

Clinton Water & Sewer East Plant

Annual Report
Permit AR0048836 & 5130-WR-2
January 2018 – December 2018



Environmental Services Company, Inc.

Corporate Office

13715 West Markham

Little Rock, Arkansas 72211

501-221-2565 (p)

501-221-1341 (f)

www.esclabs.com

Carlsbad, New Mexico

575-887-7372 (7ESC)

Albuquerque, New Mexico

888-372-3477

Springdale, Arkansas

479-750-1170

**Clinton Water and Sewer Department
Clinton, AR
East WWTP - AR0048836
Irrigation Water
Calendar Year 2018**

Parameter	Annual Concentration (mg/L)	2018 Application Data				Total Application Since 2003 Pounds/Acre
		Million Gallons/ Year	Number of Acres	Gallons per Acre-Year	Pounds per Acre	
Total Kjeldahl Nitrogen	6.6500	60.192	2038.81	29,523.1	1.638	636.04
Ammonia Nitrogen	3.3650	60.192	2038.81	29,523.1	0.829	151.90
Nitrate + Nitrite Nitrogen	0.5075	60.192	2038.81	29,523.1	0.125	109.78
BOD-5	17.0250	60.192	2038.81	29,523.1	4.195	1,042.40
Arsenic	< 0.0075	60.192	2038.81	29,523.1	0.002	0.48
Cadmium	< 0.0030	60.192	2038.81	29,523.1	0.001	0.23
Copper	< 0.0028	60.192	2038.81	29,523.1	0.001	0.27
Lead	< 0.0076	60.192	2038.81	29,523.1	0.002	0.59
Mercury	< 0.0008	60.192	2038.81	29,523.1	0.000	0.09
Selenium	< 0.0075	60.192	2038.81	29,523.1	0.002	0.69
Zinc	0.1068	60.192	2038.81	29,523.1	0.026	4.40
Conductivity, minimum (mhos/cm)*	187.00					
Conductivity, maximum (mhos/cm)*	415.00					
pH, minimum (SU)*	7.48					
pH, maximum (SU)*	8.10					

*Current year values

Crop Grown: Bermuda Hay

Clinton Water and Sewer Department
Clinton, AR
East WWTP - AR0048836
Soil
Calendar Year 2018

Sample ID	Clinton East 40.24 LA PB 3							
Control Number	1802010337							
Parameter	1st Quarter		2nd Quarter		3rd Quarter		4th Quarter	
	Sample Date	Analytical Results (mg/Kg)	Sample Date	Analytical Results (mg/Kg)	Sample Date	Analytical Results (mg/Kg)	Sample Date	Analytical Results (mg/Kg)
Nitrate Nitrogen	02/19/18	4.680						
Ammonia Nitrogen	02/19/18	0.3070						
PAN	02/19/18	4.98						
Phosphorous	02/19/18	482.35						
Potassium	02/19/18	2300.00						
Arsenic	02/19/18	14.50						
Cadmium	02/19/18	<2.50						
Copper	02/19/18	12.00						
Lead	02/19/18	22.50						
Magnesium	02/19/18	1741.00						
Mercury	02/19/18	<.1277						
Nickel	02/19/18	33.00						
Zinc	02/19/18	109.50						
Conductivity (mhos/cm)	02/19/18	30.50						
pH (SU)	02/19/18	6.80						

Clinton Water and Sewer Department
Clinton, AR
East WWTP - AR0048836
Soil
Calendar Year 2018

Sample ID	Clinton East 40.24 LA PB 30							
Control Number	1802010338							
Parameter	1st Quarter		2nd Quarter		3rd Quarter		4th Quarter	
	Sample Date	Analytical Results (mg/Kg)	Sample Date	Analytical Results (mg/Kg)	Sample Date	Analytical Results (mg/Kg)	Sample Date	Analytical Results (mg/Kg)
Nitrate Nitrogen	02/19/18	10.350						
Ammonia Nitrogen	02/19/18	1.39						
PAN	02/19/18	11.74						
Phosphorous	02/19/18	485.13						
Potassium	02/19/18	1413.50						
Arsenic	02/19/18	16.50						
Cadmium	02/19/18	<2.50						
Copper	02/19/18	10.50						
Lead	02/19/18	17.00						
Magnesium	02/19/18	991.50						
Mercury	02/19/18	<.1195						
Nickel	02/19/18	28.00						
Zinc	02/19/18	75.50						
Conductivity (mhos/cm)	02/19/18	19.59						
pH (SU)	02/19/18	6.90						

Clinton Water and Sewer Department
Clinton, AR
East WWTP - AR0048836
Soil
Calendar Year 2018

Sample ID	Clinton East 55.57 LA PB 10							
Control Number	1802010088							
Parameter	1st Quarter		2nd Quarter		3rd Quarter		4th Quarter	
	Sample Date	Analytical Results (mg/Kg)	Sample Date	Analytical Results (mg/Kg)	Sample Date	Analytical Results (mg/Kg)	Sample Date	Analytical Results (mg/Kg)
Nitrate Nitrogen	02/19/18	4.030						
Ammonia Nitrogen	02/19/18	0.5260						
PAN	02/19/18	4.55						
Phosphorous	02/19/18	460.41						
Potassium	02/19/18	1061.50						
Arsenic	02/19/18	9.00						
Cadmium	02/19/18	<2.50						
Copper	02/19/18	6.50						
Lead	02/19/18	12.00						
Magnesium	02/19/18	845.00						
Mercury	02/19/18	<.1176						
Nickel	02/19/18	17.50						
Zinc	02/19/18	61.50						
Conductivity (mhos/cm)	02/19/18	42.80						
pH (SU)	02/19/18	7.11						

Clinton Water and Sewer Department
Clinton, AR
East WWTP - AR0048836
Soil
Calendar Year 2018

Sample ID	Clinton East 55.57 LA PB 3							
Control Number	1802010339							
Parameter	1st Quarter		2nd Quarter		3rd Quarter		4th Quarter	
	Sample Date	Analytical Results (mg/Kg)	Sample Date	Analytical Results (mg/Kg)	Sample Date	Analytical Results (mg/Kg)	Sample Date	Analytical Results (mg/Kg)
Nitrate Nitrogen	02/19/18	3.10						
Ammonia Nitrogen	02/19/18	0.3560						
PAN	02/19/18	3.45						
Phosphorous	02/19/18	391.48						
Potassium	02/19/18	850.00						
Arsenic	02/19/18	8.00						
Cadmium	02/19/18	<2.50						
Copper	02/19/18	7.00						
Lead	02/19/18	10.50						
Magnesium	02/19/18	782.50						
Mercury	02/19/18	<.1188						
Nickel	02/19/18	17.50						
Zinc	02/19/18	50.50						
Conductivity (mhos/cm)	02/19/18	27.00						
pH (SU)	02/19/18	6.80						

Clinton Water and Sewer Department
Clinton, AR
East WWTP - AR0048836
Soil
Calendar Year 2018

Sample ID	Clinton East 55.57 LA PB 30							
Control Number	1802010340							
Parameter	1st Quarter		2nd Quarter		3rd Quarter		4th Quarter	
	Sample Date	Analytical Results (mg/Kg)	Sample Date	Analytical Results (mg/Kg)	Sample Date	Analytical Results (mg/Kg)	Sample Date	Analytical Results (mg/Kg)
Nitrate Nitrogen	02/19/18	4.150						
Ammonia Nitrogen	02/19/18	0.2950						
PAN	02/19/18	4.44						
Phosphorous	02/19/18	412.92						
Potassium	02/19/18	1176.50						
Arsenic	02/19/18	9.00						
Cadmium	02/19/18	<2.50						
Copper	02/19/18	7.00						
Lead	02/19/18	12.50						
Magnesium	02/19/18	881.50						
Mercury	02/19/18	<.1196						
Nickel	02/19/18	19.50						
Zinc	02/19/18	62.00						
Conductivity (mhos/cm)	02/19/18	249.00						
pH (SU)	02/19/18	6.83						

Clinton Water and Sewer Department
Clinton, AR
East WWTP - AR0048836
Soil
Calendar Year 2018

Sample ID	Clinton East LA Airport 9							
Control Number	1802010341							
Parameter	1st Quarter		2nd Quarter		3rd Quarter		4th Quarter	
	Sample Date	Analytical Results (mg/Kg)	Sample Date	Analytical Results (mg/Kg)	Sample Date	Analytical Results (mg/Kg)	Sample Date	Analytical Results (mg/Kg)
Nitrate Nitrogen	02/19/18	9.390						
Ammonia Nitrogen	02/19/18	1.68						
PAN	02/19/18	11.07						
Phosphorous	02/19/18	297.01						
Potassium	02/19/18	1066.00						
Arsenic	02/19/18	8.00						
Cadmium	02/19/18	<2.50						
Copper	02/19/18	6.00						
Lead	02/19/18	9.50						
Magnesium	02/19/18	735.50						
Mercury	02/19/18	<.1304						
Nickel	02/19/18	17.00						
Zinc	02/19/18	45.00						
Conductivity (mhos/cm)	02/19/18	12.52						
pH (SU)	02/19/18	6.96						

