C. R. Bard, Inc.
8195 Industrial Blvd
Covington, GA 30014
770-784-6100

March 23, 2018

Dan McCain
Unit Manager
Industrial Monitoring Program
Georgia Department of Natural Resources
Environmental Protection Division
Air Protection Branch
4244 International Parkway, Suite 120
Atlanta, Georgia 30354-3908

Dear Mr. McCain:

RE: Permit 3841-211-0021-S-03-0 Performance Testing

Enclosed is the Emission Control System Performance Testing Report as required by Section 6 of the above referenced permit. The report demonstrates that our emission control equipment is in compliance with the requirements for destruction efficiency. This report demonstrates compliance for sterilizer chamber vent, and the aeration rooms.

If you have any questions regarding this information, please contact me at (770) 784-6186.

Sincerely,

John LaMontagne
Process Technology Engineer
C.R. Bard, Inc.

cc: N. Carrillo
R. Pasdon
Certified: 70110470000215804684

TEST REPORT TRANSMISSION SUMMARY
(Submit separate summary sheet for each pollutant test report)

Submit to:
Dan McCain, Unit Manager
Industrial Source Monitoring Unit
4244 International Parkway, Suite 120
Atlanta, GA 30354

ISMU Database *(Air Protection Branch use only)*
No.

Facility Name: C.R. Bard Madison Operation

Facility Address: 1211 Mary Magnan Blvd. (Address) Madison (City) 30650 (Zip)

Facility Contact: John LaMontagne Phone No. 770 784-6186

PART A

Emission Point (one only): Aeration Cells

Pollutant (one only): Ethylene Oxide Date test performed: Jan. 25, 2018

Applicable Rule(s), Regulation(s) or Permit Conditions: 3841-211-0021-S-03-0 Part 2.4
(Indicate Permit # and Condition #'s)

Maximum expected operating capacity: 225 pallets

Operating capacity during test: Test 1:129 pallets, Test 2: 177 pallets, Test 3: 225 pallets

Computed allowable emission rate(s) or limitation(s): Reduce to 1 ppm by volume or at least 99%
(Determined for each applicable rule, regulation or permit condition using same units)

Reported emissions to atmosphere: 99.7%
(In same units as rule, regulation or permit condition)

The test report should include a compilation of all CEMS data, control devise parameters and process operating data related to the test.

PART B

For any facility operating under a Part 70 Permit, Condition 8.8.3 of that permit requires the following certification should be signed by a responsible official and included with the report:

I certify that based on my information and belief formed after reasonable inquiry, the statements and information in this report are true, accurate, and complete.

n/a	n/a	n/a	n/a
NAME	**SIGNATURE**	**TITLE**	**DATE**

TEST REPORT TRANSMISSION SUMMARY
(Submit separate summary sheet for each pollutant test report)

Submit to:
Dan McCain, Unit Manager
Industrial Source Monitoring Unit
4244 International Parkway, Suite 120
Atlanta, GA 30354

ISMU Database
(Air Protection Branch use only)
No.

Facility Name: C.R. Bard Madison Operation

Facility Address: 1211 Mary Magnan Blvd. (Address) Madison (City) 30650 (Zip)

Facility Contact: John LaMontagne Phone No. 770 784-6186

PART A

Emission Point (one only): Aeration Cells

Pollutant (one only): Ethylene Oxide Date test performed: Jan. 26, 2018

Applicable Rule(s), Regulation(s) or Permit Conditions: 3841-211-0021-S-03-0 Part 2.3
(Indicate Permit # and Condition #'s)

Maximum expected operating capacity: 24 pallets

Operating capacity during test: 24 pallets

Computed allowable emission rate(s) or limitation(s): Reduce by at least 99%
(Determined for each applicable rule, regulation or permit condition using same units)

Reported emissions to atmosphere: 99.995%
(In same units as rule, regulation or permit condition)

The test report should include a compilation of all CEMS data, control devise parameters and process operating data related to the test.

