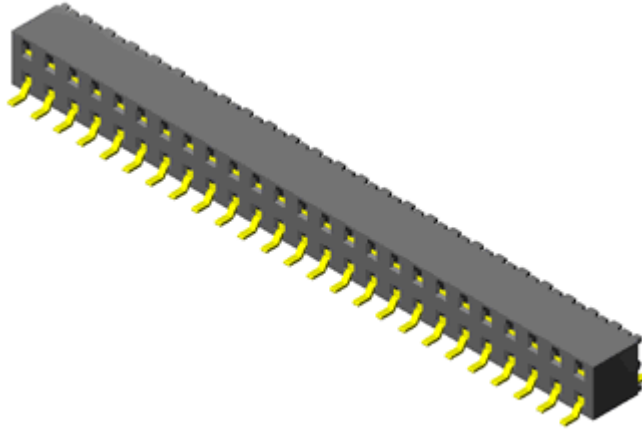




Project Number: N/A		Tracking Code: TC0327-N/A-0220	
Requested by: Phil Eckert		Date: 6/30/2003	Product Rev: N/A
Part #: MMS-120-02-T-DV-A		Lot #: N/A	Tech: Troy Cook Eng: John Tozier
Part description: MMS			Qty to test: 10
Test Start: 07/14/2003	Test Completed: 8/19/2003		



Satin-Tin contact comparison, soldered with and without a Nitrogen blanket

PART DESCRIPTION

**MMS-120-02-T-DV-A
Mated with
TMM-120-01-T-D-SM-A**

CERTIFICATION

All instruments and measuring equipment were calibrated to National Institute for Standards and Technology (NIST) traceable standards according to ISO 10012-1 and ANSI/NCSL 2540-1, as applicable.

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SCOPE

To evaluate Satin-Tin contact system integrity after exposure to typical Pb-free soldering processes. The evaluation will occur on systems soldered with and without the Nitrogen blanket.

APPLICABLE DOCUMENTS

Standards: EIA Publication 364

TEST SAMPLES AND PREPARATION

The two mating components (if applicable) were soldered using AIM TSC-4 lead free alloy using Sn with 3.8%-4% Ag, and 0.5% - 0.7% Cu solder paste using the oven profile .

- 1) All materials were manufactured in accordance with the applicable product specification.
- 2) All test samples were identified and encoded to maintain traceability throughout the test sequences.
- 3) After soldering, the parts were cleaned with the Aqueous Inline Cleaning System (Aqueous Millennium Technologies)

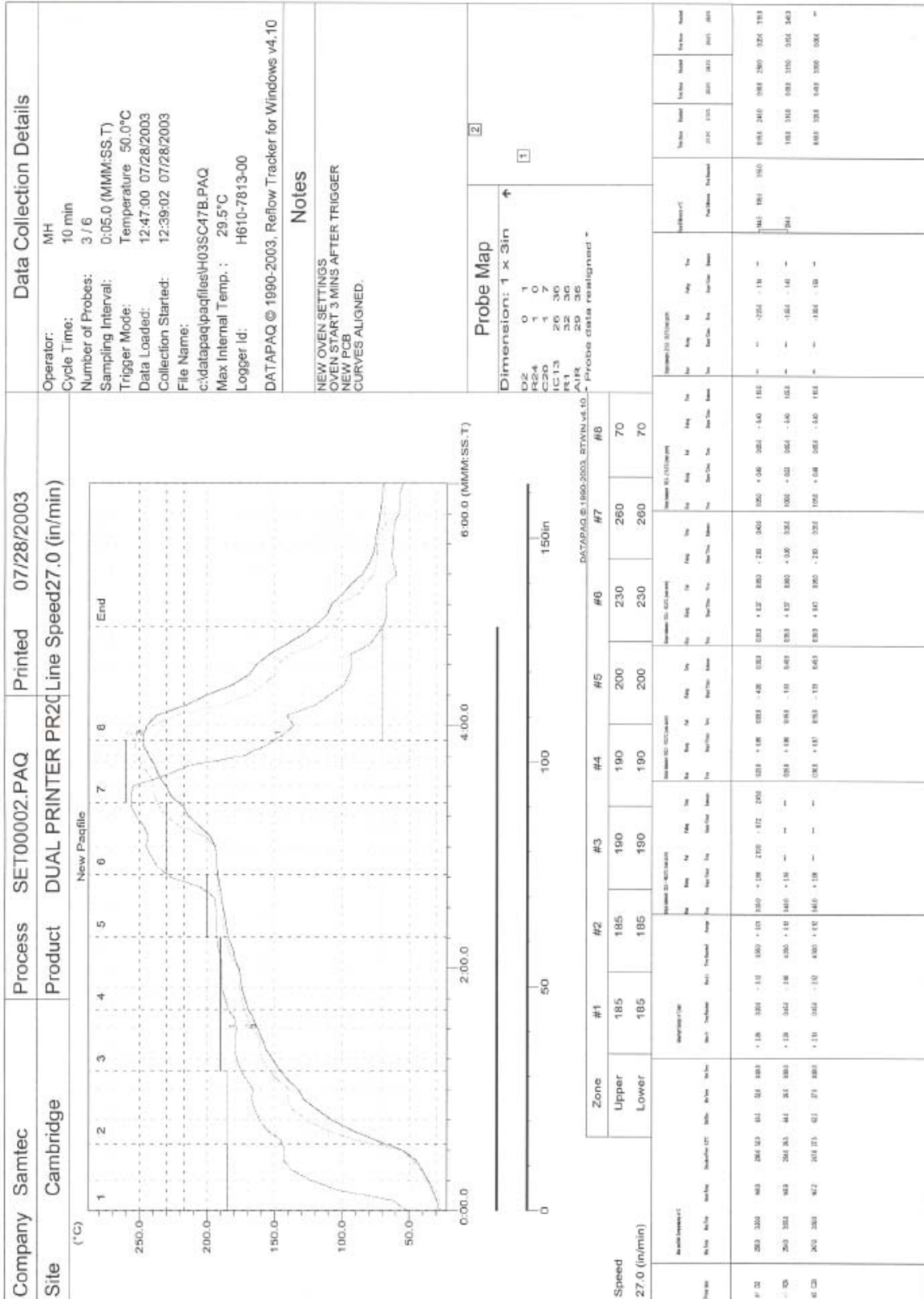
FLOWCHART

TEST STEP	GROUP A 200 Points 480 hour Test Processed in AIR	GROUP B 200 Points 480 hour Test Processed in Nitrogen
01	LLCR-1	LLCR-1
02	Data Review	Data Review
03	Cyclic Humidity, 240 Hours	Cyclic Humidity, 240 Hours
04	LLCR-2	LLCR-2
05	Data Review	Data Review
06	Cyclic Humidity, 240 Hours	Cyclic Humidity, 240 Hours
07	LLCR-3	LLCR-3

**Humidity =EIA-364-31, Test Condition B (240 Hours)
and Method III (+25 ° C to +65 ° C @ 90%RH to 98% RH)
delete steps 7a and 7b**

**LLCR = EIA-364-23, LLCR
use Keithley 580 in the dry circuit mode, 10 mA Max**

OVEN PROFILE



ATTRIBUTE DEFINITION

Following is a brief, simplified description of attributes.

CYCLIC HUMIDITY:

- 1) Reference document: EIA-364-31, *Humidity Test Procedure for Electrical Connectors*.
 - a) Test Condition B, 240 Hours.
 - b) Method III, +25° C to + 65° C, 90% to 98% Relative Humidity excluding sub-cycles 7a and 7b.
- 2) Connectors are mated.
- 3) Test Condition B run twice for a total of 480 hours.
 - a) Intermediate results taken at 240 hours.

LLCR:

- 1) EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets*.
- 2) A computer program, *LLCR 221.exe*, ensures repeatability for data acquisition.
- 3) The following guidelines are used to categorize the changes in LLCR as a result from stressing
 - a) $\leq +5.0$ mOhms: ----- Stable
 - b) +5.1 to +10.0 mOhms:----- Minor
 - c) +10.1 to +15.0 mOhms: ----- Acceptable
 - d) +15.1 to +50.0 mOhms: ----- Marginal
 - e) +50.1 to +2000 mOhms: ----- Unstable
 - f) $>+2000$ mOhms:----- Open Failure

RESULTS**LLCR (200 LLCR test points)**

- **Initial**
 - Air Processed -----4.8 mOhms Max
 - Nitrogen Processed-----6.0 mOhms Max
- **Stressed 240 Hours**
 - <= +5.0 mOhms
 - Air Processed-----200 Points ----- Stable
 - Nitrogen Processed-----200 Points ----- Stable
 - +5.1 to +10.0 mOhms
 - Air Processed-----0 Points ----- Minor
 - Nitrogen Processed-----0 Points ----- Minor
 - +10.1 to +15.0 mOhms
 - Air Processed-----0 Points ----- Acceptable
 - Nitrogen Processed-----0 Points ----- Acceptable
 - +15.1 to +50.0 mOhms
 - Air Processed-----0 Points ----- Marginal
 - Nitrogen Processed-----0 Points ----- Marginal
 - +50.1 to +2000 mOhms
 - Air Processed-----0 Points ----- Unstable
 - Nitrogen Processed-----0 Points ----- Unstable
 - >+2000 mOhms
 - Air Processed-----0 Points ----- Open Failure
 - Nitrogen Processed-----0 Points ----- Open Failure
- **Stressed 480 Hours**
 - <= +5.0 mOhms
 - Air Processed-----200 Points ----- Stable
 - Nitrogen Processed-----200 Points ----- Stable
 - +5.1 to +10.0 mOhms
 - Air Processed-----0 Points ----- Minor
 - Nitrogen Processed-----0 Points ----- Minor
 - +10.1 to +15.0 mOhms
 - Air Processed-----0 Points ----- Acceptable
 - Nitrogen Processed-----0 Points ----- Acceptable
 - +15.1 to +50.0 mOhms
 - Air Processed-----0 Points ----- Marginal
 - Nitrogen Processed-----0 Points ----- Marginal
 - +50.1 to +2000 mOhms
 - Air Processed-----0 Points ----- Unstable
 - Nitrogen Processed-----0 Points ----- Unstable
 - >+2000 mOhms
 - Air Processed-----0 Points ----- Open Failure
 - Nitrogen Processed-----0 Points ----- Open Failure

