	do Chemical Compan			РО	No.		NO				ANA	LYS	ES RE	QUES	STED	·				1 OF 1 ONTROL NO:
Project Refere Project Manag Sampl	t ence: Wee t ger: Ms. L	kly - Permit AR00007 arken Pennington		Гс	- X X A	MATE	RIX	OF B O T	(2 / Week)	04 (2 / Week)											71420 ROPOSAL NO:
No.	Sample Identification	Date/Dime Collected	R A B	OMP	TER	9 0 - 1		T L E S	90	TDS,CI,S04										Receiv	ved Temperature C
2	010	10/10/13 9:57am	X		х			1	х					+	+	+++	+		+		Remarks
7	010	10/10/13 9:55am	х		X			1		х								+	+	+-	
$\dashv$															_						
		<del>                                     </del>		1	-	$\dashv$	$\dashv$		$\dashv$	_					<del> </del>		+			<u> </u>	
						+	$\dashv$	+				_		-						<del> </del>	
		Contribut		- !													+		+-	Field ph	calibration
		Container Type Preservative	$\dashv$	-	$\dashv$		$\dashv$		P S	P NO										on	@_
urnaro	G = Gi NO = n und Time Request	ass P = Plasti ione S = Sulfui ed: (Please circle)		id pH	2			OA vi itric a	als cid pl	— <u> </u>		l	3 = 1	ICI to I	<u>o pH1</u>	2		Z = 2	Sodiun Zinc ad	Buffer: n Thiosulf cetate	ate
NORM	IAL or EXPEDITE of results requested outd AIC contact with	ED IN DAYS		- 1		<del>-</del>		L		yished	1 M TE	vvije	3		0/13	10:00	By:	æived			Date/Time
hone 8: eport A	70-312-1752 Fax: Itention to: ddress to:	Ms. Larken Penning Post Office Box 231 El Dorado, AR 7173 Lpennington@edc-a	31	<u>m</u>				8	elinqu y: omme	ents:			)	Date/	Time		Red By:	eived i	in Lab	oten	Date/Time /ひ-/ひ-/ } /32 も
				1						T											FORM 0060



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

This report contains the analytical results and supporting information for samples submitted on October 11, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

hn Overbey Soratory Director

This document has been distributed to the following:

PDF cc: El Dorado Chemical Company ATTN: Ms. Larken Pennington lpennington@edc-ark.com

> El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

> El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc. ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com



October 16, 2013 Control No. 171469 Page 2 of 4

#### **SAMPLE INFORMATION**

#### **Project Description:**

Two (2) water sample(s) received on October 11, 2013 Daily-Permit AR0000752 P.O. No. 357042

#### **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest. Ice chest #1 was delivered with a custody seal intact and signed with shipping documentation.

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

## Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time	Notes
171469-1	010 10/10/13 9:55am 10/11/13 9:55am	11-Oct-2013 0955	•
171469-2	010 10/11/13 9:55am	11-Oct-2013 0955	

#### Qualifiers:

D Result is from a secondary dilution factor

#### References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

"Standard Methods for the Examination of Water and Wastewaters", 21st edition.

"American Society for Testing and Materials" (ASTM).

"Association of Analytical Chemists" (AOAC).



## **ANALYTICAL RESULTS**

**AIC No.** 171469-1

Sample Identification: 010 10/10/13 9:55am 10/11/13 9:55am

Analyte	·	Result	RL	Units	Qualifier
Ammonia as N with Distillat SM 4500-NH3 B,G	t <b>ion</b> Prep: 11-Oct-2013 1511 by 93	<b>1.6</b> Analyzed: 15-0	0.1 Oct-2013 1225 by 93	<b>mg/l</b> Batch: W45240	
Carbonaceous BOD 5-day SM 5210 B	Prep: 11-Oct-2013 1517 by 285	< 2 Analyzed: 16-0	2 Oct-2013 0957 by 285	<b>mg/l</b> Batch: W45241	
Total Suspended Solids USGS 3765	Prep: 14-Oct-2013 0950 by 285	< <b>4</b> Analyzed: 15-0	4 Oct-2013 0915 by 285	<b>mg/l</b> Batch: W45252	
Phosphorus EPA 200.7	Prep: 14-Oct-2013 1019 by 271	<b>0.096</b> Analyzed: 15-0	0.02 Oct-2013 1402 by 305	<b>mg/l</b> Batch: S35583	
Nitrate as N EPA 300.0	Prep: 11-Oct-2013 1628 by 07	<b>11</b> Analyzed: 14-0	0.5 Oct-2013 1640 by 07	<b>mg/l</b> Batch: C16118	D Dil: 10

AIC No. 171469-2

Sample Identification: 010 10/11/13 9:55am

Analyte	Result	RL	Units	Qualifier
Fecal Coliform	42	3	/100ml	D
SM 9222 D	Analyzed: 11-Oct-2	2013 1500 by 295	Batch: M4040	Dil: 2.5



## **DUPLICATE RESULTS**

					RPD				
Analyte		AIC No.	Result	RPD	Limit	Preparation Date	Analysis Date	Dil	Qual
Carbonaceous BOD 5-day		171462-1	< 2 mg/l			11Oct13 1517 by 285	16Oct13 0940 by 285		
	Batch: W45241	Duplicate	< 2 mg/l	0.00	20.0	11Oct13 1517 by 285	16Oct13 0942 by 285		
Total Suspended Solids		171427-1	< 4 mg/l			14Oct13 0950 by 285	15Oct13 0915 by 285		
·	Batch: W45252	Duplicate	< 4 mg/l	0.00	20.0	14Oct13 0950 by 285	15Oct13 0915 by 285		
Total Suspended Solids		171461-2	29 mg/l			14Oct13 0950 by 285	15Oct13 0915 by 285		
·	Batch: W45252	Duplicate	27 mg/l	5.71	20.0	14Oct13 0950 by 285	15Oct13 0915 by 285		

## **LABORATORY CONTROL SAMPLE RESULTS**

Analyte	Spike Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	85.2	80.0-120			W45240	11Oct13 1511 by 93	15Oct13 1212 by 93	-	
Carbonaceous BOD 5-day	200 mg/l	98.9	84.5-115			W45241	11Oct13 1517 by 285	16Oct13 0939 by 285		
Phosphorus	5 mg/l	105	85.0-115			S35583	14Oct13 1020 by 271	15Oct13 1323 by 305		
Nitrate as N	4 mg/l	93.8	90.0-110			C16118	11Oct13 1300 by 07	11Oct13 1534 by 07		

## **MATRIX SPIKE SAMPLE RESULTS**

Analyte	Sample	Spike Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	171467-1	1 mg/l	92.2	80.0-120	W45240	11Oct13 1511 by 93	15Oct13 1216 by 93	,	
	171467-1	1 mg/l	96.4	80.0-120	W45240	11Oct13 1511 by 93	15Oct13 1218 by 93		
	Relative Per	rcent Difference:	3.59	25.0	W45240				
Phosphorus	171467-2	5 mg/l	105	75.0-125	S35583	14Oct13 1020 by 271	15Oct13 1326 by 305		
·	171467-2	5 mg/l	105	75.0-125	S35583	14Oct13 1020 by 271	15Oct13 1329 by 305		
	Relative Per	rcent Difference:	0.0969	20.0	S35583				
Nitrate as N	171443-3	4 mg/i	100	80.0-120	C16118	11Oct13 1300 by 07	11Oct13 1600 by 07		
	171443-3	4 mg/l	98.2	80.0-120	C16118	11Oct13 1300 by 07	11Oct13 1626 by 07		
	Relative Per	rcent Difference:	2.06	10.0	C16118				
			<i>x</i> -	~ .		* * * * * * * * * * * * * * * * * * * *			

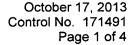
## **LABORATORY BLANK RESULTS**

				QC			
Analyte	Result	RL	PQL	Sample	Preparation Date	Analysis Date	Qual
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45240-1	11Oct13 1511 by 93	15Oct13 1211 by 93	
Carbonaceous BOD 5-day	< 2 mg/l	2	2	W45241-1	11Oct13 1517 by 285	16Oct13 0938 by 285	
Total Suspended Solids	< 4 mg/l	4	4	W45252-1	14Oct13 0950 by 285	15Oct13 0915 by 285	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35583-1	14Oct13 1020 by 271	15Oct13 1319 by 305	
Nitrate as N	< 0.05 mg/l	0.05	0.05	C16118-1	11Oct13 1300 by 07	11Oct13 1509 by 07	
Fecal Coliform	< 1 /100ml	1	1	M4040-1		11Oct13 1500 by 295	



										1											1 OF 1
Q.: 4	. fi D d-	Observation 1 O		•	PO	No.		NO		<u> </u>		ANA	YSE	REC	UEST	red		γ		AIC COI	NTROL NO:
Client Projec		Chemical Company						OF			2	1						1	1		71469
Refere		Permit AR0000752		f	<u> </u>			Ь	۱		Ĕ						1			AIC PRO	POSAL NO:
Projec		CITILE AIRCOUDT 32	-		٨.	MATR	xix	В	ဗ္ဗ	١., ١	Ĕ									Carrier:	
Manag		ken Pennington			W		Ĭ	T	CBOD, TSS	Coli, F	NH3N, Total Phosphoru	]							1	Carrier.	Gold Star
Sampl	ed · C	· · · · · · · · · · · · · · · · · · ·	G	С	A	s		Т	ğ	ပြ	👸	1				] [	1.			Receive	d Temperature C
By: AIC	ann 19	hntidm	R	0	Т	0		L	ឌ	ł	1 -				1						14.0
	Sample	Date/None	Α	M	E	1		E			후			l		1					
No.	Identification	Collected	В	Ρ	R	L		S		,	ĮŽ			<u> </u>						<u> </u>	Remarks
)	010	10/10/13-10/11/13 9:570m-9.554		×	Х			1	X	:							ĺ				
	010	10/11/13	Х		х			1		×											
	010	19/13-19/11/13		X	X			1			Х										
				1																	V
				į																	
			_																	Field pH	calibration
ľ		Container Type							Ъ	Ρ	٩									on	
		Preservative	$\Box$						NO	T	s									Buffer:	
	G = Gla		С				<u>v = 1</u>	/OA	vials	_			H = 1	CI to j	H2	<u> </u>		T = S	odium	Thiosulfa	ite
	NO = n		ric ac	id pł	12		1 = N		acid p				B = N	laOH t		2		Z = Z	linc ac	etate	
Turnar	ound Time Requeste	ed: (Please circle)							Relind	aujshe	d 🐪	1		Date/		_	Rece	eived			Date/Time
NOR	MAL or EXPEDITE	DIN DAYS		:		•	-	1	Ву:	4hn	11/2 1	dust	1	10	Hill	5 10:00	By:				
Expedi	ted results requested	d by:				_		- 1		1 <u>u</u>	MAN	<b>CANN AT</b>	My		<u> </u>	) an				_	
vvno s	hould AIC contact wi	th questions:							Relino	quishe	d	(	)	Date/	Time			eived in	n Lab		Date/Time
	870-312-1752 Fax:	Ma Lados Daniel							By:					:	•		By:	) (	_ (		10111/13
	Attention to: Address to:	Ms. Larken Penning Post Office Box 231												L	<u> </u>			<u>wyli</u>		DAY.	1330
report	Audiess (0.	El Dorado, AR 717						1	Comn	nents:								]	``	1	
4		Lpennington@edc-		om						١.											
	<del></del>	-permindion (mede-	51 A.C	<u> </u>						!											

FORM 0060





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

This report contains the analytical results and supporting information for samples submitted on October 12, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

John Overbey
Laboratory Director

This document has been distributed to the following:

PDF cc

El Dorado Chemical Company ATTN: Ms. Larken Pennington lpennington@edc-ark.com

El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc. ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com



October 17, 2013 Control No. 171491 Page 2 of 4

### **SAMPLE INFORMATION**

#### **Project Description:**

Two (2) water sample(s) received on October 12, 2013 Daily-Permit AR0000752 P.O. No. 357042

#### **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest. Ice chest #1 was delivered with shipping documentation.

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

#### Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time Notes	
171491-1	010 10-12-13 0955	12-Oct-2013 0955	
171491-2	010 10-12-13 0955	12-Oct-2013 0955	

#### Qualifiers:

D Result is from a secondary dilution factor

## References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

"Standard Methods for the Examination of Water and Wastewaters", 21st edition.

<sup>&</sup>quot;American Society for Testing and Materials" (ASTM).

<sup>&</sup>quot;Association of Analytical Chemists" (AOAC).



October 17, 2013 Control No. 171491 Page 3 of 4

### **ANALYTICAL RESULTS**

AIC No. 171491-1

Sample Identification: 010 10-12-13 0955

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distilla SM 4500-NH3 B,G	tion Prep: 14-Oct-2013 1153 by 93	<b>1.5</b> Analyzed: 15-0	0.1 Oct-2013 1253 by 93	mg/l Batch: W45254	
Carbonaceous BOD 5-day SM 5210 B	Prep: 12-Oct-2013 1400 by 93	<b>4.0</b> Analyzed: 17-0	2 Oct-2013 1005 by 93	<b>mg/l</b> Batch: W45250	
Total Suspended Solids USGS 3765	Prep: 15-Oct-2013 1348 by 285	<b>8.8</b> Analyzed: 16-0	4 Oct-2013 0939 by 285	<b>mg/l</b> Batch: W45266	
Phosphorus EPA 200.7	Prep: 14-Oct-2013 1607 by 311	<b>0.088</b> Analyzed: 15-0	0.02 Oct-2013 1721 by 305	<b>mg/l</b> Batch: S35584	

**AIC No.** 171491-2

Sample Identification: 010 10-12-13 0955

Analyte	Result	RL	Units	Qualifier
Fecal Coliform	3900	10	/100ml	D
SM 9222 D	Analyzed: 12-Oct-2	013 1250 by 295	Batch: M4042	Dil: 10



## **DUPLICATE RESULTS**

					RPD				
Analyte		AIC No.	Result	RPD	Limit	Preparation Date	Analysis Date	Dil	Qual
Carbonaceous BOD 5-day		171487-1	< 2 mg/l			12Oct13 1400 by 93	17Oct13 1000 by 93		
•	Batch: W45250	Duplicate	< 2 mg/l	0.00	20.0	12Oct13 1400 by 93	17Oct13 0942 by 93		
Total Suspended Solids		171484-3	35000 mg/l			15Oct13 1348 by 285	16Oct13 0939 by 285		
·	Batch: W45266	Duplicate	35000 mg/l	0.0570	20.0	15Oct13 1348 by 285	16Oct13 0939 by 285		
Total Suspended Solids		171484-4	38000 mg/l			15Oct13 1348 by 285	16Oct13 0939 by 285		
·	Batch: W45266	Duplicate	37000 mg/l	1.70	20.0	15Oct13 1348 by 285	16Oct13 0939 by 285		

## **LABORATORY CONTROL SAMPLE RESULTS**

	Spike									
Analyte	Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	87.8	80.0-120			W45254	14Oct13 1154 by 93	15Oct13 1235 by 93		
Carbonaceous BOD 5-day	200 mg/l	86.6	84.5-115			W45250	12Oct13 1400 by 93	17Oct13 0939 by 93		
Phosphorus	5 mg/l	104	85.0-115			S35584	14Oct13 1607 by 311	15Oct13 1638 by 305		

## **MATRIX SPIKE SAMPLE RESULTS**

		Spike							
Analyte	Sample	Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	171486-1	1 mg/l	85.8	80.0-120	W45254	14Oct13 1154 by 93	15Oct13 1239 by 93		
	171486-1	1 mg/l	89.6	80.0-120	W45254	14Oct13 1154 by 93	15Oct13 1241 by 93		
	Relative Pe	rcent Difference:	3.22	25.0	W45254				
Phosphorus	171486-1	5 mg/l	103	75.0-125	S35584	14Oct13 1607 by 311	15Oct13 1641 by 305		
	171486-1	5 mg/l	103	75.0-125	S35584	14Oct13 1607 by 311	15Oct13 1646 by 305		
	Relative Pe	rcent Difference:	0.328	20.0	S35584				

## **LABORATORY BLANK RESULTS**

<ul> <li>Service and the property of the first property of the control of the</li></ul>	3-7			QC			
Analyte	Result	RL	PQL	Sample	<b>Preparation Date</b>	Analysis Date	Qual
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45254-1	14Oct13 1154 by 93	15Oct13 1233 by 93	
Carbonaceous BOD 5-day	< 2 mg/l	2	2	W45250-1	12Oct13 1400 by 93	17Oct13 0938 by 93	
Total Suspended Solids	< 4 mg/l	4	4	W45266-1	15Oct13 1348 by 285	16Oct13 0939 by 285	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35584-1	14Oct13 1607 by 311	15Oct13 1634 by 305	
Fecal Coliform	< 1 /100ml	1	1	M4042-1		12Oct13 1250 by 295	



																					1 OF 1	
Client		lo Chemical Company	<u>.</u>		PO	No.	NO	o F			50	ANAL	YSE	REQ	UESTE	D		1	Т	<u></u>	NTROL NO	
Project Refer	ence: Daily	- Permit AR0000752		:				3   9	رم ا		osphi						Ì				OPOSAL NO	<b>)</b> :
Project Mana	ger: Ms. L	arken Pennington					) 	800, 188	Coli. F	al Ph									Carrier:	Gold Star		
Samp By: AIC	JAETAIN		G	0	A T	S O		-     °	g   '	۵	NH3N, Total Phosphoru									Receive	d Temperat	ure C
AIC No.	Sample Identification	Date/Time Collected	A B	M P	E R	L		<b>≣</b>   S			NH3										Remarks	
	010	9-12-13 0955		X	х			1	×											10/12/13	DATE A	
	010	9-12-13 0955	X	1	X		_   1		,	×										Larke	v Penni'n	ston
	010	9-13-13 0955		×	x		1				Х									1		1
																_						
				Į.																		
																				Field pH	calibration	
		Container Type Preservative						<u> </u>	<u>;                                   </u>	P	Р									on	@	
	G = 0 NO =	iass P = Plast		L	L H2		/ = VO <u>/</u> = Nit	A via		<u>'  </u> 2	S			I ICI to p IaOH t	I <u> </u>				Sodium Zinc ac	Buffer: Thiosulfa etate	ate	<del></del>
NOF	MAL or EXPEDI	sted: (Please circle) TED IN DAYS ted by:						Re By	elinqui:	stled	<u>;</u>	1	)	Date/	Time 2-13	3	Red By:	ceived			Date/Time	-
Who should AIC contact with questions: Phone 870-312-1752 Fax: Report Attention to:  Ms. Larken Pennington			_			Relinquished By:			<u>.                                    </u>	Date/Time		Red By:	Show	n Lab	Dru	Date/Time	3. \					
	t Address to:	Post Office Box 23 El Dorado, AR 717 Lpennington@edc-	1 '31					Co	mmer	nts:			· · · · · · · · · · · · · · · · · · ·	1				<u></u>			1 (1)	<del>/</del>

FORM 0060



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

This report contains the analytical results and supporting information for samples submitted on October 13, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

John Overbey aboratory Director

This document has been distributed to the following:

PDF cc: El Dorado Chemical Company

ATTN: Ms. Larken Pennington Ipennington@edc-ark.com

El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc.

ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com



#### **SAMPLE INFORMATION**

## **Project Description:**

Two (2) water sample(s) received on October 13, 2013 Daily - Permit AR0000752 P.O. No. 357042

#### **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest. Ice chest #1 was delivered with a custody seal intact and signed

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

#### Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time	Notes
171492-1	010 10-13-13 950am	13-Oct-2013 0950	-
171492-2	010 10-13-13 950am	13-Oct-2013 0950	

#### Qualifiers:

D Result is from a secondary dilution factor

#### References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

<sup>&</sup>quot;Standard Methods for the Examination of Water and Wastewaters", 21st edition.

<sup>&</sup>quot;American Society for Testing and Materials" (ASTM).

<sup>&</sup>quot;Association of Analytical Chemists" (AOAC).



### **ANALYTICAL RESULTS**

AIC No. 171492-1

Sample Identification: 010 10-13-13 950am

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distilla SM 4500-NH3 B,G	tion Prep: 14-Oct-2013 1528 by 93	<b>1.5</b> Analyzed: 15-0	0.1 Oct-2013 1255 by 93	mg/l Batch: W45254	
Carbonaceous BOD 5-day SM 5210 B	Prep: 14-Oct-2013 1446 by 285	< 2 Analyzed: 19-0	2 Oct-2013 1249 by 285	<b>mg/l</b> Batch: W45255	
Total Suspended Solids USGS 3765	Prep: 15-Oct-2013 1348 by 285	<b>8.4</b> Analyzed: 16-0	4 Oct-2013 0939 by 285	<b>mg/l</b> Batch: W45266	
Phosphorus EPA 200.7	Prep: 14-Oct-2013 1607 by 311	<b>0.077</b> Analyzed: 15-0	0.02 Oct-2013 1725 by 305	<b>mg/l</b> Batch: S35584	

AIC No. 171492-2

Sample Identification: 010 10-13-13 950am

Analyte	Result RL	Units	Qualifier
Fecal Coliform	<b>60</b> 3	/100ml	
SM 9222 D	Analyzed: 13-Oct-2013 1330 by	295 Batch: M4043	Dil: 2.5



October 21, 2013 Control No. 171492 Page 4 of 4

## **DUPLICATE RESULTS**

					RPD				
Analyte		AIC No.	Result	RPD	Limit	Preparation Date	Analysis Date	Dil	Qual
Carbonaceous BOD 5-day		171486-1	< 2 mg/l			14Oct13 1446 by 285	19Oct13 1242 by 285		
	Batch: W45255	Duplicate	< 2 mg/l	0.00	20.0	14Oct13 1446 by 285	19Oct13 1244 by 285		
Total Suspended Solids		171484-3	35000 mg/l			15Oct13 1348 by 285	16Oct13 0939 by 285		
	Batch: W45266	Duplicate	35000 mg/l	0.0570	20.0	15Oct13 1348 by 285	16Oct13 0939 by 285		
Total Suspended Solids		171484-4	38000 mg/l			15Oct13 1348 by 285	16Oct13 0939 by 285		
	Batch: W45266	Duplicate	37000 mg/l	1.70	20.0	15Oct13 1348 by 285	16Oct13 0939 by 285		

## **LABORATORY CONTROL SAMPLE RESULTS**

	Spike									
Analyte	Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	87.8	80.0-120			W45254	14Oct13 1154 by 93	15Oct13 1235 by 93		
Carbonaceous BOD 5-day	200 mg/l	111	84.5-115			W45255	14Oct13 1446 by 285	19Oct13 1241 by 285		
Phosphorus	5 mg/l	104	85.0-115			S35584	14Oct13 1607 by 311	15Oct13 1638 by 305		

## MATRIX SPIKE SAMPLE RESULTS

		Spike							
Analyte	Sample	Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	171486-1	1 mg/l	85.8	80.0-120	W45254	14Oct13 1154 by 93	15Oct13 1239 by 93		
	171486-1	1 mg/l	89.6	80.0-120	W45254	14Oct13 1154 by 93	15Oct13 1241 by 93		
Relative Percent		rcent Difference:	3.22	25.0	W45254				
Phosphorus	171486-1	5 mg/l	103	75.0-125	S35584	14Oct13 1607 by 311	15Oct13 1641 by 305		
	171486-1	5 mg/l	103	75.0-125	S35584	14Oct13 1607 by 311	15Oct13 1646 by 305		
Relative Percent Difference:		0.328	20.0	S35584					

## **LABORATORY BLANK RESULTS**

wingers and wear in the first the second of the State of		QC					
Analyte	Result	RL	PQL	Sample	Preparation Date	Analysis Date	Qual
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45254-1	14Oct13 1154 by 93	15Oct13 1233 by 93	
Carbonaceous BOD 5-day	< 2 mg/l	2	2	W45255-1	14Oct13 1446 by 285	19Oct13 1240 by 285	
Total Suspended Solids	< 4 mg/l	4	4	W45266-1	15Oct13 1348 by 285	16Oct13 0939 by 285	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35584-1	14Oct13 1607 by 311	15Oct13 1634 by 305	
Fecal Coliform	< 1 /100ml	1	1	M4043-1		13Oct13 1330 by 295	



Client: El Dorado Chemical Company Project Reference: Daily - Permit AR0000752 Project Matrix Manager: Ms. Larken Pennington  OF  OF  OF  OF  OF  OF  OF  OF  OF  O	ONTROL NO: 71492 ROPOSAL NO:
Project Reference: Daily - Permit AR0000752 Project Manager: Ms. Larken Pennington  G C A S T Q O O O O O O O O O O O O O O O O O O	
Reference: Daily - Permit AR0000752 Project Manager: Ms. Larken Pennington  Sampled By: SALTAIN  A M 5 1 5 5 5 5 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8	
Project  Manager: Ms. Larken Pennington  Sampled By: SALTAIN  R O T O L  SI L  T O T O T O L  SI D T O T O L  Receiv	
Manager: Ms. Larken Pennington W T O T O T O T O T O T O T O T O T O T	•
Sampled  SALTAIN  G C A S T O C C C C C C C C C C C C C C C C C C	Gold Star
MAIC  Sample   1Date/Time   Δ   Μ   Ε   Ι   Ε   Ι   Θ   Ι   Ι   Ι   Ι   Ι   Ι   Ι   Ι	ed Temperature C
	**************************************
No. Identification Collected BPRLS 호	Remarks
1 010 jo-13-13 950m X X 1 X	
→ 010 10-13-13 750Apm X X X 1 X	
) 010 10-13-13 950pm X X 1 1 X	
Field pl	H calibration
Container Type PPP On	@
Preservative NO T S Buffer:	
G = Glass P = Plastic V = VOA vials H = HCl to pH2 T = Sodium Thiosul	fate
NO = none S = Sulfuric acid pH2 N = Nitric acid pH2 B = NaOH to pH12 Z = Zinc acetate	i
Turnaround Time Requested: (Please circle)  NORMAL or EXPEDITED IN DAYS  Relinquished Date/Time Received By:	Date/Time
Expedited results requested by:	
Who should AIC contact with questions:  Relinquished  Date/Time  Received in Lab	Date/Time
Phone 870-312-1752 Fax:   By:   By:   / / / ,	10-13-13
Report Attention to:  Ms. Larken Pennington  Ms. Larken Pennington	(1230)
Report Address to: Post Office Box 231 Comments:	
El Dorado, AR 71731 <u>Lpennington@edc-ark.com</u>	

FORM 0060



October 21, 2013 Control No. 171513 Page 1 of 4

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

This report contains the analytical results and supporting information for samples submitted on October 14, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

John Overbey boratory Director

This document has been distributed to the following:

PDF cc: El Dorado Chemical Company

ATTN: Ms. Larken Pennington Ipennington@edc-ark.com

El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc.

ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com





#### **SAMPLE INFORMATION**

#### **Project Description:**

Two (2) water sample(s) received on October 14, 2013 Daily-Permit AR0000752 P.O. No. 357042

#### **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest. Ice chest #1 was delivered with a custody seal intact and signed

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

#### Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time Notes
171513-1	010 10-14-13 0950	14-Oct-2013 0950
171513-2	010 10-14-13 0950	14-Oct-2013 0950

#### Case Narrative:

There were no qualifiers for this data and all samples met quality control criteria.

#### References:

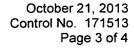
"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

<sup>&</sup>quot;Standard Methods for the Examination of Water and Wastewaters", 21st edition.

<sup>&</sup>quot;American Society for Testing and Materials" (ASTM).

<sup>&</sup>quot;Association of Analytical Chemists" (AOAC).





