



Delaware County Regional Sewer District Standard Operating Procedure

Subject	Effective	Supersedes	This Sheet	Total
Respiratory Protection Program	October 28 th 2015	NEW	1	17

1.0 PURPOSE

The program provides necessary information to provide, prepare, and implement a respiratory protection program for employees whose project work and task activities may require the use of a respirator. This program has been prepared in accordance with the OSHA Respiratory Protection Standard 29 CFR 1926.103 and 1910.134 as adopted by the Ohio Public Employment Risk Reduction Program (PERRP).

2.0 SCOPE

This guideline applies to all Delaware County Regional Sewer District employees when project work and task activities may require the use of respiratory protection.

3.0 DEFINITIONS

Air-Purifying Respirator - A respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.

Approved Respirator - A respirator that has been tested, found to meet established performance criteria, and listed as being approved by NIOSH (National Institute of Occupational Safety and Health).

Canister or Cartridge: A container with a filter, sorbent, or catalyst, or combination of these items, which removes specific contaminants from the air passed through the container.

Filtering Face Piece (Dust mask) – A negative pressure particulate respirator with a filter as an integral part of the face piece or with the entire face piece composed of the filtering medium.

High Efficiency Particulate Air (HEPA) Filter: A filter that is at least 99.97% efficient in removing monodisperse particles of 0.3 micrometers in diameter. The equivalent NIOSH 42 CFR 84 particulate filters are the N100, R100, and P100 filters.

Immediately Dangerous to Life or Health (IDLH) - An atmospheric concentration of any toxic, corrosive or asphyxiating substance that poses an immediate threat to life or would cause irreversible or adverse health effects or would interfere with an individual's ability to escape from a dangerous atmosphere.

Negative Pressure Respirator (tight fitting): A respirator in which the air pressure inside the face piece is negative during inhalation with respect to the ambient air pressure outside the respirator.

Maximum Use Concentration (MUC) - The maximum concentration of an air contaminant in which a particular respirator can be used, based on the respirator's assigned protection factor. The MUC cannot exceed the use limitations specified on the NIOSH/MSHA approval label for the cartridge, canister, or filter. The MUC can be determined by multiplying the assigned protection factor for

Subject	Effective	Supersedes	This Sheet	Total
Respiratory Protection Program	October 28 th 2015	NEW	2	17

the respirator by the occupational exposure limit for the air contaminant for which the respirator will be used.

Physician or Other Licensed Health Care Professional (PLHCP): An individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide, or be delegated the responsibility to provide, some or all of the health care services required by paragraph (e) of this section.

Positive Pressure Respirator: A respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator.

Oxygen Deficient Atmosphere - An atmosphere with an oxygen content of less than 19.5% by volume (an IDLH atmosphere).

Permissible Exposure Limit (PEL) – or other Occupational Exposure Limit (OEL). An exposure limit determined for industrial exposures.

PLHCP – Physician or other Licensed Health Care Professional with responsibility for the medical surveillance, physical evaluation and examination, and medical approval for respirator use.

Fit Factor - The value regarded as applicable for an achievable ratio of average ambient concentration of an air contaminant in a workplace to the average concentration of the contaminant measured inside the respirator face piece for a specific class of respirators. Also recognized as assigned protection factor or APF.

Qualitative Fit Test (QLFT) – A pass/fail fit test to assess the adequacy of respirator fit that relies on the individual’s response to the test agent.

Quantitative Fit Test (QNFT) – An assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

Respirator - Any device worn by an individual and intended to provide the wearer with respiratory protection against inhalation of airborne contaminants or oxygen-deficient air.

Service Life – The period of time that a respirator, filter or sorbent, or other respiratory equipment provides adequate protection to the wearer.

Supervisor - An employee who supervises the project activity which requires the use of the respirator.

Tight-Fitting Face Piece: A respiratory inlet covering that forms a complete seal with the face.

4.0 RESPONSIBILITIES

Respiratory Program Administrator – The Operations Superintendent has overall responsibility for enforcement and implementation of the respiratory protection program. Responsibilities include:

- Coordinating employee training,
- Coordinating employees’ medical clearances for respirator use,
- Coordinating employee fit testing,
- Providing assistance with respirator and cartridge selection and replacement,
- Purchasing of respiratory protection equipment, and
- Conducting evaluations of program effectiveness.

Subject	Effective	Supersedes	This Sheet	Total
Respiratory Protection Program	October 28 th 2015	NEW	3	17

Delaware County Regional Sewer District – Will have the responsibility to provide respirators, training, and medical evaluations at no expense to the employee per OSHA 1910.134 (c) (4).

