STAFF DETERMINATION

STAFF DETERMINATION FOR THE APPLICATION TO MODIFY THE GENERAL MOTORS CORPORATION, MORAINE ASSEMBLY PLANT'S CURRENT PERMIT PTI NO. 08-2506 TO INCREASE NATURAL GAS USAGE FOR PROCESS BURNING EQUIPMENT AND TO AMEND THE NITROGEN OXIDE EMISSION LIMIT FOR THE VOC ABATEMENT OXIDIZERS TO REFLECT ACTUAL EMISSION LEVELS UNDER THE PREVENTION OF SIGNIFICANT DETERIORATION REGULATIONS.

AUGUST, 1995

Ohio Environmental Protection Agency
Division of Air Pollution Control
1600 Watermark Drive
Columbus, Ohio 43215

Background

The General Motors Corporation is currently operating the Moraine Assembly Plant that produces light duty trucks and automobiles in Montgomery County in Dayton, Ohio. Montgomery County is designated as attainment for all criteria pollutants except for ozone (VOC). The facility is a major stationary source of VOC emissions. On October 23, 1992, Ohio EPA issued a federal netting permit to install (PTI) for the installation of a new paint shop and the permanent shut down of source operations K008 (Topcoat) and K006 (Guidecoat).

Because the federal netting permit was based on a conceptual design and employing emission factors listed in AP-42 that did not reflect actual production emissions of NO_x based on performance stack testings and the increase of natural gas usage over permit allowable due to real-time production versus engineering estimates, a revision to the federal netting PTI was necessary.

The result of this revision will increase the permit allowable for all the criteria pollutants, i.e., PM/PM10, SO2, CO, NOx and VOC listed in the original PTI, but only NOx emissions will result in a significant net increase over baseline levels and be subject to PSD review.

New Source Review (NSR)/PSD Applicability

The General Motors Corporation's Moraine Assembly Plant in Montgomery County in Dayton, Ohio is classified as a "major" stationary source because based on actual emissions for this facility exceeded 100 tons per year in an nonattainment area. Once a facility becomes a major, any increases in the amount of emissions above the significance levels would require the facility to perform a PSD analysis for those pollutants.

In this case, the only pollutant that exceeds the significance levels is NOx which is listed in Table 1.

Table 1
Emissions From the Proposed Modification

Pollutant	Maximum Potential Emissions of New Sources (TPY)	Baseline 1988-1989 (TPY)	Net Change (TPY)	Significant Level (TPY)
NO_x	135.58	39.70	+95.88[1]	40
PM/PM10	90.83	89.50	1.33	25/15
CO	71.40	9.9	+61.5	100
VOC	1457.94	1515.00	-57.06	40

1. Based upon the above information, PSD review is required for NO_x.

Control Technology Review

This incremental increase in the NO_x emission rate to the General Motors Corporation's Moraine Assembly Plant is subject to PSD regulations which mandates a case-by-case Best Available Control Technology (BACT) analysis be performed for NO_x. The application used a "top-down" approach to determine an appropriate level of control.

Site Description/Air Quality Designations

The General Motors Corporation's Moraine Assembly Plant is located in Montgomery County. Under Section 107 of the Clean Air Act as of June 24, 1992, this area was classified as attainment for all of the following criteria pollutants, i.e., total suspended particulates/particulate matter less than 100 microns, sulfur dioxide, nitrogen oxides, carbon monoxide, and lead. Montgomery County is classified as non-attainment for Ozone.

Ambient Air Quality Monitoring Requirements

The General Motors Corporation's Moraine Assembly Plant is located in the Dayton Air Quality Control Region (AQCR) 173. The area is attainment or attainment/unclassifiable for total suspended particulates/particulate matter less than 10 microns, sulfur dioxide, nitrogen oxides, carbon monoxide and lead. The area is classified as nonattainment for VOC.

U.S. EPA regulations require a year of ambient air quality data to be obtained as part of the PSD application. An applicant may conduct monitoring on-site, model to demonstrate a "de minimis" impact, or use existing air quality data to fulfill some of the requirements of a PSD ambient air quality analysis. If monitoring is required, U.S. EPA has set up specific conditions on the acceptability of existing air quality monitors to ensure the monitor is representative of air quality in the area.

In this instance, General Motors Corporation has conducted ambient air quality modeling that predicts the ambient air quality impact of the source to be less than the monitoring de minimis concentrations. A summary is below:

Pollutant	Averaging Period	Predicted Concentration[1]	Monitoring De Minimis Primary
NO_x	24-hour high	8.092 ug/m^3	14 ug/m^3

[1] Annual concentration based on a predicted 24-hour concentration of 22.05 ug/m^3. The 24-hour concentration was converted to an annual concentration using Turner's methodology [General Motors' consultant used .31 conversion (6.84 ug/m^3), where as, we used .367 conversion (8.092 ug/m^3)].

Modeling

Air quality dispersion modeling was conducted to assess the effect of this source on ambient air quality standards and PSD increments. Both "ISC2" and the VALLEY screening model option (Burt, 1977) of the U.S. EPA's COMPLEX I were utilized. The regulatory default option associated with the ISCLT model was selected in accordance with U.S. EPA guideline requirements. Since on-site meteorological data was not available, the VALLEY screening option of COMPLEX I utilized. The ISC2 model is the recommended guideline model for assessing the impact of aerodynamic plume downwash due the presence of nearby structures, while the COMPLEX I model is used to assess the impact on elevated terrain. The Building Profile Input Program (BPIP) which builds a mathematical representation of each building to determine projected building dimensions and the

potential zone of influence of each building. BPIP consisted of all NO_x- emitting stacks at the Moraine, Ohio Facility, along with all potentially influencing building dimensions located within the plant property. The building wake criteria influence zone, based on the wind direction-specific definition of nearby, is 5 1_b, downwind, 2 1_b, upwind, and 0.5 1_b crosswind.

Modeling Results/Increment Analysis

Since the maximum annual average NO_x concentration of 8.092 ug/m^3 does exceed the significant impact increment of 1 ug/m^3 for NO_x, it was necessary to perform additional dispersion modeling analyses to demonstrate compliance with both the NO_x, PSD Class II increment and NAAQS.

All NO_x- emitting sources associated with the proposed changes were modeled along with all creditable emission offsets from the shutdown of the topcoat and primer surface operations at the old plant as well as all non-GM PSD increment consuming sources potentially impacting the SIA. The maximum predicated annual average NO_2 concentration of 8.092 ug/m^3 is below the allowable 50 percent PSD Class II increment of 12.5 ug/m^3.

The NAAQS compliance demonstration consisted of modeling the new paint shop and existing sources at the Moraine, Ohio facility at its potential to emit along with non-GM emission sources that did not screen out during the "20D" analysis. The maximum predicated annual average impacts were combined with a representative background concentration (due to minor and distant sources) and compared with the NO_x NAAQS. The analysis indicates that complex screening was constraining. Ohio EPA understand that USEPA would suggest that a more refined above stack' analysis (eg., CTSCREEN, on-site met, etc.) should be completed to fully analyze the impact of these sources on intermediate and complex terrain. However, Ohio EPA believes that the approach taken by General Motors' consultant is conservative and therefore acceptable.

Annual concentration based on a predicated 24-hour concentration of 162.55 ug/m^3. The 24-hour concentration was converted to an annual concentration using Turner's methodology [General Motors' consultant used .31 conversion (84.39 ug/m^3), where as, we used .367 conversion (93.65 ug/m^3)]. The maximum predicated annual average NO_x concentration of 93.65 ug/m^3 is below the NO_x NAAQS of 100 ug/m^3.

BACT Review

As part of the application for any source regulated under the PSD requirements, an analysis must be conducted that demonstrates that Best Available Control Technology will be employed by the source. In this specific case, a BACT analysis was conducted for nitrogen oxides for the process burners and the VOC abatement equipment burners (recuperative oxidizers).

BACT for Process Burners

The process burners, which are installed in a multitude of process equipment such as ovens and building air supply houses, water heaters, etc.

