CWL

Eastside Wastewater Treatment Facility

No-Discharge Permit # 5142-W (ARL043401)

NPDES Permit Number AR0043401

AFIN 16-00936

Annual Biosolids and Soil Report

2012 Results

Submitted in 2013

CWL

Owned by the Citizens of Jonesboro

April 26, 2013

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

Return Receipt/Certified

RE: No-Discharge Permit # 5142-W (ARL043401)
Annual Sludge and Soil Report
(CWL Eastside Wastewater Treatment Facility) AFIN 16-00936
NPDES Permit Number AR0043401

Dear Administrator:

Enclosed is the Annual Sludge and Soil Report for the year 2013 (2012 analytical results).

This report should satisfy the requirements as stated in our permit. If more information is required, please do not hesitate to contact my office at (870) 935-5581.

Sincerely,

Jake Rice, III, P.E.
Assistant Manager

/enclosures

Ronald L. Bowen, MANAGER
CITY WATER & LIGHT • 400 East Monroe • P.O. Box 1289 • Jonesboro, Arkansas 72403-1289 • 870-935-5581

Jonesboro, Arkansas
East Side Wastewater Treatment Plant
Sludge Management Plan
Sludge Application Records

January - Gallons of Sludge Applied

January 2012	Field 1	Field 2	Field 3	Field 4	Field 5	Field 6	Field 7	Field 8	Field 9	Field 10	Field 11	Field 12	Field 13	Field 14	Field 15	Field 16
1																
2																
3																
4																
5							103579	178386		192772	43158					
6							57544	57544	181264		69053					
7																
8																
9																
10																
11																
12																
13																
14																
15																
16	57544							117965					201404			
17																
18																
19																
20																
21																
22																
23																
24							89193	172632		138105	57544					
25																
26																
27																
28																
29																
30													230176			
31							184140			43158						
Total	57544	0	0	0	0	0	434456	526527	181264	374035	169755	0	431580	0	0	0
Gallons/acre	1573	0	0	0	0	0	28696	18572	9239	28060	30368	0	13623	0	0	0
Dry ton/acre	0.131	0.000	0.000	0.000	0.000	0.000	2.39	1.55	0.771	2.34	2.53	0.000	1.14	0.00	0.00	0.00

City Water & Light land apply sludge by an irrigation system. Rye on Bermuda is crop grown on land.

Jonesboro, Arkansas
East Side Wastewater Treatment Plant
Sludge Management Plan
Sludge Application Records

February - Gallons of Sludge Applied

February 2012	Field 1	Field 2	Field 3	Field 4	Field 5	Field 6	Field 7	Field 8	Field 9	Field 10	Field 11	Field 12	Field 13	Field 14	Field 15	Field 16
1																
2																
3																
4																
5																
6		201404														
7		258948							224422							
8																
9																
10																
11																
12																
13	201404															
14																
15																
16	120842															
17		264702														
18																
19																
20																
21																
22																
23																
24																
25																
26																
27												207158		224421		
28																
Total	322246	725054	0	0	0	0	0	0	224422	0	0	207158	0	224421	0	0
Gallons/acre	8809	14217	0	0	0	0	0	0	11438	0	0	10784	0	14488	0	0
Dry ton/acre	0.735	1.19	0.000	0.000	0.000	0.000	0.000	0.000	0.954	0.000	0.000	0.899	0.000	1.21	0.00	0.00

City Water & Light land apply sludge by an irrigation system. Rye on Bermuda is crop grown on land.

Jonesboro, Arkansas
East Side Wastewater Treatment Plant
Sludge Management Plan
Sludge Application Records

March - Gallons of Sludge Applied

March 2012	Field 1	Field 2	Field 3	Field 4	Field 5	Field 6	Field 7	Field 8	Field 9	Field 10	Field 11	Field 12	Field 13	Field 14	Field 15	Field 16
1																
2																
3																
4																
5		394176														
6				89193								240000				
7	75000			270000		67500										
8																
9																
10																
11																
12																
13																
14																
15																
16																
17																
18																
19																
20								230176								
21																
22																
23																
24																
25																
26													228000	114000		
27									143860							
28																
29																
30																
31																
Total	75000	394176	0	359193	0	67500	0	230176	143860	0	0	240000	228000	114000	0	0
Total 1st Quarter	454790	1119230	0	359193	0	67500	434456	756703	549546	374035	169755	447158	659580	338421	0	0
Gallons/acre	2050	7729	0	13987	0	7188	0	8119	7332	0	0	12493	7197	7359.59	0	0
Dry ton/acre	0.171	0.645	0.000	1.17	0.000	0.600	0.000	0.677	0.612	0.000	0.000	1.04	0.600	0.614	0.000	0.000

City Water & Light land apply sludge by an irrigation system. Rye on Bermuda is crop grown on land.

Jonesboro, Arkansas
East Side Wastewater Treatment Plant
Sludge Management Plan
Sludge Application Records

April - Gallons of Sludge Applied

April 2012	Field 1	Field 2	Field 3	Field 4	Field 5	Field 6	Field 7	Field 8	Field 9	Field 10	Field 11	Field 12	Field 13	Field 14	Field 15	Field 16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13					517896											
14																
15																
16																
17																
18																
19																
20																
21																
22																
23																
24																
25																
26							83439	258948			60421					
27																
28																
29																
30																
Total	0	0	0	0	517896	0	83439	258948	0	0	60421	0	0	0	0	0
Gallons/acre	0	0	0	0	17252	0	5511	9134	0	0	10809	0	0	0	0	0
Dry ton/acre	0.000	0.000	0.000	0.000	1.37	0.000	0.437	0.724	0.000	0.000	0.856	0.000	0.000	0.000	0.000	0.000

City Water & Light land apply sludge by an irrigation system. Rye on Bermuda is crop grown on land.

Jonesboro, Arkansas
East Side Wastewater Treatment Plant
Sludge Management Plan
Sludge Application Records

May - Gallons of Sludge Applied

May 2012	Field 1	Field 2	Field 3	Field 4	Field 5	Field 6	Field 7	Field 8	Field 9	Field 10	Field 11	Field 12	Field 13	Field 14	Field 15	Field 16
1																
2								40281	166878				86316			
3																
4																
5																
6																
7																
8																
9		348141														
10																
11																
12																
13																
14																
15																
16																
17																
18																
19																
20																
21																
22																
23																
24				333755												
25																
26																
27																
28																
29																
30																
31																
Total	0	348141	0	333755	0	0	0	40281	166878	0	0	0	86316	0	0	0
Gallons/acre	0	6826	0	12997	0	0	0	1421	8506	0	0	0	2725	0	0	0
Dry ton/acre	0.000	0.541	0.000	1.03	0.000	0.000	0.000	0.113	0.674	0.000	0.000	0.000	0.216	0.000	0.000	0.000

City Water & Light land apply sludge by an irrigation system. Rye on Bermuda is crop grown on land.

Jonesboro, Arkansas
East Side Wastewater Treatment Plant
Sludge Management Plan
Sludge Application Records

June - Gallons of Sludge Applied

June 2012	Field 1	Field 2	Field 3	Field 4	Field 5	Field 6	Field 7	Field 8	Field 9	Field 10	Field 11	Field 12	Field 13	Field 14	Field 15	Field 16
1																
2																
3																
4					402808											
5				293474												
6																
7																
8																
9																
10																
11																
12																
13																
14		362527														
15																
16																
17																
18																
19																
20																
21													296352			
22	319402															
23																
24																
25									215790							
26																
27																
28																
29																
30																
Total	319402	362527	0	293474	402808	0	0	0	215790	0	0	0	296352	0	0	0
Total 2nd Quarter	319402	710668	0	627229	920704	0	83439	299229	382668	0	60421	0	382668	0	0	0
Gallons/acre	8732	7108	0	11428	13418	0	0	0	10998	0	0	0	9354.55	0	0	0
Dry ton/acre	0.692	0.563	0.000	0.905	1.06	0.000	0.000	0.000	0.871	0.000	0.000	0.000	0.741	0.000	0.000	0.000

City Water & Light land apply sludge by an irrigation system. Rye on Bermuda is crop grown on land.

Jonesboro, Arkansas
East Side Wastewater Treatment Plant
Sludge Management Plan
Sludge Application Records

July - Gallons of Sludge Applied

July 2012	Field 1	Field 2	Field 3	Field 4	Field 5	Field 6	Field 7	Field 8	Field 9	Field 10	Field 11	Field 12	Field 13	Field 14	Field 15	Field 16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																
17																
18																
19																
20																
21																
22																
23				172632												
24				57544												
25																
26																
27																
28																
29																
30																
31																
Total	0	0	0	230176	0	0	0	0	0	0	0	0	0	0	0	0
Gallons/acre	0	0	0	8963	0	0	0	0	0	0	0	0	0	0	0	0
Dry ton/acre	0.000	0.000	0.000	0.523	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	######

City Water & Light land apply sludge by an irrigation system. Rye on Bermuda is crop grown on land.

Jonesboro, Arkansas
East Side Wastewater Treatment Plant
Sludge Management Plan
Sludge Application Records

August - Gallons of Sludge Applied

August 2012	Field 1	Field 2	Field 3	Field 4	Field 5	Field 6	Field 7	Field 8	Field 9	Field 10	Field 11	Field 12	Field 13	Field 14	Field 15	Field 16
1																
2						94948										
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15		71937														
16		71937														
17																
18																
19																
20																
21		201404														
22																
23																
24																
25																
26																
27				86316												
28		351018														
29																
30																
31																
Total	0	696296	0	86316	0	94948	0	0	0	0	0	0	0	0	0	0
Gallons/acre	0	13653	0	3361	0	10112	0	0	0	0	0	0	0	0	0	0
Dry ton/acre	0.000	0.797	0.000	0.196	0.000	0.590	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	#######

**City Water & Light land apply sludge by an irrigation system. Rye on Bermuda is crop grown on land.*

Jonesboro, Arkansas
East Side Wastewater Treatment Plant
Sludge Management Plan
Sludge Application Records

September - Gallons of Sludge Applied

September 2012	Field 1	Field 2	Field 3	Field 4	Field 5	Field 6	Field 7	Field 8	Field 9	Field 10	Field 11	Field 12	Field 13	Field 14	Field 15	Field 16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																
17																
18							31649	164000		161123	48912					
19																
20																
21																
22																
23																
24																
25	187018												256071			
26																
27																
28																
29																
30																
Total	187018	0	0	0	0	0	31649	164000	0	161123	48912	0	256071	0	0	0
Total 3rd Quarter	187018	696296	0	315492	0	94948	31649	164000	0	161123	48912	0	256071	0	0	0
Gallons/acre	5113	0	0	0	0	0	2090	5785	0	12087	8749.911	0	8083	0	0	0
Dry ton/acre	0.298	0.000	0.000	0.000	0.000	0.000	0.122	0.338	0.000	0.706	0.511	0.000	0.472	0.000	0.000	######

City Water & Light land apply sludge by an irrigation system. Rye on Bermuda is crop grown on land.

Jonesboro, Arkansas
East Side Wastewater Treatment Plant
Sludge Management Plan
Sludge Application Records

October - Gallons of Sludge Applied

October 2012	Field 1	Field 2	Field 3	Field 4	Field 5	Field 6	Field 7	Field 8	Field 9	Field 10	Field 11	Field 12	Field 13	Field 14	Field 15	Field 16
1																
2																
3												204281		201404		
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15													253194			
16				230176												
17																
18																
19																
20																
21																
22																
23																
24																
25					230176											
26																
27																
28																
29																
30																
31																
Total	0	0	0	230176	230176	0	0	0	0	0	0	204281	253194	201404	0	0
Gallons/acre	0	0	0	8963	7667	0	0	0	0	0	0	10634	7992	13002	0	0
Dry ton/acre	0.000	0.000	0.000	0.673	0.576	0.000	0.000	0.000	0.000	0.000	0.000	0.798	0.600	0.976	#VALUE!	0.000

City Water & Light land apply sludge by an irrigation system. Rye on Bermuda is crop grown on land.

Jonesboro, Arkansas
East Side Wastewater Treatment Plant
Sludge Management Plan
Sludge Application Records

November - Gallons of Sludge Applied

November 2012	Field 1	Field 2	Field 3	Field 4	Field 5	Field 6	Field 7	Field 8	Field 9	Field 10	Field 11	Field 12	Field 13	Field 14	Field 15	Field 16
1						129474		218667								
2																
3																
4																
5																
6																
7																
8		397054														
9																
10																
11																
12																
13																
14																
15																
16																
17																
18																
19	431580															
20																
21																
22																
23																
24																
25																
26																
27																
28					437334											
29																
30																
Total	431580	397054	0	0	437334	129474	0	218667	0	0	0	0	0	0	0	0
Gallons/acre	11798	7785	0	0	14568	13788	0	7713	0	0	0	0	0	0	0	0
Dry ton/acre	0.886	0.584	0.000	0.000	1.09	1.03	0.000	0.579	0.000	0.000	0.000	0.000	0.000	0.000	#VALUE!	0.000

City Water & Light land apply sludge by an irrigation system. Rye on Bermuda is crop grown on land.

Jonesboro, Arkansas
East Side Wastewater Treatment Plant
Sludge Management Plan
Sludge Application Records

December - Gallons of Sludge Applied

December 2012	Field 1	Field 2	Field 3	Field 4	Field 5	Field 6	Field 7	Field 8	Field 9	Field 10	Field 11	Field 12	Field 13	Field 14	Field 15	Field 16
1																
2																
3																
4																
5							198527		204281	115088						
6																
7																
8																
9																
10																
11																
12												198527		143860		
13																
14																
15																
16																
17																
18																
19																
20																
21																
22																
23																
24																
25																
26																
27																
28																
29																
30																
31																
Total	0	0	0	0	0	0	198527	0	204281	115088	0	198527	0	143860	0	0
Total 4th Quarter	431580	397054	0	230176	667510	129474	198527	218667	204281	115088	0	402808	253194	345264	0	0
Gallons/acre	0	0	0	0	0	0	13113	0	10412	8634	0	10334.6	0	9287.28	0	0
Dry ton/acre	0.000	0.000	0.000	0.000	0.000	0.000	0.984	0.000	0.782	0.648	0.000	0.776	0.000	0.697	#VALUE!	0.000

ANNUAL TOTAL GALLONS/ACRE= 633232

ANNUAL TOTAL DRY TONS/ACRE= 49.0

City Water & Light land apply sludge by an irrigation system. Rye on Bermuda is crop grown on land.

Jonesboro, Arkansas
East Side Wastewater Plant
Sludge Application Records
ANNUAL COMPOSITE LOADING REPORT

Year 2012

Nutrient and Pollutant Loading in Pounds/Acre

Field No.	Acres	Total Kjeldahl	Ammonia Nitrogen	Organic Nitrogen	Nitrogen Nitrate	Nitrogen Total PAN	Phosphorus	Cadmium	Lead	Potassium	Arsenic	Mercury	Copper	Nickel	Zinc	Chromium	Molybdenum	Selenium
1	36.58	584	5.70	579	29.7	206	72.0	0.016	0.134	27.8	0.079	0.0031	1.43	0.118	3.63	0.16	0.178	0.079
2	51.00	796	9.23	787	34.4	275	109.8	0.024	0.213	42.7	0.120	0.0038	2.10	0.183	5.97	0.25	0.269	0.120
3	22.84	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0000	0.000	0.000	0.000	0.000	0.000	0.000
4	25.68	815	15.6	800	34.7	282	118	0.025	0.175	44.3	0.125	0.0041	2.16	0.190	6.80	0.30	0.369	0.125
5	30.02	831	19.0	812	41.9	295	106	0.022	0.097	38.3	0.111	0.0048	1.94	0.159	5.83	0.287	0.411	0.111
6	9.39	454	0.580	454	40.3	177	50.5	0.013	0.108	19.5	0.065	0.0029	1.40	0.103	3.27	0.13	0.114	0.065
7	15.14	817	3.61	813	28.2	274	96.4	0.021	0.229	38.8	0.103	0.0039	1.70	0.147	3.60	0.170	0.151	0.103
8	28.35	773	6.81	766	23.2	257	101	0.021	0.218	40.0	0.106	0.0035	1.72	0.155	4.37	0.20	0.199	0.106
9	19.62	924	12.1	912	20.2	300	121	0.024	0.229	47.2	0.121	0.0041	1.84	0.170	4.81	0.238	0.275	0.121
10	13.33	718	0.617	718	33.9	250	89.1	0.020	0.232	36.2	0.102	0.0034	1.84	0.155	4.24	0.17	0.125	0.102
11	5.59	712	7.02	705	13.0	228	101	0.021	0.229	40.6	0.104	0.0028	1.61	0.154	4.48	0.19	0.189	0.104
12	19.21	788	0.212	788	39.8	276	81.3	0.018	0.203	32.8	0.092	0.0042	1.67	0.131	2.88	0.139	0.109	0.092
13	31.68	717	7.85	709	26.9	244	95.7	0.020	0.189	37.4	0.102	0.0034	1.73	0.153	4.70	0.21	0.221	0.102
14	15.49	789	0.225	789	42.3	279	80.4	0.018	0.197	32.3	0.092	0.0044	1.69	0.131	2.91	0.141	0.113	0.092
15	27.31	0	0.000	0	0.0	0	0.0	0.000	0.000	0.0	0.000	0.0000	0.00	0.000	0.00	0.000	0.000	0.000
16	46.19	0	0.0	0	0.0	0.000	0.000	0.0	0.000	0.0000	0.00	0.000	0.00	0.000	0.000	0.000	0.000	0.000

Sampling and Analysis conducted in accordance with 40 CFR Part 136 and SW-846 "Test Methods for the Evaluation of Solid Waste"

Jonesboro, Arkansas
Land Application Records
40 CFR Part 503 Sludge Regulations

503 Cumulative Pollutant Loading Limits

Eastside Wastewater Treatment Facility (No-Discharge Permit #5142-W (ARL043401); NPDES #AR0043401)

Compared to Actual Application of Pollutants To--Date[1] (2012)

Pollutant	Cumulative Lifetime Loading Limit[2] (lb/acre -life)	Pollutant Applied to Fields to Date (lb/acre-life)									
		Field No. 1 Cumulative Load	Field No. 1 % of Limit[3]	Field No. 2 Cumulative Load	Field No. 2 % of Limit[3]	Field No. 3 Cumulative Load	Field No. 3 % of Limit[3]	Field No. 4 Cumulative Load	Field No. 4 % of Limit[3]	Field No. 5 Cumulative Load	Field No. 5 % of Limit[3]
Arsenic	37	1.16	3.18	1.46	4.00	0.012	0.03	1.10	3.00	0.120	0.33
Cadmium	35	1.04	2.98	1.50	4.31	0.015	0.04	1.24	3.55	0.032	0.09
Chromium[a]	2679	6.61	0.25	9.18	0.34	0.107	0.00	6.96	0.26	0.421	0.02
Copper	1350	32.0	2.37	42.7	3.16	0.542	0.04	35.0	2.59	2.27	0.17
Lead	270	5.22	1.93	8.02	2.97	0.140	0.05	5.80	2.15	0.150	0.06
Mercury	15	0.181	1.20	0.252	1.66	0.005	0.03	0.209	1.38	0.010	0.07
Molybdenum[b]	16	2.51	15.6	3.49	21.7	0.061	0.38	2.77	17.3	0.434	2.70
Nickel	378	8.00	2.12	11.3	2.98	0.101	0.03	8.81	2.33	0.324	0.09
Selenium	90	1.55	1.72	2.21	2.46	0.016	0.02	1.84	2.05	0.129	0.14
Zinc	2520	119	4.73	162	6.42	1.71	0.07	116	4.60	8.55	0.34

[1] The value shown for each field is the concentration of pollutant (lb/acre) applied during the year plus the total pollutant (lb/acre) applied in previous years.

2 Table 2 of 40CFR Part 503.13 - Cumulative Pollulant Loading Rates as reported in Permit # 5142-W (ARL043401)

[3]For those facilities whose sludge does not meet the Pollutant Concentrations of Table 3 of 503.13 and which are subject to the Cumulative Loading Rates of Table 2 of 503.13, the Cumulative Loading of the metals at a site must be reported in the "Maximum Loading" columns of the DMR if the loading rate has reached 90% or more of the maximum rate allowed by Table 2 of Part 503.13. If the facility has more than on application site, then a DMR form must be included for each site which it has reached 90% or more of the maximum rate allowed.

[a]Chromium is report only

[b]As a result of the February 25,1994, Amendment to the rule, the limits for molybdenum were deleted from the Part 503 rule pending EPA reconsideration.

Sampling and analysis is conducted in accordance with 40 CFR 136 and SW-846 "Test Methods for the Evaluation of Solid Waste"

Jonesboro, Arkansas
Land Application Records
40 CFR Part 503 Sludge Regulations

503 Cumulative Pollutant Loading Limits

Eastside Wastewater Treatment Facility (No-Discharge Permit #5142-W (ARL043401); NPDES #AR0043401)

Compared to Actual Application of Pollutants To--Date[1] (2012)

Pollutant	Cumulative Lifetime Loading Limit[2] (lb/acre -life)	Pollutant Applied to Fields to Date (lb/acre-life)									
		Field No. 6 Cumulative Load	Field No. 6 % of Limit[3]	Field No. 7 Cumulative Load	Field No. 7 % of Limit[3]	Field No. 8 Cumulative Load	Field No. 8 % of Limit[3]	Field No. 9 Cumulative Load	Field No. 9 % of Limit[3]	Field No. 10 Cumulative Load	Field No. 10 % of Limit[3]
Arsenic	37	0.611	1.67	2.10	5.74	1.34	3.67	2.42	6.60	1.61	4.40
Cadmium	35	0.512	1.47	2.12	6.09	1.47	4.23	2.15	6.16	1.99	5.72
Chromium[a]	2679	4.13	0.15	11.3	0.42	7.88	0.29	14.3	0.53	9.27	0.35
Copper	1350	23.1	1.71	51.4	3.81	38.3	2.83	62.9	4.66	47.2	3.49
Lead	270	4.10	1.52	9.44	3.50	6.52	2.41	12.0	4.44	7.22	2.67
Mercury	15	0.123	0.81	0.286	1.89	0.210	1.38	0.392	2.58	0.265	1.74
Molybdenum[b]	16	1.64	10.18	4.43	27.5	3.13	19.4	5.61	34.9	4.24	26.4
Nickel	378	4.06	1.07	14.0	3.71	10.3	2.73	20.2	5.34	13.3	3.52
Selenium	90	0.853	0.95	3.08	3.42	2.08	2.31	3.48	3.86	2.75	3.05
Zinc	2520	88.1	3.50	173	6.86	140	5.54	246	9.77	165	6.56

1 The value shown for each field is the concentration of pollutant (lb/acre) applied during the year plus the total pollutant (lb/acre) applied in previous years.

2 Table 2 of 40CFR Part 503.13 - Cumulative Pollulant Loading Rates as reported in Permit # 5142-W (ARL043401)

[3]For those facilities whose sludge does not meet the Pollutant Concentrations of Table 3 of 503.13 and which are subject to the Cumulative Loading Rates of Table 2 of 503.13, the Cumulative Loading of the metals at a site must be reported in the "Maximum Loading" columns of the DMR if the loading rate has reached 90% or more of the maximum rate allowed by Table 2 of Part 503.13. If the facility has more than on application site, then a DMR form must be included for each site which it has reached 90% or more of the maximum rate allowed.

[a]Chromium is report only

[b]As a result of the February 25,1994, Amendment to the rule, the limits for molybdenum were deleted from the Part 503 rule pending EPA reconsideration.

Sampling and analysis is conducted in accordance with 40 CFR 136 and SW-846 "Test Methods for the Evaluation of Solid Waste"

Jonesboro, Arkansas
Land Application Records
40 CFR Part 503 Sludge Regulations
Cumulative Loading Limits Report

Eastside Wastewater Treatment Facility (No-Discharge Permit #5142-W (ARL043401); NPDES #AR0043401)

503 Cumulative Pollutant Loading Limits

Compared to Actual Application of Pollutants To--Date[1] (2012)

Pollutant	Cumulative Lifetime Loading Limit[2] (lb/acre -life)	Pollutant Applied to Fields to Date (lb/acre-life)									
		Field No. 11 Cumulative Load	Field No. 11 % of Limit[3]	Field No. 12 Cumulative Load	Field No.12 % of Limit[3]	Field No. 13 Cumulative Load	Field No.13 % of Limit[3]	Field No. 14 Cumulative Load	Field No. 14 % of Limit[3]	Field No. 15 Cumulative Load	Field No. 15 % of Limit[3]
Arsenic	37	1.49	4.08	0.851	2.32	0.760	2.08	0.317	0.87	0.000	0.000
Cadmium	35	1.56	4.48	1.43	4.11	0.803	2.31	0.535	1.54	0.000	0.000
Chromium[a]	2679	7.30	0.27	3.94	0.15	4.40	0.16	1.33	0.05	0.000	0.000
Copper	1350	37.3	2.76	26.7	1.97	22.2	1.64	10.1	0.75	0.000	0.000
Lead	270	6.83	2.53	4.57	1.69	3.92	1.45	1.44	0.53	0.000	0.000
Mercury	15	0.224	1.48	0.137	0.90	0.122	0.80	0.057	0.37	0.000	0.000
Molybdenum[b]	16	3.18	19.8	2.54	15.8	1.57	9.78	1.57	9.78	0.000	0.000
Nickel	378	10.0	2.65	9.26	2.45	5.74	1.52	3.75	0.99	0.000	0.000
Selenium	90	2.51	2.79	2.15	2.38	1.18	1.32	0.805	0.89	0.000	0.000
Zinc	2520	143	5.68	119	4.72	81.6	3.24	40.0	1.59	0.000	0.000

1 The value shown for each field is the concentration of pollutant (lb/acre) applied during the year plus the total pollutant (lb/acre) applied in previous years.

2 Table 2 of 40CFR Part 503.13 - Cumulative Pollulant Loading Rates as reported in Permit # 5142-W (ARL043401)

[3]For those facilities whose sludge does not meet the Pollutant Concentrations of Table 3 of 503.13 and which are subject to the Cumulative Loading Rates of Table 2 of 503.13, the Cumulative Loading of the metals at a site must be reported in the "Maximum Loading" columns of the DMR if the loading rate has reached 90% or more of the maximum rate allowed by Table 2 of Part 503.13. If the facility has more than on application site, then a DMR form must be included for each site which it has reached 90% or more of the maximum rate allowed.

[a]Chromium is report only

[b]As a result of the February 25,1994, Amendment to the rule, the limits for molybdenum were deleted from the Part 503 rule pending EPA reconsideration.

Sampling and analysis is conducted in accordance with 40 CFR 136 and SW-846 "Test Methods for the Evaluation of Solid Waste"

Jonesboro, Arkansas
Land Application Records
40 CFR Part 503 Sludge Regulations
Cumulative Loading Limits Report

Eastside Wastewater Treatment Facility (No-Discharge Permit #5142-W (ARL043401); NPDES #AR0043401)

503 Cumulative Pollutant Loading Limits

Compared to Actual Application of Pollutants To--Date[1] (2012)

Pollutant	Cumulative Lifetime Loading Limit[2] (lb/acre -life)	Pollutant Applied to Fields to Date (lb/acre-life)									
		Field No. 16 Cumulative Load	Field No. 16 % of Limit[3]								
Arsenic	37	0.00	0.00								
Cadmium	35	0.00	0.00								
Chromium[a]	2679	0.00	0.00								
Copper	1350	0.00	0.00								
Lead	270	0.00	0.00								
Mercury	15	0.00	0.00								
Molybdenum[b]	16	0.00	0.00								
Nickel	378	0.00	0.00								
Selenium	90	0.00	0.00								
Zinc	2520	0.00	0.00								

1 The value shown for each field is the concentration of pollutant (lb/acre) applied during the year plus the total pollutant (lb/acre) applied in previous years.

