Linearity Test Report

Gainesville Renewable Energy Center (GREC) 20001 Northwest 13th St Gainesville, FL 32653

> Facility ID: 57241 Emission Unit ID: BFB1

Test Performed by: Charles Allan Dick, Trace Environmental Inc.

Linearity Test

Gainesville Renewable	Energy Center (GREC)
Gainesville	e, Florida
Facility ID	Unit ID
57241	BFB1

Cycle 1		Test	Date:		November	7, 2013		
	J	Start Time:	13:33:00	E	ndTime:	15:53:00		
Analyzer	Time	Level	Target	Actual	Span	ABS Err	% CRM	Se
	14:43:00	Low	13.60	10.000	50	3.60	0.26	
HCL, Hydrogen Cloride	14:56:00	Mid	28.00	26.000	50	2.00	0.07	
	15:07:00	High	41.00	44.000	50	3.00	0.07	
Analyzer	Time	Level	Target	Actual	Span	ABS Err	% CRM	Si
	15:15:00	Low	10.18	10.000	40	0.18	0.02	
SO2, Sulphur Dioxide	15:22:00	Mid	22.50	23.000	40	0.50	0.02	
	15:29:00	High	35.90	38.000	40	2.10	0.06	
Analyzer	Time	Level	Target	Actual	Span	ABS Err	% CRM	Si
Analyzer	15:33:00	Low	49.30	50.000	200	0.70	0.01	30
CO. Carbon Monoxide	15:37:00	Mid	109.70	112.000	200	2.30	0.01	
co, carbon wionoxide	15:41:00	High	182.40	183.000	200	0.60	0.02	
	13.41.00	riigii	182.40	183.000	200	0.00	0.00	
Analyzer	Time	Level	Target	Actual	Span	ABS Err	% CRM	S
	15:33:00	Low	30.30	30.000	120	0.30	0.01	
NOx, Oxides of Nitrogen	15:37:00	Mid	66.00	66.000	120	0.00	0.00	
	15:41:00	High	108.90	109.000	120	0.10	0.00	
Analyzer	Time	Level	Target	Actual	Span	ABS Err	% CRM	Si
	15:44:00	Low	6.03	5.900	25	0.13	0.02	
O2 wet	15:49:00	Mid	14.05	13.900	25	0.15	0.01	
	15:53:00	High	20.62	20.500	25	0.12	0.01	
Analyzer	Time	Level	Target	Actual	Span	ABS Err	% CRM	S
-	15:44:00	Low	6.03	6.000	25	0.03	0.00	
					THE PARTY OF THE P			The state of the s
O2 dry	15:49:00	Mid	14.05	14.000	25	0.05	0.00	

Data Summary Report

Company:

GREC Gainesville, Fl

10001 Northwest 13th St

Gainesville, FL 32653

Data Group: Report Name: All Data Groups

Summary (Linearity)

Start of Report: 11/07/2013 13:33

End of Report: 11/07/2013 15:55



Cycle 1 Start 13:33

Validation: All Available Data

Group#-Channel#	G1-C6	G1-C5	G1-C4	G1-C3	G1-C1	G1-C2	G1-C13	G1-C1
Long Descrip.	1-Min HCL	1-Min SO2	1-Min NOx	1-Min CO	1-Min 02	1-Min 02	1-Min 02	Moistur
Short Descrip.	HCL	S02	NOx	CO	02 Wet	O2 Dry	02 Wet	Moistur
Units	ppm	ppm	ppm	ppm	8	8	엉	
Range	0-50	0-40	0-120	0-200	0-25	0-25	0-25	0-10
11/07/2013 13:33	6.00	0.0D	0 D	1 D	3.3D	0.0D	3.4	-10
11/07/2013 13:34	13.00	0.0 D	0 D	1 D	3.2D	0.0 D	3.4	110
11/07/2013 13:35	17.00	0.0 D	0 D	1 D	3.2D	0.0 D	3.3	110
11/07/2013 13:36	20.00	0.0 D	0 D	0 D	3.2D	0.0 D	3.3	110
11/07/2013 13:37	22.00	0.0 D	0 D	0 D	3.2D	0.0 D	3.3	110
11/07/2013 13:38	22.00	0.0 D	0 D	0 D	3.2D	0.0 D	3.3	110
11/07/2013 13:39	22.00	0.0 D	0 D	0 D	3.2D	0.0 D	3.3	110
11/07/2013 13:40	22.00	0.0 D	0 D	0 D	2.1D	0.0 D	2.2	110
11/07/2013 13:41	23.00	0.0 D	50 D	27 D	2.3D	3.1D	2.4	22
11/07/2013 13:42	12.00	0.0 D	63 D	34 D	2.4D	3.8D	2.6	35
11/07/2013 13:43	4.00	0.0 D	63 D	29 D	2.3D	3.8D	2.4	40
11/07/2013 13:44	2.00	0.0 D	63 D	31 D	2.2D	3.8D	2.3	43
11/07/2013 13:45	2.00	0.0 D	62 D	42 D	1.8 D	3.4D	1.9	47
11/07/2013 13:46	1.00	0.0 D	63 D	44 D	1.8 D	3.4D	1.9	47
11/07/2013 13:47	1.00	0.0 D	63 D	39 D	1.9D	3.4D	2.0	4 6
11/07/2013 13:48	1.00	0.0 D	62 D	45 D	2.1D	3.5D	2.2	41
11/07/2013 13:49	1.00	0.0 D	63 D	32 D	2.2D	3.8D	2.4	42
11/07/2013 13:50	1.00	0.0 D	63 D	29 D	2.3D	3.8D	2.4	41
11/07/2013 13:51	0.00	0.0 D	63 D	31 D	2.2D	3.9D	2.3	45
11/07/2013 13:52	1.00	0.0 D	63 D	38 D	2.1D	3.7D	2.2	44
11/07/2013 13:53	1.00	0.0 D	63 D	29 D	2.1D	3.9D	2.2	45
11/07/2013 13:54	0.00	0.0 D	62 D	45 D	1.7D	3.5D	1.8	51
11/07/2013 13:55	1.00	0.0 D	62 D	46 D	2.1D	3.6D	2.2	42
11/07/2013 13:56	0.00	0.0 D	63 D	30 D	2.1D	3.9D	2.3	45
11/07/2013 13:57	0.00	0.0 D	62 D	36 D	2.0 D	3.6D	2.1	46
11/07/2013 13:58	0.00	0.0 D	62 D	38 D	2.0 D	3.7D	2.1	46
11/07/2013 13:59	1.00	0.0 D	63 D	43 D	2.0 D	3.7D	2.1	47
11/07/2013 14:00	0.00	0.0 D	62 D	48 D	1.8D	3.5D	1.9	48
11/07/2013 14:01	0.00	0.0 D	63 D	39 D	2.0 D	3.7D	2.1	47
11/07/2013 14:02	0.00	0.0 D	63 D	48 D	2.0 D	3.6D	2.2	44
11/07/2013 14:03	0.00	0.0 D	63 D	30 D	2.2D	3.9D	2.3	44
11/07/2013 14:04	0.00	0.0 D	63 D	30 D	2.2D	3.9D	2.3	44
11/07/2013 14:05	0.00	0.0 D	62 D	47 D	1.7D	3.6D	1.8	54
11/07/2013 14:06	0.00	0.0 D	60 D	84 D	1.6D	3.4D	1.8	52
11/07/2013 14:07	0.00	0.0 D	61 ⁻ D	73 D	1.7 D	3.4D	1.8	51
11/07/2013 14:08	0.00	0.0 D	60 D	68 D	1.6D	3.5D	1.8	53
11/07/2013 14:09	0.00	0.0 D	60 D	71 D	1.7D	3.4D	1.8	51
11/07/2013 14:10	0.00	0.0 D	61 D	50 D	1.9D	3.6D	2.0	47
11/07/2013 14:11	0.00	0.0 D	61 D	41 D	2.1D	3.9D	2.2	47
11/07/2013 14:12	0.00	0.0 D	61 D	58 D	1.5D	3.5D	25.0	56
11/07/2013 14:13	0.00	0.0 D	61 D	81 D	1.5D	3.3D	25.0	53

