

**TRAINING AND QUALIFICATIONS PLAN
FOR
PAGE-TROWBRIDGE RANCH LANDFILL**

**North 32°36' 26.87"
West 110°53' 45.83"
(Soil Vapor Extraction Array)**

**University of Arizona
Department of Risk Management Services
Township 9 South, Range 14 East, Gila and Salt River
Base and Meridian, Southern Half of Section 27 and Northern Half of Section 34
Pinal County, Arizona
EPA ID NO. AZD980665814**

REVISED MARCH 2012

TRAINING AND QUALIFICATIONS PLAN

The Training and Qualifications Plan is designed to address the requirements of 40 CFR 270.14(b) (12), 40 CFR 264.16, 40 CFR 264.179 and 40 CFR Subpart CC. This plan also addresses the training and medical monitoring requirements of 29 CFR 1910.120, the OSHA Standard for Hazardous Waste Operations. The general approach and philosophy of the training program is to utilize a combination of classroom instruction and supervised on-the-job training to provide employees with the knowledge necessary to perform the sampling protocols and emergency procedures for the Page-Trowbridge Ranch Landfill (PTRL) in a manner that maintains compliance and protects health, safety and the environment.

1. OUTLINE OF TRAINING AND QUALIFICATIONS PLAN

The major components of the Training and Qualifications Plan are hiring qualifications and job descriptions, initial training upon hiring, medical monitoring, and ongoing training of current employees. Exhibit 1 provides an outline of each of these program components and the various training topics associated with each other.

2. JOB DESCRIPTIONS

There are several job titles within the university personnel system that have significant job responsibilities involving the management of hazardous waste. These include the Assistant Vice President for Risk Management, Director of Occupational and Environmental Health and Safety, Environmental Safety Officer, Hazardous Waste Supervisor, and Hazardous Waste Specialist. Exhibit 2 includes copies of each of these job descriptions, outlining specific responsibilities of each position and the training required for the job description.

3. TRAINING DIRECTOR

The Training Director for the UA hazardous waste program is the Hazardous Waste Supervisor. This position is responsible for ensuring that all required training is completed on schedule, and that records are kept up to date. The Training Director, although highly knowledgeable about hazardous waste issues, typically does not conduct all of the training him/herself, but utilizes a variety of resources to accomplish this task. These resources include other Risk Management staff such as the Industrial Hygienists, the Occupational Safety Officer, and others with specific knowledge. Additional resources include video tapes and printed reference materials available from the Risk Management in-house library. Professional development courses offered at conferences and by professional organizations are also used to complete training requirements.

3.a. Training Director Qualifications

The Training Director receives the annual 8 Hour HAZWOPER Refresher, 8 Hour HAZWOPER Supervisor Training independently from outside vendors to segregate his training from internal training he provides to other PTRL staff. Train the Trainer, instructional technology or adult education themed classes are required every three years to maintain competency in training skills. Course curriculum, instructional methodology, hands-on exercises and other components of all UA environmental compliance training is developed to meet the criteria outlined in ANSI standard *ANSI/ASSE Z490.1-2009 Criteria for Accepted Practices in Safety, Health, and Environmental Training*.

4. TRAINING CONTENT

4.a. Regulatory Overview

This session covers in detail the regulatory status of PTRL as a closed disposal facility. An overview is conducted of major environmental regulatory programs and how they affect PTRL. Of paramount importance in this discussion are the Resource Conservation and Recovery Act (RCRA), and its subsequent amendments. Other regulatory programs reviewed during this session include the Comprehensive Environmental Compensation and Liability Act (CERCLA), and OSHA Hazardous Waste Operations Standard (HAZWOPER).

During this session, new employees are provided historical documentation to read that outlines previous compliance inspections, notices of violation, and the responses to those notices. This provides an excellent perspective on the types of typical compliance problems that have arisen during the operation of the program.

The Site Health and Safety Plan is introduced and discussed during this session.

The Site Inspection Report and Procedure is discussed with emphasis on the need for walking the perimeter, the cell caps and recording any deficiencies in writing and photograph. The Inspection Form is reviewed. The discussion includes potential deficiencies and a consensus is reached to ensure consistent inspections by authorized personnel. The Assistant Vice President for Risk Management, Director of Occupational and Environmental Health and Safety, Environmental Safety Officer, Hazardous Waste Supervisor are authorized to perform the required inspections but all employees who work at PTRL receive the training.

4.b. Hazardous Materials Chemistry and Toxicology

This session includes a review of the basic hazard classes of waste interred at PTRL, and the chemical characteristics that define these various hazards. The principal characteristics of concern include corrosivity, ignitability, reactivity, and toxicity. Descriptive hazard terms are also explained, including pH, vapor pressure, flashpoint, LEL/UEL, oxidizers, reductants, and pyrophoric and peroxidizable compounds. A variety of references and videotapes are also used in this session. An important component of this portion of the training is to teach employees how and where to locate specific hazard information needed to properly handle issues that may arise while at PTRL.

