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FEB 17 2016

Mr. John E. Kieling, Bureau Chief  
Hazardous Waste Bureau  
New Mexico Environment Department  
2905 Rodeo Park Drive East, Building 1  
Santa Fe, New Mexico 87505-6303

Subject: Class 1 Permit Modification Notifications to the Waste Isolation Pilot Plant  
Hazardous Waste Facility Permit Number: NM4890139088-TSDF

Dear Mr. Kieling:

Enclosed is a Notification of Class 1 Permit Modifications for the following items:

- Technical Training Organizational Change
- Descriptive Changes Regarding Ventilation Configurations
- Update Resource Conservation and Recovery Act Emergency Coordinator List
- Update Chronology in Attachment A
- Revise a Procedure Number in Attachment E, Table E-1a
- Update the Underground Ventilation System Description

We certify under penalty of law that this document and all attachments were prepared under our direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on our inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of our knowledge and belief, true, accurate, and complete. We are aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions, please contact Mr. George T. Basabilvazo at 575-234-7488.

Sincerely,

**Original Signatures on File**

Todd Shrader, Manager  
Carlsbad Field Office

Philip J. Breidenbach, Project Manager  
Nuclear Waste Partnership LLC

Enclosure

cc: w/enclosure  
K. Roberts, NMED \*ED  
R. Maestas, NMED ED  
C. Smith, NMED ED  
CBFO M&RC  
\*ED denotes electronic distribution

**Class 1 Permit Modification Notifications**

**Technical Training Organizational Change**

**Descriptive Changes Regarding Ventilation Configurations**

**Update Resource Conservation and Recovery Act Emergency Coordinator List**

**Update Chronology in Attachment A**

**Revise a Procedure Number in Attachment E, Table E-1a**

**Update the Underground Ventilation System Description**

**Waste Isolation Pilot Plant  
Carlsbad, New Mexico**

**WIPP Permit Number - NM4890139088-TSDF**

**February 2016**

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## Overview of the Permit Modification Notifications

This document contains six Class 1 Permit Modification Notifications (**PMNs**) for the Waste Isolation Pilot Plant (**WIPP**) Hazardous Waste Facility Permit (**Permit**) Number NM4890139088-TSDF.

These PMNs are being submitted by the U.S. Department of Energy (**DOE**) and Nuclear Waste Partnership LLC, collectively referred to as the Permittees, in accordance with Permit Part 1, Section 1.3.1. (20.4.1.900 New Mexico Administrative Code (**NMAC**) incorporating Title 40 of the Code of Federal Regulations (**CFR**) §270.42[a]). The PMNs in this document are necessary to notify the New Mexico Environment Department (**NMED**) of changes which impact the Permit. These changes do not reduce the ability of the Permittees to provide continued protection to human health and the environment.

The requested modifications to the Permit and any related supporting documents are provided in these PMNs. The proposed modifications to the text of the Permit have been identified using red text and double underline and a ~~strikeout~~ font for deleted information. Direct quotations are indicated by italicized text.

**Attachment A**  
**Description of the Class 1 Permit Modification Notifications**

**Table 1. Class 1 Hazardous Waste Facility Permit Modification Notifications**

Item No.	Affected Permit Section	Change Description	Category
1.	Attachment F, Section F-1, and Figure F-1	<p>This modification revises Permit Attachment F, Section F-1, <i>Outline of the Training Program</i>, to change “General Manager” to “Project Manager,” and to replace “Human Resources” with “Technical Training” in regards to the implementation of technical training. This modification also revises Permit Attachment F, Sections F-1, <i>Outline of the Training Program</i> and F-2 <i>Implementation of Training Program</i> to change “Technical Training Group” to “Technical Training.”</p> <p>This modification revises Attachment F, Figure F-1, <i>Organizational Location of Training, Waste Handling, and Emergency Response Functions</i>, to change “General Manager” to “Project Manager” and to indicate that Technical Training is now reporting to the Deputy Project Manager. Attachment F, Figure F-1 is being revised to change “Emergency Management” to “Emergency Management and Security” and to indicate that this organization is now reporting to the Project Manager in lieu of Environment, Safety, and Health.</p> <p>This modification also defines the acronym for “MOC” to be “Management and Operating Contractor.”</p>	A.1
2.	Attachment A2, Sections A2-2a(3) and A2-2b Attachment D, Section D-4d(8)	<p>This modification adds descriptive language regarding ventilation configurations to the following Permit Sections:</p> <ul style="list-style-type: none"> <li>Attachment A2, Sections A2-2a(3) <i>Subsurface Structures</i> and A2-2b <i>Geologic Repository Process Description</i></li> <li>Attachment D, Section D-4d(8) <i>Roof Fall</i></li> </ul> <p>The changes include adding the option to move the ventilation control point from the exhaust side of the active room to the air intake side and adding the term ventilation control device to describe equipment and materials typically used in the WIPP underground to control airflow.</p> <p>This modification also changes the acronym “SCFM” to “scfm” (uppercase to lowercase).</p>	A.1
3.	Attachment D, Table D-2	This modification updates the list of RCRA Emergency Coordinators in Permit Attachment D, Table D-2, <i>Resource Conservation and Recovery Act Emergency Coordinators</i> .	B.6.d
4.	Attachment A, Section A-6	This modification updates Attachment A, Section A-6 <i>Chronology of Events Relevant to Changes in Ownership or Operational Control</i> to include the merger between AECOM and URS, effective on January 5, 2015. The WIPP Management and Operating Contractor (MOC), Nuclear Waste Partnership LLC, is comprised of URS Energy and Construction, Inc (an organization within AECOM) and Babcock and Wilcox Technical Services Group, Inc. This modification also changes URS Federal Services to URS Energy and Construction, Inc. in the July 1, 2015 chronology in Attachment A, Section A-6.	A.1
5.	Attachment E, Table E-1a	This modification changes the Instrument Calibration Procedure number in Permit Attachment E, Table E-1a, from	A.1

Item No.	Affected Permit Section	Change Description	Category
		"IC240007" to "IC534000" for the Radiation Monitoring Equipment row.	
6.	Attachment A2, Section A2-2a(3) Attachment A2, Figure A2-9 Attachment A4, Figure A4-2 Attachment D, Figure D-1 Attachment D, Figure D-1a Attachment D, Figure D-6 Attachment D, Figure D-8 Attachment O, Table O-1	<p>This modification updates descriptive language in the Permit sections, figures and tables listed below regarding the underground ventilation system to include the WIPP facility Interim Ventilation System (<b>IVS</b>):</p> <ul style="list-style-type: none"> <li>• Attachment A2, Section A2-2a(3), <i>Subsurface Structures</i></li> <li>• Attachment A2, Figure A2-9, <i>Underground Ventilation System Airflow</i></li> <li>• Attachment A4, Figure A4-2, <i>WIPP Traffic Flow Diagram</i></li> <li>• Attachment D, Figure D-1, <i>WIPP Surface Structures</i></li> <li>• Attachment D, Figure D-1a, <i>Legend to Figure D-1</i></li> <li>• Attachment D, Figure D-6, <i>Fire-Water Distribution System</i></li> <li>• Attachment D, Figure D-8, <i>WIPP On-Site Assembly Areas and WIPP Staging Areas</i></li> <li>• Attachment O, Table O-1, <i>Ventilation Operating Modes and Associated Flow Rates</i></li> </ul> <p>Editorial changes are also being made to the Permit text to correct some typographical errors and to clarify existing text. For example, a parenthetical is being added; "e.g." is replacing "i.e." in reference to availability of the main exhaust fans; "contaminants in the reduced exhaust flow" is being changed to "particulates" in reference to high efficiency particulate air (<b>HEPA</b>) filtration; and the figures A2-9, A4-2, D-1, D-1a, D-6 and D-8 are being revised to include the new 900 series trailers, the north maintenance shop, and other additions and/or deletions of surface facilities. These changes to the figures are identified with "clouds" which indicate the additions and/or deletions of the surface facilities.</p>	A.1

## Item 1

### Description

This modification revises Permit Attachment F, Section F-1, *Outline of the Training Program*, to change “General Manager” to “Project Manager,” and to replace “Human Resources” with “Technical Training” in regards to the implementation of technical training. This modification also revises Permit Attachment F, Sections F-1, *Outline of the Training Program* and F-2 *Implementation of Training Program* to change “Technical Training Group” to “Technical Training.”

This modification revises Attachment F, Figure F-1, *Organizational Location of Training, Waste Handling, and Emergency Response Functions*, to change “General Manager” to “Project Manager” and to indicate that Technical Training is now reporting to the Deputy Project Manager. Attachment F, Figure F-1 is being revised to change “Emergency Management” to “Emergency Management and Security” and to indicate that this organization is now reporting to the Project Manager in lieu of Environment, Safety, and Health.

This modification also defines the acronym for “MOC” to be “Management and Operating Contractor.”

### Basis

The change is classified as an “Administrative and informational changes” and is, therefore, a Class 1 modification notification pursuant to 20.4.1.900 NMAC (incorporating 40 CFR 270.42, Appendix I, A.1).

### Discussion

These changes are needed to reflect changes within the Management and Operating Contractor organization relative to the Project Manager, training and emergency response. These changes are needed to update the Permit.



## Proposed Revised Permit Text and Figure:

### F-1 Outline of the Training Program

Employee training for the purpose of hazardous waste management at the WIPP facility is the overall responsibility of the Management and Operating Contractor (MOC) General Project Manager, with responsibility for implementation delegated to the manager of the Human Resources Department Technical Training. The Human Resources Department Manager has established a technical training group (referred to as Technical Training) within the department to implement the requirements for training. The Technical Training Group is managed by the Technical Training Manager who has the responsibility for directing the training program. Members of the training staff are assigned to Technical Training within the Human Resources Department. The organizational structure of the Human Resources Department Technical Training and its relationship to the line organizations is shown in an abbreviated organizational chart in Figure F-1. This chart also shows departments with key responsibilities for waste management and emergency response.

The WIPP facility uses a modified version of the Systematic Approach to Training (**SAT**) to analyze, design, develop, implement, and evaluate training.

This approach employs five distinct phases to develop programs. These phases are:

- Analysis
- Design
- Development
- Implementation
- Evaluation

In “analysis,” technical training and line management identify job performance requirements. These requirements are derived by studying job duty areas, related tasks, and required skills and knowledge. These derived skills and knowledge, in turn, form the blueprint for the “design” phase. In “design” these requirements are translated into learning objectives, performance standards, and test items. In “development” the products of design are incorporated into new training programs or, if appropriate, incorporated into revisions of existing programs. Products of development are lesson plans, qualification cards, student materials, and examinations. Implementation of these programs then occurs. This may be through classroom instruction, on-the-job-training, self-paced study, or any combination of the three. “Evaluation” is the final phase of the SAT process. Evaluation uses feedback derived from several sources to improve or enhance the training. The WIPP utilizes extensive guidance provided within the DOE Handbook, “Training Program Handbook: A Systematic Approach to Training (DOE-HDBK-1078-94),” to direct all program analysis, design, development, implementation, or evaluation. Further details of these processes may be derived by reviewing this manual.

The Human Resources Department Technical Training ensures that required RCRA-related training is conducted by qualified instructors. On-the-job training is conducted by Level I instructors. Level I instructors are subject matter experts; members of line organizations who have qualified on the related equipment and have attended the on-the-job training course. Classroom instruction is provided by Level II and Level III instructors. Level II instructors are members of Technical Training and line organizations who are qualified to conduct limited classroom training in their technical area of expertise. Level III instructors are members of Technical Training who are qualified to conduct classroom training, skills evaluation, and needs

assessment. Level II and III instructors are required to attend a train-the-trainer course and periodic refresher training.

Cognizant line managers provide significant input on training requirements for the WIPP facility to qualified instructors who develop the following, as required:

- Classroom Instruction
  - Objectives
  - Lesson Plans
  - Student Materials
  - Examinations
- On-the-Job Training
  - Qualification Cards

Technical training materials are approved by the Technical Training Manager and the cognizant line manager.