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Soil
Calendar Year 2018

Sample ID		Clinton East LA WD 13						
Control Number		1802010342						
Parameter	1st Quarter		2nd Quarter		3rd Quarter		4th Quarter	
	Sample Date	Analytical Results (mg/Kg)	Sample Date	Analytical Results (mg/Kg)	Sample Date	Analytical Results (mg/Kg)	Sample Date	Analytical Results (mg/Kg)
Nitrate Nitrogen	02/19/18	9.060						
Ammonia Nitrogen	02/19/18	1.47						
PAN	02/19/18	10.53						
Phosphorous	02/19/18	382.10						
Potassium	02/19/18	1716.00						
Arsenic	02/19/18	12.00						
Cadmium	02/19/18	<2.50						
Copper	02/19/18	7.50						
Lead	02/19/18	14.50						
Magnesium	02/19/18	1094.00						
Mercury	02/19/18	<.1306						
Nickel	02/19/18	21.50						
Zinc	02/19/18	64.50						
Conductivity (mhos/cm)	02/19/18	12.07						
pH (SU)	02/19/18	7.22						

Environmental Services Company, Inc.

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Tel. (501)221-2565 Fax (501)221-1341

Northwest Arkansas Branch
1107 Century Avenue
Springdale, AR 72762
Tel. (479)750-1170 Fax (479)750-1172

Control Number: 1806010510
Customer Name : CLINTON, EAST IW
Customer/Permit No. : 619 / AR0048836 001
Report Date : 07/06/18

Sample Date : 06/28/18
Sample Time : 1022
Sample Type : GRAB WWATER
Sample From : EAST IRRIGATION WTR

Collected By: JGK
Delivery By : JGK
Work Order :
Purchase Order :

<u>Laboratory Analysis</u>							<u>Quality Assurance</u>	
Analysis							Precision	Accuracy
<u>Date</u>	<u>Time</u>	<u>By</u>	<u>Parameter</u>	<u>Result</u>	<u>Notes</u>	<u>Quantity</u>	<u>% RPD</u>	<u>% Recovery</u>
06/28	1700	PJC	BOD, 5-day	17.00 mg/L		SM 2011 5210 B	0.00	95.1 *
07/03	1400	PJC	Ammonia as N, (HACH/SM)	5.89 mg/L		H/SM 11 10205/4500	2.26	101.1 *
07/02	1230	CLB	Kjeldahl Nitrogen Total	12.60 mg/L		SM 1997 4500-NorgB	3.35	90.5
07/05	1718	RAH	Copper	< 0.00300 mg/L		EPA 200.8	7.11	107.5 *
07/05	1718	RAH	Zinc	0.0100 mg/L		EPA 200.8	3.10	101.5 *
07/05	1718	RAH	Arsenic	< 0.0100 mg/L		EPA 200.8	4.54	102.6 *
07/05	1718	RAH	Selenium	< 0.0100 mg/L		EPA 200.8	1.04	103.5 *
06/28	1025	JGK	Spec. Conductance @ 25 C	214.000 umho/c		SM1997 2510B	0.00	N/A *
07/05	1718	RAH	Cadmium	< 0.0040 mg/L		EPA 200.8	1.80	106.5 *
07/06	1550	RAH	Mercury	< 0.0010 mg/L		EPA 245.1	2.69	98.9 *
07/05	1718	RAH	Lead	< 0.0100 mg/L		EPA 200.8	0.30	103.8 *
07/03	1545	NTR	Nitrate + Nitrite	0.54 mg/L		HACH 10206	0.94	99.2 *

* QA data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All NPDES testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Quality Assurance Plan on file with Arkansas Department of Environmental Quality. Analysis time indicates the time of the start of the analytical batch in which the specific sample was included.

Signature


Environmental Services Co., Inc.

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Corporate Office

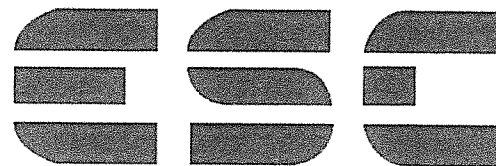
13715 West Markham P.O. Box 55146

Little Rock, AR 72211 Little Rock, AR 72215

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Springdale, Arkansas

479-750-1170

Carlsbad, New Mexico

575-887-1ESC

CHAIN OF CUSTODY

Client Information						Project Information						Requested Parameters					
Client: Clinton, East IW						Permit/Project #: AR0048836						<div style="display: flex; flex-direction: column; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">BOD(3.)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">NH3-N(15.A), NO3 + NO2(91.)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TKN(16.A)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Metals (See Comments)</div> </div>					
Address: P.O. Box 277						Purchase Order #:											
Clinton, AR 72031						Work Order #											
Phone: 501-745-4320						Sampler Name(s): J. Kroenschel											
Fax: 501-745-2164						and Signature(s): <i>[Signature]</i>											
Contact: Mr. Phil Graham						ESC Client Number: 619											
Sample Identification		Sample Collection				Sample Containers											
Identification	ESC Control #	Date	Time	Type	Matrix	Type	Volume	Preservative	#								
Irrigation Water	1806010510	6/28/18	1622	Grab	Wwater	Plastic	1/2 Gal	Cool ≤ 6° C	1	X							
				Grab	Wwater	Plastic	1 Liter	Cool ≤ 6° C, H2SO4 to pH <2	1		X	X					
				Grab	Wwater	Plastic	1 Liter	HNO3 to pH <2	1				X				
Relinquished By: (Signature and Printed Name)		Date	Time	Received By: (Signature and Printed Name)		Date	Time	Custody Seals:									
Relinquished By: (Signature and Printed Name)		Date	Time	Received By: (Signature and Printed Name)		Date	Time	Used? <input checked="" type="checkbox"/> Intact? <input type="checkbox"/>									
Relinquished By: (Signature and Printed Name)		Date	Time	Received By: (Signature and Printed Name)		Date	Time	Turnaround:									
Relinquished By: (Signature and Printed Name)		Date	Time	Received By: (Signature and Printed Name)		Date	Time	Regular <input type="checkbox"/> Special <input type="checkbox"/>									
Relinquished By: (Signature and Printed Name)		Date	Time	Received By: (Signature and Printed Name)		Date	Time	Were samples properly preserved:									
Relinquished By: (Signature and Printed Name)		Date	Time	Received By: (Signature and Printed Name)		Date	Time	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>									
Comments: Metals: Hg(50.15), Cu(29.HW), Zn(30.HW), As(33.HW), Se(34.HW)		Flow Data		Field Test		Time	Analyst	Result	Result	Units							
Cd(48.HW), Pb(82.HW)				Analyst:		pH:	1025	7.48	7.48	S.U.							
				Time:		Conduct:	1025	214	214	UMHOS							
				Reading:													
				Units:													
				Fecal Start:				This Document is Page 1 of 1									

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Northwest Arkansas Branch
1107 Century Avenue
Springdale, AR 72762
Tel. (479)750-1170 Fax (479)750-1172

Control Number: 1808010370
Customer Name : CLINTON, EAST IW
Customer/Permit No. : 619 / AR0048836 001
Report Date : 09/04/18

Sample Date : 08/22/18
Sample Time : 0950
Sample Type : GRAB WWATER
Sample From : IRRIGATION WATER

Collected By: JJM
Delivery By : JJM
Work Order :
Purchase Order :

<u>Laboratory Analysis</u>							<u>Quality Assurance</u>	
Analysis							Precision	Accuracy
<u>Date</u>	<u>Time</u>	<u>By</u>	<u>Parameter</u>	<u>Result</u>	<u>Notes</u>	<u>Quantity</u>	<u>% RPD</u>	<u>% Recovery</u>
08/24	0800	DAH	BOD, 5-day	39.30 mg/L		SM 2011 5210 B	0.65	103.9 *
08/24	0715	NTR	Ammonia as N, (HACH/SM)	1.78 mg/L		H/SM 11 10205/4500	1.75	100.0 *
08/31	1320	NTR	Total Kjeldahl Nitrogen	6.0 mg/L		02/2014 HACH 10242	2.30	100.3 *
08/22	0954	JJM	pH	7.5 S.U.		SM 2000 4500-H+B	0.00	N/A *
08/28	1600	PJC	Copper	0.00500 mg/L		EPA 200.8	2.80	94.2 *
08/28	1600	PJC	Zinc	0.3910 mg/L		EPA 200.8	6.26	97.1 *
08/28	1600	PJC	Arsenic	< 0.0100 mg/L		EPA 200.8	0.30	96.8 *
08/28	1600	PJC	Selenium	< 0.0100 mg/L		EPA 200.8	2.23	94.1 *
08/22	0954	JJM	Spec. Conductance @ 25 C	415.000 umho/c		SM1997 2510B	0.00	N/A
08/28	1600	PJC	Cadmium	< 0.0040 mg/L		EPA 200.8	0.24	93.6 *
08/28	1600	PJC	Mercury	< 0.0010 mg/L		EPA 245.1	10.26	103.4 *
08/28	1600	PJC	Lead	0.0102 mg/L		EPA 200.8	2.81	90.3 *
08/29	0930	CLB	Nitrate + Nitrite	1.03 mg/L		HACH 10206	19.00	90.4 *

* QA data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All NPDES testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Quality Assurance Plan on file with Arkansas Department of Environmental Quality. Analysis time indicates the time of the start of the analytical batch in which the specific sample was included.

