

**DRAFT
SAMPLE WRITTEN**

RESPIRATORY PROTECTION PROGRAM

For Compliance With

29 CFR 1910.134

**Wyoming General Rules and Regulations
2011**

Wyoming Department of Workforce Services
OSHA Division
Consultation Program

ACKNOWLEDGEMENTS

This material was compiled by the staff of the Wyoming OSHA Consultation Program.

NOTE: This sample plan is provided only as a guide to assist in complying with Wyoming Occupational Health and Safety's Construction Rules and Regulations. It is not intended to supersede the requirements detailed in the guidelines. Employers should review the standard for particular requirements which are applicable to their specific situation. Employers will need to add information relevant to their particular facility in order to develop an effective program. Employers should note that certain programs are expected to be reviewed at least on an annual basis and updated when necessary.

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The information contained in this document is not considered a substitute for any provision of the standard.

UPDATED: March 2020

(COMPANY NAME HERE)

RESPIRATORY PROTECTION PROGRAM

Note: *This sample program is written for an employer who requires both the use of an air-purifying respirator and voluntary use of dust masks. After the basic requirements are addressed, sections have been included for employers who utilize emergency escape respirators, supplied air respirators or engage in activities with specific respiratory requirements such as abrasive blasting, welding and entering IDLH atmospheres.*

*It is important that the employer delete sections that do not apply to their facility. Wording in "italic" format is employer information only and may be omitted from the final text of the program. Instructions in BOLD letters indicate sections that must be replaced by appropriate wording specific for your facility. **Wyoming Workers Safety will not accept this respirator program unless the employer has modified and completed all provisions outlined in this sample.***

1.0 POLICY

It is the policy and priority of *(Company Name here)* to provide an accident-free and healthy environment by eliminating recognized hazards from the workplace. This program has been developed to ensure that all of our employees are protected from exposure to identified respiratory hazards that may be encountered in the workplace. The content has been written to assure compliance with the Wyoming Occupational Health and Safety Rules and Regulations 29CFR 1910 General Industry standards.

Employees shall not wear any type of NIOSH rated respirator unless a hazard assessment of the activity or operation has been completed and all appropriate elements of the Respiratory Protection Program have been met.

Engineering controls, such as ventilation and substitution of less toxic materials, are our first line of defense. However, engineering controls have not always been feasible for some of our operations, or have not completely controlled the identified hazards. In these situations, respirators and other protective equipment must be used.

Employees participating in the respiratory protection program do so at no cost to them. The expense associated with training, medical evaluations and respiratory protection equipment will be borne by the company.

2.0 RESPONSIBILITIES

Program Administrator

(The Program Administrator must be appropriately qualified and is responsible for administering the respiratory protection program.)

The Program Administrator is responsible for:

- Conducting a hazard assessment for each operation, process or work area where airborne contaminants are present.
- Selecting the appropriate respiratory protection to be used.
- Writing, evaluating and updating the written program.
- Arranging for and/or conducting training for supervisors and employees.
- Ensuring the availability of appropriate respirators and replacement parts.
- Conducting quantitative or qualitative fit testing using an approved protocol.
- Administering the medical surveillance program.
- Maintaining records required by the program.
- Evaluating and updating the written program, as needed.

The Program Administrator is: _____ (name here)

Phone: _____ (number here)

Supervisor

(Supervisors are responsible for ensuring that the respiratory protection program is implemented in their particular areas. In addition to being knowledgeable about the program requirements for their own protection, supervisors must also ensure that the program is understood and followed by the employees under their charge.)

The Supervisor is responsible for:

- Assisting the Program Administrator with the completion of hazard assessments for operations and processes in their department.
- Becoming aware of tasks requiring the use of respiratory protection.
- Coordinating with the Program Administrator to address respiratory hazards and fulfill the requirements of the Respiratory Protection Program.
- Enforcing the proper use of respiratory protection when necessary.

- Ensuring that employees under their supervision (including new hires) have received appropriate training, fit testing, and required medical evaluation.
- Ensuring that respirators are properly cleaned, maintained, stored and disposed of as outlined in this Respiratory Protection Program.
- Ensuring that respirators fit properly and are worn properly.
- Continually monitoring work areas and operations to identify new respiratory hazards.

Employee

(Employees are responsible for learning to recognize the hazards to which they may be exposed and for following company policies and rules regarding their safety. Employee input and participation identifying new hazards and revising company safety and health programs is vital.)

Employees are responsible for:

- Recognizing hazardous tasks or areas where respirators may be required.
- Wearing their respirators when and where they are required.
- Caring for, maintaining and disposing of their respirators as instructed, and storing them in a proper manner.
- Participating in training and keeping appointments regarding compliance with medical requirements.
- Informing their supervisor (or Program administrator) if they have any unusual signs or symptoms such as shortness of breath, dizziness, chest pains, or wheezing when wearing their respirator.
- Informing their supervisor if the respirator no longer fits well and requesting a replacement that fits properly. *(This may be due to physical damage or natural deterioration of respirator or an obvious change in weight, medical condition or facial structure that affects respirator fit.)*
- Informing their supervisor (or the Program Administrator) of any respiratory hazards that they feel is not adequately addressed in the workplace and of any other concerns that they have regarding the program.

3.0 HAZARD ASSESSMENT

_____ (names here) will conduct a hazard assessment for each operation, process, or work area where airborne contaminants may be present in routine operations or during an emergency. This hazard assessment will include:

- A review of Material Safety Data Sheets for hazardous substances used in the area or task that may require respirators.

- A review of work processes to determine where potential employee exposures to hazardous vapors, mists, fumes, dust or other types of particulates. This review is conducted by surveying the workplace, checking accident records and talking with employees and supervisors.
- Exposure monitoring to quantify potential hazardous exposures. Monitoring will be requested from Wyoming Worker's Compensation and Safety (OSHA) or conducted by _____ (name or business)
- Monitoring records will be kept _____ (where) for _____ (number here) years. (30 years minimum)

The results of the current hazard evaluations are attached to this program and are revised and updated any time new hazardous substances are planned or current work processes are changed that may potentially affect exposure.

