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South Carolina Department of Health and Environmental Control

Environmental Quality Control
Bureau of Air Quality
Inspection/Investigation Report

Myrtle Beach EQC Office
927 Shine Ave
Myrtle Beach, SC 29577
843-238-4378, Fax 843-238-4518

Source (Project):	AVX Corporation	**Date/Time:**	March 30, 2012 @ 0930
Source No:	1340-0002	**Type:**	Comprehensive
Mailing Address:	801 17th Ave S Myrtle Beach SC 29577	**Owner/Operator:**	Dave Martinelli
		Person Contacted:	Ralph Bryant & Jessica Smith
Source Address:	801 17th Ave S Myrtle Beach SC 29577	**Source Telephone:**	843-448-9411
		Code:	MA01X
County:	Horry	**Inspector:**	King, Rayna S

AVX Corporation (AVX) produces electronic capacitors. This facility consists of two manufacturing areas, MB1 and MB2. Title V permit #1340-0002 was issued June 19, 2001 and expired July 31, 2006. The permit was updated January 19, 2005.

On this date the met with Ms. Jessica Smith, EHS for AVX and Mr. Ralph Bryant, EHS for AVX. The following observations were made:

Equipment Description:

Unit ID 01 – Metals Department – *This unit was operational at the time of inspection. Visible emissions were nonexistent.*

BM-4 - **Bead Mill (Small)** for particle size distribution rated at 1,200 kg/day

BM-5 - **Bead Mill (Large)** for particle size distribution rated at 2,400 kg/day

BM-6 - **Bead Mill (Large)** for particle size distribution rated at 2,400 kg/day

BM-7 - **Bead Mill (Large)** for particle size distribution rated at 2,400 kg/day

BM-8 - **Bead Mill (Large)** for particle size distribution rated at 2,400 kg/day

BM-9 - **Bead Mill (Large)** for particle size distribution rated at 2,400 kg/day

BM-10 - **Bead Mill (Large)** for particle size distribution rated at 2,400 kg/day

BRM-1 - **Buhler Roll Mill #1** for particle size distribution rated at 1,000 kg/day

BRM-2 - **Buhler Roll Mill #2** for particle size distribution rated at 1,000 kg/day

DM-1 - **Dyno Mill** for particle size distribution rated at 64 kg/day

KMS-1 - **Kady Zolver #1** for particle size distribution rated at 200 kg/day

KMS-2 - **Kady Zolver #2** for particle size distribution rated at 200 kg/day

TRM-1 - **Three Roll Mill (Large)** for particle size distribution in the making of termination paste (rated at 1,000 kg/day)

TRM-2 - **Three Roll Mill (Medium)** for particle size distribution in the making of binder (rated at 1,000 kg/day)

TRM-3 - **Three Roll Mill (Large)** for particle size distribution in the making of binder (rated at 1,000 kg/day)

TRM-4 - **Three Roll Mill (Small)** for particle size distribution in the making of termination paste (rated at 1,000 kg/day)

AM-1 - **Air Mixer #1** for process blending rated at 120 kg/day

AM-2 - **Air Mixer #2** for process blending rated at 120 kg/day

AM-3 - **Air Mixer #3** for process blending rated at 120 kg/day

AM-4 - **Air Mixer #4** for process blending rated at 120 kg/day

AM-5 - **Air Mixer #5** for process blending rated at 120 kg/day

AM-6 - **Air Mixer #6** for process blending rated at 120 kg/day

AVM1 - **Armenco Vacuum Mixer** for process blending rated at 240 kg/day

H-1 thru H-7 - **Hockmeyer Mixers #1 thru #7** for process blending rated at 120 kg/day (each)

H-8 thru H-12 - **Hockmeyer Mixers #8 thru #12** for process blending rated at 120 kg/day (each)

MM-1 - **Meyers Mixer #1** for process blending rated at 600 kg/day

MM-2 - **Meyers Mixer #2** for process blending rated at 600 kg/day

PD-2 - **PD2 Mixer** for process blending rated at 24 kg/day

HDM1 thru HDM5 - **Planetary Mixers #1 thru #5** for process blending rated at 400 kg/day (each)

Unit ID 02 – Plating Department – *This unit was operational at the time of inspection. Visible emissions were nonexistent.*

A1 - **Autoline Barrel #1** for plating of Ni and Sn/Pb rated at 276 barrel/day

A2 - **Autoline Barrel #2** for plating of Ni and Sn/Pb rated at 276 barrel/day

A3 - **Autoline Barrel #3** for plating of Ni and Sn/Pb rated at 276 barrel/day

A4 - **Autoline Barrel #4** for plating of Ni and Sn/Pb rated at 276 barrel/day

A5 - **Autoline Barrel #5** for plating of Ni and Sn/Pb rated at 276 barrel/day

GP1 - **Gold Plating** for electroplating of gold rated at 200 barrel/mo.

