Facility Name: **Nakanishi Manufacturing Corporation**
City: Winterville
County: Clarke
AIRS #: 04-13-059-00069

Application #: TV-14850
Date Application Received: November 24, 2003
Permit No: 3562-059-0069-V-02-0

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Introduction

This narrative is being provided to assist the reader in understanding the content of the attached draft Part 70 operating permit. Complex issues and unusual items are explained herein simpler terms and/or greater detail than is sometimes possible in the actual permit. This permit is being issued pursuant to: (1) Georgia Air Quality Act, O.C.G.A § 12-9-1, et seq. and (2) Georgia Rules for Air Quality Control, Chapter 391-3-1, and (3) Title V of the Clean Air Act. Section 391-3-1-.03(10) of the Georgia Rules for Air Quality Control incorporates requirements of Part 70 of Title 40 of the Code of Federal Regulations promulgated pursuant to the Federal Clean Air Act. The primary purpose of this permit is to consolidate and identify existing state and federal air requirements applicable to **Nakanishi Manufacturing Corporation** and to provide practical methods for determining compliance with these requirements. The following narrative is designed to accompany the draft permit and is presented in the same general order as the permit. It initially describes the facility receiving the permit, the applicable requirements and their significance, and the methods for determining compliance with those applicable requirements. This narrative is intended as an adjunct for the reviewer and to provide information only. It has no legal standing. Any revisions made to the permit in response to comments received during the public participation and EPA review process will be described in an addendum to this narrative.

I. Facility Description

A. Facility Identification

1. Facility Name: Nakanishi Manufacturing Corporation

2. Parent/Holding Company Name: Nakanishi Metal Works Co., LTD

3. Previous and/or Other Name(s): None

4. Facility Location: 1225 Voyles Road, Winterville, GA 30683, Clarke County

5. Attainment, Non-attainment Area Location, or Contributing Area: Attainment

6. Class I Area Impacts: None

B. Site Determination

There are no other facilities which could possibly be contiguous or adjacent and under common control.

C. Existing Permits

Table 1 below lists all current Title V permits, all amendments, 502(b)(10) changes, and off-permit changes, issued to the facility, based on a comparative review of form A.6, Current Permits, of the Title V application and the "Permit" file(s) on the facility found in the Air Branch office.

Table 1: List of Current Permits, Amendments, and Off-Permit Changes

Permit Number and/or Off-Permit Change	Date of Issuance/ Effectiveness	Purpose of Issuance
3562-059-0069-V-01-0	May 20, 1999	Initial Title V operating permit
Off-Permit Change	Sept. 3, 2003	Addition of exempt equip, including four rubber vulcanizing machines and rubber post cure oven.
Off-Permit Change	Sept. 12, 2003	Addition of exempt equip, including one degreaser and water-based blast cleaning equip.

D. Process Description

1. SIC Codes(s): 3562, 3061

The SIC Code(s) identified above were assigned by EPD's Air Protection Branch for purposes pursuant to the Georgia Air Quality Act and related administrative purposes only and are not intended to be used for any other purpose. Assignment of SIC Codes by EPD's Air Protection Branch for these purposes does not prohibit the facility from using these or different SIC Codes for other regulatory and non-regulatory purposes.

Should the reference(s) to SIC Code(s) in any narratives or narrative addendum previously issued for the Title V permit for this facility conflict with the revised language herein, the language herein shall control; provided, however, language in previously issued narratives that does not expressly reference SIC Code(s) shall not be affected.

2. Description of Product(s)

Nakanishi manufactures various types of steel and plastic bearing retainers, and also fiberglass and metal reinforced plastic gears.

3. Overall Facility Process Description

Nakanishi Manufacturing Corporation in Winterville was constructed in 1988. They manufacture bearing components and plastic gears. Note that all rubber seal production at the facility has permanently ceased, and all related equipment removed from the site. Nakanishi has also begun the implementation of a water-based slurry cleaning and surface treatment process which may eventually replace the current trichloroethylene solvent degreasers. Other than these changes, the processes described below remain identical to those which appeared in the original Title V Permit.

In the steel bearing retainer manufacturing process, cold rolled steel is stamped to form bearing retainers in a variety of presses. The bearing retainers are then degreased to remove residual oil, followed by a surface treatment. These are done using either a water-based slurry blasting machine with rust preventative, or a combination of solvent degreasing and abrasive shot blasting followed by the application of a rust preventative. The parts are then packaged for shipment.