2 Table 2 of 40CFR Part 503.13 - Cumulative Pollulant Loading Rates as reported in Permit # 5142-W (ARL043401)

[3]For those facilities whose sludge does not meet the Pollutant Concentrations of Table 3 of 503.13 and which are subject to the Cumulative Loading Rates of Table 2 of 503.13, the Cumulative Loading of the metals at a site must be reported in the "Maximum Loading" columns of the DMR if the loading rate has reached 90% or more of the maximum rate allowed by Table 2 of Part 503.13. If the facility has more than on application site, then a DMR form must be included for each site which it has reached 90% or more of the maximum rate allowed.

[a]Chromium is report only

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Sampling and analysis is conducted in accordance with 40 CFR 136 and SW-846 "Test Methods for the Evaluation of Solid Waste"

CWL

Quarterly Biosolids Results

2012

Eastside Wastewater Treatment Facility

No-Discharge Permit # 5142-W (ARL043401)

NPDES Permit Number AR0043401

AFIN 16-00936

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"A Laboratory Management Partner"

2/8/2012

City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro, AR, 72403

Ref: Analytical Testing
ETC Report Number: 12-025-0211
Client Project Description: East POTW/West POTW Annual

Dear Ms. Myra Taylor:

Environmental Testing and Consulting, Inc. received 2 sample(s) on 1/25/2012 for the analyses presented in the following report.

The above referenced project has been analyzed per your instructions. The analyses were performed in accordance with the applicable analytical method.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, instrumentation maintenance and calibration were performed in accordance with guidelines established by the analytical method(s) and NELAC. All results provided are in compliance with NELAC requirements unless otherwise indicated and/or narrated.

The results are shown on the attached Report of Analysis(s). Results for solid matrices are reported on an as-received basis unless otherwise indicated. This report shall not be reproduced except in full and relates only to the samples included in this report.

Please do not hesitate to contact me or client services if you have any questions or need additional information.

Sincerely,

Randall H. Thomas

Randy Thomas
Project Manager

Laboratory's liability in any claim relating to analyses performed shall be limited to, at laboratory's option, repeating the analysis in question at laboratory's expense, or the refund of the charges paid for performance of said analysis.

Alabama	#40750	Louisiana	#04015	VA NELAP	#460181	Texas	#T104704180-11-6	Arkansas	#88-0650
Mississippi		California	#09267CA	NC	#415	Oklahoma	#9311	Virginia	#00106
Kentucky	#90047	Tennessee	#TN02027	EPA	#TN00012	Kentucky UST	#41	Kansas	#E-10396

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Client: City Water & Light
Project: East POTW/West POTW Annual
Lab Report Number: 12-025-0211
Date: 2/6/2012

CASE NARRATIVE

Volatile Organics by Method 8260B
Surrogate Recovery Failure

Dibromofluoromethane surrogate was flagged for recoveries outside QC limits in the associated project sample. This sample was re-analyzed for verification with similar recoveries. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits indicating that failing recoveries were due to the sample matrix.

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02614
City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro , AR 72403

Project Information : East POTW/West POTW Annual

Report Date : 2/8/2012

Report Number : **12-025-0211**

REPORT OF ANALYSIS

Received : 1/25/2012

Lab No : **95970**
Sample ID : **East POTW**

Matrix: **Solids**
Sampled: **1/23/2012 9:40**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Cyanide	<50.0	mg/Kg - dry	50.0	1	01/31/12 07:00	NRT	SW-9010B
Nitrate+Nitrite-N	**119**	mg/Kg - dry	30.0	1	02/07/12 13:30	NRT	4500-NO3E
Total Kjeldahl Nitrogen	**100000**	mg/Kg - dry	1250	1	01/28/12 11:54	DRG	4500-TKN
Total Phosphorus	**12600**	mg/Kg - dry	3040	1	02/02/12 09:50	TKM	4500-PE
Phenols (Total)	**183**	mg/Kg - dry	125	1	02/03/12 11:52	DRG	SW-9065
Total Antimony	<25.0	mg/Kg - dry	25.0	1	01/27/12 04:31	JTR	6010B
Total Arsenic	<25.0	mg/Kg - dry	25.0	1	01/27/12 04:31	JTR	6010B
Total Beryllium	<2.50	mg/Kg - dry	2.50	1	01/27/12 04:31	JTR	6010B
Total Cadmium	<5.00	mg/Kg - dry	5.00	1	01/27/12 04:31	JTR	6010B
Total Chromium	**14.9**	mg/Kg - dry	12.5	1	01/27/12 04:31	JTR	6010B
Total Copper	**168**	mg/Kg - dry	12.5	1	01/27/12 04:31	JTR	6010B
Total Lead	**38.0**	mg/Kg - dry	15.0	1	01/27/12 04:31	JTR	6010B
Total Mercury	<0.665	mg/Kg - dry	0.665	1	01/30/12 16:07	TDJ	7471A
Total Molybdenum	<12.5	mg/Kg - dry	12.5	1	01/27/12 04:31	JTR	6010B
Total Nickel	**17.2**	mg/Kg - dry	12.5	1	01/27/12 04:31	JTR	6010B
Total Potassium	**5350**	mg/Kg - dry	250	1	01/27/12 04:31	JTR	6010B
Total Selenium	<25.0	mg/Kg - dry	25.0	1	01/27/12 04:31	JTR	6010B
Total Silver	<12.5	mg/Kg - dry	12.5	1	01/27/12 04:31	JTR	6010B
Total Thallium	<50.0	mg/Kg - dry	50.0	1	01/27/12 04:31	JTR	6010B
Total Zinc	**301**	mg/Kg - dry	25.0	1	01/27/12 04:31	BKN	6010B

Qualifiers/ Definitions
* Outside QC limit
MQL Method Quantitation Limit
DF Dilution Factor

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02614
City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro , AR 72403

Project Information : East POTW/West POTW Annual

Report Date : 2/8/2012

Report Number : **12-025-0211**

REPORT OF ANALYSIS

Received : 1/25/2012

Lab No : **95970**
Sample ID : **East POTW**

Matrix: **Solids**
Sampled: **1/23/2012 9:40**

Analytical Method: 2540G
Prep Method: **Prep Batch(es):** **Date/Time Prepped:**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
% Moisture	**98**	%		1		FLD	

Analytical Method: 8082
Prep Method: 3550B **Prep Batch(es):** L123228 **Date/Time Prepped:** 1/31/2012 11:15:00

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aroclor 1016	<4.49	mg/Kg - dry	4.49	1	01/31/12 20:38	VIC	L123320
Aroclor 1221	<4.49	mg/Kg - dry	4.49	1	01/31/12 20:38	VIC	L123320
Aroclor 1232	<4.49	mg/Kg - dry	4.49	1	01/31/12 20:38	VIC	L123320
Aroclor 1242	<4.49	mg/Kg - dry	4.49	1	01/31/12 20:38	VIC	L123320
Aroclor 1248	<4.49	mg/Kg - dry	4.49	1	01/31/12 20:38	VIC	L123320
Aroclor 1254	<4.49	mg/Kg - dry	4.49	1	01/31/12 20:38	VIC	L123320
Aroclor 1260	<4.49	mg/Kg - dry	4.49	1	01/31/12 20:38	VIC	L123320
Surrogate: Decachlorobiphenyl		91.1 %	Limits: 17-141%	1	01/31/12 20:38	VIC	L123320
Surrogate: Tetrachloro-m-xylene		65.4 %	Limits: 20-122%	1	01/31/12 20:38	VIC	L123320

Qualifiers/ Definitions

*	Outside QC limit	DF	Dilution Factor
I	Recovery out of range	MQL	Method Quantitation Limit

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City Water & Light
400 East Monroe Avenue

Jonesboro, AR 72403

Project Description: **East POTW/West POTW** **Annual**

Lab Order Number **12-025-0211**
Lab ID **1201142-001B**
Field ID **East POTW**
Sample Number **95970**

Report of Analysis
Received **01/25/12**
Matrix **Sludge**
Sampled **01/23/12**

1311 TCLP Characterization

Prep Batch 35542 **Date/Time** 01/25/12 15:45 Combined

Analytical Method 6010B

Prep Method 3005A **Prep Batch** 35546 **Final Volume** 50 mL **Date/Time Prepped** 01/26/12 11:34

Compound	Result	Units	MQL	DF	Date/Time Analyzed	By	Analytical Batch
Silver - TCLP	< 0.025	mg/L	0.025	1	01/28/12 4:24	KN	51509
Arsenic - TCLP	< 0.125	mg/L	0.125	1	01/28/12 4:24	KN	51509
Barium - TCLP	**0.151**	**mg/L**	**0.125**	**1**	**01/28/12 4:24**	**KN**	**51509**
Cadmium - TCLP	< 0.025	mg/L	0.025	1	01/28/12 4:24	KN	51509
Chromium - TCLP	< 0.050	mg/L	0.050	1	01/28/12 4:24	KN	51509
Lead - TCLP	< 0.050	mg/L	0.050	1	01/28/12 4:24	KN	51509
Selenium - TCLP	< 0.250	mg/L	0.250	1	01/28/12 4:24	KN	51509

Analytical Method 7470A

Prep Method 7470A **Prep Batch** 35553 **Final Volume** 20 mL **Date/Time Prepped** 01/27/12 8:43

Compound	Result	Units	MQL	DF	Date/Time Analyzed	By	Analytical Batch
Mercury - TCLP	< 0.0010	mg/L	0.0010	1	02/02/12 12:44	TJ	51551

Qualifiers/ Definitions

*	Surrogate Recovery outside accepted limits	* I	Recoveries affected by interferences or high background
B	Analyte detected in the associated Method Blank	DF	Dilution Factor
E	Value exceeds method calibration range	H	Prepped / Analyzed out of holding time.
J	Estimated Value Analyte below reported detection limit	M	Minimum value
MDL	Method Dection Limit (adjusted)	MQL	Method Quantitation Limit (adjusted)
MRL	Method Reporting Limit	N	Refer to attached Non-Compliance Report
Q	RPD >40% between primary and confirmation columns	SQL	Sample Quantitation Limit (adjusted MDL)

02/06/12 2614 CWL_JONESBOR

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City Water & Light
400 East Monroe Avenue
Jonesboro, AR 72403

Project Description **East POTW/West POTW**
Annual

Lab Order Number **12-025-0211**
Lab ID **1201142-001A**
Field ID **East POTW**
Sample Number **95970**

Report of Analysis

Received **01/25/12**
Matrix **Sludge**
Sampled **01/23/12 9:40**

1311 TCLP Zero Headspace for Volatiles

Prep Batch 35551 **Date/Time** 01/26/12 15:15 Combined

Analytical Method 8260B

Prep Method 5030B **Prep Batch** 35559 **Date/Time Prepped** 01/27/12 8:51

Default Vol/Wt 10 mL **Sample Vol/Wt** 10 mL

Compound	Result	Units	MQL	DF	Date/Time Analyzed	By	Analytical Batch
Benzene	< 0.0100	mg/L	0.0100	10	01/27/12 12:24	NFP	51501
2-Butanone (MEK)	< 0.200	mg/L	0.200	10	01/27/12 12:24	NFP	51501
Carbon Tetrachloride	< 0.0100	mg/L	0.0100	10	01/27/12 12:24	NFP	51501
Chlorobenzene	< 0.0100	mg/L	0.0100	10	01/27/12 12:24	NFP	51501
Chloroform	< 0.0100	mg/L	0.0100	10	01/27/12 12:24	NFP	51501
1,4-Dichlorobenzene	< 0.0100	mg/L	0.0100	10	01/27/12 12:24	NFP	51501
1,2-Dichloroethane	< 0.0100	mg/L	0.0100	10	01/27/12 12:24	NFP	51501
1,1-Dichloroethene	< 0.0100	mg/L	0.0100	10	01/27/12 12:24	NFP	51501
Tetrachloroethene	< 0.0100	mg/L	0.0100	10	01/27/12 12:24	NFP	51501
Trichloroethene	< 0.0100	mg/L	0.0100	10	01/27/12 12:24	NFP	51501
Vinyl Chloride	< 0.0100	mg/L	0.0100	10	01/27/12 12:24	NFP	51501
Surrogate: Dibromofluoromethane		71 %	Limits: 70-128	10	01/27/12 12:24	NFP	51501
Surrogate: Toluene-d8		81 %	Limits: 70-130	10	01/27/12 12:24	NFP	51501
Surrogate: 4-Bromofluorobenzene		87 %	Limits: 71-131	10	01/27/12 12:24	NFP	51501
Surrogate: 1,2-Dichloroethane-d4		86 %	Limits: 67-136	10	01/27/12 12:24	NFP	51501

Qualifiers/ Definitions

*	Surrogate Recovery outside accepted limits	* I	Recoveries affected by interferences or high background
B	Analyte detected in the associated Method Blank	DF	Dilution Factor
E	Value exceeds method calibration range	H	Prepped / Analyzed out of holding time.
J	Estimated Value Analyte below reported detection limit	M	Minimum value
MDL	Method Dection Limit (adjusted)	MQL	Method Quantitation Limit (adjusted)
MRL	Method Reporting Limit	N	Refer to attached Non-Compliance Report
Q	RPD >40% between primary and confirmation columns	SQL	Sample Quantitation Limit (adjusted MDL)

02/06/12 2614 CWL_JONESBOR

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City Water & Light
400 East Monroe Avenue
Jonesboro, AR 72403

Project Description **East POTW/West POTW Annual**

Lab Order Number **12-025-0211**
Lab ID **1201142-001B**
Field ID **East POTW**
Sample Number **95970**

Report of Analysis

Received **01/25/12**
Matrix **Sludge**
Sampled **01/23/12 9:40**

1311 TCLP Characterization

Prep Batch 35542 **Date/Time** 01/25/12 15:45 Combined

Analytical Method 8081A

Prep Method 3510C **Prep Batch** 35557 **Date/Time Prepped** 01/27/12 9:25
Default Vol/Wt 1000 mL **Sample Vol/Wt** 250 mL

Compound	Result	Units	MQL	DF	Date/Time Analyzed	By	Analytical Batch
Lindane	< 0.000160	mg/L	0.000160	10	01/27/12 16:54	VC	51524
Chlordane	< 0.00100	mg/L	0.00100	10	01/27/12 16:54	VC	51524
Endrin	< 0.000160	mg/L	0.000160	10	01/27/12 16:54	VC	51524
Heptachlor	< 0.000160	mg/L	0.000160	10	01/27/12 16:54	VC	51524
Heptachlor epoxide	< 0.000160	mg/L	0.000160	10	01/27/12 16:54	VC	51524
Methoxychlor	< 0.000160	mg/L	0.000160	10	01/27/12 16:54	VC	51524
Toxaphene	< 0.00120	mg/L	0.00120	10	01/27/12 16:54	VC	51524
Surrogate: Decachlorobiphenyl		72 %	Limits: 36-116	10	01/27/12 16:54	VC	51524
Surrogate: Tetrachloro-m-xylene		47 %	Limits: 25-123	10	01/27/12 16:54	VC	51524

Qualifiers/ Definitions

*	Surrogate Recovery outside accepted limits	*I	Recoveries affected by interferences or high background
B	Analyte detected in the associated Method Blank	DF	Dilution Factor
E	Value exceeds method calibration range	H	Prepped / Analyzed out of holding time.
J	Estimated Value Analyte below reported detection limit	M	Minimum value
MDL	Method Dection Limit (adjusted)	MQL	Method Quantitation Limit (adjusted)
MRL	Method Reporting Limit	N	Refer to attached Non-Compliance Report
Q	RPD >40% between primary and confirmation columns	SQL	Sample Quantitation Limit (adjusted MDL)

02/06/12 2614 CWL_JONESBOR

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City Water & Light
400 East Monroe Avenue
Jonesboro, AR 72403

Project Description **East POTW/West POTW Annual**

Lab Order Number **12-025-0211**
Lab ID **1201142-001B**
Field ID **East POTW**
Sample Number **95970**

Report of Analysis

Received **01/25/12**
Matrix **Sludge**
Sampled **01/23/12 9:40**

1311 TCLP Characterization

Prep Batch 35542 **Date/Time** 01/25/12 15:45 Combined

Analytical Method 8151A

Prep Method 8151A **Prep Batch** 35566 **Date/Time Prepped** 01/30/12 12:00
Default Vol/Wt 1000 mL **Sample Vol/Wt** 50 mL

Compound	Result	Units	MQL	DF	Date/Time Analyzed	By	Analytical Batch
2,4-D	< 0.00200	mg/L	0.00200	1	02/01/12 14:32	VC	51569
2,4,5-TP (Silvex)	< 0.000600	mg/L	0.000600	1	02/01/12 14:32	VC	51569
Surrogate: DCAA		50 %	Limits: 20-150	1	02/01/12 14:32	VC	51569

Qualifiers/ Definitions				
	*	Surrogate Recovery outside accepted limits	* I	Recoveries affected by interferences or high background
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	E	Value exceeds method calibration range	H	Prepped / Analyzed out of holding time.
	J	Estimated Value Analyte below reported detection limit	M	Minimum value
	MDL	Method Dection Limit (adjusted)	MQL	Method Quantitation Limit (adjusted)
	MRL	Method Reporting Limit	N	Refer to attached Non-Compliance Report
	Q	RPD >40% between primary and confirmation columns	SQL	Sample Quantitation Limit (adjusted MDL)

02/06/12 2614 CWL_JONESBOR

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City Water & Light
400 East Monroe Avenue
Jonesboro, AR 72403

Project Description **East POTW/West POTW** **Annual**

Lab Order Number **12-025-0211**
Lab ID **1201142-001B**
Field ID **East POTW**
Sample Number **95970**

Report of Analysis

Received **01/25/12**
Matrix **Sludge**
Sampled **01/23/12 9:40**

1311 TCLP Characterization

Prep Batch 35542 **Date/Time** 01/25/12 15:45 Combined

Analytical Method 8270C

Prep Method 3510C **Prep Batch** 35547 **Date/Time Prepped** 01/26/12 10:30

Default Vol/Wt 1000 mL **Sample Vol/Wt** 250 mL

Compound	Result	Units	MQL	DF	Date/Time Analyzed	By	Analytical Batch
2,4-Dinitrotoluene	< 0.0200	mg/L	0.0200	1	01/30/12 16:45	KS	51496
Hexachlorobenzene	< 0.0200	mg/L	0.0200	1	01/30/12 16:45	KS	51496
Hexachlorobutadiene	< 0.0200	mg/L	0.0200	1	01/30/12 16:45	KS	51496
Hexachloroethane	< 0.0200	mg/L	0.0200	1	01/30/12 16:45	KS	51496
o-Cresol	< 0.0200	mg/L	0.0200	1	01/30/12 16:45	KS	51496
m,p-Cresol	< 0.0200	mg/L	0.0200	1	01/30/12 16:45	KS	51496
Nitrobenzene	< 0.0200	mg/L	0.0200	1	01/30/12 16:45	KS	51496
Pentachlorophenol	< 0.0200	mg/L	0.0200	1	01/30/12 16:45	KS	51496
Pyridine	< 0.0400	mg/L	0.0400	1	01/30/12 16:45	KS	51496
2,4,5-Trichlorophenol	< 0.0200	mg/L	0.0200	1	01/30/12 16:45	KS	51496
2,4,6-Trichlorophenol	< 0.0200	mg/L	0.0200	1	01/30/12 16:45	KS	51496
Surrogate: Nitrobenzene-d5		72 %	Limits: 29-110	1	01/30/12 16:45	KS	51496
Surrogate: 2-Fluorobiphenyl		68 %	Limits: 38-107	1	01/30/12 16:45	KS	51496
Surrogate: 4-Terphenyl-d14		66 %	Limits: 33-122	1	01/30/12 16:45	KS	51496
Surrogate: Phenol-d6		29 %	Limits: 10-115	1	01/30/12 16:45	KS	51496
Surrogate: 2,4,6-Tribromophenol		91 %	Limits: 40-125	1	01/30/12 16:45	KS	51496
Surrogate: 2-Fluorophenol		41 %	Limits: 20-110	1	01/30/12 16:45	KS	51496

Qualifiers/ Definitions

*	Surrogate Recovery outside accepted limits	*I	Recoveries affected by interferences or high background
B	Analyte detected in the associated Method Blank	DF	Dilution Factor
E	Value exceeds method calibration range	H	Prepped / Analyzed out of holding time.
J	Estimated Value Analyte below reported detection limit	M	Minimum value
MDL	Method Dection Limit (adjusted)	MQL	Method Quantitation Limit (adjusted)
MRL	Method Reporting Limit	N	Refer to attached Non-Compliance Report
Q	RPD >40% between primary and confirmation columns	SQL	Sample Quantitation Limit (adjusted MDL)

02/06/12 2614 CWL_JONESBOR

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www.etcmemphis.com
2790 Whitten Road Memphis, Tennessee 38133 (901) 213-2400 Fax (901) 213-2440
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Cooler Receipt Form

Customer Number: **02614**
Customer Name: **City Water & Light**
Report Number: **12-025-0211**

Shipping Method

○ Fed Ex ● UPS ○ US Postal ○ Client ○ Lab ○ Courier ○ Other :

Shipping container/cooler uncompromised?	● Yes	○ No	
Custody seals intact on shipping container/cooler?	○ Yes	○ No	● Not Required
Custody seals intact on sample bottles?	○ Yes	○ No	● Not Required
Chain of Custody (COC) present?	● Yes	○ No	
COC agrees with sample label(s)?	● Yes	○ No	
COC properly completed	● Yes	○ No	
Samples in proper containers?	● Yes	○ No	
Sample containers intact?	● Yes	○ No	
Sufficient sample volume for indicated test(s)?	● Yes	○ No	
All samples received within holding time?	● Yes	○ No	
Cooler temperature in compliance?	● Yes	○ No	
Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun.	● Yes	○ No	
Water - Sample containers properly preserved	● Yes	○ No	○ N/A
Water - VOA vials free of headspace	○ Yes	○ No	● N/A
Trip Blanks received with VOAs	○ Yes	○ No	● N/A
Soil VOA method 5035 – compliance criteria met	○ Yes	○ No	● N/A

☐ High concentration container (48 hr) ☐ Low concentration EnCore samplers (48 hr)
☐ High concentration pre-weighed (methanol -14 d) ☐ Low conc pre-weighed vials (Sod Bis -14 d)

Special precautions or instructions included? ○ Yes ● No

Comments:

Any regulatory non-compliance issues will be recorded on non-compliance report.

Signature: Rebekah Ross

Date & Time: 01/25/2012 10:04:27

CWL Chain of Custody Record

12-025-0211
02614
2012-01-25
10:01:56
City Water & Light
East POTW/West POTW Quarterly

Jonesboro City Water and Light
400 East Monroe Avenue
P.O. Box 1289
Jonesboro, Arkansas 72403-1289

1201142

Sample Location: (X) East POTW (__) West POTW (__) Misc: _____

Sample Types:
A Potable Water, Source: _____
B Wastewater Effluent
C Wastewater Influent
D Wastewater Misc: _____
E Municipal Sludge (% Solids used to convert mg/L to mg/Kg: 2.0 %)
F Soil
G Miscellaneous: _____

Container #	Analysis Required	Sample Type	Preservative	(G) Grab	(C) Compo-site
1	(X)Total Phosphorus	E	H2SO4 pH<2	(X)G	(_)C
1	(X)Total Kjeldahl Nitrogen		H2SO4 pH<2	(_)G	(_)C
1	(X)Nitrate/Nitrite		H2SO4 pH<2	(_)G	(_)C
2	(X)Antimony		HNO3 ph<2	(_)G	(_)C
2	(X)Arsenic		HNO3 ph<2	(_)G	(_)C
2	(X)Beryllium		HNO3 ph<2	(_)G	(_)C
2	(X)Mercury		HNO3 ph<2	(_)G	(_)C
2	(X)Molybdenum		HNO3 ph<2	(_)G	(_)C
2	(X)Selenium		HNO3 ph<2	(_)G	(_)C
2	(X)Thallium		HNO3 ph<2	(_)G	(_)C
2	(X)Cadmium		HNO3 ph<2	(_)G	(_)C
2	(X)Copper		HNO3 ph<2	(_)G	(_)C
2	(X)Lead		HNO3 ph<2	(_)G	(_)C
2	(X)Nickel		HNO3 ph<2	(_)G	(_)C
2	(X)Zinc		HNO3 ph<2	(_)G	(_)C
2	(X)Chromium		HNO3 ph<2	(_)G	(_)C
2	(X)Total Potassium		HNO3 ph<2	(_)G	(_)C
3	(X)Phenols		H2SO4 ph<2	(_)G	(_)C
4	(X)Cyanide		NaOH ph>12	(_)G	(_)C
5	(X)PCB's		None	(_)G	(_)C
6	(X)TCLP		None	(X)G	(_)C
	(_)			(_)G	(_)C
	(_)			(_)G	(_)C

Sampled by:
Signature: _____ Date: 1/23/12 Time: 9:40 (X) AM (_) PM

Received by:
Signature: _____ Date: 1/23/12 Time: 9:42 (X) AM (_) PM

Relinquished by:
Signature: _____ Date: 1/24/12 Time: 3:30 (_) AM (X) PM

Received by:
Signature: _____ Date: __/__/__ Time: __:__ (_) AM (_) PM

Dispatched by:
Signature: _____ Date: __/__/__ Time: __:__ (_) AM (_) PM

Received in Laboratory by:
Signature: _____ Date: 1/26/12 Time: 0823 (_) AM (_) PM

Sampling and Preservation performed in compliance with 40 CFR Part 136

1°C

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"A Laboratory Management Partner"

4/18/2012

City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro, AR, 72403

Ref: Analytical Testing
ETC Report Number: 12-096-0218
Client Project Description: East POTW/West POTW

Dear Ms. Myra Taylor:

Environmental Testing and Consulting, Inc. received 2 sample(s) on 4/5/2012 for the analyses presented in the following report.

The above referenced project has been analyzed per your instructions. The analyses were performed in accordance with the applicable analytical method.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, method validations, instrumentation maintenance and calibration for all parameters (NELAP and non-NELAP) were performed in accordance with guidelines established by the USEPA and NELAC unless otherwise indicated. Any parameter for which the laboratory is not officially NELAP accredited is indicated by a '~' symbol. These are not included in the scope because NELAP accreditation is either not available or has not been applied for. Additional certifications may be held/are available for parameters, where NELAP accreditation is not required or applicable. A full list of certifications is available upon request.

The results are shown on the attached Report of Analysis(s). Results for solid matrices are reported on an as-received basis unless otherwise indicated. This report shall not be reproduced except in full and relates only to the samples included in this report.

Please do not hesitate to contact me or client services if you have any questions or need additional information.

Sincerely,

Randell H. Thomas

Randy Thomas
Project Manager

Laboratory's liability in any claim relating to analyses performed shall be limited to, at laboratory's option, repeating the analysis in question at laboratory's expense, or the refund of the charges paid for performance of said analysis.