#### **ANALYTICAL RESULTS**

AIC No. 171513-1

Sample Identification: 010 10-14-13 0950

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillat SM 4500-NH3 B,G	<b>1.5</b> Analyzed: 15-0	0.1 Oct-2013 1306 by 93	mg/l Batch: W45254		
Carbonaceous BOD 5-day SM 5210 B	Prep: 14-Oct-2013 1446 by 285	< <b>2</b> Analyzed: 19-0	2 Oct-2013 1304 by 285	<b>mg/l</b> Batch: W45255	
Total Suspended Solids USGS 3765	Prep: 16-Oct-2013 1020 by 285	<b>7.2</b> Analyzed: 16-0	4 Oct-2013 1546 by 285	<b>mg/l</b> Batch: W45285	
Phosphorus EPA 200.7	Prep: 14-Oct-2013 1607 by 311	<b>0.078</b> Analyzed: 15-0	0.02 oct-2013 1745 by 305	<b>mg/l</b> Batch: S35584	
Nitrate as N EPA 300.0	Prep: 14-Oct-2013 1451 by 302	<b>9.5</b> Analyzed: 14-0	0.05 oct-2013 1459 by 302	<b>mg/l</b> Batch: C16120	

**AIC No.** 171513-2

Sample Identification: 010 10-14-13 0950

Analyte	Result	RL	Units	Qualifier
Fecal Coliform	<1	1	/100ml	
SM 9222 D	Analyzed: 14-Oct-20	13 1425 by 304	Batch: M4044	



# **DUPLICATE RESULTS**

					RPD				
Analyte		AIC No.	Result	RPD	Limit	Preparation Date	Analysis Date	Dil	Qual
Carbonaceous BOD 5-day		171486-1	< 2 mg/l			14Oct13 1446 by 285	19Oct13 1242 by 285		
•	Batch: W45255	Duplicate	< 2 mg/l	0.00	20.0	14Oct13 1446 by 285	19Oct13 1244 by 285		
Total Suspended Solids		171507-1	530 mg/l			16Oct13 1020 by 285	16Oct13 1546 by 285		
	Batch: W45285	Duplicate	540 mg/l	0.749	20.0	16Oct13 1020 by 285	16Oct13 1546 by 285		
Total Suspended Solids		171506-2	190 mg/l			16Oct13 1020 by 285	16Oct13 1546 by 285		
-	Batch: W45285	Duplicate	190 mg/l	2.62	20.0	16Oct13 1020 by 285	16Oct13 1546 by 285		

# **LABORATORY CONTROL SAMPLE RESULTS**

Analyte	Spike Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	87.8	80.0-120			W45254	14Oct13 1154 by 93	15Oct13 1235 by 93		
Carbonaceous BOD 5-day	200 mg/l	111	84.5-115			W45255	14Oct13 1446 by 285	19Oct13 1241 by 285		
Phosphorus	5 mg/l	104	85.0-115			S35584	14Oct13 1607 by 311	15Oct13 1638 by 305		
Nitrate as N	4 mg/l	93.0	90.0-110			C16120	14Oct13 1451 by 302	14Oct13 1551 by 302		

# **MATRIX SPIKE SAMPLE RESULTS**

Analyte	Sample	Spike Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	171486-1	1 mg/i	85.8	80.0-120	W45254	14Oct13 1154 by 93	15Oct13 1239 by 93		
	171486-1	1 mg/l	89.6	80.0-120	W45254	14Oct13 1154 by 93	15Oct13 1241 by 93		
	Relative Per	rcent Difference:	3.22	25.0	W45254				
Phosphorus	171486-1	5 mg/l	103	75.0-125	S35584	14Oct13 1607 by 311	15Oct13 1641 by 305		
	171486-1	5 mg/l	103	75.0-125	S35584	14Oct13 1607 by 311	15Oct13 1646 by 305		
	Relative Per	rcent Difference:	0.328	20.0	S35584				
Nitrate as N	171513-1	4 mg/l	95.4	80.0-120	C16120	14Oct13 1451 by 302	14Oct13 1618 by 302		
	171513-1	4 mg/l	95.7	80.0-120	C16120	14Oct13 1451 by 302	14Oct13 1644 by 302		
	Relative Per	rcent Difference:	0.231	10.0	C16120			400 CT .	« « <del>درستان</del> و ر
			- 1 77	and the same of th	- 4 2 - 1 - 1	**	-		

# **LABORATORY BLANK RESULTS**

				QC			
Analyte	Result	RL	PQL	Sample	<b>Preparation Date</b>	Analysis Date	Qual
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45254-1	14Oct13 1154 by 93	15Oct13 1233 by 93	
Carbonaceous BOD 5-day	< 2 mg/l	2	2	W45255-1	14Oct13 1446 by 285	19Oct13 1240 by 285	
Total Suspended Solids	< 4 mg/l	4	4	W45285-1	16Oct13 1020 by 285	16Oct13 1546 by 285	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35584-1	14Oct13 1607 by 311	15Oct13 1634 by 305	
Nitrate as N	< 0.05 mg/l	0.05	0.05	C16120-1	14Oct13 1451 by 302	14Oct13 1524 by 302	
Fecal Coliform	< 1 /100ml	1	1	M4044-1		14Oct13 1425 by 295	



										· .										PAGE	1 OF 1
				1	PO	No.		9				ANA	LYSE	S REC	UEST	ED					NTROL NO:
Client		o Chemical Company	<u>/</u>		┦			OF		;	Š				ĺ						71513
Project Refere		- Permit AR0000752		:	<b>-</b>						ğ					1 1				AIC PR	OPOSAL NO:
Projec		- Permit AROUGUT 52			┨,	/ATR		8	TSS	١	l Sq			1		1 1				Carrier:	
Mana		arken Pennington			W			Т	-	Coli. F	<u>a</u>		1	İ	1					Carner.	Gold Star
Samp	led		G	ļC	Ä	s		T	CBOD,	ပိ	E	1		ŀ						Receive	ed Temperature C
Ву:	SARTA"		G R		Т			L	ឌ		NH3N, Total Phosphoru	1 ~			}		- 1				3,5,5
	Sample	Date/Time	A	М	E	1	1	E		1	<u>P</u>	50				1		ļ	1		
No.	Identification	Collected	В	Р	R	L		s		L	ĮŽ		↓	ļ	<u> </u>						Remarks
	010	10-14-13 0956		X	X			1	X			×									
	010	10-14-13 850	x	1	х			1		×											
	010	10-14-15 0950		X	X			1			×										
3																					<del>_</del>
				,															1		
				1																	
																				Field pH	calibration
		Container Type							Р	P,	Р									on	
<u> </u>		Preservative							NQ	T	\$									Buffer:	
	G = G						V ≃ V(	DA.	vials	•	^		H = 1	HCI to	pH2			T =	Sodiur	n Thiosulf	ate
		none S = Sulfu	iric a	cid p	H2		N = Ni						B = 1	VaOH:		2			Zinc a	cetate	
Turna	ound Time Reques	ted: (Please circle)		1					Reline		ed "			Date	Time			ceived			Date/Time
Exped	ited results request	ED IN DAYS							By:	m	ركز	h A	<b>/</b>	10-1	14-	13	By				
Who s	hould AIC contact v	vith questions:	-						Relin	quishe	ed			Date			Re	ceived	in Lab		Date/Time
	870-312-1752 Fax:								Ву:								₽ý:	<b>`</b>	,	$\overline{}$	10/14/13
	Attention to:	Ms. Larken Pennin						Į						<u></u>					my	1) aug	1315
Repor	: Address to:	Post Office Box 23							Comn	nents:	:							1	7	$\sim$ $\Gamma$	
		El Dorado, AR 717														•					
		Lpennington@edc-	-ark.c	moc																	



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

This report contains the analytical results and supporting information for samples submitted on October 15, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

John Overbey J aboratory Director

This document has been distributed to the following:

PDF cc: El Dorado Chemical Company

ATTN: Ms. Larken Pennington lpennington@edc-ark.com

El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc. ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com



October 21, 2013 Control No. 171552 Page 2 of 4

El Dorado Chemical Company 4500 North West Avenue El Dorado, AR 71730

### SAMPLE INFORMATION

#### **Project Description:**

Two (2) water sample(s) received on October 15, 2013 Daily-Weekly-Permit AR0000752 P.O. No. 357042

### **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest. Ice chest #1 was delivered with a custody seal intact and signed

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

### Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time	Notes
171552-1	010 10/14/13 9:55am 10/15/13 9:55am	15-Oct-2013 0955	
171552-2	010 10/15/13 9:55am	15-Oct-2013 0955	

#### **Case Narrative:**

There were no qualifiers for this data and all samples met quality control criteria.

#### References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

"Standard Methods for the Examination of Water and Wastewaters", 21st edition.

"American Society for Testing and Materials" (ASTM).

"Association of Analytical Chemists" (AOAC).



# **ANALYTICAL RESULTS**

AIC No. 171552-1

Sample Identification: 010 10/14/13 9:55am 10/15/13 9:55am

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillat SM 4500-NH3 B,G	tion Prep: 16-Oct-2013 1307 by 93	<b>1.5</b> Analyzed: 16-0	0.1 Oct-2013 1644 by 93	<b>mg/l</b> Batch: W45289	-
Carbonaceous BOD 5-day SM 5210 B	Prep: 16-Oct-2013 0958 by 285	< 2 Analyzed: 21-0	2 Oct-2013 1044 by 285	<b>mg/l</b> Batch: W45282	
Total Suspended Solids USGS 3765	Prep: 16-Oct-2013 1431 by 285	<b>5.6</b> Analyzed: 17-0	4 Oct-2013 0946 by 285	<b>mg/l</b> Batch: W45295	
Phosphorus EPA 200.7	Prep: 15-Oct-2013 1515 by 271	<b>0.076</b> Analyzed: 17-0	0.02 Oct-2013 1209 by 305	<b>mg/l</b> Batch: S35596	

AIC No. 171552-2

Sample Identification: 010 10/15/13 9:55am

Analyte		Result	RL	Units	Qualifier
Oil and Grease EPA 1664A	Prep: 17-Oct-2013 0848 by 295	< 5 Analyzed: 17-0	5 Oct-2013 1252 by 295	mg/l Batch: B8602	
Fecal Coliform SM 9222 D		< 1 Analyzed: 15-0	1 Oct-2013 1503 by 295	/100ml Batch: M4048	

www.AmericanInterplex.com



# **DUPLICATE RESULTS**

					RPD				
Analyte		AIC No.	Result	RPD	Limit	Preparation Date	Analysis Date	Dil	Qual
Carbonaceous BOD 5-day		171550-1	< 2 mg/l			16Oct13 0958 by 285	21Oct13 1039 by 285		
	Batch: W45282	Duplicate	< 2 mg/l	0.00	20.0	16Oct13 0958 by 285	21Oct13 1041 by 285		
Total Suspended Solids		171565-1	9.2 mg/l			16Oct13 1431 by 285	17Oct13 0946 by 285		
·	Batch: W45295	Duplicate	9.2 mg/l	0.00	20.0	16Oct13 1432 by 285	17Oct13 0946 by 285		
Total Suspended Solids		171565-2	5.6 mg/l			16Oct13 1431 by 285	17Oct13 0946 by 285		
	Batch: W45295	Duplicate	5.6 mg/l	0.00	20.0	16Oct13 1432 by 285	17Oct13 0946 by 285		

# LABORATORY CONTROL SAMPLE RESULTS

Analyte Ammonia as N with Distillation	Spike Amount 1 mg/l	<del>%</del> 97.0	Limits 80.0-120	RPD	Limit	Batch W45289	Preparation Date 16Oct13 1310 by 93	Analysis Date 16Oct13 1636 by 93	Dil	Qual
Carbonaceous BOD 5-day	200 mg/l	108	84.5-115			W45282	16Oct13 0958 by 285	21Oct13 1037 by 285		
Phosphorus	5 mg/l	108	85.0-115			S35596	15Oct13 1515 by 271	17Oct13 1116 by 305		
Oil and Grease	40 mg/l 40 mg/l	88.5 89.5	78.0-114 78.0-114	1.12	20.0	B8602 B8602	17Oct13 0849 by 295 17Oct13 0849 by 295	17Oct13 1252 by 295 17Oct13 1252 by 295		

# **MATRIX SPIKE SAMPLE RESULTS**

		Spike							
Analyte	Sample	Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	171550-1	1 mg/l	90.6	80.0-120	W45289	16Oct13 1310 by 93	16Oct13 1639 by 93		
	171550-1	1 mg/l	104	80.0-120	W45289	16Oct13 1310 by 93	16Oct13 1641 by 93		
	Relative Pe	rcent Difference:	10.4	25.0	W45289				
Phosphorus	171543-2	5 mg/l	106	75.0-125	S35596	15Oct13 1515 by 271	17Oct13 1120 by 305		
	171543-2	5 mg/l	106	75.0-125	S35596	15Oct13 1515 by 271	17Oct13 1124 by 305		
	Relative Pe	rcent Difference:	0.0350	20.0	S35596	,			

# **LABORATORY BLANK RESULTS**

		•		QC			
Analyte	Result	RL	PQL	Sample	Preparation Date	Analysis Date	Qual
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45289-1	16Oct13 1310 by 93	16Oct13 1634 by 93	
Carbonaceous BOD 5-day	< 2 mg/l	2	2	W45282-1	16Oct13 0958 by 285	21Oct13 1033 by 285	
Total Suspended Solids	< 4 mg/l	4	4	W45295-1	16Oct13 1432 by 285	17Oct13 0946 by 285	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35596-1	15Oct13 1515 by 271	17Oct13 1112 by 305	
Oil and Grease	< 5 mg/l	5	5	B8602-1	17Oct13 0849 by 295	17Oct13 1252 by 295	
Fecal Coliform	< 1 /100ml	1	1	M4048-1		15Oct13 1503 by 295	



				-																	1 OF 1	
Client:	Él Dorado	Chemical Company			PO	No.		NO OF			1 =	ANAL	YSE	REQ	UEST	ED T	1		T	AIC CO	TROL NO:	
Projec		Chemical Company		<del>-</del>	ł			OF			B	1					1		į.	1122	1852	
Refere	ence: Daily -	Permit AR0000752			<del> </del>			В	S		Total Phosphoru								İ	AIC PRO	POSAL NO:	1
Projec	t		,		l٨	MATR	IX	o	TS	u_	چ		Ì	1						Carrier:		
Manag	er: Ms. Lai	ken Pennington			W			Т	۵	Coli.	<del> </del>				1						Gold Star	
Sampl	ed o		G R	Ç	Α	s		Т	CBOD, TSS	ŭ	Ď							1		Receive	d Temperature	e C
By: AIC	MULL	nungton		0	T	0		L	ပ		z							l			1.5 C	
No.	Sample Identification	Date/Time	A	M	E	<u> </u>		Ε			NH3N,	1				<b> </b>				ł		
140.		Collected	В	Р	R			S			Z	ļ		ļ	<u> </u>		<b>_</b>	<del> </del>	<b>-</b>		Remarks	
	010	9! Stam 9: 55am		X	X			1	X													
1	010	19/5/13 9:55am	х		X			1		Х												
l	010	9156-9:550-1		X	х			1			Х											
				f }																		
				-													<del> </del>		ļ			
																	ļ		<u> </u>			
				9		-			-	<b>-</b>												
	·			اً ا		٢.,						i								Field pH	calibration	
		Container Type							Р	Р	P		,							on	@	
		Preservative							NO	T	S									Buffer:		_
	G ≃ Gla			(			V = 1	/QA	vials				H=H	CI to p	H2			T = S	odium	Thiosulfa	ite	
لـــــا	NO = no		ric ac	id pl	12		N = 1		acid p				<u>B = N</u>	aOH t	o pH1	2		Z = Z	inc ac	etate		
Turnar	ound Time Requeste	ed: (Please circle)		•					Relino	µishe	d			Date/	Time		Rece	ived			Date/Time	
NOR	MAL or EXPEDITE	DIN DAYS						ı	By: (	LAL AT	. 0	<u> </u>	1.	101	بالس	- 1-136	By:				I	
Expedi	ted results requested	by:				_		ļ				hnn	m	, ,	<u> 1817.</u>	3 10:56						
	nould AIC contact wit	th questions:						- 1	Relinq	luishe	ď	L	J	Date/	Time	<b>V</b> = 1	Rece	ived in	1 Lab		Date/Time	
	870-312-1752 Fax:	Maria Danie						l	Ву:								BÝ:	1 6	(	$\overline{}$		
	Attention to:	Ms. Larken Penning															<u> </u>	m	myl	سكم	1330	
кероп	Address to:	Post Office Box 23		,				Ì	Comm	nents:								1	1	1		
		El Dorado, AR 717 Lpennington@edc-		i ~~																		
		rheimmidion(megc-	aik,C	JIII		_																



F					<b>,</b>			-										<del></del>	100 000		1 OF 1	
Client:	El Danada	Charles I O		1	PO	No.	N			_		ANAL	YSE	SREC	UESTE	D				AIC CO	NTROL NO:	
Projec		Chemical Company		1	ļ		0	Fľ		ěk)							1				1552	
Refere		- Permit AR000075	•	)	<u> </u>		,	$\cdot \mid \cdot$	<del>.</del>	/ Week)							ł			AIC PRO	POSAL NO:	
Projec		- Femili AR000075	-		┨ ╻	(ATRI)		3   3		(2)		1		1				1	ı	0		_
Manag		ken Pennington			l w		<del>`</del>	[] {	<b>&gt;</b>	- 1										Carrier:	Gold Star	
Sampl	ed v o . O		G	С	A	s	-		일   일	ÒΠ			1		1 !		1		1	Pacaiva	d Temperature C	_
Ву:	Ilarken 19	nungtan	R	Õ	T			.   }	3   3	<del>"</del>					1 1				1		.5°C	
	Sample	Date/Time	A	M	E		E		<b>'</b> l :	TDS,CI,SO4			l .		.			1		<u> </u>	<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	_
	Identification	Collected	В	P	R	L		3		F			L.		] ]						Remarks	i
2	010	10/15/13 9:55am	x		х		1	,	<							Ţ						
2	010	10/11/13 9:55am	х		х		1			x (											<del></del> :	_
																		<u> </u>	,	<del> </del>		-
		<del> </del>		į	<del></del>		_	+	$\dashv$					<del>                                     </del>	<del>                                     </del>	_	<b>-</b>	_				┥
				đ										ľ			1					1
				1											1		† ·		<del> </del>		*	٦
_	<u></u>							Ц.						<u></u>		Ì						ļ
														Ť							τ.	
																				Field pH	calibration *	
		Container Type						F	<b>&gt;</b>	Р										on	@	٦
		Preservative						- S	S	10	ĺ									Buffer:		
	G = Gla					V	= VO	A via	ls		······································		H=F	CI to	pH2			T = S	odium	Thiosulfa	ite	┪
	NO = no		ric ac	id pl	H2	N	= Nitr						B = N	laOH t	o pH12			Z = Z				1
Turnar	ound Time Requeste	d: (Please circle)						Re	linqui	shed	ď			Date/	Time		Rece	ived			Date/Time	٦
	MAL or EXPEDITE							Ву:	$: \mathcal{V}_{l}$	۱.۱	۱. [	h	لله	10	15/13	1-14-5	Ву:					1
	ed results requested			<del></del>				$\perp$	$\bot$	Ш		enw	দ্ধাত্য			bioon						
	nould AIC contact wit	th questions:							linqui	shed	<b>j</b>		U	Date/	Time		Rece	ived in	Lab		Date/Time	٦
	870-312-1752 Fax:	M-1.1 D 1						By:									BV:∖	0	(	$\overline{}$		
	Attention to: Address to:	Ms. Larken Penning		3										<u> </u>				m	my ,	M Day	1330	
report	Address to:	Post Office Box 23						Co	mmei	nts:							(		1	1		
		El Dorado, AR 717 Lpennington@edc-		om.				1														
		FPEIIINIGROUMERCE	ai K.C	<u> </u>				1														



October 22, 2013 Control No. 171607 Page 1 of 5

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

This report contains the analytical results and supporting information for samples submitted on October 16, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

John Overbey
Laboratory Director

This document has been distributed to the following:

PDF cc: El Dorado Chemical Company

ATTN: Ms. Larken Pennington lpennington@edc-ark.com

El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc. ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com



#### **SAMPLE INFORMATION**

### **Project Description:**

Two (2) water sample(s) received on October 16, 2013 Daily-Permit AR0000752 P.O. No. 357042

### **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest. Ice chest #1 was delivered with a custody seal intact and signed

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

#### Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time Notes
171607-1	010 10/15/13 9:55 10/16/13 9:55	16-Oct-2013 0955
171607-2	010 10/16/13 9:55	16-Oct-2013 0955

#### **Qualifiers:**

D Result is from a secondary dilution factor

#### References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

"Standard Methods for the Examination of Water and Wastewaters", 21st edition.

<sup>&</sup>quot;American Society for Testing and Materials" (ASTM).

<sup>&</sup>quot;Association of Analytical Chemists" (AOAC).



# **ANALYTICAL RESULTS**

AIC No. 171607-1

Sample Identification: 010 10/15/13 9:55 10/16/13 9:55

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillat SM 4500-NH3 B,G	tion Prep: 16-Oct-2013 1447 by 93	< 0.1 Analyzed: 17-0	0.1 Oct-2013 1128 by 93	mg/l Batch: W45289	
Carbonaceous BOD 5-day SM 5210 B	Prep: 17-Oct-2013 0920 by 285	< 2 Analyzed: 22-0	2 Oct-2013 1147 by 285	<b>mg/l</b> Batch: W45305	
Total Suspended Solids USGS 3765	Prep: 21-Oct-2013 0939 by 285	<b>6.4</b> Analyzed: 21-0	4 Oct-2013 1425 by 285	<b>mg/l</b> Batch: W45340	
<b>Phosphorus</b> EPA 200.7	Prep: 17-Oct-2013 0853 by 271	<b>0.077</b> Analyzed: 18-0	0.02 Oct-2013 1514 by 305	<b>mg/l</b> Batch: S35603	
Nitrate as N EPA 300.0	Prep: 16-Oct-2013 1519 by 07	<b>9.9</b> Analyzed: 16-0	0.05 Oct-2013 1727 by 07	<b>mg/l</b> Batch: C16133	

**AIC No.** 171607-2

Sample Identification: 010 10/16/13 9:55

Analyte		Result	RL	Units	Qualifier
Total Dissolved Solids SM 2540 C	Prep: 16-Oct-2013 1526 by 302	<b>200</b> Analyzed: 17-0	10 Oct-2013 1620 by 302	mg/l Batch: W45300	
Chloride EPA 300.0	Prep: 16-Oct-2013 1519 by 07	<b>17</b> Analyzed: 16-0	0.2 Oct-2013 1633 by 07	<b>mg/l</b> Batch: C16133	
Sulfate EPA 300.0	Prep: 16-Oct-2013 1519 by 07	<b>27</b> Analyzed: 16-0	0.2 Oct-2013 1633 by 07	<b>mg/l</b> Batch: C16133	
Fecal Coliform SM 9222 D		<b>28</b> Analyzed: 16-0	3 Oct-2013 1420 by 295	/100ml Batch: M4050	D Dil: 2.5



# **DUPLICATE RESULTS**

					RPD				_
Analyte		AIC No.	Result	RPD	Limit	Preparation Date	Analysis Date	Dil	Qual
Total Dissolved Solids	***************************************	171556-1	< 10 mg/l			16Oct13 1526 by 302	17Oct13 1620 by 302		
	Batch: W45300	Duplicate	< 10 mg/l	0.00	10.0	16Oct13 1527 by 302	17Oct13 1620 by 302		
Total Dissolved Solids		171581-1	710 mg/l			16Oct13 1526 by 302	17Oct13 1620 by 302		
•	Batch: W45300	Duplicate	720 mg/l	2.10	10.0	16Oct13 1527 by 302	17Oct13 1620 by 302		
Carbonaceous BOD 5-day		171605-1	< 2 mg/l			17Oct13 0920 by 285	22Oct13 1144 by 285		
	Batch: W45305	Duplicate	< 2 mg/l	0.00	20.0	17Oct13 0920 by 285	22Oct13 1146 by 285		
Total Suspended Solids		171607-1	6.4 mg/l			21Oct13 0939 by 285	21Oct13 1425 by 285		
	Batch: W45340	Duplicate	6.8 mg/l	6.06	20.0	21Oct13 0940 by 285	21Oct13 1425 by 285		
Total Suspended Solids		171641-1	12 mg/l			21Oct13 0940 by 285	21Oct13 1425 by 285		
	Batch: W45340	Duplicate	11 mg/l	3.51	20.0	21Oct13 0940 by 285	21Oct13 1425 by 285		

# **LABORATORY CONTROL SAMPLE RESULTS**

Analyte	Spike Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	97.0	80.0-120			W45289	16Oct13 1310 by 93	16Oct13 1636 by 93		
Carbonaceous BOD 5-day	200 mg/l	98.2	84.5-115			W45305	17Oct13 0920 by 285	22Oct13 1141 by 285		
Phosphorus	5 mg/l	105	85.0-115			S35603	17Oct13 0853 by 271	18Oct13 1346 by 305		
Chloride	20 mg/l	98.2	90.0-110		•	C16133	16Oct13 1249 by 07	16Oct13 1325 by 07		
Nitrate as N	4 mg/l	90.2	90.0-110			C16133	16Oct13 1249 by 07	16Oct13 1325 by 07		
Sulfate	20 mg/l	105	90.0-110			C16133	16Oct13 1249 by 07	16Oct13 1325 by 07		

# MATRIX SPIKE SAMPLE RESULTS

Analyte	Sample	Spike Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	171550-1	1 mg/l	90.6	80.0-120	W45289	16Oct13 1310 by 93	16Oct13 1639 by 93		
	171550-1	1 mg/l	104	80.0-120	W45289	16Oct13 1310 by 93	16Oct13 1641 by 93		
	- Relative Per	cent Difference:	10.4	25.0	W45289				
Phosphorus	171605-2	5 mg/l	103	75.0-125	S35603	17Oct13 0853 by 271	18Oct13 1349 by 305		
	171605-2	5 mg/l	103	75.0-125	S35603	17Oct13 0853 by 271	18Oct13 1352 by 305		
•	Relative Per	cent Difference:	0.207	20.0	S35603				
Chloride	171581-1	20 mg/l	89.2	80.0-120	C16133	16Oct13 1249 by 07	16Oct13 1352 by 07		
	171581-1	20 mg/l	93.8	80.0-120	C16133	16Oct13 1249 by 07	16Oct13 1419 by 07		
	Relative Per	cent Difference:	4.12	10.0	C16133				
Nitrate as N	171581-1	4 mg/l	88.1	80.0-120	C16133	16Oct13 1249 by 07	16Oct13 1352 by 07		
	171581-1	4 mg/l	92.7	80.0-120	C16133	16Oct13 1249 by 07	16Oct13 1419 by 07		
•	Relative Per	cent Difference:	4.01	10.0	C16133				
Sulfate	171581-1	20 mg/l	87.2	80.0-120	C16133	16Oct13 1249 by 07	16Oct13 1352 by 07		
	171581-1	20 mg/l	94.3	80.0-120	C16133	16Oct13 1249 by 07	16Oct13 1419 by 07		
	Relative Per	cent Difference:	3.03	10.0	C16133				



October 22, 2013 Control No. 171607 Page 5 of 5

# **LABORATORY BLANK RESULTS**

				QC			
Analyte	Result	RL	PQL	Sample	Preparation Date	Analysis Date	Qual
Total Dissolved Solids	< 10 mg/l	10	10	W45300-1	16Oct13 1527 by 302	17Oct13 1620 by 302	
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45289-1	16Oct13 1310 by 93	16Oct13 1634 by 93	
Carbonaceous BOD 5-day	< 2 mg/l	2	2	W45305-1	17Oct13 0920 by 285	22Oct13 1140 by 285	
Total Suspended Solids	< 4 mg/l	4	4	W45340-1	21Oct13 0940 by 285	21Oct13 1425 by 285	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35603-1	17Oct13 0853 by 271	18Oct13 1343 by 305	
Chloride	< 0.2 mg/l	0.2	0.2	C16133-1	16Oct13 1249 by 07	16Oct13 1258 by 07	
Nitrate as N	< 0.05 mg/l	0.05	0.05	C16133-1	16Oct13 1249 by 07	16Oct13 1258 by 07	
Sulfate	< 0.2 mg/l	0.2	0.2	C16133-1	16Oct13 1249 by 07	16Oct13 1258 by 07	
Fecal Coliform	< 1 /100ml	1	1	M4050-1		16Oct13 1420 by 295	



																			PAGE	1 OF 1
<b>.</b> .				: .	PO	No.	_	NO				ANA	LYSE	S REC	UEST	ED			AIC C	ONTROL NO:
Client	El Dorado	Chemical Company						OF	9		5				1					171607
Project Refere		Permit AR0000752		•	<u> </u>				CBOD, TSS, NOZ		NH3N, Total Phosphoru				]			1 1	AIC PF	ROPOSAL NO:
Projec		Permit AROUUU752			١.	/ATF	) i V	В	SS	١	ဇို				İ	-			Comme	
Mana		rken Pennington			W	//AIF		T	-	Coli. F	<u> </u>	ರ						1 1	Carrier	: Gold Star
Samp			G	C	l Ä	s		Ť	١ğ	၂ ပိ	ota	TDS, SO4,						1	Receiv	ed Temperature C
Ву:		. Kennington	R	0	Т	0		Ĺ	ပ္ပ		-	13					ĺ		, cociv	17'
AIC	Sample	Date/Time	] A	М	Ε	l t		Ε			<del>E</del>	X	l		1		1			<u> </u>
No.	Identification	Collected	В	Р	R	L		S			Ż	-								Remarks
<b></b>	010	19/15/15/10/14/13 9155an-9/5tan		X,	X			1	×											
	010	10/14/13	х	-	х			1		х										
	010	10/15/13-10/16/13 9: 17am. 9: 15ac		X	Х			1			х									
	010	10/10/12 9:50m	X	1	X							X								
																			Field pl	H calibration
		Container Type							Р	P	P	P_							on	@
L		Preservative							NO	T	S	NO							Buffer:	
	G = Gla		-						vials					ICI to p		·		T = Soc	dium Thiosul	fate
<u></u>	NO = no		ric a	cid pl	H2		N = 1		acid p				B = 1	NaOH t		2	<del>,</del> .		c acetate	
	ound Time Requeste								Relino	quishe	ed	^	•	Date/	Time		Rece	ived		Date/Time
	MAL or EXPEDITE								By:	$\Lambda_{\Lambda}$	Vom	611ni	19602	10	1611	3 10:0000	By:			
	ited results requested			· · · ·		_			<del></del>	<u> </u>	<u> </u>	O 4 W	<u> </u>		=		<del> </del>			
	hould AIC contact wi	ui questions:				1			Relind	ļuishe	₽Œ			Date/	lime		_	ived in L	.ab	Date/Time
#	Attention to:	Ms. Larken Penning	aton	,	1	4			Ву:	•							By:	اسا	$\sim$	
8	Address to:	Post Office Box 23			· ·			}	Comn	nente:				Щ.				Jum	Mron	1320
		El Dorado, AR 717		į	,	•		3	O01111	ienis.							ļ		, ,	
		Lpennington@edc-		om			•		_											



October 23, 2013 Control No. 171663 Page 1 of 5

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

This report contains the analytical results and supporting information for samples submitted on October 17, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

hn Overbev boratory Director

This document has been distributed to the following:

PDF cc: El Dorado Chemical Company ATTN: Ms. Larken Pennington Ipennington@edc-ark.com

> El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

> El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc. ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com



October 23, 2013 Control No. 171663 Page 2 of 5

# **SAMPLE INFORMATION**

#### **Project Description:**

Two (2) water sample(s) received on October 17, 2013
Daily-Permit AR0000752
Weekly-Permit AR0000752
P.O. No. 357042

### **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest. Ice chest #1 was delivered with a custody seal intact and signed

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

### Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time	Notes
171663-1	010 10/16/13 955 10/17/13 955	17-Oct-2013 0955	
171663-2	010 10/17/13 955	17-Oct-2013 0955	

#### Qualifiers:

D Result is from a secondary dilution factor

#### References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

<sup>&</sup>quot;Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

<sup>&</sup>quot;Standard Methods for the Examination of Water and Wastewaters", 21st edition.