In the plastic bearing retainer and gear manufacturing processes, plastic beads are put through various plastic injection molding machines to form the retainers or gears. More than 95% of the plastics molded at the facility are fiberglass reinforced. Any metal parts that may be required as components in gear production are produced off-site.

Air pollution control equipment at the facility consists of two baghouses to control particulate emissions from the shot blasting processes. These processes are included within the Generic Emission Groups section of the permit. No changes to this equipment are being proposed by this renewal permit.

The primary source of emissions from the facility are VOC and HAP emissions resulting from the two trichloroethylene (TCE) degreasers (DG01 and DG02) that use a batch cold immersion process to remove residual oil from the steel bearing retainers. Each degreaser has a solvent capacity of 600 gallons, and the potential to emit for each degreaser is approximately 18 tons per year, calculated as per 40 CFR 63.465(e). Note that TCE is both a VOC and a HAP. No changes to these degreasers are being proposed within this renewal permit.

4. Overall Process Flow Diagram

The facility provided process flow diagrams in their Title V permit application.

E. Regulatory Status

1. PSD/NSR

The facility is non-major under PSD/NSR regulations.

2. Title V Major Source Status by Pollutant

Table 2: Title V Major Source Status

Pollutant	Is the Pollutant Emitted?	If emitted, what is the facility's Title V status for the pollutant?		
		Major Source Status	Major Source Requesting SM Status	Non-Major Source Status
PM	Yes			✓
PM_{10}	Yes			✓
SO_2	n/a			✓
VOC	Yes			✓
NO_x	n/a			✓
CO	n/a			✓
TRS	n/a			✓
H_2S	n/a			✓
Individual HAP	Yes	✓		
Total HAPs	Yes	✓		

Note that the application submitted by the facility incorrectly states the potential to emit of the degreasers. The potential to emit for each degreaser should have been calculated according to the method presented in the applicable MACT standard for Halogenated Solvent Cleaning (see 40 CFR 63.465(e)), which then results in a potential to emit of approximately 18 tons per year of trichloroethylene per degreaser. This does not change the facility's status with regard to any regulations, however.

3. MACT Standards

The facility is subject to 40 CFR 63, Subpart T, "National Emissions Standards for Halogenated Solvent Cleaning."

4. Program Applicability (AIRS Program Codes)

Program Code	Applicable (y/n)
Program Code 6 - PSD	n
Program Code 8 – Part 61 NESHAP	n
Program Code 9 - NSPS	n
Program Code M – Part 63 NESHAP	y
Program Code V – Title V	y

Regulatory Analysis

II. Facility Wide Requirements

A. Emission and Operating Caps:

Nakanishi has elected to continue with its existing emission limit of 100 tons per year of VOC as it appeared in their initial Title V Permit No. 3562-059-0069-V-01-0. This limit was initiated prior to their initial Title V Permit in order to exempt the facility from Georgia Rule 391-3-1-.02(2)(ff), "Solvent Metal Cleaning", which is triggered above 100 TPY VOC. However, the facility has since been (and continues to be) required to comply with 40 CFR Part 63, Subpart T, "National Emissions Standards for Halogenated Solvent Cleaning," which currently satisfies the requirements of Georgia Rule 391-3-1-.02(2)(ff). Thus, Georgia Rule 391-3-1-.02(2)(ff) need no longer be avoided, and the regulatory impetus for the 100 ton per year limit no longer exists. The limit now remains in Title V Permit No. 3562-059-0069-V-02-0 as a voluntary action on the part of Nakanishi.

B. Applicable Rules and Regulations

Applicable rules and regulations specified in Permit No. 3562-059-0069-V-02-0 are discussed in the initial Title V permit narrative for this facility. Please refer to that narrative.

C. Compliance Status

The facility is currently operating in compliance with all applicable rules and regulations.

D. Operational Flexibility

None applicable.

E. Permit Conditions

Condition 2.1.1 remains unchanged and contains a voluntary limitation on VOC emissions of 100 tons during any twelve consecutive month period.

Note that Condition 2.3.1 of the initial Title V permit now appears as Condition 8.17.2.

III. Regulated Equipment Requirements

A. Brief Process Description

See Section I.D.3, above, for a process description covering this equipment.