Alabama	#40750	Louisiana	#04015	VA NELAP	#460181	Texas	#T104704180-11-6	Arkansas	#88-0650
Mississippi		California	#09267CA	NC	#415	Oklahoma	#9311	Virginia	#00106
Kentucky	#90047	Tennessee	#TN02027	EPA	#TN00012	Kentucky UST	#41	Kansas	#E-10396

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2790 Whitten Road Memphis, Tennessee 38133 (901) 213-2400 Fax (901) 213-2440
"A Laboratory Management Partner"

02614
City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro , AR 72403

Project Information : East POTW/West POTW

Report Date : 4/18/2012

Report Number : **12-096-0218**

REPORT OF ANALYSIS

Received : 4/5/2012

Lab No : **98032**
Sample ID : **East POTW**

Matrix: **Solids**
Sampled: **4/2/2012 11:09**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Cyanide	<52.6	mg/Kg - dry	52.6	1	04/10/12 09:00	NRT	SW-9010B
Nitrate+Nitrite-N	<52.6	mg/Kg - dry	52.6	1	04/11/12 08:30	NRT	4500-NO3E
Total Kjeldahl Nitrogen	**83700**	mg/Kg - dry	2370	1	04/11/12 07:45	DRG	4500-TKN
Total Phosphorus	**14800**	mg/Kg - dry	263	1	04/10/12 08:00	TKM	4500-PE
Phenols (Total)	**172**	mg/Kg - dry	132	1	04/09/12 12:29	DRG	SW-9065
Total Antimony	<26.3	mg/Kg - dry	26.3	1	04/14/12 11:18	BKN	6010B
Total Arsenic	<26.3	mg/Kg - dry	26.3	1	04/14/12 11:18	BKN	6010B
Total Beryllium	<2.63	mg/Kg - dry	2.63	1	04/14/12 11:18	BKN	6010B
Total Cadmium	<5.26	mg/Kg - dry	5.26	1	04/14/12 11:18	BKN	6010B
Total Chromium	**41.3**	mg/Kg - dry	13.2	1	04/14/12 11:18	BKN	6010B
Total Copper	**177**	mg/Kg - dry	13.2	1	04/14/12 11:18	BKN	6010B
Total Lead	<15.8	mg/Kg - dry	15.8	1	04/14/12 11:18	BKN	6010B
Total Mercury	<0.700	mg/Kg - dry	0.700	1	04/12/12 17:40	TDJ	7471A
Total Molybdenum	<13.2	mg/Kg - dry	13.2	1	04/14/12 11:18	BKN	6010B
Total Nickel	**18.8**	mg/Kg - dry	13.2	1	04/14/12 11:18	BKN	6010B
Total Potassium	**5260**	mg/Kg - dry	263	1	04/14/12 11:18	BKN	6010B
Total Selenium	<26.3	mg/Kg - dry	26.3	1	04/14/12 11:18	BKN	6010B
Total Thallium	<52.6	mg/Kg - dry	52.6	1	04/14/12 11:18	BKN	6010B
Total Zinc	**826**	mg/Kg - dry	26.3	1	04/14/12 11:18	BKN	6010B
% Moisture	**98.1**	%		1	04/02/12 00:00	FLD	2540G

Qualifiers/ Definitions
* Outside QC limit
MQL Method Quantitation Limit
DF Dilution Factor

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Cooler Receipt Form

Customer Number: **02614**
Customer Name: **City Water & Light**
Report Number: **12-096-0218**

Shipping Method

○ Fed Ex ● UPS ○ US Postal ○ Client ○ Lab ○ Courier ○ Other :

Shipping container/cooler uncompromised?	● Yes	○ No	
Custody seals intact on shipping container/cooler?	○ Yes	○ No	● Not Required
Custody seals intact on sample bottles?	○ Yes	○ No	● Not Required
Chain of Custody (COC) present?	● Yes	○ No	
COC agrees with sample label(s)?	● Yes	○ No	
COC properly completed	● Yes	○ No	
Samples in proper containers?	● Yes	○ No	
Sample containers intact?	● Yes	○ No	
Sufficient sample volume for indicated test(s)?	● Yes	○ No	
All samples received within holding time?	● Yes	○ No	
Cooler temperature in compliance?	● Yes	○ No	
Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun.	● Yes	○ No	
Water - Sample containers properly preserved	○ Yes	○ No	● N/A
Water - VOA vials free of headspace	○ Yes	○ No	● N/A
Trip Blanks received with VOAs	○ Yes	○ No	● N/A
Soil VOA method 5035 – compliance criteria met	○ Yes	○ No	● N/A

☐ High concentration container (48 hr) ☐ Low concentration EnCore samplers (48 hr)
☐ High concentration pre-weighed (methanol -14 d) ☐ Low conc pre-weighed vials (Sod Bis -14 d)

Special precautions or instructions included?	○ Yes	● No

Comments:

Any regulatory non-compliance issues will be recorded on non-compliance report.

Signature: Rebekah Ross

Date & Time: 04/05/2012 10:09:53

CWL Chain of Custody Record

12-096-0218
02614
2012-04-05
10:09:30
City Water & Light
East POTW/West POTW

Jonesboro City Water and Light
400 East Monroe Avenue
P.O. Box 1289
Jonesboro, Arkansas 72403-1289

Sample Location: (X) East POTW ( ) West POTW ( ) Misc: _____

Sample Types:
A Potable Water, Source: _____
B Wastewater Effluent
C Wastewater Influent
D Wastewater Misc: _____
E Municipal Sludge (% Solids used to convert mg/L to mg/Kg: 1.9 %)
F Soil
G Miscellaneous: _____

Container #	Analysis Required	Sample Type	Preservative	(G) Grab	(C) Composite
1	(X) Total Phosphorus		H2SO4 pH<2	( )G	( )C
1	(X) Total Kjeldahl Nitrogen		H2SO4 pH<2	( )G	( )C
1	(X) Nitrate/Nitrite		H2SO4 pH<2	( )G	( )C
2	(X) Antimony		HNO3 ph<2	( )G	( )C
2	(X) Arsenic		HNO3 ph<2	( )G	( )C
2	(X) Beryllium		HNO3 ph<2	( )G	( )C
2	(X) Mercury		HNO3 ph<2	( )G	( )C
2	(X) Molybdenum		HNO3 ph<2	( )G	( )C
2	(X) Selenium		HNO3 ph<2	( )G	( )C
2	(X) Thallium		HNO3 ph<2	( )G	( )C
2	(X) Cadmium		HNO3 ph<2	( )G	( )C
2	(X) Copper		HNO3 ph<2	( )G	( )C
2	(X) Lead		HNO3 ph<2	( )G	( )C
2	(X) Nickel		HNO3 ph<2	( )G	( )C
2	(X) Zinc		HNO3 ph<2	( )G	( )C
2	(X) Chromium		HNO3 ph<2	( )G	( )C
2	(X) Total Potassium		HNO3 ph<2	( )G	( )C
3	(X) Phenols		H2SO4 ph<2	( )G	( )C
4	(X) Cyanide		NaOH ph>12	( )G	( )C
~~1~~	~~GRO's~~ 12.4/5/12*		None	( )G	( )C
~~2~~	~~(X) TCLP~~ TB		None	( )G	( )C
	( )			( )G	( )C
	( )			( )G	( )C

*Did not run cont. for PCB's. Client to repull (2) 4/5/12

Sampled by:
Signature: _____ Date: 4/2/12 Time: 11:09 (X) AM ( ) PM

Received by:
Signature: _____ Date: 4/2/12 Time: 11:15 (X) AM ( ) PM

Relinquished by:
Signature: _____ Date: 4/4/12 Time: 4:30 ( ) AM (X) PM

Received by:
Signature: _____ Date: __/__/__ Time: __:__ ( ) AM ( ) PM

Dispatched by:
Signature: _____ Date: __/__/__ Time: __:__ ( ) AM ( ) PM

Received in Laboratory by:
Signature: _____ Date: 4/5/12 Time: 09:55 (X) AM ( ) PM

Sampling and Preservation performed in compliance with 40 CFR Part 136

1°C

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2790 Whitten Road Memphis, Tennessee 38133 (901) 213-2400 Fax (901) 213-2440
"A Laboratory Management Partner"

4/20/2012

City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro, AR, 72403

Ref: Analytical Testing
ETC Report Number: 12-108-0208
Client Project Description: East POTW/West POTW

Dear Ms. Myra Taylor:

Environmental Testing and Consulting, Inc. received 2 sample(s) on 4/17/2012 for the analyses presented in the following report.

The above referenced project has been analyzed per your instructions. The analyses were performed in accordance with the applicable analytical method.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, method validations, instrumentation maintenance and calibration for all parameters (NELAP and non-NELAP) were performed in accordance with guidelines established by the USEPA and NELAC unless otherwise indicated. Any parameter for which the laboratory is not officially NELAP accredited is indicated by a '~' symbol. These are not included in the scope because NELAP accreditation is either not available or has not been applied for. Additional certifications may be held/are available for parameters, where NELAP accreditation is not required or applicable. A full list of certifications is available upon request.

The results are shown on the attached Report of Analysis(s). Results for solid matrices are reported on an as-received basis unless otherwise indicated. This report shall not be reproduced except in full and relates only to the samples included in this report.

Please do not hesitate to contact me or client services if you have any questions or need additional information.

Sincerely,

Randell H. Thomas

Randy Thomas
Project Manager

Laboratory's liability in any claim relating to analyses performed shall be limited to, at laboratory's option, repeating the analysis in question at laboratory's expense, or the refund of the charges paid for performance of said analysis.

Alabama	#40750	Louisiana	#04015	VA NELAP	#460181	Texas	#T104704180-11-6	Arkansas	#88-0650
Mississippi		California	#09267CA	NC	#415	Oklahoma	#9311	Virginia	#00106
Kentucky	#90047	Tennessee	#TN02027	EPA	#TN00012	Kentucky UST	#41	Kansas	#E-10396

ETC ENVIRONMENTAL TESTING & CONSULTING, INC.
www.etcmemphis.com 2790 Whitten Road Memphis, Tennessee 38133 (901) 213-2400 Fax (901) 213-2440
"A Laboratory Management Partner"

02614
City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro , AR 72403

Project Information : East POTW/West POTW

Report Date : 4/20/2012

Report Number : **12-108-0208**

REPORT OF ANALYSIS

Received : 4/17/2012

Lab No : **89325**
Sample ID : **East POTW**

Matrix: **Solids**
Sampled: **4/16/2012 13:10**

Analytical Method: 2540G
Prep Method: **Prep Batch(es):** **Date/Time Prepped:**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
% Moisture	**98.1**	%		1		FLD	

Analytical Method: 8082
Prep Method: 3550B **Prep Batch(es):** L129288 **Date/Time Prepped:** 4/17/2012 15:00:00

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aroclor 1016	<0.674	mg/Kg - dry	0.674	1	04/19/12 04:21	VIC	L129531
Aroclor 1221	<0.674	mg/Kg - dry	0.674	1	04/19/12 04:21	VIC	L129531
Aroclor 1232	<0.674	mg/Kg - dry	0.674	1	04/19/12 04:21	VIC	L129531
Aroclor 1242	<0.674	mg/Kg - dry	0.674	1	04/19/12 04:21	VIC	L129531
Aroclor 1248	<0.674	mg/Kg - dry	0.674	1	04/19/12 04:21	VIC	L129531
Aroclor 1254	<0.674	mg/Kg - dry	0.674	1	04/19/12 04:21	VIC	L129531
Aroclor 1260	<0.674	mg/Kg - dry	0.674	1	04/19/12 04:21	VIC	L129531
Surrogate: Decachlorobiphenyl	92.2 %		Limits: 17-141%	1	04/19/12 04:21	VIC	L129531
Surrogate: Tetrachloro-m-xylene	76.1 %		Limits: 20-122%	1	04/19/12 04:21	VIC	L129531

Qualifiers/ Definitions
* Outside QC limit
MQL Method Quantitation Limit
DF Dilution Factor

ETC
www.etcmemphis.com
ENVIRONMENTAL TESTING & CONSULTING, INC.
2790 Whitten Road Memphis, Tennessee 38133 (901) 213-2400 Fax (901) 213-2440
"A Laboratory Management Partner"

Cooler Receipt Form

Customer Number: **02614**
Customer Name: **City Water & Light**
Report Number: **12-108-0208**

Shipping Method

○ Fed Ex ● UPS ○ US Postal ○ Client ○ Lab ○ Courier ○ Other :

Shipping container/cooler uncompromised?	● Yes	○ No	
Custody seals intact on shipping container/cooler?	○ Yes	○ No	● Not Required
Custody seals intact on sample bottles?	○ Yes	○ No	● Not Required
Chain of Custody (COC) present?	● Yes	○ No	
COC agrees with sample label(s)?	● Yes	○ No	
COC properly completed	● Yes	○ No	
Samples in proper containers?	● Yes	○ No	
Sample containers intact?	● Yes	○ No	
Sufficient sample volume for indicated test(s)?	● Yes	○ No	
All samples received within holding time?	● Yes	○ No	
Cooler temperature in compliance?	● Yes	○ No	
Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun.	● Yes	○ No	
Water - Sample containers properly preserved	● Yes	○ No	○ N/A
Water - VOA vials free of headspace	○ Yes	○ No	● N/A
Trip Blanks received with VOAs	○ Yes	○ No	● N/A
Soil VOA method 5035 – compliance criteria met	○ Yes	○ No	● N/A

☐ High concentration container (48 hr) ☐ Low concentration EnCore samplers (48 hr)
☐ High concentration pre-weighed (methanol -14 d) ☐ Low conc pre-weighed vials (Sod Bis -14 d)

Special precautions or instructions included? ○ Yes ● No

Comments:

Any regulatory non-compliance issues will be recorded on non-compliance report.

Signature: Brooke Shoup

Date & Time: 04/17/2012 10:16:17

12-108-0208
02614
2012-04-17
10:15:57
City Water & Light
East POTW/West POTW

CWL Chain of Custody Record

Jonesboro City Water and Light
400 East Monroe Avenue
P.O. Box 1289
Jonesboro, Arkansas 72403-1289

Sample Location: (X) East POTW (_) West POTW (_) Misc: _____
Sample Types:
A Potable Water, Source: _____
B Wastewater Effluent
C Wastewater Influent
D Wastewater Misc: _____
(E) Municipal Sludge (% Solids used to convert mg/L to mg/Kg: 1.9 %)
F Soil
G Miscellaneous: _____

Container #	Analysis Required	Sample Type	Preservative	(G) Grab	(C) Compo -site
	(_)Total Phosphorus		H2SO4 pH<2	(_)G	(_)C
	(_)Total Kjeldahl Nitrogen		H2SO4 pH<2	(_)G	(_)C
	(_)Nitrate/Nitrite		H2SO4 pH<2	(_)G	(_)C
	(_)Antimony		HNO3 ph<2	(_)G	(_)C
	(_)Arsenic		HNO3 ph<2	(_)G	(_)C
	(_)Beryllium		HNO3 ph<2	(_)G	(_)C
	(_)Mercury		HNO3 ph<2	(_)G	(_)C
	(_)Molybdenum		HNO3 ph<2	(_)G	(_)C
	(_)Selenium		HNO3 ph<2	(_)G	(_)C
	(_)Thallium		HNO3 ph<2	(_)G	(_)C
	(_)Cadmium		HNO3 ph<2	(_)G	(_)C
	(_)Copper		HNO3 ph<2	(_)G	(_)C
	(_)Lead		HNO3 ph<2	(_)G	(_)C
	(_)Nickel		HNO3 ph<2	(_)G	(_)C
	(_)Zinc		HNO3 ph<2	(_)G	(_)C
	(_)Chromium		HNO3 ph<2	(_)G	(_)C
	(_)Total Potassium		HNO3 ph<2	(_)G	(_)C
	(_)Phenols		H2SO4 ph<2	(_)G	(_)C
	(_)Cyanide		NaOH ph>12	(_)G	(_)C
	(X)PCB's		None	(_)G	(_)C
	(_)TCLP		None	(_)G	(_)C
	(_)			(_)G	(_)C
	(_)			(_)G	(_)C

Sampled by:
Signature: _____ Date: 4/16/12 Time: 1:10 (_) AM (X) PM
Received by:
Signature: _____ Date: 4/16/12 Time: 1:15 (_) AM (X) PM
Relinquished by:
Signature: _____ Date: 4/16/12 Time: 3:30 (_) AM (X) PM
Received by:
Signature: _____ Date: __/__/__ Time: __:__ (_) AM (_) PM

Dispatched by:
Signature: _____ Date: __/__/__ Time: __:__ (_) AM (_) PM
Received in Laboratory by:
Signature: _____ Date: 4/17/12 Time: 0933 (X) AM (_) PM

Sampling and Preservation performed in compliance with 40 CFR Part 136

1°C

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2790 Whitten Road Memphis, Tennessee 38133 (901) 213-2400 Fax (901) 213-2440
"A Laboratory Management Partner"

8/16/2012

City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro, AR, 72403

Ref: Analytical Testing
ETC Report Number: 12-228-0221
Client Project Description: East POTW

Dear Ms. Myra Taylor:

Environmental Testing and Consulting, Inc. received sample(s) on 8/15/2012 for the analyses presented in the following report.

The above referenced project has been analyzed per your instructions. The analyses were performed in accordance with the applicable analytical method.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, method validations, instrumentation maintenance and calibration for all parameters (NELAP and non-NELAP) were performed in accordance with guidelines established by the USEPA and NELAC unless otherwise indicated. Any parameter for which the laboratory is not officially NELAP accredited is indicated by a '~' symbol. These are not included in the scope because NELAP accreditation is either not available or has not been applied for. Additional certifications may be held/are available for parameters, where NELAP accreditation is not required or applicable. A full list of certifications is available upon request.

The results are shown on the attached Report of Analysis(s). Results for solid matrices are reported on an as-received basis unless otherwise indicated. This report shall not be reproduced except in full and relates only to the samples included in this report.

Please do not hesitate to contact me or client services if you have any questions or need additional information.

Sincerely,

Randell H. Thomas

Randy Thomas
Project Manager

Laboratory's liability in any claim relating to analyses performed shall be limited to, at laboratory's option, repeating the analysis in question at laboratory's expense, or the refund of the charges paid for performance of said analysis.

Alabama	#40750	Louisiana	#04015	VA NELAP	#460181	Texas	#T104704180-11-6	Arkansas	#88-0650
Mississippi		California	#09267CA	NC	#415	Oklahoma	#9311	Virginia	#00106
Kentucky	#90047	Tennessee	#TN02027	EPA	#TN00012	Kentucky UST	#41	Kansas	#E-10396

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2790 Whitten Road Memphis, Tennessee 38133 (901) 213-2400 Fax (901) 213-2440
"A Laboratory Management Partner"

02614
City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro , AR 72403

Project Information : East POTW

Report Date : 8/16/2012

Report Number : **12-228-0221**

REPORT OF ANALYSIS

Received : 8/15/2012

Lab No : **89691**
Sample ID : **East POTW**

Matrix: **Solids**
Sampled: **8/13/2012 10:35**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	**98.5**	%		1	08/13/12 00:00	FLD	2540G
Total Kjeldahl Nitrogen	**60700**	mg/Kg - dry	1670	1	08/16/12 07:29	DRG	4500-TKN

Qualifiers/ Definitions

* Outside QC limit
MQL Method Quantitation Limit
DF Dilution Factor

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www.etcmemphis.com
ENVIRONMENTAL TESTING & CONSULTING, INC.
2790 Whitten Road Memphis, Tennessee 38133 (901) 213-2400 Fax (901) 213-2440
"A Laboratory Management Partner"

Cooler Receipt Form

Customer Number: **02614**
Customer Name: **City Water & Light**
Report Number: **12-228-0221**

Shipping Method

● Fed Ex ○ UPS ○ US Postal ○ Client ○ Lab ○ Courier ○ Other :

Shipping container/cooler uncompromised?	● Yes	○ No	
Custody seals intact on shipping container/cooler?	○ Yes	○ No	● Not Required
Custody seals intact on sample bottles?	○ Yes	○ No	● Not Required
Chain of Custody (COC) present?	● Yes	○ No	
COC agrees with sample label(s)?	● Yes	○ No	
COC properly completed	● Yes	○ No	
Samples in proper containers?	● Yes	○ No	
Sample containers intact?	● Yes	○ No	
Sufficient sample volume for indicated test(s)?	● Yes	○ No	
All samples received within holding time?	● Yes	○ No	
Cooler temperature in compliance?	● Yes	○ No	
Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun.	● Yes	○ No	
Water - Sample containers properly preserved	● Yes	○ No	○ N/A
Water - VOA vials free of headspace	○ Yes	○ No	● N/A
Trip Blanks received with VOAs	○ Yes	○ No	● N/A
Soil VOA method 5035 – compliance criteria met	○ Yes	○ No	● N/A

☐ High concentration container (48 hr) ☐ Low concentration EnCore samplers (48 hr)
☐ High concentration pre-weighed (methanol -14 d) ☐ Low conc pre-weighed vials (Sod Bis -14 d)

Special precautions or instructions included? ○ Yes ● No

Comments:

Any regulatory non-compliance issues will be recorded on non-compliance report.

Signature: Brooke Shoup

Date & Time: 08/15/2012 09:44:46

*Please rush TKN analysis *

CWL Chain of Custody Record

Jonesboro City Water and Light
400 East Monroe Avenue
P.O. Box 1289
Jonesboro, Arkansas 72403-1289

City Water & Light
East POTW
12-228-0221
02614
2012-08-15
09:44:23

Sample Location: (X) East POTW ( ) West POTW ( ) Misc. _____
Sample Types:
A Potable Water, Source: _____
B Wastewater Effluent
C Wastewater Influent
D Wastewater Misc: _____
(E) Municipal Sludge (% Solids used to convert mg/L to mg/Kg: 1.5 %)
F Soil
G Miscellaneous: _____

Container #	Analysis Required	Sample Type	Preservative	(G) Grab	(C) Compo -site
1	(X) Total Phosphorus		H2SO4 pH<2	(X) G	( ) C
1	(X) Total Kjeldahl Nitrogen		H2SO4 pH<2	( ) G	( ) C
1	(X) Nitrate/Nitrite		H2SO4 pH<2	( ) G	( ) C
2	(X) Antimony		HNO3 ph<2	( ) G	( ) C
2	(X) Arsenic		HNO3 ph<2	( ) G	( ) C
2	(X) Beryllium		HNO3 ph<2	( ) G	( ) C
2	(X) Mercury		HNO3 ph<2	( ) G	( ) C
2	(X) Molybdenum		HNO3 ph<2	( ) G	( ) C
2	(X) Selenium		HNO3 ph<2	( ) G	( ) C
2	(X) Thallium		HNO3 ph<2	( ) G	( ) C
2	(X) Cadmium		HNO3 ph<2	( ) G	( ) C
2	(X) Copper		HNO3 ph<2	( ) G	( ) C
2	(X) Lead		HNO3 ph<2	( ) G	( ) C
2	(X) Nickel		HNO3 ph<2	( ) G	( ) C
2	(X) Zinc		HNO3 ph<2	( ) G	( ) C
2	(X) Chromium		HNO3 ph<2	( ) G	( ) C
2	(X) Total Potassium		HNO3 ph<2	( ) G	( ) C
3	(X) Phenols		H2SO4 ph<2	( ) G	( ) C
4	(X) Cyanide		NaOH ph>12	( ) G	( ) C
2	(X) PCB's		~~None~~ Na2S2O3	( ) G	( ) C
	( ) TCLP		None	( ) G	( ) C
	( )			( ) G	( ) C
	( )			(X) G	( ) C

Sampled by:
Signature: _____ Date: 8/13/12 Time: 10:35 (X) AM ( ) PM
Received by:
Signature: _____ Date: 8/13/12 Time: 10:39 (X) AM ( ) PM

Relinquished by:
Signature: _____ Date: 8/14/12 Time: 10:00 (X) AM ( ) PM
Received by:
Signature: _____ Date: __/__/__ Time: __:__ ( ) AM ( ) PM

1C

Dispatched by:
Signature: _____ Date: __/__/__ Time: __:__ ( ) AM ( ) PM
Received in Laboratory by:
Signature: _____ Date: 8/15/12 Time: 08:19 (X) AM ( ) PM

Sampling and Preservation performed in compliance with 40 CFR Part 136

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2790 Whitten Road Memphis, Tennessee 38133 (901) 213-2400 Fax (901) 213-2440
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8/31/2012

City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro, AR, 72403

Ref: Analytical Testing
ETC Report Number: 12-228-0220
Client Project Description: East POTW

Dear Ms. Myra Taylor:

Environmental Testing and Consulting, Inc. received sample(s) on 8/15/2012 for the analyses presented in the following report.

The above referenced project has been analyzed per your instructions. The analyses were performed in accordance with the applicable analytical method.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, method validations, instrumentation maintenance and calibration for all parameters (NELAP and non-NELAP) were performed in accordance with guidelines established by the USEPA and NELAC unless otherwise indicated. Any parameter for which the laboratory is not officially NELAP accredited is indicated by a '~' symbol. These are not included in the scope because NELAP accreditation is either not available or has not been applied for. Additional certifications may be held/are available for parameters, where NELAP accreditation is not required or applicable. A full list of certifications is available upon request.

The results are shown on the attached Report of Analysis(s). Results for solid matrices are reported on an as-received basis unless otherwise indicated. This report shall not be reproduced except in full and relates only to the samples included in this report.

Please do not hesitate to contact me or client services if you have any questions or need additional information.

Sincerely,

Randell H. Thomas

Randy Thomas
Project Manager

Laboratory's liability in any claim relating to analyses performed shall be limited to, at laboratory's option, repeating the analysis in question at laboratory's expense, or the refund of the charges paid for performance of said analysis.

Alabama	#40750	Louisiana	#04015	VA NELAP	#460181	Texas	#T104704180-11-6	Arkansas	#88-0650
Mississippi		California	#09267CA	NC	#415	Oklahoma	#9311	Virginia	#00106
Kentucky	#90047	Tennessee	#TN02027	EPA	#TN00012	Kentucky UST	#41	Kansas	#E-10396

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"A Laboratory Management Partner"

02614
City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro , AR 72403

Project Information : East POTW

Report Date : 8/31/2012

Report Number : **12-228-0220**

REPORT OF ANALYSIS

Received : 8/15/2012

Lab No : **89690**
Sample ID : **East POTW**

Matrix: **Solids**
Sampled: **8/13/2012 10:35**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	**98.6**	%		1	08/16/12 14:48	KAT	2540G
Total Cyanide	<71.4	mg/Kg - dry	71.4	1	08/16/12 09:00	NRT	SW-9010B
Nitrate (NO3-N)	**12100**	mg/Kg - dry	714	10	08/30/12 15:59	TDJ	9056
Nitrite (NO2-N)	<71.4	mg/Kg - dry	71.4	1	08/30/12 14:32	TDJ	9056
Total Solids	**1.40**	%	0.010	1	08/16/12 14:48	KAT	2540G
Total Volatile Solids	**68.3**	%	0.010	1	08/16/12 14:48	KAT	2540G
Total Phosphorus	**11900**	mg/Kg - dry	4460	1	08/23/12 08:25	TKM	4500-PE
Phenols (Total)	<179	mg/Kg - dry	179	1	08/15/12 12:12	DRG	EPA-420.1
Total Antimony	<35.7	mg/Kg - dry	35.7	1	08/30/12 01:46	BKN	6010B
Total Arsenic	<35.7	mg/Kg - dry	35.7	1	08/30/12 01:46	BKN	6010B
Total Beryllium	<3.57	mg/Kg - dry	3.57	1	08/30/12 01:46	BKN	6010B
Total Cadmium	<7.14	mg/Kg - dry	7.14	1	08/30/12 01:46	BKN	6010B
Total Chromium	**46.7**	mg/Kg - dry	17.9	1	08/30/12 01:46	BKN	6010B
Total Copper	**450**	mg/Kg - dry	17.9	1	08/30/12 01:46	BKN	6010B
Total Lead	**22.2**	mg/Kg - dry	21.4	1	08/30/12 01:46	BKN	6010B
Total Mercury	<0.950	mg/Kg - dry	0.950	1	08/24/12 14:35	TDJ	7471A
Total Molybdenum	**43.4**	mg/Kg - dry	17.9	1	08/30/12 01:46	BKN	6010B
Total Nickel	**34.4**	mg/Kg - dry	17.9	1	08/30/12 01:46	BKN	6010B
Total Potassium	**4410**	mg/Kg - dry	357	1	08/30/12 01:46	BKN	6010B
Total Selenium	<35.7	mg/Kg - dry	35.7	1	08/30/12 01:46	BKN	6010B
Total Thallium	<71.4	mg/Kg - dry	71.4	1	08/30/12 01:46	BKN	6010B
Total Zinc	**1510**	mg/Kg - dry	35.7	1	08/30/12 10:41	JTR	6010B

Qualifiers/ Definitions
* Outside QC limit
MQL Method Quantitation Limit
DF Dilution Factor

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2790 Whitten Road Memphis, Tennessee 38133 (901) 213-2400 Fax (901) 213-2440
"A Laboratory Management Partner"

02614
City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro , AR 72403

Project Information : East POTW

Report Date : 8/31/2012

Report Number : **12-228-0220**

REPORT OF ANALYSIS

Received : 8/15/2012

Lab No : **89690**
Sample ID : **East POTW**

Matrix: **Solids**
Sampled: **8/13/2012 10:35**

Analytical Method: 8082
Prep Method: 3550B **Prep Batch(es):** L140033 **Date/Time Prepped:** 8/22/2012 11:00:00

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aroclor 1016	<3.91	mg/Kg - dry	3.91	1	08/22/12 19:03	VIC	L140173
Aroclor 1221	<3.91	mg/Kg - dry	3.91	1	08/22/12 19:03	VIC	L140173
Aroclor 1232	<3.91	mg/Kg - dry	3.91	1	08/22/12 19:03	VIC	L140173
Aroclor 1242	<3.91	mg/Kg - dry	3.91	1	08/22/12 19:03	VIC	L140173
Aroclor 1248	<3.91	mg/Kg - dry	3.91	1	08/22/12 19:03	VIC	L140173
Aroclor 1254	<3.91	mg/Kg - dry	3.91	1	08/22/12 19:03	VIC	L140173
Aroclor 1260	<3.91	mg/Kg - dry	3.91	1	08/22/12 19:03	VIC	L140173
Surrogate: Decachlorobiphenyl	68.3 %		Limits: 17-141%	1	08/22/12 19:03	VIC	L140173
Surrogate: Tetrachloro-m-xylene	49.8 %		Limits: 20-122%	1	08/22/12 19:03	VIC	L140173

Qualifiers/ Definitions
* Outside QC limit
MQL Method Quantitation Limit
DF Dilution Factor

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Cooler Receipt Form

Customer Number: **02614**
Customer Name: **City Water & Light**
Report Number: **12-228-0220**

Shipping Method

● Fed Ex ○ UPS ○ US Postal ○ Client ○ Lab ○ Courier ○ Other :

Shipping container/cooler uncompromised?	● Yes	○ No	
Custody seals intact on shipping container/cooler?	○ Yes	○ No	● Not Required
Custody seals intact on sample bottles?	○ Yes	○ No	● Not Required
Chain of Custody (COC) present?	● Yes	○ No	
COC agrees with sample label(s)?	● Yes	○ No	
COC properly completed	● Yes	○ No	
Samples in proper containers?	● Yes	○ No	
Sample containers intact?	● Yes	○ No	
Sufficient sample volume for indicated test(s)?	● Yes	○ No	
All samples received within holding time?	● Yes	○ No	
Cooler temperature in compliance?	● Yes	○ No	
Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun.	● Yes	○ No	
Water - Sample containers properly preserved	● Yes	○ No	○ N/A
Water - VOA vials free of headspace	○ Yes	○ No	● N/A
Trip Blanks received with VOAs	○ Yes	○ No	● N/A
Soil VOA method 5035 – compliance criteria met	○ Yes	○ No	● N/A

☐ High concentration container (48 hr) ☐ Low concentration EnCore samplers (48 hr)
☐ High concentration pre-weighed (methanol -14 d) ☐ Low conc pre-weighed vials (Sod Bis -14 d)

Special precautions or instructions included? ○ Yes ● No

Comments:

Any regulatory non-compliance issues will be recorded on non-compliance report.