Following technical training, trainees must successfully complete written examinations or oral examinations conducted by boards made up of cognizant personnel (referred to as “oral boards”) to demonstrate competency. The records of oral examinations are called “oral board sheets”. These examinations are based on objectives and/or competency statements. Oral boards are based on knowledge learned in the on-the-job training process. Trainees also provide feedback on the content and quality of instruction, at this time, in the form of course critiques and verbal input.

Technical training documentation is maintained by ~~the~~ Technical Training Group located at the WIPP facility. These technical training records include:

- Course Attendance
- Completed Qualification Cards
- Off-Site Training Documentation
- Oral Board Sheets

A database is maintained which records training qualifications, and course attendance. The database is used to identify course refresher and requalification dates. Training records on current personnel are kept in the Technical Training files. Technical training records on former employees are kept by ~~the~~ Technical Training Group for at least three years from the date of employment termination from the WIPP facility. Training documentation for emergency response training received by personnel called out in the WIPP Contingency Plan (Permit Attachment D) is maintained by ~~the~~ Technical Training Group. The documents which define the process by which these training activities are managed are maintained by ~~the~~ Technical Training Group and are part of the Operating Record.

To ensure the safe and efficient operation of the WIPP facility, certain positions require formal qualification. Department managers identify these positions based upon safety, complexity, and involvement with hazardous waste handling operations. A document known as a “qualification card” is prepared to identify required training for each designated position. In the case of equipment and system/procedure qualification, a “qualification card” is prepared that specifies

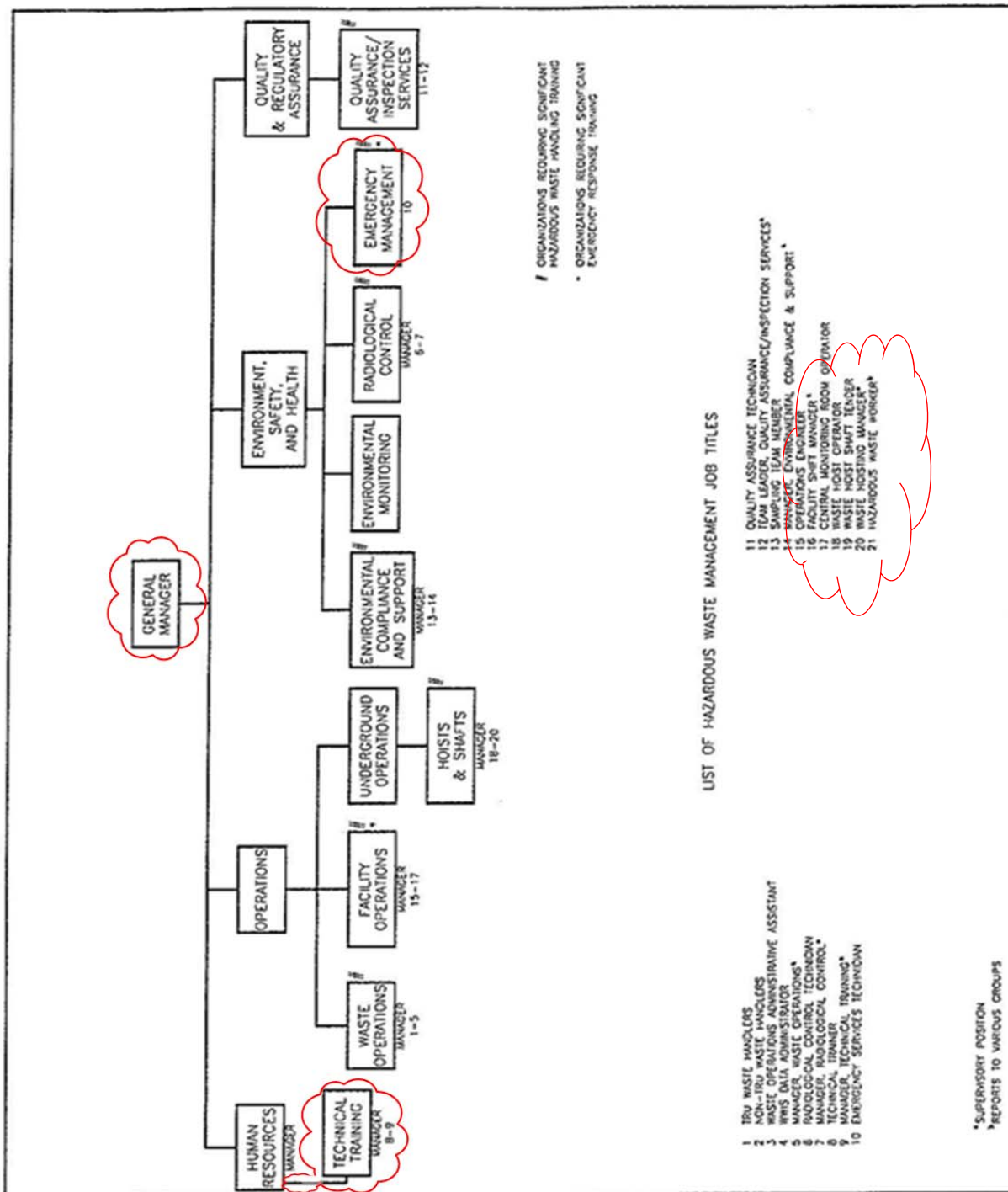
the required knowledge and practical skills needed in such areas as equipment maintenance and safety. Individual participation in the qualification card system is varied and is dependent on an incumbent's specific job duties. A complete listing of active qualifications, as they apply to any individual position, may be determined by review of the WIPP Training Database. The list of active WIPP Qualification cards is maintained at the WIPP facility.

When the qualification card is completed, that particular qualification is recorded. Successful completion of formal classroom training is documented on the individual's qualification card. When requirements are met, both for classroom instruction and on-the-job training, and oral board, if applicable, the qualification card is signed by the manager certifying that the employee is fully competent to perform all aspects of the associated qualification. Qualification cards are included in the training records maintained by the Technical Training Group. Qualification cards are living documents subject to change as the scope and content of training changes to meet new and revised regulatory requirements and modifications in job scope.

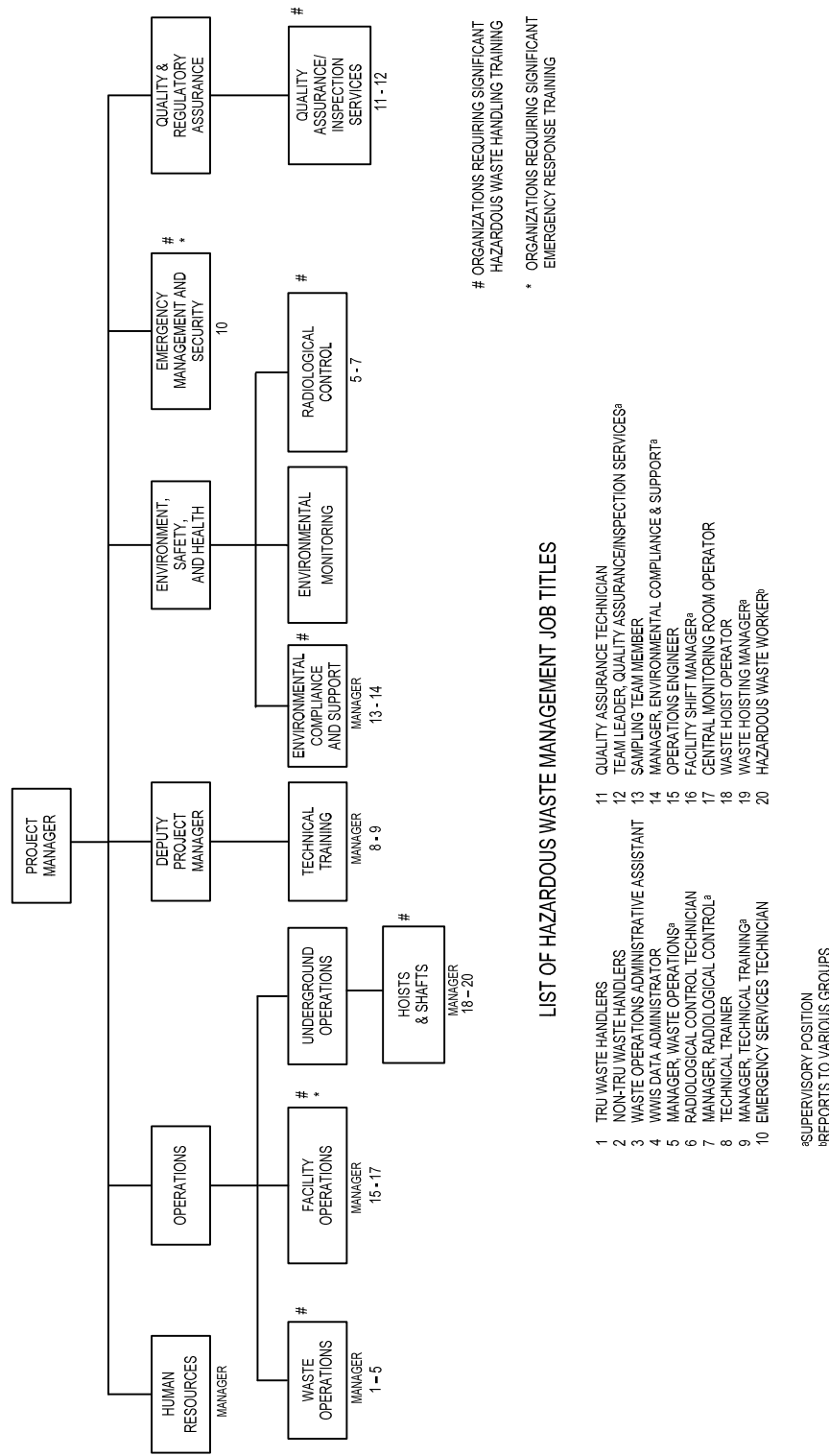
The hazardous waste management training program described in Section F-1b consists of a series of courses designed to ensure that hazardous waste management employees at the WIPP facility receive initial and continuing training relevant to their positions. These courses include instruction on the RCRA and Occupational Safety and Health Administration regulations, emergency procedures, and procedures for handling both site-generated hazardous waste and TRU mixed waste. Visitors, temporary personnel, and contractors are trained commensurate with the nature of their visit or duties. For visitors, this includes basic site safety and emergency notification procedures. Visitors who require unescorted access are also required to take an examination covering the material in the training they are given. Visitor records are maintained by security. Temporary or subcontract personnel, if hired to fill a hazardous waste management position, are required to complete the same training as permanent personnel. Record of this training is maintained by Technical Training.

## F-2     Implementation of Training Program

Records relating to the WIPP facility training program for hazardous waste management and emergency response personnel are maintained by ~~the WIPP Technical Training Group~~ located at the WIPP facility. These records include a roster of employees in hazardous waste management positions; a list of courses required for each position; course descriptions; documentation when each employee has received and completed appropriate training; and all of the backup information regarding qualification and examination. Training records of current personnel are kept by ~~the Technical Training Group~~ until closure of the WIPP facility. Records of former employees are kept by ~~the Technical Training Group~~ for at least three years from the date the employee last worked at the facility.



**Figure F-1**  
Organizational Location of Training, Waste Handling, and Emergency Response Functions



**Figure F-1**  
**Organizational Location of Training, Waste Handling, and Emergency Response Functions**

## Item 2

### Description

This modification adds descriptive language regarding ventilation configurations to the following Permit Sections:

- Attachment A2, Sections A2-2a(3) *Subsurface Structures* and A2-2b *Geologic Repository Process Description*
- Attachment D, Section D-4d(8) *Roof Fall*

The changes include adding the option to move the ventilation control point from the exhaust side of the active room to the air intake side and adding the term ventilation control device to describe equipment and materials typically used in the WIPP underground to control airflow.

This modification also changes the acronym “SCFM” to “scfm” (uppercase to lowercase).

### Basis

The change is classified as an “Administrative and informational changes” and is, therefore, a Class 1 modification notification pursuant to 20.4.1.900 NMAC (incorporating 40 CFR 270.42, Appendix I, A.1).

### Discussion

Permit Attachment A2, Section A2-2a(3) describes the process that the Permittees have in place to control the ventilation in the underground. This control is necessary in order to assure sufficient air is available to support underground activities. For example, air that comes down the intake shafts is divided between four underground ventilation flows (circuits) as described in Attachment A2-2a(3).