<sup>&</sup>quot;American Society for Testing and Materials" (ASTM).

<sup>&</sup>quot;Association of Analytical Chemists" (AOAC).



# **ANALYTICAL RESULTS**

**AIC No.** 171663-1

Sample Identification: 010 10/16/13 955 10/17/13 955

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distilla SM 4500-NH3 B,G	tion Prep: 18-Oct-2013 1238 by 93	<b>1.9</b> Analyzed: 21-0	0.1 Oct-2013 1914 by 308	<b>mg/l</b> Batch: W45323	
Carbonaceous BOD 5-day SM 5210 B	Prep: 18-Oct-2013 0846 by 285	< 2 Analyzed: 23-0	2 Oct-2013 1057 by 285	<b>mg/l</b> Batch: W45320	
Total Suspended Solids USGS 3765	Prep: 21-Oct-2013 1037 by 285	<b>6.8</b> Analyzed: 21-0	4 Oct-2013 1631 by 285	mg/l Batch: W45342	
Phosphorus EPA 200.7	Prep: 17-Oct-2013 1523 by 271	<b>0.071</b> Analyzed: 18-0	0.02 Oct-2013 1653 by 305	<b>mg/l</b> Batch: S35609	

**AIC No.** 171663-2

Sample Identification: 010 10/17/13 955

3 10/1//10 000				
	Result	RL	Units	Qualifier
Prep: 17-Oct-2013 1634 by 302	<b>120</b> Analyzed: 18-0	10 oct-2013 1615 by 308	mg/l Batch: W45313	
Prep: 17-Oct-2013 1653 by 07	<b>19</b> Analyzed: 18-0	0.2 oct-2013 0427 by 07	<b>mg/l</b> Batch: C16137	
Prep: 17-Oct-2013 1653 by 07	<b>29</b> Analyzed: 18-C	0.2 oct-2013 0427 by 07	<b>mg/l</b> Batch: C16137	
Prep: 21-Oct-2013 0845 by 295	< 5 Analyzed: 21-0	5 0ct-2013 1643 by 295	<b>mg/l</b> Batch: B8610	
	<b>15</b> Analyzed: 17-C	1 oct-2013 1418 by 295	/100ml Batch: M4051	
	Prep: 17-Oct-2013 1634 by 302  Prep: 17-Oct-2013 1653 by 07  Prep: 17-Oct-2013 1653 by 07	Prep: 17-Oct-2013 1634 by 302  Prep: 17-Oct-2013 1634 by 302  Prep: 17-Oct-2013 1653 by 07  Prep: 17-Oct-2013 1653 by 07  Prep: 17-Oct-2013 1653 by 07  Prep: 21-Oct-2013 0845 by 295  Prep: 21-Oct-2013 0845 by 295  Analyzed: 21-Oct-2013 1653 by 295	Result         RL           120         10           Analyzed: 18-Oct-2013 1615 by 308         19           Prep: 17-Oct-2013 1653 by 07         29           Prep: 17-Oct-2013 1653 by 07         29           Prep: 17-Oct-2013 1653 by 07         4nalyzed: 18-Oct-2013 0427 by 07           Analyzed: 18-Oct-2013 0427 by 07         5           Analyzed: 21-Oct-2013 1643 by 295         5	Result         RL         Units           120         10         mg/l           Analyzed: 18-Oct-2013 1615 by 308         Batch: W45313           19         0.2         mg/l           Analyzed: 18-Oct-2013 0427 by 07         Batch: C16137           29         0.2         mg/l           Prep: 17-Oct-2013 1653 by 07         Analyzed: 18-Oct-2013 0427 by 07         Batch: C16137           <5



# **DUPLICATE RESULTS**

					RPD				
Analyte		AIC No.	Result	RPD	Limit	Preparation Date	Analysis Date	Dil	Qual
Total Dissolved Solids		171622-1	< 10 mg/l	· · · · · · · · · · · · · · · · · · ·		17Oct13 1634 by 302	18Oct13 1615 by 308		
	Batch: W45313	Duplicate	< 10 mg/l	0.00	10.0	17Oct13 1634 by 302	18Oct13 1615 by 308		
Total Dissolved Solids		171671-1	< 10 mg/l			17Oct13 1634 by 302	18Oct13 1615 by 308		
	Batch: W45313	Duplicate	< 10 mg/l	0.00	10.0	17Oct13 1634 by 302	18Oct13 1615 by 308		
Carbonaceous BOD 5-day		171655-1	< 2 mg/l			18Oct13 0846 by 285	23Oct13 0955 by 285		
	Batch: W45320	Duplicate	< 2 mg/l	0.00	20.0	18Oct13 0846 by 285	23Oct13 0958 by 285		
Total Suspended Solids		171645-2	8.4 mg/l			21Oct13 1037 by 285	21Oct13 1631 by 285		
	Batch: W45342	Duplicate	8.8 mg/l	4.65	20.0	21Oct13 1037 by 285	21Oct13 1631 by 285		
Total Suspended Solids		171641-5	290 mg/l			21Oct13 1037 by 285	21Oct13 1631 by 285		
	Batch: W45342	Duplicate	280 mg/l	2.82	20.0	21Oct13 1037 by 285	21Oct13 1631 by 285		

# **LABORATORY CONTROL SAMPLE RESULTS**

Analyte	Spike Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	92.5	80.0-120	<del>.</del>		W45323	18Oct13 0912 by 93	21Oct13 1853 by 308	. —	
Carbonaceous BOD 5-day	200 mg/l	100	84.5-115			W45320	18Oct13 0846 by 285	23Oct13 0950 by 285		
Phosphorus	5 mg/l	104	85.0-115			S35609	17Oct13 1523 by 271	18Oct13 1644 by 305		
Chloride	20 mg/l	101	90.0-110			C16137	17Oct13 1005 by 302	18Oct13 0936 by 302		
Sulfate	20 mg/l	100	90.0-110			C16137	17Oct13 1005 by 302	18Oct13 0936 by 302		
Oil and Grease	40 mg/l 40 mg/l	108 102	78.0-114 78.0-114	5.69	20.0	B8610 B8610	21Oct13 0845 by 295 21Oct13 0845 by 295	21Oct13 1643 by 295 21Oct13 1643 by 295		

# MATRIX SPIKE SAMPLE RESULTS

Analyte	Sample	Spike Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	171658-1	1 mg/l	100	80.0-120	W45323	18Oct13 0912 by 93	22Oct13 0752 by 308	2	D
La serio and serio and serio s	171658-1	1-mg/l	-113	80.0-120	W45323	18Oct13 0912 by 93	22Oct13 0753 by 308	2	D
	Relative Per	rcent Difference:	5.40	25.0	W45323				D
Phosphorus	171663-1	5 mg/l	103	75.0-125	S35609	17Oct13 1523 by 271	18Oct13 1647 by 305		
	171663-1	5 mg/l	104	75.0-125	S35609	17Oct13 1523 by 271	18Oct13 1650 by 305		
	Relative Per	rcent Difference:	0.302	20.0	S35609				
Chloride	171621-1	20 mg/l	97.2	80.0-120	C16137	17Oct13 1005 by 302	17Oct13 1242 by 302		
	171621-1	20 mg/l	96.6	80.0-120	C16137	17Oct13 1005 by 302	17Oct13 1308 by 302		
	Relative Per	rcent Difference:	0.444	10.0	C16137				
Sulfate	171621-1	20 mg/l	97.7	80.0-120	C16137	17Oct13 1005 by 302	17Oct13 1242 by 302		
	171621-1	20 mg/l	97.4	80.0-120	C16137	17Oct13 1005 by 302	17Oct13 1308 by 302		
	Relative Per	rcent Difference:	0.211	10.0	C16137				



# **LABORATORY BLANK RESULTS**

				QC			
Analyte	Result	RL	PQL	Sample	Preparation Date	Analysis Date	Qual
Total Dissolved Solids	< 10 mg/l	10	10	W45313-1	17Oct13 1634 by 302	18Oct13 1615 by 308	
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45323-1	18Oct13 0912 by 93	21Oct13 1851 by 308	
Carbonaceous BOD 5-day	< 2 mg/l	2	2	W45320-1	18Oct13 0846 by 285	23Oct13 0949 by 285	
Total Suspended Solids	< 4 mg/l	4	4	W45342-1	21Oct13 1037 by 285	21Oct13 1631 by 285	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35609-1	17Oct13 1523 by 271	18Oct13 1641 by 305	
Chloride	< 0.2 mg/l	0.2	0.2	C16137-1	17Oct13 1005 by 302	17Oct13 1148 by 302	
Sulfate	< 0.2 mg/l	0.2	0.2	C16137-1	17Oct13 1005 by 302	17Oct13 1148 by 302	
Oil and Grease	< 2 mg/l	2	5	B8610-1	21Oct13 0845 by 295	21Oct13 1643 by 295	
Fecal Coliform	< 1 /100ml	1	1	M4051-1		17Oct13 1418 by 295	



Sample																						1 OF 1	
Reference:   Daily - Permit AR0000752   Project   Manager:   Man	Clinati	El Darad	- Chaminal Carry		,	PO	No.				1		ANA	YSE	SREC	UEST	ED				AIC COL	TROL NO:	
010   10   10   13   13   13   14   15   15   15   15   15   15   15			o Chemical Company	<u>y</u>		Ì			OF	l		5	•				1		1	ĺ	110.000	11663	
010   10   10   13   13   13   14   15   15   15   15   15   15   15			Permit AR0000752		į	<b>-</b>			R	100	Ì	l dg	}		1					1	AIC PRO	POSAL NO	<i>t</i> :
010   10   10   13   13   13   14   15   15   15   15   15   15   15						1 1	MATR	ux I		Ţ.	L.	ĝ						ļ		1	Carrier:		
010   10   10   13   13   13   14   15   15   15   15   15   15   15		er: Ms. La	arken Pennington							٥	; 등	<u>a</u>								1		Gold Star	
010   10   10   13   13   2   2   2   2   2   2   2   2   2	Sample By:	<u>Ulrken k</u>	nunalin			1				080	Ŭ,	jo L											ire C
010   10   10   13   13   13   14   15   15   15   15   15   15   15		Sample	Date/Time						Ε			<del>ကို</del>									·	<u> </u>	
010	No.	Identification	Collected	В	P	R	L		S			Ż										Remarks	
010		010	10/14/13-10/17/13		Х	х			1	×		L											
Container Type Preservative NO = none S = Sulfuric acid pH2 V = VOA vials NO = none S = Sulfuric acid pH2 V = VOA vials NO = none S = Sulfuric acid pH2 NORMAL or EXPEDITED IN DAYS Expedited results requested: Who should AIC contact with questions: Phone 870-312-1752 Fax: Report Attention to: Ms. Larken Pennington  Field pH calibratic On Qe Buffer: T = Sodium Thiosulfate T = Sodium Thiosu		010	19/1/13	×		X			1		X												
Container Type PPP P P P P P P P P P P P P P P P P P		010	1910/13-10/17/13		X	х			1			х											
Container Type PPP P P P P P P P P P P P P P P P P P																							
Container Type PPP P P P P P P P P P P P P P P P P P																				_			
Container Type PPP P P P P P P P P P P P P P P P P P					*																		
Container Type PPP P P P P P P P P P P P P P P P P P					:																Field pH	calibration	
Preservative			Container Type							Р	Р	Ρ											
NO = none S = Sulfuric acid pH2 N = Nitric acid pH2 B = NaOH to pH12 Z = Zinc acetate  Turnaround Time Requested: (Please circle)  NORMAL or EXPEDITED IN DAYS  Expedited results requested by:  Who should AIC contact with questions:  Phone 870-312-1752 Fax:  Report Attention to: Ms. Larken Pennington  N = Nitric acid pH2 B = NaOH to pH12 Z = Zinc acetate  Relinquished  By:    O   17   13   16:100000000000000000000000000000000000											T	S									1		
Turnaround Time Requested: (Please circle)  NORMAL or EXPEDITED IN DAYS  Expedited results requested by:  Who should AIC contact with questions:  Phone 870-312-1752 Fax:  Report Attention to:  Ms. Larken Pennington  Relinquished  By:    Oli7/13 10:60@m     Received   By:   Oli7/13 10:60@m     Received in Lab   Date/Time     Plo/17/13 10:60@m     Received in Lab   Date/Time     Received in Lab   Date/Time     Received in Lab   Date/Time     Received in Lab   Date/Time     Date/Time																			T = S	odium	Thiosulfa	ite	
NORMAL or EXPEDITED IN DAYS  Expedited results requested by:  Who should AIC contact with questions:  Phone 870-312-1752 Fax:  Report Attention to:  Ms. Larken Pennington  By:    O 17 13   0: 100m    By:   O 17 13   0: 100m    Date/Time   By:   O 17 13   0: 100m    By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   By:   O 17 13   0: 100m   O 17 13   0: 100m   O 17 13   0: 100m   O 17 13   0: 100m   O 17 13   0: 100m   O 17 13   0: 100m   O 17 13   0: 100m   O 17 13   0: 100m   O 17 13   0: 100m   O 17 13   0: 100m   O 17 13   0: 100m   O 17 13   0: 100m   O 17 13   0: 100m   O 17 13   0: 100m	T			iric ac	cid pl	H2		N = 1						B = N			2			inc ac	etate		
Expedited results requested by:  Who should AIC contact with questions:  Phone 870-312-1752 Fax:  Report Attention to:  Ms. Larken Pennington  Ms. Larken Pennington  Ms. Larken Pennington	Lurnard	ound time Request	ted: (Please circle)								uishe	d			ł				ived			Date/Time	
Who should AIC contact with questions:  Phone 870-312-1752 Fax:  Report Attention to:  Ms. Larken Pennington  Relinquished  By:  Date/Time  Received in Lab  By:  133										By:	Kan V	on Pen	un at	h	10/17	1131	10:00am	By:					
Phone 870-312-1752 Fax: Report Attention to:  Ms. Larken Pennington  By:  10/17					-		_		ł	Relino	nishe	.प .प	MCC)	<u> </u>				Pace	ived in	Lab		Date/Time	
Report Attention to: Ms. Larken Pennington 133	Phone	870-312-1752 Fax:	400000		,						1013116	u			Date	HIIC				Lau	_	10/17/13	
			Ms. Larken Pennin	gton					j	_,.					ľ					~ {	$\mathcal{L}$	1330	
El Dorado, AR 71731  Lpennington@edc-ark.com	Report	Address to:	Post Office Box 23 El Dorado, AR 717	1 731	: om					Comn	nents:			_						<del>/.</del>	-		



																				1 OF 1
	<b>5:5</b>	•			PO	No.	NO	-			ANAL	YSE	REQ	UEST	ED	<b>,</b> -	<del></del>		AIC COI	NTROL NO:
Client Projec	: El Dorado	Chemical Company		<del>- j</del>	1		OF		Š.							•			440.000	71663
Refer		r - Permit AR000075	3	1	$\vdash$		Н в	2	(2 / Week)		1								AIC PRO	POSAL NO:
Projec		CHINE PARODOOT	, <u>z</u>	+	ı	IATRIX	0	(2 / Week)	5		ļ						<u> </u>		Carrier:	
Mana	ger: Ms. Lar	ken Pennington			W		7 T	>												Gold Star
Samp	lod I	•	G R	CO	Α	s	Τ		TDS,CI,SO4				]			i			Receive	d Temperature C
By: AIC	- Unicente	minglan		0	Т	0	L	90	Ō				Ì			ŀ				<u>0.3 ·c</u>
AIC No.	Sample	Date/Time	A	M	Ε	<u> </u>	E		80									i i		<b></b> .
NO.	Identification	Collected	В	Р	R		<u>  s</u>	├	<u> </u>	├	_	-	<del> </del>	-		-	┿			Remarks
	010	1917/1355.	×		X		1	Х					<u> </u>							
	010	10/17/13	x	:	Х		1	*	×											
				-																•
				!			-								<del> </del>					
<b> </b>				7			<del> </del>			<del> </del>	<del> </del>		-	ļ		<u> </u>	-			<del>.</del>
										1					ŀ					
				+																
	,	ļ		!						<b>_</b>				<u> </u>		ļ				
																			Field pH	calibration
		Container Type						Ρ	Ρ				<u> </u>						on	@
		Preservative						S	NO										Buffer:	
	G = Gla			:			VOA						ICI to						Thiosulfa	ite
<u> </u>	NO = no		ric a	oid p	H2	<u>N</u> :	= Nitrio	acid				<u>B ≃ N</u>	aOH t		2			inc ace	etate	r_ <del></del>
	round Time Requeste							Relino		ed ^			Date/	•		Rece	eived			Date/Time
Exped	RMAL or EXPEDITE	d by:				_		Ву:	Tarl	untu	hune	ton	19	17/13	10:00000	Ву:				
	should AIC contact wi	th questions:		4				Relino			l	)	Date/	Time	_	_	ived in	Lab		Date/Time
	870-312-1752 Fax:			4				Ву:								<b>ξ</b> y:}	Ļ	_	$\overline{}$	10/17/13
	t Attention to:	Ms. Larken Pennin	_						<del></del> -				<u> </u>			17	ım	<u>~~</u> (4	<u> </u>	1330
Kepor	t Address to:	Post Office Box 23						Comn	nents							Į		1	¥	
		El Dorado, AR 717			-															
		Lpennington@edc	ark.C	UIII				<u> </u>						··· ·						



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

This report contains the analytical results and supporting information for samples submitted on October 18, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

Jøhn Overbey Jaboratory Directør

This document has been distributed to the following:

PDF cc: E

El Dorado Chemical Company ATTN: Ms. Larken Pennington lpennington@edc-ark.com

El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc. ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com



#### SAMPLE INFORMATION

### **Project Description:**

Two (2) water sample(s) received on October 18, 2013 Daily-Permit AR0000752 P.O. No. 357042

# **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest. Ice chest #1 was delivered with a custody seal intact and signed

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

### Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time Notes
171724-1	010 10/17/13 955 10/18/13 955	18-Oct-2013 0955
171724-2	010 10/18/13 955am	18-Oct-2013 0955

#### Qualifiers:

D Result is from a secondary dilution factor

#### References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

"Standard Methods for the Examination of Water and Wastewaters", 21st edition.

"American Society for Testing and Materials" (ASTM).

"Association of Analytical Chemists" (AOAC).



October 23, 2013 Control No. 171724 Page 3 of 4

# **ANALYTICAL RESULTS**

AIC No. 171724-1

Sample Identification: 010 10/17/13 955 10/18/13 955

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distilla SM 4500-NH3 B,G	tion Prep: 21-Oct-2013 0759 by 302	<b>2.0</b> Analyzed: 21-0	0.5 Oct-2013 2030 by 308	<b>mg/l</b> Batch: W45336	D Dil: 5
Carbonaceous BOD 5-day SM 5210 B	Prep: 18-Oct-2013 1628 by 285	<b>2.0</b> Analyzed: 23-0	2 Oct-2013 1205 by 285	<b>mg/l</b> Batch: W45320	
Total Suspended Solids USGS 3765	Prep: 21-Oct-2013 1551 by 285	<b>7.6</b> Analyzed: 22-0	4 Oct-2013 1410 by 285	<b>mg/l</b> Batch: W45346	
Phosphorus EPA 200.7	Prep: 21-Oct-2013 1114 by 305	<b>0.081</b> Analyzed: 21-0	0.02 Oct-2013 1638 by 305	<b>mg/l</b> Batch: S35624	

AIC No. 171724-2

Sample Identification: 010 10/18/13 955am

Analyte	Result	RL	Units	Qualifier
Fecal Coliform	180	3	/100ml	_ <u>D</u>
SM 9222 D	Analyzed: 18-Oct-2	2013 1429 by 295	Batch: M4052	Dil: 2.5



# **DUPLICATE RESULTS**

					RPD				
Analyte		AIC No.	Result	RPD	Limit	Preparation Date	Analysis Date	Dil	Qual
Carbonaceous BOD 5-day		171655-1	< 2 mg/l	'		18Oct13 0846 by 285	23Oct13 0955 by 285		
•	Batch: W45320	Duplicate	< 2 mg/l	0.00	20.0	18Oct13 0846 by 285	23Oct13 0958 by 285		
Total Suspended Solids		171712-1	< 4 mg/l			21Oct13 1551 by 285	22Oct13 1410 by 285		
	Batch: W45346	Duplicate	< 4 mg/l	0.00	20.0	21Oct13 1551 by 285	22Oct13 1410 by 285		
Total Suspended Solids		171708-2	8.4 mg/l			21Oct13 1551 by 285	22Oct13 1410 by 285		
	Batch: W45346	Duplicate	8.4 mg/l	0.00	20.0	21Oct13 1551 by 285	22Oct13 1410 by 285		

# **LABORATORY CONTROL SAMPLE RESULTS**

Analyte	Spike Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	91.3	80.0-120			W45336	21Oct13 0759 by 302	21Oct13 1925 by 308		
Carbonaceous BOD 5-day	200 mg/l	100	84.5-115			W45320	18Oct13 0846 by 285	23Oct13 0950 by 285		
Phosphorus	5 mg/l	102	85.0-115			S35624	21Oct13 1115 by 305	21Oct13 1622 by 305		

# MATRIX SPIKE SAMPLE RESULTS

		Spike							
Analyte	Sample	Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	171708-2	1 mg/l	92.1	80.0-120	W45336	21Oct13 0759 by 302	21Oct13 1928 by 308		
	171708-2	1 mg/l	94.0	80.0-120	W45336	21Oct13 0759 by 302	21Oct13 1933 by 308		
	Relative Pe	rcent Difference:	1.72	25.0	W45336				
Phosphorus	171721-2	5 mg/l	103	75.0-125	S35624	21Oct13 1115 by 305	21Oct13 1625 by 305		
	171721-2	5 mg/l	102	75.0-125	S35624	21Oct13 1115 by 305	21Oct13 1628 by 305		
,	Relative Pe	rcent Difference:	0.696	20.0	S35624				

### **LABORATORY BLANK RESULTS**

en en en en en en en en en en en en en e	n <sub>a</sub>			QC			
Analyte	Result	RL	PQL	Sample	Preparation Date	Analysis Date	Qual
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45336-1	21Oct13 0759 by 302	21Oct13 1923 by 308	
Carbonaceous BOD 5-day	< 2 mg/l	2	2	W45320-1	18Oct13 0846 by 285	23Oct13 0949 by 285	
Total Suspended Solids	< 4 mg/l	4	4	W45346-1	21Oct13 1551 by 285	22Oct13 1410 by 285	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35624-1	21Oct13 1115 by 305	21Oct13 1619 by 305	
Fecal Coliform	< 1 /100ml	1	1	M4052-1		18Oct13 1429 by 295	



			-																	PAGE	1 OF 1
	El Dana	la Obra di al O			PO	No.		NO				ANAL	YSE	S REC	UEST	ED				AIC CO	NTROL NO:
Client	: El Dorac	lo Chemical Company	<u> </u>		ł			OF			§			]			İ				71724
Refer		- Permit AR0000752		i.				В	, o		Total Phosphoru			1			ŀ	ł		AIC PRO	OPOSAL NO:
Projec	ot .		_	-,	1 1	/ATR	ΙX	ō	S	L	<u>ا</u> چ									Carrier:	
Mana		arken Pennington	_	,	W			Т		Coli. F	<u>=</u>										Gold Star
Samp By:	led Larkent	enninatas	G R	00	A	s		T	CBOD, TSS	Ŭ.	ğ		İ								d Temperature C
AIC	Sample	Date/Time	Ä	М	έ			E		,	z			1			İ				3,7°C
No.	Identification	Collected	В	P	R	انا	1	S			NH3N,							i		ŀ	Remarks
	010	10/17/13/18/10		х	х			1	×				-		1						remarks
	010	10/18/13 955am	х		x			1		Х										-	
	010	10/17/13-19/18/13		X	×			1		,	×										
				- 4000																	
																				Field pH	calibration
		Container Type							Р	P	Р				<u> </u>					on	@
		Preservative							NO	Ť	S			<u></u>						Buffer:	
ı	G = G						V = \	-						ICI to						Thiosulfa	ite
	NO =		ric a	cid pl	H2		N = 1		acid				B = 1	laOH !		2	<del> ,</del>		inc ac	etate	
		ted: (Please circle)							Relind	quishe	ed			Date	-			eived			Date/Time
	ited results request	ED IN DAYS ed by:						ł	By: c	M	(onli	wind	lun	10	18/13	(duoan	Ву:				
	hould AIC contact v	vith questions:							Relino			0	)	Date	Time		Rec	eived in	Lab		Date/Time
5	870-312-1752 Fax:							ŀ	By:					ł			BV:	<b>)</b> .			· .
	t Attention to:	Ms. Larken Pennin												<u> </u>				-lin	m	<u> </u>	1330
Report	Address to:	Post Office Box 23		;				j	Comn	nents:										1	
		El Dorado, AR 717						- 1		,										•	
		Lpennington@edc-	ark.c	mo						3						_					



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

This report contains the analytical results and supporting information for the sample submitted on October 24, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

John Overbey | boratory Director

This document has been distributed to the following:

PDF cc: El Dorado Chemical Company

ATTN: Ms. Larken Pennington lpennington@edc-ark.com

El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc. ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com



October 25, 2013 Control No. 171843 Page 2 of 4

El Dorado Chemical Company 4500 North West Avenue El Dorado, AR 71730

#### **SAMPLE INFORMATION**

# Project Description:

One (1) water sample(s) (AIC Control No. 1717381-1) resubmitted October 24, 2013 Daily-Permit AR0000752 P.O. No. 357042

#### **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest.

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

### Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time	Notes
171843-1	010 10/18/13 955 10/19/13 955	19-Oct-2013 0955	1

# Notes:

1. Holding time was expired at time of receipt

### **Qualifiers:**

- D Result is from a secondary dilution factor
- H Analytical holding time exceeded regulatory requirements

### References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

"Standard Methods for the Examination of Water and Wastewaters", 21st edition.

"American Society for Testing and Materials" (ASTM).

"Association of Analytical Chemists" (AOAC).

