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GEOLOGICAL & ENVIRONMENTAL SERVICES, INC.

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BUREAU OF AIR REGULATION

October 27, 2004

Mr. Al Linero
Florida Department of Environmental Protection
Division of Air Resources Management
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Response to Verbal Request for Additional Information
Air Construction Permit Revision Application
Nailite International, Inc.
1111 NW 165th Street
Miami, Florida
Permit Number: 0250407-005-AC (PSD-FL-289A)

Dear Mr. Linero:

We are pleased to forward four (4) copies of the above referenced document for your review and approval. The document was prepared by Golder and Associates (Golder) in coordination with Nailite International, Inc. (Nailite) and Koogler & Associates Environmental Services. Any questions may be directed to Golder or Nailite.

Truly yours,
CRB Geological & Environmental Services, Inc.

Victor Rossinsky, Ph.D., P.G.
Senior Project Manager

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Golder Associates Inc.

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Telephone (813) 287-1717
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October 15, 2004

043-9535

Florida Department of Environmental Protection
Division of Air Resources Management
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Attn: Mr. Al Linero

RE: RESPONSE TO VERBAL REQUEST FOR ADDITIONAL INFORMATION
AIR CONSTRUCTION PERMIT REVISION APPLICATION
NAILITE INTERNATIONAL, INC.
1111 NW 165TH STREET
MIAMI, FLORIDA
PERMIT NUMBER: 0250407-005-AC (PSD-FL-289A)

Dear Mr. Linero:

Per the request of Ms. Teresa Heron on August 2, 2004, Florida Department of Environmental Protection (FDEP) Air Division, and on behalf of Nailite International, Inc. (Nailite), please find below (Part 1) the responses to the request for additional information regarding the above referenced permit application. Additionally, this letter includes a request to change select permit conditions and related comments, as discussed in Part 2 below.

PART 1

1. *Provide last 5 years of Volatile Organic Compounds (VOCs) and Hazardous Air Pollutants (HAPs) emissions data. You may provide 5 years to date if 2004 data is available, if not, provide 1999 to 2003.*

   Please find attached as Table 1, tabulated VOC and HAPs emissions data representing year 1999 to August 2004. It is our understanding this information is to demonstrate Nailite's decreasing trend of air emissions as a result of installation of air pollution control equipment and implementation of work practice standards. Also attached, as Figure 1, is a graphical representation of the decreasing emissions trend for years 1999 through 2003. Figure 1 represents the sum of Line 1 (EU 01) and Line 2 (EU 04) emissions. Figure 2 represents emissions per emission unit for years 1999 through 2003. Emission estimates are based on a mass-balance approach, accounting for the capture and destruction efficiencies of the RTO. To be conservative, the calculations do not take into account the percentage of VOC/HAP that remains in the coating.

   Negligible amounts of xylene, ethylbenzene, and cumene are emitted, which are presented in Table 1. However, emissions of xylene, ethylbenzene, and cumene are not included in the chart presented in Figure 2.

The emissions data reflects greater than a 60 percent decrease in VOCs, HAPs, and toluene from 1999 through 2003.

2. *The Air Construction Revision Permit Application, dated June 15, 2004, requested that VOC emissions be limited by the PSD standard of 250 tons per year. In response to the request, the FDEP stated it will consider a 249 tons per year emissions limit; although, an emissions limit based on a shorter time duration will be established to enable the facility to demonstrate and evaluate their compliance status. The FDEP proposes a daily VOC emissions limit.*

A daily emissions limit will be difficult for Nailite to comply with since Nailite's operations are strongly seasonal and coating use cannot be tracked on an hourly basis. Figure 3 presents Nailite's relative monthly VOC emissions for the years January 2001 through August 2004. As shown in the graph, emissions are not constant, but tend to generally increase in the spring/summer months and decrease in fall/winter correlating with customer demands and production rates. Nailite is concerned that a daily emission limit determined from the proposed annual emission limit of 249 tons per year divided by the allowable operation rate (based on 7,280 hours per year) will limit Nailite's production in their busy season and result in a loss of revenue.

Nailite is aware that the FDEP's intention of establishing an emission limit based on a shorter averaging period is to evaluate compliance on a term that would facilitate determination of compliance status on a more immediate basis to allow for corrective action and reduce the potential of exceeding the annual limit.

Nailite supports FDEPs objective and will consent to the emission limit of 249 tons VOC per year. Although, due to the seasonal fluctuations in operations, Nailite requests that the permitted emission limit be established as not to exceed 30 tons of VOC per month or 249 tons VOC per year.