*The main underground ventilation system is divided into four separate flows (Figure A2-9): one flow serving the mining areas, one serving the northern experimental areas, one serving the disposal areas, and one serving the Waste Shaft and station area.*

The portion of this ventilation used to support disposal activities is routed into the disposal panel using ventilation control devices. According to the description in Section A2-2a(3), ventilation control devices include ventilation barriers such as bulkheads or brattice cloth curtains which essentially block airflow and bulkheads with regulators (louvers or a sliding panel that can be opened or closed to allow air flow or restrict air flow as needed) or brattice cloth, which can vary the amount of air that is circulated through an area in the underground. A ventilation control point is a location in the ventilation flow that is used to vary the amount of air. In the disposal rooms, ventilation control points can be adjusted to assure the required 35,000 scfm of air flows through an active disposal room when waste disposal is taking place and workers are present in the room. Under the normal mode of ventilation, when a room is first put into service for disposal, the regulator (typically sliding panels or louvers) in a ventilation bulkhead are adjusted to restrict the amount of air that flows through the room. As waste is added, the regulator is opened wider since the waste containers impede air flow. By the time a room is filled, the regulator is generally fully opened. Under conditions where there is less than normal ventilation, such as filtration mode including the proposed Interim Ventilation System (IVS), there is no need

to provide a restriction to the air flow at any time in the disposal room while waste emplacement is underway. In fact, the mere presence of the ventilation bulkhead, even with all its louvers or sliders open, becomes an obstacle in obtaining the required ventilation flow. Therefore, a ventilation control point in the exhaust drift is not desirable. There may be times when it is necessary to divert the ventilation from the disposal room when waste emplacement is not underway into other areas of the disposal circuit. In this case, the ventilation control point can be established on the air intake side of the disposal room, effectively diverting flow to places where it is needed. Because the Permit only describes ventilation control points in the exhaust, the description needs to be updated to include options to establish ventilation control points in the intake drifts.

The changes that the Permittees are making are needed to completely describe the mechanisms by which ventilation flow rates are controlled in underground rooms and panels. These changes also clarify that the type of ventilation flow control devices that can be used by the Permittees in order to maintain sufficient ventilation flow rates in underground rooms and panels are not limited to the few currently described in the Permit. At the IVS flow rate and fan pressure, the pressure across a regulator in the exhaust drift may not be sufficient to obtain 35,000 standard cubic feet per minute as required by Permit Part 4, Section 4.5.3.2. Modification to the Permit will provide the Permittees with flexibility to remove the regulator bulkhead from the exhaust point of the active room and relocate a ventilation control point to the air intake side of the room in order to minimize resistance to air flow through the room. The change "SCFM" to "scfm" is needed to make the acronym consistent with other Permit text.



## Proposed Revised Permit Text:

### A2-2a(3) Subsurface Structures

#### Underground Ventilation System Description

Air will be routed into a panel from the intake side. Air is routed through the individual rooms within a panel using any of the following flow control devices: underground bulkheads, brattice cloth barricades, bulkheads with doors or ~~and~~ air regulators. Bulkheads are constructed by erecting framing of rectangular steel tubing and screwing galvanized sheet metal to the framing. Bulkhead members use telescoping extensions that are attached to framing and the salt which adjust to creep. Flexible flashing attached to the bulkhead on one side and the salt on the other completes the seal of the ventilation. Where controlled airflow is required, a louver-style damper ~~on~~ or a slide-gate (sliding panel) regulator is installed on the bulkhead. Personnel access is available through most bulkheads, and vehicular access is possible through selected bulkheads. Vehicle roll-up doors in the panel areas are not equipped with warning bells or strobe lights since these doors are to be used for limited periodic maintenance activities in the return air path. Flow is also controlled using brattice cloth barricades. These consist of chain link fence that is bolted to the salt or attached to a structural member and covered with brattice cloth; and are used in instances where the only flow control requirement is to block the air. A brattice cloth air barricade is shown in Figure A2-11. Ventilation will be maintained only in all active rooms within a panel until waste emplacement activities are completed and the panel-closure system is installed. The air will be routed simultaneously through all the active rooms within the panel. The filled rooms will be isolated from the ventilation system, while the active rooms that are actively being filled will receive a minimum of 35,000 SCFM scfm of air when workers are present to assure worker safety. After all rooms within a panel are filled, the panel will be closed using a closure system described Permit Attachment G and Permit Attachment G1.

Once a disposal room is filled and is no longer needed for emplacement activities, it will be barricaded against entry and isolated from the mine ventilation system. This may be accomplished by any of the following: by removing the air regulator bulkhead, closing bulkhead doors, ~~and~~ constructing chain link/brattice cloth barricades and, if necessary, constructing bulkheads at each end. A typical bulkhead is shown in Figure A2-11a. There is no requirement for air for these rooms since personnel and/or equipment will not be in these areas.

CH TRU Mixed Waste Emplacement

Once a waste panel is mined and any initial ground control established, flow control devices ~~regulators~~ will be constructed to assure adequate control over ventilation during waste emplacement activities. The first room to be filled with waste will be Room 7, which is the one that is farthest from the main access ways. A ventilation control point will be established for Room 7 either just outside the exhaust side of Room 6 or at the inlet side of Room 7. This ventilation control point will consist of a flow control device (e.g., bulkhead with a ventilation regulator, or brattice cloth barricade). When RH TRU mixed waste canister emplacement is completed in a room, CH TRU mixed waste emplacement can begin in that room. Stacking of CH waste will begin at the exhaust side of the room ~~ventilation control point~~ and proceed down the access drift, through the room and up the intake access drift until the entrance of Room 6 is reached. At that point, a brattice cloth and chain link barricade and, if necessary, bulkheads will be emplaced. This process will be repeated for Room 6, and so on until Room 1 is filled. At that point, the panel closure system will be constructed.

## D-4d(8) Roof Fall

### Fall-of-Ground Actions

1. Restrict access in ventilation flow path downstream of the incident.
2. Restrict the room from ventilation flow (e.g., by closing bulkhead regulators, or constructing brattice cloth barricades).
3. Survey for radiological contamination and establish the boundary for a Radiological Buffer Area.
4. Install barricade devices to remove access.
5. At the underground emplacement room, salt contaminated by a spill of TRU mixed waste will be covered with materials such as salt, plastic or fabric sheets, or PVA to isolate it from the worker or removed and packaged as site derived waste using damp rags, hand tools, and HEPA filtered vacuums.

The criteria used to determine whether to close the entire panel or just the affected room of waste containers would include the location of the roof fall and the stability of the unaffected roof area in the panel. Techniques to determine the stability would be the same as previously described in this section.

### **Item 3**

#### **Description**

This modification updates the list of RCRA Emergency Coordinators in Permit Attachment D, Table D-2, *Resource Conservation and Recovery Act Emergency Coordinators*.

#### **Basis**

The change is classified as “Changes in name, address, or phone number of coordinators or other persons or agencies identified in the plan” and is, therefore, a Class 1 modification pursuant to 20.4.1.900 NMAC (incorporating 40 CFR 270.42, Appendix I, B.6.d).

#### **Discussion**

This change is needed to maintain the list of RCRA Emergency Coordinators in the Permit current. In order to maintain individual privacy information, these changes are made to the Controlled Copy of the Contingency Plan maintained by the Facility Shift Manager and a “confidential” copy is being sent to the NMED. The copy on the internet version of the Contingency Plan will NOT contain this private information.

**Proposed Revised Permit Text:**

**Table D-2  
Resource Conservation and Recovery Act Emergency Coordinators**

<b>Name</b>	<b>Address*</b>	<b>Office Phone</b>	<b>Personal Phone*</b>
R. C. (Russ) Stroble (primary) <sup>1</sup>		234-8276 or 234-8554	
J. E. (Joseph) Bealler <sup>2</sup>		234-8276 or 234-8916	
M. G. (Mike) Proctor <sup>2</sup>		234-8276 or 234-8143	
G. L. (Gary) Kessler <sup>2</sup>		234-8326	
A. E. (Alvy) Williams <sup>1</sup> (primary)		234-8276 or 234-8216	
P. J. (Paul) Paneral <sup>1</sup> (primary)		234-8498	
<del>J. R. (Joel) Howard<sup>2</sup></del> <u>J.B. (James) Wheeler<sup>2</sup></u>		234-8325 <u>8273</u>	
M. L. (Mark) Long <sup>1</sup> (primary)		234-8170	
A.C (Andy) Cooper <sup>2</sup>		234-8197	

\* NOTE: Personal information (home addresses and personal phone numbers) has been removed from informational copies of this Permit.

<sup>1</sup> The on-duty Facility Shift Manager is the primary RCRA Emergency Coordinator pursuant to 20.4.1.500 NMAC (incorporating 40 CFR §264.52), and is designated to serve as the RCRA Emergency Coordinator.

<sup>2</sup> The on-duty Facility Operations Engineer is the alternate RCRA Emergency Coordinator and is available as needed.

## Item 4

### Description

This modification updates Attachment A, Section A-6 *Chronology of Events Relevant to Changes in Ownership or Operational Control* to include the merger between AECOM and URS, effective on January 5, 2015. The WIPP Management and Operating Contractor (MOC), Nuclear Waste Partnership LLC, is comprised of URS Energy and Construction, Inc (an organization within AECOM) and Babcock and Wilcox Technical Services Group, Inc. This modification also changes URS Federal Services to URS Energy and Construction, Inc. in the July 1, 2015 chronology in Attachment A, Section A-6.

### Basis

The change is classified as an “Administrative and informational change” and is, therefore, a Class 1 modification pursuant to 20.4.1.900 NMAC (incorporating 40 CFR 270.42, Appendix I, A.1).

### Discussion

AECOM announced a merger between AECOM and URS in 2014 and the change was effective on January 5, 2015. This modification is needed to update Attachment A, Section A-6 *Chronology of Events Relevant to Changes in Ownership or Operational Control*. The parent company remains URS Energy and Construction, Inc. Therefore, this merger is not related to a change in operational control or ownership. The change from URS Federal Services to URS Energy and Construction, Inc. in the July 1, 2015 chronology in Attachment A, Section A-6 is needed to correct the text.

**Proposed Revised Permit Text:**

**A-6 Chronology of Events Relevant to Changes in Ownership or Operational Control**

January 5, 2015      On January 5, 2015 URS merged with AECOM. The WIPP Management and Operating Contractor (MOC), Nuclear Waste Partnership LLC, is comprised of URS Energy and Construction, Inc. (an organization within AECOM) and Babcock and Wilcox Technical Services Group, Inc. This merger is therefore not related to a change in operational control because URS Energy and Construction, Inc. continues to be 70% owner of Nuclear Waste Partnership LLC.

July 1, 2015      On June 8, 2015 the Babcock & Wilcox Company announced its intent to change the name to BWXT Technical Services Group, Inc. (BWXT TSG). This change was effective July 1, 2015. No changes are being made to the Management and Operating Contractor (MOC). The MOC is comprised of URS ~~Federal Services~~ Energy and Construction, Inc. and BWXT Technical Services Group, Inc.

## Item 5

### Description

This modification changes the Instrument Calibration Procedure number in Permit Attachment E, Table E-1a *RH TRU Mixed Waste Inspection Schedule/Procedures*, from “IC240007” to “IC534000” for the Radiation Monitoring Equipment row.

### Basis

The change is classified as an “Administrative and informational change” and is, therefore, a Class 1 modification pursuant to 20.4.1.900 NMAC (incorporating 40 CFR 270.42, Appendix I, A.1).

### Discussion

This change is needed because the Instrument Calibration procedure “IC240007” for the Eberline Portable Alpha-6/6A Continuous Air Monitor has changed to procedure “IC534000” iCAM-HD Alpha/Beta Continuous Air Monitor. There is no change in frequency of the inspection for this piece of equipment.