Signature


Environmental Services Co., Inc.

Phone: 501-221-2565 Fax: 501-221-1341



Carlsbad, New Mexico
575-887-1ESC

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Environmental Services Company, Inc.

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Northwest Arkansas Branch
1107 Century Avenue
Springdale, AR 72762
Tel. (479)750-1170 Fax (479)750-1172

Control Number: 1811010350
Customer Name : CLINTON, EAST IW
Customer/Permit No. : 619 / AR0048836 001
Report Date : 12/04/18

Sample Date : 11/19/18
Sample Time : 1335
Sample Type : GRAB WWATER
Sample From : IRRIGATION WATER

Collected By: TMO
Delivery By : TMO
Work Order :
Purchase Order :

Laboratory Analysis							Quality Assurance	
Analysis							Precision	Accuracy
Date	Time	By	Parameter	Result	Notes	Quantity	% RPD	% Recovery
11/21	0630	DWC	BOD, 5-day	11.80 mg/L			12.73	106.6 *
11/21	1300	TCF	Ammonia as N, (HACH/SM)	5.79 mg/L			2.19	98.9 *
11/27	0900	TCF	Total Kjeldahl Nitrogen	8.0 mg/L			2.13	101.0
11/19	1339	TMO	pH	8.1 S.U.			0.00	N/A *
11/30	1200	PJC	Copper	0.00330 mg/L			2.42	101.1
11/30	1200	PJC	Zinc	0.0261 mg/L			2.90	99.3
11/30	1200	PJC	Arsenic	< 0.0100 mg/L			9.60	96.2
11/30	1200	PJC	Selenium	< 0.0100 mg/L			1.74	95.5
11/19	1339	TMO	Spec. Conductance @ 25 C	187.000 umho/c			0.00	N/A
11/30	1200	PJC	Cadmium	< 0.0040 mg/L			0.05	98.1
11/21	1500	PJC	Mercury	< 0.0010 mg/L			2.48	88.0
11/30	1200	PJC	Lead	< 0.0100 mg/L			7.75	97.9
11/21	1545	TCF	Nitrate + Nitrite	0.46 mg/L			1.49	101.0 *

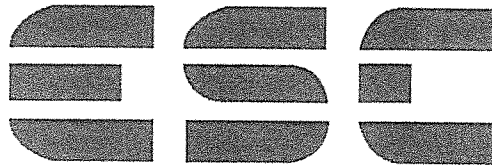
* QA data shown is from a different sample or standard on the same date.

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Signature


Environmental Services Co., Inc.

Phone: 501-221-2565 Fax: 501-221-1341



Carlsbad, New Mexico
575-887-1ESC

CHAIN OF CUSTODY

Client Information						Project Information						Requested Parameters							
Client: Clinton, East IW						Permit/Project #: AR0048836						<div style="display: flex; justify-content: space-between;"> <div>BOD(3.)</div> <div>NH₃-N(15.A), NO₃ + NO₂(91.)</div> <div>TKN(16.C)</div> <div>Metals (See Comments)</div> </div>							
Address: P.O. Box 277						Purchase Order #:													
Clinton, AR 72031						Work Order #:													
Phone: 501-745-4320						Sampler Name(s): Timothy O'Neal													
Fax: 501-745-2164						and Signature(s): [Signature]													
Contact: Mr. Phil Graham																			
ESC Client Number: 619																			
Sample Identification				Sample Collection				Sample Containers											
Identification	ESC Control #	Date	Time	Type	Matrix	Type	Volume	Preservative	#										
Irrigation Water	1811010350	11-19-18	1335	Grab	Wwater	Plastic	1 Liter	Cool ≤ 6° C	1	X									
				Grab	Wwater	Plastic	8 oz	Cool ≤ 6° C, H ₂ SO ₄ to pH <2	1		X	X							
				Grab	Wwater	Plastic	1 Liter	HNO ₃ to pH <2	1				X						
Relinquished By: (Signature and Printed Name)		Date	Time	Received By: (Signature and Printed Name)		Date	Time	Custody Seals:											
Relinquished By: (Signature and Printed Name)		Date	Time	Received By: (Signature and Printed Name)		Date	Time	Used? <input checked="" type="checkbox"/>		Intact? <input type="checkbox"/>									
Relinquished By: (Signature and Printed Name)		Date	Time	Received for Lab By: (Signature and Printed Name)		Date	Time	Turnaround:											
Timothy O'Neal		11-19-18	1600	[Signature]		11-19-18	1600	Regular <input checked="" type="checkbox"/> Special <input type="checkbox"/>											
								Were samples properly preserved:											
								Yes <input type="checkbox"/> No <input type="checkbox"/>											
						Flow Data	Field Test	Time	Analyst	Result	Result	Units							
Comments: Metals: Hg(50.15), Cu(29.HW), Zn(30.HW), As(33.HW), Se(34.HW)						Analyst:	pH:	1339	TMO	8.1	8.1	S.U.							
Cd(48.HW), Pb(82.HW), Mn(MD)						Time:	Conduct:	1339	TMO	187.0	187.0	U MHOS							
						Reading:													
						Units:													
														This Document is Page 1 of					

JA

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1107 Century Avenue
Springdale, AR 72762
Tel. (479)750-1170 Fax (479)750-1172

Control Number: 1802010337
Customer Name : CLINTON, EAST 40.24 LA PB 3
Customer Number : 3004
Report Date : 02/28/18

Sample Date : 02/19/18
Sample Time : 1215
Sample Type : GRAB SOIL
Sample From : EAST LA 40.24 PB3

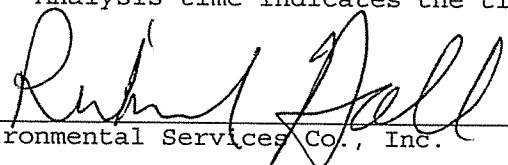
Collected By: TCF
Delivery By : TCF
Work Order :
Purchase Order :

Laboratory Analysis							Quality Assurance	
Analysis							Precision	Accuracy
Date	Time	By	Parameter	Result	Notes	Quantity	% RPD	% Recovery
02/23	1630	CLB	Ammonia Nitrogen	0.3070 mg/kg			1.17	98.2 *
02/22	1520	RAH	Mercury	< 0.1277 mg/Kg			4.78	89.5 *
02/27	1030	CLB	Nitrate Nitrogen	4.680 mg/kg			4.35	98.2 *
02/26	1600	CLB	Phosphorous, Total (as P)	482.3500 mg/kg			2.19	94.6 *
02/27	1231	RAH	Magnesium	1741.00 mg/Kg			2.37	111.6 *
02/27	1231	RAH	Potassium	2300.00 mg/Kg			2.32	98.7 *
02/23	0900	CLB	pH Soil	6.80 S.U.			0.00	N/A *
02/27	1231	RAH	Nickel	33.00 mg/Kg			0.21	98.3 *
02/27	1231	RAH	Copper	12.00 mg/Kg			0.35	98.2 *
02/27	1231	RAH	Zinc	109.50 mg/Kg			1.09	107.5 *
02/28	1530	CLB	Nitrogen, Plant Available	4.98 mg/kg			0.00	100.0 *
02/27	1231	RAH	Arsenic	14.50 mg/Kg			1.50	100.6 *
02/23	0900	CLB	Specific Conductance	30.5000 umhos			0.00	N/A *
02/27	1231	RAH	Cadmium	< 2.50 mg/Kg			0.22	100.8 *
02/27	1231	RAH	Lead	22.50 mg/Kg			2.41	95.1 *

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Signature


Environmental Services Co., Inc.

