John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

10/7/2013

Certified Mail

Steve Nelson
MARTINIZING DRY CLEANING
9881 Hayfield Ct
Loveland, OH 45140

No	TOXIC REVIEW
No	SYNTHETIC MINOR TO AVOID MAJOR NSR
No	CEMS
No	MACT/GACT
No	NSPS
No	NESHAPS
No	NETTING
No	MODELING SUBMITTED
No	SYNTHETIC MINOR TO AVOID TITLE V
No	FEDERALLY ENFORCABLE PTIO (FEPTIO)
No	SYNTHETIC MINOR TO AVOID MAJOR GHG

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL AND OPERATE
Facility ID: 1483080436
Permit Number: P0115378
Permit Type: Renewal
County: Warren

Dear Permit Holder:

Enclosed please find a final Ohio Environmental Protection Agency (EPA) Air Pollution Permit-to-Install and Operate (PTIO) which will allow you to install, modify, and/or operate the described emissions unit(s) in the manner indicated in the permit. Because this permit contains conditions and restrictions, please read it very carefully. In this letter you will find the information on the following topics:

- **How to appeal this permit**
- **How to save money, reduce pollution and reduce energy consumption**
- **How to give us feedback on your permitting experience**
- **How to get an electronic copy of your permit**

How to appeal this permit

The issuance of this PTIO is a final action of the Director and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of $70.00, made payable to “Ohio Treasurer Josh Mandel," which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General’s Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
77 South High Street, 17th Floor
Columbus, OH 43215

How to save money, reduce pollution and reduce energy consumption

The Ohio EPA is encouraging 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 Compliance Assistance and Pollution Prevention at (614) 644-3469. Additionally, all or a portion of the capital expenditures related to installing air pollution control equipment under this permit may be eligible for financing and State tax exemptions through the Ohio Air Quality Development Authority (OAQDA) under Ohio Revised Code Section 3706. For more information, see the OAQDA website: www.ohioairquality.org/clean_air

How to give us feedback on your permitting experience

Please complete a survey at www.epa.ohio.gov/survey.aspx and give us feedback on your permitting experience. We value your opinion.

How to get an electronic copy of your permit

This permit can be accessed electronically via the eBusiness Center: Air Services in Microsoft Word format or in Adobe PDF on the Division of Air Pollution Control (DAPC) Web page, www.epa.ohio.gov/dapc by clicking the "Search for Permits" link under the Permitting topic on the Programs tab.

If you have any questions, please contact Southwest Ohio Air Quality Agency at (513)946-7777or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469.

Sincerely,

Michael W. Ahern

Michael W. Ahern, Manager
Permit Issuance and Data Management Section, DAPC

Cc: SWOAQA

FINAL

Division of Air Pollution Control
Permit-to-Install and Operate
for
MARTINIZING DRY CLEANING

Facility ID:	1483080436
Permit Number:	P0115378
Permit Type:	Renewal
Issued:	10/7/2013
Effective:	10/7/2013
Expiration:	10/7/2023

Division of Air Pollution Control
Permit-to-Install and Operate
for
MARTINIZING DRY CLEANING

Table of Contents

Authorization 1

A. Standard Terms and Conditions 3

1. What does this permit-to-install and operate ("PTIO") allow me to do? 4
2. Who is responsible for complying with this permit? 4
3. What records must I keep under this permit? 4
4. What are my permit fees and when do I pay them? 4
5. When does my PTIO expire, and when do I need to submit my renewal application? 4
6. What happens to this permit if my project is delayed or I do not install or modify my source? 5
7. What reports must I submit under this permit? 5
8. If I am required to obtain a Title V operating permit in the future, what happens to the operating provisions and PER obligations under this permit? 5
9. What are my obligations when I perform scheduled maintenance on air pollution control equipment? 5
10. Do I have to report malfunctions of emissions units or air pollution control equipment? If so, how must I report? 6
11. Can Ohio EPA or my local air agency inspect the facility where the emission unit(s) is/are located? 6
12. What happens if one or more emissions units operated under this permit is/are shut down permanently? 6
13. Can I transfer this permit to a new owner or operator? 7
14. Does compliance with this permit constitute compliance with OAC rule 3745-15-07, "air pollution nuisance"? 7
15. What happens if a portion of this permit is determined to be invalid? 7

B. Facility-Wide Terms and Conditions 8

C. Emissions Unit Terms and Conditions 10

1. D001, Dry Cleaning Facility 11

Authorization

Facility ID:	1483080436
Application Number(s):	A0048753
Permit Number:	P0115378
Permit Description:	PTIO Renewal permit for a dry-to-dry perchloroethylene facility
Permit Type:	Renewal
Permit Fee:	$0.00
Issue Date:	10/7/2013
Effective Date:	10/7/2013
Expiration Date:	10/7/2023

Permit Evaluation Report (PER) Annual Date: Oct 1 - Sept 30, Due Nov 15

This document constitutes issuance to:

MARTINIZING DRY CLEANING
8944 COLUMBIA ROAD
Loveland, OH 45140

of a Permit-to-Install and Operate for the emissions unit(s) identified on the following page.