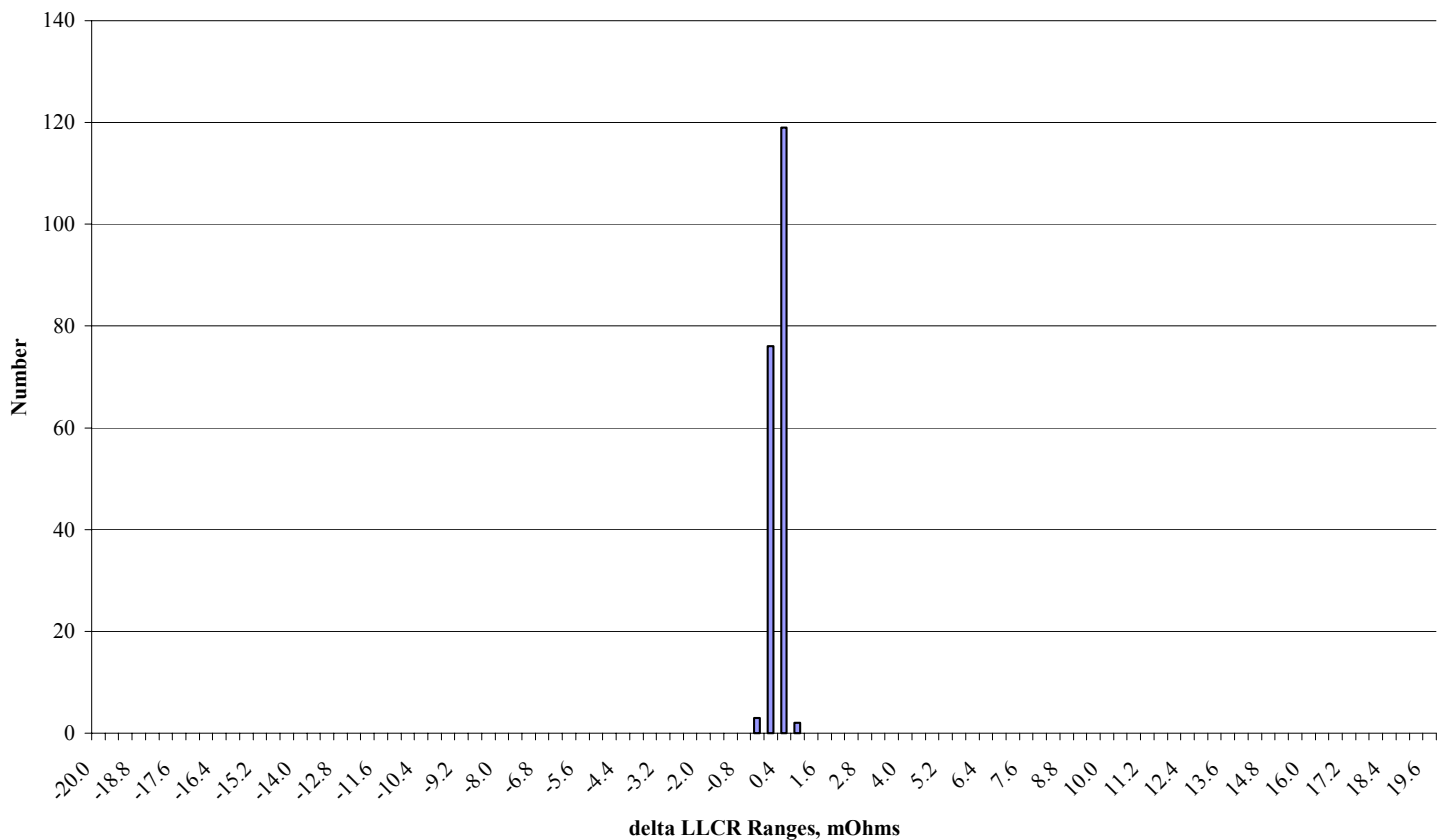
After soldering, parts soldered in the 'open air process' showed slight discoloration compared to those parts soldered in the 'nitrogen blanket process'. Discoloration is seen as a slight 'yellowing' or 'bronzing'.

DATA SUMMARIES**LLCR:**

- 1) A total of 200 points were measured.
- 2) EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets*.
- 3) A computer program, *LLCR 221.exe*, ensures repeatability for data acquisition.
- 4) The following guidelines are used to categorize the changes in LLCR as a result from stressing.
 - a) $\leq +5.0$ mOhms: ----- Stable
 - b) $+5.1$ to $+10.0$ mOhms:----- Minor
 - c) $+10.1$ to $+15.0$ mOhms: ----- Acceptable
 - d) $+15.1$ to $+50.0$ mOhms: ----- Marginal
 - e) $+50.1$ to $+2000$ mOhms ----- Unstable
 - f) $>+2000$ mOhms:----- Open Failure

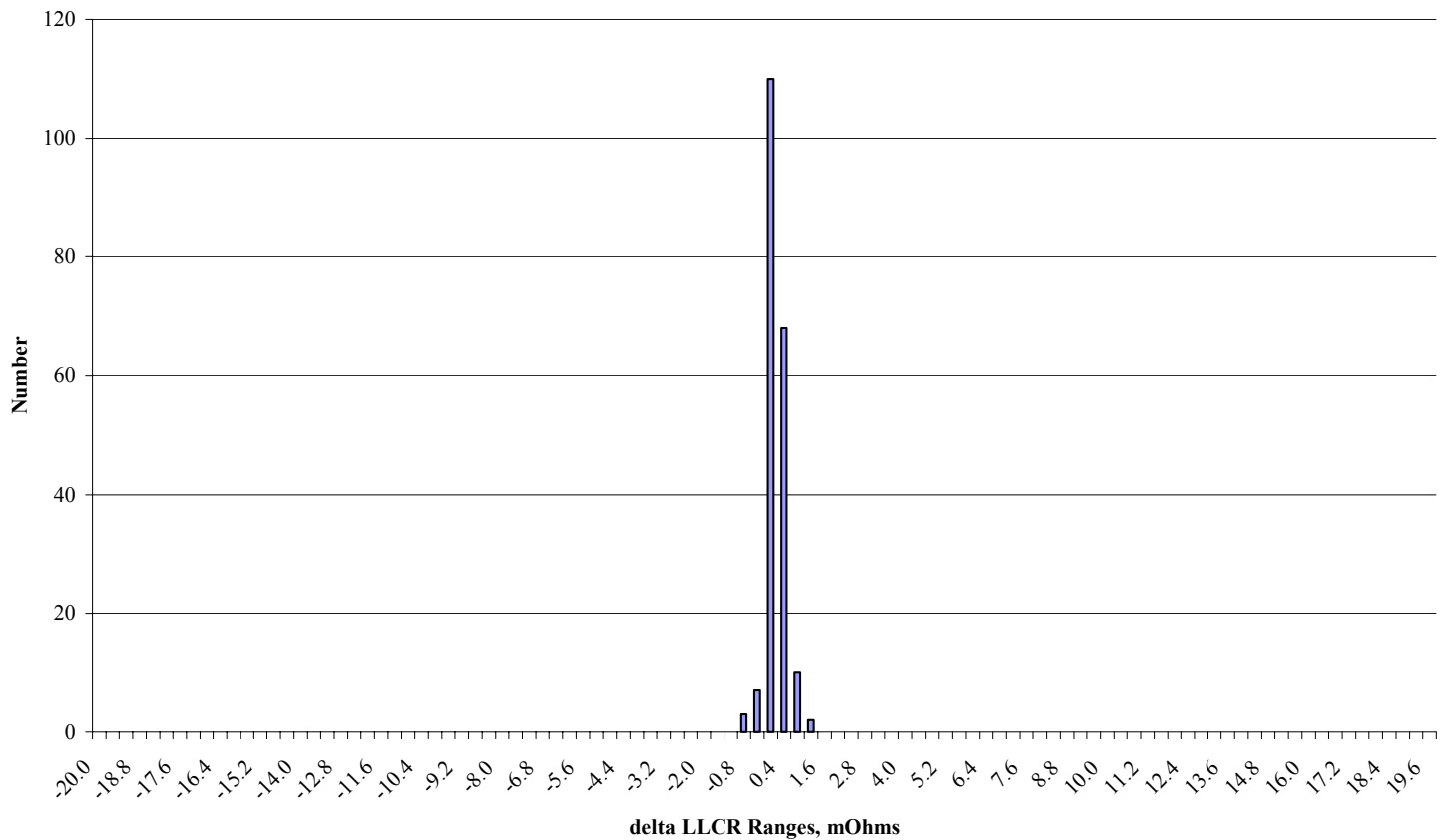
Air Processed

mOhm values	Actual Initial	Delta Humidity- 240 Hours	Delta Humidity- 480 Hours
Average	4.4	0.0	0.0
St. Dev.	0.2	0.1	0.2
Min	3.9	-0.4	-0.5
Max	4.8	0.6	0.7
Count	200	200	200

**Air Processed
After 480 Hours**

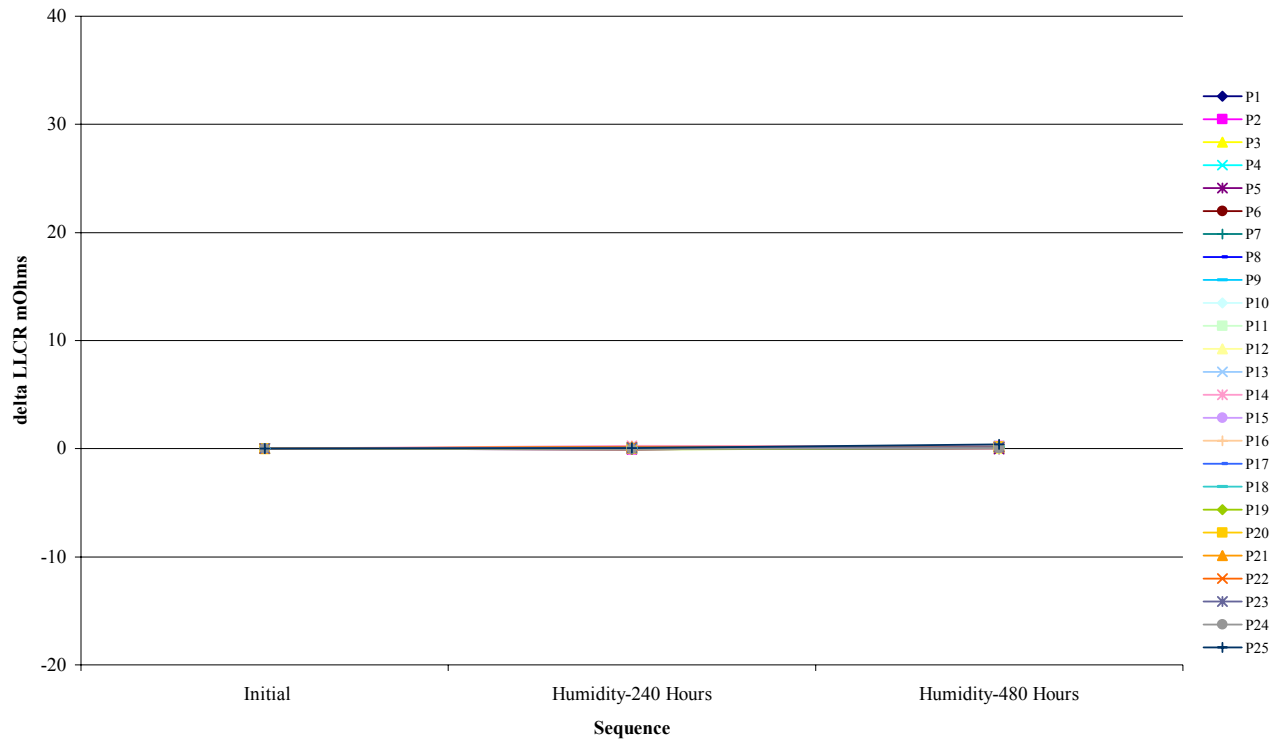
DATA SUMMARIES Continued

mOhm values	Nitrogen Processed		
	Actual Initial	Delta Humidity-240 Hours	Delta Humidity-480 Hours
Average	4.6	-0.1	0.0
St. Dev.	0.3	0.2	0.3
Min	4.0	-0.9	-1.1
Max	6.0	0.4	1.2
Count	200	200	200