Environmental Services Company, Inc.

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Northwest Arkansas Branch
1107 Century Avenue
Springdale, AR 72762
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Control Number: 1802010338
Customer Name : CLINTON, EAST 40.24 LA PB 30
Customer Number : 3003
Report Date : 03/02/18

Sample Date : 02/19/18
Sample Time : 1230
Sample Type : GRAB SOIL
Sample From : EAST LA 40.24 PB30

Collected By: TCF
Delivery By : TCF
Work Order :
Purchase Order :

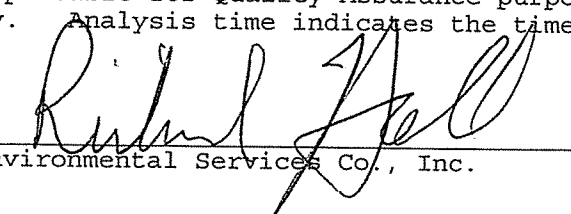
Laboratory Analysis							Quality Assurance		
Analysis							Precision	Accuracy	
Date	Time	By	Parameter	Result	Notes	Quantity	Method	% RPD	% Recovery
02/23	1630	CLB	Ammonia Nitrogen	1.3900 mg/kg			SM 1997 4500-NH3 C	1.17	98.2 *
02/22	1520	RAH	Mercury	< 0.1195 mg/Kg			SW-846 7474 02/07	4.78	89.5 *
02/27	1030	CLB	Nitrate Nitrogen	10.350 mg/kg			SM 2000 4500-NO3 E	4.35	98.2 *
02/26	1600	CLB	Phosphorous, Total (as P)	485.1300 mg/kg			EPA 365.3	2.19	94.6 *
02/27	1231	RAH	Magnesium	991.50 mg/Kg			SW-846 6020A	2.37	111.6 *
02/27	1231	RAH	Potassium	1413.50 mg/Kg			SW-846 6020A	2.32	98.7 *
02/23	0900	CLB	pH Soil	6.90 S.U.			SW846 9045C	0.00	N/A *
02/27	1231	RAH	Nickel	28.00 mg/Kg			SW-846 6020A	0.21	98.3 *
02/27	1231	RAH	Copper	10.50 mg/Kg			SW-846 6020A	0.35	98.2 *
02/27	1231	RAH	Zinc	75.50 mg/Kg			SW-846 6020A	1.09	107.5 *
02/28	1530	CLB	Nitrogen, Plant Available	11.74 mg/kg			33 MSA 2nd Ed	0.00	100.0 *
02/27	1231	RAH	Arsenic	16.50 mg/Kg			SW-846 6020A	1.50	100.6 *
02/23	0900	CLB	Specific Conductance	19.5900 umhos			EPA (MOD) 9050A	0.00	N/A *
02/27	1231	RAH	Cadmium	< 2.50 mg/Kg			SW-846 6020A	0.22	100.8 *
02/27	1231	RAH	Lead	17.00 mg/Kg			SW-846 6020A	2.41	95.1 *

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Springdale, AR 72762
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Control Number: 1802010088
Customer Name : CLINTON, EAST 55.57 LA PB 10
Customer/Permit No. : 511 / AR0048836 001
Report Date : 02/28/18

Sample Date : 02/19/18
Sample Time : 1145
Sample Type : GRAB SOIL
Sample From : EAST LA 55.57 PB10

Collected By: TCF
Delivery By : TCF
Work Order :
Purchase Order :


Laboratory Analysis							Quality Assurance	
Analysis							Precision	Accuracy
Date	Time	By	Parameter	Result	Notes	Quantity	% RPD	% Recovery
02/23	1630	CLB	Ammonia Nitrogen	0.5260 mg/kg		SM 1997 4500-NH3 C	1.17	98.2
02/22	1520	RAH	Mercury	< 0.1176 mg/Kg		SW-846 7474 02/07	4.78	89.5
02/27	1030	CLB	Nitrate Nitrogen	4.030 mg/kg		SM 2000 4500-NO3 E	4.35	98.2 *
02/26	1600	CLB	Phosphorous, Total (as P)	460.4100 mg/kg		EPA 365.3	2.19	94.6
02/27	1231	RAH	Magnesium	845.00 mg/Kg		SW-846 6020A	2.37	111.6
02/27	1231	RAH	Potassium	1061.50 mg/Kg		SW-846 6020A	2.32	98.7
02/23	0900	CLB	pH Soil	7.11 S.U.		SW846 9045C	0.00	N/A *
02/27	1231	RAH	Nickel	17.50 mg/Kg		SW-846 6020A	0.21	98.3
02/27	1231	RAH	Copper	6.50 mg/Kg		SW-846 6020A	0.35	98.2
02/27	1231	RAH	Zinc	61.50 mg/Kg		SW-846 6020A	1.09	107.5
02/28	1530	CLB	Nitogen, Plant Available	4.55 mg/kg		33 MSA 2nd Ed	0.00	100.0
02/27	1231	RAH	Arsenic	9.00 mg/Kg		SW-846 6020A	1.50	100.6
02/23	0900	CLB	Specific Conductance	42.8000 umhos		EPA (MOD) 9050A	0.00	N/A *
02/27	1231	RAH	Cadmium	< 2.50 mg/Kg		SW-846 6020A	0.22	100.8
02/27	1231	RAH	Lead	12.00 mg/Kg		SW-846 6020A	2.41	95.1

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Springdale, AR 72762
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Control Number: 1802010339
Customer Name : CLINTON, EAST 55.57 LA PB 3
Customer Number : 3002
Report Date : 02/28/18

Sample Date : 02/19/18
Sample Time : 1155
Sample Type : GRAB SOIL
Sample From : EAST LA 55.57 PB3

Collected By: TCF
Delivery By : TCF
Work Order :
Purchase Order :

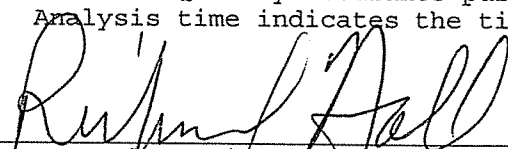
Laboratory Analysis							Quality Assurance		
Analysis							Precision	Accuracy	
Date	Time	By	Parameter	Result	Notes	Quantity	Method	% RPD	% Recovery
02/23	1630	CLB	Ammonia Nitrogen	0.3560 mg/kg			SM 1997 4500-NH3 C	1.17	98.2 *
02/22	1520	RAH	Mercury	< 0.1188 mg/Kg			SW-846 7474 02/07	4.78	89.5 *
02/27	1030	CLB	Nitrate Nitrogen	3.100 mg/kg			SM 2000 4500-NO3 E	4.35	98.2 *
02/26	1600	CLB	Phosphorous, Total (as P)	391.4800 mg/kg			EPA 365.3	2.19	94.6 *
02/27	1231	RAH	Magnesium	782.50 mg/Kg			SW-846 6020A	2.37	111.6 *
02/27	1231	RAH	Potassium	850.00 mg/Kg			SW-846 6020A	2.32	98.7 *
02/23	0900	CLB	pH Soil	6.80 S.U.			SW846 9045C	0.00	N/A *
02/27	1231	RAH	Nickel	17.50 mg/Kg			SW-846 6020A	0.21	98.3 *
02/27	1231	RAH	Copper	7.00 mg/Kg			SW-846 6020A	0.35	98.2 *
02/27	1231	RAH	Zinc	50.50 mg/Kg			SW-846 6020A	1.09	107.5 *
02/28	1530	CLB	Nitogen, Plant Available	3.45 mg/kg			33 MSA 2nd Ed	0.00	100.0 *
02/27	1231	RAH	Arsenic	8.00 mg/Kg			SW-846 6020A	1.50	100.6 *
02/23	0900	CLB	Specific Conductance	27.0000 umhos			EPA (MOD) 9050A	0.00	N/A *
02/27	1231	RAH	Cadmium	< 2.50 mg/Kg			SW-846 6020A	0.22	100.8 *
02/27	1231	RAH	Lead	10.50 mg/Kg			SW-846 6020A	2.41	95.1 *

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1107 Century Avenue
Springdale, AR 72762
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Control Number: 1802010340
Customer Name : CLINTON, EAST 55.57 LA PB 30
Customer Number : 3001
Report Date : 02/28/18

Sample Date : 02/19/18
Sample Time : 1205
Sample Type : GRAB SOIL
Sample From : EAST LA 55.57 PB30