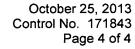


### **ANALYTICAL RESULTS**

AIC No. 171843-1

Sample Identification: 010 10/18/13 955 10/19/13 955

Analyte		Result	RL	Units	Qualifier
Nitrate as N		_ <del>11</del>	0.5	mg/l	DH
EPA 300.0	Prep: 24-Oct-2013 1231 by 07	Analyzed: 24-0	oct-2013 1447 by 07	Batch: C16159	Dil: 10





# **LABORATORY CONTROL SAMPLE RESULTS**

	Spike									
Analyte	Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Nitrate as N	4 mg/l	103	90.0-110			C16159	24Oct13 1037 by 07	24Oct13 1112 by 07	- —	

# **MATRIX SPIKE SAMPLE RESULTS**

	Spike				•			
Analyte	Sample Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Nitrate as N	171837-1 4 mg/l	90.4	80.0-120	C16159	24Oct13 1037 by 07	24Oct13 1139 by 07		
	171837-1 4 mg/l	98.5	80.0-120	C16159	24Oct13 1037 by 07	24Oct13 1206 by 07		
	Relative Percent Difference:	8.55	10.0	C16159				

# **LABORATORY BLANK RESULTS**

				QC			
Analyte	Result	RL	PQL	Sample	Preparation Date	Analysis Date	Qual
Nitrate as N	< 0.05 mg/l	0.05	0.05	C16159-1	24Oct13 1037 by 07	24Oct13 1046 by 07	



	CORPORATION	n . NES		C	:HAI	N OF	CUS	וססי	(	ALY	SIS F	EQUE	311						, P	AGE 1	OF 1:
							NO	-			ANAL	YSES F	EQL	JESTE	0				$\neg$	1_}	755
		Shaminal Company		٢	O N	0.	NO OF									1	1		ħ	AIC PROP	OSAL NO:
<u>nt:</u>	El Dorado (	Chemical Company		$\top$			l B	,,		Phosphoru				1	1		1	1	ŀ	Carrier:	
ect erent	e: Daily - P	ermit AR0000752			M	ATRIX		155	u	Pro					ļ	Ì	- 1	- 1	}		old Star emperature
ect	44 Lad	ken Pennington			W	$\neg \neg$	7 I	CBOD,	Coli. F.	Total	}				i	\	- }	1	}	Received	
age	·	emigton	G R A	C O M	A T E	SO	T L E	Ö		NH3N, T										F	Remarks
	Sample	Date/Tible Collected	В	Р	R		s	<b>├</b>	├	Z	┼──	<del>                                     </del>					_				
-	dentification 010	12/19/13-10/19/12		Х	×		1	×	<b></b> -	<del> </del>	-					<del>                                     </del>					
-	010	10/19/13 955an	X	-	×		1		×	1-											
	010	12/19/12/10/10/13		×	×		1	ŀ _	1_	×		1									
_		955-955	┼-	-	<del>                                     </del>		1									<del> </del>			-		
٠			┼		╁─	╁╌┼╴		+	-		1					·			↓	<del> </del>	
						<del>                                     </del>					+-			1	1			1			
										4_		+-		-	╁	+				Field pH	calibration
-			1					-		. <u> </u>	1.		<b> </b>		┼-		├	+-	1	on	@
			+-	+	+-	┼╼┽	十	F	P	_			-		╫		+			Buffer:	
		Container Type Preservative	╁╴	+-	+-			N					HCI I	o pHZ	<del></del> _					m Thiosulfacetate	ate ·
	G = 0	P = Pla	stic				/ = V( u = N	OA via	id pH2	· !		B = 1	NaO	to pt	<u> 112                                   </u>		Rec	zeived		ocuse	Date/Time
	NO =	none S = Su	turic	acio	priz			Re	dinouis	hed	Pos		•	-		82	Ву:			•	
ırna	round Time Reque	sted: (Please circle) TED IN DAYS	}	1				Ву	r Ki	ملازر	in 170	mieln	, ,	11911	_	ar	- Bar	ceived	inta	b	Date/Time
	aited results reques	ited by:		4					elinqui	shed			Da	ite/Tim	е		Ву:	A	5		10/19/13
Vho	should AIC contact e 870-312-1752 Fax:							B	y:									1/2	<del>// \</del>	<u> </u>	
non lepc	ort Attention to:	Ms. Larken Pen	ningt	on				c	omme	nts:								•			
lep	ort Address to:	Post Office Box El Dorado, AR	7173	1 .					•	•				ند جرور	- المساوية				-	-	FORM 006
		Lpennington@e	dc-a	rk.co	m																



#### **SAMPLE INFORMATION**

#### **Project Description:**

Two (2) water sample(s) received on October 20, 2013 Daily-Permit AR0000752 P.O. No. 357042

### **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest. Ice chest #1 was delivered with a custody seal intact and signed

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

### Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time	Notes
171742-1	010 10/19/13-10/20/13 955-955	20-Oct-2013 0955	
171742-2	010 10/20/13 955am	20-Oct-2013 0955	

### **Qualifiers:**

D Result is from a secondary dilution factor

### References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

<sup>&</sup>quot;Standard Methods for the Examination of Water and Wastewaters", 21st edition.

<sup>&</sup>quot;American Society for Testing and Materials" (ASTM).

<sup>&</sup>quot;Association of Analytical Chemists" (AOAC).



# **ANALYTICAL RESULTS**

AIC No. 171742-1

Sample Identification: 010 10/19/13-10/20/13 955-955

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distilla SM 4500-NH3 B,G	tion Prep: 21-Oct-2013 1004 by 302	<b>2.3</b> Analyzed: 21-Oct-2	0.5 013 2033 by 308	mg/I Batch: W45336	D Dil: 5
Carbonaceous BOD 5-day SM 5210 B	Prep: 21-Oct-2013 1439 by 285	< 2 Analyzed: 26-Oct-2	2 013 1311 by 285	mg/l Batch: W45344	
<b>Total Suspended Solids</b> USGS 3765	Prep: 23-Oct-2013 1421 by 285	6.8 Analyzed: 24-Oct-2	4 013 1054 by 285	<b>mg/l</b> Batch: W45371	
Phosphorus EPA 200.7	Prep: 21-Oct-2013 1114 by 305	0.073 Analyzed: 21-Oct-2	0.02 013 1719 by 305	<b>mg/l</b> Batch: S35624	

AIC No. 171742-2

Sample Identification: 010 10/20/13 955am

Analyte	Result	RL	Units	Qualifier
Fecal Coliform	<1	1	/100ml	
SM 9222 D	Analyzed: 20-Oct-20	013 1300 by 295	Batch: M4054	



# **DUPLICATE RESULTS**

					RPD				
Analyte		AIC No.	Result	RPD	Limit	Preparation Date	Analysis Date	Dil	Qual
Carbonaceous BOD 5-day		171736-1	< 2 mg/l			21Oct13 1439 by 285	26Oct13 1251 by 285		-
	Batch: W45344	Duplicate	< 2 mg/l	0.00	20.0	21Oct13 1439 by 285	26Oct13 1253 by 285		
Total Suspended Solids		171732-1	15 mg/l			23Oct13 1421 by 285	24Oct13 1054 by 285		
	Batch: W45371	Duplicate	15 mg/l	2.67	20.0	23Oct13 1422 by 285	24Oct13 1054 by 285		
Total Suspended Solids		171733-1	< 4 mg/l			23Oct13 1421 by 285	24Oct13 1054 by 285		
	Batch: W45371	Duplicate	< 4 mg/l	0.00	20.0	23Oct13 1422 by 285	24Oct13 1054 by 285		

# **LABORATORY CONTROL SAMPLE RESULTS**

Analyte	Spike Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	91.3	80.0-120			W45336	- <del> </del>		· <del></del>	- 444
Carbonaceous BOD 5-day	200 mg/l	105	84.5-115			W45344	21Oct13 1439 by 285	26Oct13 1249 by 285		
Phosphorus	5 mg/l	102	85.0-115			S35624	21Oct13 1115 by 305	21Oct13 1622 by 305		

# **MATRIX SPIKE SAMPLE RESULTS**

	S	Spike							
Analyte		Mount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	171708-2 1	mg/l	92.1	80.0-120	W45336	21Oct13 0759 by 302	21Oct13 1928 by 308		
	171708-2 1	mg/l	94.0	80.0-120	W45336	21Oct13 0759 by 302	21Oct13 1933 by 308		
	Relative Perce	nt Difference:	1.72	25.0	W45336				
Phosphorus	171721-2 5	mg/l	103	75.0-125	S35624	21Oct13 1115 by 305	21Oct13 1625 by 305		
	171721-2 5	mg/l	102	75.0-125	S35624	21Oct13 1115 by 305	21Oct13 1628 by 305		
	Relative Perce	nt Difference:	0.696	20.0	S35624				

# **LABORATORY BLANK RESULTS**

Analyte	Result	RL	PQL	QC Sample	Preparation Date	Analysis Date	Qual
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45336-1		21Oct13 1923 by 308	
Carbonaceous BOD 5-day	< 2 mg/l	2	2	W45344-1	21Oct13 1439 by 285	26Oct13 1248 by 285	
Total Suspended Solids	< 4 mg/l	4	4	W45371-1	23Oct13 1422 by 285	24Oct13 1054 by 285	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35624-1	21Oct13 1115 by 305	21Oct13 1619 by 305	
Fecal Coliform	< 1 /100ml	1	1	M4054-1	•	20Oct13 1300 by 295	



	<del></del>				75-				-												1 OF 1	
Client:	t: El Dorad	do Chemical Company	v	>	PO	No.		NO F		T	T 5	ANA	LYSE	SREC	VEST	red		1			NTROL NO	
Projec	ct				1			15.	1		þ	1	1	ł			į	ł				
Refere	rence: Daily -	- Permit AR0000752			<b> </b>			В	ړې		gg									AIC PRO	OPOSAL N	/ <b>O</b> :
Projec	<i>t</i>					MATR	<u> </u>	اه [	Տ	<u>  L</u>	٦						İ		Į	Carrier:	······································	
Manag	ger: Ms. La	arken Pennington		·	W	1		T	١٥	Coli. F	<u>=</u>					] ]	1		•		Gold Star	r
Sampl By:	Luren	Pennington	G R	00	A			T	CBOD, TSS	Ŏ	NH3N, Total Phosphoru									Receive	d Tempera	
	Sample	Date/Time/	] A [	M	E		1 '	E			1 8						1	1	1			
No.	Identification	Collected	В	Р	R	<u>  L'</u>	<u>_</u> '	s	<b>{</b>		Z									1	Remarks	
l	010	10/14/3-10/24/5		X	X			1	х				$\Box$				1	1			Meman	
2	010	10/20/13 955am	×		X			1		×								1				
<u> </u>	010	10/19/13-10/20/13		X	X			1			х											
<u> </u>																		1				
			Ц																			_
								Ш														
			4		Щ			Ш												Field pH	calibration	
, ,	1	Container Type					$\Box$		Р	Р	Р									on		
	<del></del>	Preservative					$oldsymbol{\iota}$		NO	T	S						$\top$			Buffer:		
. 1	G = Gla				_			VOA v						ICI to p		<u> </u>		T = S		dium Thiosulfate		
<del></del>	NO = n	none S = Sulfur	ric ac	id pt	12	′	N = 1		acid p					laOH t		2		Z = Zi				ľ
	round Time Requeste RMAL or EXPEDITE	ed: (Please circle)							Relinc	quishe	d	$\wedge$		Date/			Rece				Date/Time	,
i/\U#! iheav⊒	MAL OF EAPEDITE	ZD IN DAYS						17	By: (	YN,	Van	Knic	グチ	10	1201	12 pm	Ву:			!	1	ļ
Expedited results requested by:								ŀ		quisher	Mr.	IUW	MAN			13		1	2			
Phone	870-312-1752 Fax:	an questions.		•				1	•	quishe	đ	•	ノ!	Date/	Time		• • •	eided in	Lab		Date/Time	;
	Attention to:	Ms. Larken Penning	~400						Ву:	ţ			ļ	l			By	<del>*</del>	<b>么</b> .		1 1 1 -	
	Address to:	Post Office Box 231						H	~					<u> </u>			<del></del>	1/	<b>△</b>  (_	<b></b>	10/20/13	1710
, oper.	Addicas to.	El Dorado, AR 717		1				۲	Comm	ients:								1	1	•	•	
		Lpennington@edc-a		^m															-			
		Cociminatorillo coc-e	41 K.C	444	-	سيجسد	-															



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

This report contains the analytical results and supporting information for samples submitted on October 20, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

John Overbey aboratory Director

This document has been distributed to the following:

PDF cc: El Dorado Chemical Company

ATTN: Ms. Larken Pennington lpennington@edc-ark.com

El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc. ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com



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

This report contains the analytical results and supporting information for samples submitted on October 19, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

nn Overbey boratory Director

This document has been distributed to the following:

PDF cc: El Dorado Chemical Company ATTN: Ms. Larken Pennington Ipennington@edc-ark.com

> El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

> El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc. ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com



October 24, 2013 Control No. 171738 Page 2 of 4

### **SAMPLE INFORMATION**

### **Project Description:**

Two (2) water sample(s) received on October 19, 2013 Daily-Permit AR0000752 P.O. No. 357042

#### **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest. Ice chest #1 was delivered with a custody seal intact and signed

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

#### Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time Notes
171738-1	010 10/18/13 955 10/19/13 955	19-Oct-2013 0955
171738-2	010 10/19/13 955	19-Oct-2013 0955

#### Qualifiers:

D Result is from a secondary dilution factor

#### References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

<sup>&</sup>quot;Standard Methods for the Examination of Water and Wastewaters", 21st edition.

<sup>&</sup>quot;American Society for Testing and Materials" (ASTM).

<sup>&</sup>quot;Association of Analytical Chemists" (AOAC).



### **ANALYTICAL RESULTS**

AIC No. 171738-1

Sample Identification: 010 10/18/13 955 10/19/13 955

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillat SM 4500-NH3 B,G	tion Prep: 21-Oct-2013 1004 by 302	<b>2.1</b> Analyzed: 21-0	0.5 ect-2013 2032 by 308	<b>mg/l</b> Batch: W45336	D Dil: 5
Carbonaceous BOD 5-day SM 5210 B	Prep: 19-Oct-2013 1400 by 308	< 2 Analyzed: 24-0	2 oct-2013 1025 by 285	<b>mg/l</b> Batch: W45341	
Total Suspended Solids USGS 3765	Prep: 23-Oct-2013 1421 by 285	<b>6.4</b> Analyzed: 24-0	4 oct-2013 1054 by 285	<b>mg/l</b> Batch: W45371	
Phosphorus EPA 200.7	Prep: 21-Oct-2013 1114 by 305	<b>0.067</b> Analyzed: 21-0	0.02 ect-2013 1711 by 305	<b>mg/l</b> Batch: S35624	

**AIC No.** 171738-2

Sample Identification: 010 10/19/13 955

Analyte	Result	RL	Units	Qualifier
Fecal Coliform	<1	1	/100ml	
SM 9222 D	Analyzed: 19-Oct-20	013 1300 by 295	Batch: M4053	



October 24, 2013 Control No. 171738 Page 4 of 4

### **DUPLICATE RESULTS**

					RPD				
Analyte		AIC No.	Result	RPD	Limit	Preparation Date	Analysis Date	Dil	Qual
Carbonaceous BOD 5-day		171735-1	< 2 mg/l			19Oct13 1400 by 308	24Oct13 1019 by 285	-	
	Batch: W45341	Duplicate	< 2 mg/l	0.00	20.0	19Oct13 1400 by 308	24Oct13 1021 by 285		
Total Suspended Solids		171732-1	15 mg/l			23Oct13 1421 by 285	24Oct13 1054 by 285		
	Batch: W45371	Duplicate	15 mg/l	2.67	20.0	23Oct13 1422 by 285	24Oct13 1054 by 285		
Total Suspended Solids		171733-1	< 4 mg/l			23Oct13 1421 by 285	24Oct13 1054 by 285		
	Batch: W45371	Duplicate	< 4 mg/l	0.00	20.0	23Oct13 1422 by 285	24Oct13 1054 by 285		

### LABORATORY CONTROL SAMPLE RESULTS

	Spike									
Analyte	Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	91.3	80.0-120		_	W45336	21Oct13 0759 by 302	21Oct13 1925 by 308		
Carbonaceous BOD 5-day	200 mg/l	96.5	84.5-115			W45341	19Oct13 1300 by 308	24Oct13 1017 by 285		
Phosphorus	5 mg/l	102	85.0-115			S35624	21Oct13 1115 by 305	21Oct13 1622 by 305		

### **MATRIX SPIKE SAMPLE RESULTS**

		Spike							
Analyte	Sample	Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	171708-2	1 mg/l	92.1	80.0-120	W45336	21Oct13 0759 by 302	21Oct13 1928 by 308		
	171708-2	1 mg/l	94.0	80.0-120	W45336	21Oct13 0759 by 302	21Oct13 1933 by 308		
	Relative Per	rcent Difference:	1.72	25.0	W45336				
Phosphorus	171721-2	5 mg/l	103	75.0-125	S35624	21Oct13 1115 by 305	21Oct13 1625 by 305		
	171721-2	5 mg/l	102	75.0-125	S35624	21Oct13 1115 by 305	21Oct13 1628 by 305		
	Relative Per	rcent Difference:	0.696	20.0	S35624				

### **LABORATORY BLANK RESULTS**

				QC			
Analyte	Result	RL	PQL	Sample	Preparation Date	Analysis Date	Qual
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45336-1	21Oct13 0759 by 302	21Oct13 1923 by 308	
Carbonaceous BOD 5-day	< 2 mg/l	2	2	W45341-1	19Oct13 1300 by 308	24Oct13 1016 by 285	
Total Suspended Solids	< 4 mg/l	4	4	W45371-1	23Oct13 1422 by 285	24Oct13 1054 by 285	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35624-1	21Oct13 1115 by 305	21Oct13 1619 by 305	
Fecal Coliform	< 1 /100ml	1	1	M4053-1		19Oct13 1300 by 295	



	···																				1 OF 1
				1	PO	No.		NO				ANA	LYSES	REC	UEST	ED				AIC COL	ITROL NO:
Client	: El Dorad	o Chemical Company	<u>'                                     </u>	<u> </u>				OF			5					]		-		1	71738
Projec	ot ones Delte	Dit 400000750			<u> </u>			_			اق					[				AIC PRO	POSAL NO:
Refer Projec	ence: Daily -	Permit AR0000752			┨.	MATR		В О	SS	۱.,	۱ĕ		ł	1						Carrier:	
Mana	ger Ms.La	arken Pennington			W			7	BOD, TSS	Coli. F	Total Phosphoru				}					Carrier.	Gold Star
Samp	led / a.de.	The contract of the contract o	G	C	A	s		Ť	ğ	ပိ	Se	ľ	ľ		1				ĺ	Received	Temperature C
Ву:	Laken	Pennigton	R	0	T	ŏ		Ĺ	2							1 1		1			~
By: AIC	Sample	Date/libbe	Α	М	E			Ε			NH3N,										
No.	Identification	Collected	В	Р	R	L		S			Ž										Remarks
	010	10/18/17-10/19/17		X	х			1	Х								E.				•
	010	10/19/13 955an	x		Х			1		х		-									•
	010	10/19/13-10/10/13		Х	x			1			×										
				-																	
				,						,											<u> </u>
				-						:				-							
				1						,										Field pH	calibration
		Container Type							Р	Р	Р								]	on	@
		Preservative							NO	T	s	<u> </u>								Buffer:	
	G = G	ass P = Plast	ic		•		<u>v=</u> \	70A	vials	<del></del>			H=1	ICI to	pH2	<u> </u>	<del></del>	T = S	odiun	Thiosulfa	ite
	NO =		ric a	cid p	H2		1 = N	Nitric	acid	oH2			B = N	laOH 1	o pH1	2		Z = Z	inc ac	etate	
	round Time Reques								Relind	quişhe	ed	0		Date/	Time	10:00 av	Rece	eived			Date/Time
	RMAL or EXPEDIT			1					By:	Poi	Von	(Pm)	Olus	10/1	9/12	<b>189</b> ∶∞	Ву:				
	lited results requesti			<u>_</u>						<u> </u>	<del>~~</del>	104	7/17	11	CIL	ar					
	should AIC contact v	vith questions:		,				l	Reline	quish	ed		J	Date/	Time			iyedir	Kab		Date/Time
	870-312-1752 Fax:								Ву:				•				By:	/	`		10/19/13 1300
	t Attention to:	Ms. Larken Pennin								<u> </u>							U	<u>'                                    </u>	Z/L		19(17)13 1300
керо	t Address to:	Post Office Box 23							Comr	nents:	•							100	,		
		El Dorado, AR 717						ŀ													
		Lpennington@edc-	ark.c	: <u>mo:</u>				!													

FORM 0060



October 28, 2013 Control No. 171754 Page 1 of 4

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

This report contains the analytical results and supporting information for samples submitted on October 21, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

John Overbey

Booratory Director

This document has been distributed to the following:

PDF cc: El Dorado Chemical Company

ATTN: Ms. Larken Pennington lpennington@edc-ark.com

El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc. ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com



October 28, 2013 Control No. 171754 Page 2 of 4

#### SAMPLE INFORMATION

#### **Project Description:**

Two (2) water sample(s) received on October 21, 2013 Daily - Permit AR0000752 P.O. No. 357042

### **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest. Ice chest #1 was delivered with a custody seal intact and signed

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

### Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time Notes
171754-1	010 10/20/13 955 - 10/21/13 955	21-Oct-2013 0955
171754-2	010 10/20/13 955 - 10/21/13 955	21-Oct-2013 0955

#### Qualifiers:

D Result is from a secondary dilution factor

#### References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

"Standard Methods for the Examination of Water and Wastewaters", 21st edition.

"American Society for Testing and Materials" (ASTM).

"Association of Analytical Chemists" (AOAC).



### **ANALYTICAL RESULTS**

**AIC No.** 171754-1

Sample Identification: 010 10/20/13 955 - 10/21/13 955

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillat SM 4500-NH3 B,G	tion Prep: 22-Oct-2013 0931 by 308	<b>2.3</b> Analyzed: 22-0	0.5 Oct-2013 1513 by 308	mg/l Batch: W45354	D Dil: 5
Carbonaceous BOD 5-day SM 5210 B	Prep: 23-Oct-2013 0812 by 285	< 2 Analyzed: 28-0	2 Oct-2013 0946 by 285	<b>mg/l</b> Batch: W45365	
Total Suspended Solids USGS 3765	Prep: 23-Oct-2013 1421 by 285	<b>6.4</b> Analyzed: 24-0	4 Oct-2013 1054 by 285	<b>mg/l</b> Batch: W45371	
Phosphorus EPA 200.7	Prep: 22-Oct-2013 1013 by 305	<b>0.080</b> Analyzed: 23-0	0.02 Oct-2013 1848 by 305	<b>mg/l</b> Batch: S35634	
Nitrate as N EPA 300.0	Prep: 21-Oct-2013 1604 by 07	<b>12</b> Analyzed: 21-0	0.5 Oct-2013 1803 by 07	<b>mg/l</b> Batch: C16142	D Dil: 10

**AIC No.** 171754-2

Sample Identification: 010 10/20/13 955 - 10/21/13 955

Analyte	Result	RL	Units	Qualifier
Fecal Coliform	16000	10	/100ml	D
SM 9222 D	Analyzed: 21-Oct-	2013 1551 by 295	Batch: M4059	Dil: 10



### **DUPLICATE RESULTS**

					RPD				
Analyte		AIC No.	Result	RPD	Limit	Preparation Date	Analysis Date	Dil	Qual
Carbonaceous BOD 5-day		171750-1	< 2 mg/l	'		23Oct13 0812 by 285	28Oct13 0941 by 285		
	Batch: W45365	Duplicate	< 2 mg/l	0.00	20.0	23Oct13 0812 by 285	28Oct13 0943 by 285		
Total Suspended Solids		171732-1	15 mg/l			23Oct13 1421 by 285	24Oct13 1054 by 285		
·	Batch: W45371	Duplicate	15 mg/l	2.67	20.0	23Oct13 1422 by 285	24Oct13 1054 by 285		
Total Suspended Solids		171733-1	< 4 mg/l			23Oct13 1421 by 285	24Oct13 1054 by 285		
·	Batch: W45371	Duplicate	< 4 mg/l	0.00	20.0	23Oct13 1422 by 285	24Oct13 1054 by 285		

# **LABORATORY CONTROL SAMPLE RESULTS**

	Spike									
Analyte	Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	86.6	80.0-120			W45354	22Oct13 0931 by 308	22Oct13 1438 by 308		
Carbonaceous BOD 5-day	200 mg/l	104	84.5-115			W45365	23Oct13 0812 by 285	28Oct13 0940 by 285		
Phosphorus	5 mg/l	107	85.0-115			S35634	22Oct13 1013 by 305	23Oct13 1739 by 305		
Nitrate as N	4 mg/l	92.2	90.0-110			C16142	21Oct13 1605 by 07	21Oct13 1642 by 07		

### **MATRIX SPIKE SAMPLE RESULTS**

Analyte	Sample	Spike Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	171749-1	1 mg/l	93.0	80.0-120	W45354	22Oct13 0931 by 308	22Oct13 1442 by 308		
	171749-1	1 mg/l	94.9	80.0-120	W45354	22Oct13 0931 by 308	22Oct13 1443 by 308		
	Relative Pe	rcent Difference:	1.36	25.0	W45354				
Phosphorus	171749-2	5 mg/l	107	75.0-125	S35634	22Oct13 1013 by 305	23Oct13 1742 by 305		
	171749-2	5 mg/l	107	75.0-125	S35634	22Oct13 1013 by 305	23Oct13 1746 by 305		
	Relative Pe	rcent Difference:	0.131	20.0	S35634				
Nitrate as N	171754-1	4 mg/l	93.7	80.0-120	C16142	21Oct13 1605 by 07	21Oct13 1709 by 07		
	171754-1	4 mg/l	93.0	80.0-120	C16142	21Oct13 1605 by 07	21Oct13 1736 by 07		
	Relative Pe	rcent Difference:	0.588	10.0	C16142				

# **LABORATORY BLANK RESULTS**

				QC			
Analyte	Result	RL	PQL	Sample	Preparation Date	Analysis Date	Qual
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45354-1	22Oct13 0931 by 308	22Oct13 1436 by 308	
Carbonaceous BOD 5-day	< 2 mg/l	2	2	W45365-1	23Oct13 0812 by 285	28Oct13 0939 by 285	
Total Suspended Solids	< 4 mg/l	4	4	W45371-1	23Oct13 1422 by 285	24Oct13 1054 by 285	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35634-1	22Oct13 1013 by 305	23Oct13 1736 by 305	
Nitrate as N	< 0.05 mg/l	0.05	0.05	C16142-1	21Oct13 1605 by 07	21Oct13 2044 by 07	
Fecal Coliform	< 1 /100ml	1	1	M4059-1		21Oct13 1551 by 295	



																			PAGE	1 01 1	
					PO	No.	NO			_	ANAL	YSES	REQ	UEST	ED					ITROL NO:	
Client:		Chemical Company		<u> </u>			OF		'	5					_				17	1754	
Projec							4	l		Phosphoru		l				ŀ	1		AIC PRO	POSAL NO	):
Refere		Permit AR0000752		-	1		В	၂ တ္ထ		lso	İ .					i					
Projec						ATRIX	0	Ϊ́	u.	<u> </u>									Carrier:		
Manag	er: Ms. Lar	ken Pennington	<del></del>		W		T	ğ	Soli.	<u>ā</u>										Gold Star	
Sampl By: AIC	when	<u>remunation</u>	G R	0.0	A   T	S O	L	CBOD, TSS		NH3N, Total									Received	Temperate	ure C
	Sample	Date/Time	Α	M		1	E			কু											7
No.	Identification	Collected	В	Р	R	Ĺ	S			Ż										Remarks	
j	010	10/2413-10/21/13		X	х		1	X													
ď	010	10/21/13	Х	; ;	х		1		х												
1	010	12/13-13/21/13		X	х		1			×											
				1												!					
-																			Field pH	calibration	
		Container Type						Р	Р	Р									on	@	
		Preservative						NO	Т,	s									Buffer:		
	G = Gla	ss P = Plast	ic	<del></del>			VOA					H=H	CI to g	H2			T = Sc	1	Thiosulfa	te	
	NO = no	one S = Sulfu	ric a	cid p	H2			acid	oH2				aOH t		2		Z = Zi				
Turnar	ound Time Requeste	ed: (Please circle)						Relin		d			Date/			Rece				Date/Time	
NOR	MAL or EXPEDITE	DIN DAYS						Rv	D.	$ \ell$	2.	٦.	باما	1.1.		Ву:					
	ted results requested							0	rour	anti	ehnur	itan	נין אין	41/13	100am	( )					
	hould AIC contact wi					_		Relin	quishe	d			Date/		<u>`</u>		ived in	Lab		Date/Time クーン/	
	870-312-1752 Fax:	•						Ву:								Ву:		~/	_		
Report	Attention to:	Ms. Larken Pennin	gton	:				-	ı							6	vel_	11-	etc.	1340	ا ر
Report	Address to:	Post Office Box 23						Comr	nents								· · · · · · · · · · · · · · · · · · ·	-			
		El Dorado, AR 717							3												
		Lpennington@edc-		<u>om</u> .																	
		1111																		FORM 006	0



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

This report contains the analytical results and supporting information for samples submitted on October 22, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

Jøhn Overbey Laboratory Directør

This document has been distributed to the following:

PDF cc: El Do

El Dorado Chemical Company ATTN: Ms. Larken Pennington lpennington@edc-ark.com

El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc. ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com



#### **SAMPLE INFORMATION**

#### **Project Description:**

Two (2) water sample(s) received on October 22, 2013 Daily-Permit AR0000752 Weekly-Permit AR0000752 P.O. No. 357042

#### **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest. Ice chest #1 was delivered with a custody seal intact and signed

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

### Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time	Notes
171786-1	010 10/21/13 955 10/22/13 955	22-Oct-2013 0955	
171786-2	010 10/22/13 955	22-Oct-2013 0955	

### Qualifiers:

- D Result is from a secondary dilution factor
- H Analytical holding time exceeded regulatory requirements

### Case Narrative:

Elevated reporting limit for Fecal Coliform is due to matrix interference from bacterialogical overgrowth.

#### References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

"Standard Methods for the Examination of Water and Wastewaters", 21st edition.

"American Society for Testing and Materials" (ASTM).

"Association of Analytical Chemists" (AOAC).