The Program Administrator will work with _____ (other employee positions) to evaluate the feasibility of engineering controls to eliminate the need for personal protective equipment. *(These solutions may incorporate the installation of a ventilation system, modification of procedure or change in employee behavior to lower exposure levels below the permissible exposure limits).*

The Program Administrator will select respirators to be used based on the hazards to which workers are exposed and in accordance with all OSHA standards. All respirators must be certified by the National Institute for Occupational Safety and Health (NIOSH) and shall be used in accordance with the terms of that certification. All filters, cartridges, and canisters must be labeled with the appropriate NIOSH approval label. The label must not be removed or defaced while it is in use.

If an employee feels that respiratory protection is needed during a particular activity, that employee can contact their supervisor or the Program Administrator. The Program Administrator will work with you to evaluate the potential hazard, arranging for outside assistance as necessary. The Program Administrator will then communicate the results of that assessment to all affected employees and this program will be updated accordingly.

4.0 MEDICAL EVALUATION

Employees, who are required to wear respirators or wear a tight-fitting respirator under the voluntary use policy, must pass a medical exam before being permitted to wear a respirator on the job. Employees are not permitted to wear tight-fitting respirators until it is determined that they are medically able to do so.

A physician or other licensed health care professional (PLHCP) at _____ (name and location of provider) will complete the medical evaluations using a medical questionnaire or initial medical examination. The Program Administrator will coordinate this process.

(Describe the process that is used to complete the medical evaluation at this facility)

A medical questionnaire, found in Appendix C of the OSHA General Industry standard 1910.134, will be provided to the physician making the medical evaluation. The information on the medical questionnaire is confidential between the employee and the physician. The questionnaire will be filled out: _____ (**explain how it is done**) *(Some companies will have employees fill out the questionnaire at the workplace and place it in a sealed, stamped envelope for delivery to the PLHCP. Some companies have the employee fill out the questionnaire at the PLHCP office.)*

Employees will be allowed to fill out this questionnaire on company time. The company will assist employees who have difficulty completing or understanding the questionnaire through direct assistance or with the help of the PLHCP. This assistance will be kept confidential.

Follow-up medical exams will be provided for employees whose initial questionnaire demonstrates that this is necessary and will include any medical tests, consultations or diagnostic procedures that the PLHCP deems necessary to make a final determination for a written recommendation.

Prior to the medical evaluations, the Program Administrator will provide the PLHCP with:

- A copy of this company's Respiratory Protection Program.
- A copy of the OSHA General Industry Respiratory Protection standard CFR 1910.134, provided they do not have it.
- A description of the hazardous substance to which the employee is exposed.
- A general description of the work that the employee will be doing while wearing the respirator and the work environment in which the employee will be working (including temperature and humidity extremes).
- The length of time and frequency the employee is required to wear the respirator.
- The expected work load (light, moderate, or heavy) and additional protective clothing the employee may be wearing.
- The proposed respirator type and description.

After the exam, the PLHCP will provide the employer with a written recommendation that contains the following information:

- A recommendation whether or not the employee is medically able to use the respirator or what follow-up medical evaluations need to be made to make a final determination;
- Any limitations on respirator use related to the medical condition of the employee or workplace conditions;
- When or if the PLHCP wants to reevaluate the employee if they continue to wear a respirator and;

- A statement that the PLHCP has provided the employee with a copy of the written recommendation.

After an employee has received clearance, fit testing and training and has begun to wear his or her respirator, additional medical evaluations will be conducted:

- If the employee reports to the Program Administrator any medical signs or symptoms related to their ability to use a respirator, such as shortness of breath, dizziness, chest pains, or wheezing;
- At an interval directed by the PLHCP or determined by the Program Administrator;
- When observations made during fit testing or program evaluation, or made by the supervisor indicates a need;
- A change occurs in workplace conditions that may result in a substantial increase in the physiological burden placed on an employee.

The PLHCP will provide the employee with a copy of the written recommendation and employees are encouraged to speak with the PLHCP about their medical evaluation if they have any questions.

5.0 FIT TESTING

All employees required to wear “tight-fitting” respirators will be fit tested to determine if the respirator type, make and model will provide a tight seal on the employee’s face. Several models and sizes may need to be tried to ensure a correct fit. Employees voluntarily wearing tight-fitting respirators are not required by OSHA to be fit tested, but employees _____ (will or will not) be fit tested upon request. Fit testing will be conducted:

- Prior to being allowed to wear any respirator with a tight fitting facepiece.
- Annually.
- When there are changes in the employee’s physical condition that could affect respirator fit (i.e., obvious change in body weight, facial scarring, etc.).

The program administrator will ensure that all fit testing will follow OSHA approved Aerosol Qualitative or Quantitative Fit Test Protocols found in Appendix A of the Respiratory Protection standard, CFR 1910.134. Fit testing will be conducted by: _____ (name who) *(This may be a qualified individual working for the company, the PCHLP, respirator distributor etc.)*

- Fit testing records will be kept in the Program Administrator’s office and will include the type, model and size of respirator for which each employee has been trained and fit tested. These records will be kept _____ (where) for the duration of employment. *(NOTE: Fit tests are required to be retained at least until the next fit test is conducted.)*

6.0 GENERAL RESPIRATOR USE

Employees will use their respirators under conditions specified by this program, and in accordance with the training they receive on the use of each particular model. In addition, the respirator shall not be used in a manner for which it is not certified by NIOSH or by its manufacturer.

All employees who use a tight-fitting respirator will perform a user seal check to ensure that an adequate seal is achieved each time the respirator is worn. Either the positive and negative pressure checks or the manufacturer's recommended method shall be used. A copy of these procedures is attached to this program.

Employees are not permitted to wear tight-fitting respirators if they have any condition, such as facial scars, **facial hair**, or missing dentures that interfere with the facepiece-to-face seal. **(Employer may include a statement here explaining company policy or procedure when an employee who is required to wear a respirator, shows up for work with a beard that interferes with the facial seal)**

Employees are not permitted to wear headphones, jewelry, or other articles if they interfere with the facepiece-to-face seal.

Respirators that are defective or have defective parts shall be marked and taken out of service immediately. Employees should bring defective respirators to _____ **(where)** for repair or service, if help is needed. If needed, the employee will be given a replacement of the same make, model and size or another fit test will be conducted with a different respirator.