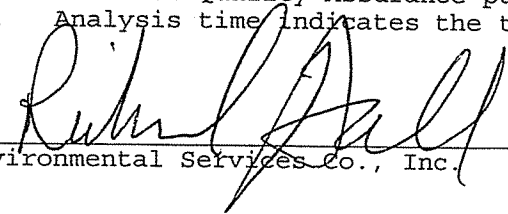
Collected By: TCF
Delivery By : TCF
Work Order :
Purchase Order :

Analysis						Laboratory Analysis		Quality Assurance	
Date	Time	By	Parameter	Result	Notes	Quantity	Method	Precision % RPD	Accuracy % Recovery
02/23	1630	CLB	Ammonia Nitrogen	0.2950 mg/kg			SM 1997 4500-NH3 C	1.17	98.2 *
02/22	1520	RAH	Mercury	< 0.1196 mg/Kg			SW-846 7474 02/07	4.78	89.5 *
02/27	1030	CLB	Nitrate Nitrogen	4.150 mg/kg			SM 2000 4500-NO3 E	4.35	98.2 *
02/26	1600	CLB	Phosphorous, Total (as P)	412.9200 mg/kg			EPA 365.3	2.19	94.6 *
02/27	1231	RAH	Magnesium	881.50 mg/Kg			SW-846 6020A	2.37	111.6 *
02/27	1231	RAH	Potassium	1176.50 mg/Kg			SW-846 6020A	2.32	98.7 *
02/23	0900	CLB	pH Soil	6.83 S.U.			SW846 9045C	0.00	N/A
02/27	1231	RAH	Nickel	19.50 mg/Kg			SW-846 6020A	0.21	98.3 *
02/27	1231	RAH	Copper	7.00 mg/Kg			SW-846 6020A	0.35	98.2 *
02/27	1231	RAH	Zinc	62.00 mg/Kg			SW-846 6020A	1.09	107.5 *
02/28	1530	CLB	Nitrogen, Plant Available	4.44 mg/kg			33 MSA 2nd Ed	0.00	100.0 *
02/27	1231	RAH	Arsenic	9.00 mg/Kg			SW-846 6020A	1.50	100.6 *
02/23	0900	CLB	Specific Conductance	249.0000 umhos			EPA (MOD)9050A	0.00	N/A
02/27	1231	RAH	Cadmium	< 2.50 mg/Kg			SW-846 6020A	0.22	100.8 *
02/27	1231	RAH	Lead	12.50 mg/Kg			SW-846 6020A	2.41	95.1 *

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Control Number: 1802010341
Customer Name : CLINTON, EAST LA AIRPORT9
Customer Number : 2959
Report Date : 02/28/18

Sample Date : 02/19/18
Sample Time : 1130
Sample Type : GRAB SOIL
Sample From : EAST LA AIRPORT 9

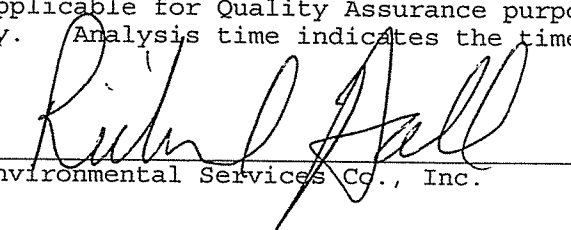
Collected By: TCF
Delivery By : TCF
Work Order :
Purchase Order :

Laboratory Analysis							Quality Assurance	
Analysis							Precision	Accuracy
Date	Time	By	Parameter	Result	Notes	Quantity	% RPD	% Recovery
02/23	1630	CLB	Ammonia Nitrogen	1.6800 mg/kg			1.17	98.2 *
02/22	1520	RAH	Mercury	< 0.1304 mg/Kg			4.78	89.5 *
02/27	1030	CLB	Nitrate Nitrogen	9.390 mg/kg			4.35	98.2 *
02/26	1600	CLB	Phosphorous, Total (as P)	297.0100 mg/kg			2.19	94.6 *
02/27	1231	RAH	Magnesium	735.50 mg/Kg			2.37	111.6 *
02/27	1231	RAH	Potassium	1066.00 mg/Kg			2.32	98.7 *
02/23	0900	CLB	pH Soil	6.96 S.U.			0.00	N/A *
02/27	1231	RAH	Nickel	17.00 mg/Kg			0.21	98.3 *
02/27	1231	RAH	Copper	6.00 mg/Kg			0.35	98.2 *
02/27	1231	RAH	Zinc	45.00 mg/Kg			1.09	107.5 *
02/28	1530	CLB	Nitrogen, Plant Available	11.07 mg/kg			0.00	100.0 *
02/27	1231	RAH	Arsenic	8.00 mg/Kg			1.50	100.6 *
02/23	0900	CLB	Specific Conductance	12.5200 umhos			0.00	N/A *
02/27	1231	RAH	Cadmium	< 2.50 mg/Kg			0.22	100.8 *
02/27	1231	RAH	Lead	9.50 mg/Kg			2.41	95.1 *

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Control Number: 1802010342
Customer Name : CLINTON, EAST LA WD13
Customer Number : 2960
Report Date : 02/28/18

Sample Date : 02/19/18
Sample Time : 1120
Sample Type : GRAB SOIL
Sample From : EAST LA WD13

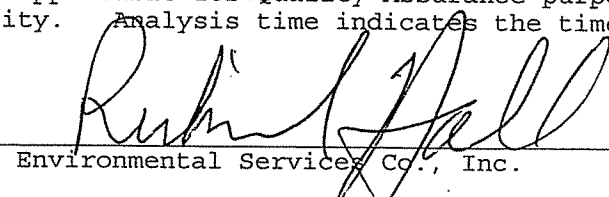
Collected By: TCF
Delivery By : TCF
Work Order :
Purchase Order :

Laboratory Analysis							Quality Assurance		
Analysis							Precision	Accuracy	
Date	Time	By	Parameter	Result	Notes	Quantity	Method	% RPD	% Recovery
02/23	1630	CLB	Ammonia Nitrogen	1.4700 mg/kg			SM 1997 4500-NH3 C	1.17	98.2 *
02/22	1520	RAH	Mercury	< 0.1306 mg/Kg			SW-846 7474 02/07	4.78	89.5 *
02/27	1030	CLB	Nitrate Nitrogen	9.060 mg/kg			SM 2000 4500-NO3 E	4.35	98.2 *
02/26	1600	CLB	Phosphorous, Total (as P)	382.1000 mg/kg			EPA 365.3	2.19	94.6 *
02/27	1231	RAH	Magnesium	1094.00 mg/Kg			SW-846 6020A	2.37	111.6 *
02/27	1231	RAH	Potassium	1716.00 mg/Kg			SW-846 6020A	2.32	98.7 *
02/23	0900	CLB	pH Soil	7.22 S.U.			SW846 9045C	0.00	N/A *
02/27	1231	RAH	Nickel	21.50 mg/Kg			SW-846 6020A	0.21	98.3 *
02/27	1231	RAH	Copper	7.50 mg/Kg			SW-846 6020A	0.35	98.2 *
02/27	1231	RAH	Zinc	64.50 mg/Kg			SW-846 6020A	1.09	107.5 *
02/28	1530	CLB	Nitogen, Plant Available	10.53 mg/kg			33 MSA 2nd Ed	0.00	100.0 *
02/27	1231	RAH	Arsenic	12.00 mg/Kg			SW-846 6020A	1.50	100.6 *
02/23	0900	CLB	Specific Conductance	12.0700 umhos			EPA (MOD) 9050A	0.00	N/A *
02/27	1231	RAH	Cadmium	< 2.50 mg/Kg			SW-846 6020A	0.22	100.8 *
02/27	1231	RAH	Lead	14.50 mg/Kg			SW-846 6020A	2.41	95.1 *

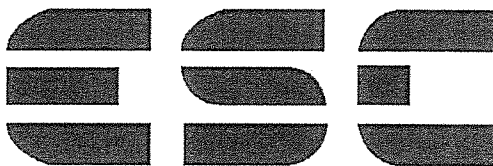
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website: www.esclabs.com