PART B

For any facility operating under a Part 70 Permit, Condition 8.8.3 of that permit requires the following certification should be signed by a responsible official and included with the report:

I certify that based on my information and belief formed after reasonable inquiry, the statements and information in this report are true, accurate, and complete.

n/a	n/a	n/a	n/a
NAME	**SIGNATURE**	**TITLE**	**DATE**

TABLE 1
ETHYLENE OXIDE CONTROL EFFICIENCY - AERATION OF AN ETHYLENE OXIDE EMISSION CONTROL DEVICE OPERATED BY CR BARD, INC. IN MADISON, GEORGIA ON JANUARY 25, 2018

RUN NUMBER	INJECTION TIME	INLET ETO CONC. (PPM)(1)	OUTLET ETO CONC. (PPM)(2)	ETO CONTROL EFFICIENCY
1(3)	1605	68.7	0.31	99.5488
1	1610	63.2	0.23	99.6361
1	1615	59.5	0.01	99.9832
1	1620	34.7	0.01	99.9712
1	1625	28.2	0.01	99.9645
1	1630	60.7	0.01	99.9835
1	1635	62.6	0.12	99.8083
1	1640	63.4	0.01	99.9842
1	1645	63.7	0.01	99.9843
1	1650	65.6	0.25	99.6189
1	1655	70.2	0.01	99.9858
1	1700	67.3	0.01	99.9851
2(4)	1709	67.5	0.01	99.9852
2	1714	68.2	0.28	99.5894
2	1719	84.0	0.35	99.5833
2	1724	89.2	0.59	99.3386
2	1729	90.4	0.16	99.8230
2	1734	101	0.46	99.5446
2	1739	100	0.81	99.1900
2	1744	104	0.69	99.3365
2	1749	98.5	0.65	99.3401
2	1754	98.7	0.67	99.3212
2	1759	101	0.81	99.1980
2	1804	97.5	0.76	99.2205
3(5)	1810	92.7	0.31	99.6656
3	1815	68.0	0.14	99.7941
3	1820	50.2	0.01	99.9801
3	1825	41.1	0.01	99.9757
3	1830	33.3	0.01	99.9700
3	1835	98.6	0.01	99.9899
3	1840	100	0.60	99.4000
3	1845	108	0.64	99.4074
3	1950	106	0.01	99.9906
3	1855	107	0.01	99.9907
3	1900	110	0.01	99.9909
3	1905	110	0.54	99.5091
TIME-WEIGHTED AVERAGE:		**78.69**	**0.2647**	**99.7108**
		GDNR REQUIRED CONTROL EFFICIENCY:		**99%**

Notes:
(1) - PPM = parts per million by volume
(2) - 0.01 ppm is the quantification limit for the detector used at the outlet.
(3) - Aeration Phase Test Run #1 started at 16:02, ended at 17:02.
(4) - Aeration Phase Test Run #2 started at 17:07, ended at 18:07.
(5) - Aeration Phase Test Run #3 started at 18:08, ended at 19:08.

ECSi

TABLE 2
COMPLIANCE TESTING RESULTS
ETHYLENE OXIDE CONTROL EFFICIENCY AND MASS EMISSIONS
OF AN ETHYLENE OXIDE EMISSION CONTROL SYSTEM
OPERATED BY CR BARD, INC.
IN MADISON, GA
ON JANUARY 26, 2018

EXHAUST PHASE - STERILIZER VACUUM VENT

Run #	Chamber Number	Stack Flow (dscfm) (1)	Average Outlet Conc. (ppm) (2)	Outlet EtO Mass Flow (lbs/min) (3)	Minutes/ Cycle	Outlet EtO Mass Emissions (lbs)	Inlet EtO Mass Emissions (lbs)	EtO Control Efficiency (%)
1	3	18000	0.010	0.0000206	19	0.0003910	74.0	99.9995
2	4	18700	0.010	0.0000214	20	0.0004284	73.5	99.9994
3	6	18600	0.010	0.0000212	19	0.0004031	75.5	99.9995
							Average EtO Control Efficiency:	**99.9995**

Notes: (1) - DSCFM = dry standard cubic feet per minute
(2) - PPM = parts per million by volume
(3) - LBS/MIN = EtO emissions, pounds per minute

ECSi

ECSi, Inc.