### **ANALYTICAL RESULTS**

AIC No. 171786-1

Sample Identification: 010 10/21/13 955 10/22/13 955

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillar SM 4500-NH3 B,G	tion Prep: 22-Oct-2013 1505 by 302	1.9 Analyzed: 22-0	0.5 Oct-2013 1956 by 308	mg/l Batch: W45354	D Dil: 5
Carbonaceous BOD 5-day SM 5210 B	Prep: 23-Oct-2013 0812 by 285	< 2 Analyzed: 28-0	2 Oct-2013 0956 by 285	<b>mg/l</b> Batch: W45365	
Total Suspended Solids USGS 3765	Prep: 24-Oct-2013 1432 by 285	<b>7.2</b> Analyzed: 25-0	4 Oct-2013 1054 by 285	<b>mg/l</b> Batch: W45389	
Phosphorus EPA 200.7	Prep: 23-Oct-2013 0913 by 271	<b>0.073</b> Analyzed: 24-0	0.02 Oct-2013 1700 by 305	<b>mg/l</b> Batch: S35639	

**AIC No.** 171786-2

Sample Identification: 010 10/22/13 955

Analyte		Result	RL	Units	Qualifier
Total Dissolved Solids SM 2540 C	Prep: 24-Oct-2013 1557 by 285	<b>240</b> Analyzed: 25-0	10 oct-2013 1523 by 285	mg/l Batch: W45395	
<b>Chloride</b> EPA 300.0	Prep: 22-Oct-2013 1514 by 07	<b>20</b> Analyzed: 23-0	0.2 ct-2013 0503 by 07	<b>mg/l</b> Batch: C16150	
<b>Sulfate</b> EPA 300.0	Prep: 22-Oct-2013 1514 by 07	<b>33</b> Analyzed: 23-0	0.2 ct-2013 0503 by 07	<b>mg/l</b> Batch: C16150	
<b>Oil and Grease</b> EPA 1664A	Prep: 25-Oct-2013 0803 by 295	< 5 Analyzed: 25-0	5 ct-2013 1257 by 295	<b>mg/l</b> Batch: B8618	
Fecal Coliform SM 9222 D		< 3 Analyzed: 22-0	3 ct-2013 1548 by 304	<b>/100ml</b> Batch: M4064	D Dil: 2.5



## **DUPLICATE RESULTS**

					RPD				
Analyte		AIC No.	Result	RPD	Limit	Preparation Date	Analysis Date	Dil	Qual
Oil and Grease		171819-2	< 5 mg/l			25Oct13 0803 by 295	25Oct13 1257 by 295		
	Batch: B8618	Duplicate	< 5 mg/l	0.00	20.0	25Oct13 1056 by 295	25Oct13 1257 by 295		
Carbonaceous BOD 5-day		171750-1	< 2 mg/l			23Oct13 0812 by 285	28Oct13 0941 by 285		
	Batch: W45365	Duplicate	< 2 mg/l	0.00	20.0	23Oct13 0812 by 285	28Oct13 0943 by 285		
Total Suspended Solids		171786-1	7.2 mg/l			24Oct13 1432 by 285	25Oct13 1054 by 285		
	Batch: W45389	Duplicate	7.6 mg/l	5.41	20.0	24Oct13 1432 by 285	25Oct13 1054 by 285		
Total Suspended Solids		171787-1	< 4 mg/i			24Oct13 1432 by 285	25Oct13 1054 by 285		
	Batch: W45389	Duplicate	< 4 mg/l	0.00	20.0	24Oct13 1432 by 285	25Oct13 1054 by 285		
Total Dissolved Solids		171755-1	1200 mg/l			24Oct13 1557 by 285	25Oct13 1523 by 285		H
	Batch: W45395	Duplicate	1200 mg/l	0.433	10.0	24Oct13 1557 by 285	25Oct13 1523 by 285		Н

# **LABORATORY CONTROL SAMPLE RESULTS**

Analyte	Spike Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	86.6	80.0-120			W45354	22Oct13 0931 by 308	22Oct13 1438 by 308		
Carbonaceous BOD 5-day	200 mg/l	104	84.5-115			W45365	23Oct13 0812 by 285	28Oct13 0940 by 285		
Phosphorus	5 mg/l	100	85.0-115			S35639	23Oct13 0913 by 271	24Oct13 1649 by 305		•
Chloride	20 mg/l	108	90.0-110			C16150	22Oct13 1515 by 07	23Oct13 0315 by 07		
Sulfate	20 mg/l	107	90.0-110			C16150	22Oct13 1515 by 07	23Oct13 0315 by 07		
Oil and Grease	40 mg/l 40 mg/l	102 103	78.0-114 78.0-114	0.976	20.0	B8618 B8618	25Oct13 0804 by 295 25Oct13 0804 by 295	25Oct13 1257 by 295 25Oct13 1257 by 295		

### **MATRIX SPIKE SAMPLE RESULTS**

Analyte	Sample	Spike Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	171749-1	1 mg/l	93.0	80.0-120	W45354	22Oct13 0931 by 308	22Oct13 1442 by 308		
The comment of the second	171749-1	-1 mg/l	94:9	80.0-120	W45354	22Oct13 0931 by 308	22Oct13 1443 by 308		- M
	Relative Pe	rcent Difference:	1.36	25.0	W45354				
Phosphorus	171786-1	5 mg/l	103	75.0-125	S35639	23Oct13 0913 by 271	24Oct13 1653 by 305		
	171786-1	5 mg/l	102	75.0-125	S35639	23Oct13 0913 by 271	24Oct13 1657 by 305		
	Relative Per	rcent Difference:	0.376	20.0	S35639				
Chloride	171782-1	20 mg/l	107	80.0-120	C16150	22Oct13 1515 by 07	23Oct13 0342 by 07		
	171782-1	20 mg/l	107	80.0-120	C16150	22Oct13 1515 by 07	23Oct13 0409 by 07		
	Relative Per	rcent Difference:	0.0327	10.0	C16150				
Sulfate	171782-1	20 mg/l	107	80.0-120	C16150	22Oct13 1515 by 07	23Oct13 0342 by 07		
	171782-1	20 mg/l	106	80.0-120	C16150	22Oct13 1515 by 07	23Oct13 0409 by 07		
	Relative Per	rcent Difference:	0.0327	10.0	C16150				



October 28, 2013 Control No. 171786 Page 5 of 5

# **LABORATORY BLANK RESULTS**

				QC			
Analyte	Result	RL	PQL	Sample	Preparation Date	Analysis Date	Qual
Total Dissolved Solids	< 10 mg/l	10	10	W45395-1	24Oct13 1557 by 285	25Oct13 1523 by 285	
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45354-1	22Oct13 0931 by 308	22Oct13 1436 by 308	
Carbonaceous BOD 5-day	< 2 mg/l	2	2	W45365-1	23Oct13 0812 by 285	28Oct13 0939 by 285	
Total Suspended Solids	< 4 mg/l	4	4	W45389-1	24Oct13 1432 by 285	25Oct13 1054 by 285	
Phosphorus	< 0.02 mg/i	0.02	0.02	S35639-1	23Oct13 0913 by 271	24Oct13 1646 by 305	
Chloride	< 0.2 mg/l	0.2	0.2	C16150-1	22Oct13 1515 by 07	23Oct13 0249 by 07	
Sulfate	< 0.2 mg/l	0.2	0.2	C16150-1	22Oct13 1515 by 07	23Oct13 0249 by 07	
Oil and Grease	< 2 mg/l	2	5	B8618-1	25Oct13 0803 by 295	25Oct13 1257 by 295	
Fecal Coliform	< 1 /100ml	1	1	M4064-1		22Oct13 1548 by 295	



					<del>,</del>															·	1 OF 1
Client	. El Dorad	lo Chemical Company		i	PO	No.		NO OF			T ==	ANAI	LYSE	S REC	UEST	ED	<del></del>				NTROL NO:
Projec		io Chemical Company	<u></u>	+	1			OF			g				1	1 1					71786 DPOSAL NO:
Refer	ence: Daily	- Permit AR0000752			一			В	S	ľ	Sph					1 1				AIC PRO	POSAL NO:
Projec	t -			İ		/ATR	RIX	0	TSS	LL.	문	ł	1			1		1		Carrier:	
Mana		arken Pennington			W			T	ğ	Coli. F	<u>F</u>					1					Gold Star
Samp By:	which	Remugton	G R	0	A T	S		T	CBOD,		NH3N, Total Phosphoru										d Temperature C の9 ~
AIC	Sample	Date/Time	A	М	E			Ε			罕	1						-			
No.	Identification	Collected	В	Р	R	L	ļ	S			Ž	<u> </u>		ļ	↓				<u> </u>		Remarks
<u> </u>	010	1921/13-1922/17 955-955		X	Х			1	X			_									
	010	12/22/13955	Х		x			1		х											
	010	10/2/13-19/2/13		×	х			1			х										
				-																	
				2																	
ļ										•										Field pH	calibration
H		Container Type							Р	Р	Ρ									on	@
ļ		Preservative		<u> </u>					NO	_ T	S									Buffer:	
	G = G NO = (						V = \							ICI to I		_				n Thiosulfa	ite
Turnar	gund Time Reques	none S = Sulfu ted: (Please circle)	nc ac	o pi	12		N = I		acid p		a		<u>8 = 1</u>	VaOH t		2	la.		inc ac		
NOR	MAL or EXPEDIT	ED IN DAYS						i	D		$\sim$			1			1	ceived			Date/Time
Exped	ited results requeste	ed by:							", <sub>Λ</sub>	In Ke	nler	nino	ton	10/2	2113	10:00	Dy.				-
Who s	hould AIC contact w	vith questions:	-			_		j	Relino			ا عدست	1	Date/				eived ir	ı Lab		Date/Time
	870-312-1752 Fax:								Ву:	•		_					BØ:			$\overline{}$	10/22/13
	Attention to:	Ms. Larken Penning						Ĺ										-lim	m	Way	1325
Report	Address to:	Post Office Box 23							Comn	nents:									7		
	-	El Dorado, AR 717		4																	
L		Lpennington@edc-	ark,c	om '																	

FORM 0060



				1				_												PAGE	1 OF 1	
	=				PO	No.		NO			~	ANAL	YSE	S REC	UEST	ED					NTROL NO:	
Client		Chemical Company		+	4			OF		용					1						171786	
Projec		u Darmit ADAGAAT		1	<u></u>					(2 / Week)				1		ĺ				AIC PRO	OPOSAL NO:	
Projec		y - Permit AR00007	94		١,	MATE	NV.	В	ee lee	2/								;		Carrier:		
Manag		rken Pennington		i i	W			T	(2 / Week)				ŀ			ŀ			i	Camer:	Gold Star	
Samp	lod (	^	G	Tc	Ä	s		т		l Š					H					Receive	d Temperature	<u></u>
Ву:	Men	enmaton	R	0	Т	0		Ĺ	ဗ္ဗ	TDS,CI,SO4						ļ					0,9,5	•
	Sample	Date/Time	A	M	E			E		၂ လွ											<del>*</del>	
No.	Identification	Collected	В	Р	R	Ļ		S		F	<u> </u>										Remarks	
<u> </u>	010	Collected	×	1	х			1	х													
)	010	10/22/13/955	X		х			1		·x												
				- 11 - 1																		
				4::																		
				1																		
				1																		
				1																Field pH	calibration	
		Container Type							P	Р										on	@	
<u></u>		Preservative							\$	NO										Buffer:		
1	G = Gl			,	-		V = 1							ICI to	•					Thiosulfa	ate	
<u> </u>	NO = r		iric ad	id pl	H2		N = 1		acid				<u>B = N</u>		to pH12	2		Z = Zi	nc ac	etate		
	ound Time Request			á					Reline	quishe	ed	0 >		Date/	Time		Rece	ived			Date/Time	
Exped	MAL or EXPEDITI	d by:		1					By: (	Kai	Ken	Renn	glor	10	22/13	13:00	Ву:					
	hould AIC contact w	ith questions:						ļ	Reline	quishe	d		Ű	Date/	Time	<del></del>	Rece	ived in	Lab		Date/Time	
12	870-312-1752 Fax:							ĺ	Ву:								ВУ:		,	$\overline{}$	1325	
Pi ·	Attention to:	Ms. Larken Pennin		'				l										ww	m h	ر سو (	132S	
Report	Address to:	Post Office Box 23		r					Comr	nents:									1			
		El Dorado, AR 711																				
<u> </u>		Lpennington@edc	<u>ark.c</u>	om						•					_							

FORM 0060



October 29, 2013 Control No. 171828 Page 1 of 4

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

This report contains the analytical results and supporting information for samples submitted on October 23, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

Jøhn Overbey Laboratory Director

This document has been distributed to the following:

PDF cc: EI E

El Dorado Chemical Company ATTN: Ms. Larken Pennington Ipennington@edc-ark.com

El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc. ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com



October 29, 2013 Control No. 171828 Page 2 of 4

El Dorado Chemical Company 4500 North West Avenue El Dorado, AR 71730

#### **SAMPLE INFORMATION**

#### **Project Description:**

Two (2) water sample(s) received on October 23, 2013 Daily-Permit AR0000752 P.O. No. 357042

#### **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest. Ice chest #1 was delivered with a custody seal intact and signed

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

#### Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time Notes
171828-1	010 10/22/13 955 10/23/13 955	23-Oct-2013 0955
171828-2	010 10/23/13 955	23-Oct-2013 0955

#### Qualifiers:

D Result is from a secondary dilution factor

#### References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

<sup>&</sup>quot;Standard Methods for the Examination of Water and Wastewaters", 21st edition.

<sup>&</sup>quot;American Society for Testing and Materials" (ASTM).

<sup>&</sup>quot;Association of Analytical Chemists" (AOAC).



# **ANALYTICAL RESULTS**

AIC No. 171828-1

Sample Identification: 010 10/22/13 955 10/23/13 955

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillar SM 4500-NH3 B,G	tion Prep: 23-Oct-2013 1518 by 308	<b>2.5</b> Analyzed: 24-0	0.5 Oct-2013 0938 by 308	<b>mg/l</b> Batch: W45373	D Dil: 5
Carbonaceous BOD 5-day SM 5210 B	Prep: 24-Oct-2013 0908 by 285	< 2.0 Analyzed: 29-0	2.0 Oct-2013 1018 by 285	<b>mg/l</b> Batch: W45385	
Total Suspended Solids USGS 3765	Prep: 25-Oct-2013 1318 by 285	<b>9.2</b> Analyzed: 28-0	4 Oct-2013 1000 by 285	<b>mg/l</b> Batch: W45402	
Phosphorus EPA 200.7	Prep: 24-Oct-2013 0854 by 271	<b>0.080</b> Analyzed: 25-0	0.02 Oct-2013 0959 by 305	<b>mg/l</b> Batch: S35648	
Nitrate as N EPA 300.0	Prep: 23-Oct-2013 1510 by 07	<b>12</b> Analyzed: 23-0	0.5 Oct-2013 1702 by 07	<b>mg/l</b> Batch: C16154	D Dil: 10

**AIC No.** 171828-2

Sample Identification: 010 10/23/13 955

Analyte	Result	RL	Units	Qualifier
Fecal Coliform	26		/100ml	
SM 9222 D	Analyzed: 23-Oct-	2013 1550 by 304	Batch: M4065	



## **DUPLICATE RESULTS**

					RPD				•
Analyte		AIC No.	Result	RPD	Limit	Preparation Date	Analysis Date	Dil	Qual
Carbonaceous BOD 5-day		171819-1	< 2.0 mg/l			24Oct13 0908 by 285	29Oct13 1007 by 285		
	Batch: W45385	Duplicate	< 2.0 mg/l	0.00	20.0	24Oct13 0908 by 285	29Oct13 1009 by 285		
Total Suspended Solids		171828-1	9.2 mg/l			25Oct13 1318 by 285	28Oct13 1000 by 285		
·	Batch: W45402	Duplicate	9.6 mg/l	4.26	20.0	25Oct13 1318 by 285	28Oct13 1000 by 285		
Total Suspended Solids		171830-3	2300 mg/l			25Oct13 1318 by 285	28Oct13 1000 by 285		
·	Batch: W45402	Duplicate	2200 mg/l	2.23	20.0	25Oct13 1318 by 285	28Oct13 1000 by 285		

### **LABORATORY CONTROL SAMPLE RESULTS**

Analyte	Spike Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	102	80.0-120			W45373	23Oct13 1518 by 308	24Oct13 0853 by 308		
Carbonaceous BOD 5-day	200 mg/l	103	84.5-115			W45385	24Oct13 0908 by 285	29Oct13 1005 by 285		
Phosphorus	5 mg/l	107	85.0-115			S35648	24Oct13 0855 by 271	25Oct13 0935 by 305		
Nitrate as N	4 mg/l	96.4	90.0-110			C16154	23Oct13 1510 by 07	23Oct13 1545 by 07		

### MATRIX SPIKE SAMPLE RESULTS

Analyte	Sample	Spike Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	171824-1	1 mg/l	111	80.0-120	W45373	23Oct13 1518 by 308	24Oct13 0857 by 308		
	171824-1	1 mg/l	98.5	80.0-120	W45373	23Oct13 1518 by 308	24Oct13 0859 by 308		
	Relative Per	cent Difference:	8.99	25.0	W45373				
Phosphorus	171824-2	5 mg/l	106	75.0-125	S35648	24Oct13 0855 by 271	25Oct13 0938 by 305		
	171824-2	5 mg/l	108	75.0-125	S35648	24Oct13 0855 by 271	25Oct13 0941 by 305		
	Relative Per	cent Difference:	1.52	20.0	S35648				
Nitrate as N	171828-1	4 mg/l	92.3	80.0-120	C16154	23Oct13 1510 by 07	23Oct13 1611 by 07		
	171828-1	4 mg/l	93.3	80.0-120	C16154	23Oct13 1510 by 07	23Oct13 1636 by 07		
	Relative Per	cent Difference:	0.821	10.0	C16154				

### **LABORATORY BLANK RESULTS**

				QC			
Analyte	Result	RL	PQL	Sample	<b>Preparation Date</b>	Analysis Date	Qual
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45373-1	23Oct13 1518 by 308	24Oct13 0852 by 308	
Carbonaceous BOD 5-day	< 2.0 mg/l	2.0	2.0	W45385-1	24Oct13 0908 by 285	29Oct13 1004 by 285	
Total Suspended Solids	< 4 mg/l	4	4	W45402-1	25Oct13 1318 by 285	28Oct13 1000 by 285	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35648-1	24Oct13 0855 by 271	25Oct13 0932 by 305	
Nitrate as N	< 0.05 mg/l	0.05	0.05	C16154-1	23Oct13 1510 by 07	23Oct13 1519 by 07	
Fecal Coliform	< 1 /100ml	1	1	M4065-1		23Oct13 1236 by 304	



_		<del></del>												,							PAGE	1 OF 1
Client	El Dorado	Chemical Company		1	PO	No.		NO			<del></del>		LYSE	SREC	UEST	rED			1		AIC CO	NTROL NO: 71828
Projec		Chemical Company		<del></del> -	1			OF			5									ļ	110.00	11878
Refere		Permit AR0000752		1	<u> </u>	<del>-</del>		В	, n	;	l g	.	l			1 1	1				AIC PRO	POSAL NO:
Projec					۱ ۱	/ATF	RIX	0	TSS	L L	٤		1				ſ				Carrier:	
Manag		ken Pennington			W		Ī	Ť		Coli.		i				1 [			1		·	Gold Star
Samp	led larken	Pennington	G	C	A	S		Т	CBOD,	ŏ	Total Phosphoru										Receive	d Temperature C
By: AIC	Sample	Date/Time	R	0 M	T	0			١٥		Z.					1 1						1,100
No.	Identification	Collected	В	P	R			E S		,	NH3N,						ĺ					Remarks
	010	10/22/13-1723/13		X	×			1	X	-												Nemarks
	010	12/23/3 955	X	?	х			1		Х												
	010	10/2/13-10/23/13		×	×			1		~~	X											
				1																		
				-																		•
<u> </u>										,											Field pH	calibration
		Container Type							Р	Р	Р						_ [	-			on	
		Preservative							NO	T	S	1									Buffer:	
1	G = Gla		_					VOA						ICI to					T = 5	odium	Thiosulfa	ite
	NO = no		ric a	cid pl	12		N = 1	<u>Nitric</u>	acid <sub>j</sub>	H2			<u>B = 1</u>	laOH 1	to pH1	2				inc ac	etate	
	ound Time Requeste								Reling	uishe	ed	0 .	- 1	Date/	Time			Rece	ived			Date/Time
	MAL or EXPEDITE ted results requested								By: 🗡	(A A)	OM	terun	play	101	13/1	3 10: an	, <b> </b> E	Зу:				
	hould AIC contact with											<del></del> (	<del>/)</del>	4								
	870-312-1752 Fax:	ar questions:							Relind	uisne	ea .	•		Date/	ııme			Kece.	ived i	n Lab		Date/Time
	_	Ms. Larken Penning	aton					1	Ву:	j								эу:	/ /3/	2/2	oter	Date/Time 10-23-13
		Post Office Box 231						ŀ	Comn	nents	<del>`</del>			<del></del>				15		= / -	<del></del>	1320
		El Dorado, AR 717	31	,							•											
		Lpennington@edc-	ark.c	om!																		

FORM 0060



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

This report contains the analytical results and supporting information for samples submitted on October 24, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

John Overbey Laboratory Director

This document has been distributed to the following:

PDF cc: El Dorado Chemical Company

ATTN: Ms. Larken Pennington pennington@edc-ark.com

El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc. ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com



### **SAMPLE INFORMATION**

## **Project Description:**

Two (2) water sample(s) received on October 24, 2013 Daily / Weekly - Permit AR0000752 P.O. No. 357042

### **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest. Ice chest #1 was delivered with a custody seal intact and signed

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

#### Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time Notes	3
171860-1	010 10/23/13 955 10/24/13 955	24-Oct-2013 0955	
171860-2	010 10/24/13 955	24-Oct-2013 0955	

### **Case Narrative:**

There were no qualifiers for this data and all samples met quality control criteria.

#### References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

"Standard Methods for the Examination of Water and Wastewaters", 21st edition.

"American Society for Testing and Materials" (ASTM).

"Association of Analytical Chemists" (AOAC).



### **ANALYTICAL RESULTS**

**AIC No.** 171860-1

Sample Identification: 010 10/23/13 955 10/24/13 955

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillation SM 4500-NH3 B,G	tion Prep: 24-Oct-2013 1450 by 302	< 0.1 Analyzed: 24-0	0.1 ct-2013 1748 by 308	<b>mg/l</b> Batch: W45391	
Carbonaceous BOD 5-day SM 5210 B	Prep: 24-Oct-2013 1528 by 285	< 2.0 Analyzed: 29-O	2.0 ct-2013 1029 by 285	<b>mg/l</b> Batch: W45385	
Total Suspended Solids USGS 3765	Prep: 25-Oct-2013 1318 by 285	<b>10</b> Analyzed: 28-0	4 ct-2013 1000 by 285	<b>mg/l</b> Batch: W45402	
Phosphorus EPA 200.7	Prep: 24-Oct-2013 1600 by 311	<b>0.080</b> Analyzed: 28-O	0.02 ct-2013 1235 by 305	<b>mg/l</b> Batch: S35652	

AIC No. 171860-2

Sample Identification: 010 10/24/13 955

Analyte	_	Result	RL	Units	Qualifier
Total Dissolved Solids SM 2540 C	Prep: 25-Oct-2013 1401 by 302	<b>220</b> Analyzed: 28-0	10 Oct-2013 1555 by 285	mg/l Batch: W45403	
Chloride EPA 300.0	Prep: 24-Oct-2013 1505 by 07	<b>19</b> Analyzed: 24-0	0.2 Oct-2013 1634 by 07	<b>mg/l</b> Batch: C16159	
Sulfate EPA 300.0	Prep: 24-Oct-2013 1505 by 07	<b>32</b> Analyzed: 24-0	0.2 Oct-2013 1634 by 07	<b>mg/l</b> Batch: C16159	
<b>Oil and Grease</b> EPA 1664A	Prep: 28-Oct-2013 0911 by 295	< 5 Analyzed: 28-0	5 Oct-2013 1637 by 295	<b>mg/l</b> Batch: B8622	
Fecal Coliform SM 9222 D		< 1 Analyzed: 24-0	1 Oct-2013 1532 by 304	<b>/100ml</b> Batch: M4066	



### **DUPLICATE RESULTS**

					RPD				
Analyte		AIC No.	Result	RPD	Limit	Preparation Date	Analysis Date	Dil	Qual
Carbonaceous BOD 5-day		171819-1	< 2.0 mg/l		• ———	24Oct13 0908 by 285	29Oct13 1007 by 285		
	Batch: W45385	Duplicate	< 2.0 mg/l	0.00	20.0	24Oct13 0908 by 285	29Oct13 1009 by 285		
Total Suspended Solids		171828-1	9.2 mg/l			25Oct13 1318 by 285	28Oct13 1000 by 285		
	Batch: W45402	Duplicate	9.6 mg/l	4.26	20.0	25Oct13 1318 by 285	28Oct13 1000 by 285		
Total Suspended Solids		171830-3	2300 mg/l			25Oct13 1318 by 285	28Oct13 1000 by 285		
	Batch: W45402	Duplicate	2200 mg/l	2.23	20.0	25Oct13 1318 by 285	28Oct13 1000 by 285		
Total Dissolved Solids		171836-1	< 10 mg/l			25Oct13 1401 by 302	28Oct13 1555 by 285		
	Batch: W45403	Duplicate	< 10 mg/l	0.00	10.0	25Oct13 1401 by 302	28Oct13 1555 by 285		

### **LABORATORY CONTROL SAMPLE RESULTS**

Analyte	Spike Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	113	80.0-120			W45391	24Oct13 1451 by 302	24Oct13 1741 by 308		- —
Carbonaceous BOD 5-day	200 mg/l	103	84.5-115			W45385	24Oct13 0908 by 285	29Oct13 1005 by 285		
Phosphorus	5 mg/l	105	85.0-115			S35652	24Oct13 1600 by 311	28Oct13 1225 by 305		
Chloride	20 mg/l	107	90.0-110			C16159	24Oct13 1037 by 07	24Oct13 1112 by 07		
Sulfate	20 mg/l	104	90.0-110			C16159	24Oct13 1037 by 07	24Oct13 1112 by 07		
Oil and Grease	40 mg/l 40 mg/l	84.0 86.0	78.0-114 78.0-114	2.35	20.0	B8622 B8622	28Oct13 0911 by 295 28Oct13 0911 by 295	28Oct13 1637 by 295 28Oct13 1637 by 295		

# **MATRIX SPIKE SAMPLE RESULTS**

Analyte		oike mount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	171849-2 1 r	mg/l	107	80.0-120	W45391	24Oct13 1451 by 302	24Oct13 1745 by 308		
	171849-2 1 r	mg/l	107	80.0-120	W45391	24Oct13 1451 by 302	24Oct13 1747 by 308		
	Relative Percen	nt Difference:	0.452	25.0	W45391				-
Phosphorus	171860-1 5 r	mg/l	105 ~	75.0-125	S35652	24Oct13 1600 by 311	28Oct13 1229 by 305		**************************************
	171860-1 5 r	mg/l	105	75.0-125	S35652	24Oct13 1600 by 311	28Oct13 1232 by 305		
	Relative Percen	nt Difference:	0.0828	20.0	S35652				
Chloride	171837-1 20	) mg/l	94.4	80.0-120	C16159	24Oct13 1037 by 07	24Oct13 1139 by 07		
	171837-1 20	) mg/l	101	80.0-120	C16159	24Oct13 1037 by 07	24Oct13 1206 by 07		
	Relative Percen	nt Difference:	5.45	10.0	C16159				
Sulfate	171837-1 20	) mg/l	94.5	80.0-120	C16159	24Oct13 1037 by 07	24Oct13 1139 by 07		
	171837-1 20	) mg/l	103	80.0-120	C16159	24Oct13 1037 by 07	24Oct13 1206 by 07		
	Relative Percent	it Difference:	8.91	10.0	C16159				



# **LABORATORY BLANK RESULTS**

				QC			
Analyte	Result	RL	PQL	Sample	Preparation Date	Analysis Date	Qual
Total Dissolved Solids	< 10 mg/l	10	10	W45403-1	25Oct13 1401 by 302	28Oct13 1555 by 285	-
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45391-1	24Oct13 1451 by 302	24Oct13 1739 by 308	
Carbonaceous BOD 5-day	< 2.0 mg/l	2.0	2.0	W45385-1	24Oct13 0908 by 285	29Oct13 1004 by 285	
Total Suspended Solids	< 4 mg/l	4	4	W45402-1	25Oct13 1318 by 285	28Oct13 1000 by 285	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35652-1	24Oct13 1600 by 311	28Oct13 1222 by 305	
Chloride	< 0.2 mg/l	0.2	0.2	C16159-1	24Oct13 1037 by 07	24Oct13 1046 by 07	
Sulfate	< 0.2 mg/l	0.2	0.2	C16159-1	24Oct13 1037 by 07	24Oct13 1046 by 07	
Oil and Grease	< 2 mg/l	2	5	B8622-1	28Oct13 0911 by 295	28Oct13 1637 by 295	
Fecal Coliform	< 1 /100ml	1	1	M4066-1		24Oct13 1532 by 295	