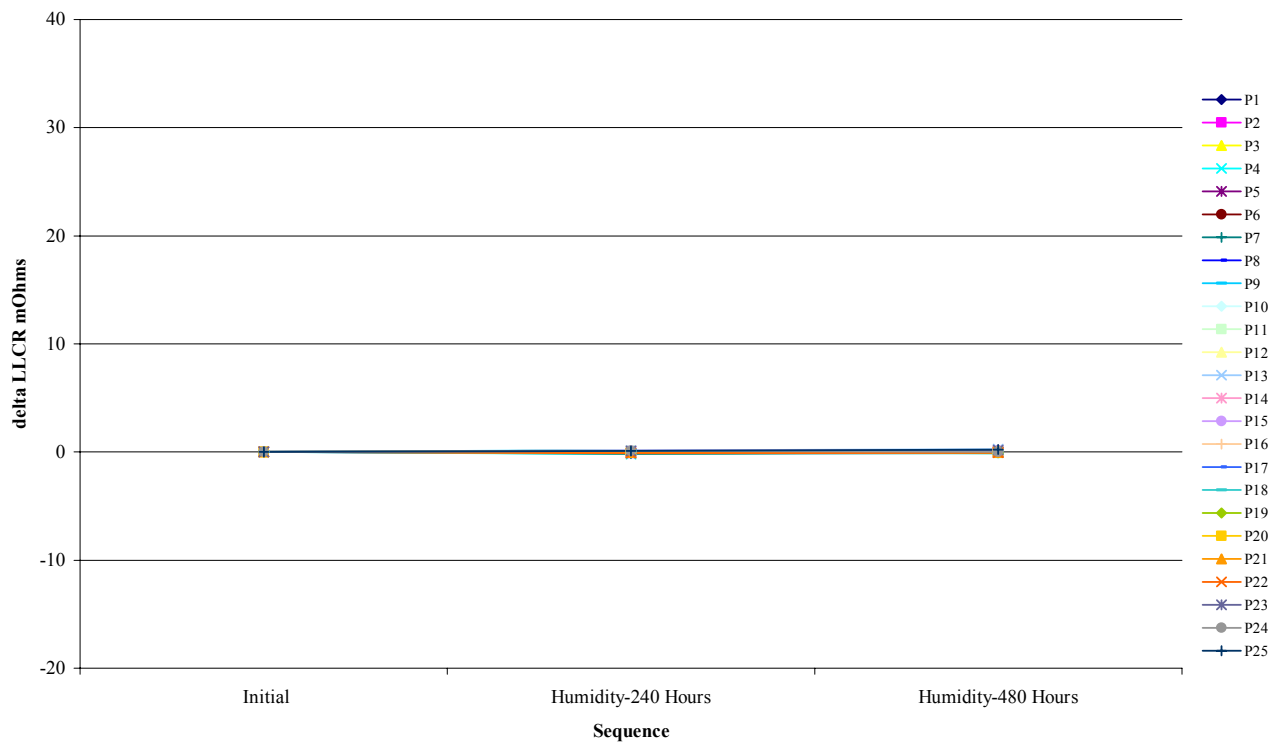
**Nitrogen Processed
After 480 Hours**

DATA SUMMARIES Continued

Air Processed
Board #1

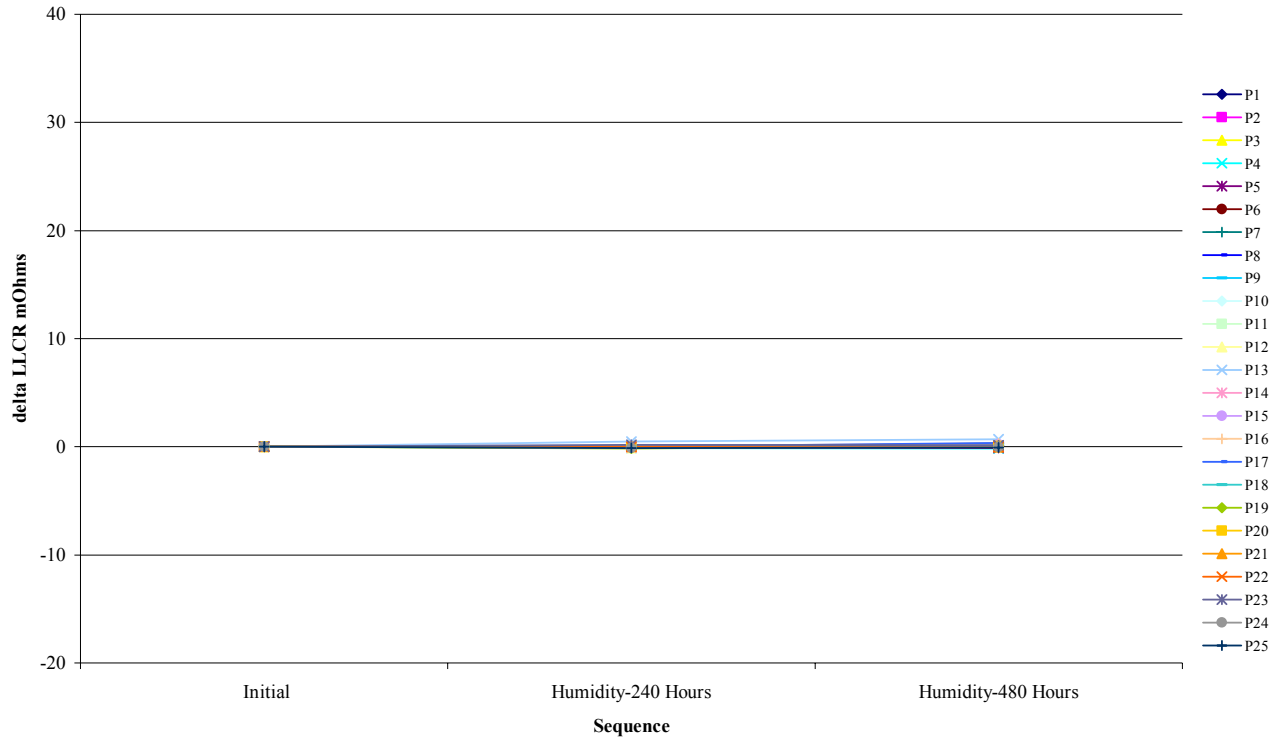


Air Processed
Board #2

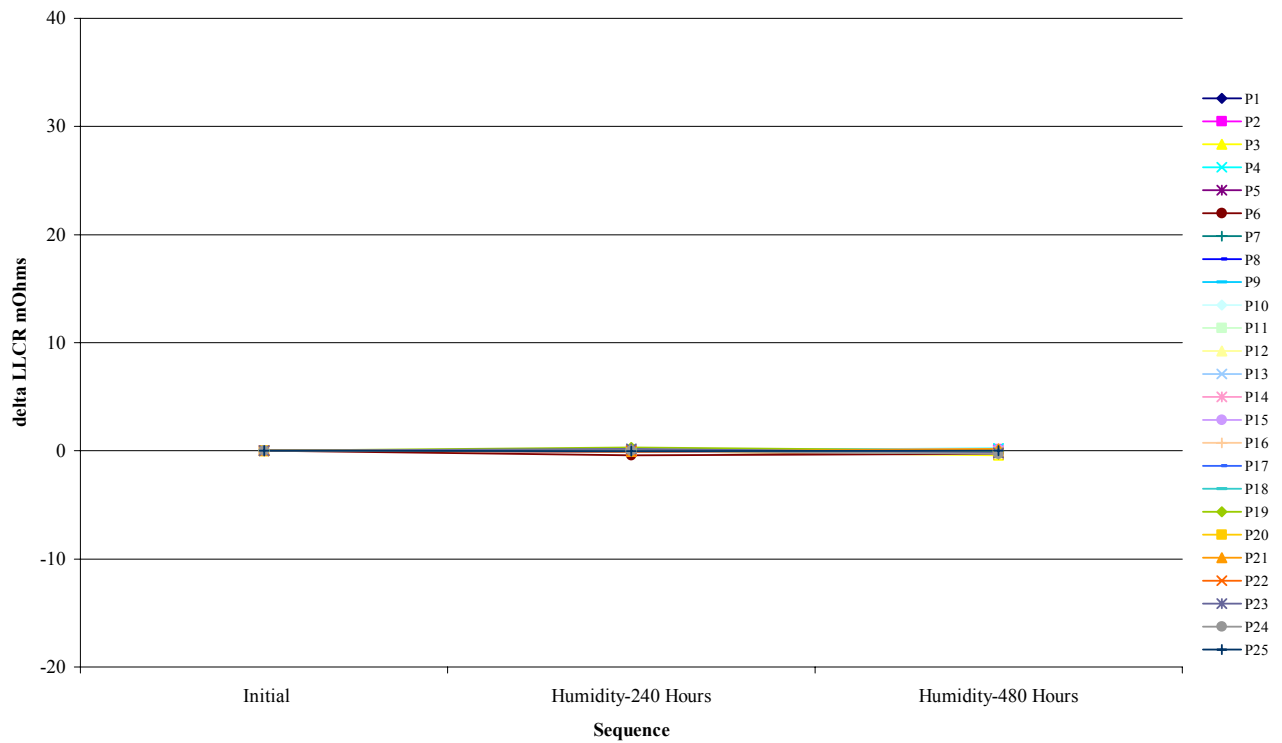


DATA SUMMARIES Continued

Air Processed
Board #3

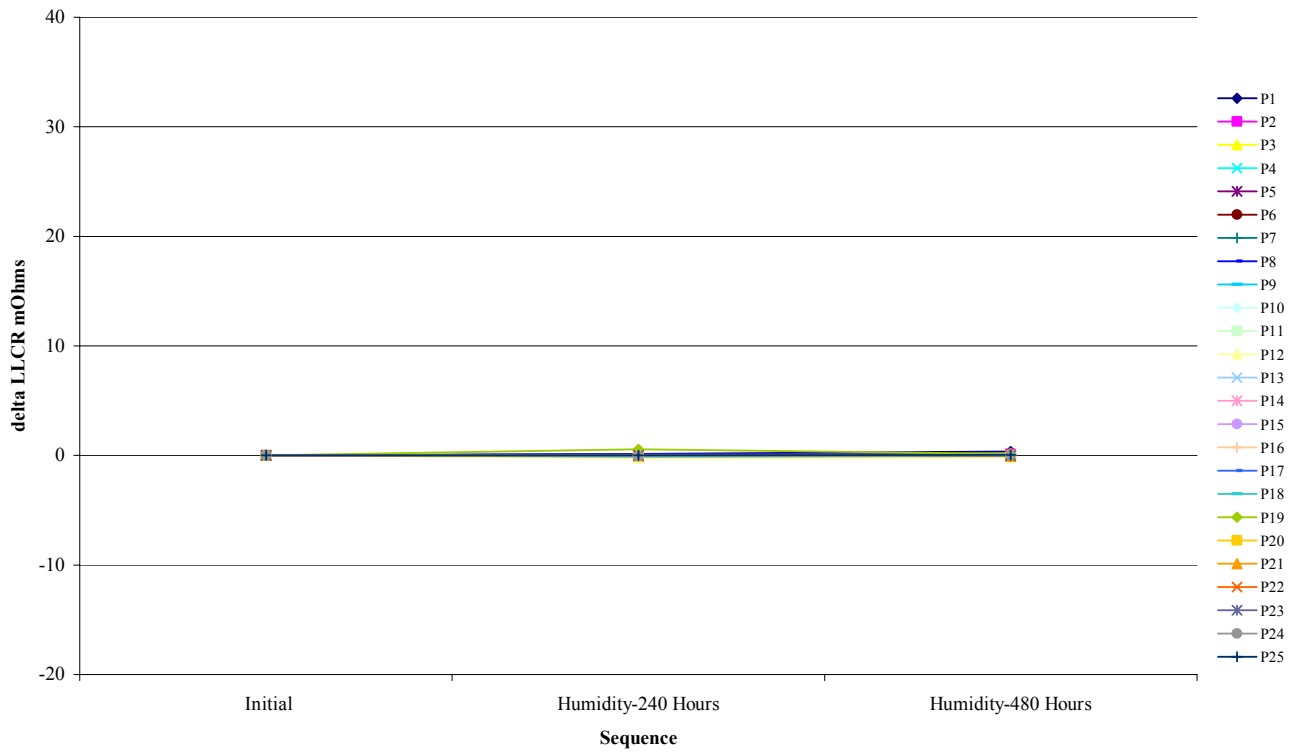


Air Processed
Board #4

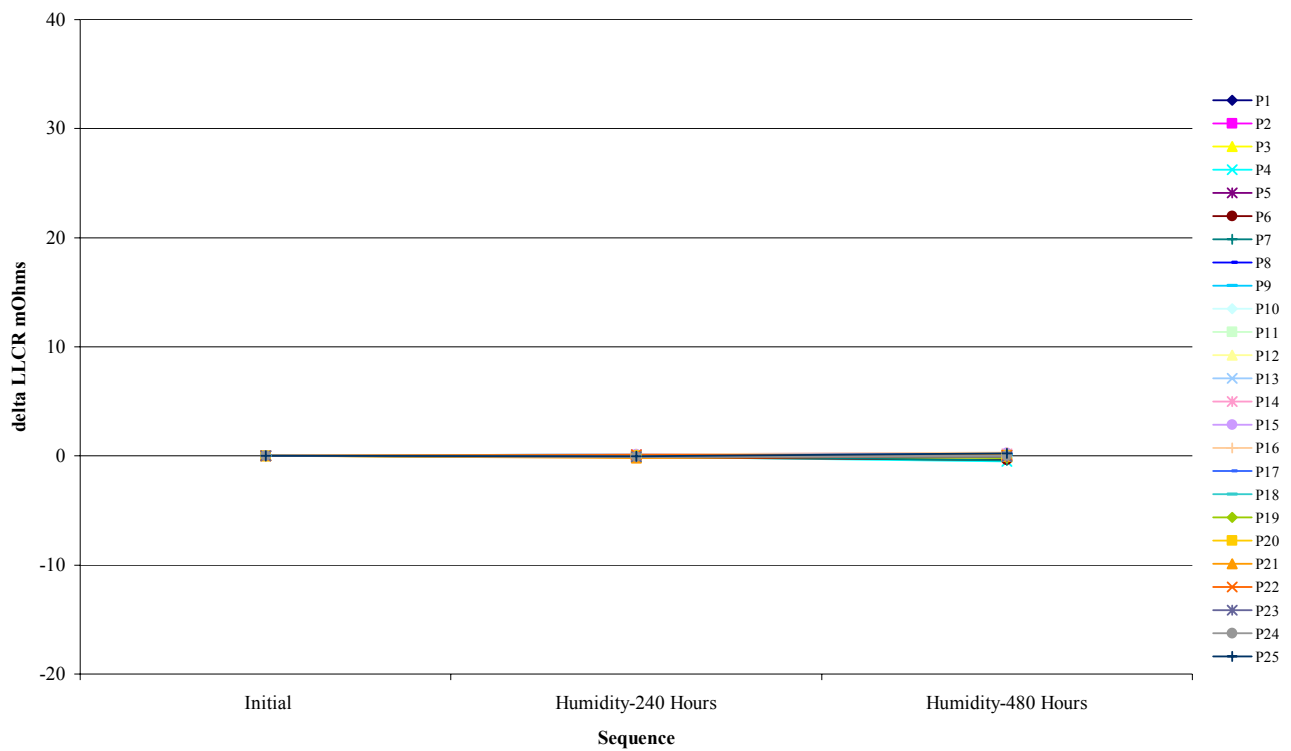


DATA SUMMARIES Continued

Air Processed
Board #5

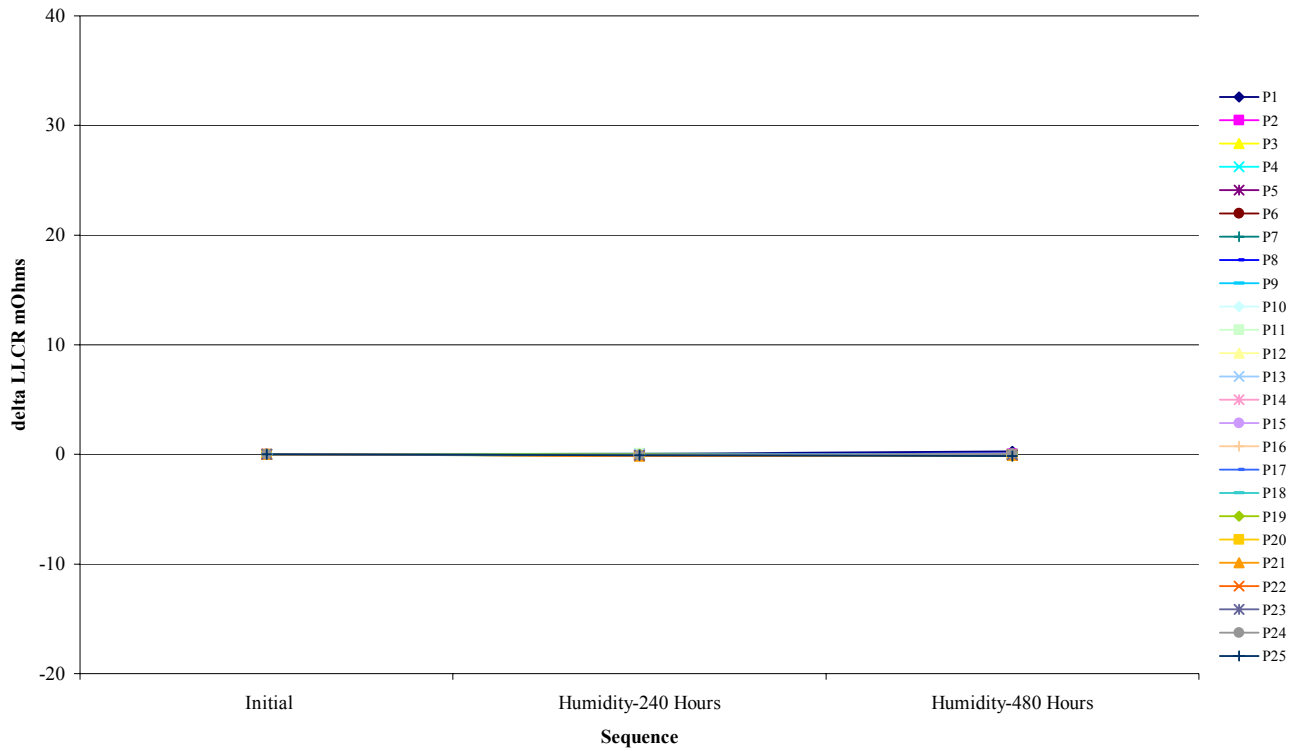


Air Processed
Board #6

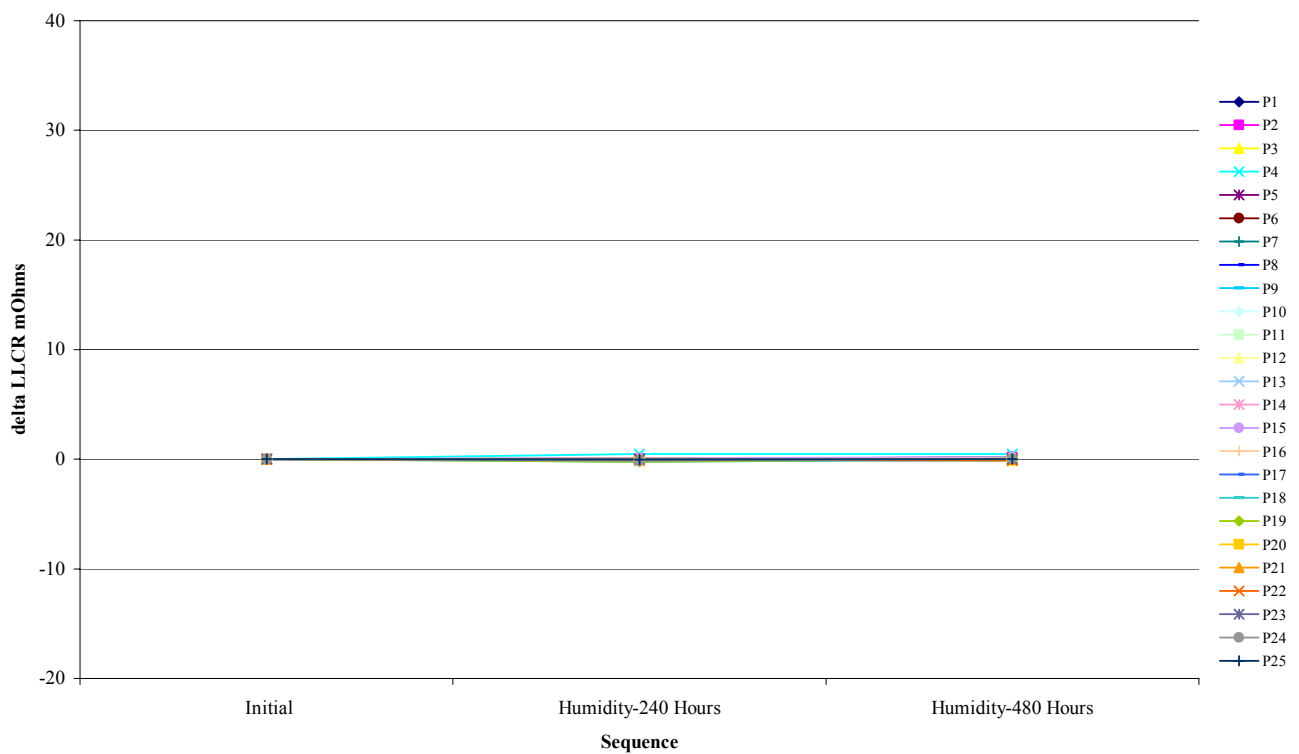


DATA SUMMARIES Continued

Air Processed
Board #7

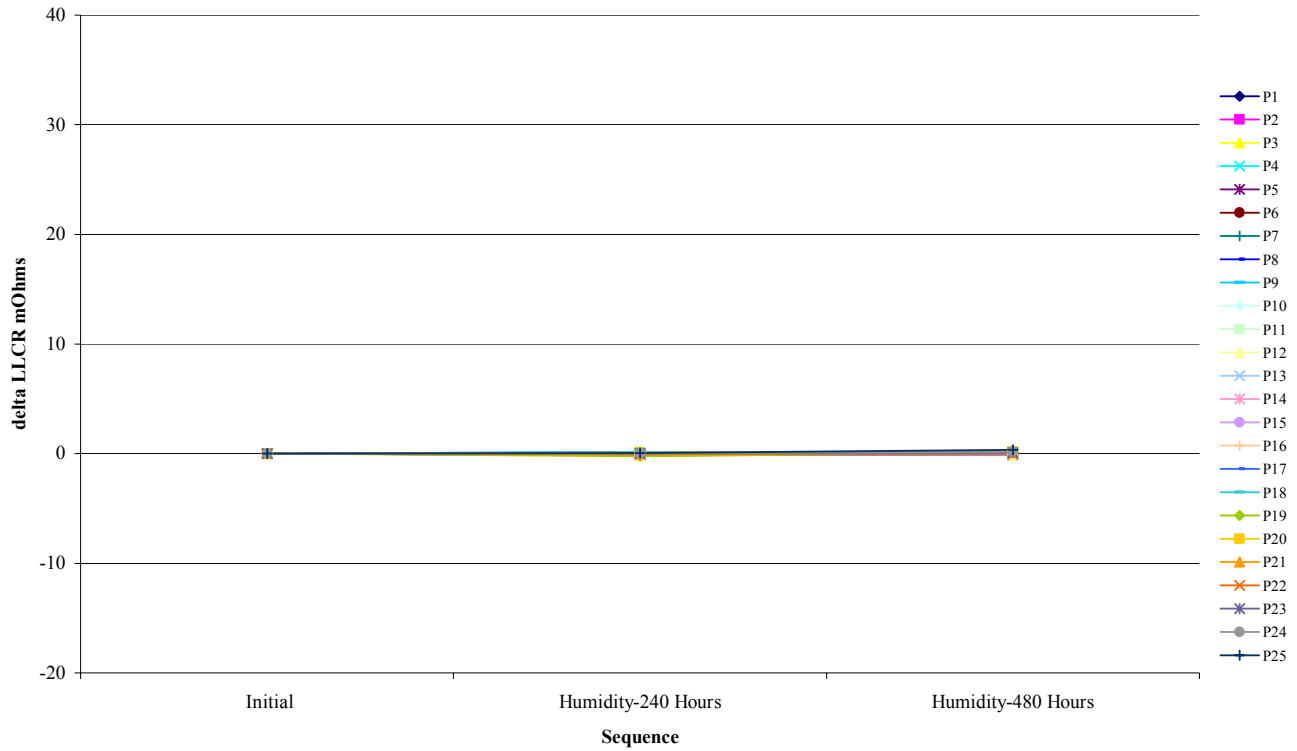


Air Processed
Board #8

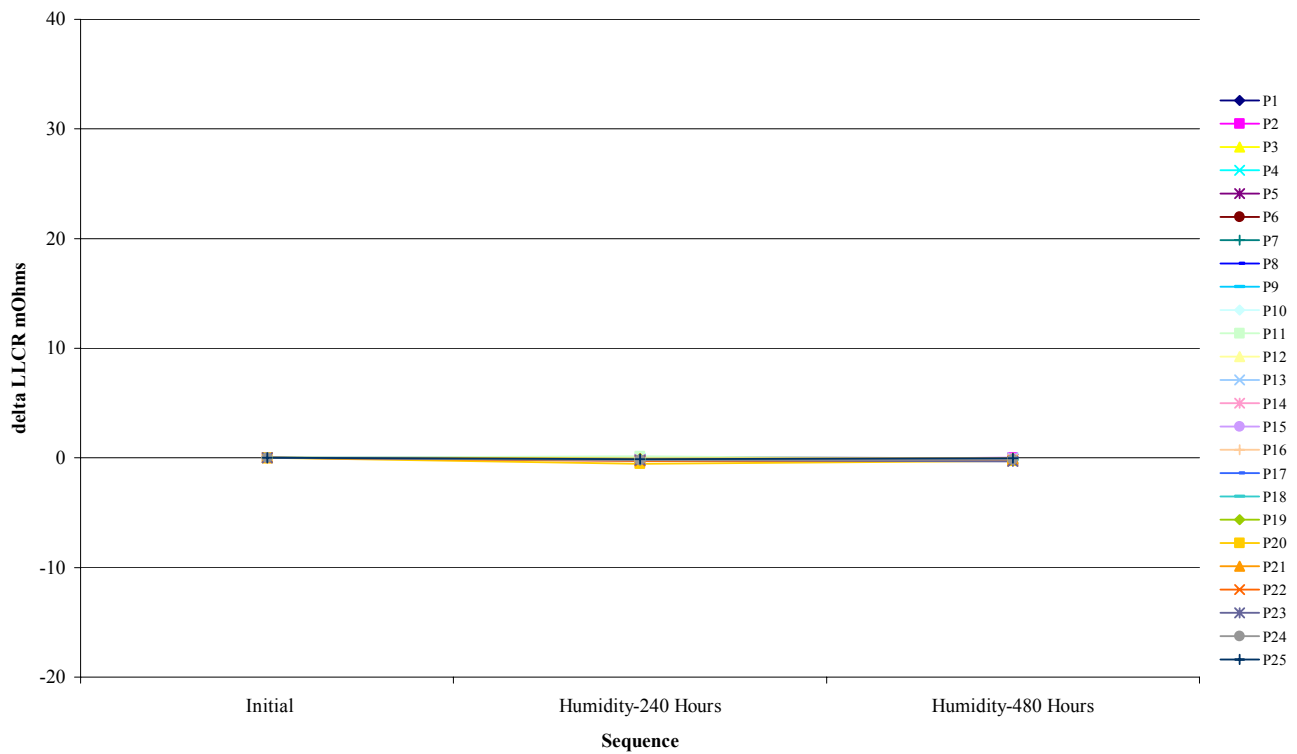


DATA SUMMARIES Continued

Nitrogen Processed Board #1

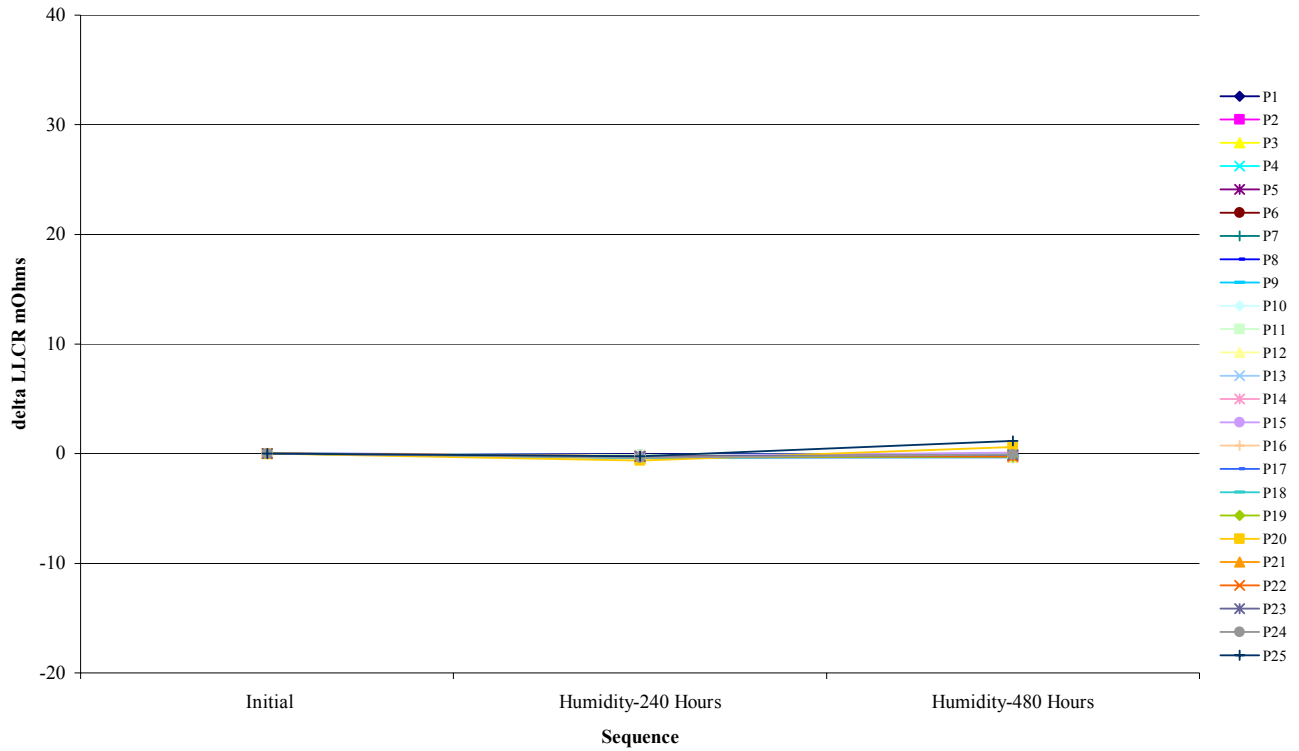


Nitrogen Processed Board #2

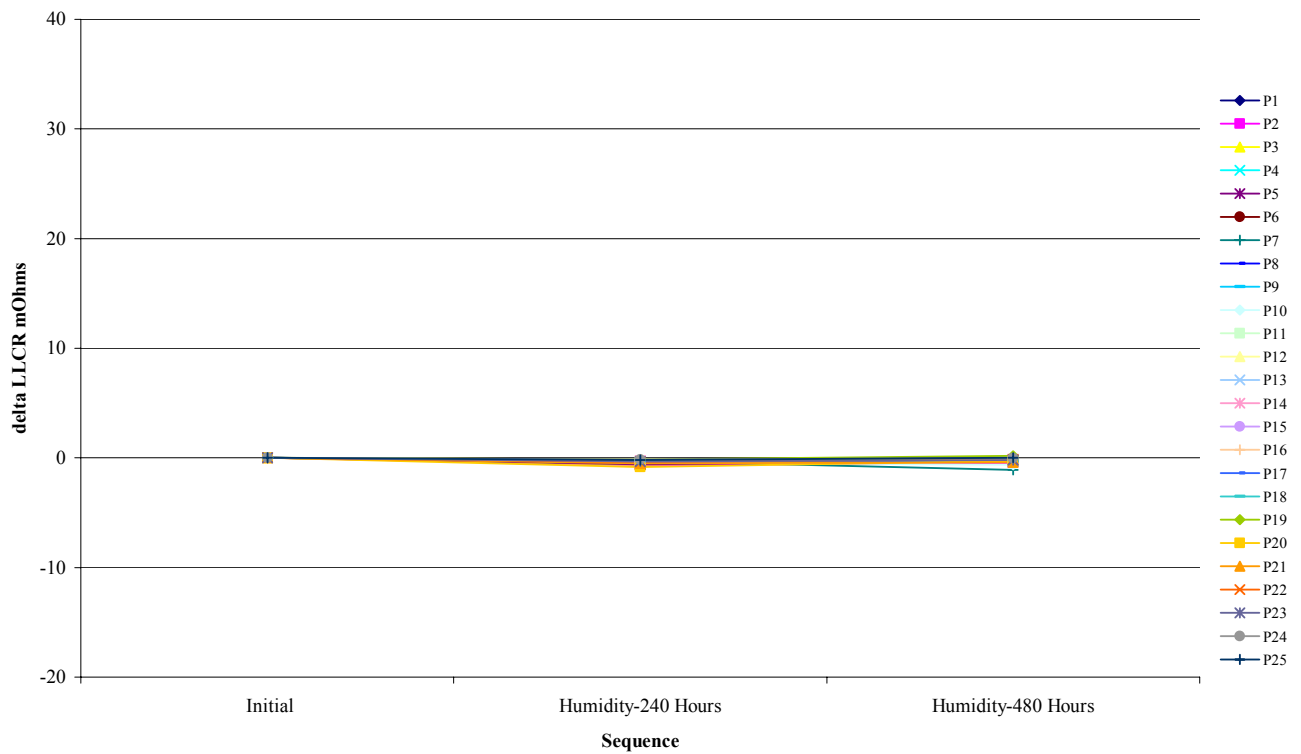


DATA SUMMARIES Continued

Nitrogen Processed Board #3

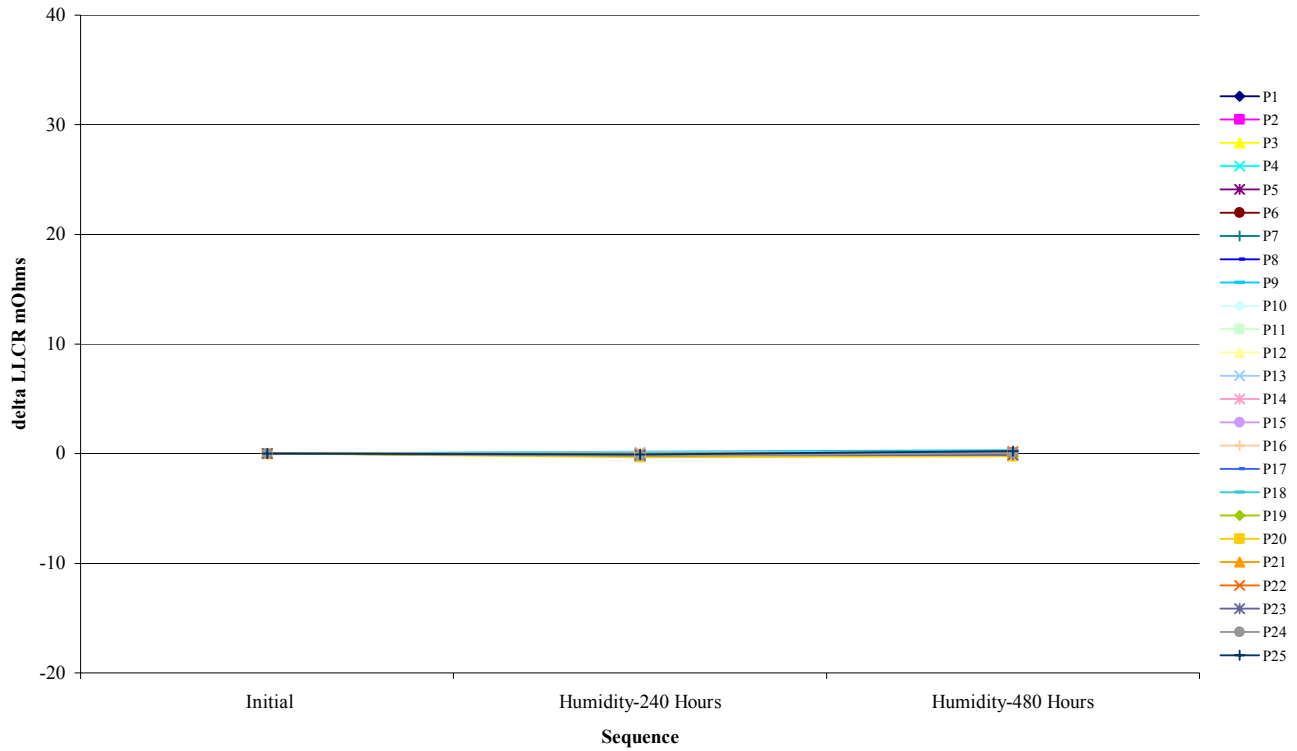


Nitrogen Processed Board #4

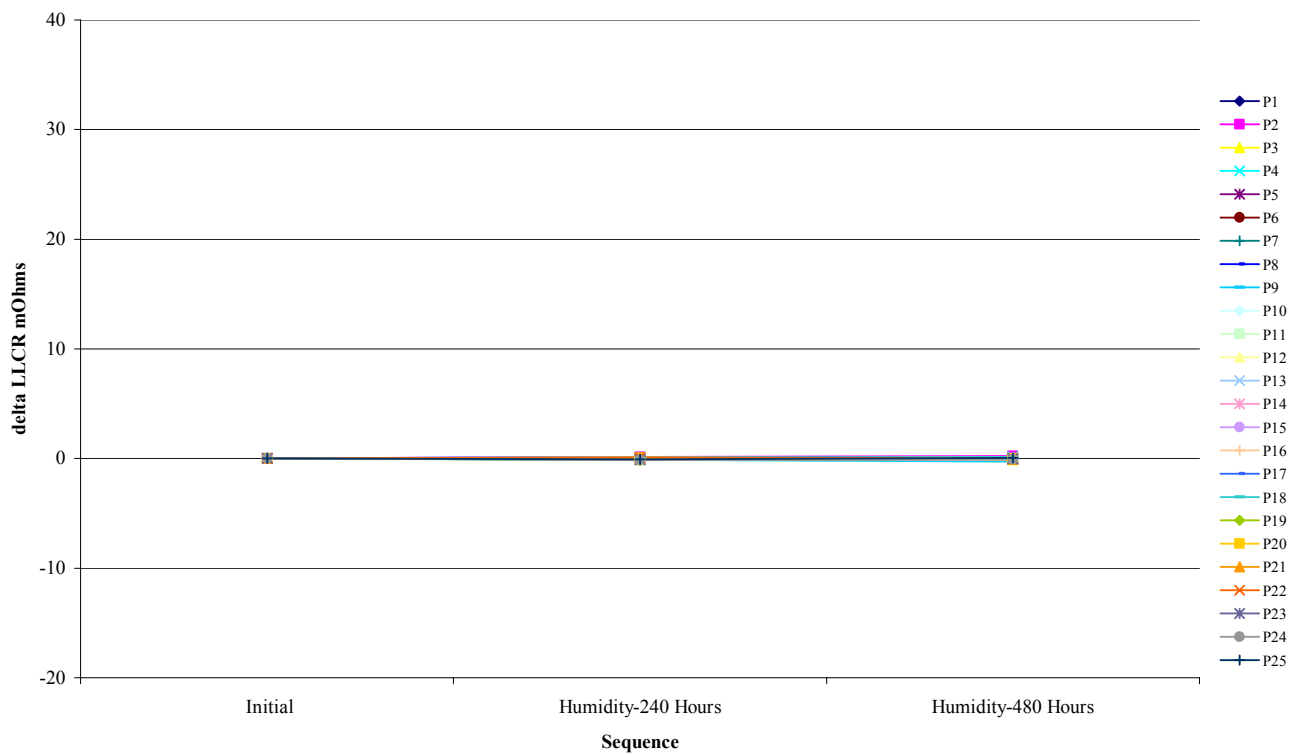


DATA SUMMARIES Continued

Nitrogen Processed Board #5