Ethylene Oxide Mass Emissions Data and Calculations

CR Bard, Inc. - Madison, Georgia
1-25-18 - Aeration Test Data

DeltaP	SqRtDeltaP	Stack Temp (F)	ppm EtO
Run#1			
0.035	0.1871	236	0.31
0.035	0.1871	228	0.23
0.035	0.1871	245	0.01
0.035	0.1871	249	0.01
0.035	0.1871	248	0.01
0.035	0.1871	246	0.01
0.035	0.1871	238	0.12
0.035	0.1871	235	0.01
0.035	0.1871	235	0.01
0.035	0.1871	233	0.25
0.035	0.1871	238	0.01
0.035	0.1871	241	0.01
Run#2			
0.035	0.1871	231	0.01
0.035	0.1871	232	0.28
0.035	0.1871	227	0.35
0.035	0.1871	221	0.59
0.035	0.1871	219	0.16
0.035	0.1871	226	0.46
0.035	0.1871	227	0.81
0.035	0.1871	225	0.69
0.035	0.1871	224	0.65
0.035	0.1871	219	0.67
0.035	0.1871	216	0.81
0.035	0.1871	213	0.76
Run#3			
0.035	0.1871	244	0.31
0.035	0.1871	260	0.14
0.035	0.1871	259	0.01
0.035	0.1871	261	0.01
0.035	0.1871	255	0.01
0.035	0.1871	238	0.01
0.035	0.1871	233	0.60
0.035	0.1871	233	0.64
0.035	0.1871	235	0.01
0.035	0.1871	238	0.01
0.035	0.1871	233	0.01
0.035	0.1871	227	0.54
Average =			
0.04	0.1871	235.2	0.2647
	=	695	degR

mw =	28.51	
stack area =	12.57	
press =	29.70	
Tstd =	528	
Pstd =	29.92	
Cp =	0.99	
Kp =	85.49	
Velocity =	14.3	ft/sec
Flow =	**7913**	**dscfm**
MWeto =	44.05	
MolVol =	385.32	
ppmv/ft3 =	1000000	
EtO Mass Flow =	**0.0002395**	**lbs/min**
EtO Mass Flow =	**0.014368**	**lbs/hr**

ECSi, Inc.

Ethylene Oxide Mass Emissions Data and Calculations

Run #1 - Chamber 3 (RTO Outlet)
CR Bard, Inc. - Madison, GA
January 26, 2018

DeltaP	SqRtDeltaP	Temp (F)	ppm EtO
0.18	0.4243	242	0.01
0.17	0.4123	244	0.01
0.18	0.4243	242	0.01
0.19	0.4359	243	0.01
0.20	0.4472	241	0.01
0.18	0.4243	239	0.01
0.19	0.4359	238	0.01
0.19	0.4359	237	0.01
0.17	0.4123	236	0.01
0.19	0.4359	233	0.01
0.18	0.4243	235	0.01
0.17	0.4123	233	0.01
0.19	0.4359	234	0.01
0.17	0.4123	233	0.01
Average = 0.1821	0.4268	237.9	**0.010**
	=	698	degR

1-%H2O =	0.97	
mw =	28.54	
stack ID =	48	in.
stack area =	12.57	sq. in.
press =	29.70	
Tstd =	528	
Pstd =	29.92	
Cp =	0.99	
Kp =	85.49	
Velocity =	32.8	ft/sec
Flow =	**18002**	**dscfm**
MWeto =	44.05	
MolVol =	385.32	
ppmv/ft3 =	1000000	
EtO Mass Flow =	**0.0000206**	**lbs/min**
evac start =	1105	
evac stop =	1124	
min/cycle =	19	
EtO Emissions =	**0.0003910**	**lbs/cycle**

INLET CALCULATION:

Pre-Evac:			
	V =	4500	ft3
	P =	27.5	in Hg Abs
	T =	130	degF
	R =	10.73	
	mw =	44.05	
	lbs EtO @ 100% =	422.09	lbs

Post-Evac:			
	V =	4500	ft3
	P =	7.8	in Hg Abs
	T =	129	degF
	R =	10.73	
	mw =	44.05	
	lbs EtO @ 100% =	119.92	lbs

Initial EtO = Scale Wt. =	103.3	lbs
% EtO @ Chamber = Scale Wt. / lbs EtO @ 100% (Pre) =	24.5	%
Final EtO = % EtO @ Chamber X lbs EtO @ 100% (Post) =	29.3	lbs
INLET ETO = Initial EtO - Final EtO =	**74.0**	**lbs**
CONTROL EFFICIENCY =	**99.9995**	**%**

ECSi, Inc.

Ethylene Oxide Mass Emissions Data and Calculations

Run #2 - Chamber 4 (RTO Outlet)
CR Bard, Inc. - Madison, GA
January 26, 2018

DeltaP	SqRtDeltaP	Temp (F)	ppm EtO
0.18	0.4243	224	0.01
0.20	0.4472	225	0.01
0.19	0.4359	225	0.01
0.20	0.4472	223	0.01
0.18	0.4243	224	0.01
0.20	0.4472	220	0.01
0.19	0.4359	222	0.01
0.19	0.4359	222	0.01
0.18	0.4243	221	0.01
0.19	0.4359	221	0.01
0.20	0.4472	220	0.01
0.19	0.4359	220	0.01
0.20	0.4472	217	0.01
0.19	0.4359	218	0.01
0.21	0.4583	218	0.01
Average = 0.1927	0.4389	221.3	**0.010**
	=	681	degR

1-%H2O =	0.97	
mw =	28.54	
stack ID =	48	in.
stack area =	12.57	sq. in.
press =	29.70	
Tstd =	528	
Pstd =	29.92	
Cp =	0.99	
Kp =	85.49	
Velocity =	33.3	ft/sec
Flow =	**18738**	**dscfm**
MWeto =	44.05	
MolVol =	385.32	
ppmv/ft3 =	1000000	
EtO Mass Flow =	**0.0000214**	**lbs/min**
evac start =	1135	
evac stop =	1155	
min/cycle =	20	
EtO Emissions =	**0.0004284**	**lbs/cycle**

INLET CALCULATION:

Pre-Evac:			
	V =	4500	ft3
	P =	27.5	in Hg Abs
	T =	130	degF
	R =	10.73	
	mw =	44.05	
	lbs EtO @ 100% =	422.09	lbs

Post-Evac:			
	V =	4500	ft3
	P =	7.8	in Hg Abs
	T =	128	degF
	R =	10.73	
	mw =	44.05	
	lbs EtO @ 100% =	120.13	lbs

Initial EtO = Scale Wt. =	102.7	lbs
% EtO @ Chamber = Scale Wt. / lbs EtO @ 100% (Pre) =	24.3	%
Final EtO = % EtO @ Chamber X lbs EtO @ 100% (Post) =	29.2	lbs
INLET ETO = Initial EtO - Final EtO =	**73.5**	**lbs**
	a	
CONTROL EFFICIENCY =	**99.9994**	**%**

ECSi, Inc.

Ethylene Oxide Mass Emissions Data and Calculations

Run #3 - Chamber 6 (RTO Outlet)
CR Bard, Inc. - Madison, GA
January 26, 2018

DeltaP	SqRtDeltaP	Temp (F)	ppm EtO
0.19	0.4359	211	0.01
0.20	0.4472	209	0.01
0.20	0.4472	210	0.01
0.19	0.4359	210	0.01
0.18	0.4243	211	0.01
0.18	0.4243	209	0.01
0.18	0.4243	210	0.01
0.19	0.4359	211	0.01
0.18	0.4243	210	0.01
0.17	0.4123	209	0.01
0.18	0.4243	208	0.01
0.19	0.4359	209	0.01
0.18	0.4243	208	0.01
0.19	0.4359	209	0.01
Average = 0.1857	0.4309	209.6	**0.010**
	=	670	degR