RF-1 - **RFT Plater #1** for electroplating of capacitors (rated at 15 KVA)

RF-2 & RF-3 - **RFT Platers #2 & #3** for electroplating of capacitors (rated at 15 KVA)

RF-4 - **RFT Plater #4** for electroplating of capacitors (rated at 15 KVA)

Unit ID 03 – Miscellaneous Site Support – *This unit was operational at the time of inspection. Visible emissions were nonexistent.*

E4 - Emergency Generator (MIS) rated at 245 kW

E5 - Emergency Generator (MIS) rated at 260 kW

E6 - Emergency Generator (RMM & Calcining) rated at 600 kW

E7 - Emergency Generator (Sol Gel) rated at 565 kW

STR1 - **Stripping Tower #1** for Air Stripping rated at 100 gpm – ***This equipment has been removed.***

STR2 - **Stripping Tower #2** for Air Stripping rated at 10 gpm– ***This equipment has been removed.***

SM3 - Support Maintenance for MB1: Miscellaneous Cleaning

Unit ID 04 – Slip Manufacturing – *This unit was operational at the time of inspection. Visible emissions were nonexistent.*

KMS1 thru KMS3 - **Kady Zolvers #1 thru #3** for particle size distribution rated at 600 kg/day (each)

MCD1 thru MCD5 - **MC Dispersers #1 thru #5** for particle size distribution rated at 800 kg/day (each)

NM1 - **Netzsch Mill #1** for particle size distribution rated at 2,400 kg/day

NM2 - **Netzsch Mill #2** for particle size distribution rated at 2,400 kg/day

NM3 - **Netzsch Mill #3** for particle size distribution rated at 2,400 kg/day

S1 - **Sweco M18 Mill #1** for particle size distribution rated at 800 kg/day

S2 - **Sweco M18 Mill #2** for particle size distribution rated at 800 kg/day

S3 - **Sweco M18 Mill #3** for particle size distribution rated at 800 kg/day

S4 thru S6 - **Sweco M18 Mills #4 thru #6** for particle size distribution rated at 800 kg/day (each)

SG1 thru SG11 - **Sweco M45 Mills #1 thru #11** for particle size distribution rated at 800 kg/day (each)

KM1 - **Kady Mill #1** for process blending rated at 2,400 kg/day

KM2 - **Kady Mill #2** for process blending rated at 2,400 kg/day

KM3 - **Kady Mill #3** for process blending rated at 2,400 kg/day

MC1 thru MC7 - **MC Mixers #1 thru #7** for particle size distribution rated at 800 kg/day (each)

AVM1 - **Armenco Vacuum Mixer** for process blending rated at 240 kg/day

SPM1 - **Stock pot mixers** for the addition of solvent to powders

Unit ID 05 – Termination Department – *This unit was operational at the time of inspection. Visible emissions were nonexistent.*

CS1 thru CS5 - **Chipstar CS-325 Ovens #1 thru #5** for drying termination ink rated at 313 BTU/min (each)

CS6 thru CS15 - **Chipstar CS-325 Ovens #6 thru #15** for drying termination ink rated at 313 BTU/min (each)

CS16 - **Chipstar CS-325 Oven #16** for drying termination ink rated at 313 BTU/min

CS17 thru CS24 - **Chipstar CS-325 Ovens #17 thru #24** for drying termination ink rated at 313 BTU/min (each)

CS30 - **Chipstar CS-325 (Modified) Oven #30** for drying termination ink rated at 313 BTU/min

MGB - **Gruenberg Oven L3-1H506** for moisture and organic removal rated at 260 Kg/day

KL-1 thru KL-4 - **Koyo-Lindburg Ovens #1 thru #4** for copper termination firing rated at 51.6 KVA (each)

KL-5 - **Koyo-Lindburg Oven #5** for copper termination firing rated at 51.6 KVA

KL-6 - **Koyo-Lindburg Oven #6** for copper termination firing rated at 51.6 KVA

KL-7 thru KL-12 - **Koyo-Lindburg Ovens #7 thru #12** for copper termination firing rated at 51.6 KVA (each)

P20 thru P24 - **Palomar 2007 Ovens** for drying of termination ink rated at 313 BTU/min (each)

P25 thru P31 - **Palomar 2009 Ovens** for drying of termination ink rated 313 BTU/min (each)

ST-8 thru ST-10 - **Sierra Therm Ovens** for 24" silver termination firing rated at 56 KVA

ST-11 - **Sierra Therm Oven** for 24" silver termination firing rated at 56 KVA

ST-12 thru ST-16 - **Sierra Therm Ovens** for 24" silver termination firing rated at 56 KVA

WJO - **WJ Oven** for moisture and organic removal rated at 260 K/day

WJ-7 - **WJ Oven 24CA-87** for silver termination firing rated at 45 KVA

PO1 - **Palomar 2001 Modified Oven** (1 Oven only) for application and drying of termination ink rated at 313 BTU/min

PO2 - **Palomar 2009 Modified Oven** for application and drying of termination ink rated at 313 BTU/min

P1 - **Palomar 246 System** for application and drying of termination ink rated at 313 BTU/min

P2 - **Palomar 246 System** for application and drying of termination ink rated at 313 BTU/min

P3 & P4 - **Palomar 246 System** for application and drying of termination ink rated at 313 BTU/min (each)

P5 & P6 - **Palomar 246 System** for application and drying of termination ink rated at 313 BTU/min (each)

P7 thru P9 - **Palomar 246 System** for application and drying of termination ink rated at 313 BTU/min (each)

P10 thru P16 - **Palomar 246 System** for application and drying of termination ink rated at 313 BTU/min (each)

P17 - **Palomar 246 System** for application and drying of termination ink rated at 313 BTU/min

P18 - **Palomar 246 System** for application and drying of termination ink rated at 313 BTU/min