B. Equipment List for the Process

Emission Unit ID No.	Emission Unit Description	Date of Installation	Applicable Requirements/Standards	Corresponding Permit Conditions
DG01	Trichloroethylene Degreaser No. 1	September 1988	40 CFR Part 63, Subpart T	2.1.1, 3.3.1, 3.3.2, 3.3.3, 6.2.1, 6.2.2, 6.2.3, 6.2.4, 6.2.5
DG02	Trichloroethylene Degreaser No. 2	September 1988	40 CFR Part 63, Subpart T	2.1.1, 3.3.1, 3.3.2, 3.3.3, 6.2.1, 6.2.2, 6.2.3, 6.2.4, 6.2.5

C. Equipment & Rule Applicability

Equipment and Rule Applicability specified in Permit No. 3562-059-0069-V-02-0 is discussed in the initial Title V permit narrative for this facility. Please refer to that narrative.

D. Compliance Status

All of the equipment are currently operating in compliance with all applicable rules and regulations.

E. Operational Flexibility

None applicable.

F. Permit Conditions

With the exception of the correction of typographical errors, and the inclusion of a requirement to comply with the General Provisions of 40 CFR Part 63 within Condition 3.3.1, all Permit Conditions within this section remain unchanged from those of the initial Title V Permit No. 3562-059-0069-V-01-0. Please refer to the initial Title V permit narrative for further information.

IV. Testing Requirements (with Associated Record Keeping and Reporting)

A. General Testing Requirements

The permit includes a requirement that the Permittee conduct performance testing on any specified emission unit when directed by the Division. Additionally, a written notification of any performance test(s) is required 30 days prior to the date of the test(s) and a test plan is required to be submitted with the test notification. Test methods and procedures for determining compliance with applicable emission limitations are listed and test results are required to be submitted to the Division within 60 days of completion of the testing.

B. Specific Testing Requirements

1. Individual Equipment

None applicable.

2. Equipment Groups (all subject to the same test requirements):

None applicable.

V. Monitoring Requirements

Note that all of the conditions appearing in Part 5.3 of the initial Title V permit now appear within the General Record Keeping requirements in Part 6.1 of the renewal permit. The terms of the conditions remain unchanged.

A. General Monitoring Requirements

Condition 5.1.1 requires that all continuous monitoring systems required by the Division be operated continuously except during monitoring system breakdowns and repairs. Monitoring system response during quality assurance activities is required to be measured and recorded. Maintenance or repair is required to be conducted in an expeditious manner.

B. Specific Monitoring Requirements

1. Individual Equipment:

None applicable.

40 CFR Part 63, Subpart T, "National Emissions Standards for Halogenated Solvent Cleaning," which applies to the two degreasers (Emission Unit ID Nos. DG01 and DG02), does not contain any specific monitoring requirements for batch cold cleaning devices.

2. Equipment Groups (all subject to the same monitoring requirements):

None applicable.

C. Compliance Assurance Monitoring (CAM)

Not Applicable.

VI. Record Keeping and Reporting Requirements

A. General Record Keeping and Reporting Requirements

The Permit contains general requirements for the maintenance of all records for a period of five years following the date of entry and requires the prompt reporting of all information related to deviations from the applicable requirements. Records, including identification of any excess emissions, exceedances, or excursions from the applicable monitoring triggers, the cause of such occurrence, and the corrective action taken, are required to be kept by the Permittee and reporting is required on a semiannual basis.

B. Specific Record Keeping and Reporting Requirements

Record keeping and reporting requirements specified in Permit No. 3562-059-0069-V-02-0 are discussed in the initial Title V permit narrative for this facility. Please refer to that narrative.

VII. Specific Requirements

A. Operational Flexibility

None Requested.

B. Alternative Requirements

None Requested.

C. Insignificant Activities

Refer to http://airpermit.dnr.state.ga.us/GATV/default.asp for the Online Title V Application.

Refer to the following forms in the Title V permit application:

- Form D.1 (Insignificant Activities Checklist)
- Form D.2 (Generic Emissions Groups)
- Form D.3 (Generic Fuel Burning Equipment)
- Form D.6 (Insignificant Activities Based on Emission Levels of the Title V permit application)

D. Temporary Sources

Not Applicable.

E. Short-Term Activities

Not Applicable.

F. Compliance Schedule/Progress Reports

None Applicable.

G. Emissions Trading

Not Applicable.

H. Acid Rain Requirements

Not Applicable.

I. Stratospheric Ozone Protection Requirements

General conditions covering Stratospheric Ozone Protection are included in Part 7.11 of this permit. These conditions satisfactorily cover this facility, and no additional conditions were required.

J. Pollution Prevention

Not Applicable.