Group#-Channel#	G1-C6	G1-C5	G1-C4	G1-C3	G1-C1	G1-C2	G1-C13	G1-C14
Long Descrip.	1-Min HCL	1-Min SO2	1-Min NOx	1-Min CO	1-Min 02	1-Min 02	1-Min 02	Moisture
Short Descrip.	HCL	SO2	NOx	СО	02 Wet	O2 Dry	02 Wet	Moisture
Units	ppm	ppm	ppm	ppm	90	9	90	
Range	0-50	0-40	0-120	0-200	0-25	0-25	0-25	0-100
11/07/2013 14:14	0.00	0.0D		70 D	1.5D	3.4D	25.0	55
11/07/2013 14:15	0.00	0.0D		75 D	1.8 D	3.4D	25.0	48
11/07/2013 14:16	0.00	0.0D		56 D	2.0 D	3.7 D	25.0	46
11/07/2013 14:17	0.00	0.0D		63 D	2.0 D	3.8D	25.0	48
11/07/2013 14:18	0.00	0.0D		83 D	1.8 D	3.6D	25.0	49
11/07/2013 14:19	0.00	0.0D	61 D	59 D	1.8 D	3.8D	25.0	51
11/07/2013 14:20	0.00	0.0D	60 D	89 D	1.6D	3.4D	25.0	52
11/07/2013 14:21	0.00	0.0D	59 D	73 D	2.0 D	3.7D	25.0	46
11/07/2013 14:22 11/07/2013 14:23	0.00	0.0D	59 D	60 D	1.8D	3.6D	25.0	51
	0.00	0.0D	59 D	56 D	1.6D	3.4D	25.0	53
11/07/2013 14:24	0.00	0.0D	59 D	59 D	1.7D	3.5D	1.8	51
11/07/2013 14:25	0.00	0.0D	60 D	58 D	1.5D	3.4D	1.6	56
11/07/2013 14:26	0.00	0.00	60 D	80 D	1.6D	3.3D	1.8	50
11/07/2013 14:27	0.00	0.0D	61 D	58 D	1.8D	3.6D	2.1	48
11/07/2013 14:28	0.00	0.0D	61 D	76 D	1.8D	3.7D	2.2	50
11/07/2013 14:29	0.00	0.00	61 D	78 D	1.6D	3.5D	2.6	54
11/07/2013 14:30 11/07/2013 14:31	0.00	0.00	61 D	70 D	1.9D	3.7D	2.9	47
11/07/2013 14:31	0.00	0.00	38 D	42 D	1.2D	2.4D	2.1	-10
11/07/2013 14:32	0.00	0.0D	13 D 0 D	12 D	2.5D	0.7D	3.3	-10
11/07/2013 14:33	0.00	0.00	0 D	1 D	4.0D	0.0D	4.8	110
11/07/2013 14:34	0.00	0.0D	0 D	0 D	3.7D	0.0D	4.5	110
11/07/2013 14:36	1.00	0.0D	0 D	0 D	3.6D	0.0D	4.4	110
11/07/2013 14:37	3.00	0.0D	0 D	0 D	3.5 D 3.4 D	0.0D 0.0D		110
11/07/2013 14:38	5.00	0.0D	0 D	1 D	3.4D	0.0D	4.2	110
11/07/2013 14:39	8.00	0.0D	0 D	1 D	3.4D	0.0D	4.2	110
11/07/2013 14:40	10.00	0.0D	0 D	1 D	3.4D	0.0D	4.2	110 110
11/07/2013 14:41	10.00	0.0D	0 D	0 D	3.4D	0.0D	4.2	110
11/07/2013 14:42	10.00	0.0D	0 D	0 D	3.4D	0.0D	4.2	110
11/07/2013 14:43	10.00	0.0D	0 D	1 D	3.1D	0.0D	4.0	110
11/07/2013 14:44	11.00	0.0D		1 D	3.4D	0.0D	4.2	110
11/07/2013 14:45	16.00		0 D	1 D	3.4D	0.0D		110
11/07/2013 14:46	21.00	0.0 D		1 D	3.5D	0.0D		-10
11/07/2013 14:47	22.00	0.0 D		0 D	3.5D	0.0D	4.3	-10
11/07/2013 14:48	23.00	0.0 D		0 D	3.5D	0.0D	4.4	-10
11/07/2013 14:49	23.00	0.0D		1 D	3.6D	0.0D	4.4	-10
11/07/2013 14:50	24.00	0.0D		0 D	3.7D	0.0D	4.5	-10
11/07/2013 14:51	24.00	0.0D	0 D	1 D	3.7D	0.0D	4.5	110
11/07/2013 14:52	24.00	0.0D	0 D	1 D	3.7D	0.0D	4.5	110
11/07/2013 14:53	24.00	0.0D	0 D	1 D	3.7D	0.0D	4.5	110
11/07/2013 14:54	25.00	0.0D	0 D	1 D	3.7D	0.0D	4.5	110
11/07/2013 14:55	25.00	0.0D	0 D	0 D	3.3D	0.0D	4.1	-10
11/07/2013 14:56	26.00	0.0D	0 D	0 D	3.6D	0.0 D	4.4	110
11/07/2013 14:57	37.00	0.0D	0 D	1 D	3.5D	0.0D	4.3	110
11/07/2013 14:58	41.00	0.0D	0 D	0 D	3.4D	0.0D	4.2	110
11/07/2013 14:59	42.00	0.0D	0 D	1 D	3.3D	0.0D	4.1	110
11/07/2013 15:00	43.00	0.0D	0 D	1 D	3.2D	0.0D	4.0	110
11/07/2013 15:01	43.00	0.0D	0 D	1 D	3.1D	0.0D	3.9	110
11/07/2013 15:02	43.00	0.0D	0 D	0 D	3.0D	0.0 D	3.8	110
11/07/2013 15:03	44.00	0.0 D	0 D	0 D	2.9D	0.0D	3.7	110
11/07/2013 15:04	44.00	0.0D	0 D	0 D	2.8 D	0.0 D	3.6	110
11/07/2013 15:05	44.00	0.0 D	0 D	0 D	2.6D	0.0D	3.5	110