The Toxicology component of this review concentrates on acute and chronic health hazards of the waste types typically generated from university activities. Important concepts that must be well understood include dose, routes of entry, acute vs. chronic, and exposure standards such as Permissible Exposure Limits (PEL), Threshold Limit Values (TLV), and Immediately Dangerous to Life and Health (IDLH). In addition to these concepts, definitions are explained for terms such as carcinogen, mutagen, teratogen, and time-weighted-average.

4.c. Sampling Protocols

This session introduces general principles of sampling based on the following guidance documents: *Region 4 U.S. Environmental Protection Agency Science and Ecosystem Support Division Groundwater Sampling October 28, 2011* and *Arizona Department of Environmental Quality Soil Vapor Sampling Guidance July 10, 2008*. These guidance documents are included as Exhibit 4 to this Training and Qualifications Plan. A complete step-by-step instruction on the groundwater and soil vapor sampling protocols is included. Equipment, sampling containers and pre-sampling event activities are discussed. Hands-on instruction is given with sample containers and equipment to provide familiarity with container handling. This session is followed by additional instruction that is performed during on-the-job activities.

4.d. Safety and Accident Prevention

Due to its remote location safety is a paramount concern at PTRL. This session provides specific information to employees on how to conduct their activities safely and efficiently without incident. Topics include fire prevention, proper lifting, and preventing heat related incidents. Employees are also given specific instructions for action to be taken in the event of an accident or injury in the workplace, including identifying locations of emergency medical assistance if needed.

Employees also receive training on the proper selection and use of personal protective equipment including protective eyewear, gloves and steel toed boots.,

Hazardous waste personnel are enrolled in the UA Medical Surveillance Program. Personnel are required to complete a Medical Questionnaire and undergo a physical exam prior to participating in hazardous waste management activities including PTRL sampling events

Employees are made aware of their rights under OSHA, specifically the HAZWOPER Standard (29 CFR 1910.120), and are encouraged to immediately report any safety concerns to their supervisor without fear of reprisal.

The medical monitoring program in place for hazardous waste employees is discussed in detail to describe the frequency and content of medical exams, and how the results will be reported and maintained.

4.f. Emergency Response and Contingency Plan Training

Employees are advised of the types of emergencies that can occur during the sampling events at PTRL, and the appropriate response to each. Topics include response to fire, explosion, or other accident that threatens health or the environment.

The Contingency Plan (Appendix E) is reviewed in detail to explain who the designated Emergency Coordinators are, and what criteria are specified for implementation of the Plan. Various scenarios are outlined in a discussion setting to enhance individual knowledge and awareness of the events that are likely to be associated with different emergencies.

5. TRAINING PLAN IMPLEMENTATION

All new employees shall not work at PTRL until all training requirements have been completed. This process is typically completed within the first two weeks of employment, but in no case shall this process take longer than 90 days from the start of employment. A certificate of completion will be awarded at the conclusion of training. An example of the certificate is included as Exhibit 3. All records of training completion are maintained at the HWMF Office, 1548-2 N. Ring Rd., Tucson, AZ, 85719. Training records are maintained with employment records for a minimum of three years after termination. Medical monitoring records are maintained for a minimum of 30 years after termination.

All training is repeated annually for all staff members who work at PTRL, or are designated as Emergency Coordinators in the Contingency Plan. Additionally, the Director and supervisors work to identify additional training opportunities as they become available. These include professional seminars, conferences, and membership in professional organizations with applicable interests.

EXHIBIT 1

Training Program Outline

TRAINING PROGRAM OUTLINE

I. Regulatory Overview

- A. UA PTRL Regulatory Status
 - 1. Closed TSDF Status
 - 2. Discussion of Compliance History
- B. Applicable Regulatory Programs
 - 1. Resource Conservation and Recovery Act (RCRA)
 - 2. Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)
 - 3. OSHA Hazardous Waste Operations Standard (HAZWOPER)
- C. Site Health and Safety Plan
- D. Site Inspection Procedure and Report

II. Hazardous Materials Chemistry and Toxicology

- A. Chemistry of Hazardous Materials
 - 1. Chemical nomenclature
 - 2. Incompatibility
 - 3. Definitions
 - a. Corrosive
 - b. Ignitable
 - c. Reactive
 - d. Toxic
 - 4. Reaction rate
 - 5. Chemical equilibrium
 - 6. Definitions/explanations of specific terms
 - a. pH
 - b. Vapor pressure
 - c. Flashpoint, LEL/UEL
 - d. Oxidizers/reductants
 - e. Pyrophoric materials

- f. Peroxidizable compounds

B. Toxicology of Hazardous Materials

- 1. Routes of entry to the body
- 2. Dose/response relationships
- 3. Acute vs. chronic exposure
- 4. Definitions/explanations of specific terms
 - a. Toxicity
 - b. Carcinogen
 - c. Mutagen
 - d. Teratogen
 - e. Time weighted average
 - f. Others as applicable
- 5. Latency effects
- 6. Exposure standards
 - a. Threshold limit values (TLV)
 - b. Permissible exposure limits (PEL)
 - c. Immediately dangerous to life and health (IDLH)

