

April 1, 2021

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Return Receipt Requested

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RE: License No. SUB-1010; Docket No. 40-8027  
Ammonium Nitrate Fertilizer Program  
2020 Completion Report

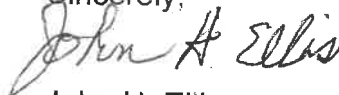
Dear Mr. Mandeville:

Please find enclosed one (1) copy of the 2020 Completion Report for the Ammonium Nitrate Fertilizer Program conducted by Sequoyah Fuels Corporation (SFC).

In accordance with License No. SUB-1010 requirements, the report describes the application of facility produced ammonium nitrate fertilizer on SFC lands near Gore, Oklahoma, and the results obtained from comprehensive soil and vegetation monitoring programs. During 2020 no ammonium nitrate fertilizer was applied; however pre-season soil, post-season soil and vegetation monitoring was completed.

Should you require further information, please contact me at 918-489-5511. (Ext. 226)

Sincerely,



John H. Ellis  
President

Enclosure

cc: Lynzie Chan (ODEQ)

*AMMONIUM NITRATE  
FERTILIZER APPLICATION PROGRAM*

*2020 Completion Report*

*License SUB-1010; Docket 40-8027*

*April 1, 2021*

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## ADDENDA

<u>TABLES</u>	<u>DESCRIPTION</u>
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4	Annual Post-Season Analyses
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1	Fertilizer Application Sites

# 2020 FERTILIZER PROGRAM COMPLETION REPORT

Sequoyah Fuels Corporation  
Gore, Oklahoma

## 1.0 INTRODUCTION

Source Material License SUB-1010, issued to Sequoyah Fuels Corporation (SFC), authorizes the application of fertilizer onto SFC owned or controlled lands for the production of forage, utilized by cattle for grazing, or for growing crops that are not used directly as human food, such as hay or seed production. On October 1, 2015 a new Oklahoma Pollution Discharge Elimination System (OPDES) permit became effective. This new OPDES permit includes sampling and application requirements for the fertilizer program. In accordance with license and permit requirements, this completion report describes the 2020 Fertilizer Application Program.

Fertilizer was not applied during 2020. Therefore, some of the monitoring typically completed was not done. The 2021 schedule for the Ammonium Nitrate Fertilizer Program is provided in Table 1.

## 2.0 APPLICATION AREA

Figure 1 shows the location of the fertilizer application sites.

## 3.0 AMMONIUM NITRATE APPLICATION

Ammonium nitrate fertilizer was not applied during 2020.

## 4.0 PROGRAM MONITORING RESULTS

### 4.1 Soil

The 2020 pre- and post-growing season soil samples for the fertilizer application areas were collected in March and November, respectively. Since there was no application of ammonium nitrate fertilizer no mid-season soil samples were collected. The analysis results for these sampling events are provided in Table 2. The top six inches of soil was characterized for nitrate content by collecting and compositing at least twenty samples from different locations in the Agland tract (one-inch diameter cores). In addition, profile samples were collected from one location in the Agland tract at six inch increments from surface to 48".

Soil samples were also collected as required by the OPDES permit. This permit requires that background soil samples be collected from each land application site and be analyzed for soil pH; the nutrients Total Kjeldahl Nitrogen, nitrogen, ammonia, nitrate, potassium and phosphorus; and the metals included in 40 CFR 503, "Standards for the Use or Disposal of Sewage Sludge." The analyses for background sampling are included in Table 3. Figure 1 shows the location of each fertilizer application site. The analyses of post season samples collected on November 04, 2020, from each land application site that typically receives fertilizer solution are included in Table 4.

### 4.2 Vegetation

Forage samples were collected and analyzed from the Agland area only. Analytical data for the forage cuttings from the Agland is provided in Table 5.

Forage collected during 2020 had elevated molybdenum concentrations. SFC determined that use of the hay should be restricted.

## 5.0 FORAGE MANAGEMENT PROGRAM

Hay was harvested two times during 2020. Hay yields and harvest were dependent upon the weather and forage growing conditions. Approximately 673 round bales were produced from the SFC property. Round hay bales average approximately 1040 pounds.

The Oklahoma State University Extension Service continues to provide oversight of the land application program.