1-%H2O =	0.97	
mw =	28.54	
stack ID =	48	in.
stack area =	12.57	sq. in.
press =	29.70	
Tstd =	528	
Pstd =	29.92	
Cp =	0.99	
Kp =	85.49	
Velocity =	32.4	ft/sec
Flow =	**18558**	**dscfm**
MWeto =	44.05	
MolVol =	385.32	
ppmv/ft3 =	1000000	
EtO Mass Flow =	**0.0000212**	**lbs/min**
evac start =	1210	
evac stop =	1229	
min/cycle =	19	
EtO Emissions =	**0.0004031**	**lbs/cycle**

INLET CALCULATION:

Pre-Evac:			
	V =	4500	ft3
	P =	27.4	in Hg Abs
	T =	130	degF
	R =	10.73	
	mw =	44.05	
	lbs EtO @ 100% =	420.56	lbs

Post-Evac:			
	V =	4500	ft3
	P =	7.8	in Hg Abs
	T =	129	degF
	R =	10.73	
	mw =	44.05	
	lbs EtO @ 100% =	119.92	lbs

Initial EtO = Scale Wt. =	105.6	lbs
% EtO @ Chamber = Scale Wt. / lbs EtO @ 100% (Pre) =	25.1	%
Final EtO = % EtO @ Chamber X lbs EtO @ 100% (Post) =	30.1	lbs
INLET ETO = Initial EtO - Final EtO =	**75.5**	**lbs**
CONTROL EFFICIENCY =	**99.9995**	**%**

CR Bard Madison GA - RTO Combustion Chamber Temperature Data
To Support RTO Compliance Testing for Madison Line 6 (7) Expansion
Aeration Cell Testing Note: Recorder time one hour ahead of test time

Date/Time	Messages	Chamber Temp	(ANIN1);Group 1;RTO;~F
1/25/18 16:50		1392.0	
1/25/18 16:51		1382.6	
1/25/18 16:52		1397.9	
1/25/18 16:53		1392.4	
1/25/18 16:54		1382.6	
1/25/18 16:55		1399.0	
1/25/18 16:56		1392.7	
1/25/18 16:57		1384.3	
1/25/18 16:58		1395.4	
1/25/18 16:59		1391.8	
1/25/18 17:00		1383.5	
1/25/18 17:01		1394.5	Run 1 Start
1/25/18 17:02		1393.0	
1/25/18 17:03		1382.9	
1/25/18 17:04		1398.2	
1/25/18 17:05		1393.6	
1/25/18 17:06		1383.8	
1/25/18 17:07		1393.5	
1/25/18 17:08		1398.1	
1/25/18 17:09		1389.3	
1/25/18 17:10		1384.3	
1/25/18 17:11		1396.5	
1/25/18 17:12		1388.8	
1/25/18 17:13		1386.4	
1/25/18 17:14		1399.4	
1/25/18 17:15		1390.3	
1/25/18 17:16		1384.3	
1/25/18 17:17		1394.3	
1/25/18 17:18		1389.3	
1/25/18 17:19		1386.8	
1/25/18 17:20		1397.0	
1/25/18 17:21		1388.9	
1/25/18 17:22		1384.6	
1/25/18 17:23		1396.4	
1/25/18 17:24		1387.9	
1/25/18 17:25		1386.9	
1/25/18 17:26		1397.9	
1/25/18 17:27		1397.2	
1/25/18 17:28		1407.1	
1/25/18 17:29		1393.7	
1/25/18 17:30		1404.2	
1/25/18 17:31		1403.9	
1/25/18 17:32		1426.1	
1/25/18 17:33		1424.5	
1/25/18 17:34		1455.0	
1/25/18 17:35		1439.8	
1/25/18 17:36		1442.1	
1/25/18 17:37		1442.4	
1/25/18 17:38		1435.0	
1/25/18 17:39		1446.3	
1/25/18 17:40		1433.7	
1/25/18 17:41		1448.0	
1/25/18 17:42		1431.8	
1/25/18 17:43		1449.2	
1/25/18 17:44		1434.3	
1/25/18 17:45		1445.4	
1/25/18 17:46		1441.2	
1/25/18 17:47		1434.2	
1/25/18 17:48		1445.1	
1/25/18 17:49		1442.6	
1/25/18 17:50		1436.2	
1/25/18 17:51		1437.5	
1/25/18 17:52		1444.2	
1/25/18 17:53		1444.0	
1/25/18 17:54		1437.0	
1/25/18 17:55		1441.7	
1/25/18 17:56		1445.8	
1/25/18 17:57		1435.3	
1/25/18 17:58		1440.1	
1/25/18 17:59		1447.1	
1/25/18 18:00		1436.0	Avg