					_																	1 OF 1
Client:	El Domdo	Chemical Company		:	PO	No.		NO				ANA	LYSE	SREC	QUEST	red .			_			NTROL NO:
Projec	+ El Dolado	Chemical Company		1 -	┨			OF	i	i	8		]	-	1				1			1860
Refere	ence: Daily -	Permit AR0000752		1	├—			В		i	Total Phosphoru	i	l			ļ				1	AIC PRO	OPOSAL NO:
Projec	t			<del>-</del>	1	MATR	ıx l	Ö	SS	<u>L</u>	Įĕ	ľ									Carrier:	
Manag	ger: Ms. La	rken Pennington			W			T	BOD, TSS	Soli	<u> </u>		1		1			İ			Carner	Gold Star
Sampl			G	С	A	s		T	ଜୁ	ပြ	te			1			1		ľ		Receive	d Temperature C
By: AIC	MAKCN.	ennuation	R	0	T	0		L	ਹ	'	-						]			1		1.7
	Sample	Date/Time/	Α	М	Ε	1		E	1		NH3N,	•						1				<del></del>
No.	Identification	Collected	В	Р	R			S	ļ	<u> </u>	ΙŻ									<u>.</u>		Remarks
	010	10/23/12-1424/13		X	×			1	х													-
⊋.	010	10/24/13	x		х			.1		х												
1	010	10/23/13-10/24/13		Х	X			1			х								-			
		753					$\dashv$		-		<del> </del>		<del>                                     </del>	+	_	<del>                                     </del>	-	_	ļ	-	<del> </del>	<del> </del>
				. ,			İ					1			]		İ	ľ		Ì	1.	
				•						:												
	<u>-</u> .			1.																	Field pH	calibration
		Container Type		- 1					Ρ	Ρ,	Р					<b>.</b>					on	@
	,	Preservative							NO	T.	S										Buffer:	
	G = Gla		-				V = V			_				(CI to	•				T = S	odium	Thiosulfa	ite
T	NO = no		ric ac	id pl	12		N = N		acid p				B = 1		lo pH1	2				inc ac	etate	
	ound Time Requeste							ľ	Relind By:	quishè	d			i .	Time			Rece	ived			Date/Time
	MAL or EXPEDITE							ı	By: \	Кo.i	. On.	•	ميام	lah	ulin	11:10	am	By:				
	ted results requested nould AIC contact wi			<del></del>		-		}	<u>/</u>	W	ente	un	ANY	<del></del>		`	_	<u> </u>			<del></del>	
	870-312-1752 Fax:	in questions.							Relino	quisne	a	1	U	Date/	Time				ived in	Lab		Date/Time /6-24-13
	Attention to:	Ms. Larken Pennin	nton	A				ľ	Ву:									Ву:		11.	<del>/-</del>	· ·
	Address to:	Post Office Box 23						ŀ	Comn	nents:		-		L				_ <i>Lu</i>	pe-	-#7	<u> </u>	/350
٠.٠٠		El Dorado, AR 717							<b>J</b> ORNI	ieilis.												
		Lpennington@edc-		om								•										
					_												•					

FORM 0060



Client: El Dorado Chemical Company PO No.  OF Project Reference: Weekly - Permit AR0000752 Project Sampled No. Identification Ool To Joseph Market Type No. Identification Ool To Joseph Market Type No. Identification Ool Id																		-			1 OF 1	
Project Manager: Ms. Larken Pennington  MATRIX  B		<b>-</b>			ş	PO	No.					ANAL	YSE	S REQ	UEST	ED						_
Project   Marriary			Chemical Company			1		OF		용										<u> </u>	1/860	
Project   Marriary					4			┨ _	_	🖇				1				ľ		AIC PRO	POSAL NO:	
Received Temperature C   Received Temperature C   Received Temperature C   Received Temperature C   Received Temperature C   Received Temperature C   Received Temperature C   Remarks   Report Address to:   Post Office Box 231   El Dorado, AR 7/1731   Remarks   Report Address to:   Post Office Box 231   El Dorado, AR 7/1731   Remarks   Report Address to:   Post Office Box 231   El Dorado, AR 7/1731   Remarks   Report Address to:   Post Office Box 231   El Dorado, AR 7/1731   Remarks   Report Address to:   Post Office Box 231   El Dorado, AR 7/1731   Remarks   Report Address to:   Post Office Box 231   El Dorado, AR 7/1731   Remarks   Report Address to:   Post Office Box 231   El Dorado, AR 7/1731   Remarks   Report Address to:   Post Office Box 231   El Dorado, AR 7/1731   Remarks   Received Temperature C   Received Temperature C   Received Temperature C   Remarks   Received Temperature C   Remarks   Received Temperature C   Remarks   Received Temperature C   Remarks   Received Temperature C   Remarks   Remark			- Permit AR000075	2		┨.		1	) š										1			٠
Sample   Date/Time   A   M   E   I   E   S   E			d			$\overline{}$	IATRIX	10	₹						l	1	1	1		Carrier:		
Sample   Date/Time   A   M   E   I   E   S   E		er. Ms. Lan	ken Pennington			l W		1 1	2	8		1 i						1				
2 010 10/12/2 Sp. X X X 1 X 1 X 1 X 1 X 1 X 1 X 1 X 1 X	Ву:	lolyken	Kennyoton	R	0			1 '		CIS										Received	J Temperature C	
2 010 10/10/2 Sow X X X 1 1 X 1 X 1 I X I X		Sample	Date/Time							8				Í		1	1					
Container Type  Container Type  Preservative  G = Glass  P = Plastic  NO = none  S = Sulfuric acid pH2  Turnaround Time Requested: (Please circle)  NORMAL or EXPEDITED IN  DAYS  Expedited results requested by:  Who should AIC contact with questions:  Phone 870-312-1752 Fax:  Report Atdress to:  Post Office Box 231  El Dorado, AR 71731  Field pH calibration  on  Buffer:  T = Sodium Thiosulfate  Z = Zinc acetate  By:  Relinquished  By:  Received in Lab  By:  Comments:  Comments:	No.	Identification	Collected	В	_P	R		<u>  s</u>		F	<u> </u>						j				Remarks	
Container Type  Container Type  Preservative  G = Glass  P = Plastic  NO = none  S = Sulfuric acid pH2  Turnaround Time Requested: (Please circle)  NORMAL or EXPEDITED IN  DAYS  Expedited results requested by:  Who should AIC contact with questions:  Phone 870-312-1752 Fax:  Report Atdress to:  Post Office Box 231  El Dorado, AR 71731  Field pH calibration  on  Buffer:  T = Sodium Thiosulfate  Z = Zinc acetate  By:  Relinquished  By:  Received in Lab  By:  Comments:  Comments:	2	010	10/24/19 955 aw	×	<i>j</i>	x		1	x						1							
Container Type Preservative S NO Preservative S NO Field pH calibration on  Field pH calibration	ユ	010	10/21/12 Sam	х		х		1		Х.											<del>*************************************</del>	7
Container Type   P P   On					i																	_
Container Type   P P   On					$\dashv$			<del>                                     </del>				<del>                                     </del>		<del> </del>		<u> </u>	<del> </del>	<b></b>				_
Container Type   P P   On	_													<u>L</u>						ŀ		
Container Type   P P   On							_								,							
Container Type   P P   On					1																	
Container Type   P P   On																				Ciald at t		1
Preservative  G = Glass			Container Type	$\dashv$	-	$\overline{}$	+	╁╾╌┤	_								+	-				$\dashv$
G = Glass P = Plastic V = VOA vials H = HCI to pH2 T = Sodium Thiosulfate N = Nitric acid pH2 N = Nitric acid pH2 B = NaOH to pH12 Z = Zinc acetate  Turnaround Time Requested: (Please circle)  NORMAL or EXPEDITED IN DAYS  Expedited results requested by:  Who should AIC contact with questions:  Phone 870-312-1752 Fax:  Report Address to:  Post Office Box 231  EI Dorado, AR 71731  T = Sodium Thiosulfate Z = Zinc acetate  T = Sodium Thiosulfate Z = Zinc acetate  Date/Time By:  Received By:  Date/Time By:  Place Time By:  Comments:				$\rightarrow$	+	<del></del>	-	<del> </del>									<del> </del> -				@	
NO = none S = Sulfuric acid pH2 N = Nitric acid pH2 B = NaOH to pH12 Z = Zinc acetate  Turnaround Time Requested: (Please circle)  NORMAL or EXPEDITED IN DAYS  Expedited results requested by:  Who should AIC contact with questions:  Phone 870-312-1752 Fax:  Report Attention to: Ms. Larken Pennington  Report Address to: Post Office Box 231  EI Dorado, AR 71731		G = Gla			-			لي		NO			11 1		1.20	<u></u>	L	لِـلِ				4
Turnaround Time Requested: (Please circle)  NORMAL or EXPEDITED IN DAYS  Expedited results requested by:  Who should AIC contact with questions:  Phone 870-312-1752 Fax:  Report Attention to:  Relinquished By:  Relinquished By:  Relinquished By:  Relinquished By:  Relinquished By:  Relinquished By:  Relinquished By:  Relinquished By:  Received in Lab By:  / 0 - 2 4 - 1 3  Report Address to:  Post Office Box 231  El Dorado, AR 71731					id ol	<b>-1</b> 2				- <b>⊔</b> 2				-		2					te	
NORMAL or EXPEDITED IN DAYS  Expedited results requested by:  Who should AIC contact with questions:  Phone 870-312-1752 Fax:  Report Attention to:  Report Address to:  Post Office Box 231  EI Dorado, AR 71731   By:    Date/Time   By:   Date/Time   By:   Date/Time   By:   Date/Time   By:   Date/Time   By:   Comments:   Comme	Turnar			io ac	iu pi	12					<u></u>		<u> </u>				Door		inc ace		Data (Fine	٦
Expedited results requested by:  Who should AIC contact with questions:  Phone 870-312-1752 Fax:  Report Attention to:  Report Address to:  Post Office Box 231  EI Dorado, AR 71731   MMMMMM  Post Office Box 231  EI Dorado, AR 71731   MMMMMM  Post Office Box 231  EI Dorado, AR 71731	NOR	MAL or EXPEDITE	DIN DAYS					- 1	Rv- (			, ,	1			win		iveu		}	Date/Time	
Who should AIC contact with questions:  Phone 870-312-1752 Fax:  Report Attention to:  Report Address to:  Post Office Box 231  El Dorado, AR 71731  Relinquished  Date/Time  By:  Received in Lab  By:  Comments:	Expedi	ted results requested	bv:					1	Uy.	h	link	MAN	den	10/2	24/1:	i wan	Бу.				1	
Phone 870-312-1752 Fax:  Report Attention to:  Ms. Larken Pennington  Report Address to:  Post Office Box 231  El Dorado, AR 71731  By:  Comments:  By:    10-24-13	Who sl	hould AIC contact wit	h questions:		<del></del>		_	- 1	Relin			WALANA O	7			<u> </u>	Reco	ivad in	Lah		Date/Time	$\dashv$
Report Address to: Post Office Box 231 Comments:  El Dorado, AR 71731			· · · · · · · · · · · · · · · · · · ·		,					7210110	_		,	Jaker	·		BV.	1450 II)	Lau		10-24-17	
Report Address to: Post Office Box 231 Comments:  El Dorado, AR 71731			Ms. Larken Pennin	aton	,												137/1	ر ربحته	1/201	time 1	1376	
El Dorado, AR 71731	-								Comn	nents:							(2)	<del></del>				
	•							i														
Section 1					om <sup>'</sup>																	

FORM 0060



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

This report contains the analytical results and supporting information for samples submitted on October 25, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

John Overbey
Laboratory Director

This document has been distributed to the following:

PDF cc: El Dorado Chemical Company

ATTN: Ms. Larken Pennington lpennington@edc-ark.com

El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc. ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com



### **SAMPLE INFORMATION**

#### **Project Description:**

Two (2) water sample(s) received on October 25, 2013 Daily-Permit AR0000752 P.O. No. 357042

#### **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest. Ice chest #1 was delivered with a custody seal intact and signed

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

### **Sample Identification:**

Laboratory ID	Client Sample ID	Sampled Date/Time Notes
171908-1	010 10/24/13 955 10/25/13 955	25-Oct-2013 0955
171908-2	010 10/25/13 955	25-Oct-2013 0955

#### Qualifiers:

D Result is from a secondary dilution factor

#### References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

<sup>&</sup>quot;Standard Methods for the Examination of Water and Wastewaters", 21st edition.

<sup>&</sup>quot;American Society for Testing and Materials" (ASTM).

<sup>&</sup>quot;Association of Analytical Chemists" (AOAC).



### **ANALYTICAL RESULTS**

AIC No. 171908-1

Sample Identification: 010 10/24/13 955 10/25/13 955

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillat	ion	2.2	0.5	mg/l	D
SM 4500-NH3 B,G	Prep: 25-Oct-2013 1441 by 308	Analyzed: 28-0	Oct-2013 0942 by 308	Batch: W45401	Dil: 5
Carbonaceous BOD 5-day SM 5210 B	Prep: 25-Oct-2013 1501 by 285	< 2 Analyzed: 30-0	2 Oct-2013 1106 by 285	<b>mg/l</b> Batch: W45398	
Total Suspended Solids USGS 3765	Prep: 28-Oct-2013 1427 by 285	<b>10</b> Analyzed: 29-0	4 Oct-2013 1053 by 285	<b>mg/l</b> Batch: W45417	
<b>Phosphorus</b> EPA 200.7	Prep: 28-Oct-2013 0925 by 271	<b>0.10</b> Analyzed: 28-0	0.02 Oct-2013 1816 by 305	<b>mg/l</b> Batch: S35664	
Nitrate as N EPA 300.0	Prep: 25-Oct-2013 1503 by 07	11 Analyzed: 25-0	0.5 Oct-2013 1659 by 07	<b>mg/l</b> Batch: C16164	D Dil: 10

AIC No. 171908-2

Sample Identification: 010 10/25/13 955

Analyte	Result	RL	Units	Qualifier
Fecal Coliform	<del>-</del> <del>&lt; 1</del>	1	/100ml	
SM 9222 D	Analyzed: 25-Oct	-2013 1512 by 304	Batch: M4071	



### **DUPLICATE RESULTS**

					RPD				
Analyte		AIC No.	Result	RPD	Limit	Preparation Date	Analysis Date	Dil	Qual
Carbonaceous BOD 5-day		171851-1	< 2.0 mg/l			25Oct13 0810 by 285	30Oct13 0949 by 285		
	Batch: W45398	Duplicate	< 2.0 mg/l	0.00	20.0	25Oct13 0810 by 285	30Oct13 0951 by 285		
Total Suspended Solids		171897-1	< 4 mg/l			28Oct13 1427 by 285	29Oct13 1053 by 285		
	Batch: W45417	Duplicate	< 4 mg/l	0.00	20.0	28Oct13 1428 by 285	29Oct13 1053 by 285		
Total Suspended Solids		171898-1	< 4 mg/l			28Oct13 1427 by 285	29Oct13 1053 by 285		
	Batch: W45417	Duplicate	< 4 mg/l	0.00	20.0	28Oct13 1428 by 285	29Oct13 1053 by 285		

# **LABORATORY CONTROL SAMPLE RESULTS**

Analyte	Spike Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	95.0	80.0-120			W45401	25Oct13 1037 by 308	25Oct13 1601 by 308		
Carbonaceous BOD 5-day	200 mg/l	100	84.5-115			W45398	25Oct13 0810 by 285	30Oct13 0947 by 285		
Phosphorus	5 mg/l	104	85.0-115			S35664	28Oct13 0926 by 271	28Oct13 1743 by 305		
Nitrate as N	4 mg/l	91.8	90.0-110			C16164	25Oct13 1504 by 07	25Oct13 1539 by 07		

### **MATRIX SPIKE SAMPLE RESULTS**

Analyte	Spike Sample Amoun	t %	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	171861-1 1 mg/l	98.7	80.0-120	W45401	25Oct13 1037 by 308	25Oct13 1605 by 308		
	171861-1 1 mg/l	113	80.0-120	W45401	25Oct13 1037 by 308	25Oct13 1607 by 308		
	Relative Percent Diffe	erence: 12.9	25.0	W45401				
Phosphorus	171894-1 5 mg/l	106	75.0-125	S35664	28Oct13 0926 by 271	28Oct13 1746 by 305		
	171894-1 5 mg/l	106	75.0-125	S35664	28Oct13 0926 by 271	28Oct13 1749 by 305		
	Relative Percent Diffe	erence: 0.149	20.0	S35664				
Nitrate as N	171908-1 4 mg/l	90.5	80.0-120	C16164	25Oct13 1504 by 07	25Oct13 1606 by 07		
	171908-1 4 mg/l	91.2	80.0-120	C16164	25Oct13 1504 by 07	25Oct13 1633 by 07		
	Relative Percent Diffe	erence: 0.568	10.0	C16164		_		

### **LABORATORY BLANK RESULTS**

				QC			
Analyte	Result	RL	PQL	Sample	Preparation Date	Analysis Date	Qual
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45401-1	25Oct13 1037 by 308	25Oct13 1559 by 308	
Carbonaceous BOD 5-day	< 2.0 mg/l	2.0	2.0	W45398-1	25Oct13 0810 by 285	30Oct13 0946 by 285	
Total Suspended Solids	< 4 mg/l	4	4	W45417-1	28Oct13 1428 by 285	29Oct13 1053 by 285	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35664-1	28Oct13 0926 by 271	28Oct13 1740 by 305	
Nitrate as N	< 0.05 mg/l	0.05	0.05	C16164-1	25Oct13 1504 by 07	25Oct13 1513 by 07	
Fecal Coliform	< 1 /100ml	1	1	M4071-1		25Oct13 1512 by 295	



					PO	Nio		INO	i ······		<del>y</del> -	A 510	L VOE				·		=			1 OF 1 🔬	m."
Client Projec	El Dorado	Chemical Company				INO.		NO OF	1	o -		ANA	LYSE	SREC	DUEST	ED	<u> </u>	1	T	T		NTROL NO:	
Reference: Daily - Permit AR0000752						В	1 13	Coli. F	<b>* 1</b>		#6	1					}			OPOSAL NO:			
Project			MATRIX			0	120	F. (-	ほぼ		TE SECOND			1	İ		1	1	Carrier:				
Mana Samp	lad 1	rken Pennington		_	W		Τ	<b>₽</b> ₹₩ ≅	₹ 7			1							İ	Carrier.	Gold Star		
Запір Ву:	1 arken	Pennyration	G R	00	A	S		T	City Character	0	<b>23</b>		<b>1</b>	1						ł	Receive	d Temperature	$\overline{c}$
AIC	Sample	Date/Time	A	М				L E	96 0	-	1	<b>©</b>	E									0,1,0	
No.	Identification	Collected	В	Р	ER	انا		S	9	)	老		15	1	l					ŀ		_	
l	010	10/24/11/0/25/13		Х	х			1	Х			†	9	<b> </b>				<del> </del> -	<del> </del>			Remarks	
2,	010	10/25/13	Х		х			1		x		<del>                                     </del>							-				
1	010	10/24/13-19/2/13		х	Х			1			×	<u> </u>			<del> </del>			-	<del> </del>				
		15.52		-							<u> </u>	<del> </del>		<del> </del>	<del>                                     </del>		-	<del> </del>	+-	_			
														<u> </u>	<u> </u>						1		
					ļ						!									ļ			
		0-11			:	_					,										Field pH	calibration	
		Container Type							Р	Р	P	<u> </u>			ļ				L		on	@	
	G = Gla	Preservative			<u></u>		<u>_</u> _		NO	T	S		Ļ	<u> </u>							Buffer:		
						viais acid p	,ua				ICI to		•		T = Sodium Thiosulfate								
Turnaround Time Requested: (Please circle)				• •		Relinq		d	B = NaOH to pH12  Date/Time						Z = Zinc acetate  Received Date/Time								
NORMAL or EXPEDITED IN DAYS  Expedited results requested by:					By: 10/25/13 10:00 By:									Date/Time									
Who should AIC contact with questions:				Ī	Relinquished Date/Time Received in La								Lah		Date/Time								
Phone 870-312-1752 Fax:						By:											Date/Time 10/25/13						
Report Attention to: Ms. Larken Pennington Report Address to: Post Office Box 231						Lamm?										Du	1330	Ì					
El Dorado, AR 71731					ľ	Comm	ents:	1									1						
		Lpennington@edc-	ark.c	<u>om</u>	1		<u> </u>		<del></del>		- '	<del></del> _				· · · · · · · · · · · · · · · · · · ·							
											ι											FORM 0060	



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

This report contains the analytical results and supporting information for samples submitted on October 26, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

hn Overbey boratory Directør

This document has been distributed to the following:

PDF cc: El Dorado Chemical Company ATTN: Ms. Larken Pennington Ipennington@edc-ark.com

> El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

> El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc. ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com



October 31, 2013 Control No. 171927 Page 2 of 4

El Dorado Chemical Company 4500 North West Avenue El Dorado, AR 71730

#### SAMPLE INFORMATION

#### **Project Description:**

Two (2) water sample(s) received on October 26, 2013 Daily - Permit AR0000752 P.O. No. 357042

#### **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest. Ice chest #1 was delivered with a custody seal intact and signed

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

### **Sample Identification:**

Laboratory ID	Client Sample ID	Sampled Date/Time Notes
171927-1	010 10-26-13 0945	26-Oct-2013 0945
171927-2	010 10-26-13 0945	26-Oct-2013 0945

#### Qualifiers:

D Result is from a secondary dilution factor

### References:

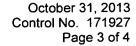
"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

"Standard Methods for the Examination of Water and Wastewaters", 21st edition.

"Association of Analytical Chemists" (AOAC).

<sup>&</sup>quot;American Society for Testing and Materials" (ASTM).





## **ANALYTICAL RESULTS**

AIC No. 171927-1

Sample Identification: 010 10-26-13 0945

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distilla SM 4500-NH3 B,G	tion Prep: 28-Oct-2013 1302 by 93	<b>2.1</b> Analyzed: 28-0	0.5 ct-2013 1724 by 302	mg/l Batch: W45411	D Dil: 5
Carbonaceous BOD 5-day SM 5210 B	Prep: 26-Oct-2013 1338 by 285	< <b>2</b> Analyzed: 31-0	2 ct-2013 1109 by 271	<b>mg/l</b> Batch: W45406	
Total Suspended Solids USGS 3765	Prep: 29-Oct-2013 1417 by 285	<b>9.2</b> Analyzed: 31-0	4 ct-2013 1450 by 285	<b>mg/l</b> Batch: W45433	
Phosphorus EPA 200.7	Prep: 28-Oct-2013 1646 by 271	<b>0.099</b> Analyzed: 29-0	0.02 ct-2013 1226 by 305	<b>mg/l</b> Batch: S35669	

**AIC No.** 171927-2

Sample Identification: 010 10-26-13 0945

Analyte	Result RL	Units	Qualifier
Fecal Coliform	<b>32</b> 3	/100ml	
SM 9222 D	Analyzed: 26-Oct-2013 1400 by	304 Batch: M4072	Dil: 2.5



## **DUPLICATE RESULTS**

					RPD				
Analyte	<u> </u>	AIC No.	Result	RPD	Limit	Preparation Date	Analysis Date	Dil	Qual
Carbonaceous BOD 5-day		171926-1	< 2 mg/l			26Oct13 1338 by 285	31Oct13 1104 by 271		- —
	Batch: W45406	Duplicate	< 2 mg/l	0.00	20.0	26Oct13 1338 by 285	31Oct13 1106 by 271		
Total Suspended Solids		171926-1	11 mg/l			29Oct13 1417 by 285	31Oct13 1450 by 285		
	Batch: W45433	Duplicate	11 mg/l	3.64	20.0	29Oct13 1417 by 285	31Oct13 1450 by 285		
Total Suspended Solids		171927-1	9.2 mg/l			29Oct13 1417 by 285	31Oct13 1450 by 285		
	Batch: W45433	Duplicate	10 mg/l	8.33	20.0	29Oct13 1417 by 285	31Oct13 1450 by 285		

## **LABORATORY CONTROL SAMPLE RESULTS**

Analyte	Spike Amount	· %	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	116	80.0-120			W45411	28Oct13 1040 by 93	28Oct13 1637 by 302		
Carbonaceous BOD 5-day	200 mg/l	86.4	84.5-115			W45406	26Oct13 1338 by 285	31Oct13 1102 by 271		
Phosphorus	5 mg/l	104	85.0-115			S35669	28Oct13 1646 by 271	29Oct13 1207 by 305		

## **MATRIX SPIKE SAMPLE RESULTS**

		Spike							
Analyte	Sample	Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	171923-1	1 mg/l	94.1	80.0-120	W45411	28Oct13 1040 by 93	28Oct13 1640 by 302		
	171923-1	1 mg/l	97.0	80.0-120	W45411	28Oct13 1040 by 93	28Oct13 1642 by 302		
	Relative Pe	rcent Difference:	2.24	25.0	W45411				
Phosphorus	171923-2	5 mg/l	103	75.0-125	S35669	28Oct13 1646 by 271	29Oct13 1210 by 305		
	171923-2	5 mg/l	103	75.0-125	S35669	28Oct13 1646 by 271	29Oct13 1213 by 305		
	Relative Pe	rcent Difference:	0.192	20.0	S35669				

## **LABORATORY BLANK RESULTS**

Analyte	Result	RL	PQL	QC Sample	Preparation Date	Analysis Date	Qual
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45411-1	28Oct13 1040 by 93	28Oct13 1635 by 302	
Carbonaceous BOD 5-day	< 2 mg/l	2	2	W45406-1	26Oct13 1338 by 285	31Oct13 1101 by 271	
Total Suspended Solids	< 4 mg/l	4	4	W45433-1	29Oct13 1417 by 285	31Oct13 1450 by 285	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35669-1	28Oct13 1646 by 271	29Oct13 1204 by 305	
Fecal Coliform	< 1 /100ml	1	1	M4072-1		26Oct13 1400 by 310	



<u> </u>		<del></del>	<del></del>		PO	N.		Taic		- }									<del></del>		1 OF 1
Client: Projec		o Chemical Company				NO.		NO OF		Γ	Ę	<u>ANA</u>	LYSE	SREC	DUES	TED		<del>-</del>		AIC CO	NTROL NO:
Refere Projec	ence: Daily	- Permit AR0000752			<del> -</del>			В	ဖွ		NH3N, Total Phosphoru										OPOSAL NO:
Manag	ger: Ms. La	arken Pennington			W	/ATF	RIX 	O	BOD, TSS	Coli. F	a P									Carrier	Gold Star
Sampl By: AIC	JAKTAIN		G R	CO	A	S		T	880	ŏ	to t				1					Receive	ed Temperature C
	Sample Identification	Date/Time Collected	A B	MP	E R	l L		E S			NH3										Remarks
	010	10.26.13 0945		×	Х			1	Х												Kemarks
2	010	10.26.13 6945	Х	1	X			1		x											
1	010	10.26.13 0945		X	X			1			×										·
																1 1			1		
	·	,																			
	<b></b>	O THE T	_		_															Field pH	calibration
		Container Type Preservative	<del></del>			$\dashv$			Р	Ρ,	Р			<b>_</b>		<u> </u>				on	@
	G = GI	ass P = Plasti	<del></del>				<del></del>	/OA \	NO	T	S						!			Buffer:	
	NO ≃ r	one S = Sulfur		id p⊦	12				acid p	H2				dCl to place		2			Sodium Zinc ac	Thiosulf	ate
MORI	ound Time Request MAL or EXPEDITE ed results requeste	ed: (Please circle) ED IN DAYS		4					Reling		d	14	, _	Date/	Time		Red By:	ceived	ZIIIC ac	etate	Date/Time
Who sh Phone	nould AIC contact w 870-312-1752 Fax; Attention to:	ith questions:		1		_			Relinq By:	uishe	d d			/ <i>O-6</i> Date/	Time	/ )	Red By:	eived i	in Lab	5L1310	Date/Time (0・26・13 (2・40
	Address to:	Ms. Larken Penning Post Office Box 231 El Dorado, AR 717; Lpennington@edc-a	31	om.				ļ	Comm	ents:		_		<u> </u>	<u> </u>		1_2'	Mez	Hot	<u>~</u>	1 12.40



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

This report contains the analytical results and supporting information for samples submitted on October 27, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

Jøhn Overbey Læboratory Directør

This document has been distributed to the following:

PDF cc: El Dorado Chemical Company

ATTN: Ms. Larken Pennington lpennington@edc-ark.com

El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc. ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com



### **SAMPLE INFORMATION**

#### **Project Description:**

Two (2) water sample(s) received on October 27, 2013 Daily - Permit AR0000752 P.O. No. 357042

#### **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest. Ice chest #1 was delivered with a custody seal intact and signed

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

#### Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time Notes
171931-1	010 10-27-13 0940	27-Oct-2013 0940
171931-2	010 10-27-13 0940	27-Oct-2013 0940

## **Case Narrative:**

There were no qualifiers for this data and all samples met quality control criteria.

#### References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

"Standard Methods for the Examination of Water and Wastewaters", 21st edition.

"American Society for Testing and Materials" (ASTM).

"Association of Analytical Chemists" (AOAC).