General Motors indicates that there are no controls that can be added to the process heaters. These burners are manufactured to the same industry standard that is available from all burner/process equipment manufacturers. General Motors indicates that there are only two major manufacturers of these burners and the Moraine Plant has both. General Motors believes that process heaters are BACT.

BACT for VOC Abatement Oxidizers

The topcoat system VOC abatement controls installed at the Moraine Plant i nclude thermal recuperative oxidizers for VOC destruction. The NO_x emission factors for the thermal recuperative oxidizers has been adjusted from the current AP-42 emission factors due to new stack test information conducted at the Moraine

Plant.

The original thermal recuperative oxidizers permitted in the federal netting permit were selected because they were the best choice considering the plant's physical layout and are still being installed in the USA to meet specific site requirements for VOC abatement. In addition, the "low NO_x" burners installed on the thermal recuperative oxidizers are still considered BACT in the most recent BACT/LAER clearing house determinations.

Therefore, General Motors believes that the DURR thermal recuperative oxidizers are BACT.

Secondary Impact

The Company has demonstrated that the predicated pollutant concentrations throughout the study area are below the secondary NAAQS based on previous submittals. In addition, the air quality impacts are not significant and therefore need no further discussion.

Conclusions

Based upon the analysis of the permit to install application and it's supporting documentation provided by General Motors, the Ohio EPA staff has determined that the incremental increase in NO_x emission rate over the current permit will comply with all applicable State and Federal Environmental regulations and that the requirements for BACT are satisfied. Therefore, the Ohio EPA staff recommends that a permit to install be issued to General Motors.

State of Ohio Environmental Protection Agency
Street Address: Lazarus Gov. Center **TELE:** (614) 644-3020 **FAX:** (614) 644-2329
Mailing Address: Lazarus Gov. Center

RE: **DRAFT PERMIT TO INSTALL MODIFICATION** CERTIFIED MAIL
MONTGOMERY COUNTY
Application No: 08-02506

DATE: 1/14/2003

GMC-Truck and Bus Group-Moraine
David Kloppenburg
2601 W Stroop Rd
Dayton, OH 45439

You are hereby notified that the Ohio Environmental Protection Agency has made a draft action recommending that the Director issue a Permit to Install modification for the air contaminant source(s) [emissions unit(s)] shown on the enclosed draft permit modification. This draft action is not an authorization to begin construction or modification of your emissions unit(s). The purpose of this draft is to solicit public comments on the proposed installation. A public notice concerning the draft permit will appear in the Ohio EPA Weekly Review and the newspaper in the county where the facility will be located. Public comments will be accepted by the field office within 30 days of the date of publication in the newspaper. Any comments you have on the draft permit modification should be directed to the appropriate field office within the comment period. A copy of your comments should also be mailed to Robert Hodanbosi, Division of Air Pollution Control, Ohio EPA, P.O. Box 1049, Columbus, OH, 43266-0149.

A Permit to Install modification may be issued in proposed of final form based on the draft action, any written public comments received within 30 days of the public notice, or record of a public meeting if one is held. You will be notified in writing of a scheduled public meeting. Upon issuance of a final Permit to Install modification a fee of **$ 200** will be due. Please do not submit any payment now.

The Ohio EPA is urging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Pollution Prevention at (614) 644-3469. If you have any questions about this draft permit, please contact the field office where you submitted your application, or Mike Ahern, Field Operations & Permit Section at (614) 644-3631.

Very truly yours,
Michael W. Ahern
Michael W. Ahern, Supervisor
Field Operations and Permit Section
Division of Air Pollution Control

CC: USEPA RAPCA Miami Valley Regional Planning Commission KY IN

Permit To Install
Terms and Conditions

Issue Date: To be entered upon final issuance
Effective Date: To be entered upon final issuance

DRAFT MODIFICATION OF PERMIT TO INSTALL 08-02506

Application Number: **08-02506**
APS Premise Number: **0857101349**
Permit Fee: **$ To be entered upon final issuance**
Name of Facility: **GMC-Truck and Bus Group-Moraine**
Person to Contact: **David Kloppenburg**
Address: **2601 W Stroop Rd**
Dayton, OH 45439

Location of proposed air contaminant source(s) [emissions unit(s)]:
2601 W Stroop Rd
Dayton, **OHIO**

Description of modification:
adm mod of B001 to revise the allowable emission rates to reflect the change in AP-42 emission factors; to increase production and days of operation for the facility.

The above named entity is hereby granted a modification to the permit to install described above pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this modification does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described source(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans included in the application, the above described source(s) of pollutants will be granted the necessary operating permits.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Director

GENERAL PERMIT CONDITIONS

TERMINATION OF PERMIT TO INSTALL

Substantial construction for installation must take place within 18 months of the effective date of this permit. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

NOTICE OF INSPECTION

The Director of the Ohio Environmental Protection Agency, or his authorized representatives, may enter upon the premises of the above-named applicant during construction and operation at any reasonable time for the purpose of making inspections, conducting tests, or to examine records or reports pertaining to the construction, modification or installation of the source(s) of environmental pollutants identified within this permit.

CONSTRUCTION OF NEW SOURCES

The proposed source(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources are inadequate or cannot meet applicable standards.

If the construction of the proposed source(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of Ohio Administrative Code (OAC) Rule 3745-31-02. Furthermore, issuance of the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities prove to be inadequate or cannot meet applicable standards.

PERMIT TO INSTALL FEE

In accordance with Ohio Revised Code 3745.11, the specified Permit to Install fee must be remitted within 30 days of the effective date of this permit to install.

PUBLIC DISCLOSURE

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC Rule 3745-49-03.

APPLICABILITY

This Permit to Install is applicable only to the contaminant sources identified. Separate application must be made to the Director for the installation or modification of any other contaminant sources.

BEST AVAILABLE TECHNOLOGY

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

PERMIT TO OPERATE APPLICATION AND OPERATION AFTER COMPLETION OF CONSTRUCTION

If the permittee is required to apply for a Title V permit pursuant to OAC Chapter 3745-77, the permittee shall submit a complete Title V permit application or a complete Title V permit modification application within twelve (12) months after commencing operation of the emissions units covered by this permit. However, if the proposed new or modified source(s) would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification must be obtained before the operation of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d).

If the permittee is required to apply for permit(s) pursuant to OAC Chapter 3745-35, the source(s) identified in this Permit To Install is (are) permitted to operate for a period of up to one year from the date the source(s) commenced operation. Permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the source(s) covered by this permit.

SOURCE OPERATION AFTER COMPLETION OF CONSTRUCTION

This facility is permitted to operate each source described by this permit to install for a period of up to one year from the date the source commenced operation. This permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws and regulations.

GMC-Truck and Bus Group-Moraine Facility ID: **0857101349**
PTI Application: 08-02506
Modification Issued: To be entered upon final issuance

Ohio EPA Source Number	Source Identification Number	BAT Determination	Applicable Federal & OAC Rules	Permit Allowable Mass Emissions and/or Control/Usage Requirements

AIR EMISSION SUMMARY

The air contaminant emissions units listed below comprise the Permit to Install for **GMC-Truck and Bus Group-Moraine Assembly** located in **MONTGOMERY** County. The emissions units listed below shall not exceed the emission limits/control requirements contained in the table. This condition in no way limits the applicability of any other state or federal regulations. Additionally, this condition does not limit the applicability of additional special terms and conditions of this permit.