Ohio Environmental Protection Agency (EPA) District Office or local air agency responsible for processing and administering your permit:

Southwest Ohio Air Quality Agency
250 William Howard Taft Rd.
Cincinnati, OH 45219
(513)946-7777

The above named entity is hereby granted this Permit-to-Install and Operate for the air contaminant source(s) (emissions unit(s))listed in this section pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the described emissions unit(s) will operate in compliance with applicable State and federal laws and regulations.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Scott J. Nally
Director

Authorization (continued)

Permit Number: P0115378
Permit Description: PTIO Renewal permit for a dry-to-dry perchloroethylene facility

Permits for the following Emissions Unit(s) or groups of Emissions Units are in this document as indicated below:

Emissions Unit ID:	**D001**
Company Equipment ID:	Dry Cleaning Facility
Superseded Permit Number:	14-05350
General Permit Category and Type:	Drycleaning operation - Dry to Dry perch facility up to 2100 gallons installed before December 21, 2005 (GP2.1)

A. Standard Terms and Conditions

1. What does this permit-to-install and operate ("PTIO") allow me to do?

This permit allows you to install and operate the emissions unit(s) identified in this PTIO. You must install and operate the unit(s) in accordance with the application you submitted and all the terms and conditions contained in this PTIO, including emission limits and those terms that ensure compliance with the emission limits (for example, operating, recordkeeping and monitoring requirements).

2. Who is responsible for complying with this permit?

The person identified on the "Authorization" page, above, is responsible for complying with this permit until the permit is revoked, terminated, or transferred. "Person" means a person, firm, corporation, association, or partnership. The words "you," "your," or "permittee" refer to the "person" identified on the "Authorization" page above.

The permit applies only to the emissions unit(s) identified in the permit. If you install or modify any other equipment that requires an air permit, you must apply for an additional PTIO(s) for these sources.

3. What records must I keep under this permit?

You must keep all records required by this permit, including monitoring data, test results, strip-chart recordings, calibration data, maintenance records, and any other record required by this permit for five years from the date the record was created. You can keep these records electronically, provided they can be made available to Ohio EPA during an inspection at the facility. Failure to make requested records available to Ohio EPA upon request is a violation of this permit requirement.

4. What are my permit fees and when do I pay them?

There are two fees associated with permitted air contaminant sources in Ohio:

PTIO fee. This one-time fee is based on a fee schedule in accordance with Ohio Revised Code (ORC) section 3745.11, or based on a time and materials charge for permit application review and permit processing if required by the Director.

You will be sent an invoice for this fee after you receive this PTIO and payment is due within 30 days of the invoice date. You are required to pay the fee for this PTIO even if you do not install or modify your operations as authorized by this permit.

Annual emissions fee. Ohio EPA will assess a separate fee based on the total annual emissions from your facility. You self-report your emissions in accordance with Ohio Administrative Code (OAC) Chapter 3745-78. This fee assessed is based on a fee schedule in ORC section 3745.11 and funds Ohio EPA's permit compliance oversight activities. Unless otherwise specified, facilities subject to one or more synthetic minor restrictions must use Ohio EPA's "Air Services" to submit annual emissions associated with this permit requirement.Ohio EPA will notify you when it is time to report your emissions and to pay your annual emission fees.

5. When does my PTIO expire, and when do I need to submit my renewal application?

This permit expires on the date identified at the beginning of this permit document (see "Authorization" page above) and you must submit a renewal application to renew the permit. Ohio EPA will send a renewal notice to you approximately six months prior to the expiration date of this permit. However, it is

very important that you submit a complete renewal permit application (postmarked prior to expiration of this permit) even if you do not receive the renewal notice.

If a complete renewal application is submitted before the expiration date, Ohio EPA considers this a timely application for purposes of ORC section 119.06, and you are authorized to continue operating the emissions unit(s) covered by this permit beyond the expiration date of this permit until final action is takenby Ohio EPA on the renewal application.