Signature: Brooke Shoup

Date & Time: 08/15/2012 09:31:50

Please Rush TKN analysis

CWL Chain of Custody Record

Jonesboro City Water and Light
400 East Monroe Avenue
P.O. Box 1289
Jonesboro, Arkansas 72403-1289

City Water & Light
East POTW

12-228-0220
02614
2012-08-15
09:31:16

Sample Location: (X) East POTW ( ) West POTW ( ) Misc: _____
Sample Types:
A Potable Water, Source: _____
B Wastewater Effluent
C Wastewater Influent
D Wastewater Misc: _____
(E) Municipal Sludge (% Solids used to convert mg/L to mg/Kg: 1.5 %)
F Soil
G Miscellaneous: _____

Container #	Analysis Required	Sample Type	Preservative	(G) Grab	(C) Compo-site
1	(X)Total Phosphorus		H2SO4 pH<2	(X)G	( )C
1	(X)Total Kjeldahl Nitrogen		H2SO4 pH<2	( )G	( )C
1	(X)Nitrate/Nitrite		H2SO4 pH<2	( )G	( )C
2	(X)Antimony		HNO3 ph<2	( )G	( )C
2	(X)Arsenic		HNO3 ph<2	( )G	( )C
2	(X)Beryllium		HNO3 ph<2	( )G	( )C
2	(X)Mercury		HNO3 ph<2	( )G	( )C
2	(X)Molybdenum		HNO3 ph<2	( )G	( )C
2	(X)Selenium		HNO3 ph<2	( )G	( )C
2	(X)Thallium		HNO3 ph<2	( )G	( )C
2	(X)Cadmium		HNO3 ph<2	( )G	( )C
2	(X)Copper		HNO3 ph<2	( )G	( )C
2	(X)Lead		HNO3 ph<2	( )G	( )C
2	(X)Nickel		HNO3 ph<2	( )G	( )C
2	(X)Zinc		HNO3 ph<2	( )G	( )C
2	(X)Chromium		HNO3 ph<2	( )G	( )C
2	(X)Total Potassium		HNO3 ph<2	( )G	( )C
3	(X)Phenols		H2SO4 ph<2	( )G	( )C
4	(X)Cyanide		NaOH ph>12	( )G	( )C
2	(X)PCB's		~~None~~ Na2S2O3	( )G	( )C
	( )TCLP		None	( )G	( )C
	( )_____			( )G	( )C
	( )_____			( )G	( )C

Sampled by:
Signature: [signature] Date: 8/13/12 Time: 10:35 (X) AM ( ) PM

Received by:
Signature: [signature] Date: 8/13/12 Time: 10:39 (X) AM ( ) PM

1 B
1 C

Relinquished by:
Signature: [signature] Date: 8/14/12 Time: 10:00 (X) AM ( ) PM

Received by:
Signature: [signature] Date: 8/15/12 Time: 8:19 (X) AM ( ) PM

Dispatched by:
Signature: _____ Date: __/__/__ Time: __:__ ( ) AM ( ) PM

Received in Laboratory by:
Signature: [signature] Date: 8/15/12 Time: 8:19 (X) AM ( ) PM

Sampling and Preservation performed in compliance with 40 CFR Part 136

ETC ENVIRONMENTAL TESTING & CONSULTING, INC.
www.etcmemphis.com
2790 Whitten Road Memphis, Tennessee 38133 (901) 213-2400 Fax (901) 213-2440
"A Laboratory Management Partner"

10/4/2012

City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro, AR, 72403

Ref: Analytical Testing
ETC Report Number: 12-277-0209
Client Project Description: East POTW/West POTW

Dear Ms. Myra Taylor:

Environmental Testing and Consulting, Inc. received sample(s) on 10/3/2012 for the analyses presented in the following report.

The above referenced project has been analyzed per your instructions. The analyses were performed in accordance with the applicable analytical method.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, method validations, instrumentation maintenance and calibration for all parameters (NELAP and non-NELAP) were performed in accordance with guidelines established by the USEPA and NELAC unless otherwise indicated. Any parameter for which the laboratory is not officially NELAP accredited is indicated by a '~' symbol. These are not included in the scope because NELAP accreditation is either not available or has not been applied for. Additional certifications may be held/are available for parameters, where NELAP accreditation is not required or applicable. A full list of certifications is available upon request.

The results are shown on the attached Report of Analysis(s). Results for solid matrices are reported on an as-received basis unless otherwise indicated. This report shall not be reproduced except in full and relates only to the samples included in this report.

Please do not hesitate to contact me or client services if you have any questions or need additional information.

Sincerely,

Randell H. Thomas

Randy Thomas
Project Manager

Laboratory's liability in any claim relating to analyses performed shall be limited to, at laboratory's option, repeating the analysis in question at laboratory's expense, or the refund of the charges paid for performance of said analysis.

Alabama	#40750	Louisiana	#04015	VA NELAP	#460181	Texas	#T104704180-11-6	Arkansas	#88-0650
Mississippi		California	#09267CA	NC	#415	Oklahoma	#9311	Virginia	#00106
Kentucky	#90047	Tennessee	#TN02027	EPA	#TN00012	Kentucky UST	#41	Kansas	#E-10396

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"A Laboratory Management Partner"

02614
City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro , AR 72403

Project Information : East POTW/West POTW

Report Date : 10/4/2012

Report Number : **12-277-0209**

REPORT OF ANALYSIS

Received : 10/3/2012

Lab No : **98749**
Sample ID : **East POTW**

Matrix: **Solids**
Sampled: **10/1/2012 10:55**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	**98.2**	%		1	10/01/12 00:00	FLD	2540G
Nitrate (NO3-N)	**12500**	mg/Kg - dry	278	5	10/03/12 18:18	TDJ	9056
Nitrite (NO2-N)	**80.6**	mg/Kg - dry	55.6	1	10/03/12 15:50	TDJ	9056
Total Kjeldahl Nitrogen	**127000**	mg/Kg - dry	1390	1	10/04/12 07:12	DRG	4500-TKN

Qualifiers/ Definitions

* Outside QC limit
MQL Method Quantitation Limit
DF Dilution Factor

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Cooler Receipt Form

Customer Number: **02614**
Customer Name: **City Water & Light**
Report Number: **12-277-0209**

Shipping Method

● Fed Ex ○ UPS ○ US Postal ○ Client ○ Lab ○ Courier ○ Other :

Shipping container/cooler uncompromised?	● Yes	○ No	
Custody seals intact on shipping container/cooler?	○ Yes	○ No	● Not Required
Custody seals intact on sample bottles?	○ Yes	○ No	● Not Required
Chain of Custody (COC) present?	● Yes	○ No	
COC agrees with sample label(s)?	● Yes	○ No	
COC properly completed	● Yes	○ No	
Samples in proper containers?	● Yes	○ No	
Sample containers intact?	● Yes	○ No	
Sufficient sample volume for indicated test(s)?	● Yes	○ No	
All samples received within holding time?	● Yes	○ No	
Cooler temperature in compliance?	● Yes	○ No	
Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun.	● Yes	○ No	
Water - Sample containers properly preserved	● Yes	○ No	○ N/A
Water - VOA vials free of headspace	○ Yes	○ No	● N/A
Trip Blanks received with VOAs	○ Yes	○ No	● N/A
Soil VOA method 5035 – compliance criteria met	○ Yes	○ No	● N/A

☐ High concentration container (48 hr) ☐ Low concentration EnCore samplers (48 hr)
☐ High concentration pre-weighed (methanol -14 d) ☐ Low conc pre-weighed vials (Sod Bis -14 d)

Special precautions or instructions included? ○ Yes ● No

Comments:

Any regulatory non-compliance issues will be recorded on non-compliance report.

Signature: Brooke Shoup

Date & Time: 10/03/2012 10:00:03

CWL Chain of Custody Record


12-277-0209
02614
2012-10-03
09:59:48
City Water & Light
East POTW/West POTW

Jonesboro City Water and Light
400 East Monroe Avenue
P.O. Box 1289
Jonesboro, Arkansas 72403-1289

Sample Location: (X) East POTW (__) West POTW (__) Misc: _____

Sample Types:
A Potable Water, Source: _____
B Wastewater Effluent
C Wastewater Influent
D Wastewater Misc: _____
E Municipal Sludge (% Solids used to convert mg/L to mg/Kg: 1.8 %)
F Soil
G Miscellaneous: _____

Container #	Analysis Required	Sample Type	Preservative	(G) Grab	(C) Compo -site
	(X)Total Phosphorus		H2SO4 pH<2	(_)G	(_)C
	(X)Total Kjeldahl Nitrogen		H2SO4 pH<2	(_)G	(_)C
	(X)Nitrate/Nitrite		H2SO4 pH<2	(_)G	(_)C
	(X)Antimony		HNO3 ph<2	(_)G	(_)C
	(X)Arsenic		HNO3 ph<2	(_)G	(_)C
	(X)Beryllium		HNO3 ph<2	(_)G	(_)C
	(X)Mercury		HNO3 ph<2	(_)G	(_)C
	(X)Molybdenum		HNO3 ph<2	(_)G	(_)C
	(X)Selenium		HNO3 ph<2	(_)G	(_)C
	(X)Thallium		HNO3 ph<2	(_)G	(_)C
	(X)Cadmium		HNO3 ph<2	(_)G	(_)C
	(X)Copper		HNO3 ph<2	(_)G	(_)C
	(X)Lead		HNO3 ph<2	(_)G	(_)C
	(X)Nickel		HNO3 ph<2	(_)G	(_)C
	(X)Zinc		HNO3 ph<2	(_)G	(_)C
	(X)Chromium		HNO3 ph<2	(_)G	(_)C
	(X)Total Potassium		HNO3 ph<2	(_)G	(_)C
	(X)Phenols		H2SO4 ph<2	(_)G	(_)C
	(X)Cyanide		NaOH ph>12	(_)G	(_)C
	(X)PCB's		None	(_)G	(_)C
	(_)TCLP		None	(_)G	(_)C
	(_)			(_)G	(_)C
	(_)			(_)G	(_)C

Sampled by:
Signature: _____ Date: 10/1/12 Time: 10:55 (X) AM (_) PM

Received by:
Signature: _____ Date: 10/1/12 Time: 11:04 (X) AM (_) PM

Relinquished by:
Signature: _____ Date: 10/2/12 Time: 3:00 (_) AM (X) PM

Received by:
Signature _____ Date: __/__/__ Time: __:__ (_) AM (_) PM

Dispatched by:
Signature _____ Date: __/__/__ Time: __:__ (_) AM (_) PM

Received in Laboratory by:
Signature _____ Date 10/3/12 Time 0938 (X) AM (_) PM

Sampling and Preservation performed in compliance with 40 CFR Part 136

1°C

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10/11/2012

City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro, AR, 72403

Ref: Analytical Testing
ETC Report Number: 12-277-0230
Client Project Description: East POTW/West POTW

Dear Ms. Myra Taylor:

Environmental Testing and Consulting, Inc. received sample(s) on 10/3/2012 for the analyses presented in the following report.

The above referenced project has been analyzed per your instructions. The analyses were performed in accordance with the applicable analytical method.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, method validations, instrumentation maintenance and calibration for all parameters (NELAP and non-NELAP) were performed in accordance with guidelines established by the USEPA and NELAC unless otherwise indicated. Any parameter for which the laboratory is not officially NELAP accredited is indicated by a '~' symbol. These are not included in the scope because NELAP accreditation is either not available or has not been applied for. Additional certifications may be held/are available for parameters, where NELAP accreditation is not required or applicable. A full list of certifications is available upon request.

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Please do not hesitate to contact me or client services if you have any questions or need additional information.

Sincerely,

Randell H. Thomas

Randy Thomas
Project Manager

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Alabama	#40750	Louisiana	#04015	VA NELAP	#460181	Texas	#T104704180-11-6	Arkansas	#88-0650
Mississippi		California	#09267CA	NC	#415	Oklahoma	#9311	Virginia	#00106
Kentucky	#90047	Tennessee	#TN02027	EPA	#TN00012	Kentucky UST	#41	Kansas	#E-10396

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02614
City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro , AR 72403

Project Information : East POTW/West POTW

Report Date : 10/11/2012
Received : 10/3/2012

Report Number : **12-277-0230**

REPORT OF ANALYSIS

Lab No : **98758**
Sample ID : **East POTW**

Matrix: **Solids**
Sampled: **10/1/2012 10:55**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	**98.2**	%		1	10/01/12 00:00	FLD	2540G
Total Cyanide	<55.6	mg/Kg - dry	55.6	1	10/11/12 09:00	NRT	SW-9010B
Total Phosphorus	**10300**	mg/Kg - dry	3570	1	10/05/12 08:45	TKM	4500-PE
Phenols (Total)	<0.050	mg/L	0.050	1	10/08/12 12:15	DRG	SW-9065
Total Antimony	<27.8	mg/Kg - dry	27.8	1	10/09/12 19:04	BKN	6010B
Total Arsenic	<27.8	mg/Kg - dry	27.8	1	10/09/12 19:04	BKN	6010B
Total Beryllium	<2.78	mg/Kg - dry	2.78	1	10/09/12 19:04	BKN	6010B
Total Cadmium	<5.56	mg/Kg - dry	5.56	1	10/09/12 19:04	BKN	6010B
Total Chromium	**25.8**	mg/Kg - dry	13.9	1	10/09/12 19:04	BKN	6010B
Total Copper	**322**	mg/Kg - dry	13.9	1	10/09/12 19:04	BKN	6010B
Total Lead	**17.6**	mg/Kg - dry	16.7	1	10/09/12 19:04	BKN	6010B
Total Mercury	**0.939**	mg/Kg - dry	0.739	1	10/05/12 13:40	TDJ	7471A
Total Molybdenum	**26.9**	mg/Kg - dry	13.9	1	10/09/12 19:04	BKN	6010B
Total Nickel	**20.3**	mg/Kg - dry	13.9	1	10/09/12 19:04	BKN	6010B
Total Potassium	**3820**	mg/Kg - dry	278	1	10/09/12 19:04	BKN	6010B
Total Selenium	<27.8	mg/Kg - dry	27.8	1	10/09/12 19:04	BKN	6010B
Total Thallium	<55.6	mg/Kg - dry	55.6	1	10/09/12 19:04	BKN	6010B
Total Zinc	**543**	mg/Kg - dry	27.8	1	10/09/12 19:04	BKN	6010B

Qualifiers/ Definitions
* Outside QC limit
MQL Method Quantitation Limit
DF Dilution Factor

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02614
City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro , AR 72403

Project Information : East POTW/West POTW

Report Date : 10/11/2012
Received : 10/3/2012

Report Number : **12-277-0230**

REPORT OF ANALYSIS

Lab No : **98758**
Sample ID : **East POTW**

Matrix: **Solids**
Sampled: **10/1/2012 10:55**

Analytical Method: 8082
Prep Method: 3550B **Prep Batch(es):** L144258 **Date/Time Prepped:** 10/10/2012 10:00:00

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aroclor 1016	<5.56	mg/Kg - dry	5.56	1	10/10/12 16:19	VIC	L144409
Aroclor 1221	<5.56	mg/Kg - dry	5.56	1	10/10/12 16:19	VIC	L144409
Aroclor 1232	<5.56	mg/Kg - dry	5.56	1	10/10/12 16:19	VIC	L144409
Aroclor 1242	<5.56	mg/Kg - dry	5.56	1	10/10/12 16:19	VIC	L144409
Aroclor 1248	<5.56	mg/Kg - dry	5.56	1	10/10/12 16:19	VIC	L144409
Aroclor 1254	<5.56	mg/Kg - dry	5.56	1	10/10/12 16:19	VIC	L144409
Aroclor 1260	<5.56	mg/Kg - dry	5.56	1	10/10/12 16:19	VIC	L144409
Surrogate: Decachlorobiphenyl	60.3 %		Limits: 17-141%	1	10/10/12 16:19	VIC	L144409
Surrogate: Tetrachloro-m-xylene	48.7 %		Limits: 20-122%	1	10/10/12 16:19	VIC	L144409

Qualifiers/ Definitions

*	Outside QC limit	DF	Dilution Factor
I	Recovery out of range	MQL	Method Quantitation Limit

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Cooler Receipt Form

Customer Number: **02614**
Customer Name: **City Water & Light**
Report Number: **12-277-0230**

Shipping Method

● Fed Ex ○ UPS ○ US Postal ○ Client ○ Lab ○ Courier ○ Other :

Shipping container/cooler uncompromised?	● Yes	○ No	
Custody seals intact on shipping container/cooler?	○ Yes	○ No	● Not Required
Custody seals intact on sample bottles?	○ Yes	○ No	● Not Required
Chain of Custody (COC) present?	● Yes	○ No	
COC agrees with sample label(s)?	● Yes	○ No	
COC properly completed	● Yes	○ No	
Samples in proper containers?	● Yes	○ No	
Sample containers intact?	● Yes	○ No	
Sufficient sample volume for indicated test(s)?	● Yes	○ No	
All samples received within holding time?	● Yes	○ No	
Cooler temperature in compliance?	● Yes	○ No	
Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun.	● Yes	○ No	
Water - Sample containers properly preserved	● Yes	○ No	○ N/A
Water - VOA vials free of headspace	○ Yes	○ No	● N/A
Trip Blanks received with VOAs	○ Yes	○ No	● N/A
Soil VOA method 5035 – compliance criteria met	○ Yes	○ No	● N/A

☐ High concentration container (48 hr) ☐ Low concentration EnCore samplers (48 hr)
☐ High concentration pre-weighed (methanol -14 d) ☐ Low conc pre-weighed vials (Sod Bis -14 d)

Special precautions or instructions included? ○ Yes ● No

Comments:

Any regulatory non-compliance issues will be recorded on non-compliance report.

Signature: Brooke Shoup

Date & Time: 10/03/2012 10:06:52

ETC
ENVIRONMENTAL TESTING & CONSULTING, INC.
2790 Whitten Road Memphis, Tennessee 38133 (901) 213-2400 Fax (901) 213-2440

12-277-0230
02614
2012-10-03
10:06:45
City Water & Light
East POTW/West POTW

Company Name		Customer Number	Telephone	RUSH	ICE
City Water & Light		02614	(870) 935-5581		
Site Name	**Project Comment**			**FID Number**	
Quarterly East & West Plant Sludge					
Project	**Project Number**	**PO Number**			
Project Manager / Contact		**E-mail**			
Ms. Myra Taylor		mtaylor@jonesboroewl.org			

Sample ID	Container Type	Collected Date / Time	# Cont	Preservative	Grab / Comp	Matrix	Analyses
East Plant	Glass - 4oz	10-1-12 10:55 AM	3	NONE	G	Solids	PCB/Metals/Inorganics
West Plant	Glass - 4oz	10-1-12 10:40 AM	3	NONE	G	Solids	PCB/Metals/Inorganics

Sampled By	Method of Shipment	Blank / Cooler Temperature 1°C	Remarks

Relinquished By (sign)	Date / Time	Received By (sign)	Date / Time
	10/2/12 3:00PM		
Relinquished By (sign)	Date / Time	Received By (sign)	Date / Time
Relinquished By (sign)	Date / Time	Received by Lab (sign)	Date / Time
			10-3-12 09:05

1/1

CWL Chain of Custody Record

12-277-0230
02614
2012-10-03
10:05:45

Jonesboro City Water and Light
400 East Monroe Avenue
P.O. Box 1289
Jonesboro, Arkansas 72403-1289

Sample Location: (X) East POTW ( ) West POTW ( ) Misc: _____

Sample Types:
A Potable Water, Source: _____
B Wastewater Effluent
C Wastewater Influent
D Wastewater Misc: _____
E Municipal Sludge (% Solids used to convert mg/L to mg/Kg: 1.8 %)
F Soil
G Miscellaneous: _____

Container #	Analysis Required	Sample Type	Preservative	(G) Grab	(C) Composite
	(X)Total Phosphorus		H2SO4 pH<2	( )G	( )C
	(X)Total Kjeldahl Nitrogen		H2SO4 pH<2	( )G	( )C
	(X)Nitrate/Nitrite		H2SO4 pH<2	( )G	( )C
	(X)Antimony		HNO3 ph<2	( )G	( )C
	(X)Arsenic		HNO3 ph<2	( )G	( )C
	(X)Beryllium		HNO3 ph<2	( )G	( )C
	(X)Mercury		HNO3 ph<2	( )G	( )C
	(X)Molybdenum		HNO3 ph<2	( )G	( )C
	(X)Selenium		HNO3 ph<2	( )G	( )C
	(X)Thallium		HNO3 ph<2	( )G	( )C
	(X)Cadmium		HNO3 ph<2	( )G	( )C
	(X)Copper		HNO3 ph<2	( )G	( )C
	(X)Lead		HNO3 ph<2	( )G	( )C
	(X)Nickel		HNO3 ph<2	( )G	( )C
	(X)Zinc		HNO3 ph<2	( )G	( )C
	(X)Chromium		HNO3 ph<2	( )G	( )C
	(X)Total Potassium		HNO3 ph<2	( )G	( )C
	(X)Phenols		H2SO4 ph<2	( )G	( )C
	(X)Cyanide		NaOH ph>12	( )G	( )C
	(X)PCB's		None	( )G	( )C
	( )TCLP		None	( )G	( )C
	( ) _____			( )G	( )C
	( ) _____			( )G	( )C

Sampled by:
Signature: _____ Date: 10/1/12 Time: 10:55 (X) AM ( ) PM

Received by:
Signature: _____ Date: 10/1/12 Time: 11:04 (X) AM ( ) PM

Relinquished by:
Signature: _____ Date: 10/2/12 Time: 3:00 ( ) AM (X) PM

Received by:
Signature: _____ Date: __/__/__ Time: __:__ ( ) AM ( ) PM

Dispatched by:
Signature: _____ Date: __/__/__ Time: __:__ ( ) AM ( ) PM

Received in Laboratory by:
Signature: _____ Date: 10/3/12 Time: 0903 (X) AM ( ) PM

Sampling and Preservation performed in compliance with 40 CFR Part 136

10 C

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10/17/2012

City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro, AR, 72403

Ref: Analytical Testing
ETC Report Number: 12-290-0277
Client Project Description: East Plant Influent/Sludge

Dear Ms. Myra Taylor:

Environmental Testing and Consulting, Inc. received sample(s) on 10/16/2012 for the analyses presented in the following report.

The above referenced project has been analyzed per your instructions. The analyses were performed in accordance with the applicable analytical method.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, method validations, instrumentation maintenance and calibration for all parameters (NELAP and non-NELAP) were performed in accordance with guidelines established by the USEPA and NELAC unless otherwise indicated. Any parameter for which the laboratory is not officially NELAP accredited is indicated by a '~' symbol. These are not included in the scope because NELAP accreditation is either not available or has not been applied for. Additional certifications may be held/are available for parameters, where NELAP accreditation is not required or applicable. A full list of certifications is available upon request.

The results are shown on the attached Report of Analysis(s). Results for solid matrices are reported on an as-received basis unless otherwise indicated. This report shall not be reproduced except in full and relates only to the samples included in this report.

Please do not hesitate to contact me or client services if you have any questions or need additional information.

Sincerely,

Randall H. Thomas

Randy Thomas
Project Manager

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Alabama	#40750	Louisiana	#04015	VA NELAP	#460181	Texas	#T104704180-11-6	Arkansas	#88-0650
Mississippi		California	#09267CA	NC	#415	Oklahoma	#9311	Virginia	#00106
Kentucky	#90047	Tennessee	#TN02027	EPA	#TN00012	Kentucky UST	#41	Kansas	#E-10396

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02614
City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro , AR 72403

Project Information : East Plant Influent/Sludge

Report Date : 10/17/2012

Report Number : **12-290-0277**

REPORT OF ANALYSIS

Received : 10/16/2012

Lab No : **90293**
Sample ID : **Sludge**

Matrix: **Solids**
Sampled: **10/15/2012 9:45**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	**98.2**	%		1	10/17/12 09:23	KAT	2540G
Nitrate (NO3-N)	**13100**	mg/Kg - dry	1110	20	10/17/12 16:06	TDJ	9056
Nitrite (NO2-N)	<1110	mg/Kg - dry	1110	20	10/17/12 16:06	TDJ	9056
Nitrate+Nitrite-N	**13100**	mg/Kg - dry	1110	20	10/17/12 16:06		9056
Total Kjeldahl Nitrogen	**778000**	mg/Kg - dry	1390	1	10/17/12 07:24	DRG	4500-TKN

√ dilution error by Lab
77,800 re-run sample
Report 12-290-9277

Qualifiers/ Definitions

* Outside QC limit
MQL Method Quantitation Limit
DF Dilution Factor

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Cooler Receipt Form

Customer Number: **02614**
Customer Name: **City Water & Light**
Report Number: **12-290-0277**

Shipping Method

● Fed Ex ○ UPS ○ US Postal ○ Client ○ Lab ○ Courier ○ Other :

Shipping container/cooler uncompromised?	● Yes	○ No	
Custody seals intact on shipping container/cooler?	○ Yes	○ No	● Not Required
Custody seals intact on sample bottles?	○ Yes	○ No	● Not Required
Chain of Custody (COC) present?	● Yes	○ No	
COC agrees with sample label(s)?	● Yes	○ No	
COC properly completed	● Yes	○ No	
Samples in proper containers?	● Yes	○ No	
Sample containers intact?	● Yes	○ No	
Sufficient sample volume for indicated test(s)?	● Yes	○ No	
All samples received within holding time?	● Yes	○ No	
Cooler temperature in compliance?	● Yes	○ No	
Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun.	● Yes	○ No	
Water - Sample containers properly preserved	○ Yes	○ No	● N/A
Water - VOA vials free of headspace	○ Yes	○ No	● N/A
Trip Blanks received with VOAs	○ Yes	○ No	● N/A
Soil VOA method 5035 – compliance criteria met	○ Yes	○ No	● N/A

☐ High concentration container (48 hr) ☐ Low concentration EnCore samplers (48 hr)
☐ High concentration pre-weighed (methanol -14 d) ☐ Low conc pre-weighed vials (Sod Bis -14 d)

Special precautions or instructions included? ○ Yes ● No

Comments:

Any regulatory non-compliance issues will be recorded on non-compliance report.

