

Eureka Springs-Bio-Solids Report *AR 002865* | 2018

The bio-solids and soil analyses conducted were performed in accordance with EPA Document SW-846, "Test Methods for Evaluation of Solid Waste"

Application Dates- None in 2018

Locations- Section 31, Township 20 North, Range 25 West, 40 Acres & Section 36, Township 20, North, Range 26, 40 Acres

Volume of Bio-solids Applied- 0.0 dry tons/acre-year – 0.0 gallon/ acre-year

Method of Disposal - Spreader Truck

Hauler- Duane Coatney- Received Copy

Crop Grown- Fescue

Total Kjeldahl Nitrogen Applied- 0.0 mg/kg, Total Solids 0.0%, Volatile Solids 0.0%, Nitrate + Nitrite Nitrogen 0.0 mg/kg, Total Potassium 0.0 mg/kg, PH 0.0 S.U.

Total Elements Applied – Mercury 0.0 lb./ac, Ammonia Nitrogen 0.0 lb./ac, Chromium 0.0 lb./ac, Nickel .0.0 lb./ac, Copper 0.0 lb./ac, Zinc 0.0 lb./ac, Arsenic 0.0 lb./ac, Selenium 0.0 lb./ac, Molybdenum 0.0 lb./ac, Fecal Coliform 0.0 lb./ac, Cadmium 0.0 lb./ac, Lead 0.0 lb. /ac, Phosphorous 0.0 lb. /ac

Total Elements applied to date- Mercury .0476 lb./ac, Ammonia Nitrogen 1,244.3697 lb./ac, Chromium 1.1991 lb./ac, Nickel 1.0356 lb./ac, Copper 53.3463 lb./ac, Zinc 36.0571 lb./ac, Arsenic .5489 lb./ac, Selenium .5545 lb./ac, Molybdenum .8934 lb./ac ,Fecal Coliform 153 lb./ac, Cadmium .9387 lb./ac, Lead 4.9782 lb./ac, Phosphorous 6,023.5078 lb./ac

Bio-Solids - Composted-72 tons- Permit 0295SC

Bio-Solids - Landfilled- 470 tons Permit 992988AR

Enclosures:

- 1) Bio-solids, grab sample
- 2) Copies of soil analyses for each site

Cooperative Extension Service
Soil Testing And Research Laboratory
Marianna, AR 72360
<http://soiltest.uark.edu>

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ES PUBLIC WORKS - ATTN	Client ID: 4792539600
3174 E VAN BUREN	
EUREKA SPRINGS	AR 72632
Date Processed:	8/28/2018
Field ID:	WA
Acres:	1
Lime Applied in the last 4 years:	No
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Carroll
Lab Number:	59406
Sample Number:	4707801

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	214	428	Above Optimum
K	249	498	Above Optimum
Ca	1284	2568	--
Mg	227	454	--
SO4-S	20	40	--
Zn	12.5	25	
Fe	111	222	--
Mn	254	508	--
Cu	7.4	14.8	--
B	0.6	1.2	--
NO3-N			--

2. Soil Properties

Property	Value	Units		
Soil pH (1:2 soil-water)	6.5	--		
Soil EC (1:2 soil-water)		umhos/cm		
Soil Estimated CEC	11.52	cmolc/kg		
Organic Matter (Loss on Ignition)		%		
Estimated Soil Texture	Silt Loam			
Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
78.29	55.75	16.43	5.54	0.57

3. Recommendations (Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop	N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	General Garden (301) ----- lb/1000 sq.ft. -----						
Crop 1	1	0	0	0	0	0	0
Crop 2							
Crop 3							

4. Crop 1 Notes:

Apply 2 lb urea, 3 lb 34-0-0, or 3.5 lb 27-0-0/1000 square ft before planting. At flowering, if needed to stimulate growth, apply 1 lb urea, 1.5 lb 34-0-0, or 1.8 lb 27-0-0/1000 square ft and water thoroughly.