Springdale, Arkansas
479-750-1170

Carlsbad, New Mexico
575-887-1ESC

Phone: 501-221-2565 Fax: 501-221-1341

CHAIN OF CUSTODY

Client Information						Project Information					Requested Parameters									
Client: Clinton, City of (East Land App)						Permit/Project #:					<div style="display: flex; flex-direction: column; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Metals (See Comments)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Nitrate Nitrogen(01.3), Phos(01.9)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Soil pH(23.S), Spec Cond(35.M)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Ammonia(01.1), PAN(33.AN)</div> </div>									
Address: P.O. Box 277						Purchase Order #:														
Clinton, AR 72031						Work Order #														
Phone: 501-745-4320						Sampler Name(s): <i>Trevor Forthman</i>														
Fax: Mr. Phil Graham						and Signature(s): <i>[Signature]</i>														
Contact: 501-745-2164																				
ESC Client Number: Various																				
Sample Identification		Sample Collection				Sample Containers														
Identification	ESC Control #	Date	Time	Type	Matrix	Type	Volume	Preservative	#											
East LA 40.24 PB3 (3004)	1802010337	2-19-18	1215	Grab	Soil	Glass	1 Liter	Cool ≤ 6° C	1	X	X	X	X							
East LA 40.24 PB30 (3003)	1802010338	2-19-18	1230	Grab	Soil	Glass	1 Liter	Cool ≤ 6° C	1	X	X	X	X							
East LA 55.57 PB10 (511)	1802010088	2-19-18	1145	Grab	Soil	Glass	1 Liter	Cool ≤ 6° C	1	X	X	X	X							
East LA 55.57 PB3 (3002)	1802010339	2-19-18	1155	Grab	Soil	Glass	1 Liter	Cool ≤ 6° C	1	X	X	X	X							
East LA 55.57 PB30 (3001)	1802010340	2-19-18	1205	Grab	Soil	Glass	1 Liter	Cool ≤ 6° C	1	X	X	X	X							
East LA Airport9 (2959)	1802010341	2-19-18	1130	Grab	Soil	Glass	1 Liter	Cool ≤ 6° C	1	X	X	X	X							
East LA WD13 (2960)	1802010342	2-19-18	1120	Grab	Soil	Glass	1 Liter	Cool ≤ 6° C	1	X	X	X	X							
Relinquished By: (Signature and Printed Name)		Date	Time	Received By: (Signature and Printed Name)		Date	Time	Custody Seals:												
Relinquished By: (Signature and Printed Name)		Date	Time	Received By: (Signature and Printed Name)		Date	Time	Used? <input checked="" type="checkbox"/> Intact? <input type="checkbox"/>												
Relinquished By: (Signature and Printed Name)		Date	Time	Received By: (Signature and Printed Name)		Date	Time	Turnaround: <input checked="" type="checkbox"/> Regular <input type="checkbox"/> Special <input type="checkbox"/>												
Relinquished By: (Signature and Printed Name)		Date	Time	Received for Lab By: (Signature and Printed Name)		Date	Time	Were samples properly preserved: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>												
Comments: Hg(01.14), Mn(12.HS), K(19.HS), Ni(28.HS), Cu(29.HS), Zn(30.HS)						Flow Data	Field Test	Time	Analyst	Result	Result	Units								
As(33.HS), Cd(48.HS), Pb(82.HS),						Analyst:														
						Time:														
						Reading:														
						Units:														
						Fecal Start:				This Document is Page <u>1</u> of <u>1</u>										

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Control Number: 1803010322
Customer Name : CLINTON, EAST GW13
Customer/Permit No. : 507 / AR0048836 001
Report Date : 04/02/18

Sample Date : 03/26/18
Sample Time : 1031
Sample Type : GRAB WATER
Sample From : EAST WELL #13

Collected By: JJM
Delivery By : JJM
Work Order :
Purchase Order :

Analysis							Laboratory Analysis		Quality Assurance	
Date	Time	By	Parameter	Result	Notes	Quantity	Method	Precision % RPD	Accuracy % Recovery	
03/27	0750	DWC	Chloride (as Cl)	12.0 mg/L			SM1997 4500ClC	0.43	92.0 *	
03/26	1031	JJM	pH	6.3 S.U.			SM 2000 4500-H+B	0.00	N/A	
03/27	1430	CLB	Solids, Total Dissolved	140.0 mg/L			SM1997 2540 C	0.00	N/A	
03/26	1031	JJM	Spec. Conductance @ 25 C	260.000 umho/c			SM1997 2510B	0.00	N/A	
03/29	1430	CLB	Nitrate + Nitrite	1.67 mg/L			HACH 10206	1.12	98.3 *	
03/26	1031	JJM	Well Depth, Total	15.40 Feet				N/A	N/A	
03/26	1031	JJM	Depth to Water	10.00 Feet				N/A	N/A	

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Control Number: 1803010323
Customer Name : CLINTON, EAST GW14
Customer/Permit No. : 508 / AR0048836 001
Report Date : 04/02/18

Sample Date : 03/26/18
Sample Time : 1052
Sample Type : GRAB WATER
Sample From : EAST WELL #14

Collected By: JJM
Delivery By : JJM
Work Order :
Purchase Order :

Laboratory Analysis							Quality Assurance	
Analysis							Precision	Accuracy
Date	Time	By	Parameter	Result	Notes	Quantity	% RPD	% Recovery
03/27	0750	DWC	Chloride (as Cl)	5.0 mg/L			0.43	92.0 *
03/26	1052	JJM	pH	7.0 S.U.			0.00	N/A *
03/27	1430	CLB	Solids, Total Dissolved	82.0 mg/L			0.00	N/A *
03/26	1052	JJM	Spec. Conductance @ 25 C	126.400 umho/c			0.00	N/A *
03/29	1430	CLB	Nitrate + Nitrite	0.49 mg/L			1.12	98.3 *
03/26	1052	JJM	Well Depth, Total	13.10 Feet			N/A	N/A
03/26	1052	JJM	Depth to Water	9.20 Feet			N/A	N/A

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Control Number: 1803010324
Customer Name : CLINTON, EAST GW16
Customer/Permit No. : 509 / AR0048836 001
Report Date : 03/27/18

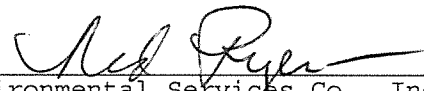
Sample Date : 03/26/18
Sample Time :
Sample Type : DRY WELL
Sample From : EAST WELL #16

Collected By:
Delivery By :
Work Order :
Purchase Order :

<u>Laboratory Analysis</u>							<u>Quality Assurance</u>	
Analysis							Precision	Accuracy
<u>Date</u>	<u>Time</u>	<u>By</u>	<u>Parameter</u>	<u>Result</u>	<u>Notes</u>	<u>Quantity</u>	<u>% RPD</u>	<u>% Recovery</u>
03/26	1006	JJM	Dry Well	0.00			N/A	N/A
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Control Number: 1803010325
Customer Name : CLINTON, EAST GW17
Customer/Permit No. : 649 / AR0048747 001
Report Date : 04/02/18

Sample Date : 03/26/18
Sample Time : 1016
Sample Type : GRAB WATER
Sample From : EAST WELL #17

Collected By: JJM
Delivery By : JJM
Work Order :
Purchase Order :

Analysis			<u>Laboratory Analysis</u>				<u>Quality Assurance</u>		
<u>Date</u>	<u>Time</u>	<u>By</u>	<u>Parameter</u>	<u>Result</u>	<u>Notes</u>	<u>Quantity</u>	<u>Method</u>	<u>Precision</u>	<u>Accuracy</u>
								<u>% RPD</u>	<u>% Recovery</u>
03/27	0750	DWC	Chloride (as Cl)	1.0 mg/L			SM1997 4500CLC	0.43	92.0 *
03/26	1016	JJM	pH	6.2 S.U.			SM 2000 4500-H+B	0.00	N/A *
03/27	1430	CLB	Solids, Total Dissolved	94.0 mg/L			SM1997 2540 C	0.00	N/A *
03/26	1016	JJM	Spec. Conductance @ 25 C	81.100 umho/c			SM1997 2510B	0.00	N/A *
03/29	1430	CLB	Nitrate + Nitrite	4.31 mg/L			HACH 10206	1.12	98.3 *
03/26	1016	JJM	Well Depth, Total	17.60 Feet				N/A	N/A
03/26	1016	JJM	Depth to Water	12.80 Feet				N/A	N/A

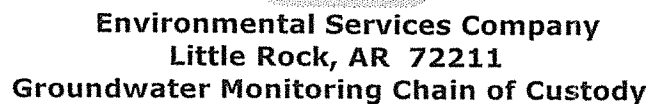
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Sampler Name(s): Josh Miller
and Signature: Josh Miller

Sample Date: 3/26/18

Relinquished by: JJM	Time: 1520	Received By Lab: Thomas Brown	Date: 3-26-18	Time: 1520
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Comments:

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Control Number: 1806010504
Customer Name : CLINTON, EAST GW13
Customer/Permit No. : 507 / AR0048836 001
Report Date : 07/06/18

Sample Date : 06/28/18
Sample Time : 1200
Sample Type : GRAB WATER
Sample From : WELL #13