3. *The EPA has promulgated the final regulations in 40CFR63 establishing Maximum Achievable Control Technology (MACT) standards for the Surface Coating of Plastic Parts Industry. Propose applicability and if applicable, a schedule of MACT compliance.*

On April 19, 2004, the EPA published the final MACT Subpart PPPP for the Surface Coating of Plastic Parts Industry. According to Permit Condition No. 10 of the facility's existing Title V Operating Permit, once the final rule is adopted by the FDEP, Nailite may apply for a permit amendment to comply with any applicable less restrictive compliance requirement of the Federal MACT rather than the case-by-case MACT established for the facility. This however does not apply to the portion of Condition No. 10 which stipulates that the RTO control device already installed shall continue to be operated as required by the permit, since it is the basis for the PSD reclassification as a synthetic minor facility.

As such, there are two options available as a result of the promulgation of the MACT; 1) retain the current case-by-case MACT and adopt the less restrictive Federal MACT compliance requirements or 2) adopt the Federal MACT, if more stringent.

Based on the Federal MACT emission standard of 0.16 lb organic HAP emitted/lb coating solids used and requirements for notification,; performance testing; semi-annual compliance, monitoring, and startup, shutdown malfunction reports; development of a work practice plan and startup, shutdown, and malfunction plan; monitoring, and recordkeeping the Federal MACT appears to be more stringent than the case-by-case MACT determination already in place.

According to the MACT, existing affected sources must be in compliance with the final rule no later than April 19, 2007. New and reconstructed sources must be in compliance upon initial startup of the affected source or by April 19, 2004, whichever is later. According to the rule, an existing source is any affected source that is not a new source. A new source is any affected source, of which the construction or reconstruction is commenced after the Administrator first proposes a relevant MACT emission standard applicable to such source (December 4, 2002).

No. 1 Paint Line (EU 001) is considered an existing source since it has been in operation at since year 2000. The only improvements to EU 001 have been for pollution control purposes (i.e., installation of process enclosures and the RTO). To meet capture efficiency requirements, the facility improved the unit in accordance with the compliance plan, which is part of the facility's Title V Operating Permit. Since, the expense of the modifications were less than 50% of the cost of installing a brand new line, the line is not considered a reconstructed source. Therefore, EU 001 is considered an existing source and has until April 19, 2007, to comply with the final rule.

Additionally, No. 2 Paint Line (EU 004) is considered an existing source, since construction of the line commenced prior to the December 4, 2002, proposed rule promulgation date. Therefore, the MACT compliance date for EU 004 is also April 19, 2007. However, because the facility previously adopted a case-by-case MACT, the compliance date may be extended to April 19, 2011, if necessary and approved by the FDEP.

PART 2

1. According to the facility's Title V Operating Permit (0250407-006-AV) and the FDEP notice dated September 4, 2003, *Request to Re-Issue and Modify Construction Permit*, the hours of operation for each and every emission unit is limited to 7,280 hours per year. This condition limits the eight injection molding machines and eight hydraulic tanks (EU 002) and the four storage silos (EU 003) to 7,280 hours per year. As the hydraulic tanks and storage silos may contain their contents on a continuous basis, it is requested that this condition is revised to reflect 8,760 hours of operation for EU 002 and EU 003.

2. The capture efficiency of the No. 1 Paint Line (EU 001) was tested in March 2004. The results were previously provided to the FDEP. As discussed in the Revised Air Construction Permit application, submitted on June 15, 2004, the test yielded a lower than anticipated capture efficiency of 72.72%. This was not believed to be representative of the actual capture conditions for the paint line. It is thought that the natural gas fired oven associated with the paint line is oxidizing the flashed-off solvents prior to the entry of these solvents into the sample port. Based on a mass-balance evaluation, this condition appears as if higher flash-off is occurring resulting in fugitive emissions. Although, it is believed that destruction of the VOCs is actually occurring within the oven. Nailite requests that this destruction efficiency be accounted for in permitting and compliance efforts. Koogler and Associates has proposed a plan to estimate this efficiency. The proposed engineering plan is presented as Attachment A. Authorization to perform the test for FDEP's consideration in permitting and compliance efforts is requested. Once the authorized test is performed, results will be submitted to the FDEP.