**Table 1**  
**Sequoyah Fuels Corporation**  
**Projected 2021 Ammonium Nitrate Fertilizer Application**

ID	Task Name	Qtr 1, 2021			Qtr 2, 2021			Qtr 3, 2021			Qtr 4, 2021		
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	SPREAD FERTILIZER												
2	Conduct Environmental Monitoring												
3	Collect Preseason Soil Samples			3/8	3/9								
4	Collect Preseason Fertilizer Samples					5/3	5/4						
5	Collect Forage Samples						6/7						
6	Collect Midseason Soil Samples											10/15	
7	Collect Postseason Soil Samples								8/16	8/17			
8	Collect Samples for Extension Service			4/5							11/1	11/2	
9										9/20			
10	Evaluate Environmental Data			4/5								12/6	
11													
12	Develop Manpower to Operate Program			4/5									
13							6/25						
14	Implement Field Applications				4/12							10/1	
15	Complete Application of 10,000,000 Gallons										10/1	10/1	
16													
17	Maintain Distribution System			4/1								10/1	
18													
19	Pond Management											12/31	

Date: 01 April 2021

Task

Milestone



**Table 3**  
**Background Soil Analyses - Fertilizer Application Sites**

Parameter	Agland # 1	Agland # 2	Agland # 3	Agland # 4	North Meadow	South Meadow
<b>Inorganic Analyses</b>						
Ammonia (as N), mg/kg	6.6	3.9	3.6	4.5	3.1	2.2
Nitrate (as N), mg/kg	28.2	33.1	31.6	17.4	15.4	26
TKN, mg/kg	1790	1880	1640	1740	1500	2340
pH	4.34	5.83	6.32	5.18	6.02	6.33
<b>Radiochemical Analyses</b>						
Radium-226 pCi/g	0.779 ± 0.142	1.42 ± 0.221	0.730 ± 0.144	1.07 ± 0.202	1.28 ± 0.197	1.73 ± 0.219
Uranium, µg/g	1.92	1.99	1.93	3.26	9.55	2.47
<b>Metals Analyses</b>						
Arsenic, mg/kg	2.39	1.62	1.53	2.25	2.62	2.2
Cadmium, mg/kg	0.728	0.505	0.612	0.819	0.805	0.838
Chromium, mg/kg	1.14	2.02	3.57	4.09	7.55	5.45
Copper, mg/kg	6.24	3.13	1.02	2.05	2.21	1.36
Lead, mg/kg	8.65	7.09	5.54	7.38	10.7	10.1
Mercury, mg/kg	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24	< 0.24
Molybdenum, mg/kg	21.9	12.7	5.3	< 0.716	2.42	1.57
Nickel, mg/kg	5.72	3.43	5.61	1.33	0.906	1.57
Phosphorus, mg/kg	274	55.9	139	221	207	221
Potassium, mg/kg	731	268	324	453	293	298
Selenium, mg/kg	< 0.520	< 0.505	< 0.510	< 0.512	< 0.503	< 0.524
Zinc, mg/kg	19.8	9.19	7.95	13.9	13.3	11

Parameter	Pond Area	Timber North # 1	Timber North # 2	Timber South # 1	Timber South # 2	Timber South # 3
<b>Inorganic Analyses</b>						
Ammonia (as N), mg/kg	2.1	2.7	3.7	3.0	1.8	1.8
Nitrate (as N), mg/kg	14.2	9.6	22.3	27.4	25.5	13.2
TKN, mg/kg	2020	2470	1850	2290	2090	1740
pH	6.35	5.4	4.9	5.28	5.2	5.5
<b>Radiochemical Analyses</b>						
Radium-226 pCi/g	1.04 ± 0.163	1.57 ± 0.249	1.07 ± 0.188	1.58 ± 0.243	1.29 ± 0.189	1.27 ± 0.201
Uranium, µg/g	2.41	5.24	16.8	12.2	9.78	2.12
<b>Metals Analyses</b>						
Arsenic, mg/kg	2.94	1.2	3.85	1.98	4.33	2.81
Cadmium, mg/kg	1.01	< 0.502	1.77	0.991	1.54	1.35
Chromium, mg/kg	6.9	< 0.703	11.4	4.46	6.8	11.2
Copper, mg/kg	0.913	< 0.602	3.02	2.78	1.54	1.04
Lead, mg/kg	9.66	< 0.390	15.1	14.8	13.6	10.7
Mercury, mg/kg	< 0.24	< 0.24	< 0.23	< 0.24	< 0.24	< 0.24
Molybdenum, mg/kg	< 0.710	< 0.703	1.14	< 0.694	< 0.721	< 0.729
Nickel, mg/kg	< 0.710	< 0.703	8.94	0.892	< 0.721	16.9
Phosphorus, mg/kg	< 10.1	192	282	280	224	168
Potassium, mg/kg	326	17.3	564	574	381	542
Selenium, mg/kg	< 0.507	< 0.502	< 0.520	< 0.496	< 0.515	< 0.521
Zinc, mg/kg	12.4	< 0.703	37.8	23.3	17.1	14.2

Note: Samples collected during August 2005.