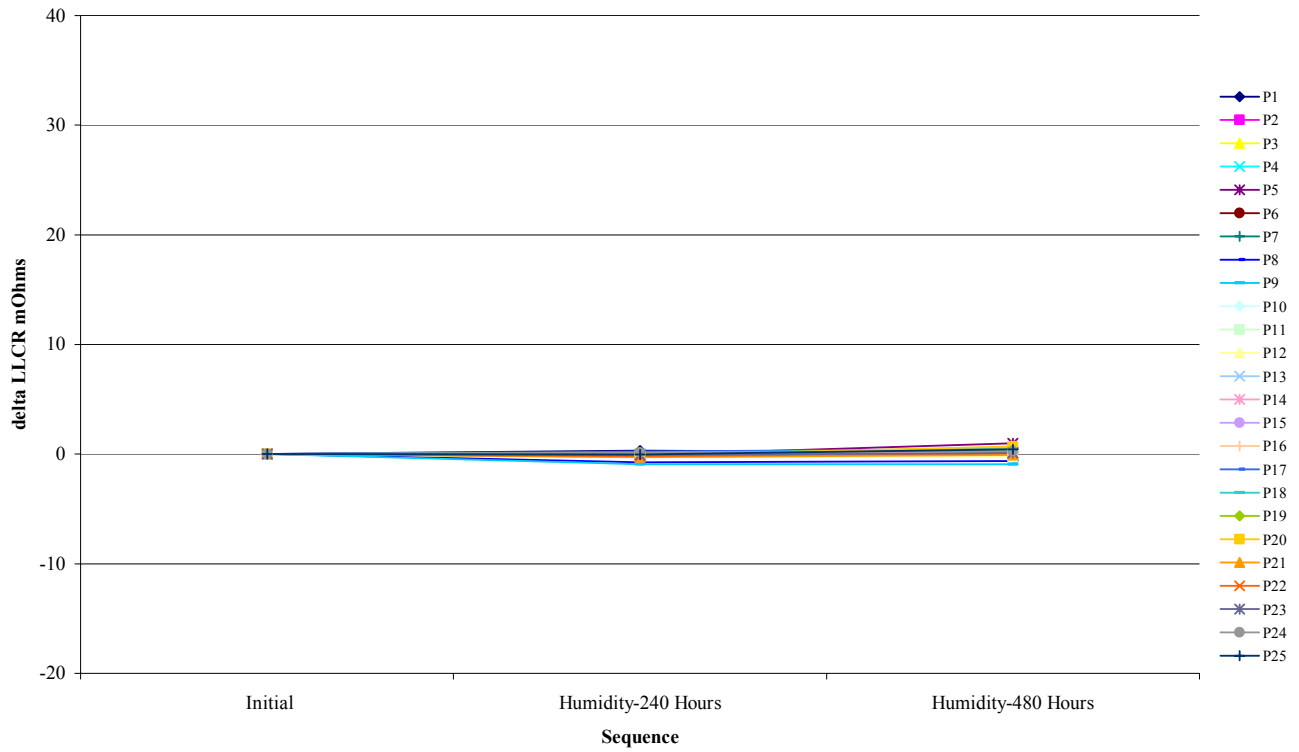


Nitrogen Processed Board #6

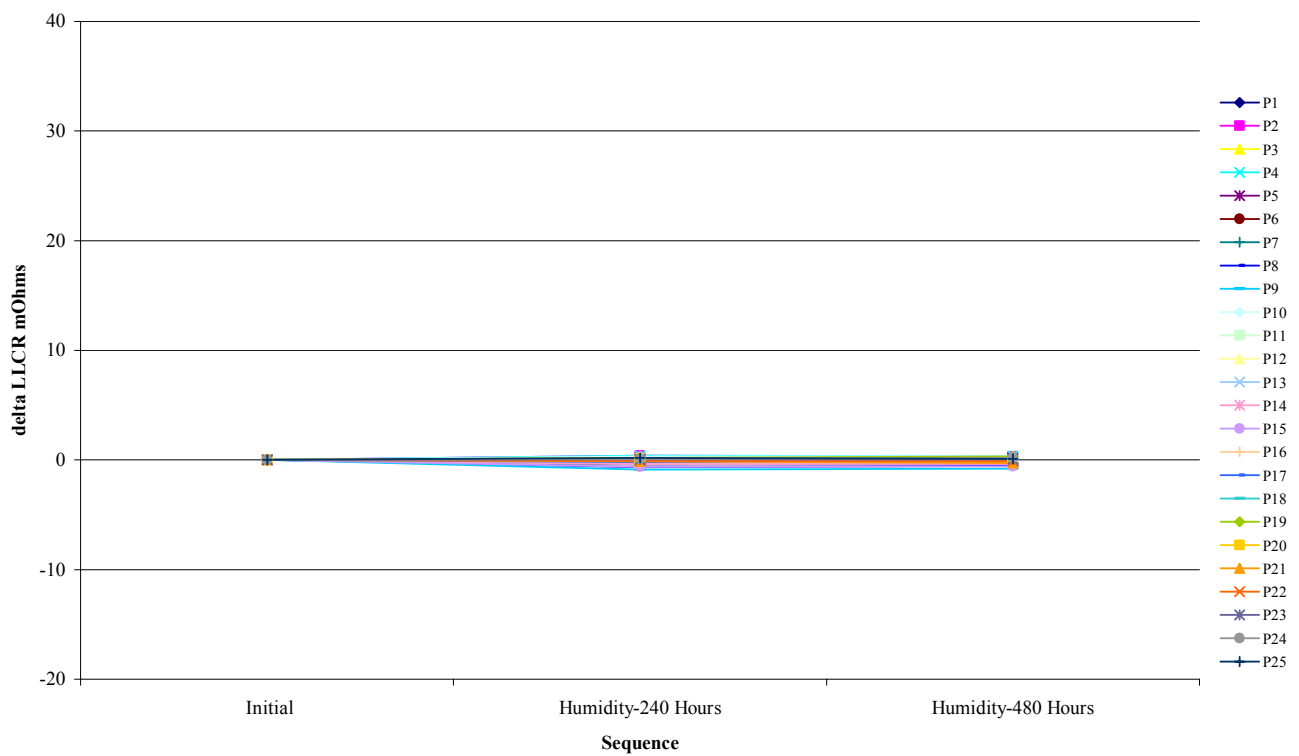


DATA SUMMARIES Continued

Nitrogen Processed Board #7



Nitrogen Processed Board #8



DATA**LLCR, Air Processed:**

Date	Jul. 14 2003	Aug. 04 2003	Aug. 18 2003
Room Temp C	22	21	22
RH	43%	51%	51%
Initials	Troy Cook	Troy Cook	Troy Cook

mOhm values		Actual	Delta	Delta
Board	Position	Initial	Humidity- 240 Hours	Humidity- 480 Hours
1	P1	4.3	-0.1	0.2
1	P2	4.5	-0.1	0.2
1	P3	4.3	0.1	0.1
1	P4	4.5	0.1	0.2
1	P5	4.5	0.0	0.0
1	P6	4.5	0.1	0.2
1	P7	4.6	0.0	0.1
1	P8	4.6	0.0	0.0
1	P9	4.4	0.1	0.2
1	P10	4.5	0.2	0.0
1	P11	4.3	0.1	0.2
1	P12	4.3	0.1	0.2
1	P13	4.5	0.1	0.3
1	P14	4.2	0.3	0.2
1	P15	4.5	0.1	0.2
1	P16	4.4	0.1	0.0
1	P17	4.5	0.0	0.0
1	P18	4.3	0.0	0.2
1	P19	4.4	-0.1	0.0
1	P20	4.4	0.0	0.2
1	P21	4.2	0.2	0.2
1	P22	4.2	0.1	0.1
1	P23	4.2	0.1	0.2
1	P24	4.4	0.0	0.1
1	P25	4.2	0.1	0.4
2	P1	4.2	0.1	0.2
2	P2	4.5	-0.1	0.0
2	P3	4.3	0.1	0.1
2	P4	4.5	-0.2	0.0
2	P5	4.3	-0.1	0.0
2	P6	4.6	0.0	0.1
2	P7	4.5	-0.2	-0.1
2	P8	4.3	0.1	0.0
2	P9	4.4	0.2	0.2
2	P10	4.5	-0.1	-0.1
2	P11	4.4	0.1	-0.1