5. Crop 2 Notes:

6. Crop 3 Notes:

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SEP 04 2018

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Marianna, AR 72360
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ES PUBLIC WORKS - ATTN	Client ID: 4792539600
3174 E VAN BUREN	
EUREKA SPRINGS	AR 72632
Date Processed:	8/28/2018
Field ID:	WB
Acres:	1
Lime Applied in the last 4 years:	No
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Carroll
Lab Number:	59407
Sample Number:	4707802

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	177	354	Above Optimum
K	147	294	Medium
Ca	1389	2778	--
Mg	179	358	--
SO4-S	26	52	--
Zn	16.9	33.8	--
Fe	126	252	--
Mn	392	784	--
Cu	4.8	9.6	--
B	0.5	1	--
NO3-N			--

2. Soil Properties

Property	Value	Units		
Soil pH (1:2 soil-water)	5.8	--		
Soil EC (1:2 soil-water)		umhos/cm		
Soil Estimated CEC	13.39	cmolc/kg		
Organic Matter (Loss on Ignition)		%		
Estimated Soil Texture	Silt Loam - Silty Clay Loam			
Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
66.40	51.86	11.14	2.81	0.58

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop	N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	General Garden (301) ----- lb/1000 sq.ft. -----						
Crop 1	1	0	1	0	0	0	23
Crop 2							
Crop 3							

4. Crop 1 Notes:

Apply lime as far in advance of planting as possible.

Apply 2 lb urea, 3 lb 34-0-0, or 3.5 lb 27-0-0/1000 square ft plus 2 lb muriate of potash(0-0-60)/1000 square ft before planting. At flowering, if needed to stimulate growth, apply 1 lb urea or 1.5 lb 34-0-0, or 1.8 lb 27-0-0/1000 square ft and water thoroughly.

5. Crop 2 Notes:

6. Crop 3 Notes:

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ES PUBLIC WORKS - ATTN	Client ID: 4792539600
3174 E VAN BUREN	
EUREKA SPRINGS	AR 72632
Date Processed:	8/28/2018
Field ID:	EA
Acres:	1
Lime Applied in the last 4 years:	No
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Carroll
Lab Number:	59408
Sample Number:	4707803

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	237	474	Above Optimum
K	438	876	Above Optimum
Ca	1294	2588	--
Mg	237	474	--
SO4-S	30	60	--
Zn	23.8	47.6	
Fe	112	224	--
Mn	120	240	--
Cu	6.7	13.4	--
B	0.5	1	--
NO3-N			--

2. Soil Properties

Property	Value	Units		
Soil pH (1:2 soil-water)	5.8	--		
Soil EC (1:2 soil-water)		umhos/cm		
Soil Estimated CEC	14.16	cmolc/kg		
Organic Matter (Loss on Ignition)		%		
Estimated Soil Texture	Silt Loam - Silty Clay Loam			
Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
68.22	45.69	13.95	7.93	0.64

3. Recommendations (Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop	N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	General Garden (301) ----- lb/1000 sq.ft. -----						
Crop 1	1	0	0	0	0	0	23
Crop 2							
Crop 3							

4. Crop 1 Notes:

Apply lime as far in advance of planting as possible.

Apply 2 lb urea, 3 lb 34-0-0, or 3.5 lb 27-0-0/1000 square ft before planting. At flowering, if needed to stimulate growth, apply 1 lb urea, 1.5 lb 34-0-0, or 1.8 lb 27-0-0/1000 square ft and water thoroughly.

5. Crop 2 Notes:

6. Crop 3 Notes:

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ES PUBLIC WORKS - ATTN	Client ID: 4792539600
3174 E VAN BUREN	
EUREKA SPRINGS	AR 72632
Date Processed:	8/28/2018
Field ID:	EB
Acres:	1
Lime Applied in the last 4 years:	No
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Carroll
Lab Number:	59409
Sample Number:	4707804

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	118	236	Above Optimum
K	438	876	Above Optimum
Ca	1427	2854	--
Mg	339	678	--
SO4-S	28	56	--
Zn	6.6	13.2	--
Fe	123	246	--
Mn	30	60	--
Cu	4.4	8.8	--
B	0.7	1.4	--
NO3-N			--

2. Soil Properties

Property	Value	Units		
Soil pH (1:2 soil-water)	6.5	--		
Soil EC (1:2 soil-water)		umhos/cm		
Soil Estimated CEC	13.71	cmolc/kg		
Organic Matter (Loss on Ignition)		%		
Estimated Soil Texture	Silt Loam			
Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
81.76	52.05	20.61	8.19	0.92

3. Recommendations (Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop	N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	General Garden (301) ----- lb/1000 sq.ft. -----						
Crop 1	1	0	0	0	0	0	0
Crop 2							
Crop 3							

4. Crop 1 Notes:

Apply 2 lb urea, 3 lb 34-0-0, or 3.5 lb 27-0-0/1000 square ft before planting. At flowering, if needed to stimulate growth, apply 1 lb urea, 1.5 lb 34-0-0, or 1.8 lb 27-0-0/1000 square ft and water thoroughly.