Signature: Rebekah Ross

Date & Time: 10/16/2012 16:24:40

ETC Environmental Testing & Consulting, Inc.

nessee 38133 (901) 213-2400 Fax (901) 213-2440

12-290-0277
02614
2012-10-16
16:23:51

City Water & Light
East Plant Influent/Sludge

Company Name	Customer Number	Telephone	RUSH	ICE
City Water & Light	02614	(870) 935-5581		

Site Name	Project Comment	FID Number
East Plant Influent/Sludge		

Project	Project Number	PO Number

Project Manager / Contact	E-mail
Mr. Jay Hadley	jhadley@jonesboromo.org

Sample ID	Container Type	Collected Date / Time	# Cont	Preservative	Grab / Comp	Matrix	Analyses
Composite	Plastic Pint	~~10/11-12/12~~ ~~10/12-12/12~~ 10/12-12 10:00 - 9:00am	1	H2SO4 - Sulfuric Acid	C	Aqueous	TKN
Composite	Plastic Pint	10/12-12 10:00 - 9:00 am	1	H2SO4 - Sulfuric Acid	C	Aqueous	TKN
Sludge	Glass - 40z	10-15-12 9:45 AM	1	NONE	G	Solids	TKN Nitrate + Nitrite

Rush per client email 10/16

Sampled By	Method of Shipment	Blank / Cooler Temperature	Remarks
		6 °C	

Relinquished By (sign)	Date / Time	Received By (sign)	Date / Time
	10-15-12/4:15PM		
Relinquished By (sign)	Date / Time	Received By (sign)	Date / Time
Relinquished By (sign)	Date / Time	Received by Lab (sign)	Date / Time
			10/16/12-0853

1/1

Support - Sludge sample

From: "Jay Earley" <jearley@jonesborocwl.org>
To: <support@lmpcorp.com>
Date: 10/16/2012 9:11 AM
Subject: Sludge sample

ETC,
Jonesboro CWL shipped a sludge sample and two influent wastewater samples yesterday (10/15/2012). I am needing to have the sludge sample analysis rushed. If you have any questions please let me know.

Thanks,

Jay Earley
QC/QA Specialist
Jonesboro City Water and Light
(870) 935-5581 ext. 494

ETC
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ENVIRONMENTAL TESTING & CONSULTING, INC.
2790 Whitten Road Memphis, Tennessee 38133 (901) 213-2400 Fax (901) 213-2440
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11/1/2012

City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro, AR, 72403

Ref: Analytical Testing
ETC Report Number: 12-290-9277
Client Project Description: East Plant Influent/Sludge

Dear Ms. Myra Taylor:

Environmental Testing and Consulting, Inc. received sample(s) on 10/16/2012 for the analyses presented in the following report.

The above referenced project has been analyzed per your instructions. The analyses were performed in accordance with the applicable analytical method.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, method validations, instrumentation maintenance and calibration for all parameters (NELAP and non-NELAP) were performed in accordance with guidelines established by the USEPA and NELAC unless otherwise indicated. Any parameter for which the laboratory is not officially NELAP accredited is indicated by a '~' symbol. These are not included in the scope because NELAP accreditation is either not available or has not been applied for. Additional certifications may be held/are available for parameters, where NELAP accreditation is not required or applicable. A full list of certifications is available upon request.

The results are shown on the attached Report of Analysis(s). Results for solid matrices are reported on an as-received basis unless otherwise indicated. This report shall not be reproduced except in full and relates only to the samples included in this report.

Please do not hesitate to contact me or client services if you have any questions or need additional information.

Sincerely,

Randell H. Thomas

Randy Thomas
Project Manager

Laboratory's liability in any claim relating to analyses performed shall be limited to, at laboratory's option, repeating the analysis in question at laboratory's expense, or the refund of the charges paid for performance of said analysis.

Alabama	#40750	Louisiana	#04015	VA NELAP	#460181	Texas	#T104704180-11-6	Arkansas	#88-0650
Mississippi		California	#09267CA	NC	#415	Oklahoma	#9311	Virginia	#00106
Kentucky	#90047	Tennessee	#TN02027	EPA	#TN00012	Kentucky UST	#41	Kansas	#E-10396

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2790 Whitten Road Memphis, Tennessee 38133 (901) 213-2400 Fax (901) 213-2440
"A Laboratory Management Partner"

Client: City Water & Light
Project: East Plant Influent/Sludge
Lab Report Number: 12-290-9277
Date: 11/1/2012

CASE NARRATIVE

Revised report due to TKN re-analysis.

ETC
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2790 Whitten Road Memphis, Tennessee 38133 (901) 213-2400 Fax (901) 213-2440
"A Laboratory Management Partner"

02614
City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro , AR 72403

Project Information : East Plant Influent/Sludge

Revised Report Date: 11/1/2012

Report Number : **12-290-9277**

REPORT OF ANALYSIS

Received : 10/16/2012

Lab No : **90293**
Sample ID : **Sludge**

Matrix: **Solids**
Sampled: **10/15/2012 9:45**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	**98.2**	%		1	10/17/12 09:23	KAT	2540G
Nitrate (NO3-N)	**13100**	mg/Kg - dry	1110	20	10/17/12 16:06	TDJ	9056
Nitrite (NO2-N)	<1110	mg/Kg - dry	1110	20	10/17/12 16:06	TDJ	9056
Nitrate+Nitrite-N	**13100**	mg/Kg - dry	1110	20	10/17/12 16:06		9056
Total Kjeldahl Nitrogen	**65600**	mg/Kg - dry	1390	1	10/31/12 16:07	DRG	4500-TKN

Qualifiers/ Definitions DF Dilution Factor MQL Method Quantitation Limit

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Cooler Receipt Form

Customer Number: **02614**
Customer Name: **City Water & Light**
Report Number: **12-290-0277**

Shipping Method

● Fed Ex ○ UPS ○ US Postal ○ Client ○ Lab ○ Courier ○ Other :

Shipping container/cooler uncompromised?	● Yes	○ No	
Custody seals intact on shipping container/cooler?	○ Yes	○ No	● Not Required
Custody seals intact on sample bottles?	○ Yes	○ No	● Not Required
Chain of Custody (COC) present?	● Yes	○ No	
COC agrees with sample label(s)?	● Yes	○ No	
COC properly completed	● Yes	○ No	
Samples in proper containers?	● Yes	○ No	
Sample containers intact?	● Yes	○ No	
Sufficient sample volume for indicated test(s)?	● Yes	○ No	
All samples received within holding time?	● Yes	○ No	
Cooler temperature in compliance?	● Yes	○ No	
Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun.	● Yes	○ No	
Water - Sample containers properly preserved	○ Yes	○ No	● N/A
Water - VOA vials free of headspace	○ Yes	○ No	● N/A
Trip Blanks received with VOAs	○ Yes	○ No	● N/A
Soil VOA method 5035 – compliance criteria met	○ Yes	○ No	● N/A

☐ High concentration container (48 hr) ☐ Low concentration EnCore samplers (48 hr)
☐ High concentration pre-weighed (methanol -14 d) ☐ Low conc pre-weighed vials (Sod Bis -14 d)

Special precautions or instructions included? ○ Yes ● No

Comments:

Any regulatory non-compliance issues will be recorded on non-compliance report.

Signature: Rebekah Ross

Date & Time: 10/16/2012 16:24:40

ETC Environmental Testing & Consulting, Inc.

massee 38133 (901) 213-2400 Fax (901) 213-2440

12-290-0277
02614
2012-10-16
16:23:51

City Water & Light
East Plant Influent/Sludge

Company Name	Customer Number	Telephone	RUSH	ICE
City Water & Light	02614	(870) 935-5581		

Site Name	Project Comment	FID Number
East Plant Influent/Sludge		

Project	Project Number	PO Number

Project Manager / Contact	E-mail
Mr. Jay Eades	jeades@jonesboromcwl.org

Sample ID	Container Type	Collected Date / Time	# Cont	Preservative	Grab / Comp	Matrix	Analyses
Composite	Plastic Pint	10/11-12/12 10/12-15/12 10:00-9:00AM	1	H2SO4 - Sulfuric Acid	C	Aqueous	TKN
Composite	Plastic Pint	10/12-15/12 10:00-9:00AM	1	H2SO4 - Sulfuric Acid	C	Aqueous	TKN
Sludge	Glass - 6oz	10-15-12 9:15AM	1	NONE	G	Solids	TKN Nitrate + Nitrite

Rush per client email
10/16

Sampled By	Method of Shipment	Blank / Cooler Temperature	Remarks
		1°C	

Relinquished By (sign)	Date / Time	Received By (sign)	Date / Time
	10-15-12/4:15PM		
Relinquished By (sign)	Date / Time	Received By (sign)	Date / Time
Relinquished By (sign)	Date / Time	Received by Lab (sign)	Date / Time
			10/16/12-0853

1/1

Support - Sludge sample

From: "Jay Earley" <jearley@jonesborocwl.org>
To: <support@lmpcorp.com>
Date: 10/16/2012 9:11 AM
Subject: Sludge sample

ETC,
Jonesboro CWL shipped a sludge sample and two influent wastewater samples yesterday (10/15/2012). I am needing to have the sludge sample analysis rushed. If you have any questions please let me know.

Thanks,

Jay Earley
QC/QA Specialist
Jonesboro City Water and Light
(870) 935-5581 ext. 494

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11/27/2012

City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro, AR, 72403

Ref: Analytical Testing
ETC Report Number: 12-320-0207
Client Project Description: East POTW

Dear Ms. Myra Taylor:

Environmental Testing and Consulting, Inc. received sample(s) on 11/15/2012 for the analyses presented in the following report.

The above referenced project has been analyzed per your instructions. The analyses were performed in accordance with the applicable analytical method.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, method validations, instrumentation maintenance and calibration for all parameters (NELAP and non-NELAP) were performed in accordance with guidelines established by the USEPA and NELAC unless otherwise indicated. Any parameter for which the laboratory is not officially NELAP accredited is indicated by a '~' symbol. These are not included in the scope because NELAP accreditation is either not available or has not been applied for. Additional certifications may be held/are available for parameters, where NELAP accreditation is not required or applicable. A full list of certifications is available upon request.

The results are shown on the attached Report of Analysis(s). Results for solid matrices are reported on an as-received basis unless otherwise indicated. This report shall not be reproduced except in full and relates only to the samples included in this report.

Please do not hesitate to contact me or client services if you have any questions or need additional information.

Sincerely,

Randall H. Thomas

Randy Thomas
Project Manager

Laboratory's liability in any claim relating to analyses performed shall be limited to, at laboratory's option, repeating the analysis in question at laboratory's expense, or the refund of the charges paid for performance of said analysis.

Alabama	#40750	Louisiana	#04015	VA NELAP	#460181	Texas	#T104704180-11-6	Arkansas	#88-0650
Mississippi		California	#09267CA	NC	#415	Oklahoma	#9311	Virginia	#00106
Kentucky	#90047	Tennessee	#TN02027	EPA	#TN00012	Kentucky UST	#41	Kansas	#E-10396

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"A Laboratory Management Partner"

02614
City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro , AR 72403

Project Information : East POTW

Report Date : 11/27/2012
Received : 11/15/2012

Report Number : **12-320-0207**

REPORT OF ANALYSIS

Lab No : **95601**
Sample ID : **East Plant Sludge**

Matrix: **Solids**
Sampled: **11/14/2012 8:50**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	**98.1**	%		1	11/16/12 14:42	KAT	2540G
Total Calcium	**29000**	mg/Kg - dry	263	1	11/20/12 04:15	BKN	6010B
Total Magnesium	**3580**	mg/Kg - dry	263	1	11/20/12 04:15	BKN	6010B
Total Sodium	**4230**	mg/Kg - dry	1320	1	11/21/12 16:50	BKN	6010B

Qualifiers/ Definitions

* Outside QC limit
MQL Method Quantitation Limit
DF Dilution Factor

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www.etcmemphis.com
2790 Whitten Road, Memphis, Tennessee 38133 (901) 213-2400 Fax (901) 213-2440
"A Laboratory Management Partner"

Cooler Receipt Form

Customer Number: **02614**
Customer Name: **City Water & Light**
Report Number: **12-320-0207**

Shipping Method

● Fed Ex ○ UPS ○ US Postal ○ Client ○ Lab ○ Courier ○ Other :

Shipping container/cooler uncompromised?	● Yes	○ No	
Custody seals intact on shipping container/cooler?	○ Yes	○ No	● Not Required
Custody seals intact on sample bottles?	○ Yes	○ No	● Not Required
Chain of Custody (COC) present?	● Yes	○ No	
COC agrees with sample label(s)?	● Yes	○ No	
COC properly completed	● Yes	○ No	
Samples in proper containers?	● Yes	○ No	
Sample containers intact?	● Yes	○ No	
Sufficient sample volume for indicated test(s)?	● Yes	○ No	
All samples received within holding time?	● Yes	○ No	
Cooler temperature in compliance?	● Yes	○ No	
Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun.	● Yes	○ No	
Water - Sample containers properly preserved	● Yes	○ No	○ N/A
Water - VOA vials free of headspace	○ Yes	○ No	● N/A
Trip Blanks received with VOAs	○ Yes	○ No	● N/A
Soil VOA method 5035 – compliance criteria met	○ Yes	○ No	● N/A

☐ High concentration container (48 hr) ☐ Low concentration EnCore samplers (48 hr)
☐ High concentration pre-weighed (methanol -14 d) ☐ Low conc pre-weighed vials (Sod Bis -14 d)

Special precautions or instructions included? ○ Yes ● No

Comments:

Any regulatory non-compliance issues will be recorded on non-compliance report.

Signature: Brooke Shoup

Date & Time: 11/15/2012 10:21:39

ETC
ENVIRONMENTAL TESTING & CONSULTING, INC.
2790 Whitten Road Memphis, Tennessee 38133 (901) 213-2400 Fax (901) 213-2440

City Water & Light
East POTW
12-320-0207
02614
2012-11-15
10:21:17

0000020049

Remarks					
Company Name: City Water & Light	Cust No: 02614	Kit ID: 0000020049	Telephone:	RUSH	ICE
Site Name: Sludge	Project Comment:			FID Number:	
Project:	Project Number:	PO Number:			
Project Manager / Contact: Mr. Adam Saulsbury	E-mail: asaulsbury@jonesboroewl.org				

Sample ID	Container Type	Collected Date / Time	# Cont	Preservative	Grab / Comp	Matrix	Analyses
East Plant Sludge	Glass - 4oz	11/14/12 8:50 AM	1	NONE	G	Solids	Mg/Na/Ca

Sampled By	Method of Shipment	Blank / Cooler Temperature	
Mike Jones	Fed Ex	1°C	
Relinquished By (sign)	Date / Time	Received By (sign)	Date / Time
	11/14/12 3:30PM		
Relinquished By (sign)	Date / Time	Received By (sign)	Date / Time
Relinquished By (sign)	Date / Time	Received by Lab (sign)	Date / Time
		B Bloxup	11-15-12 08:56

1/1

$$SAR = \frac{Na/23}{\sqrt{\frac{Ca/20 + Mg/12}{2}}}$$

$$= \frac{4230/23}{\sqrt{\frac{(29{,}000/20) + (3580/12)}{2}}}$$

$$= \frac{183.9}{\sqrt{\frac{1450 + 298.3}{2}}} = \frac{183.9}{\sqrt{1748.3/2}} = \frac{183.9}{\sqrt{874.15}} = \frac{183.9}{29.6} = 6.2$$

CWL

Annual Soil Results 2012

Eastside Wastewater Treatment Facility

No-Discharge Permit # 5142-W (ARL043401)

NPDES Permit Number AR0043401

AFIN 16-00936

Soil Analysis

Analyst: KF/TB **Date:** 1/20/2012

Sample I.D.	As (mg/L)	Mo (mg/L)	Cr (mg/L)	Ni (mg/L)	Cd (mg/L)	Pb (mg/L)
E011	0.182	0.006	0.128	0.015	-0.012	0.228
E012	0.182	0.003	0.091	-0.056	-0.014	0.157
E013	0.139	0.005	0.142	-0.028	-0.016	0.089
E014	0.111	0.006	0.095	-0.021	-0.016	0.317
E015	0.178	0.001	0.086	-0.055	-0.015	0.045
E021	0.193	0.003	0.089	-0.058	-0.016	0.084
E022	0.131	0.001	0.081	-0.046	-0.015	0.078
E023	0.159	0.000	0.075	-0.043	-0.018	0.054
E024	0.202	0.002	0.065	-0.090	-0.018	0.072
E025	0.113	-0.001	-0.039	0.060	-0.010	0.118
E026	0.170	0.003	0.090	0.031	-0.005	0.101
E031	0.142	-0.005	-0.050	0.066	-0.014	0.132
E032	0.145	-0.004	-0.071	0.078	-0.012	0.130
E033	0.123	-0.006	-0.036	0.077	-0.013	0.125
E041	0.211	0.012	0.098	0.125	-0.009	0.321
E042	0.260	0.002	0.039	0.120	-0.011	0.301
E043	0.166	0.000	0.005	0.128	-0.009	0.212
E051	0.229	0.000	0.024	0.171	-0.010	0.149
E052	0.139	0.001	0.080	0.028	-0.015	0.064
E053	0.268	0.005	0.093	0.091	-0.015	0.051
E061	0.211	0.005	0.083	0.042	-0.012	0.133
E071	0.160	0.003	0.069	0.045	-0.013	0.067
E072	0.158	0.001	0.070	0.038	-0.012	0.088
E081A	0.070	-0.005	-0.031	0.044	-0.013	0.126
E081B	0.282	0.002	0.096	0.057	-0.012	0.087
E082A	0.307	0.005	0.079	0.068	-0.011	0.095
E082B	0.151	0.008	0.080	0.031	-0.011	0.101
E091	0.283	0.010	0.106	0.070	-0.010	0.117
E101	0.195	0.003	0.115	0.004	-0.046	0.070
E102	0.192	0.006	0.059	0.032	-0.006	0.012
E111	0.236	0.003	0.056	0.030	-0.005	0.043
E121	0.252	0.006	0.072	0.067	-0.005	0.083
E122	0.258	0.002	0.086	0.058	-0.006	0.009
E123	0.083	0.008	0.078	0.076	-0.005	0.102
E131	0.213	0.001	0.075	0.018	-0.006	0.030
E132	0.327	0.001	0.074	0.021	-0.005	-0.034
E133	0.158	0.004	0.066	0.022	-0.004	0.000
E141	0.272	0.002	0.100	0.069	-0.005	0.053

City Water & Light 400 E. Monroe P. O. Box 1289 Myra Taylor Laboratory Supervisor

Soil Analysis

Analyst: KF/TB **Date:** 1/20/2012

Sample I.D.	As (mg/L)	Mo (mg/L)	Cr (mg/L)	Ni (mg/L)	Cd (mg/L)	Pb (mg/L)
E142	0.163	0.007	0.084	0.009	-0.013	0.079
E151	0.282	0.001	0.079	0.050	-0.015	0.160
E152	0.148	0.000	0.085	0.082	-0.014	0.104
E153	0.289	0.000	0.073	0.065	-0.013	0.110
E161	0.165	0.000	0.106	0.080	-0.014	-0.007
E162	0.196	-0.001	0.071	0.005	-0.013	0.061
E163	0.238	0.002	0.083	-0.002	-0.015	0.037
W011	0.127	0.006	0.266	0.125	-0.036	0.739
W012	0.000	0.000	0.133	0.092	-0.047	0.299
W013	0.110	0.001	0.189	0.069	-0.043	0.518
W014	0.001	0.004	0.135	0.036	-0.047	0.195
W015	0.186	0.001	0.122	0.093	-0.047	0.153
W021	0.050	-0.001	0.095	0.073	-0.049	0.065
W022	0.158	0.001	0.123	0.124	-0.048	0.070
W023	0.186	0.001	0.122	0.084	-0.046	0.136
W024	0.160	0.000	0.123	0.070	-0.046	0.178
W025	0.173	0.001	0.130	0.083	-0.047	0.144

City Water & Light 400 E. Monroe P. O. Box 1289 Myra Taylor Laboratory Supervisor

Effective Date 9/1/2011
MQL's for Metals

FLAME ATOMIC ABSORPTION

MQL equals 3.3 X MDL

Cadmium	0.042	mg/L
Chromium	0.035	mg/L
Copper	0.016	mg/L
Lead	0.051	mg/L
Nickel	0.032	mg/L
Zinc	0.014	mg/L
Silver	0.071	mg/L
Manganese	0.033	mg/L
Potassium	0.009	mg/L

GRAPHITE FURNACE

MQL equals 3.3 X MDL

Arsenic	0.0047 mg/L	4.7 ug/L
Chromium	0.0039 mg/L	3.9 ug/L
Lead	0.0030 mg/L	3.0 ug/L
Molybdenum	0.0231 mg/L	23.1 ug/L

City Water & Light 400 E. Monroe P. O. Box 1289 Myra Taylor Laboratory Supervisor

ETC ENVIRONMENTAL TESTING & CONSULTING, INC.
www.etcmemphis.com 2790 Whitten Road Memphis, Tennessee 38133 (901) 213-2400 Fax (901) 213-2440
"A Laboratory Management Partner"

1/27/2012

City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro, AR, 72403

Ref: Analytical Testing
ETC Report Number: 12-017-0206
Client Project Description: Soil Samples/East & West Plant

Dear Ms. Myra Taylor:

Environmental Testing and Consulting, Inc. received 18 sample(s) on 1/17/2012 for the analyses presented in the following report.

The above referenced project has been analyzed per your instructions. The analyses were performed in accordance with the applicable analytical method.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, instrumentation maintenance and calibration were performed in accordance with guidelines established by the analytical method(s) and NELAC. All results provided are in compliance with NELAC requirements unless otherwise indicated and/or narrated.

The results are shown on the attached Report of Analysis(s). Results for solid matrices are reported on an as-received basis unless otherwise indicated. This report shall not be reproduced except in full and relates only to the samples included in this report.

Please do not hesitate to contact me or client services if you have any questions or need additional information.

Sincerely,

Randall H. Thomas

Randy Thomas
Project Manager

ETC
www.etcmemphis.com
ENVIRONMENTAL TESTING & CONSULTING, INC.
2790 Whitten Road Memphis, Tennessee 38133 (901) 213-2400 Fax (901) 213-2440
"A Laboratory Management Partner"

02614
City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro , AR 72403

Project Information : Soil Samples/East & West Plant

Report Date : 1/27/2012

Report Number : **12-017-0206**

REPORT OF ANALYSIS

Received : 1/17/2012

Lab No : **94504**
Sample ID : **East Field 1**

Matrix: **Solids**
Sampled: **1/4/2012 11:38**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Mercury	**0.0580**	mg/Kg - dry	0.0150	1	01/18/12 12:33	TDJ	7471A
Total Selenium	**0.597**	mg/Kg - dry	0.564	1	01/24/12 02:28	BKN	6010B
% Moisture	**11.4**	%		1	01/17/12 15:21	KAT	2540G

Lab No : **94505**
Sample ID : **East Field 2**

Matrix: **Solids**
Sampled: **1/4/2012 13:27**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Mercury	**0.0532**	mg/Kg - dry	0.0157	1	01/18/12 12:36	TDJ	7471A
Total Selenium	**0.694**	mg/Kg - dry	0.589	1	01/24/12 02:34	BKN	6010B
% Moisture	**15.2**	%		1	01/17/12 15:21	KAT	2540G

Lab No : **94506**
Sample ID : **East Field 3**

Matrix: **Solids**
Sampled: **1/4/2012 13:47**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Mercury	**0.0163**	mg/Kg - dry	0.0151	1	01/18/12 12:37	TDJ	7471A
Total Selenium	<0.566	mg/Kg - dry	0.566	1	01/24/12 02:41	BKN	6010B
% Moisture	**11.7**	%		1	01/17/12 15:21	KAT	2540G

Qualifiers/ Definitions
* Outside QC limit
MQL Method Quantitation Limit
DF Dilution Factor

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02614
City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro , AR 72403

Project Information : Soil Samples/East & West Plant

Report Date : 1/27/2012

Report Number : **12-017-0206**

REPORT OF ANALYSIS

Received : 1/17/2012

Lab No : **94507**
Sample ID : **East Field 4**

Matrix: **Solids**
Sampled: **1/3/2012 14:39**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Mercury	**0.0770**	mg/Kg - dry	0.0149	1	01/18/12 12:38	TDJ	7471A
Total Selenium	**1.02**	mg/Kg - dry	0.559	1	01/24/12 02:47	BKN	6010B
% Moisture	**10.7**	%		1	01/17/12 15:21	KAT	2540G

Lab No : **94508**
Sample ID : **East Field 5**

Matrix: **Solids**
Sampled: **1/4/2012 14:03**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Mercury	**0.0234**	mg/Kg - dry	0.0143	1	01/18/12 12:39	TDJ	7471A
Total Selenium	<0.538	mg/Kg - dry	0.538	1	01/24/12 02:54	BKN	6010B
% Moisture	**7.19**	%		1	01/17/12 15:21	KAT	2540G

Lab No : **94509**
Sample ID : **East Field 6**

Matrix: **Solids**
Sampled: **1/4/2012 14:15**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Mercury	**0.0221**	mg/Kg - dry	0.0141	1	01/19/12 16:33	TDJ	7471A
Total Selenium	<0.528	mg/Kg - dry	0.528	1	01/24/12 03:01	BKN	6010B
% Moisture	**5.44**	%		1	01/17/12 15:21	KAT	2540G

Qualifiers/ Definitions
* Outside QC limit
MQL Method Quantitation Limit
DF Dilution Factor

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Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro , AR 72403

Project Information : Soil Samples/East & West Plant

Report Date : 1/27/2012

Report Number : **12-017-0206**

REPORT OF ANALYSIS

Received : 1/17/2012

Lab No : **94510**
Sample ID : **East Field 7**

Matrix: **Solids**
Sampled: **1/3/2012 13:52**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Mercury	**0.0197**	mg/Kg - dry	0.0139	1	01/19/12 16:34	TDJ	7471A
Total Selenium	<0.521	mg/Kg - dry	0.521	1	01/24/12 03:07	BKN	6010B
% Moisture	**4.18**	%		1	01/17/12 14:47	KAT	2540G

Lab No : **94511**
Sample ID : **East Field 8**

Matrix: **Solids**
Sampled: **1/3/2012 13:45**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Mercury	**0.0924**	mg/Kg - dry	0.0140	1	01/19/12 16:35	TDJ	7471A
Total Selenium	**0.784**	mg/Kg - dry	0.525	1	01/24/12 03:14	BKN	6010B
% Moisture	**4.80**	%		1	01/17/12 14:47	KAT	2540G

Lab No : **94512**
Sample ID : **East Field 9**

Matrix: **Solids**
Sampled: **1/4/2012 11:43**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Mercury	**0.0178**	mg/Kg - dry	0.0141	1	01/19/12 16:36	TDJ	7471A
Total Selenium	**0.710**	mg/Kg - dry	0.530	1	01/24/12 03:34	BKN	6010B
% Moisture	**5.78**	%		1	01/17/12 15:21	KAT	2540G

Qualifiers/ Definitions
* Outside QC limit
MQL Method Quantitation Limit
DF Dilution Factor

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City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro , AR 72403