Ohio EPA Source Number				
	K024		T003	T009 T010
K020		K027		
	K024 Cont'd		T004	T011
K022		K028		T012
	K025		T005	
			T006	T013
K023		K028 Cont'd		
			T007	T014
			T008	B001
	K026			
		G001		

Ohio EPA Source Number	Source Identification Number	BAT Determination	Applicable Federal & OAC Rules	Permit Allowable Mass Emissions and/or Control/Usage Requirements
			ID)	
			Tanks #1 and #2; 15,000 Gal each, (Existing Operation Authorized by PTI 08-441)	Tank# 11; 15,000 Gallons Axle Lube
	Source Identification Description	Final Repair (Existing Operation Currently K016)		Tank# 12; 15,000 gallons Power Steering Fluid
	Preclean Deck (Existing Operation without Previous ID)		Tank #3; 15,000 gallons Xylene	Tank# 13; 15,000 gallons Diesel fuel
B001 Cont'd P001	Guidecoat Line (New Source Operations)		Tank # 4; 15,000 gallons Purge Solvent	Tank# 14; 2,000 gallons Sulfuric Acid
		Chassis Black (Existing Operation Currently K001)	Tank #5; 15,000 gallons Waste Purge Solvent	Combined Natural gas Units Relating to: Elpo Sand Guide Coat Body Sand Body wipe
P002	Topcoat Lines (Basecoat/ Clearcoat With Ovens; 4 Identical Lines) (New		Tank #6; 15,000 gallons Engine Oil	Topcoat System Topcoat Abatement Final Repair Deadner
P003	Sources Operations)	Sealers and Adhesives (Plant-Wide) (Existing Operation Without Previous ID)	Tank #7; 15,000 gallons Auto Trans. Fluid	Building Heat (Existing Operations without Previous ID; Existing and New operations to be under ID B001
			Tank #8; 15,000 Gallons Anti-freeze	
P004		Misc. Solvent Usage; Cleanup Operations (flushing, Wiping & Brushing) Floor Cleaning,	Tank #9; 15,000 gallons Anti-freeze	EDP Sanding Booth
	Deadner Line (Existing Operation, Currently K015)	Paint Purging, Booth Cleaning, Windshield Cleaning, Body Wiping, (Plant-wide) (Existing Operation Without Previous	Tank# 10; 8,500 gallons Windshield Washer Solvent	Guidecoat and Minor Topcoat Sanding Booth

GMC-Truck and Bus Group-Moraine Facility ID: **0857101349**
PTI Application: 08-02506
Modification Issued: To be entered upon final issuance

Ohio EPA Source Number	Source Identification Number	BAT Determination	Applicable Federal & OAC Rules	Permit Allowable Mass Emissions and/or Control/Usage Requirements
Topcoat Sanding Booth	BAT Determination	Negligible VOC Emission At 0.1 lb/gal; Air Dry Process; Air Assisted Airless Application; Dry Filter Exhaust Filtration	Compliance With Specified Allowable Emission Rates	Submerged Fill
Final Repairs Sanding	Water Reducible Detergent Solution; Vapor Pressure of Organics <0.1 MMHG	Footnote #3		Submerged Fill
	Footnote #1			Submerged Fill
			Vapor Balance, Submerged Fill	Submerged Fill
	Footnote #2	Negligible VOC Emission At 0.1 lb/gal; Air Dry Process	Submerged Fill	Submerged Fill
			Submerged Fill	Submerged Fill
		Compliance With Specified Allowable Emission Rates and OAC rules	Submerged Fill	Submerged Fill or Bottom Fill

Ohio EPA Source Number	Source Identification Number	BAT Determination	Applicable Federal & OAC Rules	Permit Allowable Mass Emissions and/or Control/Usage Requirements
	Application of Exhaust Filtration Systems		(U)	3745-31-05
Compliance with Specified Allowable emission Rates, Natural gas Fired.	Compliance with Specified Allowable Emission Rates through Application of Exhaust Filtration Systems	Applicable Federal & OAC Rules 3745-31-05	3745-31-05 3745-21-09 (C)(1)(d) 3745-17-11	
	Compliance with Specified Allowable Emission Rates through Application of Exhaust Filtration System.	3745-31-05 3745-21-09 (C)(1)(a)(ii) 40 CFR Part 60 Subpart MM 3745-31-05 3745-21-09 (C)(1)(c); 3745-17-11 40 CFR Part 60 Subpart MM		3745-31-05 3745-21-09 (R)
	Compliance with Specified Allowable Emission Rates through Application of Exhaust Filtration Systems		3745-31-05 3745-21-09 (U)	3745-31-05 3745-21-07 (D)(2)
Compliance with Specified Allowable Emission Rates through		3745-31-05 3745-21-09	3745-31-05 3745-21-09 (U)	3745-31-05 3745-21-07 (D)(2) 3745-31-05

GMC-Truck and Bus Group-Moraine Facility ID: **0857101349**
PTI Application: 08-02506
Modification Issued: To be entered upon final issuance

Ohio EPA Source Number	Source Identification Number	BAT Determination	Applicable Federal & OAC Rules	Permit Allowable Mass Emissions and/or Control/Usage Requirements
3745-21-07 (D)(2)	3745-21-07 (D)(2)	3745-17-11		6.46 tons/yr Volatile organic Compound Usage;
	3745-31-05		Permit Allowable Mass Emissions	2.6 lbs/hr,
3745-31-05	3745-21-07 (D)(2)	3745-31-05 3745-17-11	and/or Control/Usage Requirements	6.9 tons/yr Particulate
3745-21-07 (D)(2)	3745-31-05 3745-15-07		8.3 lb/hr, 133.4 lbs/day., 20.01 tons/yr	4.8 lbs/gal Coating Less Water; (0.58 Kg/l Coating, Less Water);
		3745-31-05	Volatile Organic	23.0 lbs/hr,
3745-31-05	3745-31-05	3745-17-11	Compound Usage	88.81 lbs/day,
3745-21-07 (D)(2)	3745-17-10 (B)(1)		2.2 lbs/hr, 34.8 lbs/day, 5.22 tons/yr	13.32 tons/yr Volatile Organic Compound Usage. 0.71 lbs/hr,
3745-31-05			Volatile organic Compound Usage	3.10 tons/yr Particulate
3745-21-07 (D)(2)			0.99 Kg/1 Applied Solids (8.24 lbs/gal	0.24 lb/hr, 2.4 lbs/day,
3745-31-05			Applied Solids); 305 lbs/hr, 4913.76	0.30 ton/yr Volatile Organic Compound Usage,
3745-21-07 (D)(2)			lbs/day, 737.06 tons/yr Organic Compound Emissions, 1302.89	0.03 lb/hr, 0.03 ton/yr Particulate
3745-31-05			tons/yr Volatile Organic Compound	17 lbs/hr 37.58 TPY Volatile
3745-21-07 (D)(2)	3745-31-05 3745-17-11		Usage; 4.5 lbs/hr, 19.71 tons/yr Particulate	Organic Compound Usage
3745-31-05	3745-31-05		2.7 lbs/hr, 43.04 lbs/day,	629.0 tons/yr Volatile Organic

Ohio EPA Source Number	Source Identification Number	BAT Determination	Applicable Federal & OAC Rules	Permit Allowable Mass Emissions and/or Control/Usage Requirements
Compound Usage	0.50 ton/yr; 218,007 gals/yr Usage	Negligible	Particulates	
		20.0 lbs/MMft^3 0.020 lb/MMBTU		
	<0.01 ton/yr; Negligible	17.0 tons/yr Particulate 135.58 tons/yr NO_x 71.40 tons/yr CO 4.68 tons/yr VOC		
	<0.01 ton/yr; Negligible	1,700 MMCF Natural Gas Usage, Rolling Periods		
	<0.01 ton/yr; Negligible			
4.98 tons/yr VOC; 2,000,000 gallons Usage	<0.01 ton/yr; Negligible			
	0.15 ton/yr; 213,085 gals/yr Usage	0.001 gr/DSCF, 0.9 lb/hr, 2.3 tons/yr Particulates		
0.10 ton/yr; 63,239 gals/yr Usage	<0.01 ton/yr; Negligible	0.001 gr/DSCF, 1.8 lbs/hr 4.90 tons/yr Particulates		
0.50 ton/yr; 218,007 gals/yr Usage	<0.01 ton/yr; Negligible	0.001 gr/DSCF, 3.0 lbs/hr, 8.0 tons/yr Particulates		
	<0.01 ton/yr; Negligible	0.001 gr/DSCF, 0.5 lb/hr, 1.4 tons/yr		

SUMMARY
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

Pollutant	Tons/Year
VOC	1457.94
PM	90.83
NO_x	135.58
CO^2	71.40

FOOTNOTES:

1. (K022) Compliance with applicable OAC and federal rules and specified VOC allowable emission rates through application of powder coat surface coating materials.