Group#-Channel#	G1-C6	G1-C5	G1-C4	G1-C3	G1-C1	G1-C2	G1-C13	G1-C14
Long Descrip.	1-Min HCL	1-Min SO2	1-Min NOx	1-Min CO	1-Min 02	1-Min 02	1-Min 02	Moisture
Short Descrip.	HCL	SO2	NOx	CO	02 Wet	02 Dry	02 Wet	Moisture
Units	ppm	ppm	ppm	ppm	8	8	olo	
Range	0-50	0-40	0-120	0-200	0-25	0-25	0-25	0-100
11/07/2013 15:06	44.00	0.0D	0 D	0 D	2.5D	0.0D	3.4	110
11/07/2013 15:07	44.00	0.0 D	0 D	0 D	1.7 D	1.4D	2.5	110
11/07/2013 15:08	20.00	0.0 D	. 0 D	1 D	0.3D	0.2D	1.2	-10
11/07/2013 15:09	6.00	5.0 D	0 D	0 D	0.3D	0.0D	1.2	110
11/07/2013 15:10	3.00	8.0D	0 D	0 D	0.3D	0.0D	1.2	110
11/07/2013 15:11	2.00	9.0 D	0 D	0 D	0.3D	0.0D	1.2	110
11/07/2013 15:12	2.00	9.0D	0 D	0 D	0.3D	0.0D	1.2	-10
11/07/2013 15:13	2.00	9.0D	0 D	0 D	0.3D	0.0D	1.2	-10
11/07/2013 15:14	2.00	10.0D	0 D	1 D	0.3D	0.1D	1.2	-10
11/07/2013 15:15	1.00	10.0 D	0 D	0 D	0.4D	0.0D	1.3	110
11/07/2013 15:16	2.00	16.0D	0 D	0 D	1.1D	0.0D	1.9	110
11/07/2013 15:17	1.00	20.0D	0 D	0 D	0.9D	0.0D	1.7	110
11/07/2013 15:18	1.00	22.0 D	0 D	0 D	0.8D	0.0D	1.7	110
11/07/2013 15:19	1.00	22.0 D	0 D	0 D	0.9D	0.0D	1.8	110
11/07/2013 15:20 11/07/2013 15:21	1.00	23.0D	0 D	0 D	0.9D	0.0D	1.8	110
	1.00	23.0 D	0 D	1 D	0.9D	0.0D	1.8	110
11/07/2013 15:22	1.00	23.0 D	0 D	0 D	1.5D	0.0D	2.3	110
11/07/2013 15:23 11/07/2013 15:24	1.00	29.0D	0 D	0 D	1.5D	0.0D	2.3	110
11/07/2013 15:24	1.00	35.0D	0 D	0 D	1.4D	0.0D	2.2	110
11/07/2013 15:26	1.00	37.0 D	0 D 0 D	0 D 1 D	1.3D	0.0D	2.2	110
11/07/2013 15:27	1.00	37.0D	0 D	0 D	1.3D	0.0D	2.2	110
11/07/2013 15:27	1.00	37.0D	0 D	0 D	1.3D	0.0D	2.1	110
11/07/2013 15:29	1.00	38.0 D	0 D	2 D	1.2D 0.9D	0.0D 0.0D	2.1	110
11/07/2013 15:29	1.00	32.0 D	12 D	46 D	1.4D	0.0D	1.8	110
11/07/2013 15:30	1.00	12.0 D	30 D	50 D	3.9D	0.0D	4.7	110 110
11/07/2013 15:32	1.00	4.0 D	30 D	50 D	4.5D	0.0D	5.3	-10
11/07/2013 15:33	1.00	3.0 D	30 D	52 D	4.6D	0.0D	5.4	110
11/07/2013 15:34	1.00	2.0 D	61 D	106D	0.9D	0.0D	1.7	-10
11/07/2013 15:35	0.00	1.0 D	66 D	112 D	0.4D	0.0D	1.2	-10
11/07/2013 15:36	1.00	1.0D	66 D	112 D	0.4D	0.0D	1.2	-10
11/07/2013 15:37	1.00	1.0 D	67 D	114 D	0.3D	0.0D	1.2	-10
11/07/2013 15:38	1.00	1.0 D	104 D	177 D	0.3D	0.0D	1.2	-10
11/07/2013 15:39	1.00	1.0 D	109D	183 D	0.3D	0.0D	1.2	110
11/07/2013 15:40	1.00	1.0 D	109D	183 D	0.3D	0.0D	1.2	110
11/07/2013 15:41	1.00	1.0 D	107 D	176D	2.0 D	0.4D	2.9	-10
11/07/2013 15:42	0.00	1.0D	12 D	18 D	5.9D	5.6D	6.7	-7
11/07/2013 15:43	1.00	0.0D	0 D	1 D	5.9D	6.0 D	6.7	2
11/07/2013 15:44	1.00	0.0D	0 D	1 D	5.9D	6.0 D	6.6	2
11/07/2013 15:45	1.00	0.0D	0 D	1 D	8.4D	6.5 D	9.1	-10
11/07/2013 15:46	1.00	0.0D	0 D	1 D	13.9D	13.4D	14.5	-4
11/07/2013 15:47	0.00	0.0D	0 D	1 D	13.9D	14.0 D	14.5	0
11/07/2013 15:48	0.00	0.0D	0 D	1 D	13.9D	14.0 D	14.5	0
11/07/2013 15:49	1.00	0.0D	0 D	1 D	15.9 D	14.4D	16.5	-10
11/07/2013 15:50	0.00	0.0D	0 D	0 D	20.5D	20.1D	21.0	-2
11/07/2013 15:51	1.00	0.0D	0 D	1 D	20.5 D	20.6D	20.9	0
11/07/2013 15:52	0.00	0.0D	0 D	1 D	20.5D	20.6D	20.9	1
11/07/2013 15:53	0.00	0.0D	0 D	1 D	15.2D	20.3D	15.8	26
11/07/2013 15:54	3.00	0.0D	51 D	45 D	2.5D	5.6D	3.3	52
11/07/2013 15:55	5.00	0.0<	60 <	61<	2.2<	3.6<	3.1	39