K. Specific Conditions

Not Applicable.

VIII. General Provisions

Generic provisions have been included in this permit to address the requirements in 40 CFR Part 70 that apply to all Title V sources, and the requirements in Chapter 391-3-1 of the Georgia Rules for Air Quality Control that apply to all stationary sources of air pollution.

Addendum to Narrative

Immediately after the draft permit was issued, it was noted that the potential emission rate discussed in Sections I.D.3 and I.E.2 of this narrative seems to be inaccurate for the degreaser configuration at this facility. As stated in those sections, 40 CFR Part 63, Subpart T contains a requirement to use a specific equation when calculating the potential to emit for a degreaser subject to that standard. Using this equation for Nakanishi, however, seems to greatly underestimate the emissions, which is likely due to the large number of small parts that are processed in this case. The equation represents a potential emission of 36 tons per year from the degreasers (i.e. 18 tons per year each), but a much more precise estimate is achieved by tracking actual solvent usage at maximum throughputs, which results in potential emissions of 59 tons per year of trichloroethylene (TCE) and a maximum emission of 13.7 pounds of TCE in any one hour (from both degreasers combined).

Nakanishi also reconfigured the degreaser's exhaust system in June of 2005, improving both indoor air quality and ambient plume dispersion characteristics. This reconfiguration was not required under any regulation, but was done voluntarily in order to improve air quality. A new toxic impact assessment was performed using the new exhaust configuration and the more accurate emission rates (i.e. not the rates specified in 40 CFR Part 63, Subpart T). SCREEN3 modeling was used to assess short term impacts and ISCST3 modeling was used to assess impacts on an annual basis. These assessments resulted in ground level concentrations well below any currently regulated thresholds for TCE, and were also below the annual threshold levels used in California (i.e. 5 micro-grams per cubic meter).

The 30-day public comment period started on March 10, 2005 and ended on April 11, 2005. A single letter was received by the Division on March 17, 2005 from Jill McElheney of MICAH's Mission stating concerns about the nearness of W.R. Coile Middle School and New Grove Baptist Church to Nakanishi, and requesting that a hearing be held prior to the issuance of the renewal permit.

A Question & Answer session was held at 6:30 p.m. on June 27, 2005 at the W.R. Coile Middle School, which is less than one-third of a mile from the facility. Approximately 30 people attended the meeting, about one-third of whom were Nakanishi employees. The Division provided an overview of the Title V permitting process and representatives of Nakanishi presented information on the manufacturing process and history of their facility. All questions from the audience were then answered.

A Public Hearing was held at 6:30 p.m. on July 25, 2005 at the Athens-Clarke County Library. Approximately 20 people attended the hearing, three of whom read formal comments. One of the three, Robert Clements, also submitted additional comments via e-mail on July 26, 2005. A summary of these comments & questions are given below, along with responses by the Division.

1. **Bill Sheehan:**

   Having consulted with other environmental and industrial professionals, Mr. Sheehan stated his continued concerns that the level of TCE emissions from Nakanishi may be neither safe nor necessary.

His comments also stated that there are safer, more effective and less expensive alternatives to TCE in existence, and included contact information for the Toxics Use Reduction Institute at the University of Massachusetts Lowell, suggesting that Nakanishi should consult with them to find alternatives.

Division Response: The Division has forwarded this information to Nakanishi in an effort to assist them in obtaining functional alternatives to TCE.

Mr. Sheehan also submitted a list of 18 questions:

1. "Did your risk assessment assess the dangers of just the one option - reauthorizing Nakanishi's Title V permit -- or did you evaluate alternative, less harmful processes or degreasers?"

Division Response: Nakanishi's degreasing operations are currently in compliance with all applicable state and federal regulations, and there is no regulatory basis for requiring Nakanishi to discontinue use of TCE or to explore alternatives.

2. "Considering that the Nakanishi plant is less than four miles from East Athens and much closer to Winterville, did your risk assessment include the informed consent of parents of children who breathe the air?"

Division Response: Public participation is a vital part of Division's permitting process. Parents of children who breathe the air were invited to submit comments, questions or concerns during the 30 day Public Notice period that ended April 11, 2005; or during the Question and Answer session held at W.R. Coile Middle School on June 27, 2005; or during the Public Hearing held at the Athens-Clarke County Library on July 25, 2005. A notice of each of these events was published in the local newspaper.

3. "How many other industrial sources are there in Clarke County and in the counties around Clarke County and what are their toxic profiles?"