**Proposed Revised Permit Text:**

**Table E-1a  
RH TRU Mixed Waste Inspection Schedule/Procedures**

System/ Equipment Name	Responsible Organization <sup>J</sup>	Inspection <sup>a</sup> Frequency and Job Title of Personnel Normally Making Inspection <sup>J</sup>	Procedure Number (Latest Revision) <sup>I</sup>	Inspection Criteria		
				Deterioration <sup>b</sup>	Leaks/ spills	Other
Cask Transfer Car(s)	Waste Operations	Pre-evolution <sup>c,d,e</sup> See List 1	WP05-WH1701 PM041187 (Semi-Annual)	Yes	NA	Pre-evolution Checks and Operating Instructions. Mechanical Inspection for Wear and Lubrication
RH Bay Overhead Bridge Crane	Waste Operations	Preoperational <sup>c,d,e,j</sup> See List 1	WP05-WH1741 PM041232 (Quarterly) PM041117 (Annual)	Yes	Yes	Pre-operational Checks and Operating Instructions. Mechanical Inspection for Wear and Lubrication
Facility Cask	Waste Operations	Pre-evolution <sup>c,d,e,f</sup> See List 1	WP05-WH1713 PM041201 (Annual) PM041203 (Annual)	Yes	NA	Pre-evolution Checks and Operating Instructions. Mechanical Inspection for Wear and Lubrication. Electrical PM.
RH Bay Cask Lifting Yoke	Waste Operations	Preoperational <sup>c,d,e,j</sup> See List 1	WP05-WH1741 PM041169 (Annual)	Yes	NA	Pre-operational Checks and Operating Instructions. Mechanical Inspection for Wear and Lubrication
Facility Cask Transfer Car	Waste Operations	Pre-evolution <sup>c,d,e,f</sup> See List 1	WP05-WH1704 PM041186 (Quarterly) PM041195 (Annual)	Yes	Yes	Pre-evolution Checks and Operating Instructions. Mechanical Inspection for Wear and Lubrication Electrical Inspection
Facility Cask Rotating Device	Waste Operations	Pre-evolution <sup>c,d,e,f</sup> See List 1	WP05-WH1713 PM041175 (Annual) PM041176 (Annual)	Yes	Yes	Pre-evolution Checks and Operating Instructions. Mechanical Inspection for Wear and Lubrication Electrical Inspection
Facility Grapple	Waste Operations	Pre-evolution <sup>c,d,e,f</sup> See List 1	WP05-WH1721 PM041172 (Quarterly) PM041177 (Annual)	Yes	NA	Pre-evolution Checks and Operating Instructions. Mechanical Inspection for Wear. Non-Destructive Examination
6.25-Ton Grapple Hoist	Waste Operations	Pre-evolution <sup>c,d,e,f</sup> See List 1	WP05-WH1721 PM411028 (Annual)	Yes	Yes	Pre-evolution Checks and Operating Instructions. Mechanical Inspection for Wear and Lubrication
Transfer Cell Shuttle Car	Waste Operations	Pre-evolution <sup>c,d,e,f</sup> See List 1	WP05-WH1705 PM041184 (Semi-Annual) PM041222 (Annual)	Yes	Yes	Pre-evolution Pre- operational Checks and Operating Instructions. Mechanical Inspection for Wear and Lubrication. Electrical Inspection.

System/ Equipment Name	Responsible Organization <sup>J</sup>	Inspection <sup>a</sup> Frequency and Job Title of Personnel Normally Making Inspection <sup>J</sup>	Procedure Number (Latest Revision) <sup>I</sup>	Inspection Criteria		
				Deterioration <sup>b</sup>	Leaks/ spills	Other
Cask Unloading Room	Waste Operations	Preoperational <sup>c,d,e,f,h,i</sup> See List 1	WP05-WH1744	Yes	NA	Floor integrity
Hot Cell	Waste Operations	Preoperational <sup>c,d,e,f,g,h,i</sup> See List 1	WP05-WH1744	Yes	NA	Floor integrity
Hot Cell Overhead Powered Manipulator	Waste Operations	Preoperational <sup>c,d,e,i</sup> See List 1	WP05-WH1743 PM041215 (Annual) PM041216 (Annual) IC411037 (Annual)	Yes	Yes	Pre-operational Checks and Operating Instructions. Mechanical Inspection for Wear and Lubrication. Electrical Inspection. Load Cell Calibration
Hot Cell Bridge Crane	Waste Operations	Preoperational <sup>c,d,e,j</sup> See List 1	WP05-WH1742 PM041217 (Annual) PM041209 (Annual) IC411038 (Annual)	Yes	Yes	Pre-operational Checks and Operating Instructions. Mechanical Inspection for Wear and Lubrication. Electrical Inspection. Load Cell Calibration.
Transfer Cell	Waste Operations	Preoperational <sup>c,d,e,f,h,i</sup> See List 1	WP05-WH1744	Yes	NA	Floor integrity
Facility Cask Loading Room	Waste Operations	Preoperational <sup>c,d,e,f,h,i</sup> See List 1	WP05-WH1744	Yes	NA	Floor integrity
Closed Circuit Television Camera	Waste Operations	Preoperational <sup>c,i</sup> See List 1	WP05-WH1757	NA	NA	Operability
Radiation Monitoring Equipment	Radiation Control	Preoperational <sup>c,d,e</sup> See List 2	WP12-HP1245 IC240010 WP12-HP1307 <del>IC240007</del> <u>IC534000</u> WP12-HP1314 (Annual)	Yes	NA	Operability Checks, Functional Checks, Instrument calibrations, Flow Calibration, Efficiency Checks.
Cask Unloading Room Crane	Waste Operations	Preoperational <sup>c,d,e,j</sup> See List 1	WP05-WH1719 PM041190 (Quarterly) PM041191 (Annual) PM041192 (Annual) IC411035 (Annual)	Yes	Yes	Pre-operational Checks and Operating Instructions. Mechanical Inspection for Wear and Lubrication. Electrical Inspection. Load Cell Calibration.

System/ Equipment Name	Responsible Organization <sup>J</sup>	Inspection <sup>a</sup> Frequency and Job Title of Personnel Normally Making Inspection <sup>J</sup>	Procedure Number (Latest Revision) <sup>I</sup>	Inspection Criteria		
				Deterioration <sup>b</sup>	Leaks/ spills	Other
Horizontal Emplacement and Retrieval Equipment or functionally equivalent equipment	Waste Operations	Pre-evolution <sup>c,d,e,f</sup> See List 1	WP05-WH1700 PM052010 (Semi-Annual) <sup>k</sup> PM052011 (Annual) PM052013 PM052012 PM052014 (Annual)	Yes	Yes	Assembly and Operating Instructions. Electrical Inspection. Position Transducer Calibration. Tilt Sensor Calibration.
41-Ton Forklift	Waste Operations	Preoperational <sup>c,d,e,i</sup> See List 1	WP05-WH1602 PM074061 PM052003 (Hours of Use) PM074027 (Quarterly) PM074029 & PM074051 (Annual)	Yes	Yes	Pre-Operational Checks. PM performed every 100 hours of operation, every 500 hours of operation or every 5 Years. Quarterly Engine Emission Test. Annual Electrical Inspection. Annual NDE.
RH Bay	Waste Operations	Preoperational <sup>c,d,e,h,i</sup> See List 1	WP05-WH1744	Yes	NA	Floor integrity
Surface RH TRU Mixed Waste Handling Area	Waste Operations	Preoperational <sup>i</sup> See List 1	WP- 05 WH1744	Yes	Yes	Posted Warning, Communications

## Item 6

### Description

This modification updates descriptive language in the Permit sections, figures and tables listed below regarding the underground ventilation system to include the WIPP facility Interim Ventilation System (IVS):

- Attachment A2, Section A2-2a(3), *Subsurface Structures*
- Attachment A2, Figure A2-9, *Underground Ventilation System Airflow*
- Attachment A4, Figure A4-2, *WIPP Traffic Flow Diagram*
- Attachment D, Figure D-1, *WIPP Surface Structures*
- Attachment D, Figure D-1a, *Legend to Figure D-1*
- Attachment D, Figure D-6, *Fire-Water Distribution System*
- Attachment D, Figure D-8, *WIPP On-Site Assembly Areas and WIPP Staging Areas*
- Attachment O, Table O-1, *Ventilation Operating Modes and Associated Flow Rates*

Editorial changes are also being made to the Permit text to correct some typographical errors and to clarify existing text. For example, a parenthetical is being added; “e.g.” is replacing “i.e.” in reference to availability of the main exhaust fans; “contaminants in the reduced exhaust flow” is being changed to “particulates” in reference to high efficiency particulate air (HEPA) filtration; and the Figures A2-9, A4-2, D-1, D-1a, D-6 and D-8 are being revised to include the new 900 series trailers, the north maintenance shop, and other additions and/or deletions of surface facilities. These changes to the figures are identified with “clouds” which indicate the additions and/or deletions of the surface facilities.

### Basis

The change is classified as “Administrative and informational changes” and is, therefore, a Class 1 modification notification pursuant to 20.4.1.900 NMAC (incorporating 40 CFR §270.42, Appendix I, A.1).

This modification provides the necessary update to the underground ventilation system description to include the IVS for operation in HEPA filtration mode. This modification adds descriptive text relative to the IVS, and it does not eliminate any ventilation system modes of operation nor does it propose changes to the minimum ventilation flow rate requirements in Permit Part 4; therefore, this is an administrative and informational change.

### Discussion

The *Waste Isolation Pilot Plant Nitrate Salt Bearing Waste Container Isolation Plan* commits to continued operation in filtration mode for the foreseeable future<sup>1</sup>. Permit Part 4, Section 4.5.3.2 specifies a minimum ventilation flow rate of 35,000 standard ft<sup>3</sup> per minute (**scfm**) minimum ventilation flow rate in the active disposal room when waste handling is underway. Permit Attachment A2 contains descriptive text regarding ventilation equipment and modes of operation. One portion of this description regards the design of the HEPA filtration system as a method of protecting human health and the environment in the event of a radiological release in

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<sup>1</sup> *Waste Isolation Pilot Plant Nitrate Salt Bearing Waste Container Isolation Plan*, Revision 2.

the underground. By design, the filtration system is limited to a net flow rate of 60,000 scfm of ventilation air. Because this flow rate is insufficient to support underground activities such as waste disposal and because the Permit requires a minimum of 35,000 scfm in the active disposal room when waste handling is underway, the IVS provides additional filtered ventilation air necessary to allow TRU mixed waste handling operations to resume. This upgrade has resulted in a revision to the configuration of the ventilation system by providing additional ventilation equipment and operating modes, and as a result, the descriptions in Permit Attachment A2, Section A2-2a(3), Attachment O, Table O-1 require revision. In addition, various figures are being revised to depict the IVS.

The changes to the Permit text include updates to text and figures that describe the WIPP facility underground ventilation system, including a description of the IVS. The Permittees submitted a notification of planned alteration to the permitted facility to the NMED on August 26, 2014, describing this system. Consistent with this notification the NMED will be provided with the New Mexico Professional Engineer's certification of the installation and be afforded an opportunity to inspect.

The changes to descriptive text are needed to update the Permit. The editorial changes are needed to correct and clarify existing text.

## Proposed Revised Permit Text and Figures:

### A2-2a(3) Subsurface Structures

#### Underground Ventilation System Description

The underground ventilation system consists of ~~six~~ centrifugal exhaust fans, two identical High Efficiency Particulate Air (HEPA)-filter assemblies arranged in parallel, isolation dampers, a filter bypass arrangement, two skid-mounted HEPA-filter assemblies arranged in parallel, and associated ductwork. The ~~six~~ fans, connected by the ductwork to the underground exhaust shaft so that they can independently draw air through the Exhaust Shaft, are divided into ~~two~~ three groups. One group consists of three main exhaust fans, two of which are utilized to provide the nominal air flow of 425,000 standard ft<sup>3</sup> per minute (~~scfm~~ scfm) throughout the WIPP facility underground during normal (unfiltered) operation. One main fan may be operated in the alternate mode to provide 260,000 scfm underground ventilation flow. These fans are located near the Exhaust Shaft. The second group consists of ~~the remaining~~ three filtration fans, and each can provide 60,000 scfm of air flow. These fans, located at the Exhaust Filter Building, can be operated in the filtration mode, where exhaust is diverted through HEPA filters, or in the reduced or minimum ventilation mode, where air is not drawn through the HEPA filters. The third group consists of two skid-mounted filtration fans and HEPA-filter assemblies, each of which can provide approximately 23,000 scfm of air flow. The skid-mounted filtration fan and HEPA-filter assemblies, referred to as the Interim Ventilation System (IVS) located south of the Exhaust Filter Building, are only operated in filtration mode, where exhaust is diverted through HEPA filters.