Unit ID 06 - Raw Materials Manufacturing (RMM) – *This unit was operational at the time of inspection. Visible emissions were nonexistent.*

SG3 - **VOID - Roller Hearth Kiln** for the production of barium titanate from barium oxalate titanate rated at 223,000 kg/yr

SG5 - **VOID - Barium Chloride Tank** for barium chloride dihydrate storage; rated use of 289,000 kg/yr

SG7 & SG8 - **VOID - Mixing Tanks #1 & #2** for the mixing of BaCl2, HO2CCO2H, Titanium Oxychloride rated at 223,000 kg/yr (each)

SG9 - **VOID - Mixing Tank #3** for the mixing of BaCl2, HO2CCO2H, Titanium Oxychloride rated at 223,000 kg/yr

SG10 - **VOID - Q320 Centrifuge** to wash barium oxalate titanate cake rated at 446,000 kg/yr

SG13 - **VOID - Barium Chloride Tank** for barium chloride dihydrate storage; rated use of 289,000 kg/yr

DOA thru DOK - **Drying Ovens** for exhausting heat

BL1 - **Blender** for preparation of ceramic powder rated at 1,000,000 lb/yr

B4 - **Blender** for preparation of ceramic powder rated at 1,000,000 lb/yr

B5 - **Blender** for preparation of ceramic powder rated at 1,000,000 lb/yr

CSB1 - **Cone Screw Blender** rated at 1,000,000 lb/yr

B6 - **Dynamic Air Mixer** for process blending rated at 1,000,000 lb/yr

RMMPS1 thru RMMPS3 - **Pre-Slurry Carts** to add ceramic powders to slurry mixes rated at 4,000,000 lb/yr

V1 - Vat for $BaCO_3$ weighing/batching rated at 2,000,000 lb/yr

V3 - Vat for $BaTiO_3$ weighing/batching rated at 4,000,000 lb/yr

V8 - Vat for Bismuth Trioxide weighing/batching rated at 1,000,000 lb/yr

V5 - Vat for Lead Bismuth Titanate weighing/batching rated at 1,100,000 lb/yr

V7 - Vat for Lead Niobate weighing/batching rated at 1,000,000 lb/yr

V2 - Vat for Pb weighing/batching rated at 2,000,000 lb/yr

V4 - Vat for TiO_2 weighing/batching rated at 4,000,000 lb/yr

V6 - Vat for Y832 weighing/batching rated at 1,100,000 lb/yr

PR1 - **Ceramic Priller (3 pump)** rated at 300,000 lb/yr

PR2 - **Ceramic Priller (3 pump)** rated at 300,000 lb/yr

PR3 - **Ceramic Priller (1 pump)** rated at 100,000 lb/yr

PR4 - **Ceramic Priller (3 pump)** rated at 300,000 lb/yr

PR5 - **Ceramic Priller (3 pump)** rated at 300,000 lb/yr

PR6 thru PR9 - **Ceramic Prillers (4 pump)** rated at 400,000 lb/yr (each)

RTF-1 - **Rapid Temp Furnace** for calcining/recalcining rated at 750 kg/yr

RTF-2 - **Rapid Temp Furnace** for calcining/recalcining rated at 750 kg/yr

RTF-3 - **Rapid Temp Furnace** for calcining/recalcining rated at 750 kg/yr

G1 & G2 - **Prill Grinders** rated at 700,000 lb/yr (each)

G4 & G5 - **Prill Grinders** rated at 700,000 lb/yr (each)

M1 thru M3 - **Sweco Mills** for particle size distribution rated at 800 kg/day (each)

M4 & M6 - **Sweco Mills** for particle size distribution rated at 800 kg/day (each)

M7 thru M12 - **Sweco Mills** for particle size distribution rated at 800 kg/day (each)

UNIT ID 07 – MB1: CMAP Buildup - *This unit is not operational and has been removed.*

C0 thru C4 - **CMAP machine** (buildup process): chip fabrication of $1.8x10^6$ pcs/day

C5 - **CMAP machine** (buildup process): chip fabrication of $1.8x10^6$ pcs/day

C6 - **CMAP machine** (buildup process): chip fabrication of $1.8x10^6$ pcs/day

C7 - **CMAP machine** (buildup process): chip fabrication of $1.8x10^6$ pcs/day

C8 - **CMAP machine** (buildup process): chip fabrication of $1.8x10^6$ pcs/day

C9 - **CMAP machine** (buildup process): chip fabrication of $1.8x10^6$ pcs/day

C10 - **CMAP machine** (buildup process): chip fabrication of $1.8x10^6$ pcs/day

C11 - **CMAP machine** (buildup process): chip fabrication of $1.8x10^6$ pcs/day

C12 thru C18 - **CMAP machine** (buildup process): chip fabrication of $1.8x10^6$ pcs/day (each)

C19 thru C27 - **CMAP machine** (buildup process): chip fabrication of $1.8x10^6$ pcs/day (each)

C28 thru C32 - **CMAP machine** (buildup process): chip fabrication of $1.8x10^6$ pcs/day (each)

C33 thru C36 - **CMAP machine** (buildup process): chip fabrication of $1.8x10^6$ pcs/day (each)

C37 - **CMAP machine** (buildup process): chip fabrication of $1.8x10^6$ pcs/day

C38 thru C40 - **CMAP machine** (buildup process): chip fabrication of $1.8x10^6$ pcs/day (each)