3. In addition to the above request to increase the operating hours of the Injection Molding Machines/Oil Tanks (EU 002) from 7,280 to 8,760 hours, we are requesting that EU 002 be redesignated as an insignificant emission unit. The injection molding machines are closed units. The molding operations include the injection of a liquid, high viscous liquid colorant into the

pellet blend, plasticizing the blend, and molding to the desired form. According to the Material Safety Data Sheets (MSDSs), the colorant and polypropylene pellets do not contain VOCs or HAPs. Therefore, this unit is assumed to have negligible emissions and would qualify for the generic emission unit exemption in Rule 62-210.300(3)(b)1.b.(Florida Administrative Code (F.A.C.). Additionally, the oil tanks are integrated into the machines and serve to provide machine lubrication. It is our opinion that in addition to the generic emission unit exemption, the tanks also qualify for a categorical exemption under Petroleum Lubrication Systems, established in Rule 62-210.300(3)(a)30., F.A.C.

Additionally, the current operating permit does not accurately reflect existing equipment at the facility. The facility currently has nine injection molding machines and hydraulic tanks. Future modifications may include the construction of one additional injection molding machine and hydraulic tank.

4. In addition to the above request to increase the operating hours of the storage silos (EU 003) from 7,280 to 8,760 hours, we are requesting that EU 003 be redesignated as an insignificant emission unit. The silos are currently equipped with a vacuum pump/filter system to protect process equipment such as pipes from particulate buildup. The intent of the particulate control is not to control particulate matter from emitting into the atmosphere because the pellet system is a closed system with no points of emissions (with the exception of the baghouse, which is considered negligible). It is our opinion that this qualifies for the generic emission unit exemption in Rule 62-210.300(3)(b)1.b, F.A.C.

   Additionally, the current operating permit does not accurately reflect the facility's equipment. The facility currently has only two silos.

Please find enclosed the Professional Engineer (P.E.) Certification Statement and Responsible Official Certification. Should you have any questions regarding this letter, please contact the undersigned.

Sincerely,

GOLDER ASSOCIATES

Renee Weaver
Project Engineer

Scott McCann, P.E.
Associate

Attachments:
P.E. Certification Statement
R.O. Certification Statement
Table 1-Air Emissions
Figure 1-Total Air Emissions
Figure 2-Air Emissions per Emission Unit
Figure 3-Monthly VOC Emission Fluctuations
Attachment A-Engineering Plan

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Professional Engineer Certification

1. Professional Engineer Name: **Scott A. McCann, P.E.**
   Registration Number: **54172**
2. Professional Engineer Mailing Address...
   Organization/Firm: **Golder Associates Inc.****
   Street Address: **6241 N.W. 23rd Street, Suite 500**
   City: **Gainesville** State: **Florida** Zip Code: **32653-1500**
3. Professional Engineer Telephone Numbers...
   Telephone: **(352) 336-5600** ext. Fax: **(352) 336-6603**
4. Professional Engineer Email Address: **smccann@golder.com**
5. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

(3) If the purpose of this application is to obtain a Title V air operation permit (check here ☐, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.

(4) If the purpose of this application is to obtain an air construction permit (check here ☒, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here , if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here ☐, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

Signature 10/14/04
Date

(seal)

*Attach any exception to certification statement. ****Board of Professional Engineers Certificate of Authorization #00001670**

Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name :
   Mr. John Perry, Vice President of Operations

2. Owner/Authorized Representative Mailing Address...
   Organization/Firm: **Nailite International, Inc.**
   Street Address: **1111 NW 165th Street**
   City: **Miami** State: **Florida** Zip Code: **33169**

3. Owner/Authorized Representative Telephone Numbers...
   Telephone: **(305) 620 - 6200 ext.241** Fax: **(305) 623 - 8227**

4. Owner/Authorized Representative Email Address: **jperry@nailite.com**

5. Owner/Authorized Representative Statement:

   I, the undersigned, am the owner or authorized representative of the facility addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other requirements identified in this application to which the facility is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit.

John Perry — Signature

10/19/04 — Date

Table 1
Nailite International
Air Emissions

Date	**1999**	**2000**	**2001**	**2001**	**2001**	**2002**	**2002**	**2002**	**2003**	**2003**	**2003**	**Jan-04 to Aug-04**	**Jan-04 to Aug-04**	**Jan-04 to Aug-04**
Emisison Unit	EU 001	EU 001	EU 001	EU 004	Total	EU 001	EU 004	Total	EU 001	EU 004	Total	EU 001	EU 004	Total
Pollutant	(tons)	(tons)	(tons)	(tons)	(tons)	(tons)	(tons)	(tons)	(tons)	(tons)	(tons)	(tons)	(tons)	(tons)
VOC	366	517.9	270	43.28	313.3	83.51	63.75	147.3	67.11	76.13	143.2	58.64	37.45	96.09
Toluene	332.7	468.8	246.3	39.88	286.1	62.40	47.57	110.0	52.18	59.64	111.8	51.48	32.70	84.18
Xylene*	1.93	2.20	*3.58*	*0.59*	*4.17*	1.11	0.86	1.97	1.84	2.13	3.97	1.98	1.24	3.21
Ethylbenzene	negligible	negligible	negligible	negligible	negligible	0.10	0.08	0.18	0.48	0.57	1.04	0.57	0.37	0.94
Cumene	negligible	negligible	negligible	negligible	negligible	0.28	0.22	0.50	0.29	0.32	0.61	0.16	0.10	0.26
HAPs	334.6	471.0	246.3	39.88	286.1	64.02	48.86	112.9	54.78	62.66	117.4	54.19	34.41	88.60

*values in italics were *estimated*

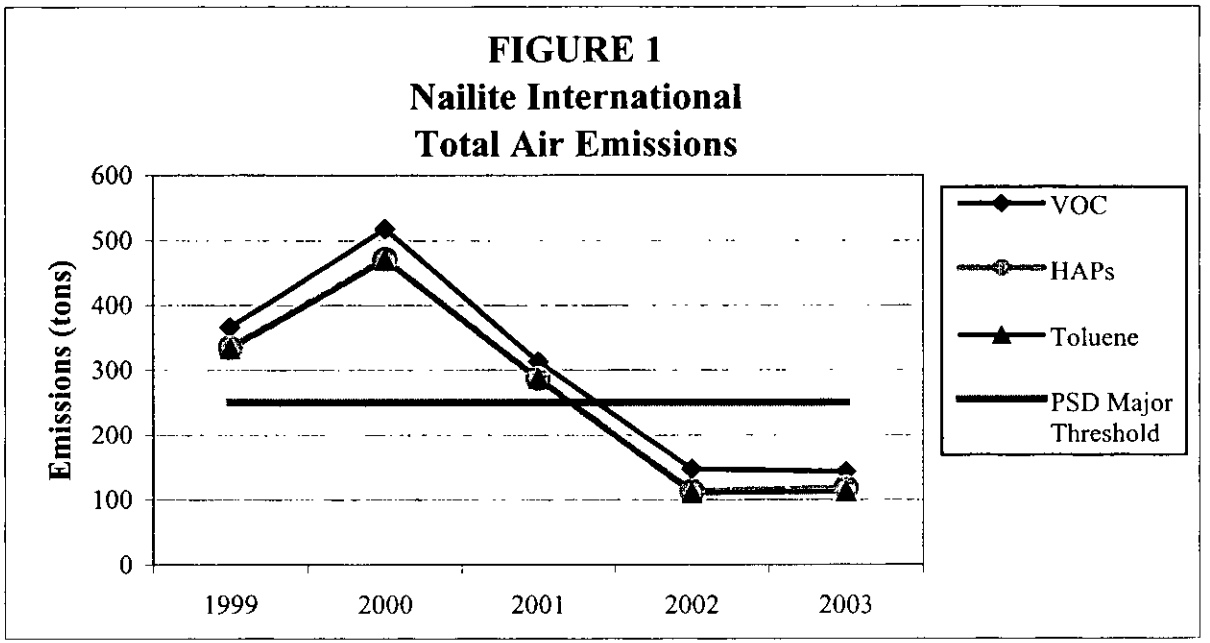


FIGURE 1
Nailite International
Total Air Emissions
Emissions (tons)
600
500
400
300
200
100
0
1999
2000
2001
2002
2003
VOC
HAPs
Toluene
PSD Major Threshold

FIGURE 2
Nailite International
Air Emissions per Emission Unit

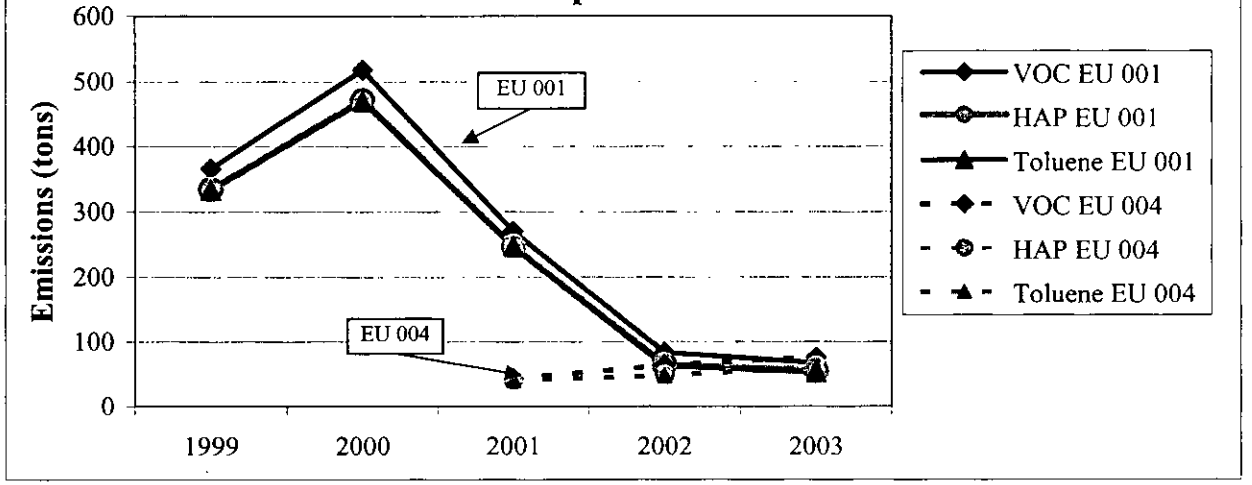
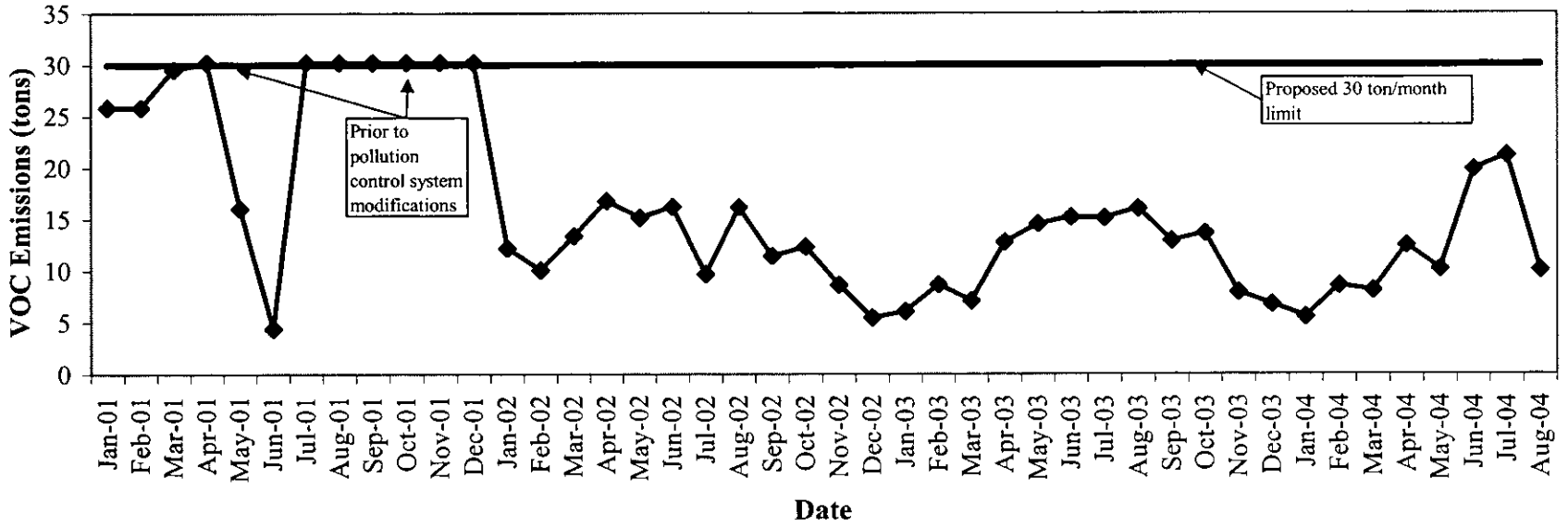


FIGURE 3
Nailite International
Monthly VOC Facility Emission Fluctuations



Test Protocol for Evaluating the Capture Efficiency of Paint Line No. 1
Nailite International, Inc.
Miami, Florida

Nailite International, Inc. (Nailite) manufactures and coats polypropylene siding for architectural and construction applications at a facility located at 1111 Northwest 165th Street, Miami, Florida. The coating operations take place in two paint lines; Paint Line No. 1 equipped with a natural gas heated drying oven and Line No. 2 equipped with an electric convection drying oven. This protocol has been developed by Koogler and Associates, Inc. of Gainesville, Florida to help in the evaluation of the solvent (primarily toluene) capture efficiency of Paint Line No. 1.

Paint Line No. 1 consists of three spray paint booths and two touch-up booths. The paint line has enclosures and an exhaust system to capture solvent released during spraying and product conveying operations. The captured solvents in the air stream and the painted product pass through a natural gas heated drying oven designed to dry the coatings applied to the product. The gas stream leaving the drying oven is directed to a regenerative thermal oxidizer (RTO) which has been measured to be 99+ percent efficient for destroying VOC. The drying oven of Line No. 1 is heated with natural gas which is fired at a rate of one million BTU per hour.

The VOC capture efficiencies of Paint Line No. 1 and Paint Line No. 2 have previously been measured by Koogler and Associates. It was found that even though the enclosures of Paint Line No. 1 and Paint Line No. 2 are similar, the measured VOC capture efficiency of Paint Line No. 1 was lower than the measured capture efficiency of Paint Line No. 2. The capture efficiencies were determined by measuring the amount of solvent (primarily toluene) in the coatings being applied in a paint line, measuring the solvent contained in the

collected over-spray and measuring the solvent in the gas stream going to the RTO. The capture efficiency was calculated as the ratio of the VOC (solvent) in the gas stream to the RTO divided by the VOC (solvent) in the applied coating materials, with a correction made for the solvent in the collected over-sprayed coating.

As the enclosures and ventilation system for VOC capture on Paint Line No. 1 and Paint Line No. 2 are similar and as the measured capture efficiency of Paint Line is lower than the measured capture efficiency of paint Line No. 2, it is suspected that some VOC is destroyed in the direct-fired natural gas heated Line No. 1 drying oven. If this is the case, the measured VOC in the gas stream to the RTO would be reduced; resulting in an apparently lowered VOC capture efficiency. This Test Protocol has been developed following consultation between Nailite and Koogler and Associates personnel to determine if there is VOC destruction in the Line No. 1 drying oven, and, if so, how much VOC is destroyed. The Test Protocol can be explained by referring to Attachment 1; a simplified process flow diagram of Paint Line No. 1.

The Test Protocol consists of two tests. Both tests involve the measurement of the mass (pounds per hour) of CO_2 in the gas stream exhausted from the No. 1 drying oven and directed to the RTO (Gas Stream C, Attachment 1). Previous measurements have shown that the total gas flow rate of Gas Stream C is approximately 20,000 standard cubic feet per minute (scfm).

In summary, Test 1 involves the measurement of CO_2 in Gas Stream C while the exhaust system of Paint Line No. 1 is operating normally and while the gas fired drying oven is operating normally but with no coating (no solvent) being applied in any of the spray booths on Line No. 1. Test 2 will be identical to the first test (i.e., the exhaust system operating normally and the gas fired oven operating normally) but with coating being applied at a normal rate. An increase in the mass of CO_2 (pounds per hour) in Gas Stream C during Test No. 2 would

demonstrate that some VOC (solvent) is destroyed in the drying oven. The magnitude of the CO_2 increase, if it occurs, can be related to the mass (pounds per hour) of VOC (solvent) destroyed in the drying oven.

Test No. 1

The exhaust system for the paint booths and the enclosed conveyor lines of Paint Line No. 1 will be operated normally however no product coating will be applied. In other words, the VOC (solvent) mass entering the natural gas heated drying oven of Line No. 1 will be zero.

The gas fired drying oven will be operated as normal. The gas firing rate to the oven will be held constant at approximately one million BTU per hour; the design gas firing rate of the oven.

Measurements will be made in the gas stream exhausted from the oven (Stream C, Attachment 1) for:

- Gas flow rate, including moisture content and temperature (dscfm),
- CO_2 (ppm, volume),
- CO (ppm, volume), and
- Methane and non-methane hydrocarbons (ppm, volume).

The gas flow rate in Gas Stream C is approximately 20,000 dscfm. The CO_2 generated by the combustion of natural gas is expected to be approximately 160 pounds per hour; equivalent to a CO_2 concentration of approximately 1180 ppm by volume in Gas Stream C (See Attachment 2).

The CO, methane and non-methane measurements will be made to provide supporting information. CO will be an indicator of incomplete combustion and

methane will be a measure of natural gas slip. Non-methane hydrocarbons should be zero.

Test No. 2

The exhaust system for the paint booths and the enclosed conveyor lines of Paint Line No. 1 will operate normally with coating applied at a typically normal rate. Based on past testing, this is equivalent to a VOC (primarily toluene) use rate of approximately 200 pounds per hour. If the capture efficiency of Line No. 1 was 100 percent, 200 pounds per hour of toluene would be entering the natural gas heated drying oven.

The gas fired drying oven will be operated as normal. The gas firing rate to the oven will be held constant at approximately one million BTU per hour; the same as the firing rate during Test No. 1.

Measurements will be made in the gas stream exhausting the oven (Gas Stream C, Attachment 1) for:

- Gas flow rate, including moisture content and temperature (dscfm),
- CO_2 (ppm, volume),
- CO (ppm, volume), and
- Methane and non-methane hydrocarbons (ppm, volume).

If 10 percent of the solvent (toluene) entering the drying oven (approximately 20 pounds per hour) is destroyed in the oven, the CO_2 concentration in Gas Stream C will increase. The CO_2 generated by the combustion of 20 pounds per hour of toluene will be approximately 67 pounds per hour; or approximately 590 ppm by volume in Gas Stream C (See Attachment 3).

The CO concentration will be an indicator of incomplete combustion. The methane concentration will be a measure of natural gas slip, and the non-methane hydrocarbon concentration will be a measure of solvent that has not been destroyed.

Method of Measurements

The flow rate of Gas Stream C will be measured in accordance with EPA Method 2, the moisture content will be measured in accordance with EPA Method 4, and measurements to determine the dry molecular weight of the gas stream will be measured in accordance with EPA Method 3.

The CO_2 measurements will be made using a gas filter correlation gas analyzer or equivalent, with full-scale ranges of zero to 100, 500, 1000, 5000, and 10,000 ppmv.

The CO measurements will be measured in accordance with EPA Method 10, and methane and non-methane hydrocarbons will be measured in accordance with EPA Method 25A.

All EPA test methods are described in 40 CFR 60, Appendix A.

Analysis of Data

The CO_2 concentration in Gas Stream C during Test No. 1 will be approximately 1180 ppmv, assuming the complete combustion of all natural gas. The measure of CO will indicate any incomplete combustion of the natural gas and the measure of methane will be an indicator of unburned methane, or natural gas slip.

The total carbon content in combustion byproducts of Gas Stream C will be calculated as the sum of the carbon in the CO_2 and CO. Any methane measured will be noted but not included as a combustion byproduct.

During Test No. 2, if 10 percent of the solvent in destroyed, the CO_2 concentration in Gas Stream C will increase by approximately 490 ppmv. Any increase in CO will be an indicator of the incomplete combustion of solvent. Methane will again be a measure of natural gas slip and will be noted but not included in the calculation of combustion byproducts. Non-methane hydrocarbons will be a measure of solvent in Gas Stream C and will be noted and compared with the solvent in the applied coating, corrected for any solvent in the collected over-sprayed coating.

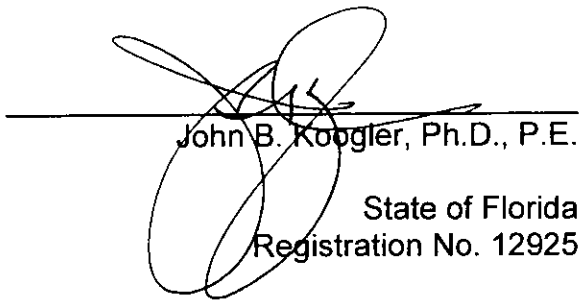
If solvent is destroyed in the drying oven of Paint Line No. 1, the CO_2 concentration in the gas stream leaving the oven (Gas Stream C) will increase by approximately 490 ppmv for each 10 percent of the applied coating solvent destroyed. An insignificant increase in CO/CO_2 in Gas Stream C will indicate that no significant solvent destruction occurs in the oven.

The mass of solvent destroyed in the drying oven, if any, will be determined by calculating the mass of carbon in the increased CO_2 concentration of Gas Stream C measured during Test No. 2 plus the mass of carbon in the increased CO concentration. This increased carbon mass will be converted to solvent mass by multiplying by the ratio of the molecular weight of the solvent (toluene) divided by the molecular weight of the carbon in the solvent.

The corrected solvent capture efficiency of Line No. 1 will be calculated as the sum of solvent destroyed in the drying oven plus the solvent remaining in Gas Stream C divided by the total mass of solvent in the applied coating, with a correction made for the solvent contained in the collected over-sprayed coating.

Certification

It is my professional opinion that the above protocol will permit an accurate determination of solvent (VOC) destruction in the natural gas fired drying oven of Paint Line No. 1 at Nailite. The sensitivity of the methods of measurement proposed herein coupled with previously measured system parameters will allow the VOC destruction efficiency in the drying oven to be determined with a reasonable degree of certainty.

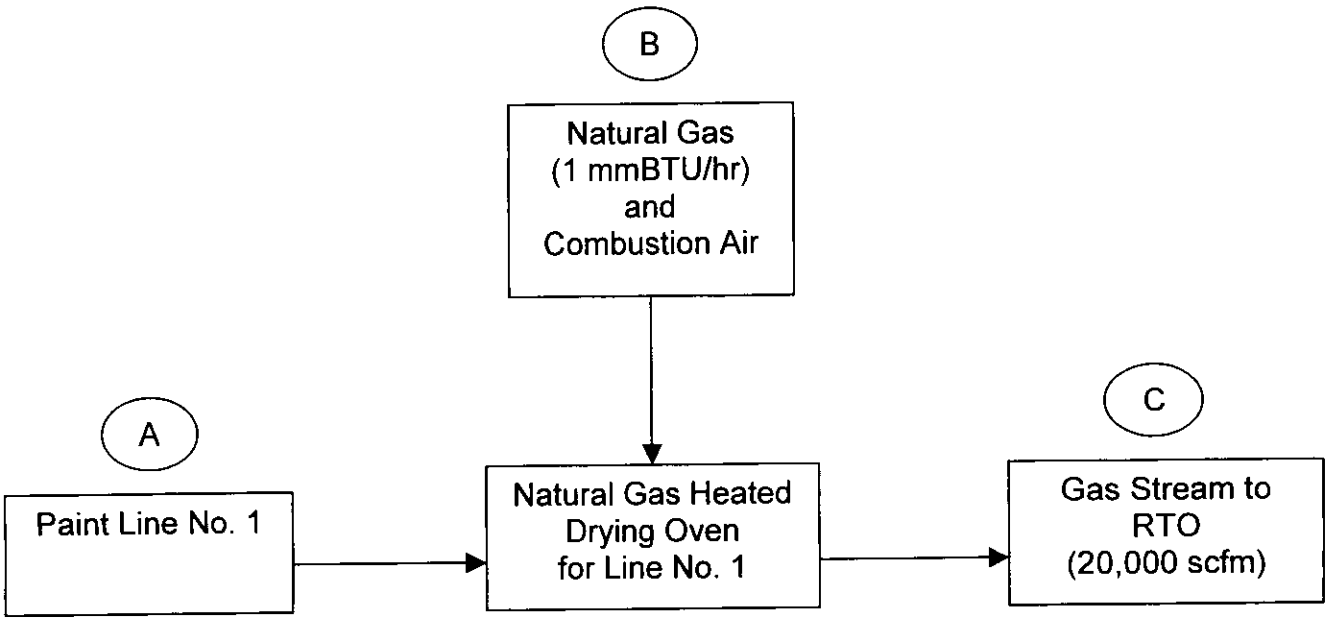


John B. Koogler, Ph.D., P.E.

State of Florida
Registration No. 12925

Attachment No. 1

Flow Diagram of Line No. 1 and Test Summary



Test 1.

- Operate exhaust fans of Line No.1 as normal, but with no paint sprayed (VOC release = zero).
- Operate Line No. 1 drying over as normal (1 mmBTU/hr gas).
- Measure flow rate (scfm) and CO_2 concentration (ppmv) of Gas Stream C (stream to RTO).
- Measure CO, methane and non-methane hydrocarbons (all ppmv) in Gas Stream C.

Test 2.

- Same operation and measurements as Test 1 but with spray booths operated as normal (release of about 200 lb/hr toluene)

ENVIRONMENTAL SERVICES

Attachment No. 3

CO_2 from Solvent (toluene) Combustion

VOC released in Line 1 during normal operations is about 200 lb/hr as toluene (C_7H_8)

CO_2 generated from a 10 percent VOC destruction in Line 1 drying oven; the destruction of 20 lb/hr toluene

20 lb/hr toluene

x 84 / 92

= 18.3 lb C/hr

x 44 / 12

= 67.0 lb CO_2/hr

x 1 / (44 lb/lb-mole) x 385 cu. ft./lb-mole

= 586 cu.ft. CO_2/hr

CO_2 concentration in 20,000 scfm Gas Stream C to RTO

= (586 cu.ft. CO2/hr) / (20,000 cfm x 60/min/hr) x 10^6

= 488 ppm (v/v)