6. What happens to this permit if my project is delayed or I do not install or modify my source?

This PTIO expires 18 months after the issue date identified on the "Authorization" page above unless otherwise specified if you have not (1) started constructing the new or modified emission sources identified in this permit, or (2) entered into a binding contract to undertake such construction. This deadline can be extended by up to 12 months, provided you apply to Ohio EPA for this extension within a reasonable time before the 18-month period has ended and you can show good cause for any such extension.

7. What reports must I submit under this permit?

An annual permit evaluation report (PER) is required in addition to any malfunction reporting required by OAC rule 3745-15-06 or other specific rule-based reporting requirement identified in this permit. Your PER due date is identified in the Authorization section of this permit.

8. If I am required to obtain a Title V operating permit in the future, what happens to the operating provisions and PER obligations under this permit?

If you are required to obtain a Title V permit under OAC Chapter 3745-77 in the future, the permit-to-operate portion of this permit will be superseded by the issued Title V permit. From the effective date of the Title V permit forward, this PTIO will effectively become a PTI (permit-to-install) in accordance with OAC rule 3745-31-02(B). The following terms and conditions will no longer be applicable after issuance of the Title V permit: Section B, Term 1.b) and Section C, for each emissions unit, Term a)(2).

The PER requirements in this permit remain effective until the date the Title V permit is issued and is effective, and cease to apply after the effective date of the Title V permit. The final PER obligation will cover operations up to the effective date of the Title V permit and must be submitted on or before the submission deadline identified in this permit on the last day prior to the effective date of the Title V permit.

9. What are my obligations when I perform scheduled maintenance on air pollution control equipment?

You must perform scheduled maintenance of air pollution control equipment in accordance with OAC rule 3745-15-06(A). If scheduled maintenance requires shutting down or bypassing any air pollution control equipment, you must also shut down the emissions unit(s) served by the air pollution control equipment during maintenance, unless the conditions of OAC rule 3745-15-06(A)(3) are met. Any emissions that exceed permitted amount(s) under this permit (unless specifically exempted by rule) must be reported as deviations in the annual permit evaluation report (PER), including nonexempt excess emissions that occur during approved scheduled maintenance.

10. Do I have to report malfunctions of emissions units or air pollution control equipment? If so, how must I report?

If you have a reportable malfunction of any emissions unit(s) or any associated air pollution control system, you must report this to the Southwest Ohio Air Quality Agency in accordance with OAC rule 3745-15-06(B). Malfunctions that must be reported are those that result in emissions that exceed permitted emission levels. It is your responsibility to evaluate control equipment breakdowns and operational upsets to determine if a reportable malfunction has occurred.

If you have a malfunction, but determine that it is not a reportable malfunction under OAC rule 3745-15-06(B), it is recommended that you maintain records associated with control equipment breakdown or process upsets. Although it is not a requirement of this permit, Ohio EPA recommends that you maintain records for non-reportable malfunctions.

11. Can Ohio EPA or my local air agency inspect the facility where the emission unit(s) is/are located?

Yes. Under Ohio law, the Director or his authorized representative may inspect the facility, conduct tests, examine records or reports to determine compliance with air pollution laws and regulations and the terms and conditions of this permit. You must provide, within a reasonable time, any information Ohio EPA requests either verbally or in writing.

12. What happens if one or more emissions units operated under this permit is/are shut down permanently?

Ohio EPA can terminate the permit terms associated with any permanently shut down emissions unit. "Shut down" means the emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31.

You should notify Ohio EPA of any emissions unit that is permanently shut down by submitting[1] a certification that identifies the date on which the emissions unit was permanently shut down. The certification must be submitted by an authorized official from the facility. You cannot continue to operate an emissions unit once the certification has been submitted to Ohio EPA by the authorized official.

You must comply with all recordkeeping and reporting for any permanently shut down emissions unit in accordance with the provisions of the permit, regulations or laws that were enforceable during the period of operation, such as the requirement to submit a PER, air fee emission report, or malfunction report. You must also keep all records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, for at least five years from the date the record was generated.

Again, you cannot resume operation of any emissions unit certified by the authorized official as being permanently shut down without first applying for and obtaining a permit pursuant to OAC Chapter 3745-31.

[1]Permittees that use Ohio EPA's "Air Services" can mark the affected emissions unit(s) as "permanently shutdown" in the facility profile along with the date the emissions unit(s) was permanently removed and/or disabled. Submitting the facility profile update will constitute notifying of the permanent shutdown of the affected emissions unit(s).