Delaware County Regional Sewer District Manager - The DCRSD Manager will ensure that employees are properly following the requirements of this program. Responsibilities include:

- Verify that each employee wearing a respirator has had proper medical clearance, training and fit testing.
- Report problems with respiratory protection equipment to the program administrator.
- Correct employees when they are observed not properly using a respirator.

Employees – each authorized employee must:

- Correctly use the provided respiratory protection in accordance with this program and the training received,
 - Users must be free of facial hair, defined as 24 hours of growth, in the area of the face piece seal
- Check the face piece seal each time the respirator is worn,
- Routinely inspect the respirator as instructed, protect it from damage,
- Properly clean and store the respirator, and
- Report malfunctions or equipment damage to the respiratory program administrator.

5.0 RESPIRATOR SELECTION

Respirators must be properly selected for each job task that may expose employees to chemical or particulate hazards in excess of OSHA permissible exposure limits. The respirator program administrator will select the appropriate respirator based on the nature of the hazard, duration of exposure and concentrations expected. For specific capabilities of a respirator, the program administrator should contact a local supplier or respirator manufacturer to get assistance in selecting an appropriate respirator. If a respiratory hazard is known or suspected to exist, the following factors shall be considered in the selection of a respirator.

- Nature of the hazard.
 - a. Type of hazard - oxygen deficiency or air contaminant
 - b. Physical and chemical properties of the air contaminant
 - c. (Previously) measured or expected concentration of air contaminant
- Established OSHA Permissible Exposure Limit (PEL) or other established Occupational Exposure Limit (OEL) of the air contaminant
 - d. Whether the hazard may be immediately dangerous to life or health
- Characteristics of the hazardous operation or process.
- Location of the hazardous area with respect to a safe area having respirable (clean) air.
- The time period that respiratory protection will be worn by employees during the work shift.
- The work activities of the employees and the potential stress of these work conditions on employees wearing the respirators.
- The physical characteristics, functional capabilities, and limitation of the respirator.
- The respirator protection factors and respirator fit.

The respiratory protective devices permitted for voluntary use by Delaware County Regional Sewer District employees are N95 filtering face pieces. The Delaware County Regional Sewer District also provides emergency escape respirators for use in potentially life-threatening situations.

N95 filtering face pieces have an Assigned Protection Factor (APF) of 10 (NIOSH) and can be used in atmospheres containing up to 10x the PEL.

Subject	Effective	Supersedes	This Sheet	Total
Respiratory Protection Program	October 28 th 2015	NEW	4	17

Limitations of the N95 filtering face piece:

- N95s do not protect the wearer from chemical vapors/gases.
- N95s cannot be used in an oxygen deficient environment.
- N95s cannot be used to handle asbestos.
- Untrained employees cannot wear a respirator.

NOTE: Medical clearances are not required for voluntary use of N95 filtering face piece. Users of the half-face or full-face respirators will be required to follow this respiratory protection program.

The escape respirators are to be used only when an employee must remove his or herself from a life-threatening situation.

6.0 RESPIRATOR TRAINING

Employees who use respirators and their supervisors shall be adequately trained in the requirements of this program and in the proper use, cleaning, inspection and storage of approved respirators. Additional training must be provided when hazards change, respiratory protective equipment changes or employees are observed using respirators in such a way that they violate any aspect of this program. The program administrator will coordinate training for employees initially and whenever a need for additional training is determined by the program administrator.

6.1 Supervisor Training

Supervisors of employees required to wear respirators shall have a reasonable knowledge of respirators and respiratory protection practices. Training should include:

- The use and limitations of respirators.
- Methods to evaluate employee compliance with this program.
- Responsibility for implementing the program requirements.

6.2 Employee Training

Employees working on job activities where respiratory protection is required will be trained in basic respiratory protection practices and the use of the respirator selected for their protection. The employee must receive this training prior to wearing the respirator in the workplace. The training program shall include the following items:

- Instruction in nature, extent, and effects of the respiratory hazard.
- Explanation of the respirator operation, capability and limitations.
- Instruction in the procedures for inspection, checking the fit and seals, and wearing of the respirator. Instruction should include how improper fit, usage or maintenance can compromise the effectiveness of the respirator. This shall include sufficient practice to enable the employee to become familiar in the use of the respirator.
- Procedures for respirator cleaning, maintenance and storage.
- How to recognize medical signs and symptoms that may limit or prevent the effective use of a respirator.
- General requirements of the OSHA respiratory protection standard and the Delaware County Regional Sewer District Respiratory Protection Program.
- An explanation of the wearer's responsibilities under the respirator protection program.
- Requirements of 29CFR 1910.134 Appendix D applies when the employee uses the respirator (filtering face pieces only) voluntarily. This form is in Appendix J of this program. It must be signed by the employee and a copy retained in the employee's records.