Division Response: There are approximately 40 other industrial air pollution sources within Clarke county that are currently permitted by the Division. Many other small sources may also exist that are exempt from permitting. Of those 40 permitted sources, six are considered major sources – a power company, a landfill, a rubber company, Nakanishi, CertainTeed, and the University of Georgia. A complete description of all pollutants emitted by all of these sources would not be appropriate here. However, it should be noted that none of these other major industries are sources of TCE.
Also note that if further information is desired, permitting documents for all major sources are located on the Air Branch web site at *www.georgiaair.org/airpermit/*. For other smaller sources, permitting documents are available for review at the office of the Air Protection Branch, 4244 International Parkway, Atlanta Tradeport - Suite 120, Atlanta, Georgia 30354.

4. "Risk assessments of chemicals are usually conducted on single chemicals, but in the real world we are all exposed to mixtures of chemicals day in and day out. Furthermore, many studies have now shown that harmless amounts of individual chemicals, in combination, can add up to a harmful dose. What other potentially harmful chemicals are the residents of East Athens and Winterville exposed to? And what are the cumulative health impacts of these chemicals with TCE?"

Division Response: It should first be stressed that the air toxics evaluation conducted by the Division is not a risk assessment. The Division does use components of the risk assessment process in developing acceptable ambient concentrations and estimating the potential for human exposure. Therefore, the Division's screening process could best be described as risk-based, but not a risk assessment. And while the potential for additivity of toxic effects for multiple chemicals released from a given facility is addressed in

the screening process, the potential for cumulative harmful effects of chemicals released from other sources (stationary or mobile) is not.

5. "In risk assessments, adult animals are almost always used. In developing the risk factors for TCE, how many tests used animals that have the greatest vulnerability – from conception through adolescence?"

Division Response: Although some toxicity indices are developed using human data, risk assessments also use toxicity indices that are often developed from animal data, much of which is collected from studies where exposures are to adult animals. However, for many chemicals, reproductive and developmental studies are conducted that do follow animals exposed and assessed through gestation and development of the young. Additionally, some tests follow the animals for a significant portion of their lifetime with exposures beginning when animals are very young, assuring that exposures occur during sensitive times of life. Also, information is often available from studies of workers exposed occupationally that provides indicators of reproductive health and development. The Agency for Toxic Substances and Disease Registry reviewed 58 studies to develop a toxicology profile for TCE . Of the 58 studies, 8 were human studies and the rest were animal. Of the 58 studies, 6 specifically looked at reproductive or developmental endpoints. Additionally, 3 other studies in rodents were for durations of 104 weeks, which are considered lifetime studies.

6. "Did you single out children, the elderly or sensitive populations, like California does, in making your risk assessment for Nakanishi?"

Division Response: Again, the Division does not conduct a risk assessment. However, in developing the screening criteria or acceptable ambient concentrations used in the air toxics evaluation, the Division does used toxicity indices and exposure scenarios (as prescribed by U.S. EPA) that are protective for sensitive subpopulations including children and the elderly. Specifically, for likely carcinogens such as TCE, the Division uses a toxicity index that is the plausible upper-bound estimate of the risk (i.e., the risk is not likely to be higher, but may be lower and may actually be zero). When adequate human epidemiology data are available, maximum likelihood estimates may be used instead of upper bounds to generate the toxicity index. When only animal data are available and linear extrapolation is used, the toxicity index is derived from the largest linear slope that is consistent with the data (within the upper 95 percent confidence limit). That is, the true risk to humans is not likely to exceed the upper-bound estimate, and is likely to be lower. U.S. EPA's current guidance states that any estimate of risk for air toxics using this approach is likely to be protective of all potentially exposed populations.

7. "Many people suffer from chronic conditions, like asthma and diabetes. But risk assessments typically assume that only healthy young adults are exposed. How did your risk analysis take into consideration preexisting chronic conditions?"

Division Response: See answer to previous question.

8. "Risk assessors try to account for human variability by applying a 'safety factor' like 10 or 100 to their numerical estimate of risk. But such a number has little to do with science and are often little more than guesses. What 'safety' factor did you use, and can you prove that your 'safety' factor offers safety?"