Tracking Code: TC0327-N/A-0220

Part #: MMS-120-02-T-DV-A

Part description: MMS

2	P12	4.4	0.1	0.2
2	P13	4.5	0.1	0.3
2	P14	4.5	0.1	0.1
2	P15	4.4	0.1	0.2
2	P16	4.5	0.0	0.0
2	P17	4.5	0.0	0.0
2	P18	4.3	0.0	-0.1
2	P19	4.4	0.1	-0.1
2	P20	4.4	-0.1	0.0
2	P21	4.4	0.0	0.0
2	P22	4.4	-0.1	-0.1
2	P23	4.2	0.1	0.2
2	P24	4.4	0.1	0.0
2	P25	4.3	0.1	0.2
3	P1	4.3	0.0	0.1
3	P2	4.5	0.0	0.0
3	P3	4.4	-0.1	0.0
3	P4	4.5	-0.1	-0.1
3	P5	4.3	-0.1	-0.1
3	P6	4.3	0.0	0.0
3	P7	4.3	-0.1	0.3
3	P8	4.4	0.0	0.0
3	P9	4.4	0.0	0.3
3	P10	4.3	0.0	0.2
3	P11	4.4	0.0	0.1
3	P12	4.5	-0.1	0.2
3	P13	3.9	0.5	0.7
3	P14	4.4	0.0	0.1
3	P15	4.4	0.0	0.2
3	P16	4.2	0.1	0.3
3	P17	4.2	0.0	0.4
3	P18	4.4	0.0	0.1
3	P19	4.3	-0.1	0.1
3	P20	4.3	0.0	0.1
3	P21	4.4	0.0	0.0
3	P22	4.3	0.0	0.0
3	P23	4.2	0.2	0.2
3	P24	4.3	-0.1	0.0
3	P25	4.4	-0.1	-0.1
4	P1	4.7	-0.1	0.1
4	P2	4.8	0.1	0.1
4	P3	4.8	0.0	-0.4
4	P4	4.5	0.0	0.2
4	P5	4.8	-0.1	-0.3
4	P6	4.6	-0.4	-0.3
4	P7	4.7	0.0	-0.1
4	P8	4.7	0.0	-0.1
4	P9	4.6	0.1	-0.1
4	P10	4.5	0.1	-0.1
4	P11	4.6	0.1	-0.1

Tracking Code: TC0327-N/A-0220

Part #: MMS-120-02-T-DV-A

Part description: MMS

4	P12	4.8	0.0	-0.2
4	P13	4.6	0.0	0.0