2. (K023) Compliance with applicable OAC and federal rules and specified VOC allowable emission rates through the application of waterborne basecoats; application of solvent borne clear coats with a VOC capture and control system; resulting overall topcoat emission of 8.24 lbs/gal applied solids; particulate control through application of wet scrubbers and preabatement filtration.

3. (K025) Compliance with applicable OAC rules through application of coating materials with a volume weighted VOC content of 4.8 lbs/gal, less water applied, based on daily usage; application of water scrubbers for particulate over-spray.

NSPS REQUIREMENTS

The following sources are subject to the applicable provisions of the New Source Performance Standards (NSPS) as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60.

Source Number	Source Description
K022	Guide Coat Line
K023	

Topcoat Lines	**NSPS Regulation (Subpart)**
	MM
	MM

The application and enforcement of these standards are delegated to the Ohio EPA. The requirements of 40 CFR Part 60 are also federally enforceable.

Pursuant to the NSPS, the source owner/operator is hereby advised of the requirement to report the following at the appropriate times:

1. construction date (no later than 30 days after such date);
2. anticipated start-up date (not more than 60 days or less than 30 days prior to such date);
3. actual start-up date (within 15 days after such date); and
4. date of performance testing (If required, at least 30 days prior to testing).

Reports are to be sent to:

Ohio Environmental Protection Agency
DAPC - Air Quality Modeling and Planning
P.O. Box 1049
Columbus, OH 43216-1049

and Regional Air Pollution Control Agency
117 South Main Street
Dayton, Ohio 45422

PERFORMANCE TEST REQUIREMENTS

The permittee shall conduct, or have conducted, performance testing on the air contaminant source(s) in accordance with procedures approved by the Agency. Two copies of the written report shall be submitted and signed by the person responsible for the test, describing the test procedures followed and the results of such tests. The Director, or an Ohio EPA representative, shall be allowed to witness the test, examine testing equipment, and require the acquisition or submission of data and information necessary to assure that the source operation and testing procedures provide a valid characterization of the emissions from the source and/or the performance of the control equipment.

1. A completed Intent to Test form shall be submitted to the appropriate Ohio EPA District Office or Local Air Pollution Control Agency where the original permit application was filed. This notice shall be made 30 days in advance and shall specify the source operating parameters, the proposed test procedures, and the time, date, place and person(s) conducting such tests.

2. Two copies of the test results shall be submitted within 30 days after the completion of the performance test.

3. Tests shall be performed for the following source(s) and pollutants(s):

Source	Pollutant(s)
K023	**VOC**

CONSTRUCTION COMPLIANCE CERTIFICATION

The applicant shall provide Ohio EPA with written certification (see enclosed form) that the facility has been constructed in accordance with the permit to install application and the terms and conditions of the permit to install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

RECORD(S) RETENTION AND AVAILABILITY

All records required by this Permit to Install shall be retained on file for a period of not less than three years unless otherwise indicated by Ohio Environmental Protection Agency. All records shall be made available to the Director, or any representative of the Director, for review during normal business hours.

REPORTING REQUIREMENTS

Unless otherwise specified, reports required by the Permit to Install need only be submitted to **Regional Air**

Pollution Control, 117 South Main Street, Dayton, Ohio 45422.

WASTE DISPOSAL

The owner/operator shall comply with any applicable state and federal requirements governing the storage, treatment, transport and disposal of any waste material generated by the operation of the sources.

MAINTENANCE OF EQUIPMENT

This source and its associated air pollution control system(s) shall be maintained regularly in accordance with good engineering practices and the recommendations of the respective manufacturers in order to minimize air contaminant emissions.

MALFUNCTION/ABATEMENT

In accordance with OAC RULE 3745-15-06, any malfunction of the source(s) or associated air pollution control system(s) shall be reported immediately to the **Regional Air Pollution Control, 117 South Main Street, Dayton, Ohio 45422.**

Except as provided by OAC Rule 3745-15-06(A)(3), scheduled maintenance of air pollution control equipment that requires the shutdown or bypassing of air pollution control system(s) must be accompanied by the shutdown of the associated air pollution sources.

AIR POLLUTION NUISANCES PROHIBITED

The air contaminant source(s) identified in this permit may not cause a public nuisance in violation of OAC Rule 3745-15-07.

ADDITIONAL SPECIAL TERMS AND CONDITIONS

I. Operating and Production Limits

1. Production operation at this facility (except repair) shall not exceed 310 per year, based upon a rolling, 12-month summation of the monthly production records.

2. The maximum annual production rate at this facility shall not exceed 384,400 units, based upon a rolling, 12-month summation of the monthly production records.

3. The total production during the first 330 calendar days of saleable vehicle production shall not exceed 306,000 units off the final assembly lime.

II. Top Coat Operations (K023)

4. The following areas within the topcoat operations shall be subject to VOC capture and control systems:

The robot clearcoat and bell areas, clearcoat bake ovens, and a portion of the flash/demask

areas.

5. The VOC emission control system (carbon adsorption followed by thermal incineration) associated with the clearcoat application areas and flash/demask zones following the clearcoat applications shall be required to achieve the following removal/destruction efficiencies:

a. Carbon (wheel) adsorption - 95 percent or 10 ppm as propane
b. Thermal incineration - 95 percent or 10 ppm as propane

The overall VOC removal/destruction efficiency for this control system shall be at least 90 percent, or 20 ppm as propane.

6. The thermal incinerator control systems associated with the clearcoat bake ovens shall be required to achieve a destruction efficiency of at least 90 percent or 10 ppm as propane.

7. This permit requires the applicant, as part of the initial overall compliance demonstration for source K023, to determine the:

a. Overall transfer efficiency for all coating applicators; and

b. VOC capture efficiency for the clearcoat application, flash, and demask areas and clearcoat bake ovens.

In no event shall the:

c. Capture efficiency for the clearcoat application, flash/demask areas and clearcoat bake ovens be less than 75.4%.

8. The emission of VOC from the topcoat operation, <u>after control</u>, shall not exceed:

a. 8.24 pounds per gallon solids applied (0.99 Kilograms per liter solids applied);
b. 305 pounds per hour;
c. 4914 pounds per day;
d. 737.06 tons per year.

III. <u>Guidecoat Operation (K022)</u>
<u>Antichip, Blackout, Primer Surface</u>

9. Powder coatings shall be employed for the Guidecoat operations. The emission of VOC from the powder Guidecoat operation, which are generated as a result of the bake oven

process, shall not exceed the following:

a. 2.2 pounds per hour;
b. 34.8 pounds per day;
c. 5.22 tons per year.

IV. Transitional Emission and Operational Requirements for Current Coating Line Operations at the Existing Moraine Truck Assembly Plant Facility

EDP prime Coating Line (currently K004)
Deadner Line (currently K015)
Final Repair Line (currently K016)
Guidecoat Line (currently K006)
Topcoat Line (currently K008)
Chassis Black Line (currently K001)
Miscellaneous Solvent Usage, Plant-wide (w/o assigned ID)

10. The sources identified above are existing operations having been authorized by way of PTI NO. 08-215, issued on May 13, 1980 and modified in subsequent permit actions in September 1988, June 1991, April 1992 and August, 1992.

The VOC and operational limitations expressed in PTI No. 08-215 remain in effect until such time as the new Guidecoat and topcoat systems are placed in operation, i.e., upon commencement of saleable vehicle production.

Upon commencement of saleable vehicle production through the new Guidecoat and topcoat operations the emission and operational requirements established by way of the PTI No. 08-2506, shall take precedence.

V. Source decommissioning Requirement

11. This PTI is issued based in part on the complete decomissioning of existing Guidecoat operations (K006) and existing topcoat (K008) operations.

The applicant shall cease operation of the existing Guidecoat (K006) and existing topcoat (K008) operations upon commencement of saleable vehicle and production through the new Guidecoat (K022) and topcoat (K023) operations.