Division Response: The Division disagrees with the premise of this statement. In current risk assessment terminology, safety factor has been replaced by the term uncertainty factor. These factors are applied in a systematic manner to address uncertainties in many areas. In addition to addressing uncertainty due to variability in humans, they are used to account for uncertainty when extrapolating from animals to humans, or when one extrapolates from acute or sub-chronic studies to chronic situations, and when using data sets where a No Observed Adverse Effect Level was not determined. In the risk assessment processes used by

the U.S. EPA (and applied by the Division), these uncertainty factors are applied in developing the toxicity indices used for chemicals that are evaluated as non-carcinogens, and vary with each chemical. However, no uncertainty factors are applied in the evaluation for carcinogens (see previous answer regarding upper-bound approach). As TCE was evaluated as a potential carcinogen, no specific uncertainty factor was applied.

9. "We now know that many dose-response relationships are not linear. Indeed, the shape of dose-response curves is the subject of an extensive body of contentious literature, yet risk assessors continue to rely most often on the simplifying assumption of linearity. What dose-response relationships were used for TCE is determining that 111,000 pounds per year is safe?"

Division Response: An assumption of linearity in the dose-response curve was used in the toxicity assessment for TCE. While the assumption may be simplifying, an upper-bounding process (see previous answer) is used which makes the process very conservative.

10. "Instead of asking 'how many additional cancers can we predict with imperfect data?', could you require Nakanishi to provide a credible analysis of alternatives that put health first?"

Division Response: Nakanishi is currently in compliance with all applicable state and federal regulations, none of which require an analysis of alternative methods of operation. In addition, the air toxics evaluation conducted by the Division indicates that the emissions from Nakanishi result in ambient concentrations of TCE that are acceptable and pose minimal hazard to health. Therefore the Division has no regulatory basis for requiring Nakanishi to submit an analysis of alternatives. Although there is no regulatory basis for such action, it should be noted that Nakanishi voluntarily began such an analysis some time ago and continues to be in contact with the Division regarding their progress.

11. "Do you believe it is **right** to allow Nakanishi to dump 111,000 pounds of a chemical that is carcinogenic, immunotoxic and neurotoxic? If you had children assigned to Coile Middle School (2,000 feet ENE of Nakanishi's plant), would you be concerned for their health?

Division Response: The Division implements and enforces environmental regulations under a mandate from the U.S. EPA, and Nakanishi is currently in compliance with all applicable state and federal regulations, including current toxic impact guidelines. Therefore, the Division currently permits the emissions of TCE to continue. Moral questions of "right" and "wrong" are more appropriately taken up during the process of creating environmental law, and the Division encourages the commenter's participation in that process in the future.

Current evidence suggests that the emissions from Nakanishi do not pose a significant health threat to the public, which includes the children of Coile Middle School.

12. "The four census tracts around CertainTeed (the other major industrial air polluter in Clarke County) and Nakanishi are 60% African American, while the other 25 census tracts in Clarke County are 23% African American. Is it fair that this minority population bear such a high toxic burden from Nakanishi?"

Division Response: The Division protects the health of all Georgia's citizens equally, regardless of race.

13. "Nakanishi Manufacturing lies 8,000 feet from CertainTeed, and in between CertainTeed and Winterville. Have you done physical air monitoring to see if TCE adheres to fiberglass PM2.5 particles blowing from CertainTeed? Where and when have you done physical air monitoring near Nakanishi?"

Division Response: Since concentrations of TCE in the air surrounding Nakanishi are expected to be on the order of one part per billion, physical capture of TCE for measurement is not practical, and has therefore

not been performed by the Division. Instead, the Division has performed detailed modeling of the emissions from the facility. Since these computer models have been validated by physical tests in multiple situations around the country, the Division is confident in their reliability.

It should be noted, however, that Nakanishi has used a high quality hand monitoring device in the areas surrounding the facility that can detect levels as low as 1 or 2 parts per million of TCE, and has consistently obtained readings of zero, thus verifying that actual TCE concentrations have been below the one part per million detection level.

14. "What is the risk to children in Winterville when they inhale CertainTeed's tiny fiberglass particles that may have picked up Nakanishi's TCE?"

Division Response: Concentrations of TCE are expected to be extremely low, and the risk to children is correspondingly expected to be extremely low. However, a precise quantitative risk value cannot be given.

The Division has no evidence that TCE is binding to fiberglass particles, or that there are significant particle loads (above the federal standard) in the atmosphere of the Winterville area. TCE is a volatile compound. When inhalation exposure does occur, TCE readily moves into the lungs and is absorbed efficiently. That is, having TCE attached or bound to PM 2.5 would not facilitate absorption or increase the opportunity for TCE to move from the lung into the blood stream. Qualitatively, the Athens area currently meets the federal criteria standard for PM 2.5, and will not be expected to exceed that standard should an increase in CertainTeed emissions be permitted by the Division. Ambient concentrations of TCE (as estimated by dispersion modeling) are below current risk-based screening values. As long as those two conditions continue, there should be no risk above that evaluated in the air toxics assessment.