5. Crop 2 Notes:

6. Crop 3 Notes:

Page 1 of 1 Agent Olivia Foster Date 8/14/18 Grower City of ES Grower E-mail _____ optional

Client ID	4792539600	County Office	09	If Address has Changed	Enter 1	
Phone #						
Name	CITY OF EUREKA	SPRING				
Address	3174 E	VAN BUREN				
City, State, Zip	EUREKA	SPRING			AR	72632

University of Arkansas Cooperative Extension Service
 Soil Testing and Research Laboratory
 P. O. Box 767 or 008 Lee 214
 Marianna, AR 72360-9987
<http://www.uark.edu/depts/soiltest>

Research only Cost Center #

Lab use only Lab Number	Sample Number Sample # must be printed on soil box	Grower's Field ID PLEASE PRINT 8 character limit	Lime applied in last 4 years, 0 = no 1 = yes		Enter 1 if field recently leveled (past 4 years)			1 = well 2 = reservoir 3 = stream			By Request Only		Fee-based Additional Analysis	
			Acres	Lime	Soil Assn #	Last Crop	Crop 1	Rice Subcode	Crop 2	Rice Subcode	Crop 3	Rice Subcode	1 = nitrate 2 = EC 3 = both	4 = organic 5 = chloride 6 = both
	4707801	WA	1	0	3	301	301							
	4707802	WB												
	4707803	EA												
	4707804	EB												
	4707805													
	4707806													
	4707807													
	4707808													
	4707809													
	4707810													
	4707811													

Environmental Services Company, Inc.

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

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

Control Number: 1801020335
Customer Name : EUREKA SPRINGS, CITY OF
Customer Number : 2203
Report Date : 02/19/18

Sample Date : 01/18/18
Sample Time : 0915
Sample Type : GRAB
Sample From : 2203 BIOSOLIDS

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

<u>Laboratory Analysis</u>							<u>Quality Assurance</u>	
Analysis			Result	Notes	Quantity	Method	Precision	Accuracy
Date	Time	By					Parameter	% RPD
01/24	0915	RAH	Metals Digestion	1		1996 EPA 3050B	0.00	100.0 *
02/05	1230	TSB	Ammonia Nitrogen	5324.51 mg/kg		SM 1997 4500-NH3 C	2.50	113.7
01/24	1530	RAH	Mercury	< 0.1076 mg/kg		SW-846 7474 02/07	1.72	87.7 *
01/25	0830	TSB	Kjeldahl Nitrogen Total	51508.61 mg/kg		SM 1997 4500-NorgB	0.05	100.5 *
02/01	1300	TSB	Nitrate Nitrogen	41.71 mg/kg		SM 2000 4500-NO3 E	0.00	102.6 *
02/01	1300	TSB	Nitrite Nitrogen	4.54 mg/kg		SM 2000 4500-NO2 B	0.02	102.6 *
01/24	1721	RAH	Sodium	< 2.50 mg/kg		SW846 6020A	13.89	86.8
01/24	1721	RAH	Magnesium, Total	189.50 mg/kg		SW846 6020A	3.96	102.8
01/24	1721	RAH	Potassium, Total	188.50 mg/kg		SW846 6020A	4.82	108.3
01/24	1721	RAH	Calcium, Total	546.50 mg/kg		SW846 6020A	15.16	100.8
01/19	0853	AEU	pH, Soil	6.60 S.U.		SM 2000 4500-H+ B	1.53	0.0
01/24	1721	RAH	Chromium, Total	< 2.50 mg/kg		SW846 6020A	5.59	94.9
01/24	1721	RAH	Nickel, Total	< 2.50 mg/kg		SW846 6020A	5.20	94.9
01/24	1721	RAH	Copper, Total	18.50 mg/kg		SW846 6020A	5.59	94.9
01/18	1207	AEU	Solids, % Volatile	81.244 %		SM 1997 2540 G	2.74	0.0 *
01/24	1721	RAH	Zinc, Total	25.50 mg/kg		SW846 6020A	4.80	108.8
01/24	1721	RAH	Arsenic, Total	< 2.50 mg/kg		SW846 6020A	9.20	101.8
01/24	1721	RAH	Selenium, Total	< 2.50 mg/kg		SW846 6020A	7.37	115.5
01/24	1721	RAH	Molybdenum, Total	< 2.50 mg/kg		SW846 6020A	5.87	103.4
01/24	1721	RAH	Cadmium, Total	< 2.50 mg/kg		SW846 6020A	3.19	102.5
01/18	1207	AEU	Solids, % Total by mass	10.762 %		SM 1997 2540 G	2.74	N/A *