Collected By: JGK
Delivery By : JGK
Work Order :
Purchase Order :

Laboratory Analysis							Quality Assurance	
Analysis							Precision	Accuracy
Date	Time	By	Parameter	Result	Notes	Quantity	% RPD	% Recovery
06/29	1530	DWC	Chloride (as Cl)	20.0 mg/L			0.00	102.5 *
06/28	1200	JGK	pH	6.0 S.U.			0.00	N/A *
07/02	1030	NTR	Solids, Total Dissolved	135.0 mg/L			7.41	N/A
06/28	1200	JGK	Spec. Conductance @ 25 C	258.000 umho/c			0.00	N/A
07/03	1545	NTR	Nitrate + Nitrite	1.44 mg/L			0.94	99.2
06/28	1200	JGK	Well Depth, Total	15.40 Feet			N/A	N/A
06/28	1200	JGK	Depth to Water	9.10 Feet			N/A	N/A

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Control Number: 1806010505
Customer Name : CLINTON, EAST GW14
Customer/Permit No. : 508 / AR0048836 001
Report Date : 07/06/18

Sample Date : 06/28/18
Sample Time : 1056
Sample Type : GRAB WATER
Sample From : WELL #14

Collected By: JGK
Delivery By : JGK
Work Order :
Purchase Order :

<u>Laboratory Analysis</u>							<u>Quality Assurance</u>	
<u>Analysis</u>							<u>Precision</u>	<u>Accuracy</u>
<u>Date</u>	<u>Time</u>	<u>By</u>	<u>Parameter</u>	<u>Result</u>	<u>Notes</u>	<u>Quantity</u>	<u>% RPD</u>	<u>% Recovery</u>
06/29	1530	DWC	Chloride (as Cl)	20.0 mg/L			0.00	102.5 *
06/28	1056	JGK	pH	5.5 S.U.			0.00	N/A *
07/02	1030	NTR	Solids, Total Dissolved	90.0 mg/L			7.41	N/A *
06/28	1056	JGK	Spec. Conductance @ 25 C	132.600 umho/c			0.00	N/A *
07/03	1545	NTR	Nitrate + Nitrite	1.61 mg/L			0.94	99.2 *
06/28	1056	JGK	Well Depth, Total	13.10 Feet			N/A	N/A
06/28	1056	JGK	Depth to Water	9.00 Feet			N/A	N/A

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Control Number: 1806010506
Customer Name : CLINTON, EAST GW16
Customer/Permit No. : 509 / AR0048836 001
Report Date : 07/02/18

Sample Date : 06/28/18
Sample Time : 1113
Sample Type : DRY WELL
Sample From : WELL #16

Collected By:
Delivery By :
Work Order :
Purchase Order :

Analysis			<u>Laboratory Analysis</u>				<u>Quality Assurance</u>		
<u>Date</u>	<u>Time</u>	<u>By</u>	<u>Parameter</u>	<u>Result</u>	<u>Notes</u>	<u>Quantity</u>	<u>Method</u>	<u>Precision</u>	<u>Accuracy</u>
								<u>% RPD</u>	<u>% Recovery</u>
06/28	1113	JGK	Dry Well	0.00				N/A	N/A
</									

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Control Number: 1806010507
Customer Name : CLINTON, EAST GW17
Customer/Permit No. : 649 / AR0048747 001
Report Date : 07/06/18

Sample Date : 06/28/18
Sample Time : 1047
Sample Type : GRAB WATER
Sample From : WELL #17

Collected By: JGK
Delivery By : JGK
Work Order :
Purchase Order :

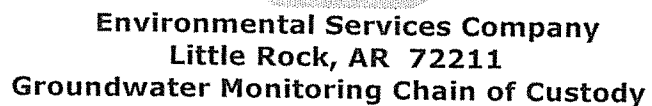
<u>Laboratory Analysis</u>							<u>Quality Assurance</u>	
<u>Analysis</u>							<u>Precision</u>	<u>Accuracy</u>
<u>Date</u>	<u>Time</u>	<u>By</u>	<u>Parameter</u>	<u>Result</u>	<u>Notes</u>	<u>Quantity</u>	<u>% RPD</u>	<u>% Recovery</u>
06/29	1530	DWC	Chloride (as Cl)	10.0 mg/L			0.00	102.5 *
06/28	1047	JGK	pH	5.4 S.U.			0.00	N/A *
07/02	1030	NTR	Solids, Total Dissolved	100.0 mg/L			7.41	N/A *
06/28	1047	JGK	Spec. Conductance @ 25 C	88.900 umho/c			0.00	N/A *
07/03	1545	NTR	Nitrate + Nitrite	6.06 mg/L			0.94	99.2 *
06/28	1047	JGK	Well Depth, Total	17.60 Feet			N/A	N/A
06/28	1047	JGK	Depth to Water	12.00 Feet			N/A	N/A

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Environmental Services Co., Inc.



Sample Date:

Relinquished by: J. Kroenschid	Time: 1700	Received By Lab: Kristina Brown	Date: 6-28-18	Time: 1700
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Comments:

JK

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Control Number: 1808010371
Customer Name : CLINTON, EAST GW13
Customer/Permit No. : 507 / AR0048836 001
Report Date : 09/04/18

Sample Date : 08/22/18
Sample Time : 1055
Sample Type : GRAB WATER
Sample From : EAST WELL #13

Collected By: JJM
Delivery By : JJM
Work Order :
Purchase Order :

Laboratory Analysis							Quality Assurance	
Analysis							Precision	Accuracy
Date	Time	By	Parameter	Result	Notes	Quantity	% RPD	% Recovery
08/29	1315	DWC	Chloride (as Cl)	1.0 mg/L			0.00	101.9 *
08/22	1055	JJM	pH	6.1 S.U.			0.00	N/A *
08/24	1245	PJC	Solids, Total Dissolved	76.0 mg/L			0.53	N/A *
08/22	1055	JJM	Spec. Conductance @ 25 C	147.100 umho/c			0.00	N/A *
08/29	0930	CLB	Nitrate + Nitrite	1.58 mg/L			19.00	90.4
08/22	1055	JJM	Well Depth, Total	15.40 Feet			N/A	N/A
08/22	1055	JJM	Depth to Water	7.80 Feet			N/A	N/A

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Control Number: 1808010372
Customer Name : CLINTON, EAST GW14
Customer/Permit No. : 508 / AR0048836 001
Report Date : 08/30/18

Sample Date : 08/22/18
Sample Time : 1110
Sample Type : GRAB WATER
Sample From : EAST WELL #14

Collected By: JJM
Delivery By : JJM
Work Order :
Purchase Order :

<u>Laboratory Analysis</u>							<u>Quality Assurance</u>		
Analysis							Precision	Accuracy	
<u>Date</u>	<u>Time</u>	<u>By</u>	<u>Parameter</u>	<u>Result</u>	<u>Notes</u>	<u>Quantity</u>	<u>Method</u>	<u>% RPD</u>	<u>% Recovery</u>
08/29	1315	DWC	Chloride (as Cl)	7.0 mg/L			SM1997 4500ClC	0.00	101.9 *
08/22	1110	JJM	pH	6.0 S.U.			SM 2000 4500-H+B	0.00	N/A *
08/24	1245	PJC	Solids, Total Dissolved	80.0 mg/L			SM1997 2540 C	0.53	N/A *
08/22	1110	JJM	Spec. Conductance @ 25 C	134.000 umho/c			SM1997 2510B	0.00	N/A *
08/29	0930	CLB	Nitrate + Nitrite	1.11 mg/L			HACH 10206	19.00	90.4 *
08/22	1110	JJM	Well Depth, Total	13.10 Feet				N/A	N/A
08/22	1110	JJM	Depth to Water	7.60 Feet				N/A	N/A

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Control Number: 1808010373
Customer Name : CLINTON, EAST GW16
Customer/Permit No. : 509 / AR0048836 001
Report Date : 08/30/18

Sample Date : 08/22/18
Sample Time : 1014
Sample Type : GRAB WATER
Sample From : EAST WELL #16


Collected By: JJM
Delivery By : JJM
Work Order :
Purchase Order :