VI. Performance Testing and Reporting Requirements

12. For sources K022 and K023 the applicant shall comply with the following provisions of the standards of performance for New Stationary Sources, 40 CFR, Part 60:

a. Paragraph 60.7: Notification and Recordkeeping
b. Paragraph 60.8: Performance Tests
c. Paragraph 60.393: Performance test and compliance provisions

d. Paragraph 60.394: Monitoring of emissions and operations
e. Paragraph 60.395: Reporting and recordkeeping requirements

13. For sources K022 and K023 within 60 days after achieving maximum production but no later than 180 days after commencement of trial operation, the applicant shall demonstrate compliance with the New Source Performance Standards referenced above.

14. Within 180 days of the issuance of this permit to install, the applicant shall submit to the Regional Air Pollution Control Agency and Ohio EPA for prior approval a plan for determining the actual overall VOC capture efficiency of the clearcoat application, flash/demask areas, and clearcoat bake ovens.

The applicant shall include in this plan a demonstration of "total enclosure" which means a structure that is constructed around a source of emissions so that all VOC emissions are collected and exhausted through a stack or duct. (Criteria for "total enclosure" are referenced in 40 CFR 60.711 (a)(17) and 60.713 (b)(5)(i)).

In lieu of a demonstration of "total enclosure" the applicant may choose a plan which includes the methods and procedures which will be employed to identify and quantify any fugitive VOC emission (leaks) associated with the clearcoat application, flash/demask areas, and clearcoat bake ovens.

Any determination of fugitive emission (leaks) associated with the clearcoat application, flash/demask areas and clearcoat bake ovens and ultimately the overall VOC emission capture efficiency must be on a gas-phase basis, or other method, with written approval by US EPA.

15. For source K023 within 60 days after achieving maximum production but not later than 270 days after production of the first saleable vehicle, the applicant shall demonstrate, by actual testing:

a. The overall transfer efficiency for all coating applicators used in the topcoat system;
b. Oven VOC loading for oven following clearcoat application;
c. VOC capture efficiency for the clearcoat application area, flash/demask areas, and clearcoat bake ovens;
d. Carbon (wheel) adsorption VOC removal efficiency; and
e. Thermal incinerator destruction efficiencies.

Additionally, the applicant shall determine, in conjunction with the actual thermal incinerator efficiency testing required above, the reference combustion temperatures necessary to achieve required destruction efficiencies as specified in X.26.

Until such time as the reference combustion temperatures necessary to achieve required destruction efficiencies are determined, the minimum combustion temperature shall be

maintained at 1200 F.

Upon determining the actual transfer efficiencies for the coating applicators employed in source K023, the actual transfer efficiency figures shall become a permit requirement by reference and shall be employed in the compliance determinations for source K023 referenced in Part VI, 16.

16. Compliance reports for each source K023 and K025 shall be prepared on a calendar month basis and submitted within 30 days of the end of the month. The initial compliance report shall be submitted within 60 days of achieving maximum production but not later than 270 days after commencement of the first saleable vehicle. The report shall contain the following data for each operation:

The data for the topcoat system (K023) shall be on a daily basis as determined by using the US EPA protocol 450/3-88-018. The data for final repair (K025) shall be on a daily basis using actual daily inventory.

a Actual coating VOC content in pounds of VOC per gallon minus water.
b. Actual coating volume solids.
c. For topcoat (K023), the transfer efficiencies used in the calculation.
d. For topcoat (K023), the capture and destruction efficiencies used in the calculation.
e. For topcoat (K023), the daily emission rate (lb VOC/gallon of applied solids) based on actual transfer efficiency.
f. Coating usage in gallons.
g. For topcoat (K023) and final repair (K025) the pounds per day of VOC.

When more than one coating has been averaged for compliance purposes, the average shall be determined on a volume weighted average. All data necessary to verify weighted averages shall be included in the report.

17. The calculation of the daily VOC emission rate for K023 shall be done in accordance with the US EPA's "Protocol for Determining the Daily Volatile Organic Compound Emissions Rate of Automobile and Light Duty Truck Topcoat Operations" (EPA-450/3-88-018).

18. Compliance reports for sources K020, K022, K024, K026, K027 and K028 shall be submitted on a calendar month basis within 30 days of the end of the month.

The initial compliance report shall be submitted within 60 days of achieving maximum production but no later than 270 days after commencement of the first saleable vehicle. The reports shall contain the following data for each operation on a monthly basis based upon actual monthly coating and miscellaneous solvent usage.

a The company identification of the material used;
b. The number of gallons used;
c. The VOC content, in lbs/gal;
d. Total volatile organic compound usage at each operation in pounds per month

based on the usage and VOC content of all of the coatings used at each operation.

These compliance reports shall be certified by way of an authorized signature in the manner prescribed under OAC rule 3745-35-02(B)(1).

VII. Recordkeeping

19. The applicant shall maintain records on file consistent with the format and frequency established for reporting under Part VI, X, XI, and XVII.

All records required by this Permit to Install shall be retained on file for a period of not less than two years unless otherwise indicated by Ohio Environmental Protection Agency. All records shall be made available to the Director, or any authorized representative of the Director, for review during normal business hours.

VIII. Performance Testing and Analysis

20. All performance testing and analysis shall be done in accordance with test procedures approved by RAPCA and Ohio EPA and in conformance with US EPA reference methods for emission testing. In particular, the following test procedures shall be followed:

a. Coating solvent content shall be determined by US EPA Test Method 24 (40 C.F.R. Part 60 App. A).
b. US EPA Test Method 25A (40 C.F.R. Part 60 App. A) will be used to determine the removal and destruction efficiency. Test Method 25 will be used when the outlet VOC concentration is greater than 50 ppm as carbon.
c. All references to ppm as propane exclude methane, as measured by US EPA Method 18 or other approved method by US EPA.
d. For purposes of determining compliance with the minimum performance requirements of the carbon adsorber and thermal incinerators, the methods prescribed in this paragraph (VIII) shall apply.

21. The carbon adsorption control system adjoined to K023 shall be tested, utilizing US EPA reference methods, on a semi-annual basis to demonstrate compliance with required VOC removal specification.

IX. VOC Compliance Demonstration.

22. Compliance with the NSPS emission limitations shall be determined pursuant to 40 C.F.R. 60.393 based upon a monthly volume weighted average mass of organic compounds emitted per volume of applied solids using the 60.393 (C)(1)(i) table for transfer efficiencies.

23. Compliance with the BAT emission limitations for source K023 (pounds VOC per gallon

solids applied) shall be determined on a daily basis in conformance with US EPA approved methodology 450.3-88-018 "Protocol for Determining the Daily Volatile Organic Compound Emissions Rate of Automobile and Light Duty Truck Topcoat Operations."

24. Compliance with the BAT emission limitations for source K025 (pounds VOC per gallon of coating, as applied, minus water) shall be determined on a daily basis by actual daily inventory.

X. Inspection/Maintenance; Monitoring; Recordkeeping; Reporting

25. The applicant shall initiate an inspection and maintenance program designed to help ensure the control equipment is operating in accordance with the manufacturer's specifications. Such an I and M program shall outline the specific steps taken and/or the specific items checked on a routine basis to ensure optimum operation of the thermal incineration systems. The I and M program shall be in writing and shall be submitted to RAPCA in conjunction with subsequent permit to operate applications 90 days prior to startup (i.e., production of the first saleable vehicle).

26. Specifically, the applicant shall continuously monitor and record the temperature of the combustion gases from the thermal incinerator units.

A combustion temperature shall be maintained which is necessary to achieve and maintain a VOC destruction efficiency for the thermal incinerator VOC control system which follows the carbon (wheel) adsorption control system and a VOC destruction efficiency for the thermal incinerator systems associated with the clearcoat bake ovens, as specified in Part II, 5 and 6.

27. The applicant shall submit monthly reports which provide the following information for each period during which the incinerator combustion gas temperatures fall below the temperature determined to be necessary to achieve and maintain the required destruction efficiencies.

a. The date of the excursion;
b. The time interval over which the excursion occurred;
c. The temperature values during the excursion;
d. The cause (s) for the excursion; and
e. The corrective action which has been or will be taken to prevent similar excursion in the future.

The reports shall be submitted within 30 days of the end of the month with the initial report due within 60 days of achieving maximum production but no later than 270 after production of the first saleable vehicle.