Project Information : Soil Samples/East & West Plant

Report Date : 1/27/2012

Report Number : **12-017-0206**

REPORT OF ANALYSIS

Received : 1/17/2012

Lab No : **94513**
Sample ID : **East Field 10**
Matrix: **Solids**
Sampled: **1/3/2012 13:59**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Mercury	**0.0637**	mg/Kg - dry	0.0144	1	01/19/12 16:37	TDJ	7471A
Total Selenium	**0.570**	mg/Kg - dry	0.539	1	01/24/12 03:41	BKN	6010B
% Moisture	**7.32**	%		1	01/17/12 14:47	KAT	2540G

Lab No : **94514**
Sample ID : **East Field 11**
Matrix: **Solids**
Sampled: **1/3/2012 14:02**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Mercury	**0.0259**	mg/Kg - dry	0.0144	1	01/25/12 15:26	TDJ	7471A
Total Selenium	**0.710**	mg/Kg - dry	0.539	1	01/24/12 03:47	BKN	6010B
% Moisture	**7.39**	%		1	01/17/12 14:47	KAT	2540G

Lab No : **94515**
Sample ID : **East Field 12**
Matrix: **Solids**
Sampled: **1/4/2012 11:52**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Mercury	<0.0145	mg/Kg - dry	0.0145	1	01/26/12 14:42	TDJ	7471A
Total Selenium	<0.543	mg/Kg - dry	0.543	1	01/24/12 03:54	BKN	6010B
% Moisture	**7.96**	%		1	01/17/12 15:21	KAT	2540G

Qualifiers/ Definitions
* Outside QC limit
MQL Method Quantitation Limit
DF Dilution Factor

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City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro , AR 72403

Project Information : Soil Samples/East & West Plant

Report Date : 1/27/2012

Report Number : **12-017-0206**

REPORT OF ANALYSIS

Received : 1/17/2012

Lab No : **94516**
Sample ID : **East Field 13**

Matrix: **Solids**
Sampled: **1/3/2012 14:17**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Mercury	<0.0136	mg/Kg - dry	0.0136	1	01/26/12 14:43	TDJ	7471A
Total Selenium	<0.512	mg/Kg - dry	0.512	1	01/24/12 04:00	BKN	6010B
% Moisture	**2.36**	%		1	01/17/12 14:47	KAT	2540G

Lab No : **94517**
Sample ID : **East Field 14**

Matrix: **Solids**
Sampled: **1/4/2012 11:58**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Mercury	**0.0177**	mg/Kg - dry	0.0144	1	01/26/12 14:44	TDJ	7471A
Total Selenium	**0.817**	mg/Kg - dry	0.542	1	01/24/12 04:07	BKN	6010B
% Moisture	**7.87**	%		1	01/17/12 15:21	KAT	2540G

Lab No : **94518**
Sample ID : **East Field 15**

Matrix: **Solids**
Sampled: **1/4/2012 14:13**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Mercury	<0.0153	mg/Kg - dry	0.0153	1	01/26/12 14:45	TDJ	7471A
Total Selenium	<0.574	mg/Kg - dry	0.574	1	01/24/12 04:14	BKN	6010B
% Moisture	**12.9**	%		1	01/17/12 15:21	KAT	2540G

Qualifiers/ Definitions
* Outside QC limit
MQL Method Quantitation Limit
DF Dilution Factor

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02614
City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro , AR 72403

Project Information : Soil Samples/East & West Plant

Report Date : 1/27/2012

Report Number : **12-017-0206**

REPORT OF ANALYSIS

Received : 1/17/2012

Lab No : **94519**
Sample ID : **East Field 16**
Matrix: **Solids**
Sampled: **1/4/2012 15:38**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Mercury	<0.0146	mg/Kg - dry	0.0146	1	01/26/12 14:46	TDJ	7471A
Total Selenium	**0.707**	mg/Kg - dry	0.549	1	01/24/12 04:20	BKN	6010B
% Moisture	**8.93**	%		1	01/18/12 15:15	KAT	2540G

Lab No : **94520**
Sample ID : **West Field 1**
Matrix: **Solids**
Sampled: **1/4/2012 9:31**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Mercury	**0.180**	mg/Kg - dry	0.0166	1	01/26/12 14:47	TDJ	7471A
Total Selenium	**1.93**	mg/Kg - dry	0.625	1	01/24/12 04:27	BKN	6010B
% Moisture	**20.1**	%		1	01/17/12 14:47	KAT	2540G

Lab No : **94521**
Sample ID : **West Field 2**
Matrix: **Solids**
Sampled: **1/4/2012 10:05**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Mercury	<0.0144	mg/Kg - dry	0.0144	1	01/26/12 14:48	TDJ	7471A
Total Selenium	**0.559**	mg/Kg - dry	0.539	1	01/24/12 04:34	BKN	6010B
% Moisture	**7.37**	%		1	01/17/12 14:47	KAT	2540G

Qualifiers/ Definitions
* Outside QC limit
MQL Method Quantitation Limit
DF Dilution Factor

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Cooler Receipt Form

Customer Number: **02614**
Customer Name: **City Water & Light**
Report Number: **12-017-0206**

Shipping Method

○ Fed Ex ● UPS ○ US Postal ○ Client ○ Lab ○ Courier ○ Other : _____

Shipping container/cooler uncompromised?	● Yes	○ No	
Custody seals intact on shipping container/cooler?	○ Yes	○ No	● Not Required
Custody seals intact on sample bottles?	○ Yes	○ No	● Not Required
Chain of Custody (COC) present?	● Yes	○ No	
COC agrees with sample label(s)?	● Yes	○ No	
COC properly completed	● Yes	○ No	
Samples in proper containers?	● Yes	○ No	
Sample containers intact?	● Yes	○ No	
Sufficient sample volume for indicated test(s)?	● Yes	○ No	
All samples received within holding time?	● Yes	○ No	
Cooler temperature in compliance?	● Yes	○ No	
Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun.	● Yes	○ No	
Water - Sample containers properly preserved	○ Yes	○ No	● N/A
Water - VOA vials free of headspace	○ Yes	○ No	● N/A
Trip Blanks received with VOAs	○ Yes	○ No	● N/A
Soil VOA method 5035 – compliance criteria met	○ Yes	○ No	● N/A

☐ High concentration container (48 hr) ☐ Low concentration EnCore samplers (48 hr)
☐ High concentration pre-weighed (methanol -14 d) ☐ Low conc pre-weighed vials (Sod Bis -14 d)

Special precautions or instructions included? ○ Yes ● No

Comments:

Any regulatory non-compliance issues will be recorded on non-compliance report.

Signature: Rebekah Ross

Date & Time: 01/17/2012 11:04:08

Environmental Testing & Consulting, Inc. Chain of Custody

Page 1 of 2

Client Name	Client Project Manager/Contact	Phone #
City Water + Light	Myra Taylor	(870) 930-3389

Project/Site Location	email Address
Soil Samples / East + West Plant	

Project Number	FID #	Purchase Order Number

Type of Event: Single Daily Weekly Monthly Quarterly Semi-Annual

Method of Shipment: UPS

12-017-0206
02614
2012-01-17
11.03.21
City Water & Light
Soil Samples/East & West Plant

- [X] NPDES
- [ ] Wastewater
- [ ] UST
- [ ] Other Program

- [ ] RUSH - Additional charges apply.
  The following require a Statement of Work
- [ ] Special Report Requirements
- [ ] Special Detection Limit(s)
- [ ] Special Method Requirements

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2790 Whitten Road
Memphis, TN 38133
(901) 213-2400 (phone)
(901) 213-2440 (fax)
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Date:	Time:	Sample Identification:	Number of Containers	Matrix	(G)rab or (C)omposite	Selenium	Mercury	Moisture								
1/4/12	11:19A-11:38A	East Field 1	1	S	C	X	X	X								
1/4/12	1:13P-1:27P	East Field 2	1	S	C	X	X	X								
1/4/12	1:41P-1:47P	East Field 3	1	S	C	X	X	X								
1/3/12	2:33P-2:39P	East Field 4	1	S	C	X	X	X								
1/4/12	1:57P-2:03P	East Field 5	1	S	C	X	X	X								
1/4/12	2:15P	East Field 6	1	S	C	X	X	X								
1/3/12	1:49P-1:52P	East Field 7	1	S	C	X	X	X								
1/3/12	1:31P-1:48P	East Field 8	1	S	C	X	X	X								
1/4/12	11:40A-11:43A	East Field 9	1	S	C	X	X	X								
1/3/12	1:56P-1:59P	East Field 10	1	S	C	X	X	X								

Required Analysis:

Matrix
WW - Wastewater GW - Groundwater DW-Drinking Water S-Soil O-Oil L-Non aqueous liquid
Other: _____

Sampled by (Name/Affiliation): (Print): John Golden / CWL

Client Remarks/Comments

For Laboratory Use Only

Ice	Cooler Temp	Lab Comments
Y / (N)	— MT	

Relinquished by: (SIGNATURE)	Date	Time	Received by: (SIGNATURE)	Date	Time
John Golden	1/16/12	9:00a			
Relinquished by: (SIGNATURE)	Date	Time	Received by: (SIGNATURE)	Date	Time
Relinquished by: (SIGNATURE)	Date	Time	Received for lab by: (SIGNATURE)	Date	Time
				1/17	2012

SAFEGUARD. Form No. 811-2/W09CS000080 11/10

Environmental Testing & Consulting, Inc. Chain of Custody

Page 2 of 2

12-017-0205
02614
2012-01-17
11:03:21
City Water & Light
Soil Samples/East & West Plant

Client Name	Client Project Manager/Contact	Phone #
City water & Light	Myra Taylor	(870) 930-3389

Project/ Site Location	email Address
Soil Samples / East & west Plant	

Project Number	FID #	Purchase Order Number

Type of Event: Single Daily Weekly Monthly Quarterly Semi-Annual

Method of Shipment: UPS

- [x] NPDES
- [ ] Wastewater
- [ ] UST
- [ ] Other Program

- [ ] RUSH - Additional charges apply.

The following require a Statement of Work
- [ ] Special Report Requirements
- [ ] Special Detection Limit(s)
- [ ] Special Method Requirements

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(901) 213-2440 (fax)
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nelac

Required Analysis:

Date:	Time:	Sample Identification:	Number of Containers	Matrix	(G)rab or (C)omposite	Selenium	Mercury	Moisture								
1/3/12	2:02p	East Field 11	1	S	C	X	X	X								
1/4/12	11:48A - 11:52A	East Field 12	1	S	C	X	X	X								
1/3/12	2:10p - 2:17p	East Field 13	1	S	C	X	X	X								
1/4/12	11:55A - 11:58A	East Field 14	1	S	C	X	X	X								
1/4/12	2:07p - 2:13p	East Field 15	1	S	C	X	X	X								
1/4/12	3:31p - 3:38p	East Field 16	1	S	C	X	X	X								
1/4/12	9:21A - 9:31A	West Field 1	1	S	C	X	X	X								
1/4/12	9:35 - 10:05	↓ 2	1	S	C	X	X	X								

Matrix
WW - Wastewater GW - Groundwater DW-Drinking Water S-Soil O-Oil L-Non aqueous liquid
Other: ____________

Sampled by (Name/Affiliation): (Print): John Golden / CWL

Client Remarks/Comments

For Laboratory Use Only

Ice	Cooler Temp	Lab Comments
Y / (N)	NA	

Relinquished by: (SIGNATURE)	Date	Time	Received by: (SIGNATURE)	Date	Time
[signature]	1/16/12	9:00A			
Relinquished by: (SIGNATURE)	Date	Time	Received by: (SIGNATURE)	Date	Time
Relinquished by: (SIGNATURE)	Date	Time	Received for lab by: (SIGNATURE)	Date	Time
			[signature]	1/17/12	0930

SAFEGUARD - Form No. 811-2/W09CS00060 11/10

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2/1/2012

City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro, AR, 72403

Ref: Analytical Testing
ETC Report Number: 12-017-0211
Client Project Description: Soil Samples/East & West Plant

Dear Ms. Myra Taylor:

Environmental Testing and Consulting, Inc. received 59 sample(s) on 1/17/2012 for the analyses presented in the following report.

The above referenced project has been analyzed per your instructions. The analyses were performed in accordance with the applicable analytical method.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, instrumentation maintenance and calibration were performed in accordance with guidelines established by the analytical method(s) and NELAC. All results provided are in compliance with NELAC requirements unless otherwise indicated and/or narrated.

The results are shown on the attached Report of Analysis(s). Results for solid matrices are reported on an as-received basis unless otherwise indicated. This report shall not be reproduced except in full and relates only to the samples included in this report.

Please do not hesitate to contact me or client services if you have any questions or need additional information.

Sincerely,

Randall H. Thomas

Randy Thomas
Project Manager

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Non-Compliance Login Summary Report

Incident Date: 01-17-2012 03:06 pm
Report number: 12-017-0211 Lab Number(s): 94526-94717
Customer number: 02614
Customer Name: City Water & Light
Contact Name: City Water & Light
Project ID: CWL - Soil Samples

This Non-Compliance Report has been generated because proper EPA protocol was not followed for the above referenced sample(s). This means that the data generated from the analysis of this project may not be suitable for Regulatory compliance.

This report should be included with any data submitted to a Regulatory Agency. The actual problems encountered are listed below.

Description of Login Non-Compliance

☑ **Sample Temperature Non-compliant**
Cooler Temperature: No Ice degrees Celsius
Required Temperature: 2-6 degrees Celsius

☐ **Sample Received in Improper Container**
Analysis:
Received Container:
Required Container:

☐ **Sample Improperly Preserved**
Analysis:
Received Preservative:
Required Preservative:

☐ **Sample Received Outside Holding Time** Date Received: 01-17-2012 00:00
Analysis:
Sampled Date and Time:
Required Holding Time:

Other:

Corrective Action

Client Notified: ● Yes ○ No Date Client Notified: 1/17/12 Contact Name: Jody Gibson
Client Directive:
Approval to analyze samples out of temperature compliance per Jody Gibson.

Initiated By: Rebekah Ross Project manager: Randall Thomas QAO: Richard Medina

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02614
City Water & Light
Ms. Myra Taylor
400 East Monroe Avenue
Jonesboro , AR 72403

Project Information : Soil Samples/East & West Plant

Report Date : 2/1/2012

Report Number : **12-017-0211**

REPORT OF ANALYSIS

Received : 1/17/2012

Lab No : **94526**
Sample ID : **E011**
Matrix: **Solids**
Sampled: **1/4/2012 11:18**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**9.53**	mg/Kg	1.00	1	01/21/12 00:41	TDJ	SW-9056

Lab No : **94660**
Sample ID : **E012**
Matrix: **Solids**
Sampled: **1/4/2012 11:23**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**13.7**	mg/Kg	1.00	1	01/21/12 00:58	TDJ	SW-9056

Lab No : **94661**
Sample ID : **E013**
Matrix: **Solids**
Sampled: **1/4/2012 11:33**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**2.36**	mg/Kg	1.00	1	01/21/12 01:15	TDJ	SW-9056

Lab No : **94662**
Sample ID : **E014**
Matrix: **Solids**
Sampled: **1/4/2012 11:38**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**30.7**	mg/Kg	1.00	1	01/21/12 01:32	TDJ	SW-9056

Qualifiers/ Definitions
* Outside QC limit
MQL Method Quantitation Limit
DF Dilution Factor

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Ms. Myra Taylor
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Jonesboro , AR 72403

Project Information : Soil Samples/East & West Plant

Report Date : 2/1/2012

Report Number : **12-017-0211**

REPORT OF ANALYSIS

Received : 1/17/2012

Lab No : **94663**
Sample ID : **E015**
Matrix: **Solids**
Sampled: **1/4/2012 11:28**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**5.69**	mg/Kg	1.00	1	01/21/12 01:49	TDJ	SW-9056

Lab No : **94664**
Sample ID : **E021**
Matrix: **Solids**
Sampled: **1/4/2012 13:13**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**18.6**	mg/Kg	1.00	1	01/21/12 02:06	TDJ	SW-9056

Lab No : **94665**
Sample ID : **E022**
Matrix: **Solids**
Sampled: **1/4/2012 13:16**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**6.78**	mg/Kg	1.00	1	01/21/12 02:23	TDJ	SW-9056

Lab No : **94666**
Sample ID : **E023**
Matrix: **Solids**
Sampled: **1/4/2012 13:19**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**9.11**	mg/Kg	1.00	1	01/21/12 02:40	TDJ	SW-9056

Qualifiers/ Definitions
* Outside QC limit
MQL Method Quantitation Limit
DF Dilution Factor

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Lab No : **94667**
Sample ID : **E024**
Matrix: **Solids**
Sampled: **1/4/2012 13:21**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**13.0**	mg/Kg	1.00	1	01/21/12 02:57	TDJ	SW-9056

Lab No : **94668**
Sample ID : **E025**
Matrix: **Solids**
Sampled: **1/4/2012 13:25**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**20.7**	mg/Kg	1.00	1	01/21/12 03:14	TDJ	SW-9056

Lab No : **94669**
Sample ID : **E026**
Matrix: **Solids**
Sampled: **1/4/2012 13:27**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**21.2**	mg/Kg	1.00	1	01/21/12 04:04	TDJ	SW-9056

Lab No : **94670**
Sample ID : **E031**
Matrix: **Solids**
Sampled: **1/4/2012 13:41**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**5.50**	mg/Kg	1.00	1	01/21/12 04:21	TDJ	SW-9056

Qualifiers/ Definitions
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DF Dilution Factor

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Lab No : **94671**
Sample ID : **E032**
Matrix: **Solids**
Sampled: **1/4/2012 13:44**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**9.66**	mg/Kg	1.00	1	01/21/12 04:38	TDJ	SW-9056

Lab No : **94672**
Sample ID : **E033**
Matrix: **Solids**
Sampled: **1/4/2012 13:47**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**24.2**	mg/Kg	1.00	1	01/21/12 04:55	TDJ	SW-9056

Lab No : **94673**
Sample ID : **E041**
Matrix: **Solids**
Sampled: **1/3/2012 14:33**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**15.8**	mg/Kg	1.00	1	01/21/12 05:12	TDJ	SW-9056

Lab No : **94674**
Sample ID : **E042**
Matrix: **Solids**
Sampled: **1/3/2012 14:36**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**5.78**	mg/Kg	1.00	1	01/21/12 05:29	TDJ	SW-9056

Qualifiers/ Definitions
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Lab No : **94675**
Sample ID : **E043**
Matrix: **Solids**
Sampled: **1/3/2012 14:39**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**9.28**	mg/Kg	1.00	1	01/21/12 05:46	TDJ	SW-9056

Lab No : **94676**
Sample ID : **E051**
Matrix: **Solids**
Sampled: **1/4/2012 14:00**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**1.31**	mg/Kg	1.00	1	01/21/12 06:03	TDJ	SW-9056

Lab No : **94677**
Sample ID : **E052**
Matrix: **Solids**
Sampled: **1/4/2012 13:57**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**1.86**	mg/Kg	1.00	1	01/21/12 06:20	TDJ	SW-9056

Lab No : **94678**
Sample ID : **E053**
Matrix: **Solids**
Sampled: **1/4/2012 14:03**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	<1.00	mg/Kg	1.00	1	01/21/12 06:37	TDJ	SW-9056

Qualifiers/ Definitions
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Lab No : **94679**
Sample ID : **E061**
Matrix: **Solids**
Sampled: **1/4/2012 14:15**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**4.41**	mg/Kg	1.00	1	01/21/12 07:27	TDJ	SW-9056

Lab No : **94680**
Sample ID : **E071**
Matrix: **Solids**
Sampled: **1/3/2012 13:52**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**15.2**	mg/Kg	1.00	1	01/21/12 07:44	TDJ	SW-9056

Lab No : **94681**
Sample ID : **E072**
Matrix: **Solids**
Sampled: **1/3/2012 13:49**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**1.40**	mg/Kg	1.00	1	01/21/12 08:01	TDJ	SW-9056

Lab No : **94682**
Sample ID : **E081A**
Matrix: **Solids**
Sampled: **1/3/2012 13:31**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**9.07**	mg/Kg	1.00	1	01/21/12 08:18	TDJ	SW-9056

Qualifiers/ Definitions
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Lab No : **94683**
Sample ID : **E081B**
Matrix: **Solids**
Sampled: **1/3/2012 13:38**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**2.12**	mg/Kg	1.00	1	01/21/12 08:35	TDJ	SW-9056

Lab No : **94684**
Sample ID : **E082A**
Matrix: **Solids**
Sampled: **1/3/2012 13:43**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**11.2**	mg/Kg	1.00	1	01/21/12 08:52	TDJ	SW-9056

Lab No : **94685**
Sample ID : **E082B**
Matrix: **Solids**
Sampled: **1/3/2012 13:45**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**18.8**	mg/Kg	1.00	1	01/21/12 09:09	TDJ	SW-9056

Lab No : **94686**
Sample ID : **E091**
Matrix: **Solids**
Sampled: **1/4/2012 11:40**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**2.53**	mg/Kg	1.00	1	01/21/12 09:26	TDJ	SW-9056

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Lab No : **94687**
Sample ID : **E092**
Matrix: **Solids**
Sampled: **1/4/2012 11:43**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**2.10**	mg/Kg	1.00	1	01/21/12 09:43	TDJ	SW-9056

Lab No : **94688**
Sample ID : **E101**
Matrix: **Solids**
Sampled: **1/3/2012 13:56**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**8.52**	mg/Kg	1.00	1	01/21/12 09:59	TDJ	SW-9056

Lab No : **94689**
Sample ID : **E102**
Matrix: **Solids**
Sampled: **1/3/2012 13:59**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**2.03**	mg/Kg	1.00	1	01/24/12 00:23	TDJ	SW-9056

Lab No : **94690**
Sample ID : **E111**
Matrix: **Solids**
Sampled: **1/3/2012 14:02**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**8.85**	mg/Kg	1.00	1	01/24/12 00:40	TDJ	SW-9056

Qualifiers/ Definitions
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Lab No : **94691** Matrix: **Solids**
Sample ID : **E121** Sampled: **1/4/2012 11:48**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**20.1**	mg/Kg	1.00	1	01/24/12 00:58	TDJ	SW-9056

Lab No : **94692** Matrix: **Solids**
Sample ID : **E122** Sampled: **1/4/2012 11:50**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**20.2**	mg/Kg	1.00	1	01/24/12 01:15	TDJ	SW-9056

Lab No : **94693** Matrix: **Solids**
Sample ID : **E123** Sampled: **1/4/2012 11:52**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**11.6**	mg/Kg	1.00	1	01/24/12 01:33	TDJ	SW-9056

Lab No : **94694** Matrix: **Solids**
Sample ID : **E131** Sampled: **1/3/2012 14:17**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**3.05**	mg/Kg	1.00	1	01/24/12 01:50	TDJ	SW-9056

Qualifiers/ Definitions
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Lab No : **94695**
Sample ID : **E132**
Matrix: **Solids**
Sampled: **1/3/2012 14:14**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	<1.00	mg/Kg	1.00	1	01/24/12 02:07	TDJ	SW-9056

Lab No : **94696**
Sample ID : **E133**
Matrix: **Solids**
Sampled: **1/3/2012 14:10**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**8.47**	mg/Kg	1.00	1	01/24/12 02:25	TDJ	SW-9056

Lab No : **94697**
Sample ID : **E141**
Matrix: **Solids**
Sampled: **1/4/2012 11:55**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**3.39**	mg/Kg	1.00	1	01/24/12 02:42	TDJ	SW-9056

Lab No : **94698**
Sample ID : **E142**
Matrix: **Solids**
Sampled: **1/4/2012 11:58**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**16.8**	mg/Kg	1.00	1	01/24/12 03:00	TDJ	SW-9056

Qualifiers/ Definitions
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Received : 1/17/2012

Lab No : **94699**
Sample ID : **E151**
Matrix: **Solids**
Sampled: **1/4/2012 14:07**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**2.33**	mg/Kg	1.00	1	01/24/12 02:52	TDJ	SW-9056

Lab No : **94700**
Sample ID : **E152**
Matrix: **Solids**
Sampled: **1/4/2012 14:10**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**4.21**	mg/Kg	1.00	1	01/24/12 03:08	TDJ	SW-9056

Lab No : **94701**
Sample ID : **E153**
Matrix: **Solids**
Sampled: **1/4/2012 14:13**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**6.79**	mg/Kg	1.00	1	01/24/12 03:25	TDJ	SW-9056

Lab No : **94702**
Sample ID : **E161**
Matrix: **Solids**
Sampled: **1/4/2012 15:31**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**3.46**	mg/Kg	1.00	1	01/24/12 03:42	TDJ	SW-9056

Qualifiers/ Definitions
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Lab No : **94703**
Sample ID : **E162**
Matrix: **Solids**
Sampled: **1/4/2012 15:34**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**7.35**	mg/Kg	1.00	1	01/24/12 03:59	TDJ	SW-9056

Lab No : **94704**
Sample ID : **E163**
Matrix: **Solids**
Sampled: **1/4/2012 15:38**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**5.23**	mg/Kg	1.00	1	01/24/12 04:16	TDJ	SW-9056

Lab No : **94705**
Sample ID : **W011**
Matrix: **Solids**
Sampled: **1/4/2012 9:11**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**70.2**	mg/Kg	5.00	5	01/26/12 06:06	TDJ	SW-9056

Lab No : **94706**
Sample ID : **W012**
Matrix: **Solids**
Sampled: **1/4/2012 9:16**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**12.7**	mg/Kg	1.00	1	01/24/12 04:50	TDJ	SW-9056

Qualifiers/ Definitions
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MQL Method Quantitation Limit
DF Dilution Factor

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Lab No : **94707**
Sample ID : **W013**
Matrix: **Solids**
Sampled: **1/4/2012 9:21**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**22.8**	mg/Kg	1.00	1	01/24/12 05:07	TDJ	SW-9056

Lab No : **94708**
Sample ID : **W014**
Matrix: **Solids**
Sampled: **1/4/2012 9:26**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**5.05**	mg/Kg	1.00	1	01/25/12 01:16	TDJ	SW-9056

Lab No : **94709**
Sample ID : **W015**
Matrix: **Solids**
Sampled: **1/4/2012 9:31**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**9.38**	mg/Kg	1.00	1	01/23/12 23:12	TDJ	SW-9056

Lab No : **94710**
Sample ID : **W021**
Matrix: **Solids**
Sampled: **1/4/2012 9:35**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**2.42**	mg/Kg	1.00	1	01/23/12 23:29	TDJ	SW-9056

Qualifiers/ Definitions
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MQL Method Quantitation Limit
DF Dilution Factor

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Lab No : **94711**
Sample ID : **W022**
Matrix: **Solids**
Sampled: **1/4/2012 9:40**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**3.15**	mg/Kg	1.00	1	01/23/12 23:46	TDJ	SW-9056

Lab No : **94712**
Sample ID : **W023**
Matrix: **Solids**
Sampled: **1/4/2012 9:45**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**5.04**	mg/Kg	1.00	1	01/24/12 00:36	TDJ	SW-9056

Lab No : **94713**
Sample ID : **W024**
Matrix: **Solids**
Sampled: **1/4/2012 9:50**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**11.1**	mg/Kg	1.00	1	01/24/12 00:53	TDJ	SW-9056

Lab No : **94714**
Sample ID : **W025**
Matrix: **Solids**
Sampled: **1/4/2012 9:55**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**1.96**	mg/Kg	1.00	1	01/24/12 01:10	TDJ	SW-9056

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Lab No : **94715** Matrix: **Solids**
Sample ID : **W026** Sampled: **1/4/2012 9:57**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**4.00**	mg/Kg	1.00	1	01/24/12 01:27	TDJ	SW-9056

Lab No : **94716** Matrix: **Solids**
Sample ID : **W027** Sampled: **1/4/2012 10:00**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**1.78**	mg/Kg	1.00	1	01/24/12 01:44	TDJ	SW-9056

Lab No : **94717** Matrix: **Solids**
Sample ID : **W028** Sampled: **1/4/2012 10:05**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Nitrate (NO3-N)	**1.84**	mg/Kg	1.00	1	01/24/12 02:35	TDJ	SW-9056

Qualifiers/ Definitions
* Outside QC limit
MQL Method Quantitation Limit
DF Dilution Factor

ETC ENVIRONMENTAL TESTING & CONSULTING, INC.
www.etcmemphis.com 2790 Whitten Road Memphis, Tennessee 38133 (901) 213-2400 Fax (901) 213-2440
"A Laboratory Management Partner"

Cooler Receipt Form

Customer Number: **02614**
Customer Name: **City Water & Light**
Report Number: **12-017-0211**

Shipping Method

○ Fed Ex ● UPS ○ US Postal ○ Client ○ Lab ○ Courier ○ Other :

Shipping container/cooler uncompromised?	● Yes	○ No	
Custody seals intact on shipping container/cooler?	○ Yes	○ No	● Not Required
Custody seals intact on sample bottles?	○ Yes	○ No	● Not Required
Chain of Custody (COC) present?	● Yes	○ No	
COC agrees with sample label(s)?	● Yes	○ No	
COC properly completed	● Yes	○ No	
Samples in proper containers?	● Yes	○ No	
Sample containers intact?	● Yes	○ No	
Sufficient sample volume for indicated test(s)?	● Yes	○ No	
All samples received within holding time?	● Yes	○ No	
Cooler temperature in compliance?	● Yes	○ No	
Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun.	○ Yes	● No	
Water - Sample containers properly preserved	○ Yes	○ No	● N/A
Water - VOA vials free of headspace	○ Yes	○ No	● N/A
Trip Blanks received with VOAs	○ Yes	○ No	● N/A
Soil VOA method 5035 – compliance criteria met	○ Yes	○ No	● N/A

☐ High concentration container (48 hr) ☐ Low concentration EnCore samplers (48 hr)
☐ High concentration pre-weighed (methanol -14 d) ☐ Low conc pre-weighed vials (Sod Bis -14 d)

Special precautions or instructions included? ○ Yes ● No

Comments: Samples did not arrive on ice. Approval to analyze per Jody Gibson.