<u>Laboratory Analysis</u>							<u>Quality Assurance</u>	
<u>Analysis</u>							<u>Precision</u>	<u>Accuracy</u>
<u>Date</u>	<u>Time</u>	<u>By</u>	<u>Parameter</u>	<u>Result</u>	<u>Notes</u>	<u>Quantity</u>	<u>% RPD</u>	<u>% Recovery</u>
08/29	1315	DWC	Chloride (as Cl)	< 0.1 mg/L			0.00	101.9 *
08/22	1014	JJM	pH	6.5 S.U.			0.00	N/A *
08/24	1245	PJC	Solids, Total Dissolved	68.0 mg/L			0.53	N/A *
08/22	1014	JJM	Spec. Conductance @ 25 C	81.200 umho/c			0.00	N/A *
08/29	0930	CLB	Nitrate + Nitrite	0.41 mg/L			19.00	90.4 *
08/22	1014	JJM	Well Depth, Total	14.00 Feet			N/A	N/A
08/22	1014	JJM	Depth to Water	9.00 Feet			N/A	N/A

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Control Number: 1808010374
Customer Name : CLINTON, EAST GW17
Customer/Permit No. : 649 / AR0048747 001
Report Date : 08/30/18

Sample Date : 08/22/18
Sample Time : 1035
Sample Type : GRAB WATER
Sample From : EAST WELL #17


Collected By: JJM
Delivery By : JJM
Work Order :
Purchase Order :

<u>Laboratory Analysis</u>							<u>Quality Assurance</u>	
Analysis							Precision	Accuracy
<u>Date</u>	<u>Time</u>	<u>By</u>	<u>Parameter</u>	<u>Result</u>	<u>Notes</u>	<u>Quantity</u>	<u>% RPD</u>	<u>% Recovery</u>
08/29	1315	DWC	Chloride (as Cl)	< 0.1 mg/L			0.00	101.9 *
08/22	1035	JJM	pH	6.0 S.U.			0.00	N/A *
08/24	1245	PJC	Solids, Total Dissolved	108.0 mg/L			0.53	N/A *
08/22	1035	JJM	Spec. Conductance @ 25 C	100.400 umho/c			0.00	N/A *
08/29	0930	CLB	Nitrate + Nitrite	4.10 mg/L			19.00	90.4 *
08/22	1035	JJM	Well Depth, Total	17.60 Feet			N/A	N/A
08/22	1035	JJM	Depth to Water	10.50 Feet			N/A	N/A

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Signature


Environmental Services Co., Inc.

SA

Environmental Services Company, Inc.

Corporate Office
13715 West Markham
Little Rock, AR 72211
Tel. (501)221-2565 Fax (501)221-1341

Northwest Arkansas Branch
1107 Century Avenue
Springdale, AR 72762
Tel. (479)750-1170 Fax (479)750-1172

Control Number: 1811010351
Customer Name : CLINTON, EAST GW13
Customer/Permit No. : 507 / AR0048836 001
Report Date : 11/27/18

Sample Date : 11/19/18
Sample Time : 1245
Sample Type : GRAB WATER
Sample From : WELL #13

Collected By: TMO
Delivery By : TMO
Work Order :
Purchase Order :

Analysis			<u>Laboratory Analysis</u>				<u>Quality Assurance</u>		
<u>Date</u>	<u>Time</u>	<u>By</u>	<u>Parameter</u>	<u>Result</u>	<u>Notes</u>	<u>Quantity</u>	<u>Method</u>	<u>Precision</u>	<u>Accuracy</u>
								<u>% RPD</u>	<u>% Recovery</u>
11/26	1230	DWC	Chloride (as Cl)	10.0 mg/L			SM1997 4500ClC	0.00	100.0 *
11/19	1245	TMO	pH	6.2 S.U.			SM 2000 4500-H+B	0.00	N/A *
11/20	0630	ATL	Solids, Total Dissolved	112.0 mg/L			SM1997 2540 C	0.80	N/A *
11/19	1245	TMO	Spec. Conductance @ 25 C	85.700 umho/c			SM1997 2510B	0.00	N/A *
11/21	1545	TCF	Nitrate + Nitrite	3.37 mg/L			HACH 10206	1.49	101.0 *
11/19	1245	TMO	Well Depth, Total	15.40 Feet				N/A	N/A
11/19	1245	TMO	Depth to Water	13.40 Feet				N/A	N/A

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Control Number: 1811010352
Customer Name : CLINTON, EAST GW14
Customer/Permit No. : 508 / AR0048836 001
Report Date : 11/27/18

Sample Date : 11/19/18
Sample Time : 1225
Sample Type : GRAB WATER
Sample From : WELL #14

Collected By: TMO
Delivery By : TMO
Work Order :
Purchase Order :

<u>Laboratory Analysis</u>							<u>Quality Assurance</u>	
Analysis							Precision	Accuracy
<u>Date</u>	<u>Time</u>	<u>By</u>	<u>Parameter</u>	<u>Result</u>	<u>Notes</u>	<u>Quantity</u>	<u>% RPD</u>	<u>% Recovery</u>
11/26	1230	DWC	Chloride (as Cl)	10.0 mg/L			0.00	100.0 *
11/19	1225	TMO	pH	6.6 S.U.			0.00	N/A *
11/20	0630	ATL	Solids, Total Dissolved	100.0 mg/L			0.80	N/A *
11/19	1225	TMO	Spec. Conductance @ 25 C	83.900 umho/c			0.00	N/A *
11/21	1545	TCF	Nitrate + Nitrite	3.19 mg/L			1.49	101.0 *
11/19	1225	TMO	Well Depth, Total	13.10 Feet			N/A	N/A
11/19	1225	TMO	Depth to Water	13.60 Feet			N/A	N/A

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Control Number: 1811010353
Customer Name : CLINTON, EAST GW16
Customer/Permit No. : 509 / AR0048836 001
Report Date : 11/27/18

Sample Date : 11/19/18
Sample Time : 1210
Sample Type : GRAB WATER
Sample From : WELL #16

Collected By: TMO
Delivery By : TMO
Work Order :
Purchase Order :

Laboratory Analysis							Quality Assurance	
Analysis							Precision	Accuracy
Date	Time	By	Parameter	Result	Notes	Quantity	% RPD	% Recovery
11/26	1230	DWC	Chloride (as Cl)	10.0 mg/L			0.00	100.0 *
11/19	1210	TMO	pH	6.3 S.U.			0.00	N/A *
11/20	0630	ATL	Solids, Total Dissolved	96.0 mg/L			0.80	N/A *
11/19	1210	TMO	Spec. Conductance @ 25 C	130.000 umho/c			0.00	N/A *
11/21	1545	TCF	Nitrate + Nitrite	3.89 mg/L			1.49	101.0 *
11/19	1210	TMO	Well Depth, Total	14.00 Feet			N/A	N/A
11/19	1210	TMO	Depth to Water	14.00 Feet			N/A	N/A

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Springdale, AR 72762
Tel. (479)750-1170 Fax (479)750-1172

Control Number: 1811010354
Customer Name : CLINTON, EAST GW17
Customer/Permit No. : 649 / AR0048747 001
Report Date : 11/27/18

Sample Date : 11/19/18
Sample Time : 1155
Sample Type : GRAB WATER
Sample From : WELL #17

Collected By: TMO
Delivery By : TMO
Work Order :
Purchase Order :

Laboratory Analysis							Quality Assurance	
Analysis							Precision	Accuracy
Date	Time	By	Parameter	Result	Notes	Quantity	% RPD	% Recovery
11/26	1230	DWC	Chloride (as Cl)	10.0 mg/L			0.00	100.0 *
11/19	1155	TMO	pH	6.3 S.U.			0.00	N/A *
11/20	0630	ATL	Solids, Total Dissolved	128.0 mg/L			0.80	N/A *
11/19	1155	TMO	Spec. Conductance @ 25 C	127.800 umho/c			0.00	N/A *
11/21	1545	TCF	Nitrate + Nitrite	5.95 mg/L			1.49	101.0 *
11/19	1155	TMO	Well Depth, Total	17.60 Feet			N/A	N/A
11/19	1155	TMO	Depth to Water	12.90 Feet			N/A	N/A

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Figure 1 shows a 2D hexagonal lattice. A central vertex is labeled '1'. The six vertices immediately surrounding it are labeled '2' through '7'. The edges connecting these central vertices are labeled '1' through '6'.

Timothy D'Neal

James O'Neil

11-196-18



CITY OF CLINTON
CLINTON WATER AND SEWER DEPARTMENT

P.O. BOX 277
CLINTON, AR 72031
TELEPHONE (501) 745-4320
FAX (501) 745-2164

TO: _____ ESC _____

ATTN: _____ JOYCE _____

FAX#: _____ 501-221-1341 _____

FROM: Clinton Water & Sewer

PAGES INCLUDING COVER PAGE: 1

MESSAGE: Yearly Report 2018

East Plant: 60.192 mg, 159 inches, 2038.81 Acres

West Plant: No Spray

Crops Grown: Bermuda Hay

East side Owners: Steve Bone & Will Dawson

West side Owners: Danny Boone & Roy Gray Jennings

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