28. Within 60 days after achieving maximum production but not later than 270 days after production of the first saleable vehicle, the applicant shall install, operate and maintain equipment to continuously monitor and record the inlet hydrocarbon concentration of the exhaust gases being vented to, and the exhaust gases from, the operation of the carbon (wheel) adsorption emission control system which precedes a thermal incineration emission control system. Such continuous

monitoring and recording equipment shall be installed and operated in accordance with procedures approved, in writing, by the US EPA and shall be used for equipment monitoring purposes and not for compliance.

As final promulgation of performance specifications for such monitoring equipment is pending, the performance specifications as drafted by the US EPA, dated May 26, 1992, titled Performance Specifications (Sections 101 and 102) for Enhanced Monitoring Plan Parameter and Emission Monitoring Systems shall serve as reference for purposes of this permit.

The applicant shall submit monthly reports which summarize the continuous emission data required above and which note any incidences where the carbon (wheel) adsorption emission control system failed to achieve a removal efficiency of 95 percent or 10 ppm as propane, based on hourly averages of the respective inlet/exhaust hydrocarbon concentrations. The removal efficiencies shall be determined in accordance with the following equation:

$$\text{Removal Efficiency} = \frac{HC\ Inlet - HC\ Exhaust}{HC\ Inlet} \times 100$$

The reports shall be submitted within 30 days of the end of the month with the initial report due within 60 days of achieving maximum production but no later than 270 after production of the first saleable vehicle.

XI. Alternative Minimum Capture, Control and Destruction Efficiencies

29. If a 75.4% VOC capture efficiency and/or a 90% overall destruction efficiency of captured VOC emissions (including a 95% control efficiency at the carbon adsorption system, a 95% destruction efficiency at the carbon adsorption system incinerator, and/or 90% destruction efficiency at each of the bake oven incinerators) cannot be achieved by the Permittee (based on the initial performance tests required in Part VI.15.), the Permittee may elect to comply with the alternative permit restrictions and requirements set forth in the applicable subpart (a, b, or c) of this paragraph. The Permittee shall have 30 days from the date of submission of the results for the initial performance testing (required by Part VI.15) to petition for compliance with the limits in this paragraph or this paragraph shall be waived.

a. If the required 75.4% capture and 90% overall destruction efficiencies are achieved but one or more of the individual incinerator destruction efficiencies cannot be achieved, then the Permittee shall:

i. Report the actual tested capture and overall destruction efficiencies,
ii. Report the actual tested control/destruction efficiency of each control device and the corresponding incinerator operating temperatures (the minimum tested efficiencies and temperatures required to meet (a)(iii) will be directly

incorporated into this permit as minimum requirements), and

iii. Demonstrate that an overall 90% destruction efficiency is achieved.

b. If the required 90% overall destruction efficiency is not achieved but a greater than 75.4% capture efficiency is achieved that will fully offset the lower overall destruction efficiency, then the Permittee shall:

i. Report the actual tested capture efficiency, the overall destruction efficiency, the individual control/destruction efficiencies of each control device, and the corresponding incinerator operating temperatures (the minimum tested efficiencies and temperatures (the minimum tested efficiencies and temperatures required to meet (b)(ii) will be directly incorporated into this permit as minimum requirements), and

ii. Demonstrate that the actual capture efficiency, overall destruction efficiency, and topcoat VOC usage limit of 1302.89 tons per year will not violate the VOC emissions limit of 737.06 tons per year at the topcoat operation.

c. If the required 75.4% capture efficiency and 90% overall destruction efficiency are not achieved, then the Permittee shall:

i. Report the actual tested capture efficiency, the overall destruction efficiency, the individual control/destruction efficiencies of each control device, and the corresponding incinerator operating temperatures (these efficiencies and temperatures will be directly incorporated into this permit as minimum requirements), and

ii. Comply with either further restriction on VOC usage at the topcoat operation (including, if applicable, reductions associated with the application of incinerator control equipment with the base coat application) or on annual units produced, (based on a rolling 12-month period). The required further restriction on VOC usage or units produced (including a limit on VOC usage per vehicle produced) shall be calculated with the appropriate equation, expressed below, and reported to the Regional Air Pollution Control Agency and the OEPA.

The information and reports required above shall be submitted to the Regional Air Pollution Control Agency and the Ohio EPA within 30 days of the submission of the results for the initial performance testing required in Part VI.15 and, if satisfactory, shall be directly incorporated into a revised Permit to Install.

Calculation of Additional Permit Restrictions

One of the following two equations shall be used to determine the VOC usage or vehicle production limitation necessary to satisfy the requirements of Part XI.29.

1. Required VOC = $470 + \frac{267.1}{[1-(N_c)(N_d)]}$ plus:
Usage Limit **

(Reductions associated with the application of incinerator control of captured emissions at the heated flash area following base coat application)

2. Required Vehicle = $384{,}400 - \frac{832.9[(0.754)(0.90-(N_c)(N_d)]}{737.1/384{,}400}$

Where N_c = 0.754 or the actual tested capture efficiency for the clearcoat operation (whichever will be the new required value)

N_d = 0.90 or the actual tested overall destruction efficiency of the captured emissions in the clearcoat operation (whichever is lower)

* This restriction assumes a VOC usage of 3.82 pounds of VOC per Vehicle (i.e., 737.1 tons VOC per year x 2,000 lbs/ton / 384,400 vehicles per year). This limit (along with appropriate monthly recordkeeping and reporting) will be directly incorporated into this permit as a minimum requirement.

30. If the Permittee chooses to incorporate VOC emissions reductions associated with the application of incineration control of captured emissions at the heated flash off area following the basecoat application, the determination of VOC emissions captured and destroyed at this point in the topcoat process shall be consistent with the methods and procedures specified in this permit for the clearcoat part of the topcoat system (including but not limited to Parts VI.14; VI.15 and VIII. 20). Within 180 days of the issuance of this permit, the applicant shall submit to the Regional Air Pollution Control Agency and the Ohio EPA for prior approval a plan for determining the actual capture and destruction efficiencies at the heated flash off area that follows basecoat application. The minimum tested capture and destruction efficiencies (including incinerator operating temperature) required to achieve and maintain the VOC reduction shall be incorporated directly into this permit. In addition, requirements for the continuous monitoring of the incinerator temperature and for monthly reporting shall also be incorporated directly into this permit.

XII. Natural Gas Equipment; Recordkeeping; Reporting

31. The total natural gas consumption at the Moraine Assembly Plant, including new and existing operations, shall not exceed 1,700,000 MCF per year based on a rolling twelve

month period.

32. The applicant shall submit monthly reports to the Regional Air Pollution Control Agency on the facility's natural gas usage. The reports shall be submitted within 30 days of the end of the month with the initial report due within 60 days of achieving maximum production but not later than 270 days after production of the first saleable vehicle.

(* The initial report, for January 1995, has been submitted to the Regional Air Pollution Control Agency, in conformance with this reporting requirement.)

XIII. Compliance Demonstration with Annual Usage Limits

33. Compliance with the annual VOC usage limit specified in this permit for sources K020, K022, K023, K024, K025, K026, K027, K028, and compliance with the annual NO_x emission limit specified in the permit for source B001 shall be determined based on a rolling twelve month period, i.e., January 1, 1994 to January 1, 1995; February 1, 1994 to February 1, 1995, etc.

34. Until such time as the rolling twelve month compliance demonstration periods can begin each of the identified sources (except K028 and B001) shall be limited to a specific monthly allowable volatile organic compound usage rate based on the following.

January 1994	0.083 of annual VOC usage limit
February 1994	0.083 of annual VOC usage limit
March 1994	0.087 of annual VOC usage limit
April 1994	0.080 of annual VOC usage limit
May 1994	0.087 of annual VOC usage limit
June 1994	0.087 of annual VOC usage limit
July 1994	0.083 of annual VOC usage limit
August 1994	0.090 of annual VOC usage limit
September 1994	0.083 of annual VOC usage limit
October 1994	0.090 of annual VOC usage limit
November 1994	0.080 of annual VOC usage limit
December 1994	0.067 of annual VOC usage limit

35. Until such time as the rolling twelve month compliance demonstration periods can begin, source K028 shall be limited to a specific monthly allowable volatile organic compound usage rate based on the following.