C41 thru C53 - **CMAP machine** (buildup process): chip fabrication of $1.8x10^6$ pcs/day (each)

C54 - **CMAP machine** (buildup process): chip fabrication of $1.8x10^6$ pcs/day

UNIT ID 08 – MB1: CMAP Support - *This unit is not operational and has been removed.*

D1 - **Blue M Oven POM-7-336G-3** for drying; rated at 341 BTU/min

D2 - **Blue M Oven POM-7-336G-3** for drying; rated at 341 BTU/min

CD1 thru CD22 - **Chip Dryers** for excess moisture removal

GPBO-1 thru GPBO-7 - **Gruenberg Post Bake Oven** to drive off moisture rated at 1,366 BTU/min (each)

GPBO-11 & GPBO-12 - **Gruenberg Post Bake Oven** to drive off moisture rated at 1,366 BTU/min (each)

GPBO-13 thru GPBO-16 - **Gruenberg Post Bake Oven** to drive off moisture rated at 1,366 BTU/min (each)

MTO1 & MT02 - **Microtech Oven 1** - Thermal release ovens to remove paper and buildup from plates (each)

MTO3 & MT04 - **Microtech Oven 3** - Thermal release ovens to remove paper and buildup from plates (each)

DD-1 - **Disco Dicer chip fabrication/capacitor separation** - $9.2x10^6$ pcs/day

DD-2 - **Disco Dicer chip fabrication/capacitor separation** - $9.2x10^6$ pcs/day

DD-3 - **Disco Dicer chip fabrication/capacitor separation** - $9.2x10^6$ pcs/day

DD-4 - **Disco Dicer chip fabrication/capacitor separation** - $9.2x10^6$ pcs/day

DD-5 - **Disco Dicer chip fabrication/capacitor separation** - $9.2x10^6$ pcs/day

DD-6 - **Disco Dicer chip fabrication/capacitor separation** - $9.2x10^6$ pcs/day

GS-1 - **M&E Dicer chip fabrication/capacitor separation** - $9.2x10^6$ pcs/day

GS-2 - **M&E Dicer chip fabrication/capacitor separation** - $9.2x10^6$ pcs/day

(GS-5 Not In Service) & GS-6 - **M&E Dicer chip fabrication/capacitor separation** - $9.2x10^6$ pcs/day (each)

GS-7 (Not In Service) - **M&E Dicer chip fabrication/capacitor separation** - $9.2x10^6$ pcs/day

GS-8 (Not In Service) - **M&E Dicer chip fabrication/capacitor separation** - $9.2x10^6$ pcs/day

GS-9 - **M&E Dicer chip fabrication/capacitor separation** - $9.2x10^6$ pcs/day

GS-10 - **M&E Dicer chip fabrication/capacitor separation** - $9.2x10^6$ pcs/day

GS-11 - **M&E Dicer chip fabrication/capacitor separation** - $9.2x10^6$ pcs/day

GS-12 - **M&E Dicer chip fabrication/capacitor separation** - $9.2x10^6$ pcs/day

UNIT ID 09 – MB1: Kiln Room - *This unit is not operational and has been removed.*

RA8 thru RA13, RA29 & RA33 - **Blue M Ovens CW-888OG** for air burnout of volatile compounds from capacitors rated at 512 BTU/min (each)

RA34 & RA37 - **Blue M Oven CW-888OG** for air burnout of volatile compounds from capacitors rated at 512 BTU/min (each)

BM27 - **Blue M Oven POM-7-336F** for air burnout of volatile compounds from capacitors 341 BTU/min

BM28 - **Blue M Oven POM-7-336F** for air burnout of volatile compounds from capacitors 341 BTU/min

BM64 - **Blue M Oven POM-7-336F** for air burnout of volatile compounds from capacitors 341 BTU/min

BM65 & BM66 - **Blue M Oven POM-7-336F** for air burnout of volatile compounds from capacitors 341 BTU/min (each)

(VOID) CL01 CL02 - **(VOID) Cladan Kiln 315** for densification of ceramic capacitors rated at 682 BTU/min (each)

(VOID) CL03 thru CL05 - **(VOID) Cladan Kiln 315** for densification of ceramic capacitors rated at 682 BTU/min (each)

GB1 - **Gruenberg Oven C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min

GB2 & GB3 - **Gruenberg Oven C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)

GB4, GB5 & GB14 thru GB20 - **Gruenberg Ovens C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)

GB36 & GB38 - **Gruenberg Oven C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)

GB39, GB40, GB42, GB43 & GB46 - **Gruenberg Oven C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)

GB47 - **Gruenberg Oven C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min

GB48 - **Gruenberg Oven C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min

GB59 - **Gruenberg Oven C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min

GB60 thru GB62 - **Gruenberg Oven C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)

GB63, GB65 thru GB79 - **Gruenberg Oven C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)

GB81 thru GB99 - **Gruenberg Oven C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)

GB100 - **Gruenberg Oven C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min

GB101 - **Gruenberg Oven C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min

GB102 - **Gruenberg Oven C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min

GB111 - **Gruenberg Oven C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min

GB112 - **Gruenberg Oven C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min

GB113 - **Gruenberg Oven C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min

GB114 - **Gruenberg Oven C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min

GB115 & GB116 - **Gruenberg Oven C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)

GB117 thru GB120 - **Gruenberg Oven C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)

GB121 & GB122 - **Gruenberg Oven C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)