## **ANALYTICAL RESULTS**

AIC No. 171931-1

Sample Identification: 010 10-27-13 0940

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distilla SM 4500-NH3 B,G 1997	tion Prep: 28-Oct-2013 1302 by 93	1.8 Analyzed: 28-0	0.1 ct-2013 1659 by 302	mg/l Batch: W45411	
Carbonaceous BOD 5-day SM 5210 B 2001	Prep: 28-Oct-2013 1421 by 285	3.0 Analyzed: 02-N	2 ov-2013 1458 by 285	<b>mg/l</b> Batch: W45416	
Total Suspended Solids USGS 3765	Prep: 29-Oct-2013 1417 by 285	<b>8.8</b> Analyzed: 31-0	4 ct-2013 1450 by 285	<b>mg/l</b> Batch: W45433	
Phosphorus EPA 200.7	Prep: 28-Oct-2013 1646 by 271	<b>0.13</b> Analyzed: 29-0	0.02 ct-2013 1242 by 305	<b>mg/l</b> Batch: S35669	

**AIC No.** 171931-2

Sample Identification: 010 10-27-13 0940

Analyte	Result	RL	Units	Qualifier
Fecal Coliform	32	1	/100ml	
SM 9222 D 1997	Analyzed: 27-Oct-2	013 1315 by 304	Batch: M4073	



### **DUPLICATE RESULTS**

				RPD				
Analyte	AIC No.	Result	RPD	Limit	Preparation Date	Analysis Date	Dil	Qual
Carbonaceous BOD 5-day	171928-1	< 2 mg/l			28Oct13 1421 by 285	02Nov13 1452 by 285		
Batch: W454	6 Duplicate	< 2 mg/l	0.00	20.0	28Oct13 1421 by 285	02Nov13 1453 by 285		
Total Suspended Solids	171926-1	11 mg/l			29Oct13 1417 by 285	31Oct13 1450 by 285		
Batch: W454	3 Duplicate	11 mg/l	3.64	20.0	29Oct13 1417 by 285	31Oct13 1450 by 285		
Total Suspended Solids	171927-1	9.2 mg/l			29Oct13 1417 by 285	31Oct13 1450 by 285		
Batch: W4543	3 Duplicate	10 mg/l	8.33	20.0	29Oct13 1417 by 285	31Oct13 1450 by 285		

## **LABORATORY CONTROL SAMPLE RESULTS**

Analyte	Spike Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	116	80.0-120		_ =====	W45411	28Oct13 1040 by 93	28Oct13 1637 by 302	<del></del>	
Carbonaceous BOD 5-day	200 mg/l	109	84.5-115			W45416	28Oct13 1421 by 285	02Nov13 1450 by 285		
Phosphorus	5 mg/l	104	85.0-115			S35669	28Oct13 1646 by 271	29Oct13 1207 by 305		

## MATRIX SPIKE SAMPLE RESULTS

		Spike							
Analyte	Sample	Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dii	Qual
Ammonia as N with Distillation	171923-1	1 mg/l	94.1	80.0-120	W45411	28Oct13 1040 by 93	28Oct13 1640 by 302	. —	
	171923-1	1 mg/l	97.0	80.0-120	W45411	28Oct13 1040 by 93	28Oct13 1642 by 302		
	Relative Pe	rcent Difference:	2.24	25.0	W45411				
Phosphorus	171923-2	5 mg/l	103	75.0-125	S35669	28Oct13 1646 by 271	29Oct13 1210 by 305		
	171923-2 Relative Pe	5 mg/l rcent Difference:	103 0.192	75.0-125 20.0	S35669 S35669	28Oct13 1646 by 271	29Oct13 1213 by 305		
	I VEISTIAC L.C.	icent binerence.	0.192	20.0	333009				

## **LABORATORY BLANK RESULTS**

and the second section of the second section of the second section of the second section secti				QC			
Analyte	Result	RL	PQL	Sample	Preparation Date	Analysis Date	Qual
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45411-1	28Oct13 1040 by 93	28Oct13 1635 by 302	
Carbonaceous BOD 5-day	< 2 mg/l	2	2	W45416-1	28Oct13 1421 by 285	02Nov13 1449 by 285	
Total Suspended Solids	< 4 mg/l	4	4	W45433-1	29Oct13 1417 by 285	31Oct13 1450 by 285	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35669-1	28Oct13 1646 by 271	29Oct13 1204 by 305	
Fecal Coliform	< 1 /100ml	1	1	M4073-1		27Oct13 1315 by 310	



<del></del>				.,	·		<del></del>		·	ا									<u> </u>		1 OF 1
Client	El Dorad	o Chemical Company	,	4	PO	No.		NO OF		Γ	<u>=</u>	ANAI	YSE:	S REC	UEST	ED			γ		NTROL NO:
Projec	t .			-,	1		l	-			Ē							ĺ			OPOSAL NO:
Refere	ence: Daily	Permit AR0000752						В	တ္တ		dso										
Projec		adean Daniel			_	IATR	XIX	0	CBOD, TS	Щ	E E		1							Carrier:	
Manag Sampl	od	arken Pennington			W			T	O C	SO.	ia l			1	1	1 1	İ				Gold Star
By: AIC	SAFTAIN		G R	0 0	A   T	S O		<u> </u>	Ö		NH3N, Total Phosphoru	•								Receive	d Temperature C
	Sample	Date/Time	A	М	Ε	Ī		Ē			E										1.
No.	Identification	Collected	В	Р	R	L		s			Įż			L.						-	Remarks
	010	10-27-13 0940		X	х			1	X												
۲	010	10-27-13 0940	х	*	X			1		х											
	010	10-27-13 0940		X	х			1			×										
																			1		
									·												
				*																	
																				Field pH	calibration
		Container Type		1					Ρ	Р	P								-	on	@
		Preservative					L		NO	T	S						l			Buffer:	
	G = G						V = V		-					(C) to		-				Thiosulfa	ite
Turnar	NO = r ound Time Request		ric ac	ia pi	12	-	N = N		acid p			4 1	B = N	laOH t		2			inc ac		
	MAL or EXPEDIT			!				1	Reline	inishe	7			Date/	ime			eived			Date/Time
Expedi	ted results requeste	ed by:		)				- [	By:	()	( )	W	,	//>-	27-	3	Ву:				<del></del>
	nould AIC contact w					_		-	Relind	uishe	4			Date/		<u> </u>	Pec	aivad is	a Lab.	/	DataCima
	870-312-1752 Fax:	•		,					By:	10.00	•						Bv.	CIVEU II	1 2	HOID	10.27-17
_	Attention to:	Ms. Larken Penning		į.													126	Pol	12.	~_	Date/Time 10 · 27 · 13 1230
Report	Address to:	Post Office Box 231 El Dorado, AR 717 Lpennington@edc-	31						Comm	nents:							-13-9-	بالتبوط . ا .	<del>,</del>	<del></del> _	/.0_
	<del></del>	Eponington@edc-	01 N.C	יווי														<del></del>			



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

This report contains the analytical results and supporting information for samples submitted on October 28, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

John Overbey | Laboratory Director

This document has been distributed to the following:

PDF cc: El Dorado Chemical Company

ATTN: Ms. Larken Pennington Ipennington@edc-ark.com

El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc. ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com



### **SAMPLE INFORMATION**

#### **Project Description:**

Two (2) water sample(s) received on October 28, 2013 Daily-Permit AR0000752 P.O. No. 357042

### **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest. Ice chest #1 was delivered with a custody seal intact and signed

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

#### Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time Notes
171949-1	010 10/27/13 955 10/28/13 955	28-Oct-2013 0955
171949-2	010 10/28/13 955	28-Oct-2013 0955

### Qualifiers:

D Result is from a secondary dilution factor

#### References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

"Standard Methods for the Examination of Water and Wastewaters", 21st edition.

"Association of Analytical Chemists" (AOAC).

<sup>&</sup>quot;American Society for Testing and Materials" (ASTM).



## **ANALYTICAL RESULTS**

AIC No. 171949-1

Sample Identification: 010 10/27/13 955 10/28/13 955

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distilla SM 4500-NH3 B,G 1997	tion Prep: 30-Oct-2013 1314 by 93	1.6 Analyzed: 31-C	0.1 Oct-2013 1530 by 93	mg/l Batch: W45446	
Carbonaceous BOD 5-day SM 5210 B 2001	Prep: 30-Oct-2013 0834 by 285	< <b>2</b> Analyzed: 04-N	2 lov-2013 1024 by 285	<b>mg/l</b> Batch: W45440	
Total Suspended Solids USGS 3765	Prep: 29-Oct-2013 1417 by 285	<b>11</b> Analyzed: 31-C	4 Oct-2013 1450 by 285	<b>mg/l</b> Batch: W45433	•
Phosphorus EPA 200.7	Prep: 29-Oct-2013 0850 by 311	<b>0.12</b> Analyzed: 29-C	0.02 Oct-2013 1817 by 305	<b>mg/l</b> Batch: S35670	
Nitrate as N EPA 300.0	Prep: 28-Oct-2013 1555 by 07	<b>12</b> Analyzed: 28-C	0.5 Oct-2013 1952 by 07	<b>mg/l</b> Batch: C16165	D Dil: 10

**AIC No.** 171949-2

Sample Identification: 010 10/28/13 955

Analyte	Result	RL	Units	Qualifier
Fecal Coliform	< 1	1	/100ml	
SM 9222 D 1997	Analyzed: 28-O	ct-2013 1443 by 304	Batch: M4076	



## **DUPLICATE RESULTS**

					RPD				
Analyte		AIC No.	Result	RPD	Limit	<b>Preparation Date</b>	Analysis Date	Dil	Quai
Total Suspended Solids		171926-1	11 mg/l			29Oct13 1417 by 285	31Oct13 1450 by 285		
	Batch: W45433	Duplicate	11 mg/l	3.64	20.0	29Oct13 1417 by 285	31Oct13 1450 by 285		
Total Suspended Solids		171927-1	9.2 mg/l			29Oct13 1417 by 285	31Oct13 1450 by 285		
	Batch: W45433	Duplicate	10 mg/l	8.33	20.0	29Oct13 1417 by 285	31Oct13 1450 by 285		
Carbonaceous BOD 5-day		171944-1	< 2 mg/l			30Oct13 0834 by 285	04Nov13 1019 by 285		
	Batch: W45440	Duplicate	< 2 mg/l	0.00	20.0	30Oct13 0834 by 285	04Nov13 1021 by 285		

## **LABORATORY CONTROL SAMPLE RESULTS**

Analyte	Spike Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	108	80.0-120			W45446	30Oct13 1314 by 93	31Oct13 1519 by 93		
Carbonaceous BOD 5-day	200 mg/l	92.4	84.5-115			W45440	30Oct13 0834 by 285	04Nov13 1018 by 285		
Phosphorus	5 mg/l	106	85.0-115			S35670	29Oct13 0850 by 311	29Oct13 1647 by 305		
Nitrate as N	4 mg/l	98.2	90.0-110			C16165	28Oct13 1555 by 07	28Oct13 1831 by 07		

## **MATRIX SPIKE SAMPLE RESULTS**

	•	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
171990-1	1 mg/l	97.9	80.0-120	W45446	30Oct13 1314 by 93	31Oct13 1652 by 93	2	D
171990-1	1 mg/l	101	80.0-120	W45446	30Oct13 1314 by 93	31Oct13 1654 by 93	2	D
Relative Perce	ent Difference:	1.38	25.0	W45446				D
171945-2	5 mg/l	103	75.0-125	S35670	29Oct13 0850 by 311	29Oct13 1651 by 305		
171945-2	5 mg/l	103	75.0-125	S35670	29Oct13 0850 by 311	29Oct13 1654 by 305		
Relative Perce	ent Difference:	0.0781	20.0	S35670				
171949-1	4 mg/l	99.0	80.0-120	C16165	28Oct13 1555 by 07	28Oct13 1858 by 07		
171949-1	4 mg/l	98.6	80.0-120	C16165	28Oct13 1555 by 07	28Oct13 1925 by 07		
Relative Perce	ent Difference:	0.251	10.0	C16165				
	Sample 171990-1 171990-1 Relative Perce 171945-2 Relative Perce 171949-1 171949-1	171990-1 1 mg/l 171990-1 1 mg/l Relative Percent Difference: 171945-2 5 mg/l 171945-2 5 mg/l Relative Percent Difference: 171949-1 4 mg/l	Sample         Amount         %           171990-1         1 mg/l         97.9           171990-1         1 mg/l         101           Relative Percent Difference:         1.38           171945-2         5 mg/l         103           171945-2         5 mg/l         103           Relative Percent Difference:         0.0781           171949-1         4 mg/l         99.0           171949-1         4 mg/l         98.6	Sample         Amount         %         Limits           171990-1         1 mg/l         97.9         80.0-120           171990-1         1 mg/l         101         80.0-120           Relative Percent Difference:         1.38         25.0           171945-2         5 mg/l         103         75.0-125           171945-2         5 mg/l         103         75.0-125           Relative Percent Difference:         0.0781         20.0           171949-1         4 mg/l         99.0         80.0-120           171949-1         4 mg/l         98.6         80.0-120	Sample         Amount         %         Limits         Batch           171990-1         1 mg/l         97.9         80.0-120         W45446           171990-1         1 mg/l         101         80.0-120         W45446           Relative Percent Difference:         1.38         25.0         W45446           171945-2         5 mg/l         103         75.0-125         S35670           171945-2         5 mg/l         103         75.0-125         S35670           Relative Percent Difference:         0.0781         20.0         S35670           171949-1         4 mg/l         99.0         80.0-120         C16165           171949-1         4 mg/l         98.6         80.0-120         C16165	Sample         Amount         %         Limits         Batch         Preparation Date           171990-1         1 mg/l         97.9         80.0-120         W45446         30Oct13 1314 by 93           171990-1         1 mg/l         101         80.0-120         W45446         30Oct13 1314 by 93           Relative Percent Difference:         1.38         25.0         W45446         30Oct13 1314 by 93           171945-2         5 mg/l         103         75.0-125         S35670         29Oct13 0850 by 311           171945-2         5 mg/l         103         75.0-125         S35670         29Oct13 0850 by 311           Relative Percent Difference:         0.0781         20.0         S35670         29Oct13 0850 by 311           171949-1         4 mg/l         99.0         80.0-120         C16165         28Oct13 1555 by 07           171949-1         4 mg/l         98.6         80.0-120         C16165         28Oct13 1555 by 07	Sample         Amount         %         Limits         Batch         Preparation Date         Analysis Date           171990-1         1 mg/l         97.9         80.0-120         W45446         300ct13 1314 by 93         310ct13 1652 by 93           171990-1         1 mg/l         101         80.0-120         W45446         300ct13 1314 by 93         310ct13 1654 by 93           Relative Percent Difference:         1.38         25.0         W45446         290ct13 0850 by 311         290ct13 1651 by 305           171945-2         5 mg/l         103         75.0-125         S35670         290ct13 0850 by 311         290ct13 1654 by 305           Relative Percent Difference:         0.0781         20.0         S35670         290ct13 1555 by 07         280ct13 1858 by 07           171949-1         4 mg/l         99.0         80.0-120         C16165         280ct13 1555 by 07         280ct13 1925 by 07	Sample         Amount         %         Limits         Batch         Preparation Date         Analysis Date         Dil           171990-1         1 mg/l         97.9         80.0-120         W45446         30Oct13 1314 by 93         31Oct13 1652 by 93         2           171990-1         1 mg/l         101         80.0-120         W45446         30Oct13 1314 by 93         31Oct13 1654 by 93         2           Relative Percent Difference:         1.38         25.0         W45446         29Oct13 0850 by 311         29Oct13 1651 by 305           171945-2         5 mg/l         103         75.0-125         S35670         29Oct13 0850 by 311         29Oct13 1654 by 305           Relative Percent Difference:         0.0781         20.0         S35670         29Oct13 0850 by 311         29Oct13 1654 by 305           171949-1         4 mg/l         99.0         80.0-120         C16165         28Oct13 1555 by 07         28Oct13 1858 by 07           171949-1         4 mg/l         98.6         80.0-120         C16165         28Oct13 1555 by 07         28Oct13 1925 by 07

## **LABORATORY BLANK RESULTS**

				QC			
Analyte	Result	RL	PQL	Sample	Preparation Date	Analysis Date	Qual
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45446-1	30Oct13 1314 by 93	31Oct13 1518 by 93	
Carbonaceous BOD 5-day	< 2 mg/l	2	2	W45440-1	30Oct13 0834 by 285	04Nov13 1017 by 285	
Total Suspended Solids	< 4 mg/l	4	4	W45433-1	29Oct13 1417 by 285	31Oct13 1450 by 285	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35670-1	29Oct13 0850 by 311	29Oct13 1644 by 305	
Nitrate as N	< 0.05 mg/l	0.05	0.05	C16165-1	28Oct13 1555 by 07	28Oct13 1644 by 07	
Fecal Coliform	< 1 /100ml	1	1	M4076-1		28Oct13 1443 by 295	



	<del></del>			<u> </u>	_						1									PAGE	1 OF 1
Client	El Doca	do Chemical Company		-	PO	No.		NO	<u></u>	<del></del>		ANAL	LYSE	S REQ	UEST	ED			····	AIC CO	NTROL NO:
Projec		10 Chemical Company		<del></del>	┨			OF	2	ļ .	S			1				-		1	71949
Refere		- Permit AR0000752		, ¥	<b> </b>		<del></del> -	1 2	2		Phosphoru		ŀ							AIC PR	OPOSAL NO:
Projec	ct				1 1	MATE	RIX	١٥	Ţ	L '	<u> </u> ጀ						1			Carrier:	<del></del>
Manag		arken Pennington		·	w			1 т	ا ا	Coli. F	∯ He										Gold Star
Sampl By: AIC	2 Lliken	Runnaton	G R	0	T	S			CBOD, TSS, NO, TI	ŏ	:  <del>}-</del> -									Receive	ed Temperature (
No.	Sample Identification	Date/Time 3	[ A ]	M		] !		E		]	NH3N,						1				
140.			В	Р	R	┝┶	<del> </del>	S	<b> </b>		Z	-		<del> </del>				<b> </b>	ļ		Remarks
<u> </u>	010	182715142813 955-955	<u> </u>	X	X			1	×	·	]										
	010	10 22 13	X		×			1		х											
	010	19/27/17-19/28/13		Х	Х			1			×									<u> </u>	
														:	_						· -
	-	<del></del>	<del></del>				$\vdash$		<del> </del> -	├─-		<del>  </del>	- /				<del></del>				
	<del> </del>																<u> </u>				
;																				Field pH	calibration
	ļ	Container Type	Ш,	لنب		Ш	Щ		Р	Ρ	Р									on	@
<b></b>		Preservative		لِب	Ш	ئــــــــــــــــــــــــــــــــــــــ		لا	NO	T	S									Buffer:	
	G = G NO =				ua.		V = /							ICI to p		_				Thiosulfa	ate
Turnar	ound Time Reques	none S = Sulfur sted: (Please circle)	nc ac	ila pi	12		<u>N = I</u>		acid p					Date/		2	1	Z = Zi	nc ace	etate	T
NOR	MAL or EXPEDIT	TED IN DAYS								7				i	-		Rece	ived			Date/Time
	ited results requeste								<b>一</b> 人	anV	onli	nnwa	alle	(0)	28/13	310:00	Ву:				ļ
	hould AIC contact v							Ì	Relinq	uishe	d	7	<del>)                                    </del>	Date/			Rece	ived in	Lab		Date/Time
	870-312-1752 Fax:								By:								By:			_	10/28/13
•	Attention to:	Ms. Larken Penning	_					l					<u>.</u>					im	ms [	سک	1415
Report	Address to:	Post Office Box 231		,					Comm	nents:									1		
		El Dorado, AR 717							ı									1	'	•	
		Lpennington@edc-a	<u>ark.c</u> ∕	<u>om</u>																	



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

This report contains the analytical results and supporting information for samples submitted on October 29, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

hn Overbey boratory Director

This document has been distributed to the following:

PDF cc: El Dorado Chemical Company ATTN: Ms. Larken Pennington lpennington@edc-ark.com

> El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

> El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@qbmcassoc.com

GBMc & Associates, Inc.

ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com

November 4, 2013 Control No. 171993 Page 2 of 5

El Dorado Chemical Company 4500 North West Avenue El Dorado, AR 71730

### **SAMPLE INFORMATION**

#### **Project Description:**

Two (2) water sample(s) received on October 29, 2013 Daily-Permir AR0000752 Weekly-Permit AR0000752 P.O. No. 357042

#### **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest. Ice chest #1 was delivered with a custody seal intact and signed

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

### **Sample Identification:**

Laboratory ID	Client Sample ID	Sampled Date/Time Notes
171993-1	010 10/28/13 955 10/29/13 955	29-Oct-2013 0955
171993-2	010 10/29/13 955	29-Oct-2013 0955

#### Qualifiers:

D Result is from a secondary dilution factor

#### References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

<sup>&</sup>quot;Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

<sup>&</sup>quot;Standard Methods for the Examination of Water and Wastewaters", 21st edition.

<sup>&</sup>quot;American Society for Testing and Materials" (ASTM).

<sup>&</sup>quot;Association of Analytical Chemists" (AOAC).



## **ANALYTICAL RESULTS**

**AIC No.** 171993-1

Sample Identification: 010 10/28/13 955 10/29/13 955

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillat SM 4500-NH3 B,G 1997	tion Prep: 30-Oct-2013 1314 by 93	<b>1.6</b> Analyzed: 31-0	0.1 Oct-2013 1542 by 93	mg/l Batch: W45446	
Carbonaceous BOD 5-day SM 5210 B 2001	Prep: 30-Oct-2013 0834 by 285	< 2 Analyzed: 04-N	2 lov-2013 1037 by 285	<b>mg/l</b> Batch: W45440	
Total Suspended Solids USGS 3765	Prep: 01-Nov-2013 1351 by 285	<b>11</b> Analyzed: 04-N	4 lov-2013 0936 by 285	<b>mg/l</b> Batch: W45479	
Phosphorus EPA 200.7	Prep: 30-Oct-2013 0953 by 311	<b>0.10</b> Analyzed: 31-0	0.02 Oct-2013 1536 by 305	<b>mg/l</b> Batch: S35680	

**AIC No.** 171993-2

Sample Identification: 010 10/29/13 955

Analyte		Result	RL	Units	Qualifier
Total Dissolved Solids SM 2540 C 1997	Prep: 30-Oct-2013 1613 by 285	<b>260</b> Analyzed: 31-0	10 Oct-2013 1438 by 285	mg/l Batch: W45452	
Chloride EPA 300.0	Prep: 29-Oct-2013 1613 by 07	<b>21</b> Analyzed: 29-0	0.2 Oct-2013 2353 by 07	<b>mg/l</b> Batch: C16168	
Sulfate EPA 300.0	Prep: 29-Oct-2013 1613 by 07	<b>35</b> Analyzed: 29-0	0.2 Oct-2013 2353 by 07	<b>mg/l</b> Batch: C16168	
Oil and Grease EPA 1664A	Prep: 30-Oct-2013 0844 by 295	< <b>5</b> Analyzed: 30-0	5 Oct-2013 1119 by 295	<b>mg/l</b> Batch: B8627	
Fecal Coliform SM 9222 D 1997		< 1 Analyzed: 29-0	1 Oct-2013 1510 by 21	/100ml Batch: M4080	



## **DUPLICATE RESULTS**

					RPD				
Analyte		AIC No.	Result	RPD	Limit	Preparation Date	Analysis Date	Dil	Qual
Carbonaceous BOD 5-day		171944-1	< 2 mg/l			30Oct13 0834 by 285	04Nov13 1019 by 285		
	Batch: W45440	Duplicate	< 2 mg/l	0.00	20.0	30Oct13 0834 by 285	04Nov13 1021 by 285		
Total Dissolved Solids		171989-1	870 mg/l			30Oct13 1613 by 285	31Oct13 1438 by 285		
	Batch: W45452	Duplicate	840 mg/l	3.52	10.0	30Oct13 1614 by 285	31Oct13 1438 by 285		
Total Dissolved Solids		171990-2	620 mg/l			30Oct13 1613 by 285	31Oct13 1438 by 285		
	Batch: W45452	Duplicate	650 mg/l	5.99	10.0	30Oct13 1614 by 285	31Oct13 1438 by 285		
Total Suspended Solids	•	171985-1	26 mg/l			01Nov13 1351 by 285	04Nov13 0936 by 285		
	Batch: W45479	Duplicate	25 mg/l	1.57	20.0	01Nov13 1352 by 285	04Nov13 0936 by 285		
Total Suspended Solids		171989-1	45 mg/l			01Nov13 1351 by 285	04Nov13 0936 by 285		
	Batch: W45479	Duplicate	45 mg/l	0.889	20.0	01Nov13 1352 by 285	04Nov13 0936 by 285		

## **LABORATORY CONTROL SAMPLE RESULTS**

Analyte	Spike Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	108	80.0-120			W45446	30Oct13 1314 by 93	31Oct13 1519 by 93		
Carbonaceous BOD 5-day	200 mg/l	92.4	84.5-115			W45440	30Oct13 0834 by 285	04Nov13 1018 by 285		
Phosphorus	5 mg/l	105	85.0-115			S35680	30Oct13 0954 by 311	31Oct13 1508 by 305		
Chloride	20 mg/l	98.6	90.0-110			C16168	29Oct13 1614 by 07	29Oct13 1804 by 07		
Sulfate	20 mg/l	101	90.0-110			C16168	29Oct13 1614 by 07	29Oct13 1804 by 07		
Oil and Grease	40 mg/l 40 mg/l	90.5 82.5	78.0-114 78.0-114	9.25	20.0	B8627 B8627	30Oct13 0844 by 295 30Oct13 0844 by 295	30Oct13 1119 by 295 30Oct13 1119 by 295		

## **MATRIX SPIKE SAMPLE RESULTS**

Analyte	Sample	Spike Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	171990-1	1 mg/l	97.9	80.0-120	W45446	30Oct13 1314 by 93	31Oct13 1652 by 93	2	D
	171990-1	· 1 ·mg/l	-101	80.0-120	W45446	30Oct13:1314 by 93	31Oct13 1654 by 93	- 2	D
	Relative Pe	rcent Difference:	1.38	25.0	W45446				D
Phosphorus	171989-1	5 mg/l	105	75.0-125	S35680	30Oct13 0954 by 311	31Oct13 1512 by 305		
	171989-1	5 mg/l	104	75.0-125	S35680	30Oct13 0954 by 311	31Oct13 1516 by 305		
	Relative Pe	rcent Difference:	0.744	20.0	S35680				
Chloride	171989-1	20 mg/l	96.7	80.0-120	C16168	29Oct13 1614 by 07	29Oct13 1831 by 07		
	171989-1	20 mg/l	99.9	80.0-120	C16168	29Oct13 1614 by 07	29Oct13 1858 by 07		
	Relative Pe	rcent Difference:	1.59	10.0	C16168				
Sulfate	171989-1	20 mg/l	100	80.0-120	C16168	29Oct13 1614 by 07	29Oct13 1831 by 07		
	171989-1	20 mg/l	105	80.0-120	C16168	29Oct13 1614 by 07	29Oct13 1858 by 07		
	Relative Pe	rcent Difference:	2.09	10.0	C16168				



## **LABORATORY BLANK RESULTS**

				QC			
Analyte	Result	RL	PQL	Sample	<b>Preparation Date</b>	Analysis Date	Qual
Total Dissolved Solids	< 10 mg/l	10	10	W45452-1	30Oct13 1614 by 285	31Oct13 1438 by 285	
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45446-1	30Oct13 1314 by 93	31Oct13 1518 by 93	
Carbonaceous BOD 5-day	< 2 mg/l	2	2	W45440-1	30Oct13 0834 by 285	04Nov13 1017 by 285	
Total Suspended Solids	< 4 mg/l	4	4	W45479-1	01Nov13 1352 by 285	04Nov13 0936 by 285	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35680-1	30Oct13 0954 by 311	31Oct13 1505 by 305	
Chloride	< 0.2 mg/l	0.2	0.2	C16168-1	29Oct13 1614 by 07	29Oct13 1737 by 07	
Sulfate	< 0.2 mg/l	0.2	0.2	C16168-1	29Oct13 1614 by 07	29Oct13 1737 by 07	
Oil and Grease	< 2 mg/l	2	5	B8627-1	30Oct13 0844 by 295	30Oct13 1119 by 295	
Fecal Coliform	< 1 /100ml	1	1	M4080-1		29Oct13 1302 by 295	