15. "Does EPD perform stack (or vent, since there do not appear to be stacks at Nakanishi) tests to check Nakanishi's data? After the initial tests, do you require tests on a continued basis? When have they been performed?"

Division Response: Stack testing is not required by state or federal regulation for this type of operation. For evaporative liquids such as this, a mass balance approach is extremely accurate. The facility is required to track all incoming and outgoing materials that contain HAP or VOC, and to calculate emissions based upon the assumption that all material not shipped out as waste has evaporated into the air.

16. "If EPD grants the permit request, and cancer, immunological or neurological diseases in children and adults are eventually linked to Nakanishi's TCE releases, will Nakanishi have any liability? Will EPD have any liability?"

Division Response: The Division cannot speculate on the possible results of future civil lawsuits.

17. "Does EPD have the authority to deny this permit given the potential harm it will cause our citizens?"

Division Response: The Division has the authority to deny a permit to a facility that fails to comply with current state or federal regulations. However, Nakanishi is currently in compliance with all applicable state and federal regulations.

18. "If residents want their air cleaner than EPD standards, what can local government do to limit toxic industrial air pollution from Nakanishi?"

Division Response: Local governments do have the ability to pass and enforce their own laws. However, the Division does not maintain information on the procedures and policies of local governments.

2. **Jill McElheney:**

Ms. McElheney stated her concern that EPD is neglecting to protect the air of children around Nakanishi, and had the following further comments:

"TCE is a teratogen, neurotoxin and has been linked to childhood leukemia. Because EPD does not single children out for risk assessment, the faith you hold in your modeling should be accompanied by ambient air monitoring for Coile Middle School, New Grove Baptist Church and the young families on the side of Nakanishi's property line."

Division Response:

The literature on the carcinogenicity of TCE has been very contradictory. There is currently no linkage of TCE to specific disease or cancer states like leukemia.

With regard to children and risk assessments, please see the response to Bill Sheehan's question #6, above.

The models used by the Division have been validated by physical tests in multiple situations around the country. The Division is therefore confident in their reliability. Ambient air monitoring of TCE in the Nakanishi area cannot be accomplished using relatively less expensive hand-held sampling devices, which are not sensitive enough to detect the extremely low levels of TCE expected. Indeed, Nakanishi has used a high quality hand monitoring device in the areas surrounding the facility (including Coile Middle School) that can detect levels as low as 1 or 2 parts per million of TCE, and has consistently obtained readings of zero, thus verifying that actual TCE concentrations have been below the one part per million detection level.

Thus, ambient air monitoring would instead require very sophisticated equipment that can collect samples over a long period of time, which are then sent to a laboratory for analysis. But such sampling stations are expensive to construct and maintain, usually on the order of hundreds of thousands of dollars per year. Given the proven accuracy of computer modeling and the fact that the Division strives to use Georgia's tax dollars as effectively as possible, the Division determined that ambient monitoring could not be justified.

"Cancer in children tends to be genetically very simple since there is not the latent period needed to accumulate genetic mutations. Most recent research on childhood cancer is linking atmospheric combustion pollutants to in utero chromosomal changes which lead to childhood cancer. There are documented cases of childhood leukemia in the host community of CertainTeed and Nakanishi. While Nakanishi is not combusting like CertainTeed, the combination of their emissions together increases the risks for young children."

Division Response: The Division is aware of recent reports that suggest childhood cancer is linked to air pollutants caused by burning oil (e.g. traffic pollution). The Division is also aware that other respected researchers are critical of drawing strong conclusions from those reports, and have suggested interpreting such results with considerable caution. Both Nakanishi and CertainTeed release chemicals that are classified as likely or probably carcinogenic to humans, and the Division conducts an evaluation to assess how those chemicals may impact people's health at the property line of the facility and beyond. The Division's evaluation for air toxics for any given facility does not quantitatively account for potential added risk from other facilities or vehicle emissions. However, the Division is confident that the conservative screening procedures used in the assessment ensure the protection of the public's health.

