SEQUOYAH FUELS
A GENERAL ATOMICS COMPANY

RE: 0617-N

May 1, 2006

Certified Mail 7004 1160 0004 4867 1513
Return Receipt Requested

U.S. Nuclear Regulatory Commission
ATTN: Mr. Gary Janosko, Chief
Fuel Cycle Facilities Branch
Division of Fuel Cycle Safety and Safeguards
11545 Rockville Pike
Two White Flint
Washington, D.C. 20852-2738

RE: License No. SUB-1010; Docket No. 40-8027
Ammonium Nitrate Fertilizer Program
2005 Completion Report

Dear Mr. Janosko:

Please find enclosed one (1) copy of the 2005 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.

Should you require further information, please contact me at 918-489-5511. (Ext. 14)

Sincerely,

Craig L. Harlin
Vice President

Enclosure

cc: Myron Fliegel (NRC)
Regina Clear (ODEQ)

HIGHWAY 10 & I-40 PO BOX 610, GORE, OKLAHOMA 74435 (918) 489-5511 FAX: (918) 489-2291

AMMONIUM NITRATE FERTILIZER APPLICATION PROGRAM

2005 Completion Report

License SUB-1010; Docket 40-8027

April 28, 2006

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ADDENDA

2005 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 July 1, 2005 a new Oklahoma Pollution Discharge Elimination System (OPDES) permit became effective. This new OPDES permit includes additional sampling and application requirements for the fertilizer program. In accordance with license and permit requirements, this completion report describes the 2005 Fertilizer Application Program.

SFC monitors a control plot as specified in the license in order to implement good programmatic control and ensure that the program is being operated in accordance with best agricultural practices. In September 1996, an NRC License Amendment which changed the fertilizer program control plot was approved. This report contains the fertilizer program monitoring results as described in the amended license.

The 2005 Fertilizer Application Program included oversight by Dr. Billy Tucker, Ph.D., Agronomist and Soil Scientist, Extension Agronomist Emeritus, Oklahoma State University. Dr. Tucker provided recommendations to ensure maximum plant nutrient utilization and forage production while limiting impact to the environment. Additionally, Dr. Tucker assisted in investigations of anomalous monitoring data.

Fertilizer application began in June 2005 and concluded in October 2005. A total of 7.8 million gallons of ammonium nitrate fertilizer was applied. Application amounts ranged from 148 to 296 lbs-N/acre. The 2006 schedule for the Ammonium Nitrate Fertilizer Program is provided in Table 1.

2.0 APPLICATION AREA

In 2005, SFC's ammonium nitrate fertilizer was applied to the control plot which is located within the facility boundary. This application area is referred to as Agland #1 (Previously identified as Agland XVII) and is comprised of approximately 91 acres of which approximately 60 acres were utilized for application. Fertilizer was also applied to an 8 acre field located immediately

south of the Agland #1 site, referred to as Agland #2 (Previously identified as Algland XVII South). In addition, ammonium nitrate fertilizer was applied to a 20 acre portion of the field located immediately east of the Agland #1 site. This area has been identified as Agland #3 (Previously identified as Province 5 of Area160A).

3.0 AMMONIUM NITRATE APPLICATION

Pre-growing season soil samples were collected early in the year prior to implementation of fertilizer application. Nitrate analysis of these samples provided a basis for application rates and scheduling. Dr. Tucker reviewed this information and provided SFC with application rate recommendations.

Application rates were monitored based upon monthly nitrate analysis of the fertilizer solution. Application began in June and continued until October. A total of 7.8 million gallons was applied utilizing either a Bauer Rainstar 75-310 or Kifco Ag-Rain A-Series irrigation system. The 2005 fertilizer application summary is presented in Table 2. No commercial fertilizer supplements were applied during 2005.

Analytical results of a representative composite of the fertilizer solution are provided in Table 3. In addition, samples were also collected from fertilizer sources as they were being transferred to the fertilizer storage ponds. These analytical results for these sources, which include Clarifier Basin 3A, Monitor Well MW095A Collection Trench, Monitor Well MW095A Collection Pit and Catchment No. 3, are included in Table 4. Although the composite sample did not include analysis for mercury, each of the source samples were analyzed for this parameter.

4.0 PROGRAM MONITORING RESULTS

4.1 Soil

The 2005 pre-, mid- and post-growing season soil samples for the fertilizer application areas were collected in March, July and November, respectively. These samples were analyzed for nitrate content. The analysis results for the three sampling events are provided in Table 5. 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". Review of the 2005 pre-season soil profiles, and the top six inch soil composite, provided the basis for Dr. Tucker's recommendation of application rates for the 2005 Fertilizer Program.

Soil samples were also collected as required by the new OPDES permit that

became effective on July 1, 2005. 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 6. Figure 1 shows the location of each fertilizer application site. The analyses of post season samples collected from each land application site that received fertilizer solution are included in Table 7.

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 8. Two samples were collected from the second cutting and are designated Agland II-1 and Agland II-2.

The forage samples collected during 2005 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 2005. Hay yields and harvest were dependent upon the weather and forage growing conditions. A total of approximately 505 round bales were produced from the SFC property. Round hay bales average approximately 1250 pounds. None of the hay harvesting acreage was over seeded during 2005.

TABLES

Table 1

Sequoyah Fuels Corporation

Projected 2006 Ammonium Nitrate Fertilizer Application

ID	Task Name	Qtr 1, 2006			Qtr 2, 2006			Qtr 3, 2006			Qtr 4, 2006		
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	**SPREAD FERTILIZER**												
2	**Conduct Environmental Monitoring**												
3	Collect Preseason Soil Samples		3/7	3/8									
4	Collect Preseason Fertilizer Samples				5/5	5/6							
5	Collect Forage Samples						6/5				10/12		
6	Collect Midsection Soil Samples							7/18	7/18				
7	Collect Postseason Soil Samples										11/3	11/3	
8	Perform Follow-up/Resample				4/7					9/15			
9													
10	Evaluate Environmental Data				4/7								12/6
11													
12	Develop Manpower to Operate Program				4/4		6/23						
13													
14	Implement Field Applications					5/8				10/3			
15	Complete Application of 10,000,000 Gallons									10/3			
16													
17	Maintain Distribution System				4/10					9/25			
18													
19	Pond Management					5/5						11/2	

Date: Thu 4/6/06

Task

Milestone

TABLE 2

2005 Fertilizer Application Data

LOCATION	APPL	CONC g/l N	GALS APPLIED	Acres Applied To	LBS/ ACRE
XVII (AGLAND)	1	0.314	2,473,500	57	113.6
	2	0.285	2,503,200	57	104.3
	3	0.260	1,027,100	28.7	77.7
TOTAL			6,003,800		295.6
160A Province 5	1	0.314	707,900	16.2	114.4
	2	0.285	603,800	16.2	88.6
TOTAL			1,311,700		203.0
XVII (South)	1	0.314	299,300	8.2	95.6
	2	0.285	180,900	8.2	52.4
TOTAL			480,200		148.0

Notes: Total Volume Applied to All Areas: 7,795,700 gallons

N = Total Nitrogen

TABLE 3 2005 Fertilizer Composite Analyses		
Element		Composite
As	mg/l	0.033
Ba	mg/l	0.124
B	mg/l	0.230
Cd	mg/l	< 0.006
Co	mg/l	0.025
Cr	mg/l	< 0.007
Cu	mg/l	0.022
Fe	mg/l	0.126
Mg	mg/l	19.0
Mn	mg/l	2.52
Mo	mg/l	2.80
Ni	mg/l	0.118
Pb	mg/l	< 0.005
Se	mg/l	< 0.007
V	mg/l	0.024
Zn	mg/l	0.062
Hg*	mg/l	No Analysis
U	ug/l	3.58
Ra226	pCi/l	0 ± 0.083
Th230	pCi/l	0.559 ± 0.168

* Note: Although a mercury analysis was not completed for the composite sample, mercury analyses were completed on four other samples of sources that contributed to the fertilizer solution during 2005. All of these mercury analyses were less than the detection level of 0.0002 mg/l. These results are included in Table 4.

Table 4 2005 Fertilizer Source Analyses				
Parameter	**Clarifier Basin 3A**	**MW095A Coll. Trench**	**MW095A Coll. Pit**	**Catchment No. 3**
Inorganic Analyses				
Ammonia (as N), mg/l	3000	0.3	0.8	479
Nitrate (as N), mg/l	5010	1570	597	1270
TKN, mg/l	3200	< 0.2	0.6	523
Radiochemical Analyses				
Radium-226 pCi/l	1.40 ± 0.662	1.62 ± 0.212	0.477 ± 0.155	0.010 ± 0.113
Uranium, µg/l	1.96	3.26	7.54	277
Metals Analyses				
Arsenic, mg/l	0.456	0.041	0.023	0.512
Cadmium, mg/l	0.018	< 0.001	0.002	0.009
Chromium, mg/l	0.069	< 0.007	< 0.007	0.063
Copper, mg/l	0.235	0.018	0.043	0.165
Lead, mg/l	< 0.005	< 0.005	0.012	0.198
Mercury, mg/l	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Molybdenum, mg/l	58.5	< 0.007	< 0.007	0.07
Nickel, mg/l	2.09	0.023	0.039	2.42
Phosphorus, mg/l	1.38	< 0.1	0.158	4.24
Potassium, mg/l	135	7.18	3.06	36
Selenium, mg/l	0.300	< 0.007	< 0.007	< 0.007
Zinc, mg/l	0.554	0.088	0.044	0.257

TABLE 5

Soil Nitrate Analyses (mg/kg)

Sequoyah Acreage

	Pre-Season Results (Collected on 3/4/2005)							
Location	0-6C"	6-12"	12-18"	18-24"	24-30"	30-36"	36-42"	42-48"
Agland	9.5	5.8	5.2	5.7	5.0	5.5	5.2	4.7
	Mid-Season Results (Collected on 7/21/2005)							
Location	0-6C"	6-12"	12-18"	18-24"	24-30"	30-36"	36-42"	42-48"
Agland	34.3	1.41	1.86	1.70	1.94	1.89	2.16	2.32
	Post-Season Results (Collected on 11/8/2005)							
Location	0-6C"	6-12"	12-18"	18-24"	24-30"	30-36"	36-42"	42-48"
Agland	30.7	10.7	10.8	17.7	14.4	4.6	11.2	10.2

Table 6
Background Soil Analyses - Fertilizer Application Sites

Parameter	Agland # 1	Agland # 2	Agland # 3	Agland # 4	North Meadow	South Meadow
Inorganic Analyses						
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
Radiochemical Analyses						
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
Metals Analyses						
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
Inorganic Analyses						
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
Radiochemical Analyses						
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
Metals Analyses						
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

Table 7
Annual Post-Season Soil Analyses - Fertilizer Application Sites

Parameter	Agland # 1 0 - 0.5 ft	Agland # 1 0.5 - 1.0 ft	Agland # 1 1.0 - 1.5 ft	Agland # 1 1.5 - 2.0 ft	Agland # 1 2.0 - 2.5 ft	Agland # 1 2.5 - 3.0 ft
Inorganic Analyses						
Ammonia (as N), mg/kg	7.5	10.3	2.3	5	1.9	2.2
Nitrate (as N), mg/kg	19.7	10.7	10.8	17.7	14.4	4.6
TKN, mg/kg	540	224	236	108	47	154
pH	4.55	4.87	5.51	5.52	5.87	6.54
Radiochemical Analyses						
Radium-226 pCi/g	0.949 ± 0.21	0.691 ± 0.188	1.17 ± 0.238	1.51 ± 0.315	0.624 ± 0.300	0.620 ± 0.139
Uranium, µg/g	1.88	1.61	1.68	3.22	1.75	1.87
Metals Analyses						
Arsenic, mg/kg	< 0.539	< 0.521	< 0.533	< 0.520	< 0.552	< 0.556
Cadmium, mg/kg	< 0.647	< 0.626	< 0.640	< 0.624	0.773	1.33
Chromium, mg/kg	1.83	1.88	1.71	0.832	3.2	7.44
Copper, mg/kg	2.59	2.61	2.35	2.5	1.99	3.56
Lead, mg/kg	6.26	6.67	5.44	4.37	6.4	9.67
Mercury, mg/kg	< 0.25	< 0.25	< 0.24	< 0.24	< 0.24	< 0.24
Molybdenum, mg/kg	16.5	1.88	< 0.747	< 0.728	< 0.773	< 0.778
Nickel, mg/kg	4.42	3.65	2.56	1.98	3.98	6.89
Phosphorus, mg/kg	257	211	267	254	374	409
Potassium, mg/kg	689	746	782	670	1160	2090
Selenium, mg/kg	< 0.755	< 0.730	< 0.747	< 0.728	< 0.773	< 0.778
Zinc, mg/kg	17	16.7	15.6	12.4	19.7	31.4

Parameter	Agland # 1 3.0 - 3.5 ft	Agland # 1 3.5 - 4.0 ft	Agland # 1 Composite	Agland #2 Composite	Agland # 3 Composite	Agland # 1 0-0.5' Dup
Inorganic Analyses						
Ammonia (as N), mg/kg	2	1.9	5.4	3.7	3.9	7.8
Nitrate (as N), mg/kg	11.2	10.2	30.7	32.2	26.8	18.6
TKN, mg/kg	85.3	117	596	1650	677	335
pH	6.53	6.56	4.75	5.87	6.26	5.35
Radiochemical Analyses						
Radium-226 pCi/g	1.16 ± 0.235	1.05 ± 0.223	1.18 ± 0.221	0.847 ± 0.208	0.584 ± 0.135	0.36 ± 0.272
Uranium, µg/g	2.03	1.91	1.72	2.03	1.99	1.92
Metals Analyses						
Arsenic, mg/kg	< 0.570	< 0.554	0.949	< 0.541	< 0.496	1.09
Cadmium, mg/kg	1.48	1.55	< 0.633	< 0.650	< 0.595	< 0.656
Chromium, mg/kg	7.64	7.2	2.22	4.12	3.67	2.62
Copper, mg/kg	17.1	4.54	3.48	2.17	< 0.794	25.2
Lead, mg/kg	10.8	9.08	7.8	6.93	5.75	8.31
Mercury, mg/kg	< 0.24	< 0.24	< 0.23	0.33	< 0.24	< 0.24
Molybdenum, mg/kg	< 0.798	< 0.776	14.3	11	5.95	18.4
Nickel, mg/kg	7.53	7.09	3.27	2.17	4.36	3.17
Phosphorus, mg/kg	417	421	252	162	135	305
Potassium, mg/kg	2170	2170	757	303	308	679
Selenium, mg/kg	< 0.798	< 0.776	< 0.738	< 0.758	< 0.694	< 0.766
Zinc, mg/kg	34.8	32.9	18.3	10.3	8.73	17.1

TABLE 8

Forage Analyses

Location	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
Sequoyah Acreage																
Agland I	07/13/05	< 0.533	4.37	< 0.747	7.47	84.4	64.5	30.4	4.69	1.92	< 0.747	24.8	0.037	0 ± 0.011	0.011 ± 0.010	-
Agland II-1	10/03/05	< 0.526	3.16	< 0.736	7.57	121	55.7	39.5	11.1	1.95	< 0.736	37.4	0.029	0.035 ± 0.013	0.019 ± 0.007	1310
Agland II-2	10/03/05	< 0.534	2.99	< 0.748	9.40	96.8	83.0	18.6	9.62	1.80	< 0.748	46.0	0.015	0.003 ± 0.010	0.014 ± 0.007	1010
Caution Levels[1]		100	150	10	100	1000	1000	20	50	30	50	500	-	-	-	2800

[1] 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.