	<del></del>										: 1											1 OF 1	
		_		,	PO	No.		NO			3	ANAL	YSE	S REC	UEST	ED					AIC CO	NTROL NO	D:
Client		o Chemical Company			1			OF			Ş											7190	
Projec				:				l	ſ		黃								1		AIC PR	OPOSAL N	10:
Refer		Permit AR0000752			↓ .			В	SS		Sos				l								
Projec		adon Donoto de o		1		MATR	<u>IX</u>	0	=	Щ.	ا <del>و</del>		ł					1			Carrier:		
Mana		arken Pennington	<del>-</del>	Υ	W	F 1	Ì	ΙŢ	8	Co.	a l		i							1		Gold Sta	
Samp By:	Luncen	Runnaton	G R	0.0	T	s 0		T L	CBOD, TSS	~	NH3N, Total Phosphoru										Receive	d Tempera	ature C
AIC	Sample	Date/Time	Α	M P	Ε	1 1		E.	ļ	i	Ÿ	ŀ				]						•	
No.	Identification	Collected	В	P	R	L		S	<u> </u>	L	Ž	<u> </u>							<u> </u>			Remarks	3
	010	1928/13-1929/13		X	x			1	x														
	010	10/29/13	Х	1	х			1		×													
	010	19413-19913		×	х			1			×												
				-																			
								٠															
	<b>©</b>											7.3											
				1																	Field ph	l calibration	n
		Container Type		-					Р	Р	P										on	@	
		Preservative							20	7	S										Buffer:		
	G = G	lass P = Plast	ic			•	V = V	VOA	vials	•		<u> </u>	H = 1	iCI to	pH2				T≃S	odium	Thiosulf	ate	
	NO = 1		iric a	cid p	H2		N = 1	Nitric	acid	<u>p</u> H2			B = 1	laOH 1	to pH1	2	_		Z = Z	inc ace	etate		
		ted: (Please circle)							Relin	quishe	ed .			Date/	Time			Rece	ived			Date/Tim	е
	MAL or EXPEDIT ited results requeste	ED IN DAYS							By: ر	Ra	Von	EMU.	d'n	(0)	129/1	3 10	ص	Ву:					
	hould AIC contact w			1				ŀ	Relin	duishe	d ·	/	fur	Date/	Time	<u> </u>		Paca	ived in	Lab		DateCim	
	870-312-1752 Fax:	4							By:	4410116	.~	(	J	Date/	111111111111111111111111111111111111111			1		Lau	_	10/29	13
1	Attention to:	Ms. Larken Pennin	aton						<b>-</b>		t							84.	) _	<u> </u>	<b>}</b>	Date/Tim 10129	1901W
	Address to:	Post Office Box 23		:				j	Comr	nents	3								Jun	~\r	<del></del>	132.7	16/29/
•		El Dorado, AR 717		*					····										ı		ı	3	. ,- ,,
		Lpennington@edc		:om							•												



				- 1															PAGE	1 OF 1
				í	PO	No.	NO				ANAL	YSES	REQ	UEST	ED					NTROL NO:
Client	: El Dorado	Chemical Company			1		OF		<del>§</del>											<u> 11993                                  </u>
Projec	7 <b>t</b> 	h. Damit AD000075	_				┨ _	-	/ Week)										AIC PRO	POSAL NO:
Refer Projec	ence: vveeki	ly - Permit AR000075		-	١.	IATRIX	В	e e	(2)										Corrier	
Mana	oer: Ms.la	rken Pennington		1	W	HIRIA	┨╤	(2 / Week)	1										Carrier:	Gold Star
Samp	led		G	¢	A	s	l T		l &										Receive	d Temperature C
By: AIC	Car	Ken fennington	R	Ō	Т	0	L	ဗ	TDS,CI,SO4										(	2,9°C
	Sample	Date/Time	Α	M	E	1	E	_	S,	ļ			i					. I	7	
No.	Identification	Collected	В	Р	R	L.	s		F							ļ <u>.</u>				Remarks
	010	19/29/13 955	X		X		1	×												
	010	10/29/13955	Х		Х		1		Х											
				J																····
							<del>                                     </del>					=				<del> </del>				
ļ	<del></del>			1	-		-				ļ.,					ļ				· · · · · · · · · · · · · ·
				1			Ì													
				+			╁	<b></b>					_					$\dashv$		<del></del>
				!											e	l .				
									,										Field pH	calibration
		Container Type		1				P	Р									_	on	
1	1	Preservative		į				s	NO						<del></del>			-	Buffer:	
	G = GI	ass P = Plasti	c			V =	VOA				·1	H=F	Ci to p	H2	<u> </u>	1	T = Sc	odium	Thiosulfa	ite
	NO = r		ric ac	id pl	<del>1</del> 2	N =	Nitrio	acid				B = N	aOH t	o pH12	2		Z = Zi	nc ace	atate	
	round Time Request			, ,				Relin	quishe	d	_	-	Date/			Rece	ived	•		Date/Time
	RMAL or EXPEDIT			,				Ву:	$\mathcal{H}_{\Lambda_{\Lambda}}$	N. W	) Mul	٠,	10/2	al.	10:00	Ву:				
	ited results requeste			1		_			1 UN	Cent		glib	[2	<u>7113</u>	10:90					
	should AIC contact w	ith questions:		1					quishe	d	(	)	Date/	Time			ived in	Lab		Date/Time 10/29 /13
	e 870-312-1752 Fax: t Attention to:	Ma Ladian Dannia	-4	1				Ву:								BA:	\	$\langle$	<b>)</b> .	10/24/12
	t Address to:	Ms. Larken Penning Post Office Box 231	-					Comr	nents:							<u> </u>	سينا	$\rightarrow \mu$	<del>~</del>	0#/W 12.0°
. tepoi	i rigaress to.	El Dorado, AR 717							c.1165.	ł							ı	V	1	10/01/13
		Lpennington@edc-		<u>om</u>		_				}										



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

This report contains the analytical results and supporting information for samples submitted on October 30, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

John Overbey J aboratory Director

This document has been distributed to the following:

PDF cc

El Dorado Chemical Company ATTN: Ms. Larken Pennington lpennington@edc-ark.com

El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc. ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com



November 5, 2013 Control No. 172029 Page 2 of 4

### **SAMPLE INFORMATION**

#### **Project Description:**

Two (2) water sample(s) received on October 30, 2013 Daily - Permit AR0000752 P.O. No. 357042

#### **Receipt Details:**

A Chain of Custody was provided. The samples were delivered in one (1) ice chest. Ice chest #1 was delivered with a custody seal intact and signed

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

#### Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time	Notes
172029-1	010 10/29/13 955 - 10/30/13 955	30-Oct-2013 0955	
172029-2	010 10/30/13 955	30-Oct-2013 0955	

### Qualifiers:

D Result is from a secondary dilution factor

#### References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

<sup>&</sup>quot;Standard Methods for the Examination of Water and Wastewaters", 21st edition.

<sup>&</sup>quot;American Society for Testing and Materials" (ASTM).

<sup>&</sup>quot;Association of Analytical Chemists" (AOAC).



## **ANALYTICAL RESULTS**

AIC No. 172029-1

Sample Identification: 010 10/29/13 955 - 10/30/13 955

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillar SM 4500-NH3 B,G 1997	tion Prep: 01-Nov-2013 0938 by 93	1.3 Analyzed: 04-N	0.1 lov-2013 1559 by 302	<b>mg/l</b> Batch: W45476	
Carbonaceous BOD 5-day SM 5210 B 2001	Prep: 31-Oct-2013 0822 by 285	< 2 Analyzed: 05-N	2 Nov-2013 1023 by 285	<b>mg/l</b> Batch: W45457	
Total Suspended Solids USGS 3765	Prep: 04-Nov-2013 1035 by 285	<b>12</b> Analyzed: 04-N	4 Nov-2013 1425 by 285	<b>mg/l</b> Batch: W45494	
Phosphorus EPA 200.7	Prep: 30-Oct-2013 1624 by 311	<b>0.10</b> Analyzed: 31-0	0.02 Oct-2013 1625 by 305	<b>mg/l</b> Batch: S35686	
Nitrate as N EPA 300.0	Prep: 30-Oct-2013 1445 by 07	<b>12</b> Analyzed: 30-0	0.5 Oct-2013 1539 by 07	<b>mg/l</b> Batch: C16169	D Dil: 10

**AIC No.** 172029-2

Sample Identification: 010 10/30/13 955

Analyte	Result	RL	Units	Qualifier
Fecal Coliform	< 1	1	/100ml	
SM 9222 D 1997	Analyzed: 30-Od	t-2013 1507 by 21	Batch: M4084	



## **DUPLICATE RESULTS**

					RPD				
Analyte		AIC No.	Result	RPD	Limit	Preparation Date	Analysis Date	Dil	Quai
Carbonaceous BOD 5-day		172015-1	< 2 mg/l			31Oct13 0822 by 285	05Nov13 1012 by 285		
	Batch: W45457	Duplicate	< 2 mg/l	0.00	20.0	31Oct13 0823 by 285	05Nov13 1014 by 285		
Total Suspended Solids		172027-1	6.4 mg/l			04Nov13 1035 by 285	04Nov13 1425 by 285		
	Batch: W45494	Duplicate	6.8 mg/l	6.06	20.0	04Nov13 1036 by 285	04Nov13 1425 by 285		
Total Suspended Solids		172028-1	< 4 mg/l			04Nov13 1035 by 285	04Nov13 1425 by 285		
	Batch: W45494	Duplicate	< 4 mg/l	0.00	20.0	04Nov13 1036 by 285	04Nov13 1425 by 285		

## LABORATORY CONTROL SAMPLE RESULTS

Analyte	Spike Amount	%	Limits	RPD	Limit	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	1 mg/l	103	80.0-120			W45476	01Nov13 0940 by 93	04Nov13 1439 by 302		
Carbonaceous BOD 5-day	200 mg/l	102	84.5-115			W45457	31Oct13 0823 by 285	05Nov13 1010 by 285		
Phosphorus	5 mg/l	107	85.0-115			S35686	30Oct13 1625 by 311	31Oct13 1602 by 305		
Nitrate as N	4 mg/l	103	90.0-110			C16169	30Oct13 1024 by 07	30Oct13 1232 by 07		

## **MATRIX SPIKE SAMPLE RESULTS**

Analyte	Sample	Spike Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	172028-1	1 mg/l	91.1	80.0-120	W45476	01Nov13 0940 by 93	04Nov13 1442 by 302		
	172028-1	1 mg/l	99.5	80.0-120	W45476	01Nov13 0940 by 93	04Nov13 1444 by 302		
	Relative Pe	rcent Difference:	6.01	25.0	W45476				
Phosphorus	172026-1	5 mg/l	109	75.0-125	S35686	30Oct13 1625 by 311	31Oct13 1606 by 305		
	172026-1	5 mg/l	110	75.0-125	S35686	30Oct13 1625 by 311	31Oct13 1610 by 305		
	Relative Pe	rcent Difference:	0.640	20.0	S35686				
Nitrate as N	172011-1	4 mg/l	97.3	80.0-120	C16169	30Oct13 1024 by 07	30Oct13 1258 by 07		
	172011-1	4 mg/l	99.1	80.0-120	C16169	30Oct13 1024 by 07	30Oct13 1325 by 07		
· · · · · · · · · · · · · · · · · · ·	Relative Pe	rcent Difference:	1.83	10.0	C16169				

## **LABORATORY BLANK RESULTS**

				QC			
Analyte	Result	RL	PQL	Sample	<b>Preparation Date</b>	Analysis Date	Qual
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45476-1	01Nov13 0940 by 93	04Nov13 1437 by 302	. ——
Carbonaceous BOD 5-day	< 2 mg/l	2	2	W45457-1	31Oct13 0823 by 285	05Nov13 1009 by 285	
Total Suspended Solids	< 4 mg/l	4	4	W45494-1	04Nov13 1036 by 285	04Nov13 1425 by 285	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35686-1	30Oct13 1625 by 311	31Oct13 1559 by 305	
Nitrate as N	< 0.05 mg/l	0.05	0.05	C16169-1	30Oct13 1024 by 07	30Oct13 1205 by 07	
Fecal Coliform	< 1 /100ml	1	1	M4084-1		30Oct13 1346 by 21	



<u></u>				<del>-</del>	<del></del>				!								PAGE 1 OF 1
Client	. Fl Dorad	o Chemical Company		:  P	O No.		10 10				NALYSE	SREC	UEST	ED		· · · · · · · · · · · · · · · · · · ·	AIC CONTROL NO:
Projec	et <u>Croorac</u>	o Chemical Company		+		١١	OF [	<b>,</b>		동			1			1 1	172029
Refere		Permit AR0000752					в	CBOD, TSS,NO3N	1	Total Phosphoru	1					1 1	AIC PROPOSAL NO:
Projec	at Table 1		****		MATR	ux I	ō	Žļ	니;	۾ ا						1 1	Carrier:
Manag		arken Pennington		一	w		Τ	တ္က ၂ မ	<u> </u>	<u>e</u>		ŀ			1	1 1	Gold Star
Sampl	led   O ole	2- 1-	G		AS		τ [	7 1 3	;   ک	<u> </u>		1	]			1 1	Received Temperature C
Ву:	Luren	Peninaton	R		T O		L	ğ [			l					1	1
AIC	Sample	Date/Time	<u>A</u>		E   I			<u>წ</u>		ZH3Z	Ī						
No.	Identification	Collected	В	P	R L		<u>s  </u>	_		Z		<u> </u>					Remarks
	010	10/29/13-10/30/13		<b>x</b> :	×		1	X									
Ĵ	010	10/30/12	x		×		1	×	(								
1	010	10/29/13/10/30/13		x   :	×		1		;	×							
							T										
						_				十		<del>                                     </del>			<del> </del>		
			-			-				_					-	$\downarrow \downarrow \downarrow$	
	<u> </u>						$\perp$										
									_								Field pH calibration
		Container Type			-			P F		>					1		on @
		Preservative		_[_[_				T   O		S [							Buffer:
	G = G!					V = VC						ICI to p					dium Thiosulfate
Tuener	NO = r	none S = Sulfu	nc acid	pH2		N = Nit		id pH2			<u>B</u> = N	aOH t		2			c acetate
NOD	ound Time Request MAL or EXPEDIT	eo: (Please circle)						elinquis	hed	`		Date/			Rece	ived	Date/Time
NON: Evnedi	ted results requeste	ED IN DAYS					lRA	: Ko	La Mo	n 1h	mighn	10	30/13	10:00	Ву:		
Who el	hould AIC contact w	ith supptions:		-			-	U W	<u> </u>	1110					1		
	870-312-1752 Fax;	ioi questions:		;			By	elinquis	ned			Date/	Ime		Rece	ived in L	Date/Time 10-30-13 1340
	Attention to:	Ms. Larken Pennin	nton				lea	•	•						By: /		- Aug 1340
	Address to:	Post Office Box 23	-				5	mmen	to:		<del></del> .	<u> </u>				you-	-N-7 5 /340
-1		El Dorado, AR 717						cn									
		Lpennington@edc-		n													
	- <del></del>								<del></del>								li li



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

This report contains the analytical results and supporting information for samples submitted on October 31, 2013. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Laboratory Director or a qualified designee.

Jøhn Overbey | Læboratory Directør

This document has been distributed to the following:

PDF cc: El Dorado Chemical Company

ATTN: Ms. Larken Pennington lpennington@edc-ark.com

El Dorado Chemical Company ATTN: Mr. David Sartain dsartain@edc-ark.com

El Dorado Chemical Company ATTN: Mr. Kyle Wimsett kwimsett@edc-ark.com

GBMc & Associates, Inc. ATTN: Mr. Russell McLaren rmclaren@gbmcassoc.com

GBMc & Associates, Inc. ATTN: Ms. Amanda Gallagher agallagher@gbmcassoc.com



#### **SAMPLE INFORMATION**

#### **Project Description:**

Two (2) water sample(s) received on October 31, 2013 Daily / Weekly - Permit AR0000752 P.O. No. 357042

#### Receipt Details:

A Chain of Custody was provided. The samples were delivered in one (1) ice chest.

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

#### Sample Identification:

Laboratory ID	Client Sample ID	Sampled Date/Time Notes
172072-1	010 10/30/13 955 10/31/13 955	31-Oct-2013 0955
172072-2	010 10/31/13 955	31-Oct-2013 0955

#### **Case Narrative:**

There were no qualifiers for this data and all samples met quality control criteria.

#### References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

<sup>&</sup>quot;Standard Methods for the Examination of Water and Wastewaters", 21st edition.

<sup>&</sup>quot;American Society for Testing and Materials" (ASTM).

<sup>&</sup>quot;Association of Analytical Chemists" (AOAC).



## **ANALYTICAL RESULTS**

**AIC No.** 172072-1

Sample Identification: 010 10/30/13 955 10/31/13 955

Analyte		Result	RL	Units	Qualifier
Ammonia as N with Distillat SM 4500-NH3 B,G 1997	tion Prep: 01-Nov-2013 0938 by 93	1.4 Analyzed: 04-N	0.1 Nov-2013 1620 by 302	mg/l Batch: W45476	
Carbonaceous BOD 5-day SM 5210 B 2001	Prep: 31-Oct-2013 1548 by 285	< 2 Analyzed: 05-1	2 Nov-2013 1044 by 285	<b>mg/l</b> Batch: W45457	
Total Suspended Solids USGS 3765	Prep: 04-Nov-2013 1035 by 285	<b>12</b> Analyzed: 04-1	4 Nov-2013 1425 by 285	<b>mg/l</b> Batch: W45494	
Phosphorus EPA 200.7	Prep: 31-Oct-2013 1647 by 271	<b>0.10</b> Analyzed: 01-N	0.02 Nov-2013 1720 by 235	<b>mg/l</b> Batch: S35691	

AIC No. 172072-2

Sample Identification: 010 10/31/13 955

Analyte	·	Result	RL	Units	Qualifier
Total Dissolved Solids SM 2540 C 1997	Prep: 31-Oct-2013 1614 by 302	<b>220</b> Analyzed: 01-No	10 ov-2013 1528 by 302	<b>mg/l</b> Batch: W45464	
Chloride EPA 300.0	Prep: 31-Oct-2013 1534 by 07	<b>20</b> Analyzed: 31-O	0.2 ct-2013 1644 by 07	<b>mg/l</b> Batch: C16171	
Sulfate EPA 300.0	Prep: 31-Oct-2013 1534 by 07	31 Analyzed: 31-O	0.2 ct-2013 1644 by 07	<b>mg/l</b> Batch: C16171	
Oil and Grease EPA 1664A	Prep: 01-Nov-2013 0821 by 295	< 5 Analyzed: 01-No	5 ov-2013 1622 by 295	<b>mg/l</b> Batch: B8629	
Fecal Coliform SM 9222 D 1997		<b>20</b> Analyzed: 31-Od	1 ct-2013 1605 by 21	<b>/100ml</b> Batch: M4086	



## **DUPLICATE RESULTS**

Analyte		AIC No.	Result	RPD	RPD Limit	Preparation Date	Analysis Date	Dil	Qual
Oil and Grease	Batch: B8629	172016-2 Duplicate	< 5 mg/l < 5 mg/l	0.00	20.0	01Nov13 0821 by 295 01Nov13 1454 by 295	01Nov13 1622 by 295 01Nov13 1622 by 295		
Carbonaceous BOD 5-day	Batch: W45457	172015-1 Duplicate	< 2 mg/l < 2 mg/l	0.00	20.0	31Oct13 0822 by 285 31Oct13 0823 by 285	05Nov13 1012 by 285 05Nov13 1014 by 285		
Total Dissolved Solids	Batch: W45464	172051-1 Duplicate	< 10 mg/l < 10 mg/l	0.00	10.0	31Oct13 1614 by 302 31Oct13 1616 by 302	01Nov13 1528 by 302 01Nov13 1528 by 302		
Total Dissolved Solids	Batch: W45464	172065-2 Duplicate	890 mg/l 890 mg/l	0.112	10.0	31Oct13 1614 by 302 31Oct13 1616 by 302	01Nov13 1528 by 302 01Nov13 1528 by 302		
Total Suspended Solids	Batch: W45494	172027-1 Duplicate	6.4 mg/l 6.8 mg/l	6.06	20.0	04Nov13 1035 by 285 04Nov13 1036 by 285	04Nov13 1425 by 285 04Nov13 1425 by 285		
Total Suspended Solids	Batch: W45494	172028-1 Duplicate	< 4 mg/l < 4 mg/l	0.00	20.0	04Nov13 1035 by 285 04Nov13 1036 by 285	04Nov13 1425 by 285 04Nov13 1425 by 285		

## **LABORATORY CONTROL SAMPLE RESULTS**

Amalista	Spike	0/	1 toutes	DDD		D-4-1-	B	A d. ada mada		
Analyte Ammonia as N with Distillation	Amount 1 mg/l	<u> </u>	Limits 80.0-120	RPD	_ <u>Limit</u>	Batch W45476	Preparation Date 01Nov13 0940 by 93	Analysis Date 04Nov13 1439 by 302	Dil	Qual
Ammonia as N With Distillation	r mg/r	103	00.0-120			VV45476	0 1110V 13 0940 by 93	04NOV13 1439 by 302		
Carbonaceous BOD 5-day	200 mg/l	102	84.5-115			W45457	31Oct13 0823 by 285	05Nov13 1010 by 285		
Phosphorus	5 mg/l	105	85.0-115			S35691	31Oct13 1648 by 271	01Nov13 1606 by 235		
Chloride	20 mg/l	104	90.0-110			C16171	31Oct13 1121 by 07	31Oct13 1258 by 07		
Sulfate	20 mg/l	106	90.0-110			C16171	31Oct13 1121 by 07	31Oct13 1258 by 07		
Oil and Grease	40 mg/l	98.0	78.0-114			B8629	01Nov13 0821 by 295	01Nov13 1622 by 295		
	40 mg/l	98.0	78.0-114	0.00	20.0	B8629	01Nov13 0821 by 295	01Nov13 1622 by 295		

## **MATRIX SPIKE SAMPLE RESULTS**

		Spike							
Analyte	Sample	Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Ammonia as N with Distillation	172028-1	1 mg/l	91.1	80.0-120	W45476	01Nov13 0940 by 93	04Nov13 1442 by 302		
	172028-1	1 mg/l	99.5	80.0-120	W45476	01Nov13 0940 by 93	04Nov13 1444 by 302		
	Relative Pe	rcent Difference:	6.01	25.0	W45476				
Phosphorus	172073-1	5 mg/l	106	75.0-125	S35691	31Oct13 1648 by 271	01Nov13 1609 by 235		
	172073-1	5 mg/l	106	75.0-125	S35691	31Oct13 1648 by 271	01Nov13 1612 by 235		
	Relative Pe	rcent Difference:	0.719	20.0	S35691				
Chloride	172046-1	20 mg/l	102	80.0-120	C16171	31Oct13 1121 by 07	31Oct13 1325 by 07		
	172046-1	20 mg/l	104	80.0-120	C16171	31Oct13 1121 by 07	31Oct13 1352 by 07		
	Relative Pe	rcent Difference:	0.948	10.0	C16171				
Sulfate	172046-1	20 mg/l	111	80.0-120	C16171	31Oct13 1121 by 07	31Oct13 1325 by 07		
	172046-1	20 mg/l	106	80.0-120	C16171	31Oct13 1121 by 07	31Oct13 1352 by 07		
	Relative Pe	rcent Difference:	2.49	10.0	C16171				



## **LABORATORY BLANK RESULTS**

				QC			
Analyte	Result	RL	PQL	Sample	Preparation Date	Analysis Date	Qual
Total Dissolved Solids	< 10 mg/l	10	10	W45464-1	31Oct13 1616 by 302	01Nov13 1528 by 302	. —
Ammonia as N with Distillation	< 0.1 mg/l	0.1	0.1	W45476-1	01Nov13 0940 by 93	04Nov13 1437 by 302	
Carbonaceous BOD 5-day	< 2 mg/l	2	2 ·	W45457-1	31Oct13 0823 by 285	05Nov13 1009 by 285	
Total Suspended Solids	< 4 mg/l	4	4	W45494-1	04Nov13 1036 by 285	04Nov13 1425 by 285	
Phosphorus	< 0.02 mg/l	0.02	0.02	S35691-1	31Oct13 1648 by 271	01Nov13 1603 by 235	
Chloride	< 0.2 mg/l	0.2	0.2	C16171-1	31Oct13 1121 by 07	31Oct13 1418 by 07	
Sulfate	< 0.2 mg/l	0.2	0.2	C16171-1	31Oct13 1121 by 07	31Oct13 1418 by 07	
Oil and Grease	< 2 mg/l	2	5	B8629-1	01Nov13 0821 by 295	01Nov13 1622 by 295	
Fecal Coliform	< 1 /100ml	1	1	M4086-1		31Oct13 1427 by 295	



																			1 OF 1 12	
O!:4	51.5				PO	No.	NC				ANAL	YSES	REQ	UEST	ED			4	AIC CON	ITROL NO:
Client: Project		Chemical Company	<u> </u>		┨		OF			5		i i								2072 POSAL NO:
Refere		Permit AR0000752			<u> </u>		$\dashv$ <sub>B</sub>	l w		gb									AICPRO	POSAL NO:
Project					l N	IATRIX		ŢŜ	L.	နို								1	Carrier:	
Manag		ken Pennington			W		٦τ	اق	S. j	la			ļ		]		ľ	1		Gold Star
Sample	ed Invk	Runington	G		A	S	T	CBOD, TSS	0	1º								1	Received	Temperature C
By: AIC	Sample	Date/Time	R	О М	T	0	L	0	,	Z.		1								
	Identification	Collected	В	P	R		s			NH3N, Total Phosphoru								į	ĺ	Remarks
)	010	10/3413-1931/13		х	х		1	×												
2	010	10/31/13955	X		x		1		×											
	010	10/30/13-10/31/10		Х	х		1			х										
																	<b> </b>			
		<u>u</u>					+													
							_		ļ							-	+	<u> </u>		
	! <del>- · · · · · · · · · · · · · · · · · · ·</del>									<u> </u>							ļ	ļ		
																			Field pH	calibration
		Container Type						Р	Р	Р									on	@
		Preservative						NO	T	s									Buffer:	
	G = Gla NO = no	one S = Sulfu		id pl	H2 .		= VOA = Nitrio		pH2				ICI to place		2			odium Inc ac	n Thiosulfa etate	te
	ound Time Requeste	ed: (Please circle)						Relin	quishe	ed			Date/	Time		Rec	eived			Date/Time
	MAL or EXPEDITE							By:	Yn.	Vosil	اه یوا	١	101	21/	310:00	Ву:				
	ted results requested					_			000	CONCH	1000g				<u> </u>					
	nould AIC contact wi 870-312-1752 Fax:	in questions:							quishe	a	J	,	Date/	Time			eived ii	n Lab		Date/Time
	Attention to:	Ms. Larken Pennin	note					Ву:								By:				
	Address to:	Post Office Box 23						Comr	nents:				1			1			_	
•		El Dorado, AR 717																		
		Lpennington@edc-	ark.c	<u>om</u>					•											



																			PAGE	1 01 1		
				PO I	No.	NO		ANALYSES REQUESTED									AIC ÇON	TROL NO:				
Client: El Dorado Chemical Company			]		OF		3			T					Ì			てひり				
Project			<u> </u>			l _	ĕ						1 1					POSAL NO	<del>)</del> :			
Reference: Weekly - Permit AR0000752					B O	(2 / Week)	(2 / Week)					ł										
Project			<del></del>	ATRIX		§					1				1		Carrier:					
Manager: Ms. Larken Pennington			W		T	2 /	🛪 ˈ		•				l [		l			Gold Star				
Sampled		2	G	C	A	s	T		) S,		l		ľ				1		Received	Temperati	ure C	
Ву:	Wrken	Penaination	R		T	0	L	8	TDS,CI,SO4	İ				1				1		<u> </u>		
		Date/Time_	Α	М	E R	1	E		8					i								
No.	Identification	Collected	В	Р	R	_L	s		-	<u> </u>	<u> </u>		<u> </u>				<u> </u>			Remarks		
5	010	10/31/13	X		x		1	Х														
2	010	(0(31/13955	Х		×		1		X													
																1				· ·		
											-											
-							ļ						ļ				<u> </u>					
	•								,													
									,													
																			Field old	calibration		
		Container Type	Container Type					Р	P	<del>-  </del>		<del> </del>	<del>                                     </del>	-								
	·				-+	<del> </del>							-						on	@	— I	
	C = Clas	Preservative					بيا	S	NO		لـــــا		<u> </u>	L			لبيا		Buffer:			
1	G = Glass P = Plastic V = VOA																	T = Sodium Thiosulfate Z = Zinc acetate				
														laOH to pH12				nc ace		<del> </del>		
NORMAL or EXPEDITED IN DAYS							Relinquished									Received			Date/Time			
Expedited results requested by:								By: Lauler Rright					10/31/13 10:00			By:						
Who should AIC contact with questions:														<u> </u>	(3, 00					<del></del>		
Who should AIC contact with questions:								Relinquished Date/Time								Received in Lab  By: 10-31-13  1330					12	
Phone 870-312-1752 Fax:								By: By: Lyer H								1	_	10-21-1	ا د			
Report Attention to: Ms. Larken Pennington								Comments:									119	الاس	1530			
Report Address to: Post Office Box 231							Comr	nents:							•							
El Dorado, AR 71731																						
Lpennington@edc-ark.com																	_					

Origin ID: ELDA

Fed €xx.

From: (870) 863-1125 C Larken Pennington EL DORADO CHEMICAL COMPANY

El Dorado, AR 71730

**BILL SENDER** 

SHIP TO: (870) 863-1484 **ADEQ - Water Division Enforcement ADEQ - Water Division Enforcement 5301 NORTHSHORE DR** 

**NORTH LITTLE ROCK, AR 72118** 

Ship Date: 20NOV13 ActWgt: 1.0 LB CAD: 5887030/INET3430



Ref# Invoice # Dept#

> THU - 21 NOV 10:30A PRIORITY OVERNIGHT

7972 1105 7313

72118 AR-US LIT



#### After printing this label:

- 1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
- Fold the printed page along the horizontal line.
   Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.