Subject	Effective	Supersedes	This Sheet	Total
Respiratory Protection Program	October 28 th 2015	NEW	5	17

7.0 RESPIRATOR FITTING

Each employee required to wear a respirator will be fit-tested using accepted fit test methods and daily user seal checks as described in Appendix A, 1910.134. When possible each person will be quantitatively fit tested using a TSI Portacount® or equivalent. A fit-test must be performed:

- Annually on the exact model, size, brand and type of respirator that the employee will wear.
- If the employee experiences significant weight loss or gain (generally 10% of body weight).
- If the employee determines during routine use that the mask does not fit.
- When major dental work has been performed (removal of teeth).
- If an accident results in a significant facial scar that will impact the face piece seal.

A qualified person will administer fit testing. The person performing the fit testing will provide documentation of the fit test protocol(s) used.

Daily user seal checks will be performed immediately after donning and adjusting the respirator. This procedure must be demonstrated during training and fit testing.

8.0 RESPIRATOR MAINTENANCE AND CARE

Respirators must be properly maintained and kept in working order by the employee wearing the respirator. Respirators that are not functioning properly must be removed from use and given to the respirator program administrator for evaluation and/or replacement.

The Delaware County Regional Sewer District currently only uses disposable N95 filtering face pieces. Sections 8.2 – 8.5 refer to the maintenance and care for half-face and full-face air-purifying respirators and are retained in the event of the addition of these respirators to the respiratory protection program.

8.1 Inspection

Respirators shall be inspected for defects by the user and to insure that functioning parts are intact. All respirators used in routine situations shall be inspected before each use and during cleaning. The inspections shall include:

- Tightness of the connections.
- Condition of:
 - a. Face piece
 - b. Head straps assembly
 - c. Valves (if present)
- Pliability and condition of rubber or elastomer parts.

8.2 Cartridge/Filter Changing/Replacement

The respirator program administrator will determine the best cartridge change schedule by consulting an industrial hygienist familiar with the chemical concentration or by contacting the manufacturer regarding recommended use of the given respirator. Filters/cartridges used on air-purifying respirators must be replaced when one of the following occurs:

- A resistance in breathing is observed when using particulate filters; or
- Indicated on end-of-service-life indicator; or
- Odor or irritation is detected prior to established change schedule.

8.3 Cleaning and Disinfecting

Respirators shall be properly cleaned and disinfected after each use in accordance with Appendix B to this program. The respirators shall be cleaned and disinfected at the following intervals:

Subject	Effective	Supersedes	This Sheet	Total
Respiratory Protection Program	October 28 th 2015	NEW	6	17

- Employees will clean the respirator with a non-alcohol antibacterial wipe each time the respirator is removed in the work environment; and
- Respirators used in fit testing and training shall be cleaned and disinfected after each use and cleaned at the end of each day.

8.4 Repair

Each user will replace worn out inhalation valves, exhalation valves, cartridges, and head strap assemblies when it is determined that equipment is defective. Face shields, voice emitters or hoses on full-face respirators must be replaced or repaired by a vendor or qualified person designated by the respirator program administrator. Respirators that cannot be repaired or adjusted will be discarded and replaced by the program administrator prior to the next time an employee is exposed to inhalation hazards.

8.5 Proper Respirator Storage

After inspection, cleaning and necessary repair, respirators will be stored by the worker at the jobsite in a job box, tool box or vehicle in such a way as to protect against dust, direct sunlight, extreme heat or extreme cold, excessive moisture, or damaging chemicals. Routinely used respirators may be placed in plastic bags.

9.0 WORKPLACE SURVEILLANCE

The Delaware County Regional Sewer District Manager will evaluate worker use of respirators and inform the respirator program administrator of any deficiencies in equipment or employee skills. Each manager will have the responsibility to remain consistent with Delaware County Regional Sewer District's overall respiratory protection program.