**Table 4**  
**Annual Post-Season Soil Analyses - Fertilizer Application Sites**

Parameter	Agland #1 Composite	Agland #2 Composite	Agland #3 Composite	Pond Area Composite	N. Meadow Composite	Timber S#2 Composite
<b>Inorganic Analyses</b>						
Ammonia (as N), mg/kg	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Nitrate (as N), mg/kg	2.85	2.11	2.27	<1.06	1.76	5.13
TKN, mg/kg	618	319	450	528	713	641
pH	5.3	6.3	6.3	5.6	7.4	6.2
<b>Radiochemical Analyses</b>						
Radium-226 pCi/g	0.242 ± 0.106	0.316 ± 0.116	0.318 ± 0.123	0.593 ± 0.154	0.405 ± 0.136	0.444 ± 0.138
Uranium, µg/g	1.12	1.63	1.58	1.90	5.13	2.46
<b>Metals Analyses</b>						
Arsenic, mg/kg	1.20	< 1.00	1.11	1.84	1.16	2.43
Cadmium, mg/kg	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500	< 0.500
Chromium, mg/kg	2.73	2.29	5.31	10.8	4.60	9.48
Copper, mg/kg	2.97	< 2.00	< 2.00	4.93	< 2.00	2.68
Lead, mg/kg	3.94	3.60	4.16	9.40	8.70	9.95
Mercury, mg/kg	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040
Molybdenum, mg/kg	11.0	1.83	4.58	0.982	1.99	2.06
Nickel, mg/kg	3.22	< 2.00	2.27	11.5	2.01	2.99
Phosphorus, mg/kg	104	<100	< 100	154	< 100	165
Potassium, mg/kg	289	152	205	388	140	198
Selenium, mg/kg	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00
Zinc, mg/kg	8.35	< 5.0	< 5.0	29.3	< 5.0	12.4

Parameter	S. Meadow Composite					
<b>Inorganic Analyses</b>						
Ammonia (as N), mg/kg	< 10.0					
Nitrate (as N), mg/kg	<1.06					
TKN, mg/kg	804					
pH	5.6					
<b>Radiochemical Analyses</b>						
Radium-226 pCi/g	0.467 ± 0.140					
Uranium, µg/g	3.81					
<b>Metals Analyses</b>						
Arsenic, mg/kg	< 1.00					
Cadmium, mg/kg	< 0.500					
Chromium, mg/kg	6.69					
Copper, mg/kg	< 2.00					
Lead, mg/kg	5.80					
Mercury, mg/kg	< 0.040					
Molybdenum, mg/kg	1.74					
Nickel, mg/kg	2.05					
Phosphorus, mg/kg	< 100					
Potassium, mg/kg	175					
Selenium, mg/kg	< 2.00					
Zinc, mg/kg	5.37					

Note: Samples collected during November 2020.

TABLE 5

Forage Analyses

Location (Cutting)	Sample Date	As mg/kg	B mg/kg	Co mg/kg	Cu mg/kg	Fe mg/kg	Mn mg/kg	Mo mg/kg	Ni mg/kg	Pb mg/kg	V mg/kg	Zn mg/kg	U mg/kg	Th-230 pCi/g	Ra-226 pCi/g	NO3-N mg/kg
<b>Sequoyah Acreage</b>																
Agland (1 <sup>st</sup> )	06/15/20	< 2.0	< 20.0	< 1.0	5.57	193	53.8	76.0	< 2.0	< 0.5	< 2.0	25.7	< 0.5	0.003±0.014	0.030 ± 0.016	<40.0
Agland (2 <sup>nd</sup> )	09/09/20	< 1.0	< 20.0	< 1.0	4.65	54.0	74.2	42.5	< 2.0	< 0.5	< 2.0	25.1	0.126	-0.039±0.014	0.021 ± 0.008	< 100
Caution Levels <sup>1</sup>		100	150	10	100	1000	1000	20	50	30	50	500	-	-	-	2800

<sup>1</sup> Caution Levels do not mean that forage with higher concentrations cannot be safely fed to livestock, but that certain precautions and additional treatments and supplements may be prudent.

Figure 1

Fertilizer Application Sites  
Background Soil Sample Locations  
Collected on 04 Aug 2005