January 1994	0.085 of annual VOC usage limit

February 1994	0.077 of annual VOC usage limit
March 1994	0.085 of annual VOC usage limit
April 1994	0.082 of annual VOC usage limit
May 1994	0.085 of annual VOC usage limit
June 1994	0.082 of annual VOC usage limit
July 1994	0.085 of annual VOC usage limit
August 1994	0.085 of annual VOC usage limit
September 1994	0.082 of annual VOC usage limit
October 1994	0.085 of annual VOC usage limit
November 1994	0.082 of annual VOC usage limit
December 1994	0.085 of annual VOC usage limit

36a. Until such time as the rolling twelve month compliance demonstration periods can begin, source B001 shall be limited to a specific quarterly allowable emission rate based on the following cumulative table:

1st Quarter

May 1994 through July 1994: 0.436 of annual limit

2nd Quarter

August 1994 through October 1994: 0.593 of annual limit

3rd Quarter

November 1994 through January 1995: 0.697 of annual limit

4th Quarter

February 1995 through April 1995: 1.000 of annual limit

36b. Nitrogen Oxides Allowable Emission Rates

Emissions of nitrogen oxides from the various natural gas burning equipment at the Moraine Assembly Plant, new and existing operations, shall not exceed:

	lbs/MM cubic feet
Process Related	140
Oxidizers (Emission Control)	450

The total annual allowable emission rate of nitrogen oxides from the Moraine Assembly Plant, including new and existing operations, shall not exceed 135.58 tons per year.

XIV. Contemporaneous Emission Increases and Decreases

37a. With the installation of the new sources identified within PTI 08-2506, issued October 23,1992, the permanent shutdown of source operations K008 (Topcoat) and K006 (Guidecoat), and the assignment of reduced allowable emission rates for the remaining source operations, the net change in emissions was determined to be:

Pollutant	New Source TPY	Existing Source TPY	Net Change TPY
VOC	1546.39	1515.0	+31.39
PM	85.72	89.5	-3.78
NO_x	79.3	39.7	+39.6
SO_2	0.30	0.2	+0.10
CO	19.50	9.9	+9.60

37b. With the increased allowable natural gas usage from 1,132,506 MCF to 1,700,000 MCF specified within this PTI, the net change in emissions is revised to now be:

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Pollutant	New Source TPY	Existing Source TPY	Net Change TPY
VOC	1457.94	1515.0	-57.06
PM	90.83	89.5	+1.33
NO_x	135.58	39.7	+95.88
CO	71.40	9.9	+61.5

The applicant, with the specified revisions to the new source emission total and the calculated net emissions change, has "netted out" of the Federal Prevention of Significant Deterioration and non-attainment requirements for the pollutants volatile organic compounds, particulate matter, sulfur dioxide, and carbon monoxide.

In order to "net out" of the Federal Prevention of Significant Deterioration and non-attainment requirements for the pollutants volatile organic compounds, particulate matter, sulfur dioxide, and carbon monoxide, the applicant has permanently decommissioned upon startup (i.e., commencement of production of first saleable vehicle) of the new Guidecoat operation (K022), and the new topcoat operation (K023), the following sources at the GM Moraine Assembly Plant: K008, topcoat and K006, Guidecoat.

Additionally, the applicant is required to adhere to revised allowable emission rates for the remaining source operations at the GM Moraine Assembly Plant as specified within this permit on the air emission summary.

The overall net change in emission is as specified above.

37c. The applicant, with the specified increase to the allowable natural gas usage rate and the calculated net emission increase for the pollutant nitrogen oxides of 95.88 TPY, is now subject to the applicable provisions of the Prevention of Significant Deterioration (PSD) regulations as promulgated by the United States Environmental Protection Agency 40 CFR 52.21.

37d. Increment Consumption

In accordance with Federal Prevention of Significant Deterioration regulations contained within 40 CFR 52.21, increases in pollutant concentration are limited to 25 micrograms per cubic meter.

Ohio EPA policy allows sources to consume up to one-half the available PSD increment.

Presently, 24.87 micrograms per cubic meter of the established increment remains available.

Therefore, 12.44 micrograms per cubic meter, are presently available for this new source installation.

The maximum annual average nitrogen oxide impact is predicted to be 8.09 micrograms per

cubic meter.

Therefore, 16.78 micrograms of the original 25 remain for additional new source growth.

XV. Future Coating Application Technology

34. Electrostatic application equipment for waterborne basecoat may be installed. Prior to purchase of the electrostatic application equipment, the applicant shall submit plans and specifications to the Regional Air Pollution Control Agency and the Ohio EPA for approval. Creditable emission reductions generated by implementation of such electrostatic application equipment may be used for future emissions netting only after being made federally enforceable through a modification of this permit.

XVI. Saleable Definition

39. For purposes of this permit "saleable" shall be defined as:

A marketable vehicle that can be sold, titled and licensed (as opposed to test vehicles and/or scrap test bodies and sheet metal).

XVII. Amendment to the Construction Compliance Certification Paragraph

40. The construction compliance certification referenced on page 10 shall be satisfied provided that the applicant notifies RAPCA and Ohio EPA that each individual source has been or is being constructed in accordance with the PTI application and the terms and conditions of the PTI. The construction compliance certification may be submitted in conjunction with the permit to operate application for each source.

XVIII. Recordkeeping and Reporting Requirements for Production Limitations

41. The permittee shall maintain monthly records of the following information:

a. The total number of units produced;
b. The rolling 12-month summation of the number of units produced (beginning the first full calendar month of operation following the issuance of this modification to PTI No. 08-2506);
c. The total number of days operated; and ,
d. The rolling 12-month summation of the number of days operated (beginning the first full calendar month of operation following the issuance of this modification to PTI No. 08-2506).

42. The permittee shall submit quarterly deviation (excursion) reports which identify all exceedances of the rolling, 12-month production and/or days of operation limitations.

The permittee shall submit required quarterly reports in the following manner:

a. Reports of any required monitoring and/or recordkeeping information shall be submitted to the Regional Air Pollution Control Agency; and,

b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from emission limitations and operational restrictions that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the Regional Air Pollution Control Agency. If no deviations occurred during a six-month period, the permittee shall submit a semi-annual report, which states that no deviations occurred during that period.

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Modification Issued: To be entered upon final issuance

STAFF DETERMINATION FOR THE APPLICATION TO MODIFY THE GENERAL MOTORS CORPORATION, MORAINE ASSEMBLY PLANT'S CURRENT PERMIT PTI NO. 08-2506 TO INCREASE NATURAL GAS USAGE FOR PROCESS BURNING EQUIPMENT AND TO AMEND THE NITROGEN OXIDE EMISSION LIMIT FOR THE VOC ABATEMENT OXIDIZERS TO REFLECT ACTUAL EMISSION LEVELS UNDER THE PREVENTION OF SIGNIFICANT DETERIORATION REGULATIONS.

AUGUST, 1995

Ohio Environmental Protection Agency
Division of Air Pollution Control
1600 Watermark Drive
Columbus, Ohio 43215

GMC-Truck and Bus Group-Moraine Facility ID: **0857101349**
PTI Application: 08-02506
Modification Issued: To be entered upon final issuance

Background

The General Motors Corporation is currently operating the Moraine Assembly Plant that produces light duty trucks and automobiles in Montgomery County in Dayton, Ohio. Montgomery County is designated as attainment for all criteria pollutants except for ozone (VOC). The facility is a major stationary source of VOC emissions. On October 23, 1992, Ohio EPA issued a federal netting permit to install (PTI) for the installation of a new paint shop and the permanent shut down of source operations K008 (Topcoat) and K006 (Guidecoat).

Because the federal netting permit was based on a conceptual design and employing emission factors listed in AP-42 that did not reflect actual production emissions of NO_x based on performance stack testings and the increase of natural gas usage over permit allowable due to real-time production versus engineering estimates, a revision to the federal netting PTI was necessary.