10.0 MEDICAL SURVEILLANCE

Employees assigned to tasks requiring the use of respirators shall complete a medical clearance questionnaire to determine if they are physically able to wear tight fitting respirators. These determinations must be made prior to any use, including fit testing, and must be completed by a PLHCP. These medical evaluations shall be reviewed periodically as deemed appropriate by the PLHCP or respiratory program administrator or if there are medical reasons to evaluate the employee.

The following information must be provided to the PLHCP before a medical determination can be made:

- Type and weight of respirator that is to be used;
- Duration and frequency of respirator use;
- Expected physical work effort;
- Additional protective clothing and equipment to be worn;
- Temperature and humidity extremes that may be encountered; and
- A written copy of this respiratory protection program.

The respiratory program administrator will receive a written recommendation from the PLHCP and maintain this recommendation in the employee's personnel file. The recommendation will provide information on any limitations on respirator use. Additional medical evaluations must be provided if any of the following occurs:

- An employee reports medical signs or symptoms that are related to ability to use a respirator;
- A PLHCP, supervisor, or the respirator program administrator informs the employer that an employee needs to be reevaluated;

Subject	Effective	Supersedes	This Sheet	Total
Respiratory Protection Program	October 28 th 2015	NEW	7	17

- Information from the respiratory protection program, including observations made during fit testing and program evaluation, indicates a need for employee reevaluation; or
- A change occurs in workplace conditions that may result in a substantial increase in the physiological burden placed on an employee.

The program administrator will develop and maintain a list of employees who have been cleared by a PLHCP to wear a respirator. The list will be maintained up-to-date and will be listed with this program as Appendix C “Employees approved to wear respirators.”

11.0 RECORDKEEPING

Records of employee’s exposure monitoring, medical surveillance, training, respiratory protection use, inspection and maintenance shall be kept according to Delaware County Regional Sewer District’s recordkeeping requirements.

Copies of training and fit test records will be kept at the Delaware County Regional Sewer District Operations Superintendent’s office.

11.1 Fit Tests

The Respiratory Program Administrator will maintain fit test records with this program in Appendix E “Fit Test Records.” Records of fit tests shall be maintained until the employee’s next fit test. The records must include the name and identification of the employee, type of fit test performed, make, model, style, and size of respirator tested, date of fit test, and fit test results (printed test results for quantitative fit-test).

12.0 PROGRAM EVALUATION

The Respiratory Program Administrator shall conduct an evaluation of the Respiratory Protection Program at least annually. The Respiratory Program Administrator should:

- Consult with users to determine program acceptance. (Appendix I contains a checklist/questionnaire.)
- Conduct inspections of respirator use.
- Review required records.

Subject	Effective	Supersedes	This Sheet	Total
Respiratory Protection Program	October 28 th 2015	NEW	8	17

APPENDIX A: USER SEAL CHECK PROCEDURES

The individual who used a tight-fitting respirator is to perform a user seal check to ensure that an adequate seal is achieved each time the respirator is put on. **User seal checks are not a substitute for qualitative or quantitative fit tests.**

1. Positive Pressure Checks
 - a. Close off exhalation valve and exhale gently into the face piece. The face fit is considered satisfactory if a slight positive pressure can be built up inside the face piece without any evidence of outward leakage of air at the seal. For most respirators this method of leak testing requires the wearer to first remove the exhalation valve cover before closing off the exhalation valve and then carefully replacing it after the test.
2. Negative Pressure Checks
 - a. Close off the inlet opening of the canister or cartridge by covering with the palm of the hand(s) or by replacing the filter seal(s).
 - b. Inhale gently so that the face piece collapses slightly, and hold breath for 10 seconds. The design of the inlet opening of some cartridges cannot be effectively covered with the palm of the hand. The test can be performed by covering the inlet opening of the cartridge with a thin latex or nitrile glove. If the face piece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is considered satisfactory.
3. N95 Seal Checks
 - a. Cover the respirator completely with both hands.
 - b. Exhale sharply. If air blows on your face or eyes, readjust the nose piece. Do not use the respirator until you pass the seal check (no air leaks).

Subject	Effective	Supersedes	This Sheet	Total
Respiratory Protection Program	October 28 th 2015	NEW	9	17

APPENDIX B – RESPIRATOR CLEANING PROCEDURES

These procedures are provided for employer use when cleaning respirators (half face air-purifying respirators only).