C. Hazards of Specific Materials

- 1. Halogenated hydrocarbons
- 2. Ketones/alcohols
- 3. Metals
- 4. Reactives
- 5. Pesticides

III. Sampling Protocols

A. Sampling QA/QC

- a. Sampling Method
- b. Sampling Equipment Maintenance and Calibration
- c. Control Samples (trip blanks, field blanks)
- d. Standard Operating Procedures
- e. Chain of Custody, Transportation, Sample Holding Times

B. Sampling Protocols

- 1. Groundwater Detection Monitoring Plan
 - a. General Principles of Sample Collection
 - 1. Groundwater Sampling – EPA Science

and Ecosystem Support Division Region 4
Operating Procedure 10/28/11

- a. Volatile Organic Compounds
 1. Sample Bottles/Preservatives
 2. Container Handling During Sampling

2. Soil Vapor Monitoring Well Procedure
 - a. General Principles of Sample Collection
 1. Soil Vapor Sampling Guidance – ADEQ 7/10/08
 - a. Well Purging
 - b. Container Handling During Sampling
3. Soil Vapor Extraction System Sampling Procedure
 - a. General Principles of Sample Collection
 1. Soil Vapor Sampling Guidance – ADEQ 7/10/08
 - a. Container Handling During Sampling

IV. Safety and Accident Prevention

- A. General Safety Considerations
 1. Fire prevention and response
 2. Proper lifting techniques
 3. Maintenance of work areas and equipment
 4. Accident reporting and investigation
 5. First aid and emergency medical resources
- B. Personal Protective Equipment
 1. Skin protection
 - a. Gloves-types and limitations
 - b. Safety eyewear-types and limitations
 - c. Proper footwear
- C. Medical Monitoring Program
 1. Requirements of 29 CFR 1910.120
 2. Frequency and content of examinations
 3. Results reporting
 4. Recordkeeping

V. Emergency Response and Contingency Plan Training

- A. Types of Emergencies and Response
 1. Fire

2. Explosion
3. Chemical release
4. Criteria to shutdown PTRL activities

B. Emergency Equipment

1. Emergency Response Equipment Inventory
2. Equipment inspection, maintenance, and replacement
3. Communication and alarm systems
4. Environmental monitoring equipment

C. Contingency Plan

1. Criteria for implementation of the Contingency Plan
2. Evacuation routes and notification
3. Emergency coordinators
4. Reporting and recordkeeping
5. Coordination with outside response agencies

REGULATORY COMPLIANCE
TRAINING REQUIREMENTS

HAZARDOUS WASTE

40CFR265.16 **RCRA** (Applicable to LQG and TSDF)

<u>Worker</u>	<u>Initial</u>	<u>Annual Refresher</u>	<u>Certification</u>
New	No Specific Hours	No Specific Hours	Instructor
Current	Previous Experience	No Specific Hours	Instructor
Emergency Responder	Part of Initial	No Specific Hours	Instructor

UA Personnel Affected

Assistant Vice President for Risk Management
Director, Occupational and Environmental Health and Safety
Environmental Safety Officer
Hazardous Waste Supervisor
Hazardous Waste Specialist

29CFR1910.120 **OSHA** (Applicable to LQG and TSDF)

<u>Worker</u>	<u>Initial</u>	<u>Annual Refresher</u>	<u>Certification</u>
New	24 Hours	8 Hours	Instructor
Current	Previous Experience	8 Hours	Instructor
Emergency Responder	As Necessary	As Necessary	Instructor

UA Personnel Affected

Assistant Vice President for Risk Management
Director, Occupational and Environmental Health and Safety

Environmental Safety Officer
Hazardous Waste Supervisor
Hazardous Waste Specialist

HAZWOPER

29CFR1910.120 **OSHA** (Site Cleanup)

<u>Worker</u>	<u>Initial</u>	<u>Annual Refresher</u>	<u>Certification</u>
General Worker	40 Hours Offsite & 3 Days Onsite (Supervised)	8 Hours	Instructor/Site Supervisor
Occasional Worker	24 Hours Offsite 1 Day Onsite (Supervised)	8 Hours	Instructor/Supervisor
Low-Hazard Worker	24 Hours Offsite	8 Hours	Instructor
Supervisor	Same As Worker & 8 Hours Specialized	8 Hours	Instructor
Emergency Responder	Not Specified, But Need Training Prior To Response Work	Annual "Rehearsal" of Emergency Response Plan	Not Necessary

UA Personnel Affected

Occasional Worker (Page Ranch)
Assistant Vice President for Risk Management
Director, Occupational and Environmental Health and Safety
Environmental Safety Officer
Hazardous Waste Supervisor
Hazardous Waste Specialist

EXHIBIT 2

Job Descriptions

EXHIBIT 3

Example of Training Certificate

Exhibit 4

1. Arizona Department of Environment Quality – Soil Vapor Sampling Guidance, July 10, 2008 (19 pages)
2. Environmental Protection Agency Region 4 – Groundwater Sampling Operating Procedure, October 28, 2011 (32 pages)