#### Underground Ventilation Modes of Operation

The underground ventilation system is designed to perform under two types of operation: normal (the HEPA exhaust filtration system is bypassed), and filtered (the exhaust is filtered through the HEPA filtration system), if radioactive contaminants are detected or suspected.

~~Overall, there are six~~ The possible modes of exhaust fan operation are as follows:

- 2 main fans in operation
- 1 main fan in operation
- 1 filtration fan in filtered operation
- 2 fans in filtered operation (one filtration fan and one IVS fan or two IVS fans)
- 3 fans in filtered operation (one filtration fan and two IVS fans)
- 1 filtration fan in unfiltered operation
- 2 filtration fans in unfiltered operation
- 1 main and 1 filtration fan (~~unfiltered~~) in unfiltered operation

Under some circumstances (such as power outages and maintenance activities, etc.), all mine ventilation may be discontinued for short periods of time.

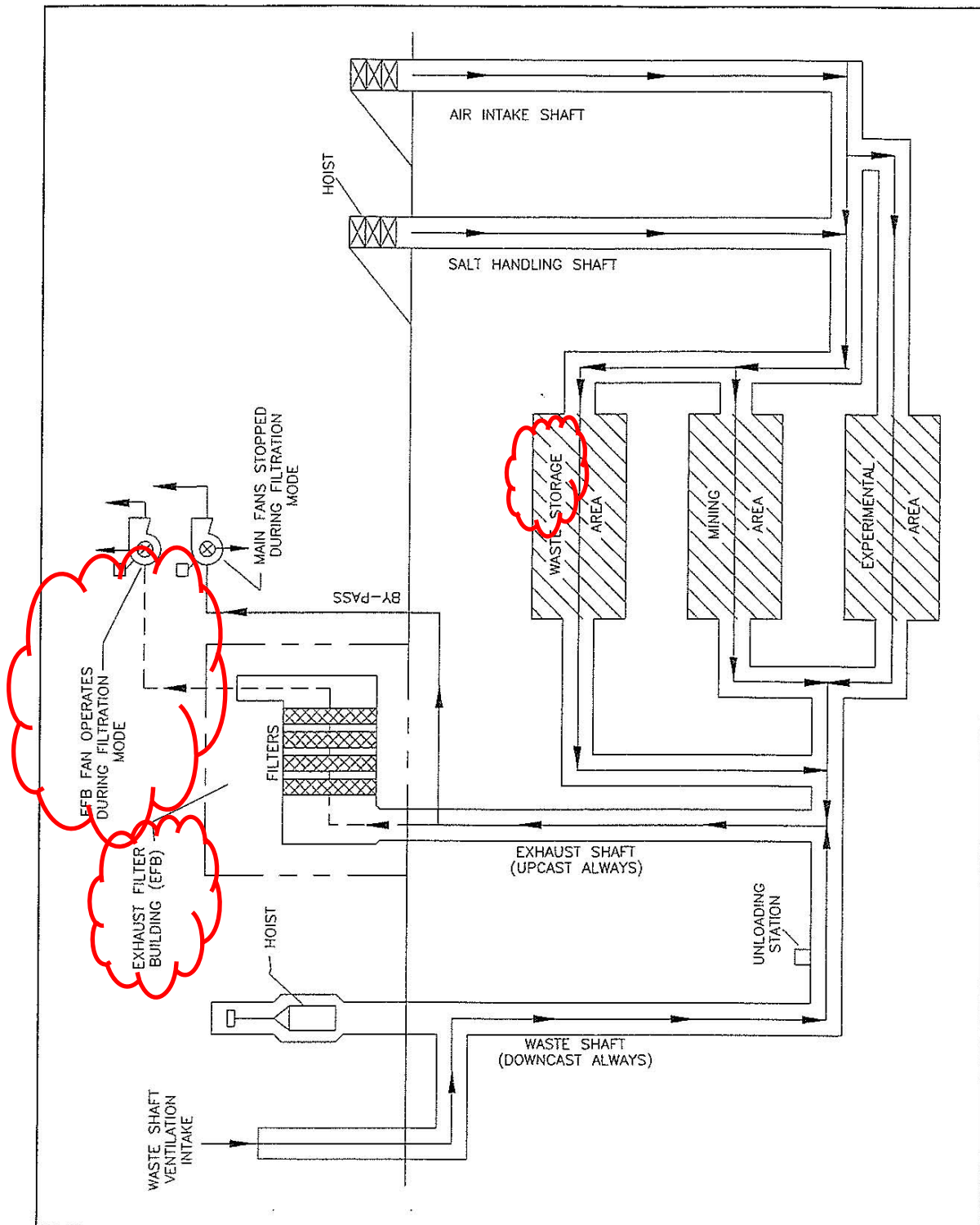
In the normal mode, two main surface exhaust fans, located near the Exhaust Shaft, will provide continuous ventilation of the underground areas. All underground flows join at the bottom of the Exhaust Shaft before discharge to the atmosphere.

Outside air will be supplied to the mining areas and the waste disposal areas through the Air Intake Shaft, the Salt Handling Shaft, and access entries. A small quantity of outside air will flow down the Waste Shaft to ventilate the Waste Shaft station. The ventilation system is designed to operate with the Air Intake Shaft as the primary source of fresh air. Under these circumstances, sufficient air will be available to simultaneously conduct all underground operations (e.g., waste handling, mining, experimentation, and support). Ventilation may be supplied by operating fans in the configurations listed in the above description of the ventilation modes.

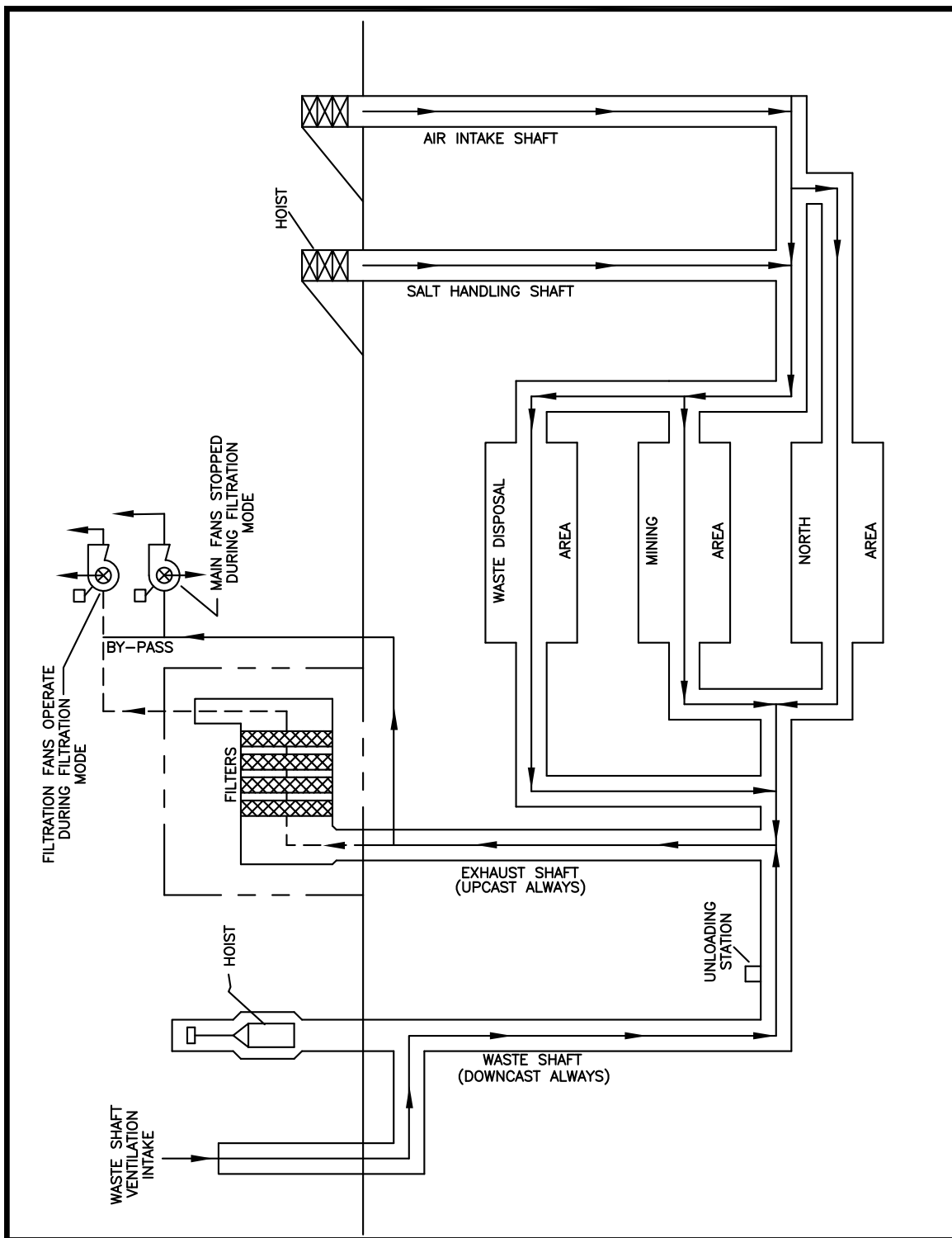
If the nominal flow of 425,000 scfm ( $12,028 \text{ m}^3/\text{min}$ ) is not available (~~i.e., e.g.,~~ only one of the main ventilation fans is available) underground operations may proceed, but the number of activities that can be performed in parallel may be limited depending on the quantity of air available. Ventilation may be supplied by operating one or ~~two~~ more of the filtration exhaust fans. To accomplish this, the isolation dampers will be opened, which will permit air to flow from the main exhaust duct to the filter outlet plenum or to the IVS. The filtration fans may also be operated to bypass the HEPA plenum. The isolation dampers of the filtration exhaust fan(s) to be employed will be opened, and the selected fan(s) will be switched on. In this mode, underground operations will be limited, because filtration exhaust fans cannot provide sufficient airflow to support the use of diesel equipment.

If the nominal flow of 425,000 scfm ( $12,028 \text{ m}^3/\text{min}$ ) is not available because ~~In the~~ facility is operating in filtration mode, the exhaust air will pass through ~~two identical~~ HEPA-filter assemblies, with ~~only one of the three Exhaust Filter Building~~ filtration fans operating (~~i.e.,~~ all other fans are stopped). This system provides a means for removing the airborne particulates that may contain radioactive and hazardous waste ~~contaminants in the reduced exhaust flow~~ particulates before they are discharged through the exhaust stack to the atmosphere. The filtration mode is activated manually or automatically if the radiation monitoring system detects abnormally high concentrations of airborne radioactive particulates (an alarm is received from the continuous air monitor in the exhaust drift of the active waste panel) or a waste handling incident with the potential for a waste container breach is observed. The filtration mode is not initiated by the release of gases such as VOCs.