GB126 thru GB129 - **Gruenberg Oven C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)

GB130 - **Gruenberg Oven C135H11M** for air burnout of volatile compounds from capacitors rated at

1,366 BTU/min

GB131 thru GB180 - **Gruenberg Oven C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)

GB182 thru GB184 - **Gruenberg Oven C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)

HA9 - **Harper Double Hearth Kiln** for densification of ceramic capacitors rated at 13,298 BTU/min

HA10 & HA11 - **Harper Double Hearth Kiln** for densification of ceramic capacitors rated at 13,298 BTU/min (each)

HA12 - **Harper Double Hearth Kiln** for densification of ceramic capacitors rated at 13,298 BTU/min

HA15 & HA16 - **Harper Double Hearth Kiln** for densification of ceramic capacitors rated at 16,026 BTU/min (each)

HA17 & HA18 - **Harper Double Hearth Kiln** for densification of ceramic capacitors rated at 16,026 BTU/min (each)

HA1 thru HA7 - **Harper Single Hearth Kiln** for densification of ceramic capacitors rated at 5,456 BTU/min (each)

HA14 - **Harper Single Hearth Kiln** for densification of ceramic capacitors rated at 5,456 BTU/min

N13 & N14 - **Sierra Therm Oven 2k26-91C69-7AN** for nitrogen burnout of volatile compounds rated at 3,182 BTU/min (each)

N15 - **Sierra Therm Oven 2k26-91C69-7AN** for nitrogen burnout of volatile compounds rated at 3,182 BTU/min

(VOID) TK1 thru TK5 & TK9 - **(VOID) Tokai Continuous Kiln** for burnout and firing; 10,415 BTU/min (each)

(VOID) TK6 & TK7 - **(VOID) Tokai Continuous Kiln** for burnout and firing; 10,415 BTU/min (each)

(VOID) NNE1 thru NNE4 - **(VOID) Tokai Non-Noble Kiln** for burnout and firing rated at 63 KVA (each)

(VOID) NNE5 thru NNE9 - **(VOID) Tokai Non-Noble Kiln** for burnout and firing rated at 63 KVA (each)

N5 - **WJ Oven 12CA-87** for nitrogen burnout of volatile compounds rated at 2,557 BTU/min

N7 thru N10 - **WJ Oven 12CA-87** for nitrogen burnout of volatile compounds rated at 2,557 BTU/min (each)

N12 - **WJ Oven 12CA-87** for nitrogen burnout of volatile compounds rated at 2,557 BTU/min

UNIT ID 10 – MB2: CMAP Buildup - *This unit was operational at the time of inspection. Visible emissions were nonexistent.*

C200 thru C207 - **CMAP machine** (buildup process): chip fabrication of $1.8x10^6$ pcs/day (each)

C208 thru C215 - **CMAP machine** (buildup process): chip fabrication of $1.8x10^6$ pcs/day (each)

C216 thru C223 - **CMAP machine** (buildup process): chip fabrication of $1.8x10^6$ pcs/day (each)

C224 thru C231 - **CMAP machine** (buildup process): chip fabrication of $1.8x10^6$ pcs/day (each)

C232 thru C239 - **VOID - CMAP machine** (buildup process): chip fabrication of $1.8x10^6$ pcs/day (each)

C240 thru C247 - **VOID - CMAP machine** (buildup process): chip fabrication of $1.8x10^6$ pcs/day (each)

UNIT ID 11 – MB2: CMAP Support - *This unit was operational at the time of inspection. Visible emissions were nonexistent.*

BM-202 thru BM-205 - **Blue M Ovens TA662G-1** for air burnout of volatile compounds from capacitors rated at 325 BTU/min (each)

DD-7 thru DD-10 - **Disco Dicer chip fabrications/capacitor separations** - $9.2x10^6$ pcs/day (each)

GB232 thru GB235 - **Gruenberg Ovens** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)

LD1 thru LD3 - **Linear Dryers** for the drying of capacitor chips

LD4 - **Linear Dryer** for the drying of capacitor chips

MTI-201 & MTI-202 - **MTI Dicer chip fabrications/capacitor separations** - $9.2x10^6$ pcs/day (each)

B201 - **MB2 Boiler** for steam production rated at $13.4x10^6$ BTU/hr; **NSPS Subpart Dc**

SM2 - **Support Maintenance** for MB2 miscellaneous cleaning

UNIT ID 12 – MB2: Kiln Room - *This unit was operational at the time of inspection. Visible emissions were nonexistent.*

BM-201 - **Blue M Oven TA662G-1** for air burnout of volatile compounds from capacitors rated at 325 BTU/min

GB201 thru GB207 - **Gruenberg Ovens C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)

GB208 - **Gruenberg Oven C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min

GB209 thru GB215 - **Gruenberg Ovens C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)
GB216 - **Gruenberg Oven C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min
GB217 thru GB223 - **Gruenberg Ovens C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)
GB224 - **Gruenberg Oven C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min
GB225 thru GB231 - **Gruenberg Ovens C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)
GB236 thru GB284 - **Gruenberg Ovens C135H11M** for air burnout of volatile compounds from capacitors rated at 1,366 BTU/min (each)
TK1 - **Tokai Continuous Kiln** for burnout and firing; 10,415 BTU/min
TK2 & TK3 - **Tokai Continuous Kilns** for burnout and firing; 10,415 BTU/min (each)
TK8 thru TK12 - **Tokai Continuous Kilns** for burnout and firing; 10,415 BTU/min (each)
NNE20 thru NNE25 - **Tokai Non-Noble Kilns** for burnout and firing rated at 65 KVA (each)
NNE26 thru NNE31 - **Tokai Non-Noble Kilns** for burnout and firing rated at 65 KVA (each)
TFP - **Thin Film Process** which transforms silicon wafers into integrated passive components (IPCs)