13. Can I transfer this permit to a new owner or operator?

You can transfer this permit to a new owner or operator. If you transfer the permit, you must follow the procedures in OAC Chapter 3745-31, including notifying Ohio EPA or the local air agency of the change in ownership or operator. Any transferee of this permit must assume the responsibilities of the transferor permit holder.

14. Does compliance with this permit constitute compliance with OAC rule 3745-15-07, "air pollution nuisance"?

This permit and OAC rule 3745-15-07 prohibit operation of the air contaminant source(s) regulated under this permit in a manner that causes a nuisance. Ohio EPA can require additional controls or modification of the requirements of this permit through enforcement orders or judicial enforcement action if, upon investigation, Ohio EPA determines existing operations are causing a nuisance.

15. What happens if a portion of this permit is determined to be invalid?

If a portion of this permit is determined to be invalid, the remainder of the terms and conditions remain valid and enforceable. The exception is where the enforceability of terms and conditions are dependent on the term or condition that was declared invalid.

B. Facility-Wide Terms and Conditions

1. This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

   a) For the purpose of a permit-to-install document, the facility-wide terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

      (1) None.

   b) For the purpose of a permit-to-operate document, the facility-wide terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

      (1) None.

C. Emissions Unit Terms and Conditions

1. D001, Dry Cleaning Facility

Operations, Property and/or Equipment Description:

Union dry to dry cleaning machine with refrigerated condenser.

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05 (A)(3)	Perchloroethylene usage at this facility shall not exceed 2100 gallons per rolling, 12-month period. Emissions of perchloroethylene from this facility shall not exceed 9.36tons per rolling, 12-month period. The requirements of this rule also include compliance with OAC rule 3745-21-09(AA) and 40 CFR Part 63, Subparts A & M.
b.	OAC rule 3745-21-09(AA)	See b)(2)b. and c)(1) through c)(4).
c.	40 CFR Part 63, Subparts A & M	See b)(2)a., b)(2)c., and c)(5) through c)(10).

(2) Additional Terms and Conditions

a. The exhaust from each dry cleaning machine shall be vented through a refrigerated condenser.

b. The dryer is equipped with or vented to a refrigerated vapor condenser whereby there is no exhaust of perchloroethylene vapors to the ambient air throughout the drying cycle, except for when the dryer's door is momentarily opened during loading or unloading.

c. The permittee must comply with all of the requirements listed for an area source per 40 CFR Part 63, Subpart M.

c) Operational Restrictions

(1) The waste from any diatomaceous earth filter which has been used to filter perchloroethylene shall contain no more than twenty-five per cent (25%) by weight perchloroethylene, as determined under paragraph (J) of OAC rule 3745-21-10.

(2) The waste from any distillation operation (solvent still) which has been used to distill perchloroethylene shall contain no more than sixty per cent (60%) by weight perchloroethylene, as determined under paragraph (J) of OAC rule 3745-21-10.

(3) Any disposable filter cartridge which has been used to filter perchloroethylene shall be drained in the filter housing for at least twenty-four (24) hours before being discarded.

(4) All equipment must be maintained so as to prevent the leaking of perchloroethylene liquid and prevent perceptible vapor leaks from gaskets, seals, ducts, and related equipment. Any equipment which is leaking perchloroethylene liquid or has a perceptible vapor leak shall not be operated until the leak is repaired.

(5) The permittee shall store all perchloroethylene and wastes that contain perchloroethylene in solvent tanks or solvent containers with no perceptible leaks. The exception to this requirement is that containers for separator water may be uncovered, as necessary, for proper operation of the machine and still.

(6) The door of each dry cleaning machine shall be closed at all times except to transfer articles to and from the machine.

(7) The dry cleaning machine shall be operated and maintained according to manufacturer's specifications and recommendations.

(8) The permittee shall comply with either c)(8)a. or c)(8)b. below:

a. The gas-vapor stream temperature at the outlet of the condenser shall not be greater than 45 degrees Fahrenheit before the end of the cool down cycle while the gas-vapor stream is flowing through the condenser or;

b. The refrigeration system high and low pressure during the drying phase shall be kept within the range specified in the manufacturer's operating instructions.

(9) Perchloroethylene shall not be vented or released to the atmosphere while the dry cleaning machine drum is rotating.