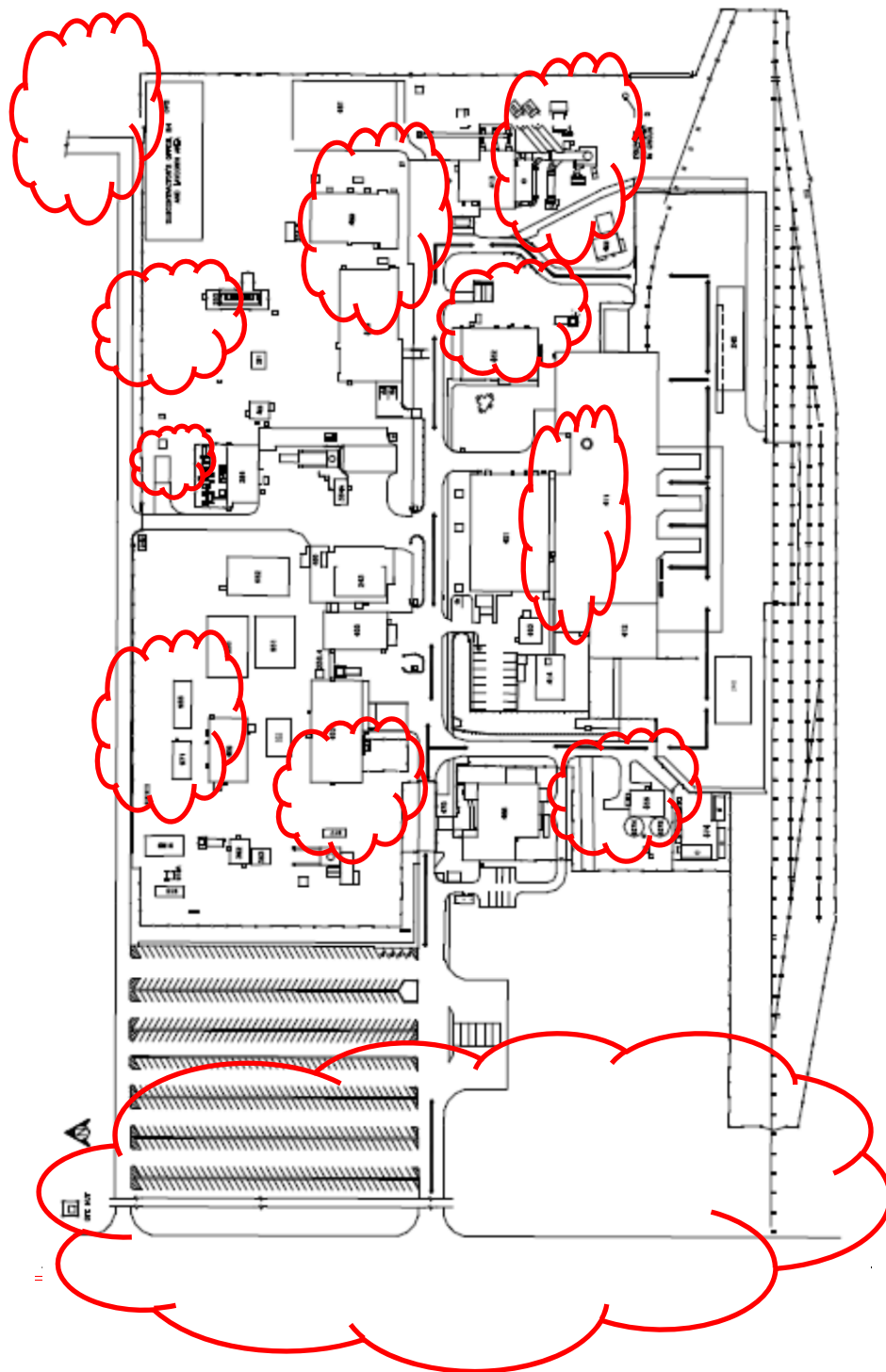
If utility power fails, the exhaust filter system goes into the fail-safe position, and the system high-efficiency particulate-air filter dampers are placed into filtration position. When power is restored by the diesel generators, a decision is made whether to remain in filtration mode and energize a filtration fan or to realign the dampers into the minimum exhaust mode. Without any indication of a radiological release, the decision is usually the latter. TRU mixed waste handling and related operations cease upon loss of utility power and are not resumed until normal utility power is returned. As specified in Part 2, all waste handling equipment will "fail safe," meaning that it will retain its load during a power outage.