If the respirator is irreparable, it will be disposed of or dismantled for spare parts immediately. Employees will not store or leave defective respirators in the work area where they may be accidentally used.

7.0 INSPECTIONS AND CLEANING

Respirators are to be properly maintained at all times to ensure that they function properly and adequately protect the employee. Maintenance involves a thorough visual inspection for cleanliness and defects. Worn or deteriorated parts will be replaced prior to use. No components from one manufacturer will be substituted on a respirator made by another manufacturer. No repairs will be made beyond those recommended by the manufacturer. Tape will be not be used to hold parts together.

The following checklist will be used when inspecting respirators:

- ❑ **Face piece:** distortion, cracks, tears, or holes in facemask; cracked or loose lenses; valves in place.
- ❑ **Head straps:** stretched out, breaks or tears; broken buckles.
- ❑ **Valves:** residue or dirty surface; cracks or tears in valve material; distortion of surface so that it does not lay flat.
- ❑ **Filters/Cartridges:** dirty filters; cracks or dents in housing; proper cartridge for hazard.

Employees are permitted to leave their work area to clean and maintain their respirator in a designated area that is free of respiratory hazards. Employees should replace filters or cartridges if they detect any leakage in the face-piece seal, and to inspect the respirator and replace parts if the respirator stops functioning as intended. The employee should not remove the respirator until they are out of the hazardous atmosphere.

Respirators are to be wiped clean after each use and thoroughly cleaned and disinfected by submersion regularly. The following procedures should be used when thoroughly cleaning and disinfecting the respirator:

1. **Remove filters and/or cartridges.** Disassemble the face piece by removing valves, headpiece and speaking diaphragm. Discard or replace any defective parts.
2. **Wash the face-piece** and associated parts in warm water with a mild detergent or with a cleaner recommended by the manufacturer. Do not use organic solvents. The following disinfectant _____ (name the disinfectant) has been provided for you to use when cleaning your respirator and can be found _____ (where). If supplies become low, _____ (explain what they should do)
3. **Rinse components** completely with clean, warm water. Drain.
4. **Air dry** in a clean area or hand dry with a clean lint-free cloth.
5. **Reassemble** all parts and test the respirator to ensure that all components work properly.
6. **Store** in a clean, dry plastic bag where it will not be crushed.

8.0 CARTRIDGE CHANGE SCHEDULES (see Appendix F)

Based on discussions with the product manufacturer, respirator supplier and _____ (list other technical sources used) about our respirator use and workplace exposure conditions, employees wearing tight-fitting respirators with particulate or chemical vapor cartridges shall utilize the following cartridge changing schedule to ensure the continued effectiveness of the respirators:

(Chemical cartridges must be equipped with a NIOSH-approved end of service life indicator (ESLI). This is an area on the cartridge that changes color when its time to replace the cartridge. If the cartridge does not have this indicator, employers must develop and enforce a change schedule based on reliable information. Currently, there are very few cartridges equipped with these NIOSH-approved ESLIs. To comply with the new standard, employers must develop their own change schedules, but they do not have to search for and analyze test data themselves. Employers can simply acquire information from other sources that have the expertise to develop change schedules. The employers must then include the source for this information in their written respiratory program. If no information can be obtained to develop an accurate change schedule, the employees must use a supplied air system. See Appendix F for additional assistance establishing a change schedule.)

Records of information used and any monitoring conducted to make this determination can be found in the Program Administrators office.

Employees wearing NIOSH certified (paper type) particulate dust masks shall replace and dispose of their mask when they first begin to experience difficulty breathing (i.e., resistance) while wearing their mask, or at least daily.

9.0 STORAGE

Respirators will be stored in a bag or box in a clean, dry area _____ (list acceptable areas here.) The storage bag or box must be identified with your name and will only be used to store that respirator.

Do not hang the respirator by the head straps. If you want to hang the respirator, keep it in a bag with drawstrings and hang the bag.

Do not place anything on top of the respirator while it is in storage. The materials used in respirators can deform easily.

10.0 TRAINING

The Program Administrator will arrange training for employees who wear respirators, prior to the use of a respirator in the workplace. Supervisors will also be trained prior to supervising employees that wear respirators.

The training course will cover the following topics (add and delete as necessary):

- General requirements of the OSHA Respiratory Protection standard 1910.134.
- A review of the company's Respiratory Protection Program.
- Respiratory hazards encountered at in the workplace and their health effects and why the respirator is necessary.
- Proper selection and use of respirators.
- What the limitations and capabilities of the respirators used are.
- How to inspect, don, use, and check the seals of the respirator they will be using.
- How improper fit, usage, storage or maintenance can compromise the protective effect of the respirator.
- What the procedures are for maintenance and storage of the respirator.
- How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators.
- How to use the respirator effectively in emergency situations when the respirator malfunctions.

Employees will be retrained at least annually, whenever workplace hazards or respirator use changes or employee's actions indicate they have not retained sufficient knowledge, understanding or skill to ensure safe respirator use. Employees must demonstrate their understanding of the topics covered in the training through _____ (what will employer use) (Example: hands on exercises, verbal or written tests...). Respirator training will be documented by the Program Administrator and kept _____ (how long).

11.0 PROGRAM EVALUATION

The Program Administrator will conduct periodic evaluations of the workplace to ensure that the written respiratory program is being properly implemented. The evaluations will include regular consultations with employees who use respirators and their supervisors, site inspections, air monitoring, and a review of records. Factors to be assessed include but are not limited to: respirator selection, fit, use, storage and maintenance. These findings will be reported to _____ (who) and any problems identified during this assessment shall be corrected.

12.0 DOCUMENTATION AND RECORDKEEPING

A written copy of this program and the OSHA standard is kept in the Program Administrator's office and is available to all employees who wish to review it.

Also maintained in the Program Administrator's office are copies of training and fit test records. These records will be updated as new employees are trained, as existing employees receive refresher training, and as new fit tests are conducted.

The Program Administrator will also maintain copies of the physician's written recommendations regarding each employee's ability to wear a respirator. These records will be kept confidential and stored in a locked cabinet for thirty years after the last date of employment.