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

Report for Control Number: 1801020335 Continued on Next Page

<u>Laboratory Analysis</u>							<u>Quality Assurance</u>	
<u>Analysis</u>			<u>Result</u>	<u>Notes</u>	<u>Quantity</u>	<u>Method</u>	<u>Precision</u>	<u>Accuracy</u>
<u>Date</u>	<u>Time</u>	<u>By</u>					<u>Parameter</u>	<u>% RPD</u>
01/24	1721	RAH	Lead, Total	< 2.50 mg/kg		SW846 6020A	5.88	105.8
01/24	1721	RAH	Sodium Absorption Ratio	0.0033		AGRN 724	13.89	86.8

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

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

Signature 
 Environmental Services Co., Inc.

Environmental Services Company, Inc.
 Corporate Office
 13715 West Markham P.O. Box 55146
 Little Rock, AR 72211 Little Rock, AR 72215
 website: www.esclabs.com



Environmental Services Company, Inc.
 Northwest Branch
 1107 Century
 Springdale, AR 72764

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





CHAIN OF CUSTODY

Phone 479-750-1170 Fax: 479-750-1172

Client Information				Project Information						Requested Parameters										
Company Name: Eureka Springs				Permit/Project #: BIOSOLIDS						As, Cd, Cu, Pb, Hg, Mo, Ni, Se Zn, TP, TK, Mg, Na, Ca, PCB's NH ₃ -N, NO ₃ -N, NO ₂ -N TKN, Sodium Absorption Rate TS, pH										
Address: 3174 E. Van Buren				Purchase Order #:																
Eureka Springs, Ar 72632				Sampler Name(s): <i>TERREY R LONG</i>																
Telephone: (479) 253-7410				and Signature(s): <i>Terrey R Long</i>																
FAX: (479) 253-6974																				
ESWWT@YAHOO.COM																				
ESC Client Number: 2203 - BIOSOLIDS																				
Sample Identification		Sample Collection				Sample Containers														
Identification	ESC Control #	Date	Time	Type	Matrix	Type	Volume	Preservative	#											
2203 Biosolids	<i>R01020335</i>	<i>1/18/18</i>	<i>0915</i>	GRAB	BIOSOLIDS	Plastic	1-Gallon	None	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
Relinquished By: (Signature and Printed Name)		Date	Time	Received By: (Signature and Printed Name)		Date	Time	Custody Seals:												
<i>Terrey R Long</i>		<i>1/18/18</i>	<i>1340</i>	<i>Terrey R Long</i>				Used? <input type="checkbox"/> Intact? <input type="checkbox"/>												
Relinquished By: (Signature and Printed Name)		Date	Time	Received By: (Signature and Printed Name)		Date	Time	Turnaround:												
								Regular <input type="checkbox"/> Special <input type="checkbox"/>												
Relinquished By: (Signature and Printed Name)		Date	Time	Received of Lab By: (Signature and Printed Name)		Date	Time	Were samples properly preserved:												
				<i>Amber Anderson</i>		<i>1/18/18</i>	<i>1340</i>	Yes <input type="checkbox"/> No <input type="checkbox"/>												
Comments:				FLOW DATA		Field Test		Time	Analyst	Result	Result	Units								
				Analyst:		pH:														
				Time:		Temp.:						°C °F								
				Reading:		DO:														
				Units:		Debris:														
Cool all samples to 6 degrees C.								Chlorinated? Yes No		This Document is Page <u> </u> of <u> </u>										

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FROM:

City of Eureka Springs
Department of Public Works
3174 East Van Buren
Eureka Springs, AR 72632

TO:

ADEQ, Water Division, Permits
5301 Northshore Drive
North Little Rock, AR 72118-5317

BC



U.S. POSTAGE PAID
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EUREKA SPRINGS, AR
72632
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AMOUNT
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R2305E125750-02

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EP14 July 2013
OD: 11.625 x 15.125

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