Procedures for Cleaning Respirators

- A. Remove filters, cartridges, or canisters. Discard or repair any defective parts.
- B. Wipe down the entire respirator with a non-alcohol antibacterial wipe. For some chemical exposure a substituted procedure may include a wash of components in warm (maximum temp. 45 deg. C {110 deg. F}) water with a mild detergent or with a cleaner recommended by the manufacturer. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt.
- C. Rinse components thoroughly in clean, warm, preferably running water. Drain.
- D. When the cleaner used does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:
 1. Hypochlorite solution (50 ppm of chlorine) made by adding approximately one milliliter of laundry bleach to one liter of water at 43 deg. C (110 deg. F); or
 2. Aqueous solution of iodine (50 ppm iodine) made by adding approximately 0.8 milliliters of tincture of iodine (6-8 grams ammonium and/or potassium iodide/100cc of 45% alcohol) to one liter of water at 43 deg. C.
 3. Other commercially available cleansers of equivalent disinfectant quality when used as directed, if their use is recommended or approved by manufacturer.
 4. Rinse components thoroughly in clean, warm, preferable running water. Drain. The importance of thorough rinsing cannot be overemphasized. Detergents of disinfectants that dry on facepieces may result in dermatitis. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.
 5. Components should be hand-dried with a clean lint-free cloth or air-dried.
 6. Reassemble facepiece, replacing filters, cartridges, and canisters where necessary.
 7. Test the respirator to ensure that all components work properly.

Subject	Effective	Supersedes	This Sheet	Total
Respiratory Protection Program	August 2015	NEW	10	17

APPENDIX C – EMPLOYEES APPROVED TO WEAR RESPIRATORS

EMPLOYEE NAME	APPROVED RESPIRATORS	DATE	LIMITATIONS

JOB TITLES APPROVED FOR RESPIRATOR USE

Collection System Technician
 Chemist
 Electronic Maintenance Tech (1, 2)
 Lead Maintenance Technician
 Regional Treatment Facility Operator

Lead Collection System Technician
 Custodian
 Maintenance Technician (1, 2)
 Package Plant Operator
 Lead Operator

Subject	Effective	Supersedes	This Sheet	Total
Respiratory Protection Program	August 2015	NEW	11	17

APPENDIX D – TASKS WITH MANDATORY RESPIRATOR USE

The following tasks have been identified by the Delaware County Regional Sewer District to have the potential to exceed the Occupational Safety and Health Administration's Permissible Exposure Limits for a particular exposure.

Task	Exposure	Respirator	Cartridge

Subject	Effective	Supersedes	This Sheet	Total
Respiratory Protection Program	August 2015	NEW	12	17

APPENDIX E – TASKS WITH VOLUNTARY RESPIRATOR USE

The Delaware County Regional Sewer District allows voluntary use of N95 filtering face piece respirators when conducting the following tasks, but not limited to:

- Using calcium hypochlorite
- Spreading granular fertilizer
- Work in dusty conditions
- Painting
- Working sand in filters
- Mowing grass
- Using weed eater
- Pressure washing screens
- Tile floor maintenance
- Using leaf blower

Subject	Effective	Supersedes	This Sheet	Total
Respiratory Protection Program	August 2015	NEW	13	17

APPENDIX F – ADDITIONAL RESPIRATOR USE FORM

Task (Name/Describe):

Exposures of Concern:

Substance	OSHA PEL	Measured Exposure	APF* Needed

* APF = assigned protection factor

Proposed Respirator:

Style: half-face full-face N95

Cartridge (half/full-face only):

Submitted By:

Approved By:

Name _____

Date _____

Subject	Effective	Supersedes	This Sheet	Total
Respiratory Protection Program	August 2015	NEW	14	17

APPENDIX G – MEDICAL CLEARANCE AND FIT TEST RECORDS

Subject	Effective	Supersedes	This Sheet	Total
Respiratory Protection Program	August 2015	NEW	16	17

APPENDIX I – PROGRAM EVALUATION CHECKLIST

RESPIRATOR USE

Employee Name _____

Identification _____

Position _____

Description of Work Activities:

1. What jobs/activities require the use of respiratory protection?
2. Is respiratory protection used every time that it is required?
3. What type of respiratory protection is used?
4. Where is respiratory protection stored?
5. How is respiratory protection cleaned and maintained?
6. What was date of last fit test?
7. When did employee last receive respiratory protection training?
8. Are other employees that are required to use respiratory protection using it properly/effectively?

List any problems/concerns/comments on back of form.

Subject	Effective	Supersedes	This Sheet	Total
Respiratory Protection Program	August 2015	NEW	17	17

APPENDIX J – 29 CFR 1910.134 Appendix D (Mandatory) Information for Employees Using Respirators When Not Required Under the Standard

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.
4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

Employee Signature

Date