

Golder Associates Inc.

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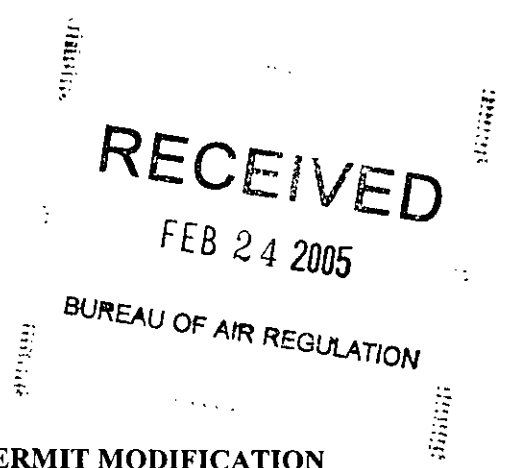


February 23, 2005

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

Attention: Mr. Al Linero

**RE: COMMENTS TO DRAFT AIR CONSTRUCTION PERMIT MODIFICATION
NAILITE INTERNATIONAL, INC.
1111 NW 165TH STREET
MIAMI, FLORIDA
PERMIT NUMBER: 0250407-008-AC**



Dear Mr. Linero:

On behalf of Nailite International, Inc. (Nailite), please find below comments to the draft Air Construction Permit Modification issued on January 28, 2005. Requested revisions follow each comment.

Technical Evaluation and Preliminary Determination

1. Comment

Facility operations are described as vinyl siding manufacturing. Note that the facility does not use vinyl materials in the operations, but rather polypropylene. Reference to vinyl occurs on the cover page and page 4 of 10 Section III, Original Project and Photo 1.

Requested Revision

Delete the term vinyl and replace with polypropylene when describing the operations throughout permit documents.

2. Comment

Miami-Dade County is referred to as Dade County. This occurs on Page 2 of 10 Section II.A, Facility Location and Page 3 of 10 Section II.C Facility Category/Applicability.

Requested Revision

Replace Dade County with Miami-Dade County throughout permit documents.

3. Comment

Historical emissions listed in the table presented in Section IV.A Continued Operation of Line No. 1; do not exactly match the numbers submitted in the Response to Verbal



Request for Additional Information (RAI) dated October 15, 2004, as referenced. Slight discrepancies were noted as follows:

Year/Line	VOC Emissions (TPY)	VOC Emissions (TPY)	HAPS Emissions (TPY)	HAPS Emissions (TPY)	Other
Reference	Draft Permit	Response to RAI	Draft Permit	Response to RAI	
Action		<u>Requested Revision</u>		<u>Requested Revision</u>	<u>Requested Revision</u>
1999 Line 1	ND	ND	334	335	ND
2001 Line 1&2	ND	ND	290	286	ND
2002 Line 1&2	148	147	ND	ND	ND
2003 Line 1&2	ND	ND	118	117	ND
2004 (Jan to Aug)	ND	ND	88	89	Insert reference to Line 1&2

ND-no discrepancy noted

4. Comment

Reference No. 3 includes a grammatical typo: Golder Associates Letter to FDEP, Response to Verbal Request for Additional Information, of October 15, 2004. This occurs on Page 10 of 10.

Requested Revision

Revise to: Golder Associates Letter to FDEP, Response to Verbal Request for Additional Information, October 15, 2004.

Permit Statement of Basis

1. Comment

AC Permit Modification (0250407-008-AC) expires May 30, 2005. This may not be reasonable. Per the rule, an application for permit revision is required at least ninety days prior to expiration of the unit's air construction permit, but no later than 180 days after the emissions unit commences operation or commences operation as modified. (213-420(1)(a)4., F.A.C.).

Requested Revision

Revise the expiration date to July 31, 2005 to allow the facility sufficient time to prepare the Operating Permit Revision Application.

Draft Air Construction Permit 0250407-008-AC

1. Comment

Section 1, Facility Information, Relevant Documents includes a grammatical typo: Departments request for additional information of August 2, 2004. This occurs on Page 3 of 11.

Requested Revision

Revise to: Departments request for additional information on August 2, 2004. Additionally, reference as a verbal request for additional information.

2. Comment

Section III, Emissions Units Specific Conditions, Emissions Unit Description. Since EU002 and EU003 were redesignated as insignificant, they should not be subject to or referenced in the emission unit specific condition section. Footnotes 1 and 2 are referenced, but do not appear in this section. This occurs on Page 9 of 11.

Requested Revision

Reference units in appropriate attachment of insignificant units and clarify reference to Footnotes 1 and 2.

3. Comment

Section III, Emissions Units Specific Conditions, Emissions Limiting and Performance Standards, No. 3 Control System Performance requires that when the emissions unit is in operation, the Regenerative Thermal Oxidizer (RTO) minimum 3-hr average combustion temperature shall not fall below 1700 degrees Fahrenheit (°F) and shall be maintained by using supplementary natural gas. This condition is presented on Page 9 of 11.

Additionally, Condition No. 13 for Reporting and Record Keeping Requirements requires that the control efficiency be assumed as 0% for each 3-hour period of operation below the minimum RTO combustion temperature.

As reported by Ms. Cindy Mulkey, this established minimum temperature was based on a discussion with facility personnel and report of operating temperatures recorded during the compliance testing, which was conducted at greater than 90 percent maximum operating capacity. Additionally, the intent of the monitoring requirement is to provide reasonable assurance of sufficient destruction of the target pollutants.

Requested Revision

It is requested that the 3-hour average minimum operating temperature be reduced to 1500°F. Rational for this reduced temperature is presented below.

The 1700°F minimum temperature restricts Nailite's operating flexibility. Although the temperature during the compliance testing was as high as 1700°F, maintaining this temperature is not considered critical to achieve the desired destruction efficiency. Rather, the higher temperature is a consequence of the VOC loading. In certain instances only one paint line may be operating, rendering a lower VOC loading to the RTO and possibly a lower combustion temperature.

The RTO was manufactured by Adwest Technologies and distributed by Airex Corporation. Per the manufacturer's operating manual, included as Attachment A:

As solvents enter the bed, they are oxidized and heat is released. Depending on the concentration of solvents in the process air stream, supplemental fuel in the form of natural gas injection may be used. The PLC controls the natural gas injection so as to maintain bed temperatures of approximately 1500°F and a combustion chamber temperature average of 1700°F.

According to the RTO General Description, provided in Attachment A:

When the hydrocarbon laden process gas passes through the media bed and approaches the combustion chamber, its temperature rapidly increases. Due to the abundant oxygen content of the process gas, complete combustion readily occurs when the ignition point is reached in the combustion chamber, which is typically in the 1500°F to 1700°F range.

Furthermore, according to a report published by the Environmental Protection Agency (EPA); Afterburner Systems Study, excerpts included as Attachment B, 97 percent destruction efficiency can be achieved at temperatures as low as 1200°F, given a sufficient residence time.

Additionally, a requirement to achieve 98 percent destruction efficiency, defined in the Design Data and Testing Section of the Manual is also based on a minimum solvent concentration of 123 pounds per hour. This equates to 2.05 pounds per minute. As mentioned, Nailite does not always run at 90 percent maximum capacity as required during compliance testing. There are instances where one paint line may be used for a solid colored product which may result in only two of three booths operating. However, these solid colored products run at the highest line rates/conveyor speed and therefore offset the operation of the third paint booth at slower line rates. During the capture efficiency testing each line is tested individually. The testing conducted on March 11, 2004 represents the aforementioned conditions in which a solid colored product was coated a high rate of speed, essentially 100 percent of the maximum line rate. During the three individual trials, data on the concentration levels was recorded and presented in Attachment C. Run number 1 represents the lowest amount of VOC captured during the testing. This scenario represents the lowest concentration measured and typical of a minimum operating day where only one paint line is operating. During this run, the VOCs captured in the one hour test were 127.57 pounds per hour, which yields just over the minimum referenced in the destruction efficiency guarantee of 123 pounds per hour. In summary, Nailite's minimum operations are greater than the minimum solvent concentration of 123 pounds per hour required to achieve the 98 percent destruction efficiency.

In conclusion, based on the supporting documentation, the supplemental gas requirement is triggered when bed temperatures fall below 1500°F, which results in an average of 1700°F combustion temperature. Because the average temperature of 1700°F is based on a correlation to the bed temperature and the trigger for supplemental gas is based on the temperature of the bed, 1500°F is requested as the minimum temperature. Additionally,

complete combustion readily occurs when the ignition point is reached in the combustion chamber, which is typically in the 1500°F to 1700°F range. Furthermore, as demonstrated by the compliance testing in conjunction with the manufacturer's data, the desired destruction efficiency can be achieved under Nailite's minimum operating conditions based on VOC loading and not strictly dependent upon maintaining a combustion temperature of 1700°F.

4. Comment

Section III, Compliance Monitoring and Testing Requirements, No. 7 Destruction Efficiency of the RTO. A destruction efficiency test shall be performed annually on the RTO. This condition is on Page 10 of 11. It is not clear if annual refers to the calendar year or fiscal year (October 1-September 30).

Requested Revision

Clarify whether testing requirement is based on annual or fiscal year.

5. Comment

Section III, Reporting and Recordkeeping Requirements, No. 13 Monthly Emissions Summary requires the specified records to be compiled no later than 5 days following each month.


Requested Revision

Because an automated system to measure flow rates is not employed at the facility, the process of compiling the raw data is complex and time consuming, Nailite requests that the facility be allowed 10 days to compile the records. Additionally, the previous permits have indicated 5 working days. Please clarify.

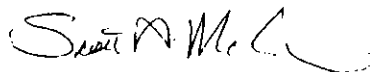
Please find enclosed as Attachment D, the Professional Engineer (P.E.) Certification Statement and Responsible Official (R.O) Certification. Please consider the requested revisions and should you have any questions regarding this letter, please contact the undersigned.

Sincerely,

GOLDER ASSOCIATES



Renee Weaver, P.E.
Project Engineer



Scott A. McCann, P.E.
Associate

Attachments Attachment A-RTO Manual Excerpts
Attachment B-EPA Afterburner Systems Study Excerpts
Attachment C-Summary of Capture Efficiency Test Results
Attachment D-P.E. Certification Statement, R.O. Certification Statement

cc: Mr. John Perry, Nailite International

REW/SAM/dcg

H:\PROJECTS\2004proj\043-9535 Nailite Environmental Compliance\Permits\Revised AC Permit Comments\AC Permit Comments.doc

Adams, Patty

From: Heron, Teresa
Sent: Friday, September 10, 2004 9:48 AM
To: Adams, Patty
Subject: FW: Nailite Response to RAI Schedule

Patty: This AC application is incomplete.

-----Original Message-----

From: Weaver, Renee [mailto:rweaver@golder.com]
Sent: Monday, August 30, 2004 8:13 PM
To: Heron, Teresa
Cc: jperry@nailite.com; smcann@golder.com
Subject: Nailite Response to RAI Schedule

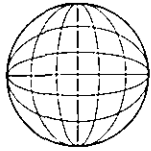
Ms. Heron,

Per our conversation today, the response to the FDEP's verbal Request for Additional Information (RAI) regarding the revised air construction permit application submitted in June 2004 for Nailite will be submitted within the next 3 weeks. During this time period Nailite will be evaluating the applicability of the MACT PPPP and evaluating the impact the MACT may have on permitting and compliance efforts. If you have any questions regarding this schedule, please contact me on my cell phone at (813) 299-3950 while I am out of town. I will be returning to the office on Tuesday . Thank you.

Sincerely,

Renee Weaver

9/10/2004



CRB

GEOLOGICAL & ENVIRONMENTAL SERVICES, INC.

RECEIVED

NOV 01 2004

BUREAU OF AIR REGULATION

October 27, 2004

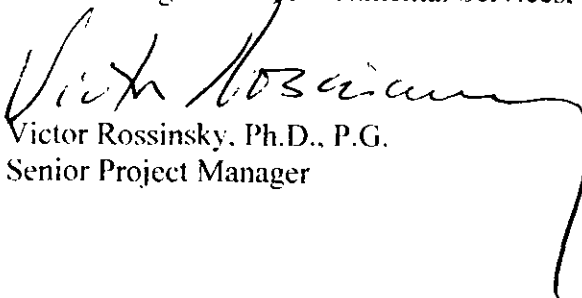
Mr. Al Linero
Florida Department of Environmental Protection
Division of Air Resources Management
2600 Blair Stone Road
Tallahassee, FL 32399-2400

**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

Golder Associates Inc.

5100 West Lemon Street, Suite 114
Tampa, FL USA 33609
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October 15, 2004

RECEIVED 043-9535

NOV 01 2004

BUREAU OF AIR REGULATION

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.

- 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.

- 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 P 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.

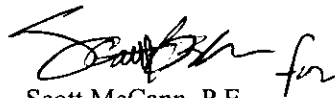
Please find enclosed the Professional Engineer (P.E.) Certification Statement and Responsible Official Certification. Should you have any questions regarding this letter, please contact the undersigned.

Sincerely,

GOLDER ASSOCIATES



Renee Weaver
Project Engineer



Scott McCann, P.E.
Associate

Attachments:

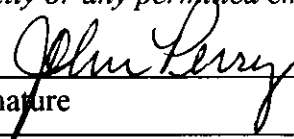
- P.E. Certification Statement
- R.O. Certification Statement
- Table 1-Air Emissions
- Figure 1-Total Air Emissions
- Figure 2-Air Emissions per Emission Unit
- Figure 3-Monthly VOC Emission Fluctuations
- Attachment A-Engineering Plan

REW/SAM

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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: <u>jperry@nailite.com</u>
5. Owner/Authorized Representative Statement: <i>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.</i>  Signature _____ Date <u>10-19-04</u>

AIREX CORPORATION

REGENERATIVE THERMAL OXIDIZER GENERAL DESCRIPTION

INTRODUCTION:

The Airex regenerative thermal oxidizer converts hydrocarbons as found in many industrial process streams into harmless carbon dioxide and water. It achieves this through the process of high temperature oxidation. The beds of heat exchange media provide up to 95% heat recovery to keep operating costs to a minimum.

EQUIPMENT:

The Airex oxidizer consists of two reinforced, insulated chambers filled with high temperature heat exchange media. The media filled beds are separated by a central combustion chamber that includes a burner to bring the process stream to its final oxidation temperature. Below each media bed is located an air plenum that directs the flow through the beds. As the flow enters the first bed, heat is transferred from the media to relatively cooler air. The air is heated to a temperature close to the combustion temperature and is directed into the combustion chamber where the burner heats it up the rest of the way. The air then exits the second bed where it releases heat back into the media. At controlled intervals the flow direction through the oxidizer is changed by the action of the two pneumatic poppet valves in order to maintain a stable temperature situation.

PROCESS COMBUSTION:

When the hydrocarbon laden process gas passes through the media bed and approaches the combustion chamber, its temperature rapidly increases. Due to the abundant oxygen content of the process gas, complete combustion readily occurs when the ignition point is reached in the combustion chamber, which is typically in the 1500°F to 1700°F range. With a sufficient concentration of solvents in the incoming process stream the heat energy of the solvent may be enough so that the destruction of hydrocarbons will be self-sustaining with no additional heat energy required from the burner.

5.6 Basic Control Functions, Operations and Hardware:

- Using the gas burner, the combustion chamber temperature during initial heat up is controlled by thermocouples TE-103 and TE-104 via their input to the PLC.
- After the temperature set points are reached the unit is put into "RUN". As supplemental fuel is required the natural gas injection will cycle on and off. Gas injection is controlled by thermocouples TE-103, TE-104, TE-108, and TE109 as inputs to the PLC.
- The PLC also includes high and low temperature limits for the oxidizers respective areas.
- The PLC operates the poppet valves, monitors chamber area temperatures and various permissive limits. The PLC along with the flame safeguard provides fault annunciation and logic control for all I/O functions.
- The Main Control Panel includes the Quartech Operator Interface, (keypad/display), a mode selector switch, emergency stop, E-stop reset, fault reset, burner fault reset, various pilot lights which include a permissive fault indicator. Other control panel components are the burner management system, combustion air fan motor starter, and a modem for on line assistance.
- A door mounted alarm horn will notify operators of any faults. (Optional)
- Necessary over-load protection is provided in the form of a fused disconnect.

5.7 Basic Oxidizer Operation:

- 5.7.1** The beds are initially brought up to the desired temperature by the burner management system and the PLC utilizing a gas burner. Once the unit reaches "Run Mode", the bed's temperature is controlled by the PLC, switching the poppet valves and using the burner or the optional gas injection system to maintain the run mode temperature set points.
- 5.7.2** As solvents enter the bed, they are oxidized and heat is released. Depending on the concentration of solvents in the process air stream, supplemental fuel in the form of natural gas injection may be used. The PLC controls the natural gas injection so as to maintain bed temperatures of approximately 1500°F and a combustion chamber temperature average of 1700°F.
- 5.7.3** The ideal running condition is sufficient solvents to maintain bed temperatures as well as combustion chamber temperatures with no natural gas input.

If any thermocouple temperatures exceed the maximum operating temperature of (2000°F), the natural gas is turned "OFF" the process fan shuts down, and the fault is annunciated on the Quartech display interface.

5/5

JOB 2317-NAILITE INTERNATIONAL

SECTION 3

DESIGN DATA & PERFORMANCE TESTING

THE PERFORMANCE GUARANTEE IS BASED ON THE FOLLOWING PROCESS CONDITIONS:

3.0 <u>Design Data</u>	<u>Measurement</u>
• Maximum process air flow, SCFM	<u>27,000</u>
• Minimum process air flow, SCFM	<u>9,000</u>
• Maximum process temperature, °F	<u>80</u>
• Minimum process temperature, °F	<u>80</u>
• Maximum solvent concentration, #/Hr	<u>366</u>
• Minimum solvent concentration, #/Hr	<u>123</u>
• Maximum pressure at inlet of oxidizer, "w.c.	<u>14</u>
• Electrical power requirement for main control panel, CP-101 (380 VAC/3 phase/60 Hz), Amps	<u>23</u>
• Electrical power requirement for main process fan (460 VAC./3 phase/60 Hz), Amps	<u>150</u>
• Heat recovery efficiency, %	<u>95</u>
• Hydrocarbon destruction efficiency (to lower limit of 20 ppm of C ¹), %	<u>98</u>
• Compressed air requirements @ 90 psig, SCFH	<u>280</u>
• Natural gas requirement @ 5 psig, SCFH	<u>7,150</u>

1000 ppm /c
143 ppm

NOTE: *The compressed air requirement above is an hourly average based on one stroke of the inlet and outlet poppet valves at 4 minute intervals.*

Afterburner Systems Study

R.W. Rolke, R.D. Hawthorne, C.R. Garbett,
E.R. Slater, T.T. Phillips, G.D. Towell

ENVIRONMENTAL PROTECTION AGENCY
Office of Air Programs
Contract EHS-D-71-3

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SHELL DEVELOPMENT COMPANY
A DIVISION OF SHELL OIL COMPANY
Emeryville, California

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S-14121
6/7/84

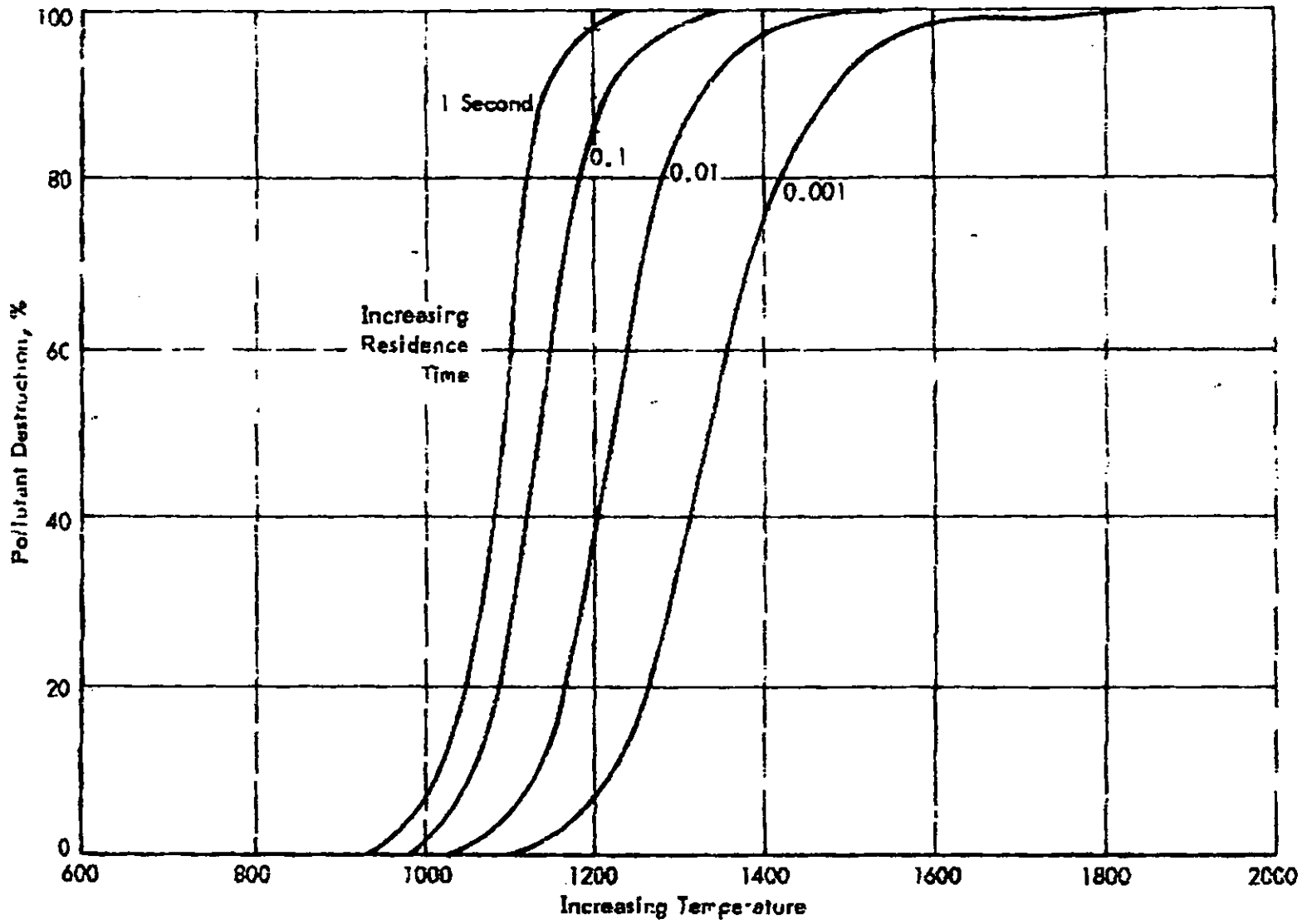


Figure 3-2a. COUPLED EFFECTS OF TEMPERATURE AND TIME ON RATE OF POLLUTANT OXIDATION

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Table 1

Emissions Collection System Capture Efficiency Test

Nailite International, Inc. Miami, Florida Paint Line No. 1 VOC Release Data March 11, 2004				
VOC Release (lb/hr) (1)				
Run No.	Booth 1	Booth 2	Overspray Recovery	VOC (2) Release
1	95.78	95.78	5.73	185.82
2	101.09	101.09	7.64	194.55
3	103.62	103.62	9.55	197.68
average>>	100.16	100.16	7.64	192.69

(1) Calculated from VOC content of paint and thinners used; see Appendix.

(2) As Toluene (see Appendix)

Emissions Collection System Capture Efficiency Test Nailite International, Inc. Miami, Florida							
Run No.	RTO Inlet Conditions			VOC Captured(4)			Capture Efficiency(7) (%)
	Temp. (F)	Moisture (%)	Flow(3) (scfm)	As Propane		As Toluene (5) (lb/Hr)	
				(ppm)	(lb/Hr)		
1	77	2.0	18968	1081	140.54	127.56	68.65
2	80	2.0	19953	1223	167.36	151.91	78.08
3	80	2.0	19960	1229	168.17	152.65	77.22
average>	79	2.0	19826	1178	158.69	144.04	74.65

(3) Standard cubic feet per minute, wet basis

(4) VOC measured at RTO Inlet; expressed as propane

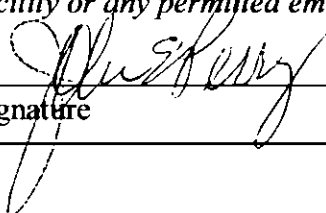
(5) lb/hr as Toluene = $(\text{lb/hr as Propane}) \times \frac{(\text{MW toluene/toluene carbon number})}{(\text{MW propane/propane carbon number})} \times R_f$ (6)

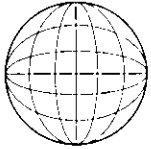
(6) See Response Factor determination in Appendix = 7/6.91

(7) (VOC capture)/(VOC released); all VOC expressed as propane

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: <u>jperry@nailite.com</u>
5. Owner/Authorized Representative Statement: <i>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.</i>  _____ Signature _____ Date <i>2/18/2005</i>

**CRB**

GEOLOGICAL & ENVIRONMENTAL SERVICES, INC.

June 15, 2004

RECEIVED

JUN 22 2004

BUREAU OF AIR REGULATION

Ms. Trina Vielhauer
Florida Department of Environmental Protection
Division of Air
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: CRB Project No. NAI 553-05; Nailite International, Inc., 1111 NW 165th Street,
Miami, Florida; Permit No. 0250407-005-AC (PSD-FL-289A)

Dear Ms. Vielhauer:

Pursuant to our telephone conversation on June 11, 2004, please consider this document with attachments as a request to revise the above referenced permit, as discussed below. The purpose of this revision is to:

- establish final collection and destruction efficiency values for the Regenerative Thermal Oxidizer (RTO);
- modify emissions limitations for volatile organic compounds (VOCs); and,
- remove the operational deadline for Paint Line No. 1 (EU001)

Background

On August 28, 1998, Final Permit Number 0250504-001-AV was issued by DERM to the Nailite International, Inc. facility located at 1251 NW 165th Street, Miami, Florida 33169. This permit had a renewal application date of March 26, 2003 and an expiration date of August 27, 2003.

On September 26, 2000, Nailite applied for a construction permit in order to relocate the facility from 1251 NW 165th Street to 1111 NW 165th Street, Miami, Florida 33169. Pursuant to that application, Construction Permit No. 0250407-003-AC/PSD-FL-289 was issued. On February 21, 2002, Nailite applied to the Miami-Dade County Department of Environmental Resources Management (DERM) for a Title V Air Operation Permit Revision. The purpose of this permit revision was to incorporate the terms and conditions of Construction Permit No. 0250407-003-AC/PSD-FL-289 into the facility's current Title V Operating Permit.

The relocated facility included the No. 1 plastic panel spray line consisting of three spray booths, and eight injection-molding machines. The construction permit also authorized the installation of a Regenerative Thermal Oxidizer (RTO) and the No. 2 plastic panel

spray line consisting of three continuous spray booths and a curing oven. Captured emissions from the No. 1 Line (Emission Unit 001) and the No. 2 Line (Emission Unit 004) were required to be routed to the RTO.

Section A.5 of Nailite's Title V Permit required the shutdown and discontinuance of operation of Paint Line No. 1 by January 1, 2003. On December 31, 2002, Nailite received approval from the Florida Department of Environmental Protection (FDEP) to extend the use of this paint line through December 31, 2003 (Permit No. 0250407-005-AC). This extension was approved in order to perform additional capture and destruction efficiency testing and to allow for continuing engineering research into modified painting techniques based on the results of that testing.

On August 13, 2003, FDEP issued Title V Operation Permit No. 0250407-006-AV. The purpose of this permit was for the renewal of the existing Title V Operation Permit, as well as to incorporate the terms and conditions of Air Construction Permit No. 0250407-005-AC and to incorporate a compliance plan. The Compliance Plan outlined the additional construction measures and testing proposed by Nailite in order to improve the capture and destruction efficiency values for the RTO. The issuance of the Title V Operation Permit effectively extended the operational deadline for Paint Line No. 1 pending the construction of improvements and the completion of additional capture and destruction efficiency testing.

Capture and Destruction Efficiency Values

Construction and Testing Information

Pursuant to the Compliance Plan, Nailite undertook to construct extensive modifications to the Number 1 and Number 2 paint lines (EU001 and EU004) at a cost in excess of \$400,000. These modifications consisted of the following:

- All open sections of the conveyors on Paint Lines No. 1 and No. 2 were enclosed to eliminate any "flashing-off" of emissions in exposed areas of the paint process lines.
- All new enclosed areas were exhausted to the RTO.
- Manned booths were added to Paint Lines No. 1 and No. 2 to capture emissions created during the hand spraying (highlighting) operation that was previously done in the open air without any capture.
- The radiant-heat oven associated with Paint Line No. 1 was replaced with a new gas oven that captures emissions and exhausts to the RTO.
- Old ductwork associated with Paint Line No. 1 was replaced with more efficiently designed ductwork.

Additional, minor changes were made to support the above improvements. Photographs of the paint lines following construction/modification are included as Attachment A.

Capture and destruction efficiency testing was performed by Koogler and Associates Environmental Services (Koogler) upon completion of the system modifications. Destruction efficiency of the RTO was measured at 99.18 percent. This value is well above the 95 percent destruction efficiency required in the current Title V Operation Permit No. 0250407-006-AV.

The capture efficiency test performed on Paint Line No. 2 indicated a capture efficiency of 91.4 percent. This efficiency represents an increase from the efficiency of 81.5 percent, which was measured on January 22, 2003, prior to the construction of system improvements.

The capture efficiency for Paint Line No. 1 averaged 72.72 percent during the recent testing event. Information from Nailite personnel indicates that this number is not representative of actual capture conditions for the paint line. It is the belief of Nailite engineering staff and the manufacturers of the gas oven associated with the paint line that the oven is oxidizing the flashed-off solvents prior to the entry of these solvents into the sample port. This conclusion is consistent with observations during testing that no odors were detected in the areas immediately surrounding the paint lines. On other separate site visits conducted by CRB personnel, the same observations were made during operation of Paint Line No. 1.

Information included in Attachment B describes the air flow processes in Paint Lines No. 1 and 2.

Proposed Permit Revision

Based upon the capture and destruction efficiency measured during the testing conducted between March 11 and 12, 2004, the following values are proposed for incorporation in the revised Air Construction permit:

- Paint Line No. 1 (EU001) – Measured capture efficiency = 70 percent with gas oven firing
- Paint Line No. 2 (EU002) – Capture efficiency = 90 percent
- RTO – Destruction efficiency = 95 percent

VOC Emissions Limitations

Nailite is currently operating under a permit condition that limits the VOC emissions by capping the quantity of VOCs included in the individual paints. However, it is requested that Nailite's VOC emissions be limited instead by the total annual emissions.

In order to comply with 62-296.570(4)(b)10, FAC, "Emissions of VOC from resin coating operation shall be limited by the use of low-VOC resin or thermal oxidation of emission from the purge cycle." Nailite currently utilizes low-VOC coatings almost exclusively, and both paint lines are connected to the Regenerative Thermal Oxidizer (RTO). As shown in the chart included in Attachment C, these modifications have resulted in a significant decrease in the overall emissions from the facility. Therefore, it is requested that Nailite's VOC emissions be limited only by the PSD standard of 250 tons per year. In addition, it is requested that the annual emissions fee be based upon actual emissions, calculated using the mass balance approach.

Continuation of Line 1

Nailite has undertaken extensive measures to comply with all regulatory guidelines with regard to the operation of the two (2) paint lines. The results of capture efficiency testing for

Paint Line No. 1 are not reflective of true conditions, and it is the belief of Nailite staff that the low capture efficiency measurement is an artifact of oxidation taking place within the gas-fired convection oven currently used on Paint Line No. 1. This was confirmed by representatives of the oven manufacturer and is consistent with other observations.

The utilization of Paint Line No. 1 does not cause a detrimental impact on the actual total emissions from the Nailite facility. This facility will continue to operate below the major facility threshold of 250 tons per year.

Summary

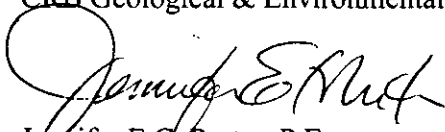
Through a number of emission controls, Nailite achieved a three-fold reduction in emissions from close to 450 tons per year to approximately 150 tons per year. Projected future emissions at a self-imposed operations cap of 7,280 hours per year would keep the facility well under the threshold of a major facility.

Based on the above, Nailite requests that permit 0250407-005-AC (PSD-FL-289A) be reissued with the following modifications:

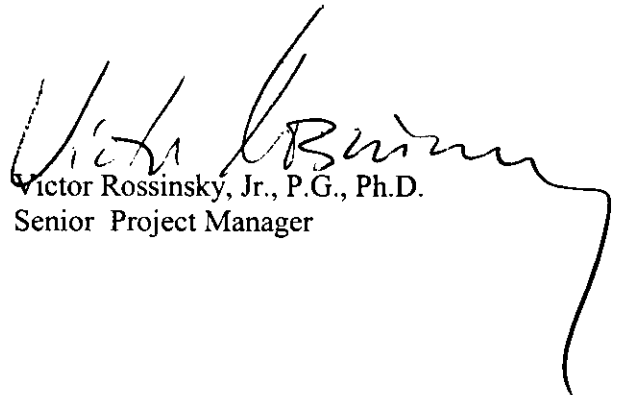
1. Establish final capture and destruction efficiency values as indicated above.
2. Change the emissions limitation from 6 pounds of VOCs per gallon of paint to 250 tons per year of total emissions; annual Title V fee to be calculated using mass balance.
3. Allow EU001 to continue operation indefinitely.

Per your request, the first pages of Form No. 62-210.900(1) are included as Attachment D. If you have any questions or concerns, please don't hesitate to contact me at (305) 620-6200 ext. 222.

Very truly yours,
CRB Geological & Environmental Services, Inc.



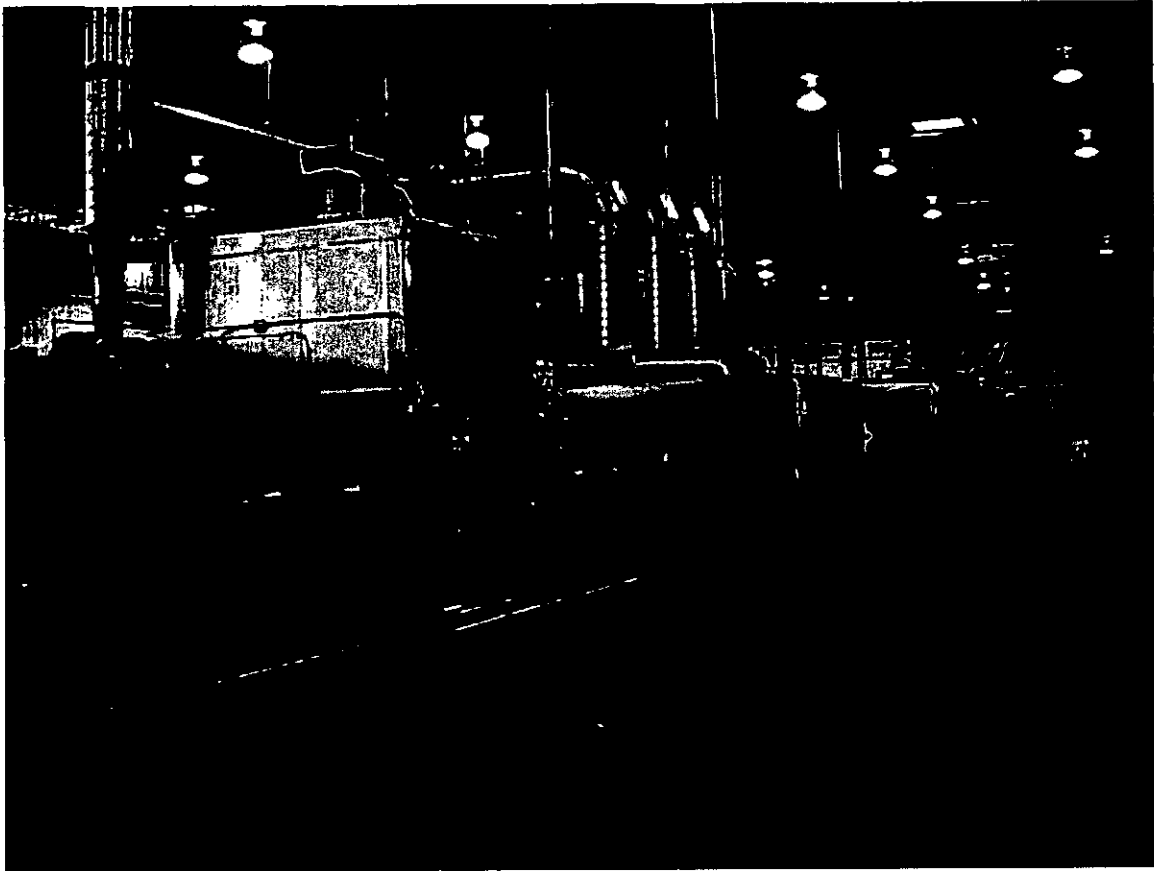
Jennifer E.C. Porter, P.E.
Project Manager



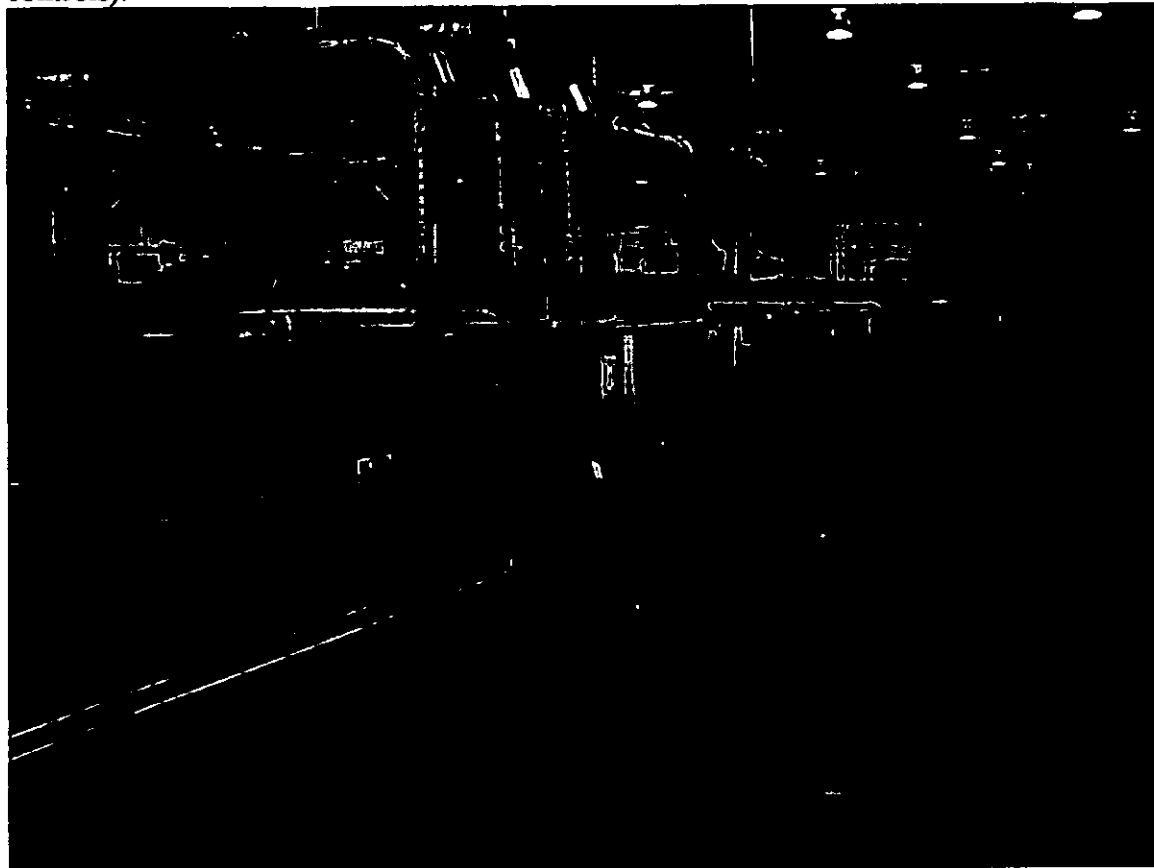
Victor Rossinsky, Jr., P.G., Ph.D.
Senior Project Manager

cc: Ms. Mallika Muthiah, P.E., DERM

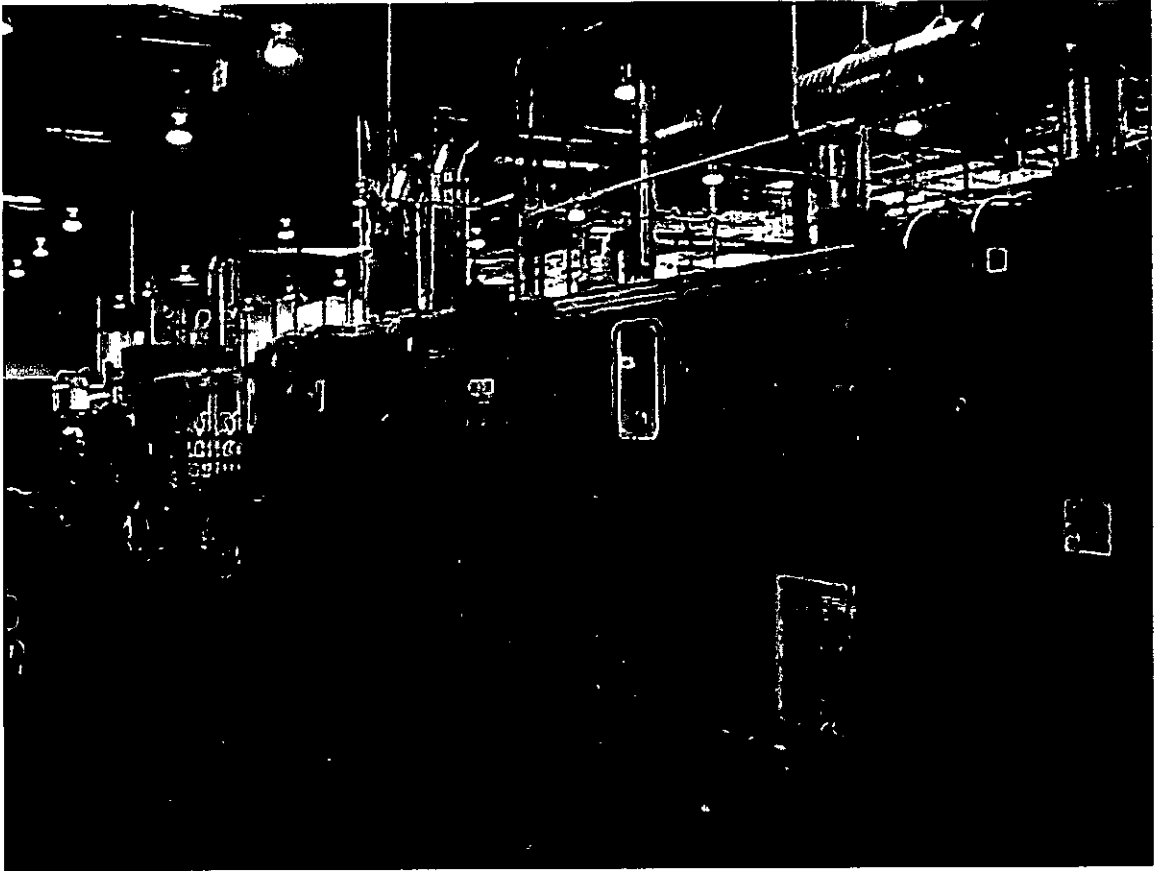
ATTACHMENT A
PHOTOGRAPHS



Paint Line No. 1 showing enclosed conveyors and new gas oven (enclosure with red controls).



Paint line No.1 showing enclosed conveyors and ductwork that routes emissions to the RTO.



Paint line No. 1- loading end.

ATTACHMENT B
AIR FLOW PROCESSES