4	P14	4.6	0.1	0.0
4	P15	4.5	0.0	0.1
4	P16	4.6	0.0	0.2
4	P17	4.4	0.1	0.0
4	P18	4.6	0.1	-0.1
4	P19	4.4	0.3	0.0
4	P20	4.7	0.0	-0.2
4	P21	4.7	-0.1	0.2
4	P22	4.5	0.0	-0.2
4	P23	4.6	0.2	-0.2
4	P24	4.6	0.0	-0.3
4	P25	4.6	0.0	0.0
5	P1	4.5	0.1	0.3
5	P2	4.3	0.1	0.1
5	P3	4.6	0.0	0.1
5	P4	4.6	-0.1	0.0
5	P5	4.7	-0.1	0.0
5	P6	4.6	0.0	0.0
5	P7	4.6	0.1	0.1
5	P8	4.3	0.1	0.1
5	P9	4.7	-0.2	-0.1
5	P10	4.7	-0.1	-0.1
5	P11	4.4	0.0	0.0
5	P12	4.7	-0.3	-0.2
5	P13	4.4	-0.1	0.0
5	P14	4.6	-0.1	0.0
5	P15	4.4	0.0	0.0
5	P16	4.6	-0.1	0.0
5	P17	4.6	0.0	0.0
5	P18	4.5	-0.1	-0.1
5	P19	4.1	0.6	0.1
5	P20	4.5	0.0	-0.1
5	P21	4.4	0.0	-0.1
5	P22	4.4	0.0	0.1
5	P23	4.3	0.0	0.0
5	P24	4.5	-0.1	0.0
5	P25	4.4	0.0	0.1
6	P1	4.5	0.0	0.1
6	P2	4.6	-0.1	0.0
6	P3	4.6	-0.1	-0.1
6	P4	4.5	-0.1	-0.5
6	P5	4.0	0.1	0.1
6	P6	4.5	-0.1	-0.4
6	P7	4.7	0.0	-0.4
6	P8	4.4	0.0	0.2
6	P9	4.5	0.1	0.1
6	P10	4.8	-0.1	-0.1
6	P11	4.4	0.0	0.0

Tracking Code: TC0327-N/A-0220

Part #: MMS-120-02-T-DV-A

Part description: MMS

6	P12	4.5	0.0	0.0
6	P13	4.3	0.0	0.1
6	P14	4.4	0.1	0.2
6	P15	4.4	0.2	0.3
6	P16	4.4	0.2	0.3
6	P17	4.6	0.0	0.2
6	P18	4.4	-0.1	0.1
6	P19	4.5	0.0	-0.2