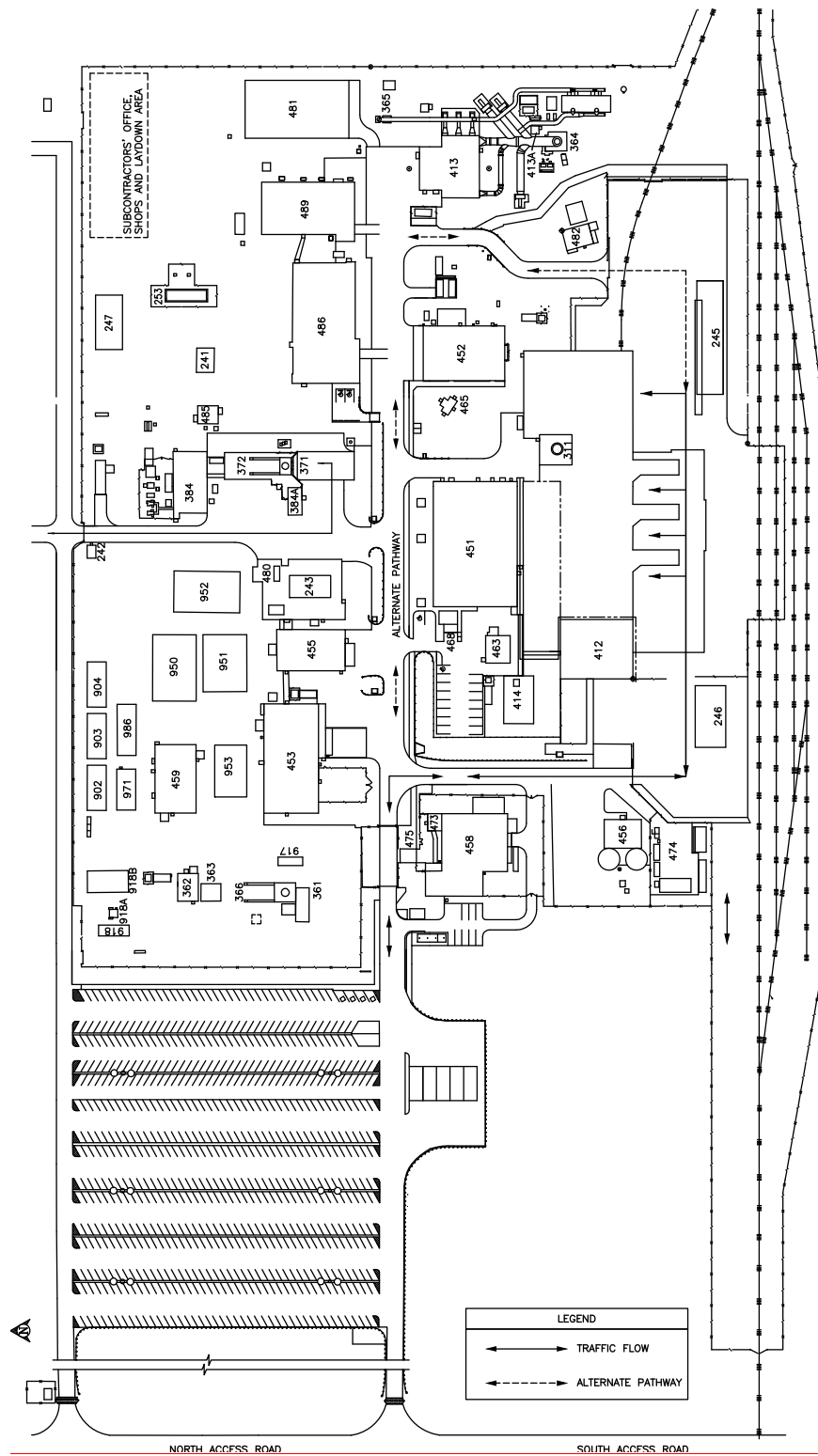




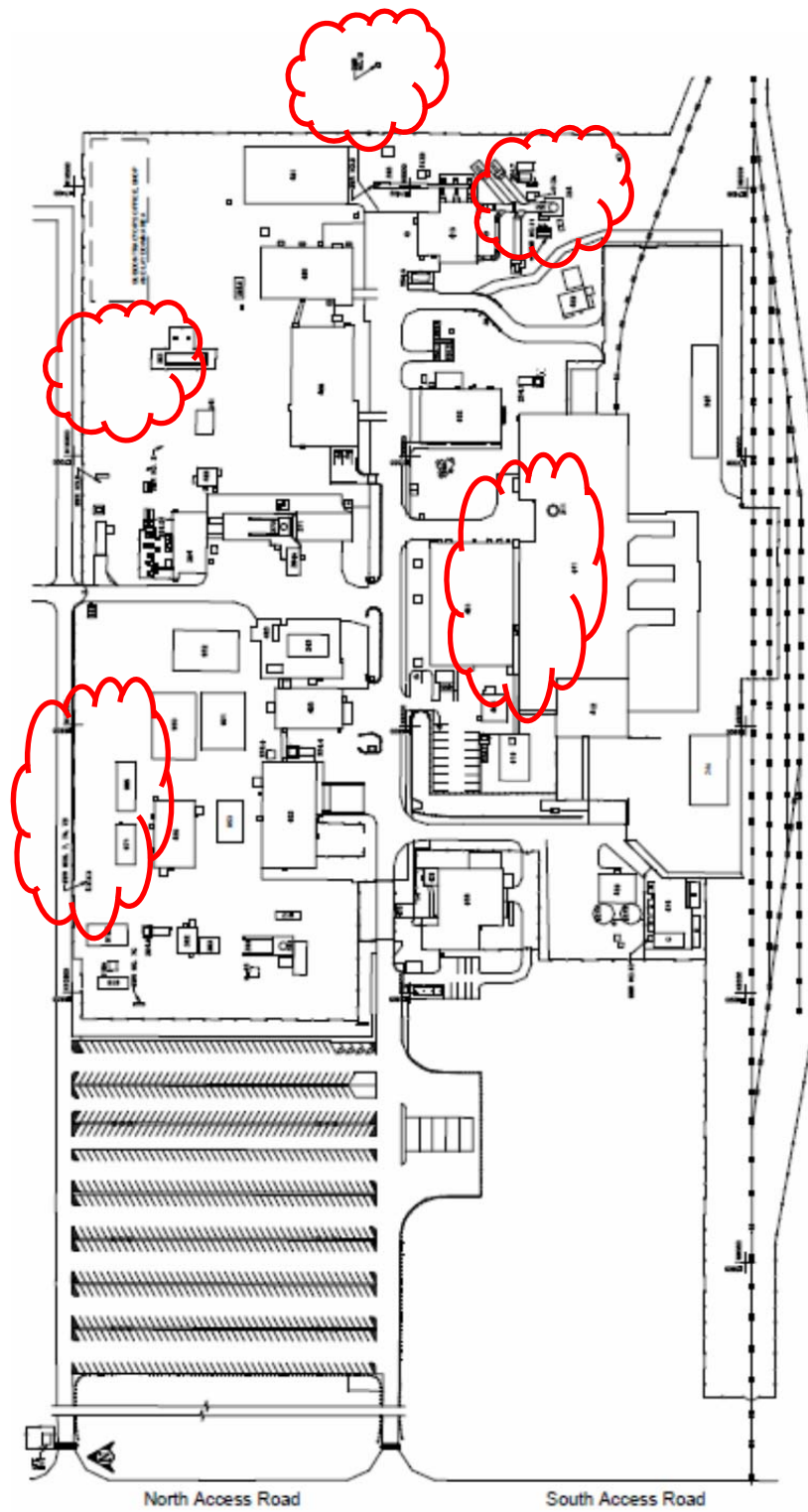


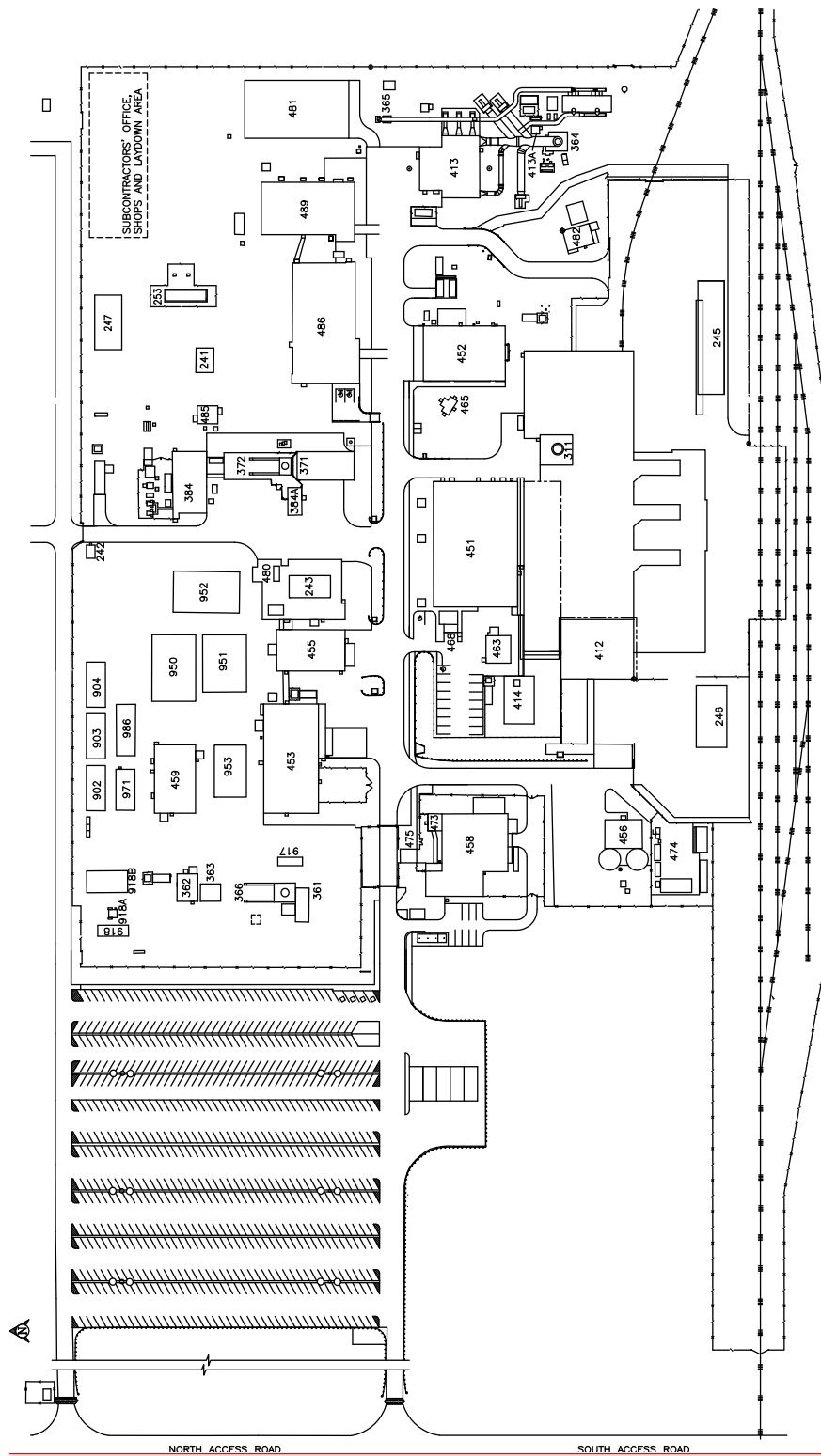
**Figure A2-9**  
**Underground Ventilation System Airflow**





**Figure A4-2**  
**WIPP Traffic Flow Diagram**



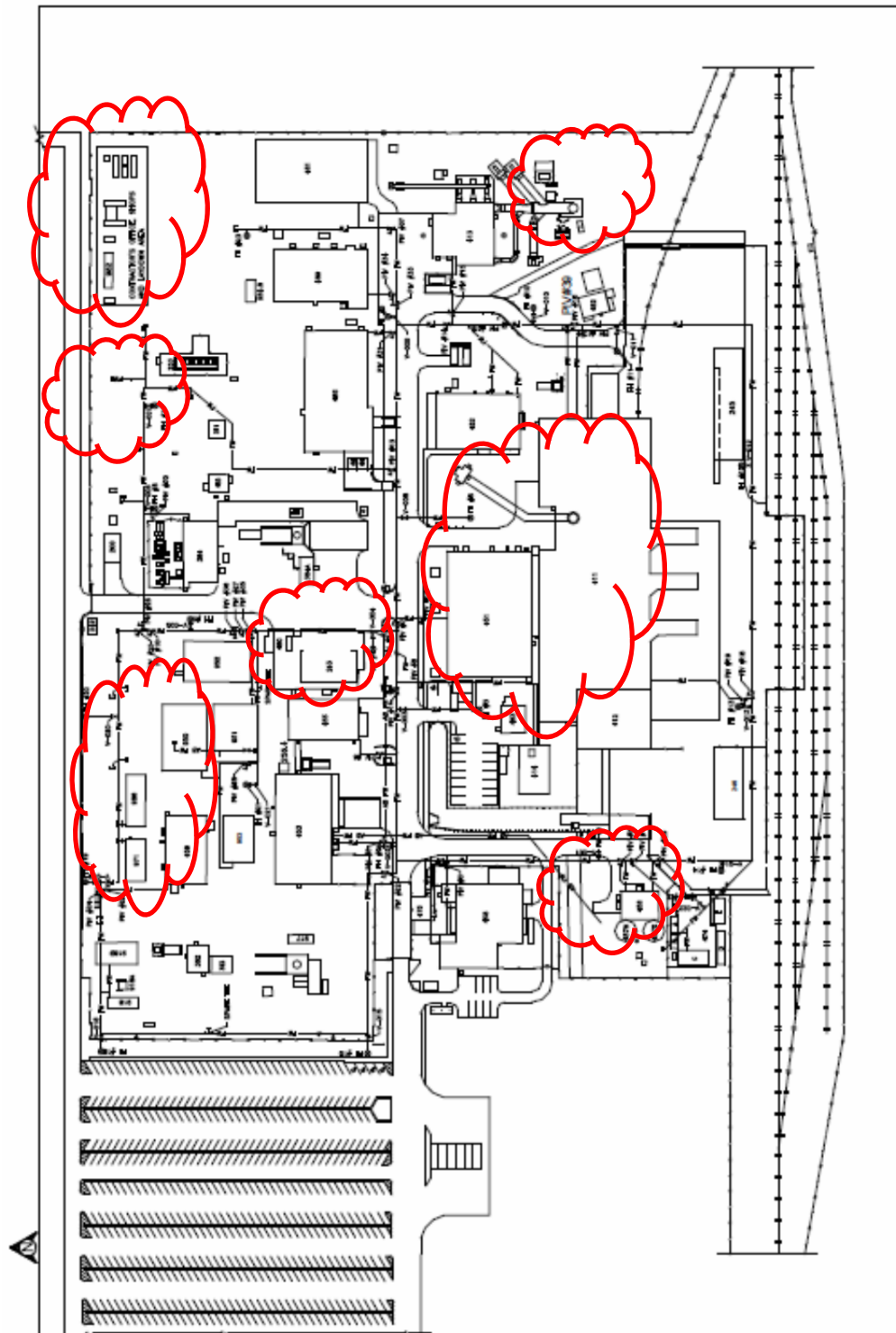


**Figure D-1**  
**WIPP Surface Structures**

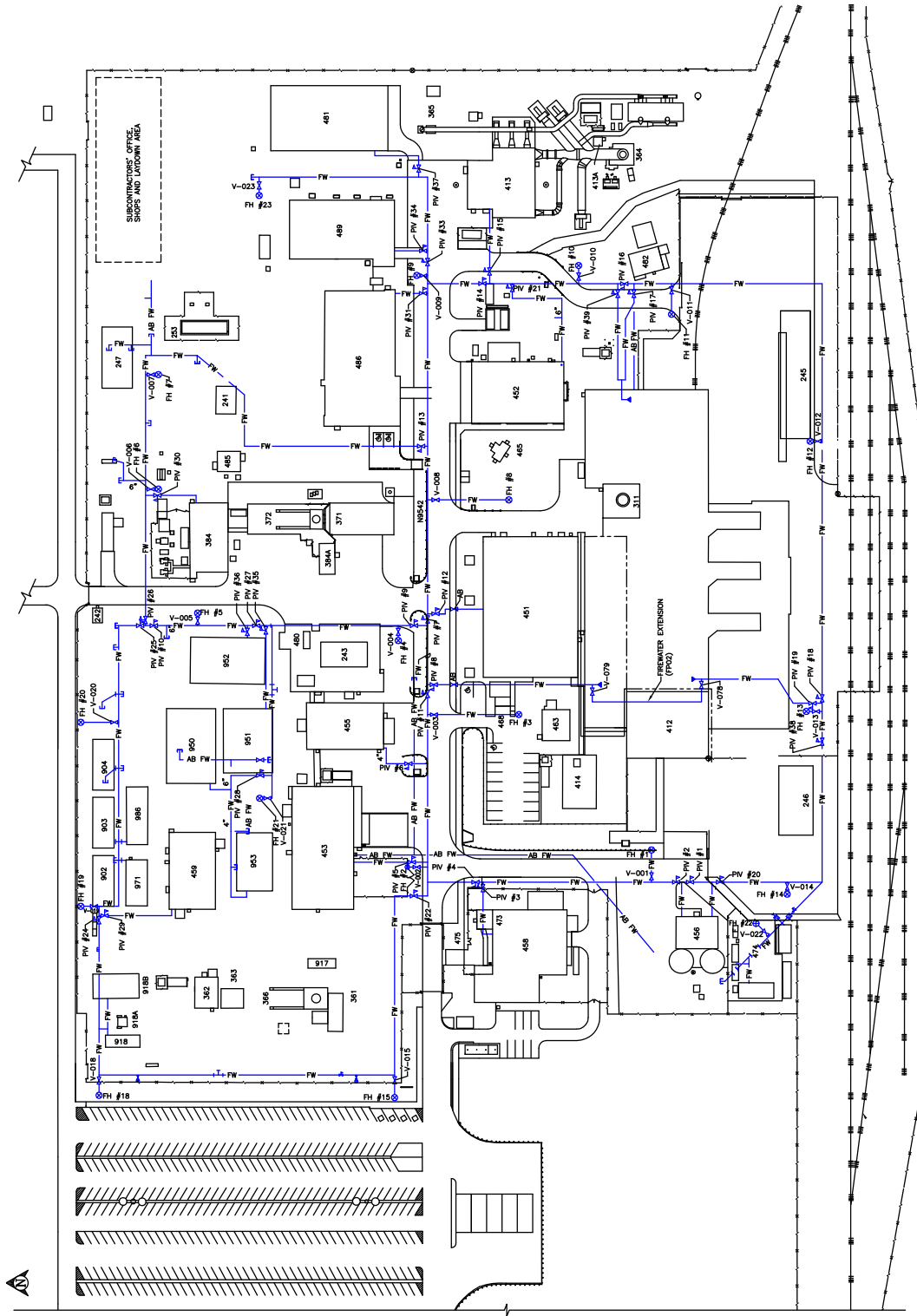
BLDG / FAC. #	DESCRIPTION	BLDG / FAC. #	DESCRIPTION	BLDG / FAC. #	DESCRIPTION
#241	EQUIPMENT SHED	#384	SALT HANDLING SHAFT HOISTHOUSE	#475	GATEHOUSE
#242	GUARDSHACK	#384A	MINING OPERATIONS	#480	VEHICLE FUEL STATION
#243	SALT HAULING TRUCKS SHELTER	#311	WASTE HANDLING BUILDING	#481	WAREHOUSE ANNEX
#245	TRUPACT TRAILER SHELTER	#412	TRUPACT MAINTENANCE BUILDING	#482	EXHAUST SHAFT HOIST EQUIP. WAREHOUSE
#246	MgO STORAGE SHELTER	#413	EXHAUST SHAFT FILTER BUILDING	#485	SULLAIR COMPRESSOR BUILDING
#253	13.8 KV SWITCHGEAR 25p-SWG15/1	#413A	MONITORING STATION A	#486	ENGINEERING BUILDING
#254.1	AREA SUBSTATION NO. 1 25P-SW15.1	#413B	MONITORING STATION B	#489	TRAINING BUILDING
#254.2	AREA SUBSTATION NO. 2 25P-SW15.2	#414	WATER CHILLER FACILITY & BLDG	#H-16	SANDIA TEST WELL
#254.3	AREA SUBSTATION NO. 3 25P-SW15.3	#451	SUPPORT BUILDING	#917	AIS MONITORING
#254.4	AREA SUBSTATION NO. 4 25P-SW15.4	#452	SAFETY & EMERGENCY SERVICES FACILITY	#918	VOC TRAILER
#254.5	AREA SUBSTATION NO. 5 25P-SW15.5	#453	WAREHOUSE/SHOPS BUILDING	#918A	VOC AIR MONITORING STATION
#254.6	AREA SUBSTATION NO. 6 25P-SW15.6	#455	AUXILIARY WAREHOUSE BUILDING	#918B	VOC LAB TRAILER
#254.7	AREA SUBSTATION NO. 7 25P-SW15.7	#456	WATER PUMPHOUSE	#950	WORK CONTROL TRAILER
#254.8	AREA SUBSTATION NO. 8 25P-SW15.8	#457N	WATER TANK 25-D-001B	#951	PROCUREMENT/PURCHASING
#254.9	480V SWITCHGEAR (25P-SWGO4/9)	#457S	WATER TANK 25-D-001A	#952	TRAILER
#255.1	BACK-UP DIESEL GENERATOR #1 25-PE 503	#458	GUARD AND SECURITY BUILDING	#953	MODULAR OFFICE COMPLEX
#255.2	BACK-UP DIESEL GENERATOR #2 25-PE 504	#459	CORE STORAGE BUILDING	#971	HUMAN RESOURCES TRAILER
#256.4	SWITCHBOARD #4 (25P-SBD04/4)	#463	COMPRESSOR BUILDING	#986	PUBLICATIONS & PROCEDURES TRAILER
#311	WASTE SHAFT	#465	AUXILIARY AIR INTAKE	SWR NO. 6	SWITCHRACK NO. 6
#351	EXHAUST SHAFT	#468	TELEPHONE HUT	SWR NO. 7	7A, 7B SWITCHRACK NO. 7, 7A, 7B
#361	AIR INTAKE SHAFT	#473	ARMORY BUILDING	SWR NO. 7C	SWITCHRACK NO. 7C
#362	AIR INTAKE SHAFT/HOIST HOUSE	#474	HAZARDOUS WASTE STORAGE FACILITY	SWR NO. 10	SWITCHRACK NO. 10
#363	AIR INTAKE SHAFT/WINCH HOUSE	#474A	HAZARDOUS WASTE STORAGE BUILDING	SWR NO. 11	SWITCHRACK NO. 11
#364	EFFLUENT MONITORING INSTRUMENT SHED A	#474B	HAZARDOUS WASTE STORAGE BUILDING	SWR NO. 12	SWITCHRACK NO. 12
#365	EFFLUENT MONITORING INSTRUMENT SHED B	#474C	OIL & GREASE STORAGE BUILDING	SWR NO. 15	SWITCHRACK NO. 15
#366	AIR INTAKE SHAFT HEADFRAME	#474D	GAS BOTTLE STORAGE BUILDING		
#371	SALT HANDLING SHAFT	#474E	HAZARD MATERIAL STORAGE BUILDING		
#372	SALT HANDLING SHAFT HEADFRAME	#474F	WASTE OIL RETAINER		