Any regulatory non-compliance issues will be recorded on non-compliance report.

Signature: Rebekah Ross

Date & Time: 01/17/2012 11:30:13

Environmental Testing & Consulting, Inc. Chain of Custody

Page 1 of 6

Client Name	Client Project Manager/Contact	Phone #
City Water & Light	Myra Taylor	(870) 930-3381

Project Site Location	email Address
Soil Samples / East & West Plant	

Project Number	FID #	Purchase Order Number

Type of Event: Single Daily Weekly Monthly Quarterly Semi-Annual

Method of Shipment: UPS

City Water & Light
Soil Samples/East & West Plant
12-017-0211
02614
2012-01-17
11:29:52

- [X] NPDES
- [ ] Wastewater
- [ ] UST
- [ ] Other Program

- [ ] RUSH - Additional charges apply
- The following require a Statement of Work
- [ ] Special Report Requirements
- [ ] Special Detection Limit(s)
- [ ] Special Method Requirements

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Memphis, TN 38133
(901) 213-2400 (phone)
(901) 213-2440 (fax)
www.etcmemphis.com

Date:	Time:	Sample Identification:	Number of Containers	Matrix	(G)rab or (C)omposite	Nitrate Nitrogen NO_3-N										
1/4/12	11:18A	E011	1	S	G	X										
1/4/12	11:23A	E012	1	S	G	X										
1/4/12	11:33A	E013	1	S	G	X										
1/4/12	11:38A	E014	1	S	G	X										
1/4/12	11:38A	E015	1	S	G	X										
1/4/12	1:13p	E021	1	S	G	X										
1/4/12	1:16p	E022	1	S	G	X										
1/4/12	1:19p	E023	1	S	G	X										
1/4/12	1:21p	E024	1	S	G	X										
1/4/12	1:25p	E025	1	S	G	X										

Required Analysis:

Matrix
WW - Wastewater GW - Groundwater DW-Drinking Water S-Soil O-Oil L-Non aqueous liquid
Other: _____

Sampled by (Name/Affiliation): (Print):
John Golden / CWL

Client Remarks/Comments

For Laboratory Use Only

Filed	Cooler Temp	Lab Comments
Y (N)		Approval to analyze per JT Gibson EB 1/17/12

Relinquished by: (SIGNATURE)	Date	Time	Received by: (SIGNATURE)	Date	Time
John H. Golden	1/16/12	9:00A			
Relinquished by: (SIGNATURE)	Date	Time	Received by: (SIGNATURE)	Date	Time
Relinquished by: (SIGNATURE)	Date	Time	Received for lab by: (SIGNATURE)	1/17/12	0930

Environmental Testing & Consulting, Inc. Chain of Custody

Page 2 of 6

12-017-0211
02614
2012-01-17
11:29:52
City Water & Light
Soil Samples/East & West Plant

Client Name	Client Project Manager/Contact	Phone #
City Water + Light	Myra Taylor	(870) 930-3389
Project/ Site Location		**email Address**
Soil Samples / East + West Plant		
Project Number	**PID #**	**Purchase Order Number**
Type of Event		**Method of Shipment**
Single Daily Weekly Monthly Quarterly Semi-Annual		UPS

- [X] NPDES
- [ ] Wastewater
- [ ] UST
- [ ] Other Program

- [ ] RUSH - Additional charges apply
  The following require a Statement of Work
- [ ] Special Report Requirements
- [ ] Special Detection Limit(s)
- [ ] Special Method Requirements

Environmental Testing & Consulting, Inc.
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Memphis, TN 38133
(901) 213-2400 (phone)
(901) 213-2440 (fax)
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Date:	Time:	Sample Identification:	Number of Containers	Matrix	Required Analysis: (G)rab or (C)omposite	Nitrate Nitrogen NO3-N
1/4/12	1:27p	E026	1	S	G	X
1/4/12	1:41p	E031	1	S	G	X
1/4/12	1:44p	E032	1	S	G	X
1/4/12	1:47p	E033	1	S	G	X
1/3/12	2:33p	E041	1	S	G	X
1/3/12	2:36p	E042	1	S	G	X
1/3/12	2:39p	E043	1	S	G	X
1/4/12	2:00p	E051	1	S	G	X
1/4/12	1:57p	E052	1	S	G	X
1/4/12	2:03p	E053	1	S	G	X

Matrix
WW - Wastewater GW - Groundwater DW-Drinking Water S-Soil SD-Solid L-Non aqueous liquid
Other: _____

For Laboratory Use Only

Ice	Cooler Temp	Lab Comments
Y / N		

Sampled by (Name/Affiliation): (Print): John Golden / CWL

Client Remarks/Comments

Relinquished by: (SIGNATURE)	Date	Time	Received by: (SIGNATURE)	Date	Time
John K. Golden	1/6/12	9:00A			
Relinquished by: (SIGNATURE)	Date	Time	Received by: (SIGNATURE)	Date	Time
Relinquished by: (SIGNATURE)	Date	Time	Received for lab by: (SIGNATURE)	Date	Time
				1/7	0830

Environmental Testing & Consulting, Inc. Chain of Custody

12-017-0211
02614
2012-01-17
11:29:52
City Water & Light
Soil Samples/East & West Plant

Client Name	Client Project Manager/Contact	Phone #
City Water & Light	Myra Taylor	(870) 930 - 3389
Project/ Site Location		**email Address**
Soil Samples / East & West Plant		
Project Number	**PO #**	**Purchase Order Number**
Type of Event		**Method of Shipment**
Single Daily Weekly Monthly Quarterly Semi-Annual		UPS

- [x] NPDES
- [ ] Wastewater
- [ ] UST
- [ ] Other Program

- [ ] RUSH - Additional charges apply!
  The following require a Statement of Work
- [ ] Special Report Requirements
- [ ] Special Detection Limit(s)
- [ ] Special Method Requirements

Environmental Testing & Consulting, Inc.
2790 Whitten Road
Memphis, TN 38133
(901) 213-2400 (phone)
(901) 213-2440 (fax)
www.etcmemphis.com

Date:	Time:	Sample Identification:	Number of Containers	Matrix	(G)rab or (C)omposite	Required Analysis: Nitrate Nitrogen NO_3-N
1/4/12	2:15p	E061	1	S	G	X
1/3/12	1:52p	E071	1	S	G	X
1/3/12	1:49p	E072	1	S	G	X
1/3/12	1:31p	E081A	1	S	G	X
1/3/12	1:38p	E081B	1	S	G	X
1/3/12	1:43p	E082A	1	S	G	X
1/3/12	1:45p	E082B	1	S	G	X
1/4/12	11:40A	E091	1	S	G	X
1/4/12	11:43A	E092	1	S	G	X
1/3/12	1:56p	E101	1	S	G	X

Matrix
WW - Wastewater GW - Groundwater DW-Drinking Water S-Soil O-Oil L-Non aqueous liquid
Other _____

For Laboratory Use Only

Ice	Cooler Temp	Lab Comments
Y / (N)		

Sampled by: (Name/Affiliation): (Print): John Golden / CWL

Client Remarks/Comments

Relinquished by: (SIGNATURE)	Date	Time	Received by: (SIGNATURE)	Date	Time
John Golden	1/16/12	9:00A			
Relinquished by: (SIGNATURE)	Date	Time	Received by: (SIGNATURE)	Date	Time
Relinquished by: (SIGNATURE)	Date	Time	Received for lab by: (SIGNATURE)	Date	Time
				1/16/12	15:00

Environmental Testing & Consulting, Inc. Chain of Custody

12-017-0211
02614
2012-01-17
11:29:52
City Water & Light
Soil Samples/East & West Plant

Client Name	Client Project Manager/Contact	Phone #
City Water + Light	Myra Taylor	(870) 930-3389

Project/ Site Location	email Address
Soil Samples / East & West Plant	

Project Number	FID #	Purchase Order Number

Type of Event: Single Daily Weekly Monthly Quarterly Semi-Annual

Method of Shipment: UPS

- [x] NPDES
- [ ] Wastewater
- [ ] UST
- [ ] Other Program

- [ ] RUSH - Additional charges apply.

The following require a Statement of Work:

- [ ] Special Report Requirements
- [ ] Special Detection Limit(s)
- [ ] Special Method Requirements

Environmental Testing & Consulting, Inc.
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Memphis, TN 38133
(901) 213-2400 (phone)
(901) 213-2440 (fax)
www.etcmemphis.com

Required Analysis:

Date:	Time:	Sample Identification:	Number of Containers	Matrix	(G)rab or (C)omposite	Nitrate Nitrogen NO_3-N
1/3/12	1:59p	E102	1	S	G	X
1/3/12	2:02p	E111	1	S	G	X
1/4/12	11:48A	E121	1	S	G	X
1/4/12	11:50A	E122	1	S	G	X
1/4/12	11:52A	E123	1	S	G	X
1/3/12	2:17p	E131	1	S	G	X
1/3/12	2:14p	E132	1	S	G	X
1/3/12	2:10p	E133	1	S	G	X
1/4/12	11:55A	E141	1	S	G	X
1/4/12	11:58A	E142	1	S	G	X

Matrix
WW - Wastewater GW - Groundwater DW-Drinking Water S-Soil O-Oil L-Non aqueous liquid
Other: ____________

Sampled by (Name/Affiliation): (Print): John Golden / CWL

Client Remarks/Comments

For Laboratory Use Only

Ice	Cooler Temp	Lab Comments
Y / (N)		

Relinquished by: (SIGNATURE)	Date	Time	Received by: (SIGNATURE)	Date	Time
[signature]	1/16/12	7:00A			
Relinquished by: (SIGNATURE)	Date	Time	Received by: (SIGNATURE)	Date	Time
Relinquished by: (SIGNATURE)	Date	Time	Received for lab by: (SIGNATURE) [signature]	1/17/12	0930

AFFIGUARD Form No. 811

Environmental Testing & Consulting, Inc. Chain of Custody

Page 5 of 6

12-017-0211
02614
2012-01-17
11:29:52
City Water & Light
Soil Samples/East & West Plant

Client Name	Client Project Manager/Contact	Phone #
City Water & Light	Myra Taylor	(870) 930-3389

Project/ Site Location	email Address
Soil Samples / East & West Plant	

Project Number	FID #	Purchase Order Number

Type of Event	Method of Shipment
Single Daily Weekly Monthly Quarterly Semi-Annual	UPS

- [X] NPDES
- [ ] Wastewater
- [ ] UST
- [ ] Other Program

- [ ] RUSH - Additional charges apply.

The following require a Statement of Work
- [ ] Special Report Requirements
- [ ] Special Detection Limit(s).
- [ ] Special Method Requirements

Environmental Testing & Consulting, Inc.
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Memphis, TN 38133
(901) 213-2400 (phone)
(901) 213-2440 (fax)
www.etcmemphis.com

Required Analysis:

Date:	Time:	Sample Identification:	Number of Containers	Matrix	(G)rab or (C)omposite	Nitrate Nitrogen NO_3-N										
1/4/12	2:07p	E151	1	S	G	X										
1/4/12	2:10p	E152	1	S	G	X										
1/4/12	2:13p	E153	1	S	G	X										
1/4/12	3:31p	E161	1	S	G	X										
1/4/12	3:34p	E162	1	S	G	X										
1/4/12	3:38p	E163	1	S	G	X										
1/4/12	9:11A	W011	1	S	G	X										
1/4/12	9:16A	W012	1	S	G	X										
1/4/12	9:21A	W013	1	S	G	X										
1/4/12	9:26A	W014	1	S	G	X										

Matrix
WW - Wastewater GW - Groundwater DW-Drinking Water S-Soil O-Oil L-Non aqueous liquid
Other: ________

Sampled by (Name/Affiliation): (Print): John Golden / CWL

Client Remarks/Comments

For Laboratory Use Only

Ice	Cooler Temp	Lab Comments
Y / (N)		

Relinquished by: (SIGNATURE)	Date	Time	Received by: (SIGNATURE)	Date	Time
[signature]	1/16/12	9:00A			
Relinquished by: (SIGNATURE)	Date	Time	Received by: (SIGNATURE)	Date	Time
Relinquished by: (SIGNATURE)	Date	Time	Received for lab by: (SIGNATURE) [signature]	1/17/12	930

SAFEGUARD Form No. 811-2AW09C500060 11/10

Environmental Testing & Consulting, Inc. Chain of Custody

Page 6 of 6

12-017-0211
02614
2012-01-17
11:29:52
City Water & Light
Soil Samples/East & West Plant

Client Name	Client Project Manager/Contact	Phone #
City Water & Light	Myra Taylor	(870) 930-3389

Project/ Site Location	email Address
Soil Samples / East & West Plant	

Project Number	FID #	Purchase Order Number

Type of Event: Single Daily Weekly Monthly Quarterly Semi-Annual

Method of Shipment: UPS

[X] NPDES
[ ] Wastewater
[ ] UST
[ ] Other Program

[ ] RUSH - Additional charges apply.
The following require a Statement of Work
[ ] Special Report Requirements
[ ] Special Detection Limit(s)
[ ] Special Method Requirements

Environmental Testing & Consulting, Inc.
2790 Whitten Road
Memphis, TN 38133
(901) 213-2400 (phone)
(901) 213-2440 (fax)
www.etcmemphis.com

Required Analysis:

Date:	Time:	Sample Identification:	Number of Containers	Matrix	(G)rab or (C)omposite	Nitrate Nitrogen NO3-N
1/4/12	9:31A	W015	1	S	G	
1/4/12	9:35A	W021	1	S	G	
1/4/12	9:40A	W022	1	S	G	
1/4/12	9:45A	W023	1	S	G	
1/4/12	9:50A	W024	1	S	G	
1/4/12	9:55A	W025	1	S	G	
1/4/12	9:57A	W026	1	S	G	
1/4/12	10:00A	W027	1	S	G	
1/4/12	10:05A	W028	1	S	G	

Matrix
WW - Wastewater GW - Groundwater DW-Drinking Water S-Soil O-Oil L-Non aqueous liquid
Other: ______

Sampled by (Name/Affiliation) (Print): John Golden / CWL

Client Remarks/Comments

For Laboratory Use Only

Ice	Cooler Temp.	Lab Comments
Y / (N)		

Relinquished by: (SIGNATURE)	Date	Time	Received by: (SIGNATURE)	Date	Time
[signature]	1/16/12	9:00A			
Relinquished by: (SIGNATURE)	Date	Time	Received by: (SIGNATURE)	Date	Time
Relinquished by: (SIGNATURE)	Date	Time	Received for lab by: (SIGNATURE)	Date	Time
			[signature]	1/17/12	0920

SAFEGUARD Form No. 611-2W09CS000060 11/10

UofA UNIVERSITY OF ARKANSAS DIVISION OF AGRICULTURE

Cooperative Extension Service
Soil Analysis Report
Soil Testing And Research Laboratory
Marianna, AR 72360
http://www.uark.edu/depts/soiltest

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 011		
Acres	11		
Lime Applied in the last 4 years:	Yes		
Leveled in past 4 years:	Yes		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17294		
Sample Number:	2010251		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	552	1104	Above Optimum
K	56	112	Very Low
Ca	2672	5344	--
Mg	465	930	--
SO4-S	13	26	--
Zn	85.0	170.0	--
Fe	417	834	--
Mn	62	124	--
Cu	22.1	44.2	--
B	1.8	3.6	--
NO3-N	23	46	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.7	--
Soil EC (1:2 soil-water)	74	umhos/cm
Soil ECEC	21	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silty Clay Loam - Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
85.5	64.6	18.8	0.7	1.4

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

	Crop	N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	lb/acre						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	160	0	0	0	0
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

UofA UNIVERSITY OF ARKANSAS DIVISION OF AGRICULTURE

Cooperative Extension Service
Soil Analysis Report
Soil Testing And Research Laboratory
Marianna, AR 72360
http://www.uark.edu/depts/soiltest

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 012		
Acres	11		
Lime Applied in the last 4 years:	Yes		
Leveled in past 4 years:	Yes		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17295		
Sample Number:	2010252		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	454	908	Above Optimum
K	53	106	Very Low
Ca	1455	2910	--
Mg	204	408	--
SO4-S	33	66	--
Zn	40.8	81.6	--
Fe	465	930	--
Mn	61	122	--
Cu	12.6	25.2	--
B	1.4	2.8	--
NO3-N	14	28	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	5.4	---
Soil EC (1:2 soil-water)	86	umhos/cm
Soil ECEC	15	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
62.8	49.2	11.5	0.9	1.2

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	---------- lb/acre ----------						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	160	0	0	0	5000
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

UofA UNIVERSITY OF ARKANSAS DIVISION OF AGRICULTURE

Cooperative Extension Service
Soil Analysis Report
Soil Testing And Research Laboratory
Marianna, AR 72360
http://www.uark.edu/depts/soiltest

The University of Arkansas is an equal opportunity/affirmative action institution

CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 013		
Acres	11		
Lime Applied in the last 4 years:	Yes		
Leveled in past 4 years:	Yes		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17296		
Sample Number:	2010253		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	260	520	Above Optimum
K	41	82	Very Low
Ca	1256	2512	--
Mg	191	382	--
SO4-S	16	32	--
Zn	26.7	53.4	--
Fe	547	1094	--
Mn	116	232	--
Cu	6.8	13.6	--
B	1.2	2.4	--
NO3-N	5	10	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	5.2	---
Soil EC (1:2 soil-water)	38	umhos/cm
Soil ECEC	15	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
55.8	42.7	10.8	0.7	1.5

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	---------- lb/acre ----------						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	160	0	0	0	5000
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

UofA UNIVERSITY OF ARKANSAS DIVISION OF AGRICULTURE

Cooperative Extension Service
Soil Analysis Report
Soil Testing And Research Laboratory
Marianna, AR 72360
http://www.uark.edu/depts/soiltest

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 014		
Acres	11		
Lime Applied in the last 4 years:	Yes		
Leveled in past 4 years:	Yes		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17297		
Sample Number:	2010254		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	330	660	Above Optimum
K	33	66	Very Low
Ca	6478	12956	--
Mg	106	212	--
SO4-S	43	86	--
Zn	33.4	66.8	--
Fe	209	418	--
Mn	188	376	--
Cu	16.0	32.0	--
B	1.2	2.4	--
NO3-N	68	136	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	7.6	---
Soil EC (1:2 soil-water)	110	umhos/cm
Soil ECEC	36	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Clay	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
94.4	91.2	2.5	0.2	0.4

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	lb/acre						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	160	0	0	0	0
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401

Date Processed:	1/26/2012
Field ID:	E 015
Acres	11
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	Yes
Irrigation:	Unknown
County:	Craighead
Lab Number:	17298
Sample Number:	2010255

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	200	400	Above Optimum
K	49	98	Very Low
Ca	2108	4216	--
Mg	587	1174	--
SO4-S	14	28	--
Zn	14.9	29.8	--
Fe	479	958	--
Mn	56	112	--
Cu	7.5	15.0	--
B	1.6	3.2	--
NO3-N	14	28	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	7.7	--
Soil EC (1:2 soil-water)	55	umhos/cm
Soil ECEC	18	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
88.8	58.9	27.3	0.7	1.9

3. Recommendations

(**Notice:** State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	---------- lb/acre ----------						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	160	0	0	0	0
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 021		
Acres	9		
Lime Applied in the last 4 years:	Yes		
Leveled in past 4 years:	No		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17299		
Sample Number:	2010256		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	383	766	Above Optimum
K	32	64	Very Low
Ca	2064	4128	--
Mg	110	220	--
SO4-S	17	34	--
Zn	37.3	74.6	--
Fe	466	932	--
Mn	48	96	--
Cu	10.2	20.4	--
B	1.2	2.4	--
NO3-N	23	46	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	5.9	---
Soil EC (1:2 soil-water)	77	umhos/cm
Soil ECEC	15	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silty Clay Loam - Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
76.5	69.3	6.2	0.6	0.5

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	---------- lb/acre ----------						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	160	0	0	0	0
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401

Date Processed:	1/26/2012
Field ID:	E 022
Acres	9
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Craighead
Lab Number:	17300
Sample Number:	2010257

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	473	946	Above Optimum
K	36	72	Very Low
Ca	966	1932	--
Mg	63	126	--
SO4-S	21	42	--
Zn	34.3	68.6	--
Fe	451	902	--
Mn	65	130	--
Cu	10.8	21.6	--
B	1.0	2.0	--
NO3-N	23	46	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	4.7	---
Soil EC (1:2 soil-water)	54	umhos/cm
Soil ECEC	12	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
45.9	40.2	4.4	0.8	0.5

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	---------- lb/acre ----------						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	160	0	0	0	6000
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 023		
Acres	9		
Lime Applied in the last 4 years:	Yes		
Leveled in past 4 years:	No		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17301		
Sample Number:	2010258		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	154	308	Above Optimum
K	30	60	Very Low
Ca	1188	2376	--
Mg	106	212	--
SO4-S	12	24	--
Zn	32.5	65.0	--
Fe	260	520	--
Mn	237	474	--
Cu	5.5	11.0	--
B	0.7	1.4	--
NO3-N	16	32	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	5.5	--
Soil EC (1:2 soil-water)	42	umhos/cm
Soil ECEC	12	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
56.0	47.6	7.1	0.6	0.7

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	lb/acre						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	160	0	0	0	4000
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.
If S deficiency has occurred previously on this field apply 20 lb SO4-S/Acre.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 024		
Acres	9		
Lime Applied in the last 4 years:	Yes		
Leveled in past 4 years:	No		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17302		
Sample Number:	2010259		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	543	1086	Above Optimum
K	40	80	Very Low
Ca	972	1944	--
Mg	55	110	--
SO4-S	25	50	--
Zn	19.7	39.4	--
Fe	465	930	--
Mn	69	138	--
Cu	9.2	18.4	--
B	1.1	2.2	--
NO3-N	19	38	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	4.8	---
Soil EC (1:2 soil-water)	51	umhos/cm
Soil ECEC	12	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
45.9	40.5	3.8	0.9	0.7

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

	Crop	N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	---------- lb/acre ----------						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	160	0	0	0	6000
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

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400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 025		
Acres	9		
Lime Applied in the last 4 years:	Yes		
Leveled in past 4 years:	No		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17303		
Sample Number:	2010260		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	394	788	Above Optimum
K	37	74	Very Low
Ca	971	1942	--
Mg	77	154	--
SO4-S	24	48	--
Zn	18.5	37.0	--
Fe	290	580	--
Mn	133	266	--
Cu	6.2	12.4	--
B	0.9	1.8	--
NO3-N	21	42	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	4.8	---
Soil EC (1:2 soil-water)	79	umhos/cm
Soil ECEC	12	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
46.6	39.9	5.3	0.8	0.7

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	lb/acre						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	160	0	0	0	6000
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 026		
Acres	9		
Lime Applied in the last 4 years:	Yes		
Leveled in past 4 years:	No		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17304		
Sample Number:	2010261		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	707	1414	Above Optimum
K	52	104	Very Low
Ca	1063	2126	--
Mg	56	112	--
SO4-S	39	78	--
Zn	26.9	53.8	--
Fe	407	814	--
Mn	90	180	--
Cu	11.2	22.4	--
B	1.4	2.8	--
NO3-N	16	32	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	4.5	---
Soil EC (1:2 soil-water)	87	umhos/cm
Soil ECEC	14	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
44.5	39.3	3.5	1.0	0.7

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (201)	lb/acre						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	160	0	0	0	6000
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 031		
Acres	8		
Lime Applied in the last 4 years:	No		
Leveled in past 4 years:	No		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17306		
Sample Number:	2010262		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	44	88	Optimum
K	103	206	Medium
Ca	1289	2578	--
Mg	254	508	--
SO4-S	16	32	--
Zn	4.9	9.8	--
Fe	415	830	--
Mn	169	338	--
Cu	1.6	3.2	--
B	0.9	1.8	--
NO3-N	8	16	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	7.2	--
Soil EC (1:2 soil-water)	52	umhos/cm
Soil ECEC	11	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
81.9	58.2	19.1	2.4	2.3

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

	Crop	N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Soybean (14)	---------- lb/acre ----------						
Crop 1	Hay - Warm-Season Grasses (MNT) - 4 ton/acre (133)	200	40	190	0	0	0	0
Crop 2								
Crop 3								

4. Crop 1 Notes:

For optimum fertilizer efficiency, divide the recommended N, P, and K rates by the estimated number of harvests/year. Make the first fertilizer application in spring when night temperatures are > 60 degrees F for one week. Make subsequent applications following each harvest. Do not apply N after Sept. 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 032		
Acres	8		
Lime Applied in the last 4 years:	No		
Leveled in past 4 years:	No		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17307		
Sample Number:	2010263		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	33	66	Medium
K	91	182	Medium
Ca	993	1986	--
Mg	242	484	--
SO4-S	19	38	--
Zn	5.6	11.2	--
Fe	215	430	--
Mn	138	276	--
Cu	1.4	2.8	--
B	0.5	1.0	--
NO3-N	18	36	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.2	---
Soil EC (1:2 soil-water)	64	umhos/cm
Soil ECEC	10	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
74.8	50.1	20.3	2.4	2.0

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

	Crop	N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Soybean (14)	---------- lb/acre ----------						
Crop 1	Hay - Warm-Season Grasses (MNT) - 4 ton/acre (133)	200	60	190	0	0	0	0
Crop 2								
Crop 3								

4. Crop 1 Notes:

For optimum fertilizer efficiency, divide the recommended N, P, and K rates by the estimated number of harvests/year. Make the first fertilizer application in spring when night temperatures are > 60 degrees F for one week. Make subsequent applications following each harvest. Do not apply N after Sept. 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 033		
Acres	8		
Lime Applied in the last 4 years:	No		
Leveled in past 4 years:	No		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17308		
Sample Number:	2010264		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	29	58	Medium
K	110	220	Medium
Ca	1114	2228	--
Mg	252	504	--
SO4-S	16	32	--
Zn	6.4	12.8	--
Fe	227	454	--
Mn	139	278	--
Cu	1.7	3.4	--
B	0.5	1.0	--
NO3-N	35	70	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.5	---
Soil EC (1:2 soil-water)	63	umhos/cm
Soil ECEC	11	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
76.4	52.5	19.8	2.7	1.5

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

	Crop	N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Soybean (14)	lb/acre						
Crop 1	Hay - Warm-Season Grasses (MNT) - 4 ton/acre (133)	200	60	190	0	0	0	0
Crop 2								
Crop 3								