6	P20	4.4	0.0	0.1
6	P21	4.6	-0.2	0.0
6	P22	4.4	0.1	0.0
6	P23	4.5	-0.1	-0.1
6	P24	4.5	-0.1	0.0
6	P25	4.3	0.0	0.2
7	P1	4.3	0.1	0.3
7	P2	4.5	-0.1	0.1
7	P3	4.5	-0.1	0.1
7	P4	4.5	-0.2	0.0
7	P5	4.3	0.1	0.0
7	P6	4.5	-0.1	0.0
7	P7	4.7	0.0	0.1
7	P8	4.4	0.0	0.1
7	P9	4.7	-0.1	0.0
7	P10	4.8	0.0	-0.1
7	P11	4.4	0.1	0.0
7	P12	4.5	-0.1	-0.1
7	P13	4.3	0.0	0.0
7	P14	4.5	-0.1	0.1
7	P15	4.4	0.0	0.0
7	P16	4.5	0.0	-0.1
7	P17	4.4	0.0	0.0
7	P18	4.2	0.0	0.0
7	P19	4.3	0.0	-0.1
7	P20	4.5	-0.1	0.0
7	P21	4.4	-0.2	-0.1
7	P22	4.4	-0.1	-0.1
7	P23	4.2	-0.1	0.0
7	P24	4.2	-0.1	0.0
7	P25	4.1	-0.1	-0.2
8	P1	4.3	0.0	0.0
8	P2	4.4	0.0	0.2
8	P3	4.4	-0.1	-0.1
8	P4	4.0	0.5	0.5
8	P5	4.2	0.1	0.1
8	P6	4.0	0.0	0.0
8	P7	4.4	0.0	0.2
8	P8	4.4	0.1	0.1
8	P9	4.6	-0.2	-0.1
8	P10	4.4	0.0	0.1
8	P11	4.6	-0.1	-0.1

Tracking Code: TC0327-N/A-0220

Part #: MMS-120-02-T-DV-A

Part description: MMS

8	P12	4.5	0.0	0.1
8	P13	4.4	0.0	-0.1
8	P14	4.5	-0.2	-0.1
8	P15	4.2	0.1	0.2
8	P16	4.5	-0.1	0.1
8	P17	4.3	-0.2	0.0
8	P18	4.7	-0.2	0.0
8	P19	4.7	-0.2	0.1
8	P20	4.5	-0.1	0.0
8	P21	4.3	0.0	0.0
8	P22	4.5	0.0	-0.1
8	P23	4.3	0.0	0.0
8	P24	4.4	-0.1	0.0
8	P25	4.2	0.0	0.0