13.0 VOLUNTARY RESPIRATORY USE

(*Company Name here*) promotes respiratory protection to be worn even when exposure levels are below regulatory standards. Respirator use is optional during certain tasks or in certain areas that do not require respiratory protection. A hazard assessment has been completed for each of these situations and is attached to this program. (Examples are in Appendix __)

Employees will be provided the following respiratory protection for voluntary use during the following work tasks or areas that have been determined to be below established Permissible Exposure Limits (**complete statements below**):

1. Employees may wear Powered Air Purifying Respirators (PAPR's) with _____ (type) cartridges while _____ (location or task).
2. Employees may wear full-facepiece Air Purifying Respirators (APR's) with _____ (type) cartridges while _____ (location or task).

3. Employees may wear half-facepiece Air Purifying Respirators (APR's) with _____ (type) cartridges while _____ (location or task).
4. Employees may wear NIOSH certified _____ (rating) rated filtering facepiece disposable dust masks while _____ (location or task).

Employees voluntarily wearing a tight fitting mask, (full facepiece, half mask or disposable mask with an elastomeric type of face seal), will receive a medical evaluation, a copy of Appendix D and training on the required cleaning, storage and maintenance procedures for their mask. Fit testing (choose: may or may not) be requested from the Program Administrator.

Employees voluntarily choosing to wear NIOSH approved filtering facepiece disposable (paper type) dust masks will receive a copy of Appendix D from the 1910 General Industry standards and receive instruction on the location, replacement, storage and disposal of these masks.

Disposable paper type dust masks that do not have any NIOSH rating are not subject to OSHA respiratory protection standards.

Any other requests by employees to wear respiratory protection during other activities not identified in our hazard assessment will be reviewed and authorized on a case-by-case basis by the Program Administrator.

The following sections may or may not be applicable to the employer's workplace. Please delete sections that do not apply.

14.0 EMERGENCY ESCAPE RESPIRATORS

(Emergency escape breathing apparatus provides breathable oxygen for 5 or 10 minutes depending on the unit. These are used for emergency situations in which a worker must escape from environments immediately dangerous to life and health. **It cannot be used to perform any work.**)

If your company does not provide emergency escape respirators:

Hazard assessments of company work processes have determined that no situation exists during normal working operations that would require the use of an emergency escape respirator.

If your company does provide emergency escape respirators:

NIOSH certified Emergency Escape Respirators _____ (insert brand and model here) are provided for emergency escape only in the following situations:

- 1.
- 2.
- 3.

Respiratory protection in these instances is for escape purposes only. (**Company Name here**) Employees are not trained as emergency responders and are not authorized to act in such a manner.

Emergency escape respirators have been placed where they are quickly accessible at all times and are stored in compartments that are marked clearly in the following way: _____ (explain)

Emergency escape respirators are located _____ (list or attach map):

When _____ happens (describe situation or alarm mechanism), employees in the affected department must immediately don their emergency escape respirators and follow the procedures described below (**refer to the company Emergency Action Plan or describe**):

Inspections of the emergency escape respirators will be conducted according to manufacturers specifications after each use and at least (choose: weekly, monthly, yearly) by _____ (name or person).

Employees will be trained on the proper use, limitations and care of these respirators _____ (describe when, where and by whom).

15. ENTRY INTO IDLH (Immediately Dangerous to Life and Health) ATMOSPHERES

(An IDLH atmosphere is any atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects or would impair an individual's ability to escape from a dangerous atmosphere. A low oxygen atmosphere is considered to be an IDLH condition.)

If your company does not anticipate entry into any IDLH atmospheres:

No IDLH atmospheres during normal operations are anticipated at this company. Employees are not trained as emergency responders, and are not authorized to act in such a manner. **(Company Name here)** does not allow the use of any respirators the company has provided in IDLH atmospheres. If any such situation is suspected, do not enter the area. Contact your supervisor immediately.

If your company does anticipate entry into any IDLH atmospheres:

The following activities may require the entry into IDLH conditions:

- 1.
- 2.
- 3.

The Program Administrator has determined that workers entering a potential IDLH atmosphere shall wear the following personal protective equipment *(Note: Only a NIOSH approved full face supplied air respirator with an emergency escape bottle or a self contained breathing apparatus with a service life of 30 minutes minimum may be used):*

Where an IDLH atmosphere is found, one person shall remain outside the area at all times and maintain constant visual, voice or signal line communication with the worker. The outside person is equipped and trained to provide appropriate emergency rescue. In the event of an emergency requiring the standby person to enter the IDLH environment, the standby person shall immediately notify _____ (who) and will proceed with rescue operations in accordance with rescue procedures outlined below **(describe or reference another safety program here):**

16.0 AIR LINE RESPIRATORS

(Air-line respirators are a type of supplied air respirators that have an air hose that is connected to a fresh air supply from a central source. This source may be an ambient air pump situated indoors or outdoors, or an air compressor that provides at least Grade D breathing air.)

Air-line respirators are used in this company in the following activities or areas:

- 1.
- 2.
- 3.

Portable Pump: Employees will make sure that the placement of the air pump or extension hose is in an area free of vehicular traffic and air contaminants that may be drawn into the pump. The breathing air of the worker must meet Grade D air requirements as outlined in ANSI G-7.1-1989.

Air Compressor: If the air-line taps into an air compressor or compressed air system, the air compressor will be located in an area or designed to prevent contaminated air from being drawn in. In line sorbent beds and filters will be provided to ensure Grade D breathing air. These sorbent beds and filters will be inspected regularly according to manufacturer instructions by _____ (who) and the compressor will be tagged with information dating the last inspection and filter change by _____ (who).

The compressor located _____ (where) is oil lubricated. If it is oil lubricated the in line sorbent beds and filters will include an alarm to monitor Carbon Monoxide levels. This alarm is tested _____ (how often) by _____ (who) *(Remove this paragraph if your compressor is not oil lubricated.)*

GRADE D BREATHING AIR

Oxygen Content	19.5-23.5%
Hydrocarbon (condensed)	< 5mg/m ³
Carbon Monoxide (CO)	<10ppm
Carbon Dioxide (CO ₂)	<1000ppm
Lack of a noticeable odor	

If employees are using a tight fitting face mask with their air-line respirator, they will be fit tested by _____ (who) in the **negative pressure mode** prior to use to ensure a proper fit using an OSHA approved Qualitative or Quantitative method as described in Appendix A of the OSHA respiratory standard 1910.134.