UNIT ID 13 – MB2: Thin Film Process - *This unit was operational at the time of inspection. Visible emissions were nonexistent.*
TFP - **Thin Film Process** which transforms silicon wafers into integrated passive components (IPCs)

Control Devices:
AD-1 - **Absorber/desorber pair #1** for the FluiSorb System MB-2 - CMAP Buildup (Equip ID C200-C207). *This unit has been removed.*

AD-2 - **Absorber/desorber pair #2** for the FluiSorb System MB-2 - CMAP Buildup (Equip ID C208-C215). *This unit was operating at 2.9"w.c. and 403.1ºF at the time of inspection. Operational range is 1.0"w.c – 5.0"w.c. and 350ºF – 500ºF. Visible emissions were nonexistent.*

AD-3 - **Absorber/desorber pair #3** for the FluiSorb System MB-2 - CMAP Buildup (Equip ID C216-C223). *This unit was operating at 2.2"w.c. and 382.0ºF at the time of inspection. Operational range is 1.0"w.c – 5.0"w.c. and 350ºF – 500ºF. Visible emissions were nonexistent.*

AD-4 - **Absorber/desorber pair #4** for the FluiSorb System MB-2 - CMAP Buildup (Equip ID C224-C231). *This unit was operating at 1.5"w.c. and 382.1ºF at the time of inspection. Operational range is 1.0"w.c – 5.0"w.c. and 350ºF – 500ºF. Visible emissions were nonexistent.*

DC-A - **Dust Collector A** - Farr Tenkay Dust Collector 60L for use in controlling emissions from RMM Grinders and Mills, RMM Mixers & Ovens, Kilns/Priller (Equip ID G1-5, M1-12, BL1, B4-6, RMMPS1-3, V1-8, CSB1, RMM1-2, RMMA-L, RTF1-3, VK1-16, RK1-4, PLB, PR1-9). *This unit was operating at 2.0"w.c. at the time of inspection. . Operational range is 1.0"w.c – 5.0"w.c. Visible emissions were nonexistent.*

DC-B - **Dust Collector B** - Farr Tenkay Dust Collector 60L for use in controlling emissions from RMM - Grinders and Mills, RMM Mixers & Ovens, Kilns/Priller (Equip ID G1-5, M1-12, BL1, B4-6, RMMPS1-3, V1-8, CSB1, RMM1-2, RMMA-L, RTF1-3, VK1-16, RK1-4, PLB, PR1-9). *This unit was operating at 1.2"w.c. at the time of inspection. . Operational range is 1.0"w.c – 5.0"w.c. Visible emissions were nonexistent.*

DC-C - **Dust Collector C** - American Air Filter Pulse Pak II for use in controlling emissions from RMM Grinders and Mills, RMM Mixers & Ovens, Kilns/Priller (Equip ID G1-5, M1-12, BL1, B4-6, RMMPS1-3, V1-8, CSB1, RMM1-2, RMMA-L, RTF1-3, VK1-16, RK1-4, PLB, PR1-9). *This unit was not operating at the time of inspection.*

MB1-H1 - **MB1 Dicer Baghouse 1** - Spencer Vacuum Dust Collector used for CMAP Support: Dicers (Equip ID GS1-4, 6, 9-12), Dicers (Equip ID GS5, 7, and 8 Not in Service). *This unit has been removed.*

MB1-H2 - (Not In Service) **MB1 Dicer Baghouse 2** - Spencer Vacuum Dust Collector used for CMAP Support: Dicers (Equip ID GS9-12, (Moved to MB1-H1)). *This unit has been removed.*

MB1-H3 - **MB1 Dicer Baghouse 3** - Spencer Vacuum Dust Collector used for CMAP Support: Dicers (Equip ID DD1-6). *This unit has been removed.*

MB2-BH - **MB2 Dicer Baghouse** - Spencer Centrifugal Separator to Baghouse used for CMAP Support: CMAP Support Ovens & Dicers (Equip ID BM202-203, LD3, GB232-235, DD7-10, MTI201-202, TA2). *This unit was not operating at the time of inspection.*

SRS-ATOM - **Solvent Recovery System with Atomizer** for use in CMAP Buildup (Equip ID C0-C32, C54) *This unit has been removed.*

TO-1 - **Thermal Oxidizer #1** for use in the FluiSorb System in the MB-2 CMAP Buildup (Equip ID C200-C215). *This unit was operating at 1534ºF at the time of inspection. The operational range for this unit is 1400ºF – 1800ºF. Visible emissions were nonexistent.*

TO-2 - **Thermal Oxidizer #2** for use in the FluiSorb System in the MB-2 CMAP Buildup (Equip ID C216-C231). *This unit has been removed.*

TFS - **Thin Film Scrubbers** fluidized bed scrubbers for use in controlling emissions from the Thin Film Process. *This unit was operating at the time of inspection. Scrubber #1 was operating at 1.6"w.c. and 8.13 s.u. and scrubber #2 was operating at 1.2"w.c. and 6.82 s.u. The operational range is 1.0" – 3.0" w.c. and 6.0 – 13.0 s.u. Visible emissions were nonexistent.*