1/25/18 18:01	1441.2		Min	Max	1390.9
1/25/18 18:02	1445.0	Run 1 End	1382.6	1399.0	
1/25/18 18:03	1436.5				
1/25/18 18:04	1430.5				
1/25/18 18:05	1425.9				
1/25/18 18:06	1421.9				
1/25/18 18:07	1418.3	Run 2 Start			
1/25/18 18:08	1415.7				
1/25/18 18:09	1412.8				
1/25/18 18:10	1411.8				
1/25/18 18:11	1412.1				
1/25/18 18:12	1412.5				
1/25/18 18:13	1413.6				
1/25/18 18:14	1412.5				
1/25/18 18:15	1411.7				
1/25/18 18:16	1412.0				
1/25/18 18:17	1411.1				
1/25/18 18:18	1409.6				
1/25/18 18:19	1411.1				
1/25/18 18:20	1410.8				
1/25/18 18:21	1407.8				
1/25/18 18:22	1404.7				
1/25/18 18:23	1403.7				
1/25/18 18:24	1400.6				
1/25/18 18:25	1399.3				
1/25/18 18:26	1398.7				
1/25/18 18:27	1396.9				
1/25/18 18:28	1395.8				
1/25/18 18:29	1396.2				
1/25/18 18:30	1394.8				
1/25/18 18:31	1394.9				
1/25/18 18:32	1395.8				
1/25/18 18:33	1395.8				
1/25/18 18:34	1398.3				
1/25/18 18:35	1398.7				
1/25/18 18:36	1398.7				
1/25/18 18:37	1401.5				
1/25/18 18:38	1400.6				
1/25/18 18:39	1400.5				
1/25/18 18:40	1402.8				
1/25/18 18:41	1402.6				
1/25/18 18:42	1400.5				
1/25/18 18:43	1401.5				
1/25/18 18:44	1400.6				
1/25/18 18:45	1394.0				
1/25/18 18:46	1390.6				
1/25/18 18:47	1399.0				
1/25/18 18:48	1395.7				
1/25/18 18:49	1390.4				
1/25/18 18:50	1398.2				
1/25/18 18:51	1397.0				
1/25/18 18:52	1391.8				
1/25/18 18:53	1392.6				
1/25/18 18:54	1399.5				
1/25/18 18:55	1396.8				
1/25/18 18:56	1393.6				
1/25/18 18:57	1389.5				
1/25/18 18:58	1400.9				
1/25/18 18:59	1400.1				
1/25/18 19:00	1392.9				
1/25/18 19:01	1393.7				
1/25/18 19:02	1400.7				
1/25/18 19:03	1394.0				
1/25/18 19:04	1390.5				
1/25/18 19:05	1402.8				
1/25/18 19:06	1397.9				Avg
1/25/18 19:07	1392.4	Run 2 End	Min	Max	1419.8
1/25/18 19:08	1393.5	Run 3 Start	1384.3	1455.0	
1/25/18 19:09	1394.7				
1/25/18 19:10	1397.6				
1/25/18 19:11	1394.1				
1/25/18 19:12	1390.6				
1/25/18 19:13	1398.7				
1/25/18 19:14	1399.7				
1/25/18 19:15	1394.8				