DATA Continued**LLCR, Nitrogen Processed:**

Date	Jul. 14 2003	Aug. 04 2003	Aug. 18 2003
Room Temp C	22	20	22
RH	43%	49%	59%
Initials	Troy Cook	Troy Cook	Troy Cook

mOhm values		Actual	Delta	Delta
Board	Position	Initial	Humidity- 240 Hours	Humidity- 480 Hours
1	P1	4.3	-0.2	0.0
1	P2	4.2	0.0	-0.1
1	P3	4.3	0.0	-0.1
1	P4	4.3	-0.1	0.1
1	P5	4.3	-0.1	-0.1
1	P6	4.3	0.0	0.1
1	P7	4.1	0.0	0.1
1	P8	4.1	0.2	0.0
1	P9	4.3	0.1	-0.1
1	P10	4.3	0.0	-0.1
1	P11	4.3	0.0	0.1
1	P12	4.5	-0.2	-0.1
1	P13	4.2	0.0	-0.2
1	P14	4.2	0.0	0.0
1	P15	4.1	0.0	0.1
1	P16	4.2	-0.1	0.0
1	P17	4.1	-0.1	-0.1
1	P18	4.1	0.0	0.0
1	P19	4.2	-0.2	0.1
1	P20	4.4	0.1	0.2
1	P21	4.3	0.0	0.1
1	P22	4.3	0.0	0.0
1	P23	4.3	0.0	0.1
1	P24	4.2	0.1	0.2
1	P25	4.0	0.1	0.4
2	P1	4.4	0.0	0.0
2	P2	4.5	-0.1	0.0
2	P3	4.7	-0.2	-0.1
2	P4	4.7	-0.1	-0.1
2	P5	4.7	-0.2	-0.1
2	P6	4.7	-0.1	-0.1
2	P7	4.6	-0.2	0.0
2	P8	4.6	-0.1	0.0
2	P9	4.6	-0.1	-0.2
2	P10	4.5	0.0	-0.1
2	P11	4.6	0.1	-0.1

Part description: MMS

2	P12	4.7	-0.1	0.0
2	P13	4.6	-0.1	0.0
2	P14	4.6	-0.1	-0.1
2	P15	4.7	-0.3	-0.2
2	P16	4.6	-0.2	-0.1
2	P17	4.7	-0.2	-0.1
2	P18	4.6	-0.2	-0.2
2	P19	4.3	-0.1	-0.1
2	P20	6.0	-0.5	-0.3
2	P21	4.5	-0.1	0.0
2	P22	4.8	-0.3	-0.3
2	P23	4.7	-0.2	-0.3
2	P24	4.7	-0.2	-0.1
2	P25	6.0	-0.1	0.0
3	P1	4.7	-0.3	-0.4
3	P2	4.7	-0.2	-0.2
3	P3	4.8	-0.2	-0.3
3	P4	4.6	-0.3	-0.1
3	P5	4.8	-0.4	-0.2
3	P6	4.6	-0.3	-0.1
3	P7	4.5	-0.1	0.0
3	P8	4.6	-0.1	0.0
3	P9	4.8	-0.2	-0.2
3	P10	4.9	-0.4	-0.4
3	P11	4.5	-0.1	0.0
3	P12	4.8	-0.4	-0.2
3	P13	4.6	-0.3	-0.1
3	P14	4.8	-0.3	-0.3
3	P15	4.6	-0.2	0.1
3	P16	4.7	-0.2	-0.2
3	P17	4.9	-0.4	-0.3
3	P18	4.7	-0.4	-0.2
3	P19	4.5	-0.3	-0.3
3	P20	5.1	-0.6	0.6
3	P21	4.6	-0.2	-0.2
3	P22	4.7	-0.2	-0.2
3	P23	4.6	-0.3	-0.1
3	P24	4.6	-0.4	-0.1
3	P25	4.7	-0.2	1.2
4	P1	4.8	-0.5	-0.2
4	P2	4.9	-0.7	-0.5
4	P3	4.7	-0.6	0.0
4	P4	4.7	-0.5	-0.3
4	P5	4.8	-0.6	-0.3
4	P6	4.6	-0.3	-0.2
4	P7	5.0	-0.3	-1.1
4	P8	4.8	-0.3	-0.2
4	P9	4.7	-0.2	-0.3
4	P10	5.0	-0.4	-0.6
4	P11	4.7	-0.4	-0.3

Tracking Code: TC0327-N/A-0220

Part #: MMS-120-02-T-DV-A

Part description: MMS

4	P12	4.6	-0.3	-0.1
4	P13	4.7	-0.4	-0.3
4	P14	4.5	-0.2	-0.1
4	P15	4.6	-0.3	-0.3
4	P16	4.5	-0.2	-0.1
4	P17	4.7	-0.3	-0.3
4	P18	4.5	-0.2	-0.3
4	P19	4.3	-0.2	0.2
4	P20	4.8	-0.9	-0.3
4	P21	4.7	-0.5	-0.4
4	P22	4.6	-0.4	-0.1
4	P23	4.6	-0.3	-0.2
4	P24	4.4	-0.1	0.0
4	P25	4.5	-0.2	0.0
5	P1	4.5	-0.2	0.0
5	P2	4.4	0.0	0.0
5	P3	4.6	-0.2	-0.1
5	P4	4.6	-0.2	-0.1
5	P5	4.5	-0.2	-0.1
5	P6	4.5	-0.1	0.1
5	P7	4.4	0.1	0.2
5	P8	4.5	0.0	0.1
5	P9	4.4	0.2	0.3
5	P10	4.6	-0.2	-0.1
5	P11	4.7	0.0	-0.1
5	P12	4.5	0.1	0.0
5	P13	4.5	0.1	0.2
5	P14	4.4	0.0	0.0
5	P15	4.4	-0.1	0.0
5	P16	4.5	-0.1	0.0
5	P17	4.4	0.0	0.0
5	P18	4.3	0.0	0.1
5	P19	4.2	-0.1	0.1
5	P20	4.8	-0.3	-0.2
5	P21	4.5	0.0	0.2
5	P22	4.4	0.0	0.2
5	P23	4.6	-0.2	-0.1
5	P24	4.3	-0.2	0.1
5	P25	4.3	-0.1	0.2
6	P1	4.5	0.1	0.1
6	P2	4.6	0.1	0.2
6	P3	4.6	-0.1	-0.1
6	P4	4.4	-0.1	0.2
6	P5	4.6	0.0	-0.1
6	P6	4.6	-0.1	-0.1
6	P7	4.6	0.0	0.1
6	P8	4.5	0.1	0.1
6	P9	4.7	-0.1	-0.3
6	P10	4.5	0.0	0.1
6	P11	4.6	-0.1	0.0

Tracking Code: TC0327-N/A-0220

Part #: MMS-120-02-T-DV-A

Part description: MMS

6	P12	4.5	0.0	0.1
6	P13	4.4	0.2	0.0
6	P14	4.4	0.0	0.0
6	P15	4.3	0.0	-0.1
6	P16	4.4	-0.1	-0.1
6	P17	4.4	0.0	0.0
6	P18	4.4	0.1	0.2
6	P19	4.3	-0.1	0.0
6	P20	4.4	0.1	0.0
6	P21	4.4	0.1	-0.1
6	P22	4.4	0.1	0.0
6	P23	4.3	-0.1	0.0
6	P24	4.3	-0.1	-0.1
6	P25	4.3	-0.1	0.0
7	P1	5.0	0.3	0.1
7	P2	4.4	-0.2	0.4
7	P3	4.4	-0.2	0.4
7	P4	4.3	-0.1	0.6
7	P5	4.5	-0.1	1.0
7	P6	4.8	-0.2	-0.1
7	P7	4.8	-0.2	0.2
7	P8	5.4	-0.8	-0.6
7	P9	5.7	-0.9	-0.9
7	P10	4.3	0.1	0.2
7	P11	5.0	-0.3	-0.2
7	P12	4.8	-0.1	-0.2
7	P13	4.8	0.1	0.0
7	P14	5.0	-0.2	0.4
7	P15	5.3	-0.2	0.6
7	P16	4.6	0.1	0.4
7	P17	4.6	0.2	0.5
7	P18	4.6	0.1	0.5
7	P19	4.3	0.0	0.4
7	P20	4.3	-0.1	0.7
7	P21	5.1	-0.3	-0.1
7	P22	5.0	-0.2	0.1
7	P23	4.6	-0.1	0.1
7	P24	4.3	0.1	0.3
7	P25	4.3	0.0	0.5
8	P1	4.9	-0.4	-0.4
8	P2	4.3	0.4	0.3
8	P3	4.3	0.2	0.1
8	P4	4.3	0.4	0.4
8	P5	4.5	0.1	0.1
8	P6	4.8	-0.2	-0.2
8	P7	4.8	-0.3	-0.3
8	P8	5.0	-0.7	-0.5
8	P9	5.4	-0.9	-0.8
8	P10	4.3	0.3	0.4
8	P11	4.9	-0.4	-0.2

Tracking Code: TC0327-N/A-0220

Part #: MMS-120-02-T-DV-A

Part description: MMS

8	P12	4.7	-0.2	0.0
8	P13	4.6	-0.1	-0.1
8	P14	4.9	-0.4	-0.4
8	P15	5.2	-0.6	-0.6
8	P16	4.6	-0.2	-0.1
8	P17	4.5	-0.2	0.0
8	P18	4.6	0.0	0.1
8	P19	4.3	0.2	0.3
8	P20	4.2	0.1	0.0
8	P21	4.8	-0.1	-0.3
8	P22	4.6	-0.1	-0.1
8	P23	4.5	0.1	0.1
8	P24	4.4	0.1	0.2
8	P25	4.3	0.2	0.1

EQUIPMENT AND CALIBRATION SCHEDULES**Equipment #:** THL-01**Description:** Temperature/Humidity Chart Recorder**Manufacturer:** Dickson**Model:** THDX**Serial #:** 9316255**Accuracy:** Temp: +/- 1C; Humidity: +/-2% RH (0 - 60%) +/- 3% RH (61 - 95%).

... Last Cal: 7/15/02, Next Cal: 7/15/03

Equipment #: MO-01**Description:** Micro-Ohmmeter**Manufacturer:** Keithley**Model:** 580**Serial #:** 0772740**Accuracy:** See Manual

... Last Cal: 6/12/03, Next Cal: 6/12/04

Equipment #: MO-03**Description:** Multimeter /Data Acquisition System**Manufacturer:** Keithley**Model:** 2700**Serial #:** 0791975**Accuracy:** See Manual

... Last Cal: 6/12/03, Next Cal: 6/12/04

Equipment #: THC-01**Description:** Temperature/Humidity Chamber**Manufacturer:** Thermotron**Model:** SM-8-7800**Serial #:** 30676**Accuracy:** See Manual

... Last Cal: 5/28/2003, Next Cal: 5/28/2004

Equipment #: OV-5**Description:** Nitrogen Purge IR Reflow**Manufacturer:** Vitronics Soltec**Model:** XPM-730**Serial #:** XN 70328**Accuracy:** +/- 5 deg. C

... Last Cal: , Next Cal: