

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION**

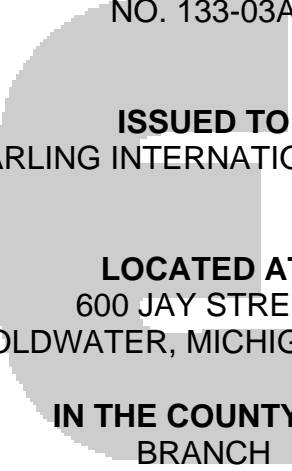
OCTOBER 26, 2005

**PERMIT TO INSTALL
NO. 133-03A**

**ISSUED TO
DARLING INTERNATIONAL, INC.**

**LOCATED AT
600 JAY STREET
COLDWATER, MICHIGAN 49036**

**IN THE COUNTY OF
BRANCH**



**STATE REGISTRATION NUMBER
B1526**

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environmental Quality. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203: 9/19/2005	
DATE PERMIT TO INSTALL APPROVED: 10/26/2005	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

PERMIT TO INSTALL

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Common Abbreviations / Acronyms

Common Acronyms		Pollutant/Measurement Abbreviations	
AQD	Air Quality Division	Btu	British Thermal Unit
ANSI	American National Standards Institute	°C	Degrees Celsius
BACT	Best Available Control Technology	CO	Carbon Monoxide
CAA	Clean Air Act	dscf	Dry standard cubic foot
CEM	Continuous Emission Monitoring	dscm	Dry standard cubic meter
CFR	Code of Federal Regulations	°F	Degrees Fahrenheit
COM	Continuous Opacity Monitoring	gr	Grains
EPA	Environmental Protection Agency	Hg	Mercury
EU	Emission Unit	hr	Hour
FG	Flexible Group	H ₂ S	Hydrogen Sulfide
GACS	Gallon of Applied Coating Solids	hp	Horsepower
GC	General Condition	lb	Pound
HAP	Hazardous Air Pollutant	m	Meter
HVLP	High Volume Low Pressure *	mg	Milligram
ID	Identification	mm	Millimeter
LAER	Lowest Achievable Emission Rate	MM	Million
MACT	Maximum Achievable Control Technology	MW	Megawatts
MAERS	Michigan Air Emissions Reporting System	NO _x	Oxides of Nitrogen
MAP	Malfunction Abatement Plan	PM	Particulate Matter
MDEQ	Michigan Department of Environmental Quality	PM-10	Particulate Matter less than 10 microns diameter
MIOSHA	Michigan Occupational Safety & Health Administration	pph	Pound per hour
MSDS	Material Safety Data Sheet	ppm	Parts per million
NESHAP	National Emission Standard for Hazardous Air Pollutants	ppmv	Parts per million by volume
NSPS	New Source Performance Standards	ppmw	Parts per million by weight
NSR	New Source Review	psia	Pounds per square inch absolute
PS	Performance Specification	psig	Pounds per square inch gauge
PSD	Prevention of Significant Deterioration	scf	Standard cubic feet
PTE	Permanent Total Enclosure	sec	Seconds
PTI	Permit to Install	SO ₂	Sulfur Dioxide
RACT	Reasonable Available Control Technology	THC	Total Hydrocarbons
ROP	Renewable Operating Permit	tpy	Tons per year
SC	Special Condition Number	µg	Microgram
SCR	Selective Catalytic Reduction	VOC	Volatile Organic Compounds
SRN	State Registration Number	yr	Year
TAC	Toxic Air Contaminant		
VE	Visible Emissions		

* For High Volume Low Pressure (HVLP) applicators, the pressure measured at the HVLP gun air cap shall not exceed ten (10) pounds per square inch gauge (psig).

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **[R336.1201(1)]**
2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent, shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environmental Quality, P.O. Box 30260, Lansing, Michigan 48909, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **[R336.1201(4)]**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to R336.1210, operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **[R336.1201(6)(b)]**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **[R336.1201(8), Section 5510 of Act 451, PA 1994]**
5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to R336.1219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of R336.1219. The written request shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **[R336.1219]**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **[R336.1901]**
7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided no later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **[R336.1912]**
8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.

9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.
10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.
11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of R336.1301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with R336.1303. **[R336.1301]**
 - a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
 - b) A visible emission limit specified by an applicable federal new source performance standard.
 - c) A visible emission limit specified as a condition of this permit to install.
12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in R336.1370(2). **[R336.1370]**
13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R336.2001 and R336.2003, under any of the conditions listed in R336.2001. **[R336.2001]**

SPECIAL CONDITIONS

Emission Unit Identification

Emission Unit ID	Emission Unit Description	Stack Identification
EU-Boiler1	72.9 MMBtu/hr Nebraska Boiler.	SV-Boiler1
EU-Boiler2	78.1 MMBtu/hr Babcock & Wilcox Boiler.	SV-Boiler2
EU-TO	20.4 MMBtu/hr thermal oxidizer with heat recovery boiler for controlling odors from EU-Rendering1 and EU-Rendering2.	SV-Rendering
EU-Rendering1	Rendering process line 1, including a condenser and wet scrubber system.	SV-Rendering
EU-Rendering2	Rendering process line 2, including a condenser and wet scrubber system.	SV-Rendering
EU-Scrubber	75,000 CFM scrubber for general room exhaust odor control.	SV-Scrubber
EU-Dryer	Blood drying equipment, consisting of a coagulator, centrifuge, ring dryer, and cyclone separator, and controlled by a baghouse, and a venturi scrubber followed by two packed tower scrubbers in series.	SV-Towers SV-Baghouse
Changes to the equipment described in this table are subject to the requirements of R336.1201, except as allowed by R336.1278 to R336.1290.		

Flexible Group Identification

Flexible Group ID	Emission Units Included in Flexible Group	Stack Identification
FG-Boilers	EU-Boiler1 EU-Boiler2 EU-TO EU-Dryer	N/A
FG-Rendering	EU-Rendering1 EU-Rendering2 EU-Scrubber EU-TO	N/A

The following conditions apply to: EU-Dryer

Emission Limits

	Pollutant	Equipment	Limit	Time Period	Testing/ Monitoring Method	Applicable Requirement
1.1	PM	EU-Dryer	0.10 lb/1000 lb exhaust gas on a dry gas basis.	Test Protocol	GC 13	R336.1331

Visible Emission Limits

1.2 Visible emissions from EU-Dryer shall not exceed a six-minute average of five percent opacity.
[R336.1301(1)(c)]

Equipment

- 1.3 The permittee shall not operate EU-Dryer unless the baghouse, venturi scrubber followed by two packed tower scrubbers in series, are installed, maintained, and operated in a satisfactory manner. [R336.1301, R336.1331, R336.1901, R336.1910]
- 1.4 The permittee shall equip and maintain the venturi/packed tower scrubber system for EU-Dryer with pressure gauges for indicating total pressure drop across the venturi and packed tower scrubbers and flow meters for measuring the liquid flow rates to the venturi scrubber and the spray nozzles of the packed towers. [R336.1901, R336.1910]

Recordkeeping/Reporting/Notification

- 1.5 The permittee shall keep, in a satisfactory manner, records of the pH and ORP reading of the recycled scrubber solution for the venturi/packed tower scrubber system, once every eight hours of operation. All records shall be kept on file for a period of at least five years and made available to the Department upon request. [R336.1901, R336.1910]

Stack/Vent Restrictions

	Stack & Vent ID	Maximum Diameter (inches)	Minimum Height Above Ground Level (feet)	Applicable Requirement
1.6a	SV-Towers	N/A	40	R336.1901
1.6b	SV-Baghouse	N/A	35	R336.1901
The exhaust gases shall be discharged unobstructed vertically upwards to the ambient air.				

The following conditions apply to: FG-Boilers

Emission Limits

	Pollutant	Equipment	Limit	Time Period	Testing/Monitoring Method	Applicable Requirement
2.1a	NOx	FG-Boilers	89.4 tpy	12-month rolling time period, as determined at the end of each calendar month.	See below, plus SC 2.2, 2.3, 2.4, 2.6, 2.7, & 2.8	R336.1205(1)(a) & (3)
The permittee shall calculate NOx emissions from FG-Boilers based on the worst-case emission factor from testing per GC 13 or the emission factors below:						
Natural Gas Emission Factors NOx = 0.032 lb/MMBtu for EU-Boiler1 NOx = 0.100 lb/MMBtu for EU-Boiler2				Fuel Oil Emission Factors NOx = 0.140 lb/MMBtu		
Yellow Grease Emission Factors NOx = 0.122 lb/MMBtu				Tallow Emission Factors NOx = 0.111 lb/MMBtu		

Material Usage Limits

- 2.2 The permittee shall only burn natural gas, #2 fuel oil, yellow grease, and tallow in FG-Boilers. [R336.1205(1)(a) & (3), R336.1224, R336.1225, R336.1901]
- 2.3 The permittee shall not exceed the following fuel usage rates for FG-Boilers:

- a. 10,818,545 gallons of tallow per 12-month rolling time period; or
- b. 9,843,102 gallons of yellow grease per 12-month rolling time period; or
- c. 7,964,878 gallons of fuel oil per 12-month rolling time period.

The NOx emissions from FG-Boilers from the firing of any fuel or combined fuels, including natural gas, tallow, yellow grease, and fuel oil, shall not exceed 89.4 tons per 12-month rolling time period.

[R336.1205(1)(a) & (3), R336.1225, R336.1901]

- 2.4 The sulfur content of all fuel oil used in FG-Boilers shall not exceed 0.05 percent by weight. **[R336.1205(1)(a) & (3)]**

Recordkeeping/Reporting/Notification

- 2.5 The permittee shall keep, in a satisfactory manner, monthly and previous 12-month rolling time period records of natural gas usage, in cubic feet, fuel oil usage, in gallons, yellow grease usage, in gallons, and tallow usage, in gallons, for FG-Boilers. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1205(1)(a) & (3), R336.1225, R336.1901]**
- 2.6 The permittee shall calculate the NOx mass emission rate from FG-Boilers in tons per month and tons per 12-month rolling time period on a monthly basis. **[R336.1205(1)(a) & (3)]**
- 2.7 The permittee shall keep, in a satisfactory manner, monthly and previous 12-month NOx emission records, as required by SC 2.1a, for FG-Boilers. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1205(1)(a) & (3)]**
- 2.8 The permittee shall maintain a complete copy of the sulfur content analysis, as supplied by the fuel oil vendor, for each shipment of fuel oil, prior to firing in FG-Boilers. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1205(1)(a) & (3)]**

Stack/Vent Restrictions

	Stack & Vent ID	Maximum Diameter (inches)	Minimum Height Above Ground Level (feet)	Applicable Requirement
2.9a	SV-Boiler1	60	45	R336.1225, R336.1901
2.9b	SV-Boiler2	48	60	R336.1225, R336.1901
The exhaust gases shall be discharged unobstructed vertically upwards to the ambient air.				

The following conditions apply to: FG-Rendering

Visible Emission Limits

- 3.1 Visible emissions from FG-Rendering shall not exceed a six-minute average of five percent opacity. **[R336.1301(1)(c)]**
- 3.2 Visible emissions from EU-Scrubber shall not exceed a six-minute average of five percent opacity. **[R336.1301(1)(c)]**

Process/Operational Limits

- 3.3 Upon a thermal oxidizer failure/malfunction and bypass, the permittee shall not accept incoming material into the plant after four hours of downtime if repairs are anticipated to exceed eight hours. After a plant shutdown due to the above, input feed to FG-Rendering shall not restart until EU-TO is back on line and functioning properly. **[R336.1301, R336.1901, R336.1910, R336.1911]**

- 3.4 The permittee shall immediately begin the use of EU-Scrubber as backup control of FG-Rendering in the event of a malfunction, bypass, or natural gas curtailment of EU-TO. **[R336.1301, R336.1901, R336.1910, R336.1911]**
- 3.5 During normal shutdown operations for FG-Rendering, the permittee shall begin the use of EU-Scrubber for use as an alternate control of FG-Rendering, only after the shutdown of the cookers and after the subsequent shutdown of EU-TO. **[R336.1301, R336.1901, R336.1910, R336.1911]**
- 3.6 The permittee shall not operate FG-Rendering unless a minimum temperature of 1200 °F and a minimum retention time of 0.5 seconds in EU-TO are maintained. **[R336.1301, R336.1901, R336.1910]**

Equipment

- 3.7 The permittee shall not operate FG-Rendering unless the condensers, non-condensable wet scrubbers, EU-Scrubber, and EU-TO are installed, maintained, and operated in a satisfactory manner, except as described in Special Conditions 3.3 and 3.4. **[R336.1301, R336.1901, R336.1910]**
- 3.8 The permittee shall equip and maintain EU-TO with a temperature gauge. **[R336.1901, R336.1910]**
- 3.9 The permittee shall equip and maintain EU-Scrubber with a pH meter and an ORP meter. **[R336.1901, R336.1910]**

Recordkeeping/Reporting/Notification

- 3.10 The permittee shall keep, in a satisfactory manner, hourly records of the pH and ORP reading for EU-Scrubber. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1901, R336.1910]**
- 3.11 The permittee shall keep, in a satisfactory manner, hourly records of the temperature for EU-TO. All records shall be kept on file for a period of at least five years and made available to the Department upon request. **[R336.1901, R336.1910]**

Stack/Vent Restrictions

	Stack & Vent ID	Maximum Diameter (inches)	Minimum Height Above Ground Level (feet)	Applicable Requirement
3.12a	SV-Rendering	36	57	R336.1901
3.12b	SV-Scrubber	48	40	R336.1901
The exhaust gases shall be discharged unobstructed vertically upwards to the ambient air.				