1/25/18 19:16	1390.6				
1/25/18 19:17	1397.5				
1/25/18 19:18	1397.6				
1/25/18 19:19	1392.7				
1/25/18 19:20	1391.8				
1/25/18 19:21	1397.1				
1/25/18 19:22	1396.6				
1/25/18 19:23	1392.5				
1/25/18 19:24	1398.0				
1/25/18 19:25	1401.4				
1/25/18 19:26	1399.5				
1/25/18 19:27	1395.8				
1/25/18 19:28	1393.5				
1/25/18 19:29	1397.5				
1/25/18 19:30	1398.6				
1/25/18 19:31	1398.6				
1/25/18 19:32	1397.2				
1/25/18 19:33	1394.7				
1/25/18 19:34	1396.1				
1/25/18 19:35	1397.9				
1/25/18 19:36	1396.5				
1/25/18 19:37	1397.5				
1/25/18 19:38	1397.6				
1/25/18 19:39	1392.4				
1/25/18 19:40	1399.2				
1/25/18 19:41	1401.9				
1/25/18 19:42	1395.4				
1/25/18 19:43	1392.9				
1/25/18 19:44	1406.4				
1/25/18 19:45	1399.1				
1/25/18 19:46	1393.4				
1/25/18 19:47	1396.6				
1/25/18 19:48	1398.5				
1/25/18 19:49	1398.4				
1/25/18 19:50	1395.7				
1/25/18 19:51	1392.4				
1/25/18 19:52	1402.6				
1/25/18 19:53	1398.6				
1/25/18 19:54	1392.6				
1/25/18 19:55	1397.7				
1/25/18 19:56	1405.3				
1/25/18 19:57	1397.9				
1/25/18 19:58	1391.9				
1/25/18 19:59	1405.1				
1/25/18 20:00	1399.7				
1/25/18 20:01	1393.4				
1/25/18 20:02	1399.0				
1/25/18 20:03	1398.8				
1/25/18 20:04	1392.4				
1/25/18 20:05	1400.2				
1/25/18 20:06	1400.1				Avg
1/25/18 20:07	1393.5		Min	Max	1400.6
1/25/18 20:08	1395.2	Run 3 End	1389.5	1415.7	
1/25/18 20:09	1402.9				
1/25/18 20:10	1395.8				
1/25/18 20:11	1405.6				
1/25/18 20:12	1429.3				
1/25/18 20:13	1431.1				
1/25/18 20:14	1449.3				
1/25/18 20:15	1437.8				
1/25/18 20:16	1420.1				
1/25/18 20:17	1400.5				
1/25/18 20:18	1395.5				
1/25/18 20:19	1398.7				
1/25/18 20:20	1403.6				
1/25/18 20:21	1403.6				
1/25/18 20:22	1402.5				
1/25/18 20:23	1404.5				
1/25/18 20:24	1403.8				
1/25/18 20:25	1402.6				
1/25/18 20:26	1404.5				
1/25/18 20:27	1403.6				
1/25/18 20:28	1402.5				