4. Crop 1 Notes:

For optimum fertilizer efficiency, divide the recommended N, P, and K rates by the estimated number of harvests/year. Make the first fertilizer application in spring when night temperatures are > 60 degrees F for one week. Make subsequent applications following each harvest. Do not apply N after Sept. 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 041		
Acres	13		
Lime Applied in the last 4 years:	Yes		
Leveled in past 4 years:	Yes		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17309		
Sample Number:	2010265		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	390	780	Above Optimum
K	69	138	Low
Ca	2877	5754	--
Mg	286	572	--
SO4-S	18	36	--
Zn	35.0	70.0	--
Fe	335	670	--
Mn	81	162	--
Cu	9.5	19.0	--
B	1.1	2.2	--
NO3-N	28	56	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.4	—
Soil EC (1:2 soil-water)	80	umhos/cm
Soil ECEC	21	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silty Clay Loam - Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
83.0	69.9	11.6	0.9	0.6

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	lb/acre						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	110	0	0	0	0
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT	**Client ID:**	8709355581
400 E MONROE		
JONESBORO	AR	72401
Date Processed:	1/26/2012	
Field ID:	E 042	
Acres	13	
Lime Applied in the last 4 years:	Yes	
Leveled in past 4 years:	Yes	
Irrigation:	Unknown	
County:	Craighead	
Lab Number:	17310	
Sample Number:	2010266	

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	218	436	Above Optimum
K	88	176	Low
Ca	1322	2644	--
Mg	138	276	--
SO4-S	37	74	--
Zn	18.6	37.2	--
Fe	426	852	--
Mn	238	476	--
Cu	6.6	13.2	--
B	1.0	2.0	--
NO3-N	4	8	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	4.9	---
Soil EC (1:2 soil-water)	52	umhos/cm
Soil ECEC	16	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
52.0	42.3	7.4	1.4	1.0

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

	Crop	N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	---------- lb/acre ----------						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	110	0	0	0	6000
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 043		
Acres	13		
Lime Applied in the last 4 years:	Yes		
Leveled in past 4 years:	Yes		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17311		
Sample Number:	2010267		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	214	428	Above Optimum
K	66	132	Low
Ca	1648	3296	--
Mg	183	366	--
SO4-S	18	36	--
Zn	31.0	62.0	--
Fe	419	838	--
Mn	171	342	--
Cu	5.0	10.0	--
B	1.0	2.0	--
NO3-N	6	12	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	5.3	--
Soil EC (1:2 soil-water)	51	umhos/cm
Soil ECEC	16	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silty Clay Loam - Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
62.8	51.2	9.5	1.1	1.1

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	---------- lb/acre ----------						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	110	0	0	0	6000
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 051		
Acres	10		
Lime Applied in the last 4 years:	Yes		
Leveled in past 4 years:	No		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17312		
Sample Number:	2010268		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	11	22	Very Low
K	100	200	Medium
Ca	1067	2134	--
Mg	520	1040	--
SO4-S	18	36	--
Zn	1.0	2.0	--
Fe	135	270	--
Mn	72	144	--
Cu	0.8	1.6	--
B	0.3	0.6	--
NO3-N	1	2	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	5.4	---
Soil EC (1:2 soil-water)	11	umhos/cm
Soil ECEC	15	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
69.0	36.7	29.8	1.8	0.7

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

	Crop	N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	lb/acre						
Crop 1	Warm-Season Grasses (MNT) (207)	60	100	60	0	0	0	5000
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 052		
Acres	10		
Lime Applied in the last 4 years:	Yes		
Leveled in past 4 years:	No		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17313		
Sample Number:	2010269		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	19	38	Low
K	89	178	Low
Ca	1077	2154	--
Mg	412	824	--
SO4-S	6	12	--
Zn	2.3	4.6	--
Fe	244	488	--
Mn	164	328	--
Cu	2.4	4.8	--
B	0.5	1.0	--
NO3-N	1	2	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	5.6	---
Soil EC (1:2 soil-water)	13	umhos/cm
Soil ECEC	13	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
69.7	40.7	26.0	1.7	1.3

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

	Crop	N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	---------- lb/acre ----------						
Crop 1	Warm-Season Grasses (MNT) (207)	60	70	110	0	0	0	4000
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.
If S deficiency has occurred previously on this field apply 20 lb SO4-S/Acre.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 053		
Acres	10		
Lime Applied in the last 4 years:	Yes		
Leveled in past 4 years:	No		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17314		
Sample Number:	2010270		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	4	8	Very Low
K	64	128	Low
Ca	826	1652	--
Mg	376	752	--
SO4-S	4	8	--
Zn	1.5	3.0	--
Fe	123	246	--
Mn	94	188	--
Cu	0.6	1.2	--
B	0.3	0.6	--
NO3-N	1	2	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	5.8	---
Soil EC (1:2 soil-water)	9	umhos/cm
Soil ECEC	12	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
65.2	35.9	27.2	1.4	0.7

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

	Crop	N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	---------- lb/acre ----------						
Crop 1	Warm-Season Grasses (MNT) (207)	60	100	110	0	0	0	0
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.
If S deficiency has occurred previously on this field apply 20 lb SO4-S/Acre.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401

Date Processed:	1/26/2012
Field ID:	E 061
Acres	8
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Craighead
Lab Number:	17315
Sample Number:	2010271

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	294	588	Above Optimum
K	44	88	Very Low
Ca	744	1488	--
Mg	89	178	--
SO4-S	20	40	--
Zn	14.8	29.6	--
Fe	331	662	--
Mn	137	274	--
Cu	4.3	8.6	--
B	0.6	1.2	--
NO3-N	5	10	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	4.5	—
Soil EC (1:2 soil-water)	36	umhos/cm
Soil ECEC	12	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
38.4	30.6	6.1	0.9	0.8

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	---------- lb/acre ----------						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	160	0	0	0	6000
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 071		
Acres	6		
Lime Applied in the last 4 years:	Yes		
Leveled in past 4 years:	No		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17316		
Sample Number:	2010272		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	164	328	Above Optimum
K	31	62	Very Low
Ca	1325	2650	--
Mg	101	202	--
SO4-S	15	30	--
Zn	15.1	30.2	--
Fe	259	518	--
Mn	203	406	--
Cu	4.0	8.0	--
B	0.9	1.8	--
NO3-N	30	60	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.2	---
Soil EC (1:2 soil-water)	66	umhos/cm
Soil ECEC	11	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
72.0	61.9	7.9	0.7	1.4

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	lb/acre						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	160	0	0	0	0
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 072		
Acres	6		
Lime Applied in the last 4 years:	Yes		
Leveled in past 4 years:	No		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17330		
Sample Number:	2010284		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	227	454	Above Optimum
K	25	50	Very Low
Ca	748	1496	--
Mg	87	174	--
SO4-S	12	24	--
Zn	20.9	41.8	--
Fe	462	924	--
Mn	84	168	--
Cu	4.4	8.8	--
B	1.0	2.0	--
NO3-N	2	4	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	5.3	—
Soil EC (1:2 soil-water)	28	umhos/cm
Soil ECEC	9	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
50.8	40.9	7.9	0.7	1.2

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	---------- lb/acre ----------						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	160	0	0	0	5000
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.
If S deficiency has occurred previously on this field apply 20 lb SO4-S/Acre.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 081 A		
Acres	7		
Lime Applied in the last 4 years:	Yes		
Leveled in past 4 years:	No		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17331		
Sample Number:	2010285		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	104	208	Above Optimum
K	31	62	Very Low
Ca	1642	3284	--
Mg	178	356	--
SO4-S	14	28	--
Zn	14.6	29.2	--
Fe	384	768	--
Mn	95	190	--
Cu	4.8	9.6	--
B	0.9	1.8	--
NO3-N	19	38	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.6	---
Soil EC (1:2 soil-water)	50	umhos/cm
Soil ECEC	13	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
76.9	63.3	11.4	0.6	1.5

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	---------- lb/acre ----------						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	160	0	0	0	0
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 081 B		
Acres	7		
Lime Applied in the last 4 years:	Yes		
Leveled in past 4 years:	No		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17332		
Sample Number:	2010286		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	41	82	Optimum
K	36	72	Very Low
Ca	1180	2360	--
Mg	241	482	--
SO4-S	6	12	--
Zn	6.8	13.6	--
Fe	282	564	--
Mn	127	254	--
Cu	2.7	5.4	--
B	0.6	1.2	--
NO3-N	4	8	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.2	--
Soil EC (1:2 soil-water)	26	umhos/cm
Soil ECEC	11	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
73.1	52.9	18.0	0.8	1.4

3. Recommendations

(**Notice:** State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	---------- lb/acre ----------						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	160	0	0	0	0
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.
If S deficiency has occurred previously on this field apply 20 lb SO4-S/Acre.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401

Date Processed:	1/26/2012
Field ID:	E082 A
Acres	7
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Craighead
Lab Number:	17333
Sample Number:	2010287

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	223	446	Above Optimum
K	36	72	Very Low
Ca	751	1502	--
Mg	58	116	--
SO4-S	24	48	--
Zn	21.1	42.2	--
Fe	273	546	--
Mn	334	668	--
Cu	5.7	11.4	--
B	0.7	1.4	--
NO3-N	14	28	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	4.7	---
Soil EC (1:2 soil-water)	44	umhos/cm
Soil ECEC	11	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
40.7	34.3	4.4	0.8	1.1

3. Recommendations

(**Notice:** State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	---------- lb/acre ----------						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	160	0	0	0	6000
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 082B		
Acres	7		
Lime Applied in the last 4 years:	Yes		
Leveled in past 4 years:	No		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17334		
Sample Number:	2010288		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	445	890	Above Optimum
K	41	82	Very Low
Ca	1120	2240	--
Mg	75	150	--
SO4-S	29	58	--
Zn	20.1	40.2	--
Fe	465	930	--
Mn	49	98	--
Cu	8.5	17.0	--
B	1.1	2.2	--
NO3-N	25	50	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	5.0	—
Soil EC (1:2 soil-water)	88	umhos/cm
Soil ECEC	13	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
49.9	43.2	4.8	0.8	1.1

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	lb/acre						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	160	0	0	0	5000
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 091		
Acres	10		
Lime Applied in the last 4 years:	Yes		
Leveled in past 4 years:	Yes		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17335		
Sample Number:	2010289		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	22	44	Low
K	45	90	Very Low
Ca	1135	2270	--
Mg	284	568	--
SO4-S	5	10	--
Zn	3.8	7.6	--
Fe	173	346	--
Mn	272	544	--
Cu	1.7	3.4	--
B	0.5	1.0	--
NO3-N	4	8	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.3	---
Soil EC (1:2 soil-water)	20	umhos/cm
Soil ECEC	11	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
73.6	49.9	20.8	1.0	2.0

3. Recommendations

(**Notice:** State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	---------- lb/acre ----------						
Crop 1	Warm-Season Grasses (MNT) (207)	60	70	160	0	0	0	0
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.
If S deficiency has occurred previously on this field apply 20 lb SO4-S/Acre.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 092		
Acres	10		
Lime Applied in the last 4 years:	Yes		
Leveled in past 4 years:	Yes		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17336		
Sample Number:	2010290		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	510	1020	Above Optimum
K	39	78	Very Low
Ca	722	1444	--
Mg	77	154	--
SO4-S	14	28	--
Zn	12.2	24.4	--
Fe	515	1030	--
Mn	50	100	--
Cu	3.9	7.8	--
B	1.0	2.0	--
NO3-N	1	2	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	4.4	---
Soil EC (1:2 soil-water)	35	umhos/cm
Soil ECEC	12	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
37.6	30.0	5.3	0.8	1.4

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	---------- lb/acre ----------						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	160	0	0	0	6000
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401

Date Processed:	1/26/2012
Field ID:	E 101
Acres	6
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Craighead
Lab Number:	17337
Sample Number:	2010291

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	337	674	Above Optimum
K	44	88	Very Low
Ca	516	1032	--
Mg	59	118	--
SO4-S	19	38	--
Zn	12.4	24.8	--
Fe	373	746	--
Mn	104	208	--
Cu	4.7	9.4	--
B	0.7	1.4	--
NO3-N	6	12	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	4.4	--
Soil EC (1:2 soil-water)	37	umhos/cm
Soil ECEC	10	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
32.1	25.0	4.8	1.1	1.2

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

	Crop	N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	---------- lb/acre ----------						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	160	0	0	0	6000
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 102		
Acres	6		
Lime Applied in the last 4 years:	Yes		
Leveled in past 4 years:	No		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17338		
Sample Number:	2010292		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	35	70	Medium
K	39	78	Very Low
Ca	1222	2444	--
Mg	143	286	--
SO4-S	7	14	--
Zn	4.6	9.2	--
Fe	252	504	--
Mn	81	162	--
Cu	2.4	4.8	--
B	0.6	1.2	--
NO3-N	2	4	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.9	---
Soil EC (1:2 soil-water)	24	umhos/cm
Soil ECEC	10	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
75.1	60.8	11.9	1.0	1.5

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	lb/acre						
Crop 1	Warm-Season Grasses (MNT) (207)	60	40	160	0	0	0	0
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.
If S deficiency has occurred previously on this field apply 20 lb SO4-S/Acre.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 111		
Acres	40		
Lime Applied in the last 4 years:	Yes		
Leveled in past 4 years:	No		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17339		
Sample Number:	2010293		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	283	566	Above Optimum
K	45	90	Very Low
Ca	1034	2068	--
Mg	86	172	--
SO4-S	21	42	--
Zn	15.6	31.2	--
Fe	432	864	--
Mn	75	150	--
Cu	5.8	11.6	--
B	1.1	2.2	--
NO3-N	6	12	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	5.2	--
Soil EC (1:2 soil-water)	47	umhos/cm
Soil ECEC	12	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
52.9	44.3	6.1	1.0	1.5

3. Recommendations

(**Notice:** State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Hay (133)	---------- lb/acre ----------						
Crop 1	Hay - Warm-Season Grasses (MNT) - 4 ton/acre (133)	200	0	270	0	0	0	5000
Crop 2								
Crop 3								

4. Crop 1 Notes:

For optimum fertilizer efficiency, divide the recommended N, P, and K rates by the estimated number of harvests/year. Make the first fertilizer application in spring when night temperatures are > 60 degrees F for one week. Make subsequent applications following each harvest. Do not apply N after Sept. 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT	**Client ID:**	8709355581
400 E MONROE		
JONESBORO	AR	72401
Date Processed:	1/26/2012	
Field ID:	E 121	
Acres	6	
Lime Applied in the last 4 years:	Yes	
Leveled in past 4 years:	No	
Irrigation:	Unknown	
County:	Craighead	
Lab Number:	17340	
Sample Number:	2010294	

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	308	616	Above Optimum
K	64	128	Low
Ca	1017	2034	--
Mg	195	390	--
SO4-S	20	40	--
Zn	24.2	48.4	--
Fe	446	892	--
Mn	181	362	--
Cu	4.5	9.0	--
B	1.1	2.2	--
NO3-N	23	46	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	4.8	--
Soil EC (1:2 soil-water)	67	umhos/cm
Soil ECEC	14	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
52.0	37.5	12.0	1.2	1.3

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	lb/acre						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	110	0	0	0	6000
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 122		
Acres	5		
Lime Applied in the last 4 years:	Yes		
Leveled in past 4 years:	No		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17318		
Sample Number:	2010273		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	121	242	Above Optimum
K	70	140	Low
Ca	1761	3522	--
Mg	384	768	--
SO4-S	6	12	--
Zn	8.7	17.4	--
Fe	260	520	--
Mn	163	326	--
Cu	3.8	7.6	--
B	0.8	1.6	--
NO3-N	7	14	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.8	---
Soil EC (1:2 soil-water)	32	umhos/cm
Soil ECEC	15	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
83.2	59.2	21.5	1.2	1.2

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	---------- lb/acre ----------						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	110	0	0	0	0
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.
If S deficiency has occurred previously on this field apply 20 lb SO4-S/Acre.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 123		
Acres	5		
Lime Applied in the last 4 years:	Yes		
Leveled in past 4 years:	No		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17319		
Sample Number:	2010274		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	407	814	Above Optimum
K	116	232	Medium
Ca	1332	2664	--
Mg	215	430	--
SO4-S	23	46	--
Zn	33.2	66.4	--
Fe	493	986	--
Mn	172	344	--
Cu	5.9	11.8	--
B	1.4	2.8	--
NO3-N	14	28	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	4.8	--
Soil EC (1:2 soil-water)	70	umhos/cm
Soil ECEC	16	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
54.3	40.6	10.9	1.8	1.0

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

	Crop	N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	---------- lb/acre ----------						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	60	0	0	0	6000
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 131		
Acres	7		
Lime Applied in the last 4 years:	Yes		
Leveled in past 4 years:	Yes		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17320		
Sample Number:	2010275		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	51	102	Above Optimum
K	59	118	Very Low
Ca	1617	3234	--
Mg	336	672	--
SO4-S	14	28	--
Zn	4.5	9.0	--
Fe	275	550	--
Mn	80	160	--
Cu	1.9	3.8	--
B	0.7	1.4	--
NO3-N	5	10	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	7.0	---
Soil EC (1:2 soil-water)	54	umhos/cm
Soil ECEC	13	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
85.0	60.6	21.0	1.1	2.2

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	---------- lb/acre ----------						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	160	0	0	0	0
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 132		
Acres	7		
Lime Applied in the last 4 years:	Yes		
Leveled in past 4 years:	Yes		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17321		
Sample Number:	2010276		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	6	12	Very Low
K	61	122	Low
Ca	1293	2586	--
Mg	607	1214	--
SO4-S	12	24	--
Zn	2.4	4.8	--
Fe	136	272	--
Mn	63	126	--
Cu	0.7	1.4	--
B	0.4	0.8	--
NO3-N	1	2	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	7.3	---
Soil EC (1:2 soil-water)	33	umhos/cm
Soil ECEC	14	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
86.2	44.8	35.0	1.1	5.3

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	---------- lb/acre ----------						
Crop 1	Warm-Season Grasses (MNT) (207)	60	100	110	0	0	0	0
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.
If S deficiency has occurred previously on this field apply 20 lb SO4-S/Acre.

5. Crop 2 Notes:

6. Crop 3 Notes:

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Soil Testing And Research Laboratory
Marianna, AR 72360
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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 133		
Acres	7		
Lime Applied in the last 4 years:	Yes		
Leveled in past 4 years:	No		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17322		
Sample Number:	2010277		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	75	150	Above Optimum
K	36	72	Very Low
Ca	1752	3504	--
Mg	136	272	--
SO4-S	11	22	--
Zn	8.6	17.2	--
Fe	253	506	--
Mn	58	116	--
Cu	3.8	7.6	--
B	0.7	1.4	--
NO3-N	13	26	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.9	--
Soil EC (1:2 soil-water)	51	umhos/cm
Soil ECEC	13	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
80.3	69.2	9.0	0.7	1.4

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

	Crop	N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	---------- lb/acre ----------						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	160	0	0	0	0
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.
If S deficiency has occurred previously on this field apply 20 lb SO4-S/Acre.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 141		
Acres	7		
Lime Applied in the last 4 years:	No		
Leveled in past 4 years:	No		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17323		
Sample Number:	2010278		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	122	244	Above Optimum
K	67	134	Low
Ca	1339	2678	--
Mg	269	538	--
SO4-S	8	16	--
Zn	8.0	16.0	--
Fe	384	768	--
Mn	82	164	--
Cu	2.1	4.2	--
B	0.9	1.8	--
NO3-N	5	10	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.0	—
Soil EC (1:2 soil-water)	24	umhos/cm
Soil ECEC	13	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
72.5	52.6	17.6	1.3	0.9

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	---------- lb/acre ----------						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	110	0	0	0	0
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.
If S deficiency has occurred previously on this field apply 20 lb SO4-S/Acre.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 142		
Acres	7		
Lime Applied in the last 4 years:	No		
Leveled in past 4 years:	No		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17324		
Sample Number:	2010279		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	298	596	Above Optimum
K	131	262	Optimum
Ca	866	1732	--
Mg	160	320	--
SO4-S	19	38	--
Zn	18.2	36.4	--
Fe	608	1216	--
Mn	61	122	--
Cu	2.3	4.6	--
B	1.1	2.2	--
NO3-N	13	26	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	4.6	---
Soil EC (1:2 soil-water)	59	umhos/cm
Soil ECEC	13	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
48.3	34.4	10.6	2.7	0.6

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Pasture (207)	lb/acre						
Crop 1	Warm-Season Grasses (MNT) (207)	60	0	0	0	0	0	6000
Crop 2								
Crop 3								

4. Crop 1 Notes:

Apply the recommended rates of N, P, and K, in spring when night temperatures are > 60 degrees F for 1 week. For higher production, topdress an additional 60 lb N/Acre after every 4 to 6 weeks of grazing. For fall grazing apply 50 lb N/Acre in early August. Do not apply N after September 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401

Date Processed:	1/26/2012
Field ID:	E 151
Acres	30
Lime Applied in the last 4 years:	No
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Craighead
Lab Number:	17325
Sample Number:	2010280

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	23	46	Low
K	64	128	Low
Ca	646	1292	--
Mg	303	606	--
SO4-S	10	20	--
Zn	2.2	4.4	--
Fe	226	452	--
Mn	361	722	--
Cu	1.2	2.4	--
B	0.4	0.8	--
NO3-N	5	10	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	5.1	—
Soil EC (1:2 soil-water)	12	umhos/cm
Soil ECEC	12	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
52.3	28.0	21.9	1.4	0.9

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

	Crop	N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Hay (133)	---------- lb/acre ----------						
Crop 1	Hay - Warm-Season Grasses (MNT) - 4 ton/acre (133)	200	85	230	0	0	0	5000
Crop 2								
Crop 3								

4. Crop 1 Notes:

For optimum fertilizer efficiency, divide the recommended N, P, and K rates by the estimated number of harvests/year. Make the first fertilizer application in spring when night temperatures are > 60 degrees F for one week. Make subsequent applications following each harvest. Do not apply N after Sept. 1.
If S deficiency has occurred previously on this field apply 20 lb SO4-S/Acre.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 152		
Acres	30		
Lime Applied in the last 4 years:	No		
Leveled in past 4 years:	No		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17326		
Sample Number:	2010281		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	16	32	Low
K	65	130	Low
Ca	677	1354	--
Mg	290	580	--
SO4-S	12	24	--
Zn	2.5	5.0	--
Fe	152	304	--
Mn	250	500	--
Cu	1.1	2.2	--
B	0.3	0.6	--
NO3-N	6	12	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	5.1	---
Soil EC (1:2 soil-water)	14	umhos/cm
Soil ECEC	12	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
52.3	29.3	20.9	1.4	0.6

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Hay (133)	---------- lb/acre ----------						
Crop 1	Hay - Warm-Season Grasses (MNT) - 4 ton/acre (133)	200	85	230	0	0	0	5000
Crop 2								
Crop 3								

4. Crop 1 Notes:

For optimum fertilizer efficiency, divide the recommended N, P, and K rates by the estimated number of harvests/year. Make the first fertilizer application in spring when night temperatures are > 60 degrees F for one week. Make subsequent applications following each harvest. Do not apply N after Sept. 1.
If S deficiency has occurred previously on this field apply 20 lb SO4-S/Acre.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 153		
Acres	30		
Lime Applied in the last 4 years:	No		
Leveled in past 4 years:	No		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17327		
Sample Number:	2010282		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	6	12	Very Low
K	52	104	Very Low
Ca	756	1512	--
Mg	247	494	--
SO4-S	5	10	--
Zn	2.1	4.2	--
Fe	181	362	--
Mn	206	412	--
Cu	1.2	2.4	--
B	0.3	0.6	--
NO3-N	7	14	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	5.4	—
Soil EC (1:2 soil-water)	25	umhos/cm
Soil ECEC	11	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
57.3	35.8	19.5	1.3	0.7

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

	Crop	N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Hay (133)	lb/acre						
Crop 1	Hay - Warm-Season Grasses (MNT) - 4 ton/acre (133)	200	115	270	0	0	0	5000
Crop 2								
Crop 3								

4. Crop 1 Notes:

For optimum fertilizer efficiency, divide the recommended N, P, and K rates by the estimated number of harvests/year. Make the first fertilizer application in spring when night temperatures are > 60 degrees F for one week. Make subsequent applications following each harvest. Do not apply N after Sept. 1.
If S deficiency has occurred previously on this field apply 20 lb SO4-S/Acre.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401

Date Processed:	1/26/2012
Field ID:	E 161
Acres	70
Lime Applied in the last 4 years:	No
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Craighead
Lab Number:	17328
Sample Number:	2010283

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	21	42	Low
K	77	154	Low
Ca	2425	4850	--
Mg	506	1012	--
SO4-S	3	6	--
Zn	1.3	2.6	--
Fe	123	246	--
Mn	78	156	--
Cu	1.0	2.0	--
B	0.3	0.6	--
NO3-N	7	14	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	8.0	--
Soil EC (1:2 soil-water)	30	umhos/cm
Soil ECEC	19	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
89.3	65.0	22.6	1.1	0.6

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Soybean (14)	lb/acre						
Crop 1	Hay - Warm-Season Grasses (MNT) - 4 ton/acre (133)	200	85	230	0	0	0	0
Crop 2								
Crop 3								

4. Crop 1 Notes:

For optimum fertilizer efficiency, divide the recommended N, P, and K rates by the estimated number of harvests/year. Make the first fertilizer application in spring when night temperatures are > 60 degrees F for one week. Make subsequent applications following each harvest. Do not apply N after Sept. 1.
If S deficiency has occurred previously on this field apply 20 lb SO4-S/Acre.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 162		
Acres	70		
Lime Applied in the last 4 years:	No		
Leveled in past 4 years:	No		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17342		
Sample Number:	2010295		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	33	66	Medium
K	64	128	Low
Ca	1497	2994	--
Mg	529	1058	--
SO4-S	9	18	--
Zn	3.3	6.6	--
Fe	227	454	--
Mn	152	304	--
Cu	1.4	2.8	--
B	0.5	1.0	--
NO3-N	11	22	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	7.3	---
Soil EC (1:2 soil-water)	45	umhos/cm
Soil ECEC	14	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
86.0	52.5	30.9	1.2	1.4

3. Recommendations

(**Notice:** State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Soybean (14)	lb/acre						
Crop 1	Hay - Warm-Season Grasses (MNT) - 4 ton/acre (133)	200	60	230	0	0	0	0
Crop 2								
Crop 3								

4. Crop 1 Notes:

For optimum fertilizer efficiency, divide the recommended N, P, and K rates by the estimated number of harvests/year. Make the first fertilizer application in spring when night temperatures are > 60 degrees F for one week. Make subsequent applications following each harvest. Do not apply N after Sept. 1.
If S deficiency has occurred previously on this field apply 20 lb SO4-S/Acre.

5. Crop 2 Notes:

6. Crop 3 Notes:

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CITY WATER & LIGHT		**Client ID:**	8709355581
400 E MONROE			
JONESBORO	AR		72401
Date Processed:	1/26/2012		
Field ID:	E 163		
Acres	70		
Lime Applied in the last 4 years:	No		
Leveled in past 4 years:	No		
Irrigation:	Unknown		
County:	Craighead		
Lab Number:	17343		
Sample Number:	2010296		

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	20	40	Low
K	48	96	Very Low
Ca	2026	4052	--
Mg	296	592	--
SO4-S	16	32	--
Zn	3.3	6.6	--
Fe	230	460	--
Mn	252	504	--
Cu	1.5	3.0	--
B	0.6	1.2	--
NO3-N	10	20	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	8.0	--
Soil EC (1:2 soil-water)	49	umhos/cm
Soil ECEC	15	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
86.8	66.6	16.2	0.8	3.2

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

	Crop	N	P2O5	K2O	SO4S	Zn	B	Lime
Last Crop	Soybean (14)	lb/acre						
Crop 1	Hay - Warm-Season Grasses (MNT) - 4 ton/acre (133)	200	85	270	0	0	0	0
Crop 2								
Crop 3								

4. Crop 1 Notes:

For optimum fertilizer efficiency, divide the recommended N, P, and K rates by the estimated number of harvests/year. Make the first fertilizer application in spring when night temperatures are > 60 degrees F for one week. Make subsequent applications following each harvest. Do not apply N after Sept. 1.

5. Crop 2 Notes:

6. Crop 3 Notes:

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