"Furthermore, the residents of Pittard Road, who underwent a cancer cluster investigation recently, did not receive any air monitoring data from their multiple exposures of Certainteed's 30 years of air toxic emissions combined with Nakanishi's 18 years of emitting over 100,000 lbs annually of TCE."

Division Response: The Division did conduct sampling of private well water in the Pittard Road area in 2003 at the request of the Northeast Georgia Health District. However, those results were all negative for chemical contamination, and the Division is unaware of any results or conclusions from the investigation

conducted by the Health District in the Pittard Road area that suggests air contamination as a source of, or linked to, disease.

"Serious immune dysfunction from low levels of TCE among workers have now been documented (abstract attached). Parents who carry this contaminant on their clothes and come in contact with their children should be advised."

Division Response: The Division has reviewed the abstract entitled "Effects of Occupational Trichloroethylene Exposure on Cytokine Levels in Workers" by Lavicoli et. al., JOEM 47(5):453-457, 2005. The Division disagrees with the conclusions reached by the commenter regarding the significance of the findings from the study and their applicability to the evaluation of TCE emissions from Nakanishi. The authors of the study were investigating trichloroethylene-induced alterations of the immune system. The conclusion was that this study "provides the first report on quantitative immune changes induced by occupational exposure to low levels of trichloroethylene and strongly suggests that exposure to this substance alters immunohomeostasis in humans with possible effects on health". It should be noted that the occupational exposures that the authors reported are approximately 7000 times greater than the TCE concentration used as a maximum allowable screening value in the Division's evaluation for exposure to ambient TCE at the property line and beyond. That is, while the study investigated immune effects from exposures to TCE in the low range of legally allowable occupational exposures, those exposures are still several thousand times greater than concentrations deemed acceptable by regulatory agencies for environmental exposure. The issue of children's exposures from clothing (presumably from workers) is outside of the Division's purview.

"Given there are several states who are phasing out TCE for safer alternatives that are cost efficient, MICAH's Mission would like to request the following:

1. Meeting with EPD & Nakanishi to prepare collectively a timetable to stop the emissions of TCE into the ambient air.
2. Should EPD not use their authority and the TCE emissions continue, MICAH's Mission will petition local government to relocate Coile Middle School."

Division Response:

1. The Division has been and will continue to be involved with Nakanishi's efforts to find functional alternatives to TCE. MICAH's Mission is free to share with the Division and Nakanishi pertinent information about alternative degreasing processes, and this information will certainly be taken into consideration. However, Nakanishi is currently in compliance with all applicable state and federal regulations, and is therefore under no obligation to adhere to any timetable for replacing TCE, whether suggested by the Division or by the public.
2. Nakanishi is currently in compliance with all applicable state and federal regulations, and the Division has no authority to force Nakanishi to discontinue emissions of TCE.

3. **Robert Clements:**

Mr. Clements stated his concern that Nakanishi is using such large amounts of TCE – almost half of the total TCE emissions in the state of Georgia. He summarized the effects TCE can have on the nervous system when inhaled in high concentrations, and noted that it has been classified by some as a possible carcinogen. He then stated that "Its common occurrence as air vapor is especially troubling given the plant's 2000 yard proximity to Coile Middle School." He further speculated that the school's record of poor performance might be related to the student's inhalation of TCE.

In addition, he posed the following two questions:

"Two questions I have are is the Georgia EPD enforcing the regulations for the handling and disposal of trichloroethylene. And, in the workplace, is Ga. E.P.D. (or is this left up to OSHA) enforcing the Occupational Safety and Health Administration (OSHA) exposure limit of 100 parts of trichloroethylene per million parts of air (100 ppm) for an 8-hour workday, 40-hour workweek."

Division Response: Yes, the Division's Air Protection Branch actively reviews and enforces all applicable state and federal regulations regarding emissions from Nakanishi into the atmosphere. Handling and disposal of hazardous substances such as TCE (apart from those entering the atmosphere) are also monitored by the Hazardous Waste Branch.

Responsibility for enforcement of indoor air quality regulations lies with the Occupational Safety and Health Administration (OSHA). However, the Division is aware that Nakanishi does have a very sensitive hand-held detection device to monitor indoor air quality that can detect TCE down to 1 or 2 parts per million parts of air. The facility has stated that recent sampling showed the presence of TCE in indoor air at less than 2 ppm.

After a careful review of comments and questions received during the Public Notice period, the Question & Answer session and the Public Hearing, the Division has made no changes to the proposed renewal permit for Nakanishi Manufacturing Corporation located in Winterville, GA.