TABLE 4

CR Bard Madison GA - RTO Combustion Chamber Temperature Data

To Support RTO Compliance Testing for Madison Line 6 (7) Expansion

Testing of first Evac. Note: Recorder time one hour ahead of vessel time

Date/Time	Messages	Chamber Temp (ANIN1);Group 1;RTO;−F			
1/26/18 11:45		1391.0			
1/26/18 11:46		1391.1			
1/26/18 11:47		1390.1			
1/26/18 11:48		1391.1			
1/26/18 11:49		1391.4			
1/26/18 11:50		1390.1			
1/26/18 11:51		1391.1			
1/26/18 11:52		1391.7			
1/26/18 11:53		1390.2			
1/26/18 11:54		1391.9			
1/26/18 11:55		1391.3			
1/26/18 11:56		1390.1			
1/26/18 11:57		1391.0			
1/26/18 11:58		1391.4			
1/26/18 11:59		1389.4			
1/26/18 12:00		1390.4			
1/26/18 12:01		1391.1			
1/26/18 12:02		1389.2			
1/26/18 12:03		1390.5			
1/26/18 12:04		1390.2			
1/26/18 12:05		1388.2	Start Run 1 (Vessel #3)		
1/26/18 12:06		1390.0			
1/26/18 12:07		1394.1			
1/26/18 12:08		1397.9			
1/26/18 12:09		1405.4			
1/26/18 12:10		1415.5			
1/26/18 12:11		1423.9			
1/26/18 12:12		1433.6			
1/26/18 12:13		1444.7			
1/26/18 12:14		1453.4			
1/26/18 12:15		1461.8			
1/26/18 12:16		1469.3			
1/26/18 12:17		1471.3			
1/26/18 12:18		1475.9			
1/26/18 12:19		1479.4			
1/26/18 12:20		1480.3			
1/26/18 12:21		1484.9			
1/26/18 12:22		1486.3			
1/26/18 12:23		1485.3		Min	Max	Avg
1/26/18 12:24		1487.4	End Run 1	1388.2	1487.4	1446.4
1/26/18 12:25		1480.7				
1/26/18 12:26		1450.8				
1/26/18 12:27		1430.9				
1/26/18 12:28		1414.7				
1/26/18 12:29		1403.3				
1/26/18 12:30		1397.3				
1/26/18 12:31		1393.6				
1/26/18 12:32		1391.6				
1/26/18 12:33		1394.4				
1/26/18 12:34		1391.5				
1/26/18 12:35		1388.6	Start Run 2 (Vessel 4)			
1/26/18 12:36		1389.2				

1/26/18 12:37	1391.3				
1/26/18 12:38	1393.0				
1/26/18 12:39	1402.4				
1/26/18 12:40	1412.6				
1/26/18 12:41	1420.2				
1/26/18 12:42	1433.0				
1/26/18 12:43	1445.8				
1/26/18 12:44	1453.2				
1/26/18 12:45	1463.7				
1/26/18 12:46	1473.3				
1/26/18 12:47	1476.3				
1/26/18 12:48	1481.6				
1/26/18 12:49	1486.1				
1/26/18 12:50	1485.8				
1/26/18 12:51	1490.0				
1/26/18 12:52	1491.8				
1/26/18 12:53	1490.4				
1/26/18 12:54	1493.6		Min	Max	Avg
1/26/18 12:55	1492.4	End Run 2	1388.6	1493.6	1450.2
1/26/18 12:56	1482.7				
1/26/18 12:57	1451.9				
1/26/18 12:58	1427.8				
1/26/18 12:59	1411.6				
1/26/18 13:00	1399.6				
1/26/18 13:01	1392.6				
1/26/18 13:02	1388.4				
1/26/18 13:03	1390.3				
1/26/18 13:04	1388.0				
1/26/18 13:05	1385.1				
1/26/18 13:06	1392.0				
1/26/18 13:07	1392.4				
1/26/18 13:08	1388.5				
1/26/18 13:09	1388.8				
1/26/18 13:10	1389.4	Start Run 3 (Vessel 6)			
1/26/18 13:11	1387.4				
1/26/18 13:12	1395.3				
1/26/18 13:13	1405.7				
1/26/18 13:14	1410.9				
1/26/18 13:15	1423.1				
1/26/18 13:16	1436.2				
1/26/18 13:17	1442.5				
1/26/18 13:18	1456.3				
1/26/18 13:19	1466.4				
1/26/18 13:20	1468.1				
1/26/18 13:21	1472.9				
1/26/18 13:22	1478.5				
1/26/18 13:23	1476.8				
1/26/18 13:24	1481.5				
1/26/18 13:25	1486.5				
1/26/18 13:26	1482.6				
1/26/18 13:27	1485.6				
1/26/18 13:28	1489.8		Min	Max	Avg
1/26/18 13:29	1484.5	End Run 3	1387.4	1489.8	1451.0
1/26/18 13:30	1485.0				
1/26/18 13:31	1459.5				
1/26/18 13:32	1430.2				