Facility Wide Conditions:

2 – Condition states that any changes in the parameters used in the air dispersion modeling may require a review by the facility to determine continuing compliance with these standards. *According to Mr. Bryant and Ms. Smith no changes have been made that would affect modeling.*

5 – Condition states that in the event of any malfunction of air pollution control equipment or system, process upset or other equipment failure which results in discharges of air contaminants lasting for one hour or more and which are greater than those discharges described for normal operation in the permit application

shall be reported to the local Environmental Quality Control (EQC) District office within twenty-four (24) hours after the beginning of the occurrence. *Ms. Smith stated that there have not been any such occurrences.*

Emission Unit Conditions:

3 – Condition limits the opacity to 20% for Unit ID 01 thru Unit ID 13. *Visible emissions were nonexistent at the time of inspection.*

4 – Condition limits VOC emissions to 39.5 TPY. *VOC emissions have not exceeded 39.5 TPY according to records provided by Ms. Smith.*

6 – Condition limits the opacity to 20% for the thermal oxidizers except during startup or shutdown. A startup and shutdown log shall be maintained. *Visible emissions were nonexistent at the time of inspection. AVX personnel maintain a startup and shutdown log.*

8 – Condition limits the opacity to 20 % for the MB2 boiler except during startup or shutdown. A startup and shutdown log shall be maintained. *Visible emissions were nonexistent at the time of inspection. AVX personnel maintain a startup and shutdown log.*

Monitoring and Reporting Conditions:

5 – Condition states that AVX Corporation shall conduct and log maintenance inspections of all scrubbers to ensure proper operation in accordance with the preventative maintenance (PM) plan for these units. *Records of maintenance inspections were randomly reviewed from April 2010 to March 2012.*

6 – Condition states that AVX Corporation shall install, calibrate and maintain a pressure drop gauge on each module of the dust collector or baghouse. Pressure drop readings shall be recorded daily. *Ms. Smith provided records of daily pressure drop readings, which were randomly reviewed from April 2010 to March 2012.*

7 – Condition states that AVX Corporation shall maintain an adequate supply of bags on hand to replace any defective bags promptly and keep a log of bag maintenance. *According to AVX personnel a supply of bags are stored in MB2. Records provided were randomly reviewed from April 2010 to March 2012 and indicated that no bags have been replaced.*

8 – Condition states that AVX Corporation shall conduct and log maintenance inspections of all baghouses to ensure proper operation. *AVX personnel perform weekly and monthly inspections of all baghouses. Records of inspections were randomly reviewed from April 2010 to March 2012.*

9 – Condition stated that pressure drop readings shall be required for the MB1 Dicer Baghouses and MB2 Dicer baghouse only when the dicers are operating in "dry mode." On the days when the dicers are operating in "wet mode," a clear notation shall be made in the baghouse log indicating such. *Ms. Smith provided records that were randomly reviewed from April 2010 to March 2012. Under normal conditions the dicers are operated in "dry mode" unless noted in the log.*

10 – Condition states that AVX Corporation shall calibrate and maintain the cooling coil thermocouple, inlet gas thermocouple and cooling water continuous temperature gauge as they pertain to the Solvent Recovery System (SRS). The facility shall maintain an operational logbook of all performance parameters. *This SRS has been out of service since December 2009.*

11 – Condition states that temperature readings shall be within the specified ranges and the readings shall be maintained in logs. *Ms. Smith provided records of daily temperature readings; no deviations were noted from the random review of April 2010 to March 2012.*

12 – Condition states that AVX Corporation shall conduct and log maintenance inspections of the solvent recovery system to ensure proper operation in accordance with the preventative maintenance (PM) plan. *The solvent recovery system has been out of service since December 2009.*

13 – Condition states that AVX Corporation shall install, operate and maintain a continuous temperature gauge on each thermal oxidizer and readings shall be recorded daily. AVX shall also install an alarm feature to provide notification if the combustion zone temperature deviates from the prescribed range. A hard copy of the time & date when the alarm is triggered shall be maintained and kept on site. *Records were randomly reviewed from April 2010 to March 2012 of daily temperature readings from the thermal oxidizer, no deviations were noted. Mr. Bryant stated that there is an alarmed installed that would notify personnel of a temperature deviation. The alarm has not been triggered in the review period.*

14 – Condition states that temperature readings shall be within the specified ranges and the readings shall be maintained in logs. *Records were provided and randomly reviewed from April 2010 to March 2012. No deviations were noted.*

15 – Condition limits the MB2 boiler to use only natural gas as a fuel. Records of the amount of fuel combusted during each month shall be maintained. *Records of monthly fuel combustion are being maintained. The amount of fuel combusted in February 2012 was 11,362 therms (25,716 Kg).*

16 – Condition requires the boiler to be inspected and preventive maintenance to be completed on a quarterly basis. All maintenance activities shall be maintained in logs. *AVX personnel are maintaining records of all boiler maintenance. The last quarterly inspection was performed in January 2012.*

18 – Condition states that AVX Corporation shall perform daily Visual Inspections on all emission points for Unit ID 01 thru Unit ID 13 for which a cyclone or no air pollution control device is utilized. A log shall be kept to record all visual inspections, including cause and corrective action taken if necessary. *Records of daily visual inspections were randomly reviewed from April 2010 to March 2012. No issues were noted.*

19 – Condition states that AVX Corporation shall maintain semiannual consumption records of all solvents containing volatile organic compounds (VOCs) and/or hazardous air pollutants (HAPs). *Mr. Bryant provided VOC and HAP consumption records. The most recent semiannual report was submitted February 7, 2012. VOC consumption was 20.21 tons and HAP consumption was 1.39 tons.*

20 – Condition states that AVX Corporation shall use monthly emissions estimates to calculate a 12-month rolling sum of VOC emissions from the MB2. *Records provided by Mr. Bryant indicated that the 12-month rolling sum of VOC emissions ending in February 2012 was 3.58 tons.*

21 – Condition states that AVX Corporation shall report to the Bureau of Air Quality if the 12-month rolling sum of VOC emissions from the MB2 at any time exceeds 35 tons. *Mr. Bryant stated that the 12-month rolling sum has not exceeded 35 tons during this review period.*

23 – Condition states that AVX Corporation shall install, calibrate annually and maintain pressure drop indicators & pH meters on the fluidized bed scrubber (Thin Film Scrubber). Both parameters shall be recorded daily. Operational ranges for the monitored parameters shall be established. *Annual calibrations of required parameters are being maintained. Records of daily readings were randomly reviewed from April 2010 to March 2012.*

Additional Conditions:

3 – Condition states that AVX Corporation shall implement a program for routine inspection and subsequent maintenance on all equipment including duct work, piping, or any other materials pertaining to material transport or storage. Maintenance events shall be recorded and a reasonable inventory of routine replacement items shall be kept on-site to facilitate timely repair of any malfunctioning systems. *AVX personnel maintain maintenance records pertaining to problems noted and corrective actions taken.*

Operational Flexibility:

4 – Condition states that solvent cleaning operations in the MB2 facility using solvents that meet any one or more of the exemption requirements are exempt from any additional work practice or housekeeping requirements. *According to Ms. Smith and exempt solvent is used for cleaning.*

5 – Condition states that hand-wipe cleaning operations in the MB2 facility shall, to the maximum extent practical, utilize cleaning solvent solutions that have a composite vapor pressure of 45 mmHg or less at 20ºC. *Ms. Smith stated that cleaning solvents used meet this requirement.*

7 – Condition states that AVX Corporation shall maintain records for each cleaning solvent used in cleaning operations in the MB2 facility that is exempt or for any semi-aqueous cleaning solvents used for flush cleaning operations. *AVX does not utilize flush cleaning operations.*

Insignificant Activities:

The following sources were observed in use during this inspection with no problems or visible emissions noted:

Plating Department

PL-1 - Blue M Oven for moisture removal rated at 194 BTU/min
PL-2 - Blue M Oven for moisture removal rated at 512 BTU/min

PL-3 - Blue M Oven for moisture removal rated at 512 BTU/min
PL-4 - Blue M Oven for moisture removal rated at 683 BTU/min
PL-5 - Blue M Oven for moisture removal rated at 683 BTU/min
PL-6 - Blue M Oven for moisture removal rated at 683 BTU/min
SS1 - Solder Station for soldering of parts rated at 260 kg/day
SS2 - Solder Station for soldering of parts rated at 260 kg/day

Termination Department
L1 - Laser to mark chips with ID number rated at 260 K/day
L2 - Laser to mark chips with ID number rated at 260 K/day
L3 - Laser to mark chips with ID number rated at 260 K/day
L4 - Laser to mark chips with ID number rated at 260 K/day
L5 - Laser to mark chips with ID number rated at 260 K/day
SW6 - Solvent Wash for cleaning of equipment
SW7 - Solvent Wash for cleaning of equipment

Raw Materials Manufacturing (RMM)
RMM1- Blue M Oven CW778OG4 for moisture and organic removal rated at 797 BTU/min
RMM2 - Blue M Oven CW778OG4 for moisture and organic removal rated at 797 BTU/min
RMMA - Blue M Oven CW888OG for moisture and organic removal rated at 797 BTU/min
RMMB - Blue M Oven CW888OG for moisture and organic removal rated at 797 BTU/min
RMMC - Blue M Oven CW888OG for moisture and organic removal rated at 797 BTU/min
RMMD - Blue M Oven CW888OG for moisture and organic removal rated at 797 BTU/min
RMME - Blue M Oven CW888OG for moisture and organic removal rated at 797 BTU/min
RMMF - Blue M Oven CW888OG for moisture and organic removal rated at 797 BTU/min
RMMG - Blue M Oven CW888OG for moisture and organic removal rated at 797 BTU/min
RMMH - Blue M Oven CW888OG for moisture and organic removal rated at 797 BTU/min
RMMI - Blue M Oven CW888OG for moisture and organic removal rated at 797 BTU/min
RMMJ - Blue M Oven CW888OG for moisture and organic removal rated at 797 BTU/min
RMMK - Blue M Oven CW888OG for moisture and organic removal rated at 797 BTU/min
RMML - Blue M Oven CW888OG for moisture and organic removal rated at 797 BTU/min

Lot Quality Department
HDS2 - Hand Dip Solder Station
HDS3 - Hand Dip Solder Station
HDS4 - Hand Dip Solder Station

Conclusion:

No violations of permit requirements or applicable regulations were observed during this inspection.