Period Average =	7.61	3.6	28	29	3.1	2.5	5.6	61
Period Max Value =	44.00	38.0	109	183	20.5	20.6	25.0	110
Period Min Value =	0.00	0.0	0	0	0.3	0.0	1.2	-10
Period Totals =	1.0880E+3	5.2000E+2	4.0340E+3	4.1940E+3	4.4250E+2	3.5590E+2	7.9780E+2	8.7400E+3
Period % Recovery =	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Linearity Test

Gainesville Renewable	Energy Center (GREC)
Gainesville	, Florida
Facility ID	Unit ID
57241	BFB1

	1							
Cycle 2		Test	Test Date:		Novembe			
	1	Start Time:	17:32:00		EndTime:	19:00:00		
Analyzer	Time	Level	Target	Actual	Span	ABS Err	% CRM	Seco
	17:44:00	Low	13.60	10.870	50	2.73	0.20	76
HCL, Hydrogen Cloride	17:57:00	Mid	28.00	24.780	50	3.22	0.12	7
	18:10:00	High	41.00	44.350	50	3.35	0.08	7
Analyzer	Time	Level	Target	Actual	Span	ABS Err	% CRM	Seco
	18:17:00	Low	10.18	9.900	40	0.28	0.03	4
SO2, Sulphur Dioxide	18:25:00	Mid	22.50	23.000	40	0.50	0.02	4
	18:32:00	High	35.90	37.700	40	1.80	0.05	45
Analyzer	Time	Level	Target	Actual	Span	ABS Err	% CRM	Seco
	18:36:00	Low	49.30	50.000	200	0.70	0.01	24
CO, Carbon Monoxide	18:40:00	Mid	109.70	111.000	200	1.30	0.01	24
	18:44:00	High	182.40	184.000	200	1.60	0.01	2
Analyzer	Time	Level	Target	Actual	Span	ABS Err	% CRM	Seco
	18:36:00	Low	30.30	30.000	120	0.30	0.01	24
NOx, Oxides of Nitrogen	18:40:00	Mid	66.00	66.000	120	0.00	0.00	24
	18:44:00	High	108.90	109.000	120	0.10	0.00	24
Analyzer	Time	Level	Target	Actual	Span	ABS Err	% CRM	Seco
	18:48:00	Low	6.03	5.900	25	0.13	0.02	24
O2 wet	18:52:00	Mid	14.05	14.000	25	0.05	0.00	24
	18:56:00	High	20.62	20.400	25	0.22	0.01	24
Analyzer	Time	Level	Target	Actual	Span	ABS Err	% CRM	Seco
	18:48:00	Low	6.03	6.000	25	0.03	0.00	24
					District Control of the Control of t		The second secon	ENDINESSES DE LA COMPTE
O2 dry	18:52:00	Mid	14.05	14.000	25	0.05	0.00	24

Analyzer	Time	Level	Target	Actual	Span	ABS Err	% CRM
	18:48:00	Low	6.03	6.000	25	0.03	0.00
O2 dry	18:52:00	Mid	14.05	14.000	25	0.05	0.00
	18:56:00	High	20.62	20.600	25	0.02	0.00

Data Summary Report

Company:

Data Group:

Report Name:

Start of Report:

GREC Gainesville, Fl

10001 Northwest 13th St

Gainesville, FL 32653

All Data Groups

Summary (Linearity) 11/07/2013 17:30

End of Report: 11/07/2013 19:00



Environmental Systems, Inc.

Cycle 2 Start 17:32

Validation: All Available Data

Group#-Channel#	G1-C6	G1-C5	G1-C4	G1-C3	G1-C1	G1-C2	G1-C13	G1-C14
Long Descrip.	1-Min HCL	1-Min SO2	1-Min NOx	1-Min CO	1-Min 02	1-Min 02	1-Min 02	Moisture
Short Descrip.	HCL	SO2	NOx	CO	02 Wet	O2 Dry	02 Wet	Moisture
Units	ppm	ppm	ppm	ppm	90	90	%	110100010
Range	0-50	0-40	0-120	0-200	0-25	0-25	0-25	0-100
11/07/2013 17:30	0.00	0.0	60	54	2.5	3.9	3.1	37
11/07/2013 17:31	0.00	0.0	59	61	2.4	3.7	3.0	35
11/07/2013 17:32	0.01	0.0<		49<	2.5<	3.9<	3.3	29
11/07/2013 17:33	0.00	0.0 D	21 D	20 D	1.3D	1.6D	1.9	-10
11/07/2013 17:34	0.00	0.0D	0 D	0 D	3.6D	0.0D	4.2	-10
11/07/2013 17:35	0.41	0.0 D	0 D	1 D	4.0 D	0.0D	4.6	110
11/07/2013 17:36	0.22	0.0 D	0 D	1 D	4.0 D	0.0D	4.6	110
11/07/2013 17:37	0.20	0.0 D	0 D	1 D	3.9D	0.0D	4.5	110
11/07/2013 17:38	1.15	0.0D	0 D	0 D	3.8D	0.0D	4.4	110
11/07/2013 17:39	2.68	0.0D	0 D	0 D	3.7D	0.0D	4.3	110
11/07/2013 17:40	4.35	0.0D	0 D	1 D	3.7D	0.0D	4.3	110
11/07/2013 17:41	5.63	0.0D	0 D	0 D	3.7D	0.0D	4.2	110
11/07/2013 17:42	7.22	0.0D	0 D	1 D	3.6D	0.0D	4.2	110
11/07/2013 17:43	9.40	0.0D	0 D	1 D	3.6D	0.0D	4.2	110
11/07/2013 17:44	10.87	0.0D	0 D	0 D	3.6D	0.0D	4.2	110
11/07/2013 17:45	10.64	0.0D	0 D	1 D	2.6D	0.0D	3.2	110
11/07/2013 17:46	12.25	0.0D	0 D	0 D	3.4D	0.0D	3.9	110
11/07/2013 17:47	17.37	0.0D	0 D	0 D	3.3D	0.0D	3.9	110
11/07/2013 17:48	21.61	0.0D	0 D	0 D	3.3D	0.0D	3.9	110
11/07/2013 17:49	22.60	0.0 D	0 D	0 D	3.3D	0.0D	3.9	110
11/07/2013 17:50	22.59	0.0D	0 D	0 D	3.2D	0.0D	3.8	110
11/07/2013 17:51	22.98	0.0D	0 D	0 D	3.2D	0.0D	3.7	110
11/07/2013 17:52	23.46	0.0D	0 D	0 D	3.1D	0.0D	3.7	110
11/07/2013 17:53	23.81	0.0D	0 D	0 D	2.9D	0.0D	3.5	110
11/07/2013 17:54	24.21	0.0D	0 D	0 D	2.8D	0.00	3.4	110
1/07/2013 17:55	24.66	0.0D	0 D	0 D	2.6D	0.0D	3.2	110
1/07/2013 17:56	24.76	0.0D	0 D	0 D	2.5D	0.0D	3.1	110
11/07/2013 17:57	24.78	0.0D	0 D	1 D	2.3D	0.0D	2.9	110
1/07/2013 17:58	25.23	0.0D	0 D	0 D	1.4D	0.0D	2.0	110
1/07/2013 17:59	29.70	0.0D	0 D	1 D	1.9D	0.0D		110
1/07/2013 18:00	39.90		0 D	1 D	1.8D	0.0D	2.4	110
1/07/2013 18:01	42.32	0.0D	0 D	1 D	1.8D			-10
1/07/2013 18:02	43.01	0.0D	0 D	0 D	1.7D	0.0D	2.3	110
1/07/2013 18:03	43.28	0.0D	0 D	0 D	1.6D	0.0D	2.2	110
1/07/2013 18:04	43.83	0.0D	0 D	0 D	1.5D	0.0D	2.1	110
1/07/2013 18:05	44.16	0.0D	0 D	1 D	1.4D	0.0D	2.0	110
1/07/2013 18:06	44.01	0.0D	0 D	1 D	1.3D	0.0D	1.9	110
1/07/2013 18:07	44.43	0.0D	0 D	1 D	1.2D	0.0D	1.8	110
1/07/2013 18:08	44.43	0.0D	0 D	0 D	1.2D	0.0D	1.8	110
1/07/2013 18:09	44.27	0.0D	0 D	1 D	1.1D	0.0D	1.7	110
1/07/2013 18:10	44.35	0.00	0 D	1 D	0.9D	0.0D	1.5	110

Group#-Channel#	G1-C6		G1-C4	G1-C3	G1-C1	G1-C2	G1-C13	G1-C14
Long Descrip.	1-Min HCL	1-Min SO2	1-Min NOx	1-Min CO	1-Min 02	1-Min 02	1-Min 02	Moisture
Short Descrip.	HCL	SO2	NOx	CO	02 Wet	02 Dry	02 Wet	Moisture
Units	ppm	ppm	ppm	ppm	ଚ	9	ofo	
Range	0-50	0-40	0-120	0-200	0-25	0-25	0-25	0-100
11/07/2013 18:11	44.55	0.0D	0 D	1 D	0.3D	0.0D	0.9	-10
11/07/2013 18:12	11.87	3.3D	0 D	1 D	0.3D	0.0 D	0.9	-10
11/07/2013 18:13	5.48	7.6D	0 D	0 D	0.3D	0.0D	0.9	-10
11/07/2013 18:14	3.25	8.9D	0 D	1 D	0.3D	0.0 D	0.9	-10
11/07/2013 18:15	2.30	9.5D	0 D	1 D	0.3D	0.0 D	0.9	-10
11/07/2013 18:16	2.13	9.7D	0 D	0 D	0.3D	0.0 D	0.9	-10
11/07/2013 18:17	1.67	9.9D	0 D	1 D	0.3D	0.0D	0.9	-10
11/07/2013 18:18	1.62	9.9D	0 D	1 D	0.3D	0.0D	0.9	-10
11/07/2013 18:19	1.52	12.8 D	0 D	0 D	0.3D	0.0D	0.9	110
11/07/2013 18:20	1.31	19.7D	0 D	1 D	0.3D	0.0D	0.9	110
11/07/2013 18:21	1.31	21.9D	0 D	1 D	0.3D	0.0D	0.9	110
11/07/2013 18:22	1.09	22.4D	0 D	0 D	0.3D	0.0D	0.9	110
11/07/2013 18:23	0.87	22.8D	0 D	0 D	0.3D	0.0D	0.9	110
11/07/2013 18:24	1.03	22.9D	0 D	1 D	0.3D	0.0D	0.9	110
11/07/2013 18:25	1.14	23.0 D	0 D	0 D	0.3D	0.0D	0.9	110
11/07/2013 18:26	0.91	23.9D	0 D	1 D	0.3D	0.0D	0.9	110
11/07/2013 18:27	0.90	31.4D	0 D	0 D	0.3D	0.0D	0.9	110
11/07/2013 18:28	0.84	36.0D	0 D	0 D	0.3D	0.0D	0.9	110
11/07/2013 18:29	0.74	37.0D	0 D	0 D	0.3D	0.0D	0.9	110
11/07/2013 18:30	0.76	37.5D	0 D	0 D	0.3D	0.0D	0.9	110
11/07/2013 18:31 11/07/2013 18:32	0.70	37.6D	0 D	1 D	0.3D	0.0D	0.9	110
11/07/2013 18:32	0.56	37.7 D	0 D	0 D	0.3D	0.0D	0.9	110
11/07/2013 18:34	0.46	28.1D	4 D 29 D	10 D 49 D	1.0D	0.0D	1.6	-10
11/07/2013 18:35	0.52	9.3D	30 D		4.2D	0.00	4.8	-10
11/07/2013 18:36	0.60	4.0D	30 D	50 D	4.8D	0.0D	5.4	-10
11/07/2013 18:37	0.55	2.4 D	36 D	62 D	5.0 D 2.3 D	0.0D	5.5	-10
11/07/2013 18:38	0.52	1.8D	65 D	110 D	0.3D	0.0D 0.0D	2.9	-10
11/07/2013 18:39	0.45	1.4D	66 D	110 D	0.3D	0.0D	0.9	-10
11/07/2013 18:40	0.43	1.4D	66 D	111D	0.3D	0.0D		-10
11/07/2013 18:41	0.57	1.1D	73 D	125 D	0.3D	0.0D	0.9	-10
11/07/2013 18:42	0.50	1.1D	107 D	181 D	0.3D	0.0D	0.9	-10
11/07/2013 18:43	0.63	1.0 D	107 D	184 D	0.3D	0.0D	0.9	-10 -10
11/07/2013 18:44	0.45	1.0 D	109D	184 D	0.3D	0.0D	0.9	110
11/07/2013 18:45	0.55	0.9D	91 D	148 D	3.4D	1.4D	4.0	110
11/07/2013 18:46	0.07	0.6D	4 D	6 D	5.9D	5.9D	6.5	-1
11/07/2013 18:47	0.55	0.3D	0 D	1 D	5.9D	6.0 D	6.4	2
11/07/2013 18:48	0.56	0.2D	0 D	0 D	5.9D	6.0 D	6.4	2
11/07/2013 18:49	0.57	0.1D	0 D	1 D	10.3D	7.8 D	10.8	-10
11/07/2013 18:50	0.50	0.1D	0 D	1 D	14.0 D	13.8 D	14.3	-10
11/07/2013 18:51	0.57	0.1D	0 D	0 D	13.9D	14.0 D	14.3	0
11/07/2013 18:52	0.28	0.1D	0 D	0 D	14.0 D	14.0 D	14.3	0
11/07/2013 18:53	0.33	0.0D	0 D	1 D	17.4D	15.5 D	17.7	-10
11/07/2013 18:54	0.54	0.0D	0 D	0 D	20.5D	20.4D	20.7	0
11/07/2013 18:55	0.51	0.0D	0 D	1 D	20.4D	20.4D	20.7	1
11/07/2013 18:56	0.48	0.0D	0 D	1 D	20.4D	20.6D	20.6	1
11/07/2013 18:57	0.52	0.0D	6 D	14 D	11.6D	17.6D	12.0	40
11/07/2013 18:58	3.55	0.0D	56 D	65 D	2.4D	4.2D	3.0	42
11/07/2013 18:59	4.64	0.0	59	50	2.5	3.8	3.1	33
11/07/2013 19:00	3.47	0.0	58	56	2.4	3.8	3.0	35

Period Average =	10.57	5.9	13	20	3.3	2.1	3.9	62
Period Max Value =	44.55	37.8	109	184	20.5	20.6	20.7	110
Period Min Value =	0.00	0.0	0	0	0.3	0.0	0.9	-10
Period Totals =	9.6154E+2	5.3790E+2	1.1960E+3	1.7840E+3	3.0410E+2	1.8850E+2	3.5580E+2	5.6250E+3
Period % Recovery =	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Linearity Test

Gainesville Renewable Energy Center (GREC)						
Gainesvill	e, Florida					
Facility ID	Unit ID					
57241	BFB1					

				57241	/		BFB1		
	Cycle 3		Test	Date:		November	7, 2013		
		J	Start Time:	19:00:00	[EndTime:	20:21:00		
1	Analyzer	Time	Level	Target	Actual	Span	ABS Err	% CRM	Secon
Г		19:13:00	Low	13.60	9.800	50	3.80	0.28	600
	HCL, Hydrogen Cloride	19:23:00	Mid	28.00	25.030	50	2.97	0.11	600
L		19:33:00	High	41.00	44.740	50	3.74	0.09	600
1	Analyzer	Time	Level	Target	Actual	Span	ABS Err	% CRM	Secon
Г		19:41:00	Low	10.18	10.000	40	0.18	0.02	450
	SO2, Sulphur Dioxide	19:48:00	Mid	22.50	23.100	40	0.60	0.03	450
L		19:55:00	High	35.90	37.700	40	1.80	0.05	450
A	Analyzer	Time	Level	Target	Actual	Span	ABS Err	% CRM	Secon
Г	•	20:00:00	Low	49.30	50.000	200	0.70	0.01	240
	CO, Carbon Monoxide	20:05:00	Mid	109.70	110.000	200	0.30	0.00	240
L		20:08:00	High	182.40	183.000	200	0.60	0.00	240
A	Analyzer	Time	Level	Target	Actual	Span	ABS Err	% CRM	Second
		20:00:00	Low	30.30	30.000	120	0.30	0.01	240
	NOx, Oxides of Nitrogen	20:05:00	Mid	66.00	66.000	120	0.00	0.00	240
L		20:08:00	High	108.90	109.000	120	0.10	0.00	240
A	Analyzer	Time	Level	Target	Actual	Span	ABS Err	% CRM	Secon
Г		20:12:00	Low	6.03	5.900	25	0.13	0.02	240
	O2 wet	20:16:00	Mid	14.05	13.900	25	0.15	0.01	240
L		20:20:00	High	20.62	20.400	25	0.22	0.01	240
A	Analyzer	Time	Level	Target	Actual	Span	ABS Err	% CRM	Secon
		20:12:00	Low	6.03	6.000	25	0.03	0.00	240
	O2 dry	20:16:00	Mid	14.05	14.000	25	0.05	0.00	240
1		20:20:00	High	20.62	20.600	25	0.02	0.00	240

Data Summary Report

Company:

GREC Gainesville, Fl

10001 Northwest 13th St

Gainesville, FL 32653

Data Group: Report Name: All Data Groups

Summary (Linearity)

11/07/2013 19:00

End of Report:

Start of Report:

11/07/2013 20:25

Environmental Systems, Inc.

Cycle 3 Start 19:00

Validation: All Available Data

Group#-Channel#	G1-C6	G1-C5	G1-C4	G1-C3	G1-C1	G1-C2	G1-C13	G1-C14
Long Descrip.	1-Min HCL	1-Min SO2	1-Min NOx	1-Min CO	1-Min 02	1-Min 02	1-Min 02	Moisture
Short Descrip.	HCL	SO2	NOx	CO	02 Wet	O2 Dry	02 Wet	Moisture
Units	ppm	ppm	ppm	ppm	96	g .	90	
Range	0-50	0-40	0-120	0-200	0-25	0-25	0-25	0-100
11/07/2013 19:00	3.47	0.0	58	56	2.4	3.8	3.0	35
11/07/2013 19:01	2.22	0.0	58	54	2.5	3.7	3.0	33
11/07/2013 19:02	1.79	0.0	57	58	2.3	3.6	2.8	36
11/07/2013 19:03	1.52	0.0	57	71	2.2	3.4	2.8	35
11/07/2013 19:04	1.27 <	0.0<	57 <	70 <	2.1<	3.4<	3.0	25
11/07/2013 19:05	1.70 D	0.0 D	12 D	14 D	0.3D	0.9D	0.9	-10
11/07/2013 19:06	1.32 D	0.0 D	0 D	1 D	0.3D	0.0 D	0.9	-10
11/07/2013 19:07	2.94 D	0.0 D	0 D	1 D	0.3D	0.0 D	0.9	-10
11/07/2013 19:08	4.80 D	0.0 D	0 D	1 D	0.3D	0.0 D	0.9	-10
11/07/2013 19:09	6.65 D	0.0 D	0 D	1 D	0.3D	0.0 D	0.9	-10
11/07/2013 19:10	7.96D	0.0 D	0 D	0 D	0.3D	0.0 D	0.9	-10
11/07/2013 19:11	8.79D	0.0 D	0 D	1 D	0.3D	0.0D	0.9	-10
11/07/2013 19:12	9.50 D	0.0 D	0 D	1 D	0.3D	0.0D	0.9	-10
11/07/2013 19:13	9.80 D	0.0 D	0 D	1 D	0.3D	0.0D	0.9	110
11/07/2013 19:14	10.28 D	0.0 D	0 D	1 D	0.3D	0.0D	0.9	110
11/07/2013 19:15	11.91 D	0.0 D	0 D	1 D	0.3D	0.0D	0.9	-10
11/07/2013 19:16	17.11 D	0.0 D	0 D	0 D	0.3D	0.0D	0.9	110
11/07/2013 19:17	22.37 D	0.0D	0 D	0 D	0.3D	0.0D	0.9	110
11/07/2013 19:18	23.42 D	0.0D	0 D	1 D	0.3D	0.0D	0.9	110
11/07/2013 19:19	24.12 D	0.0D	0 D	1 D	0.3D	0.0D	0.9	110
11/07/2013 19:20	24.47 D	0.0 D	0 D	0 D	0.3D	0.0D	0.9	110
11/07/2013 19:21	24.58 D	0.0D	0 D	1 D	0.3D	0.0D	0.9	110
11/07/2013 19:22	24.83 D	0.0 D	0 D	0 D	0.3D	0.0D	0.9	110
11/07/2013 19:23	25.03 D	0.0D	0 D	1 D	0.3D	0.0D	0.9	110
1/07/2013 19:24	25.10 D	0.0D	0 D	0 D	0.3D	0.0D	0.9	110
11/07/2013 19:25	27.93 D	0.0 D	0 D	0 D	0.3D	0.0D	0.9	110
11/07/2013 19:26	36.43D	0.0 D	0 D	1 D	0.3D	0.0 D	0.9	110
11/07/2013 19:27	42.60 D	0.0 D	0 D	0 D	0.3D	0.0D	0.9	110
11/07/2013 19:28	43.60 D	0.0 D	0 D	1 D	0.3D	0.0D	0.9	110
11/07/2013 19:29	43.94 D	0.0 D	0 D	0 D	0.3D	0.0D	0.9	110
11/07/2013 19:30	44.13 D	0.0 D	0 D	0 D	0.3 D	0.0 D	0.9	110
11/07/2013 19:31	44.39 D	0.0 D	0 D	1 D	0.3D	0.0D	0.9	110
1/07/2013 19:32	44.56D	0.0 D	0 D	1 D	0.3D	0.0D	0.9	110
11/07/2013 19:33	44.74 D	0.0 D	0 D	0 D	0.3D	0.0D	0.9	110
11/07/2013 19:34	44.96D	0.0D	0 D	0 D	0:3D	0.0D	0.9	110
11/07/2013 19:35	39.72D	0.2D	0 D	1 D	0.3D	0.0D	0.9	-10
11/07/2013 19:36	13.07 D	4.3D	0 D	0 D	0.3D	0.0D	0.9	110
1/07/2013 19:37	4.25 D	8.0D	0 D	1 D	0.3D	0.0D	0.9	110
11/07/2013 19:38	2.82D	9.1D	0 D	1 D	0.3D	0.0 D	0.9	-10

Group#-Channel#	G1-C6	G1-C5	G1-C4	G1-C3	G1-C1	G1-C2	G1-C13	G1-C14
Long Descrip.	1-Min HCL	1-Min SO2	1-Min NOx	1-Min CO	1-Min 02	1-Min 02	1-Min 02	Moisture
Short Descrip.	HCL	SO2	NOx	CO	02 Wet	O2 Dry	02 Wet	Moisture
Units	ppm	ppm	ppm	ppm	90	96	90	
Range	0-50	0-40	0-120	0-200	0-25	0-25	0-25	0-100
11/07/2013 19:39	2.34 D	9.6D	0 D	1 D	0.3D	0.0D	0.9	110
11/07/2013 19:40	1.94 D	9.8D	, 0 D	1 D	0.3D	0.0D	0.9	110
11/07/2013 19:41	1.55D	10.0D	0 D	1 D	0.3D	0.0 D	0.9	110
11/07/2013 19:42	1.48 D	10.2D	0 D	2 D	0.3D	0.0D	0.9	110
11/07/2013 19:43	1.50 D	14.0 D	0 D	1 D	0.3D	0.0D	0.9	110
11/07/2013 19:44	1.36D	20.5D	0 D	1 D	0.3D	0.0 D	0.9	110
11/07/2013 19:45	1.01 D	22.2D	0 D	1 D	0.3D	0.0D	0.9	110
11/07/2013 19:46	1.20 D	22.6D	0 D	0 D	0.3D	0.0D	0.9	110
11/07/2013 19:47	1.16D	22.9D	0 D	1 D	0.3D	0.0D	0.9	110
11/07/2013 19:48	0.90 D	23.1D	0 D	0 D	0.3D	0.0D	0.9	110
11/07/2013 19:49	0.80D	23.1D	0 D	0 D	0.3D	0.0D	0.9	110
11/07/2013 19:50	0.92 D	24.5D	0 D	0 D	0.3D	0.0D	0.9	110
11/07/2013 19:51	0.85D	32.7 D	0 D	0 D	0.3D	0.0D	0.9	110
11/07/2013 19:52	0.92D	36.4D	0 D	0 D	0.3D	0.0D	0.9	110
11/07/2013 19:53	0.77 D	37.2D	0 D	1 D	0.3D	0.0D	0.9	110
11/07/2013 19:54	0.79D	37.5D	0 D	0 D	0.3D	0.0D	0.9	110
11/07/2013 19:55	0.70 D	37.7D	0 D	1 D	0.3D	0.0D	0.9	110
11/07/2013 19:56	0.71 D	37.9D	0 D	1 D	0.3D	0.0D	0.9	110
11/07/2013 19:57	0.71 D	37.8D	8 D	15 D	0.6D	0.0D	1.3	110
11/07/2013 19:58	0.68 D	25.4 D	30 D	49 D	2.2D	0.0D	2.7	110
11/07/2013 19:59	0.74 D	8.0D	30 D	50 D	2.4 D	0.0 D	3.0	110
11/07/2013 20:00	0.53D	3.6D	30 D	50 D	2.7 D	0.0 D	3.3	110
11/07/2013 20:01	0.38D	2.1D	40 D	69 D	1.2D	0.0 D	1.8	110
11/07/2013 20:02	0.38D	1.6D	65 D	110 D	0.3D	0.0 D	0.9	110
11/07/2013 20:03	0.52 D	1.3D	66 D	111 D	0.3D	0.0 D	0.9	110
11/07/2013 20:04	0.63 D	1.1D	66 D	111 D	0.3D	0.0 D	0.9	110
11/07/2013 20:05	0.48D	0.9D	78 D	133 D	0.3D	0.0 D	1.0	-10
11/07/2013 20:06	0.44 D	0.9D	108 D	182 D	0.3D	0.0 D	0.9	110
11/07/2013 20:07	0.44 D	0.9D	109 D	183 D	0.3D	0.0D	0.9	110
11/07/2013 20:08	0.41D	0.9D	109 D	183 D	0.3D	0.0D	0.9	110
11/07/2013 20:09	0.21D	0.8D	79 D	126 D	4.2D	2.2D	4.7	110
11/07/2013 20:10	0.29D	0.5D	2 D	4 D	6.0D	5.9D	6.5	-1
11/07/2013 20:11	0.54D	0.2D	0 D	1 D	5.9D	6.0 D	6.5	1
11/07/2013 20:12	0.53D	0.2D	0 D	1 D	5.9D	6.0 D	6.4	2
11/07/2013 20:13	0.55D	0.2D	0 D	1 D	11.3D	8.9D	11.7	-10
11/07/2013 20:14	0.46D	0.1D	0 D	0 D	14.0 D	13.9D	14.3	-1
11/07/2013 20:15	0.46D	0.1D	0 D	0 D	13.9D	14.0 D	14.3	0
11/07/2013 20:16	0.50 D	0.1D	0 D	1 D	13.9D	14.0 D	14.3	0
11/07/2013 20:17	0.43D	0.1D	0 D	1 D	18.2D	16.4D	18.5	-10
11/07/2013 20:18 11/07/2013 20:19	0.38D	0.0D	0 D	1 D	20.4D	20.5D	20.6	0
11/07/2013 20:19	0.43D	0.0D	0 D	1 D	20.4D	20.6D	20.7	1
11/07/2013 20:20	0.08D	0.0D	0 D	0 D	20.4D	20.6D	20.7	1
11/07/2013 20:21	0.94 D 3.97 D	0.0D	15 D	4 D	9.8D	16.1D	10.2	44
11/07/2013 20:22	5.94 D	0.0D 0.1D	68 D 70 D	13 D	3.3D	5.0D	3.9	33
11/07/2013 20:23	3.94 D	0.1D	70 D	13 D	3.3D	4.6D	3.9	27
11/07/2013 20:24	2.95D	0.0D	70 D	14 D	3.5D	4.7D	4.0	26
11/0//2013 20.23	2.950	0.00	70 D	14 D	3.3D	4.6D	3.9	27

Period Average =	9.58	6.3	16	21	2.5	2.4	3.1	70
Period Max Value =	44.96	37.9	109	183	20.4	20.6	20.7	110
Period Min Value =	0.08	0.0	0	0	0.3	0.0	0.9	-10
Period Totals =	8.2379E+2	5.4040E+2	1.4120E+3	1.7960E+3	2.1600E+2	2.0280E+2	2.6500E+2	6.0140E+3
Period % Recovery =	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100 0