Employees will receive training on the proper use, care and limitations of their respirator _____ (how, when, where, by whom).

17.0 SELF-CONTAINED BREATHING APPARATUS (SCBA's)

(Self-contained breathing apparatus (SCBAs) have a limited air supply (usually 30 –60 minutes) that is carried by the user, allowing for good mobility and fewer restrictions than air-line respirators.)

SCBA's are used in this company in the following activities or areas:

- 1.
- 2.
- 3.

All oxygen used in compressed cylinders will meet U.S. Pharmacopoeia requirements for Grade D breathing oxygen. The Program Administrator will coordinate deliveries of compressed air with the company's vendor and will ensure that the cylinders are marked in accordance with NIOSH 42 CFR Part 84 and that the cylinders have a certificate of analysis saying that the air in the cylinders meets the specifications of Grade D breathing air.

Cylinders are to be inspected and maintained according to manufacturer instructions. Prior to each use, they are to be checked to ensure that they are fully charged and tested and to ensure that the regulator and warning devices are operating properly. It is the responsibility of _____ (name) to inspect and maintain the cylinders. Additional cylinders can be obtained _____ (explain how) or the cylinders may be refilled _____ (explain how).

Employees wearing SCBA's will be fit tested in the **negative pressure mode** to ensure a proper fit using an OSHA approved Qualitative or Quantitative method as described in Appendix A of the OSHA respiratory standard 1910.134.

Employees will receive training on the proper use, care and limitations of their respirator _____ (how, when, where, by whom).

Interior Firefighting

(Company Name here) does not allow employees to conduct interior firefighting operations. We rely upon _____ for emergency services.

(NOTE: If the company has a fire brigade (private or industrial fire department with an organized group of employees who are knowledgeable, trained and skilled at basic fire fighting techniques), they must follow the requirements outlined in 1910.156.)

18.0 ABRASIVE BLASTING OPERATIONS

Abrasive blasting operations are performed at _____ (*Company Name here*) for the following tasks (*list types and location of operations*). :

- 1.
- 2.
- 3.

The composition and toxicity of the dust formed from the abrasive material and the surface coating on the material being blasted have been considered when making the evaluation of the potential health hazards during our abrasive blasting operations. The hazard assessment can be found attached to this program. The concentration of respirable dust or fume in the breathing zone of the abrasive blasting operator will be kept below the levels in OSHA 29CFR1910.1000.

All abrasive blasting operators will participate in the Respiratory Protection Program and air-line or self-contained breathing apparatus type respirators will be worn when working inside of blast cleaning rooms with silica sand or when concentrations of toxic dust may exceed the limits set in 29CFR 1910.1000.

The following NIOSH certified respirator has been provided for abrasive blasting to protect workers from abrasive blasting operations _____ (*type and model*). In addition, the following additional personal protective equipment will be provided to protect the employee from the impact of abrasive materials _____ (*gloves aprons, safety shoes etc.*) Grade D breathing air will be supplied to the operator. All of the requirements set forth in the supplied air respirator section of this program will be complied with.

NIOSH approved loose fitting disposable respirators may be used during short, intermittent or occasional exposures that do not exceed any permissible exposure limits. (*Unloading a shipment of sand, cleaning and dumping dust collectors or using a non-silica abrasive on a low toxicity surface coating material, or working outside in the open air.*) Dust filter respirators will NOT be used for continuous protection when silica sand is used or toxic surface coatings are blasted.

A hazard assessment has been made and the program administrator has determined that employees conducting the following activities may use the _____ (*NIOSH certification and type*) dust filter respirators:

- 1.
- 2.
- 3.

The company has blasting cabinets available in the following areas (*list areas*):

The design of these blasting cabinets conform to ANSI 233.1-1961 and NFPA 1910.6 requirements and the seals are inspected regularly and kept in good condition by _____ (*who*).

19.0 WELDING IN CONFINED SPACES

The Program Administrator has identified the following confined spaces in which welding is conducted:

- 1.
- 2.
- 3.

Ventilation may not be sufficient so the following supplied air system (air-line or SCBA) has been provided for employees to use when welding in a confined space: _____ (make, model and description).

All welders entering these confined spaces will be fit tested in the **negative pressure mode** if tight fitting face masks are used by _____ (who). They will be trained prior to use _____ (when, where, by whom). An additional worker will always be stationed outside when welding.

All of the requirements set forth in OSHA welding standards (29CFR 1910.252) will be followed. Specific procedures are outlined in the company's Confined Space Program for compliance for OSHA confined space standards (29CFR 1910.146).

Specific Hazards for all welding

The employer is expected to obtain and look at all Material Safety Data Sheets to determine what toxic substances may be found in either the welding materials or welded object. Specific requirements may apply.

If welding or cutting (indoors, outdoors or confined spaces) involves fluxes, coverings or other materials that contain fluorine compounds, ventilation and supplied air respirators will be used when the maximum allowable concentration is exceeded. (*Experience has shown that such protection is desired for fixed location welding and welding on stainless steels.*)

If welding or cutting (in confined spaces) involves zinc bearing base, filler metals or coatings, ventilation and air-line respirators (or SCBA) will be used to protect the employee from the accumulation of toxic materials. If welding and cutting (indoors) involves zinc bearing base, filler metals or coatings, local exhaust hoods and booths shall be used to prevent the accumulation of toxic materials.

If welding or cutting (in confined spaces) involves lead base materials or paint on work, the work must be done with local exhaust ventilation OR air-line respirators (or SCBA).

If welding (indoors, outdoors or confined spaces) involves beryllium containing base or filler metals, the welding shall be done using local exhaust ventilation AND air-line respirators (or SCBA)

If welding (indoors or confined spaces) involves cadmium bearing or coated base metals or mercury bearing materials, local exhaust OR air-line respirators (or SCBA) must be used.

20.0 TUBERCULOSIS

The General Industry OSHA standard 1910.139, "Respiratory protection for M. tuberculosis", has been deleted as of January 2004. Respiratory protection requirements for M. tuberculosis will again be located in 1910.134. NIOSH N95 rated dust masks are considered to be sufficient for tuberculosis protection. Companies that **require** or allow employees to wear NIOSH N95 respirators for TB are required to follow all appropriate elements of the Respiratory Protection Program.

Maintenance personnel who use N95 rated dust masks for particulate protection against other contaminants other than tuberculosis will comply with the requirements set forth within this Respiratory Protection Program.

21.0 BLOODBORNE PATHOGENS

Personal protective equipment used for facial protection against bloodborne pathogens must not permit blood or other potentially infectious materials to pass through or reach employees clothes, skin or mucous membranes. Employees using surgical masks that are not NIOSH certified (minimum of N95 rated) are not subject to the respiratory protection requirements outlined in this program. (*These types of face masks should not be used for protection against tuberculosis.*) If disposable NIOSH certified (N95 or above) particulate masks are used for protection from bloodborne pathogens, then employees must comply with all applicable sections of this Respiratory Protection program.

Employees who work in HBV or HIV labs must be provided NIOSH certified, N95 respirators. A biosafety manual must be prepared and periodically reviewed that consists of the hazards; practices and procedures employees are required to follow. See CFR 1910.1030(e) for a more thorough explanation of these additional requirements.

APPENDICES

- Appendix A: Qualitative Fit Test Procedures**
- Appendix B: Negative/Positive Pressure Check**
- Appendix C: Medical Questionnaire**
- Appendix D: Filtering Facepiece Information**
- Appendix E: Hazard Assessment Examples**
- Appendix F: Cartridge Change Schedule**
- Appendix G: Respirator Flowchart**

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APPENDIX A

Qualitative Fit Testing Procedures

Each test shall be performed for one minute.

1. **Normal Breathing.** In a normal standing position, without talking, the subject shall breathe normally.
2. **Deep breathing.** In a normal standing position, the subject shall breathe slowly and deeply, taking caution so as not to hyperventilate.
3. **Turning Head side to side.** Standing in place, the subject shall slowly turn his/her head from side to side between the extreme positions on each side. The head shall be held at each extreme momentarily so the subject can inhale at each side.
4. **Moving head up and down.** Standing in place, the subject shall slowly move his/her head up and down. The subject shall be instructed to inhale in the up position (i.e., when looking toward the ceiling.).
5. **Talking.** The subject shall talk out loud slowly and loud enough so as to be heard clearly by the test conductor. The subject can read from a prepared text such as the Rainbow Passage, count backward from 100 or recite a memorized poem or song.
6. **Activity.** The test subject shall bend at the waist as if they were to touch his/her toes. Jogging or stepping in place shall be substituted for this exercise in those test environments that use a shroud type PLFT units that do not permit bending over at the waist.
7. **Normal Breathing.** Same as exercise (1).

Rainbow Passage

When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond reach, his friends say he is looking for the pot of gold at the end of the rainbow.

APPENDIX B Negative and Positive Pressure Check

Employees are required to conduct a seal check prior to each use to demonstrate that the mask is fitting properly and the seal is intact.

Negative Pressure Check

The employee closes the inlet to the respirator cartridge or canister and inhales gently until the face piece collapses slightly. This position is held for a few seconds. If the piece remains slightly collapsed and no inward leakage is detected, then the respirator is properly fitted.



Positive Pressure Check

This is just the opposite of the negative pressure check. The wearer closes the exhalation valve and exhales gently. A positive pressure builds up which the wearer holds for a few seconds. If no outward leakage is noted, then the respirator is fitted. Note that you should not blow hard, as this will force leaks.



Do not confuse the respirator seal checks conducted by the employee with the fit testing the employer must complete to select the appropriate respirator for the employee. Qualitative or Quantitative fit testing requirements are more stringent and OSHA approved procedures must be followed. See 1910.134 Appendix A in the General Industry Regulations for more information.



APPENDIX C MEDICAL QUESTIONNAIRE

Appendix C to Sec. 1910.134: OSHA Respirator Medical Evaluation
Questionnaire (Mandatory)

To the employer: Answers to questions in Section 1, and to question 9 in Section 2 of Part A, do not require a medical examination.

To the employee: Can you read (circle one): Yes/No

Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the health care professional who reviews it.

Part A. Section 1. (Mandatory) The following information must be provided by every employee who has been selected to use any type of respirator (please print).

1. Today's date: _____
2. Your name: _____
3. Your age (to nearest year): _____
4. Sex (circle one): Male/Female
5. Your height: _____ ft. _____ in.
6. Your weight: _____ lbs.
7. Your job title: _____
8. A phone number where you can be reached by the health care professional who reviews this questionnaire (include the Area Code): _____
9. The best time to phone you at this number: _____
10. Has your employer told you how to contact the health care professional who will review this questionnaire (circle one): Yes/No
11. Check the type of respirator you will use (you can check more than one category):
 - a. _____ N, R, or P disposable respirator (filter-mask, non- cartridge type only).

b. _____ Other type (for example, half- or full-facepiece type, powered-air purifying, supplied-air, self-contained breathing apparatus).

12. Have you worn a respirator (circle one): Yes/No

If "yes," what type(s): _____

Part A. Section 2. (Mandatory) Questions 1 through 9 below must be answered by every employee who has been selected to use any type of respirator (please circle "yes" or "no").

1. Do you currently smoke tobacco, or have you smoked tobacco in the last month: Yes/No

2. Have you ever had any of the following conditions?

- a. Seizures (fits): Yes/No
- b. Diabetes (sugar disease): Yes/No
- c. Allergic reactions that interfere with your breathing: Yes/No
- d. Claustrophobia (fear of closed-in places): Yes/No
- e. Trouble smelling odors: Yes/No

3. Have you ever had any of the following pulmonary or lung problems?

- a. Asbestosis: Yes/No
- b. Asthma: Yes/No
- c. Chronic bronchitis: Yes/No
- d. Emphysema: Yes/No
- e. Pneumonia: Yes/No
- f. Tuberculosis: Yes/No
- g. Silicosis: Yes/No
- h. Pneumothorax (collapsed lung): Yes/No
- i. Lung cancer: Yes/No
- j. Broken ribs: Yes/No
- k. Any chest injuries or surgeries: Yes/No
- l. Any other lung problem that you've been told about: Yes/No

4. Do you currently have any of the following symptoms of pulmonary or lung illness?

- a. Shortness of breath: Yes/No
- b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline: Yes/No
- c. Shortness of breath when walking with other people at an ordinary pace on level ground: Yes/No
- d. Have to stop for breath when walking at your own pace on level ground: Yes/No
- e. Shortness of breath when washing or dressing yourself: Yes/No
- f. Shortness of breath that interferes with your job: Yes/No
- g. Coughing that produces phlegm (thick sputum): Yes/No
- h. Coughing that wakes you early in the morning: Yes/No
- i. Coughing that occurs mostly when you are lying down: Yes/No

- j. Coughing up blood in the last month: Yes/No
 - k. Wheezing: Yes/No
 - l. Wheezing that interferes with your job: Yes/No
 - m. Chest pain when you breathe deeply: Yes/No
 - n. Any other symptoms that you think may be related to lung problems: Yes/No
5. Have you ever had any of the following cardiovascular or heart problems?
- a. Heart attack: Yes/No
 - b. Stroke: Yes/No
 - c. Angina: Yes/No
 - d. Heart failure: Yes/No
 - e. Swelling in your legs or feet (not caused by walking): Yes/No
 - f. Heart arrhythmia (heart beating irregularly): Yes/No
 - g. High blood pressure: Yes/No
 - h. Any other heart problem that you've been told about: Yes/No
6. Have you ever had any of the following cardiovascular or heart symptoms?
- a. Frequent pain or tightness in your chest: Yes/No
 - b. Pain or tightness in your chest during physical activity: Yes/No
 - c. Pain or tightness in your chest that interferes with your job: Yes/No
 - d. In the past two years, have you noticed your heart skipping or missing a beat: Yes/No
 - e. Heartburn or indigestion that is not related to eating: Yes/ No
 - f. Any other symptoms that you think may be related to heart or circulation problems: Yes/No
7. Do you currently take medication for any of the following problems?
- a. Breathing or lung problems: Yes/No
 - b. Heart trouble: Yes/No
 - c. Blood pressure: Yes/No
 - d. Seizures (fits): Yes/No
8. If you've used a respirator, have you ever had any of the following problems? (If you've never used a respirator, check the following space and go to question 9:)
- a. Eye irritation: Yes/No
 - b. Skin allergies or rashes: Yes/No
 - c. Anxiety: Yes/No
 - d. General weakness or fatigue: Yes/No
 - e. Any other problem that interferes with your use of a respirator: Yes/No
9. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire: Yes/No

Questions 10 to 15 below must be answered by every employee who has been selected to use either a full-facepiece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.

10. Have you ever lost vision in either eye (temporarily or permanently):

Yes/No

11. Do you currently have any of the following vision problems?
 - a. Wear contact lenses: Yes/No
 - b. Wear glasses: Yes/No
 - c. Color blind: Yes/No
 - d. Any other eye or vision problem: Yes/No

12. Have you ever had an injury to your ears, including a broken ear drum:
Yes/No

13. Do you currently have any of the following hearing problems?
 - a. Difficulty hearing: Yes/No
 - b. Wear a hearing aid: Yes/No
 - c. Any other hearing or ear problem: Yes/No

14. Have you ever had a back injury: Yes/No

15. Do you currently have any of the following musculoskeletal problems?
 - a. Weakness in any of your arms, hands, legs, or feet: Yes/No
 - b. Back pain: Yes/No
 - c. Difficulty fully moving your arms and legs: Yes/No
 - d. Pain or stiffness when you lean forward or backward at the waist: Yes/No
 - e. Difficulty fully moving your head up or down: Yes/No
 - f. Difficulty fully moving your head side to side: Yes/No
 - g. Difficulty bending at your knees: Yes/No
 - h. Difficulty squatting to the ground: Yes/No
 - i. Climbing a flight of stairs or a ladder carrying more than 25 lbs: Yes/No
 - j. Any other muscle or skeletal problem that interferes with using a respirator: Yes/No

Part B Any of the following questions, and other questions not listed, may be added to the questionnaire at the discretion of the health care professional who will review the questionnaire.

1. In your present job, are you working at high altitudes (over 5,000 feet) or in a place that has lower than normal amounts of oxygen: Yes/No
If "yes," do you have feelings of dizziness, shortness of breath, pounding in your chest, or other symptoms when you're working under these conditions: Yes/No

2. At work or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g., gases, fumes, or dust), or have you come into skin contact with hazardous chemicals: Yes/No
If "yes," name the chemicals if you know them: _____

3. Have you ever worked with any of the materials, or under any of the

conditions, listed below:

- a. Asbestos: Yes/No
- b. Silica (e.g., in sandblasting): Yes/No
- c. Tungsten/cobalt (e.g., grinding or welding this material): Yes/No
- d. Beryllium: Yes/No
- e. Aluminum: Yes/No
- f. Coal (for example, mining): Yes/No
- g. Iron: Yes/No
- h. Tin: Yes/No
- i. Dusty environments: Yes/No
- j. Any other hazardous exposures: Yes/No

If "yes," describe these exposures: _____

4. List any second jobs or side businesses you have: _____

5. List your previous occupations: _____

6. List your current and previous hobbies: _____

7. Have you been in the military services? Yes/No

If "yes," were you exposed to biological or chemical agents (either in training or combat): Yes/No

8. Have you ever worked on a HAZMAT team? Yes/No

9. Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications): Yes/No

If "yes," name the medications if you know them: _____

10. Will you be using any of the following items with your respirator(s)?

- a. HEPA Filters: Yes/No
- b. Canisters (for example, gas masks): Yes/No
- c. Cartridges: Yes/No

11. How often are you expected to use the respirator(s) (circle "yes" or "no" for all answers that apply to you)?:

- a. Escape only (no rescue): Yes/No
- b. Emergency rescue only: Yes/No

- c. Less than 5 hours per week: Yes/No
- d. Less than 2 hours per day: Yes/No
- e. 2 to 4 hours per day: Yes/No
- f. Over 4 hours per day: Yes/No

12. During the period you are using the respirator(s), is your work effort:

a. Light (less than 200 kcal per hour): Yes/No

If "yes," how long does this period last during the average shift: _____ hrs. _____ mins. Examples of a light work effort are sitting while writing, typing, drafting, or performing light assembly work; or standing while operating a drill press (1-3 lbs.) or controlling machines.

b. Moderate (200 to 350 kcal per hour): Yes/No

If "yes," how long does this period last during the average shift: _____ hrs. _____ mins. Examples of moderate work effort are sitting while nailing or filing; driving a truck or bus in urban traffic; standing while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs.) at trunk level; walking on a level surface about 2 mph or down a 5-degree grade about 3 mph; or pushing a wheelbarrow with a heavy load (about 100lbs.) on a level surface.

c. Heavy (above 350 kcal per hour): Yes/No

If "yes," how long does this period last during the average shift: _____ hrs. _____ mins. Examples of heavy work are lifting a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock; shoveling; standing while bricklaying or chipping castings; walking up an 8-degree grade about 2 mph; climbing stairs with a heavy load (about 50 lbs.).

13. Will you be wearing protective clothing and/or equipment (other than the respirator) when you're using your respirator: Yes/No

If "yes," describe this protective clothing and/or equipment: _____

14. Will you be working under hot conditions (temperature exceeding 77 deg F): Yes/No

15. Will you be working under humid conditions: Yes/No

16. Describe the work you'll be doing while you're using your respirator(s):

17. Describe any special or hazardous conditions you might encounter when you're using your respirator(s) (for example, confined spaces,

life-threatening gases):

18. Provide the following information, if you know it, for each toxic substance that you'll be exposed to when you're using your respirator(s):

Name of the first toxic substance: _____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift _____

Name of the second toxic substance: _____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____

Name of the third toxic substance: _____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____

The name of any other toxic substances that you'll be exposed to while using your respirator:

19. Describe any special responsibilities you'll have while using your respirator(s) that may affect the safety and well-being of others (for example, rescue, security):

APPENDIX D - 1

Regulations (Standards - 29 CFR)

(Mandatory) Information for Employees Using Respirators When not Required Under Standard. - 1910.134 App D

• Part Number:	1910
• Part Title:	Occupational Safety and Health Standards
• Subpart:	I
• Subpart Title:	Personal Protective Equipment
• Standard Number:	1910.134 App D
• Title:	(Mandatory) Information for Employees Using Respirators When not Required Under 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 Name: _____
Employee Signature: _____
Date: _____

APPENDIX E - 1

**RESPIRATOR HAZARD ASSESSMENT
FOR** _____

(Work Activity Or Product Name)

Any Material Safety Data Sheets and monitoring results are attached.

What is the anticipated exposure? _____

What is time (length) of exposure? _____
(hours per day)

What is the quantity of exposure? _____
(gallons, pounds, etc.)

How is the product utilized? _____
(sprayed, dipped, wiped, transported, etc.)

Where is the product utilized? _____
(outside, booth, large/small room)

How many employees are exposed? _____

What control measures are utilized? _____

(ventilation, employee rotation, etc.)

What respirator is available? _____

Are respirators mandatory or voluntary? _____

Comments:

Signature

Date

For further assistance, please call 307-777-7786

APPENDIX E – 2

RESPIRATOR HAZARD ASSESSMENT FOR _____ (Work Activity Or Product Name)

SDS Information:

Hazardous Ingredients	PEL TLV	% Of Product	Measured Exposure	Anticipated Exposure

What is the product vapor pressure? _____

What is time of exposure? _____
(hours per day)

What is the quantity of exposure? _____
(gallons, pounds, etc.)

How is the product utilized? _____
(sprayed, dipped, wiped, transported, etc.)

Where is the product utilized? _____
(outside, booth, large/small room)

How many employees are exposed? _____

What control measures are utilized? _____

(ventilation, employee rotation, etc.)

What respirator is selected? _____

Are respirators mandatory or voluntary? _____

Signature

Date

APPENDIX F

Cartridge Change Schedules

29 CFR 1910.134(d)(3)(iii)(B)(2) states, "If there is no ESLI [end-of-service-life indicator] appropriate for conditions in the employer's workplace, the employer implements a change schedule for canisters and cartridges based on objective information or data that will ensure the canisters are changed before the end of their service life."

Methods For Developing Change Schedules

There are several valid methods employers can use to determine the change schedules for chemical cartridges.

Use Manufacturer's Recommendations

These recommendations could come from either the chemical supplier or, more likely, the respirator manufacturer. This method is not as reliable as conducting your own tests but is still a good alternative. Unfortunately, respirator manufacturers may not have information for your specific chemicals or compounds.

Use Computer Models and Programs

Some computer programs are available on-line or by using CD-ROM's from some manufacturers. Three models are also available:

1. The G.O. Wood Model can be found on the Internet at
www.osha-slc.gov/SLTC/respiratoryprotection/woodmodel.html.
2. The Yoon-Nelson model can be found at
www.osha-slc.gov/SLTC/respiratoryprotection/yonmodel.html.
3. The AIHA "Rule of Thumb" method from Chapter 36 of the AIHA publication, "The Occupations Environment – Its Evaluation and Control". (This can only be used as a guide)
Some rules of thumb are:

If the concentration of the chemical is less than 200 ppm and the chemical's boiling point is greater than 70°C, you can expect a service life of 8 hours at a normal work rate.

Service life is inversely proportional to work rate.

Reducing concentrations by a factor of 10 will increase the service life by a factor of 5.

Humidity above 85% will reduce service life by 50%.

EXAMPLE OF CARTRIDGE CHANGE TABLE

<i>Work activity</i>	<i>Cartridge type</i>	<i>Change Frequencies:</i>
<i>Cleaning parts-Table 7</i>	<i>Organic Vapor</i>	<i>1X week</i>
<i>Spraying paint #026 green Part A & B</i>	<i>Organic Vapor with particulate prefilter</i>	<i>Before each job</i>
<i>Asbestos Cleanup</i>	<i>HEPA</i>	<i>1X day</i>

APPENDIX G

RESPIRATOR FLOWCHART