The result of this revision will increase the permit allowable for all the criteria pollutants, i.e., PM/PM10, SO2, CO, NOx and VOC listed in the original PTI, but only NOx emissions will result in a significant net increase over baseline levels and be subject to PSD review.

New Source Review (NSR)/PSD Applicability

The General Motors Corporation's Moraine Assembly Plant in Montgomery County in Dayton, Ohio is classified as a "major" stationary source because based on actual emissions for this facility exceeded 100 tons per year in an nonattainment area. Once a facility becomes a major, any increases in the amount of emissions above the significance levels would require the facility to perform a PSD analysis for those pollutants.

In this case, the only pollutant that exceeds the significance levels is NOx which is listed in Table 1.

Table 1
Emissions From the Proposed Modification

Pollutant	Maximum Potential Emissions of New Sources (TPY)	Baseline 1988-1989 (TPY)	Net Change (TPY)	Significant Level (TPY)
NO_x	135.58	39.70	+95.88[1]	40
PM/PM10	90.83	89.50	1.33	25/15
CO	71.40	9.9	+61.5	100
VOC	1459.94	1515.00	-57.06	40

1. Based upon the above information, PSD review is required for NO_x.

Control Technology Review

This incremental increase in the NO_x emission rate to the General Motors Corporation's Moraine Assembly Plant is subject to PSD regulations which mandates a case-by-case Best Available Control Technology (BACT) analysis be performed for NO_x. The application used a "top-down" approach to determine an appropriate level of control.

Site Description/Air Quality Designations

The General Motors Corporation's Moraine Assembly Plant is located in Montgomery County. Under Section 107 of the Clean Air Act as of June 24, 1992, this area was classified as attainment for all of the following criteria pollutants, i.e., total suspended particulates/particulate matter less than 100 microns, sulfur dioxide, nitrogen oxides, carbon monoxide, and lead. Montgomery County is classified as non-attainment for Ozone.

Ambient Air Quality Monitoring Requirements

The General Motors Corporation's Moraine Assembly Plant is located in the Dayton Air Quality Control Region (AQCR) 173. The area is attainment or attainment/unclassifiable for total suspended particulates/particulate matter less than 10 microns, sulfur dioxide, nitrogen oxides, carbon monoxide and lead. The area is classified as nonattainment for VOC.

U.S. EPA regulations require a year of ambient air quality data to be obtained as part of the PSD application. An applicant may conduct monitoring on-site, model to demonstrate a "de minimis" impact, or use existing air quality data to fulfill some of the requirements of a PSD ambient air quality analysis. If monitoring is required, U.S. EPA has set up specific conditions on the acceptability of existing air quality monitors to ensure the monitor is representative of air quality in the area.

In this instance, General Motors Corporation has conducted ambient air quality modeling that predicts the ambient air quality impact of the source to be less than the monitoring de minimis concentrations. A summary is below:

Pollutant	Averaging Period	Predicted Concentration[1]	Monitoring De Minimis Primary
NO_x	24-hour high	8.092 ug/m^3	14 ug/m^3

[1] Annual concentration based on a predicted 24-hour concentration of 22.05 ug/m^3. The 24-hour concentration was converted to an annual concentration using Turner's methodology [General Motors' consultant used .31 conversion (6.84 ug/m^3), where as, we used .367 conversion (8.092 ug/m^3)].

Modeling

Air quality dispersion modeling was conducted to assess the effect of this source on ambient air quality standards and PSD increments. Both "ISC2" and the VALLEY screening model option (Burt, 1977) of the U.S. EPA's COMPLEX I were utilized. The regulatory default option associated with the ISCLT model was selected in accordance with U.S. EPA guideline requirements. Since on-site meteorological data was not available, the VALLEY screening option of COMPLEX I utilized. The ISC2 model is the recommended guideline model for assessing the impact of aerodynamic plume downwash due the presence of nearby structures, while the COMPLEX I model is used to assess the impact on elevated terrain. The Building Profile Input Program (BPIP) which builds a mathematical representation of each building to determine projected building dimensions and the potential zone

of influence of each building. BPIP consisted of all NO_x- emitting stacks at the Moraine, Ohio Facility, along with all potentially influencing building dimensions located within the plant property. The building wake criteria influence zone, based on the wind direction-specific definition of nearby, is 5 1_b, downwind, 2 1_b, upwind, and 0.5 1_b crosswind.

Modeling Results/Increment Analysis

Since the maximum annual average NO_x concentration of 8.092 ug/m^3 does exceed the significant impact increment of 1 ug/m^3 for NO_x, it was necessary to perform additional dispersion modeling analyses to demonstrate compliance with both the NO_x, PSD Class II increment and NAAQS.

All NO_x- emitting sources associated with the proposed changes were modeled along with all creditable emission offsets from the shutdown of the topcoat and primer surface operations at the old plant as well as all non-GM PSD increment consuming sources potentially impacting the SIA. The maximum predicated annual average NO_2 concentration of 8.092 ug/m^3 is below the allowable 50 percent PSD Class II increment of 12.5 ug/m^3.

The NAAQS compliance demonstration consisted of modeling the new paint shop and existing sources at the Moraine, Ohio facility at its potential to emit along with non-GM emission sources that did not screen out during the "20d" analysis. The maximum predicated annual average impacts were combined with a representative background concentration (due to minor and distant sources) and compared with the NO_x NAAQS. The analysis indicates that complex screening was constraining. Ohio EPA understand that USEPA would suggest that a more refined above stack' analysis (eg., CTSCREEN, on-site met, etc.) should be completed to fully analyze the impact of these sources on intermediate and complex terrain. However, Ohio EPA believes that the approach taken by General Motors' consultant is conservative and therefore acceptable.

Annual concentration based on a predicated 24-hour concentration of 162.55 ug/m^3. The 24-hour concentration was converted to an annual concentration using Turner's methodology [General Motors' consultant used .31 conversion (84.39 ug/m^3), where as, we used .367 conversion (93.65 ug/m^3)]. The maximum predicated annual average NO_x concentration of 93.65 ug/m^3 is below the NO_x NAAQS of 100 ug/m^3.

BACT Review

As part of the application for any source regulated under the PSD requirements, an analysis must be conducted that demonstrates that Best Available Control Technology will be employed by the source. In this specific case, a BACT analysis was conducted for nitrogen oxides for the process burners and the VOC abatement equipment burners (recuperative oxidizers).

BACT for Process Burners

The process burners, which are installed in a multitude of process equipment such as ovens and building air supply

houses, water heaters, etc.

General Motors indicates that there are no controls that can be added to the process heaters. These burners are manufactured to the same industry standard that is available from all ll burner/process equipment manufacturers. General Motors indicates that there are only two major manufacturers of these burners and the Moraine Plant has both. General Motors believes that process heaters are BACT.

BACT for VOC Abatement Oxidizers

The topcoat system VOC abatement controls installed at the Moraine Plant Include thermal recuperative oxidizers for VOC destruction. The NO_x emission factors for the thermal recuperative oxidizers has been adjusted from the current AP-42 emission factors due to new stack test information conducted at the Moraine Plant.

The original thermal recuperative oxidizers permitted in the federal netting permit were selected because they were the best choice considering the plant's physical layout and are still being installed in the USA to meet specific site requirements for VOC abatement. In addition, the "low NO_x" burners installed on the thermal recuperative oxidizers are still considered BACT in the most recent BACT/LAER clearing house determinations.

Therefore, General Motors believes that the DURR thermal recuperative oxidizers are BACT.

Secondary Impact

The Company has demonstrated that the predicated pollutant concentrations throughout the study area are below the secondary NAAQS based on previous submittals. In addition, the air quality impacts are not significant and therefore need no further discussion.

Conclusions

Based upon the analysis of the permit to install application and it's supporting documentation provided by General Motors, the Ohio EPA staff has determined that the incremental increase in NO_x emission rate over the current permit will comply with all applicable State and Federal Environmental regulations and that the requirements for BACT are satisfied. Therefore, the Ohio EPA staff recommends that a permit to install be issued to General Motors.