(10) The machine shall be operated to prevent air drawn into the dry cleaning machine (when the machine door is open) from passing through the refrigerated condenser.

d) Monitoring and/or Recordkeeping Requirements

(1) The following components shall be visually inspected each week for perceptible leaks while the dry cleaning system is operating:

a. hose and pipe connections, fittings, coupling and valves;

b. machine door gaskets and seatings;

c. filter gaskets and seatings;

d. pumps;

e. solvent tanks and containers;

f. water separators;

g. filter sludge recovery or muck cookers;

h. distillationunit;

i. diverter valves;

j. saturated lint from the lint basket;

k. cartridge filters and housings;

l. stills; and

m. exhaust dampers.

Inspection with ahalogenated hydrocarbondetector or PCE gas analyzer also fulfills this requirement.

Leaks are to be repaired within 24 hours after being detected. If repair parts are to be ordered, the order shall be initiated within two (2) working days after detecting the leak. The repair parts shall be installed within five (5) working days after they are received.

(2) Beginning no later than July 28, 2008, the components listed in d)(1) shall be inspected monthly for vapor leaks using a halogenated hydrocarbon detector or PCE gas analyzer. The inspections shall be done while the components are in operation. The analyzer shall be operated according to the manufacturer's instructions. Specifically, the operator shall place the probe inlet at the surface of each component interface where leakage

could occur and move it slowly along the interface of theperiphery. The week in which a monthly inspection is performed using a halogenated hydrocarbon detector or PCE gas analyzer shall satisfy the requirements for the weekly visual inspection for perceptible leaks for that same week as required in d)(1).

(3) The following parameters, as applicable, shall be monitored on a weekly basis:

a. If complying with c)(8)b., the refrigeration system high pressure and low pressure readings during the drying phase to determine if they are in the range specified in the manufacturer's operating instructions or;

b. If complying with c)(8)a., the temperature of the air-perchloroethylene gas-vapor stream on the outlet side of the refrigerated condenser shall be measured weekly with a temperature sensor. The temperature sensor shall be used according to the manufacturer's instructions and shall be designed to measure a temperature of 45 degrees Fahrenheit to an accuracy of plus or minus 2 degrees Fahrenheit. If the outlet temperature is higher than 45 degrees Fahrenheit,prior to the end of the cool-down or drying cycle, while the gas-vapor stream is flowing through the condenser, adjustments or repairs shall be made to lower the outlet temperature to less than or equal to 45 degrees Fahrenheit. Repair parts shall be ordered within two (2) working days after detecting a violation that needs repair parts. Repair parts shall be installed within five (5) working days after they are received.

(4) The following records shall be kept on site in a log for a period of not less than five (5) years, and shall be made available upon request:

a. Receipts of all perchloroethylene purchases.

b. The volume of perchloroethylene purchased each month as recorded from perchloroethylene purchase receipts. If no perchloroethylene is purchased during a given month, then the records shall state zero gallons.

c. The calculation and result of the yearly perchloroethylene consumption (12-month rolling summation) determined on the first day of each month.

d. The dates of all weekly visual inspections and monthly vapor leak inspectionsconducted with the use of a halogenated hydrocarbon detector or PCE gasanalyzer and the name or location of dry cleaning system components where leaks are detected.

e. The dates of repair and records of written or verbal orders for repair parts.

f. The date and temperature sensor monitoring or pressure gauge reading results, as required in d)(3) above.

g. A description of control equipment maintenance performed and the date.

h. The amount of fabric dry cleaned with perchloroethylene, from January 1 to December 31 of each year, in pounds.

(5) A copy of the design specifications and the operating manuals for each dry-cleaning system and each emission control device located at the dry cleaning facility shall be retained on site and shall be made available upon request.

e) Reporting Requirements

(1) The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) and the U.S. EPA (Region 5) in writing of any record from d)(4) showing that the perchloroethylene usage limitation of 2100 gallons per rolling, 12-month period specified in b)(1) was exceeded. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) and the U.S. EPA (Region 5) within 45 days after the exceedance occurs.

f) Testing Requirements

(1) Compliance with the mass emission limit listed in b)(1) of 9.36 tons of perchloroethylene per rolling, 12-month period is demonstrated by multiplying the rolling, 12-month consumption of perchloroethylene in gallons (required in d)(4)) by 0.66 (the percentage of perchloroethylene assumed to be emitted to the atmosphere including vent and fugitive emissions) and by 0.00675 ton/gallon (the specific density of perchloroethylene).

(2) Compliance with the annual perchloroethylene consumption limitation shall be determined using the records maintained in accordance with d)(4).

g) Miscellaneous Requirements

(1) If the total yearly consumption of perchloroethylene exceeds 2100 gallons per year, this facility becomes a major source and must comply with the requirements for a major source per 40 CFR, Part 63, Subpart M, within 180 days of the exceedance determination.