BLDG./ FAC. #	DESCRIPTION	BLDG./ FAC. #	DESCRIPTION	BLDG./ FAC. #	DESCRIPTION
#241	EQUIPMENT SHED	#384	SALT HANDLING SHAFT HOISTHOUSE	#480	VEHICLE FUEL STATION
#242	GUARDSHACK	#384A	MINING OPERATIONS	#481	WAREHOUSE ANNEX
#243	SALT HAULING TRUCKS SHELTER	#411	WASTE HANDLING BUILDING	#482	EXHAUST SHAFT HOIST EQUIP. WAREHOUSE
#245	TRUPACT TRAILER SHELTER	#412	TRUPACT MAINTENANCE BUILDING	#485	SULLAIR COMPRESSOR BUILDING
#246	MgO STORAGE SHELTER	#413	EXHAUST SHAFT FILTER BUILDING	#486	ENGINEERING BUILDING
#247	NORTH MAINTENANCE SHOP	#413A	MONITORING STATION A	#489	TRAINING BUILDING
#253	13.8 KV SWITCHGEAR 25P-SWG15/1	#413B	MONITORING STATION B	#H-16	SANDIA TEST WELL
#254.1	AREA SUBSTATION NO.1 25P-SW15.1	#414	WATER CHILLER FACILITY & BLDG	#902	TRAILER
#254.2	AREA SUBSTATION NO.2 25P-SW15.2	#451	SUPPORT BUILDING	#903	TRAILER
#254.3	AREA SUBSTATION NO.3 25P-SW15.3	#452	SAFETY & EMERGENCY SERVICES FACILITY	#904	TRAILER
#254.4	AREA SUBSTATION NO.4 25P-SW15.4	#453	WAREHOUSE/SHOPS BUILDING	#917	AIS MONITORING
#254.5	AREA SUBSTATION NO.5 25P-SW15.5	#455	AUXILLIARY WAREHOUSE BUILDING	#918	VOC TRAILER
#254.6	AREA SUBSTATION NO.6 25P-SW15.6	#456	WATER PUMPHOUSE	#918A	VOC AIR MONITORING STATION
#254.7	AREA SUBSTATION NO.7 25P-SW15.7	#457	WATER TANK 25-D-001A	#918B	VOC LAB TRAILER
#254.8	AREA SUBSTATION NO.8 25P-SW15.8	#457	WATER TANK 25-D-001B	#950	WORK CONTROL TRAILER
#254.9	480V SWITCHGEAR (25P-SWG04/9)	#458	GUARD AND SECURITY BUILDING	#951	PROCUREMENT/PURCHASING
#255.1	BACK-UP DIESEL GENERATOR #1 25-PE 503	#459	CORE STORAGE BUILDING	#952	TRAILER
#255.2	BACK-UP DIESEL GENERATOR #2 25-PE 504	#463	COMPRESSOR BUILDING	#953	OFFICE COMPLEX 953
#256.4	SWITCHBOARD #4 (25P-SBD04/4)	#465	AUXILIARY AIR INTAKE	#971	HUMAN RESOURCES TRAILER
#311	WASTE SHAFT	#468	TELEPHONE HUT	#986	PUBLICATIONS & PROCEDURES TRAILER
#351	EXHAUST SHAFT	#473	ARMORY BUILDING	SWR NO.6	SWITCHRACK NO. 6
#361	AIR INTAKE SHAFT	#474	HAZARDOUS WASTE STORAGE FACILITY	SWR NO.7,7A,7B	SWITCHRACK NO. 7, 7A, 7B
#362	AIR INTAKE SHAFT/HOIST HOUSE	#474A	HAZARDOUS WASTE STORAGE BUILDING	SWR NO.7C	SWITCHRACK NO. 7C
#363	AIR INTAKE SHAFT/WINCH HOUSE	#474B	HAZARDOUS WASTE STORAGE BUILDING	SWR NO.10	SWITCH RACK NO. 10
#364	EFFLUENT MONITORING INSTRUMENT SHED A	#474C	OIL & GREASE STORAGE BUILDING	SWR NO.11	SWITCH RACK NO. 11
#365	EFFLUENT MONITORING INSTRUMENT SHED B	#474D	GAS BODLE STORAGE BUILDING	SWR NO.12	SWITCH RACK NO. 12
#366	AIR INTAKE SHAFT HEADFRAME	#474E	HAZARD MATERIAL STORAGE BUILDING	SWR NO.16	SWITCH RACK NO. 16
#371	SALT HANDLING SHAFT	#474F	WASTE OIL RETAINER	COMPACTOR	25-H-010
#372	SALT HANDLING SHAFT HEADFRAME	#475	GATEHOUSE	BALER	25-H-011

**Figure D-1a**  
**Legend to Figure D-1**

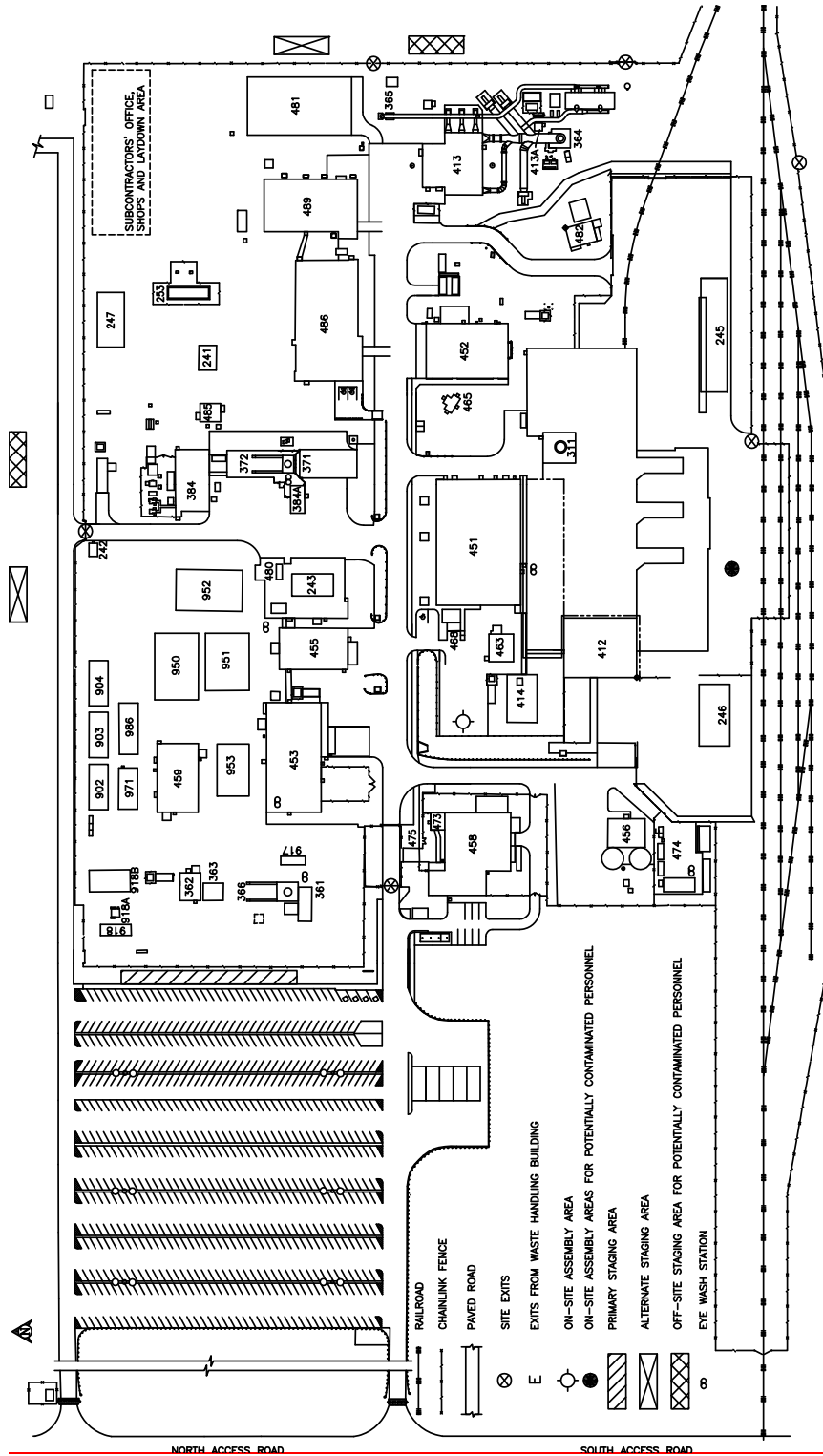






**Figure D-6**  
**Fire-Water Distribution System**





**Figure D-8**  
**WIPP On-Site Assembly Areas and WIPP Staging Areas**

**TABLE O-1**  
**Ventilation Operating Modes and Associated Flow Rates**

Mode of Operation	Flow Rate (scfm) Nominal Design Values
Normal (two main fans)	425,000
Alternate (one main fan)	260,000
Maintenance Bypass [parallel operation of main fan(s) and filtration fan(s)]	260,000 to 425,000
Reduced (two filtration fans)	120,000
Minimum (one filtration fan)	60,000
Filtration (one filtration fan <u>or one IVS fan</u> )	60,000 <u>or 23,000</u>
<u>Filtration (one filtration fan and one IVS fan or two IVS fans)</u>	<u>83,000 or 46,000</u>
<u>Filtration (one filtration fan and two IVS fans)</u>	<u>106,000</u>