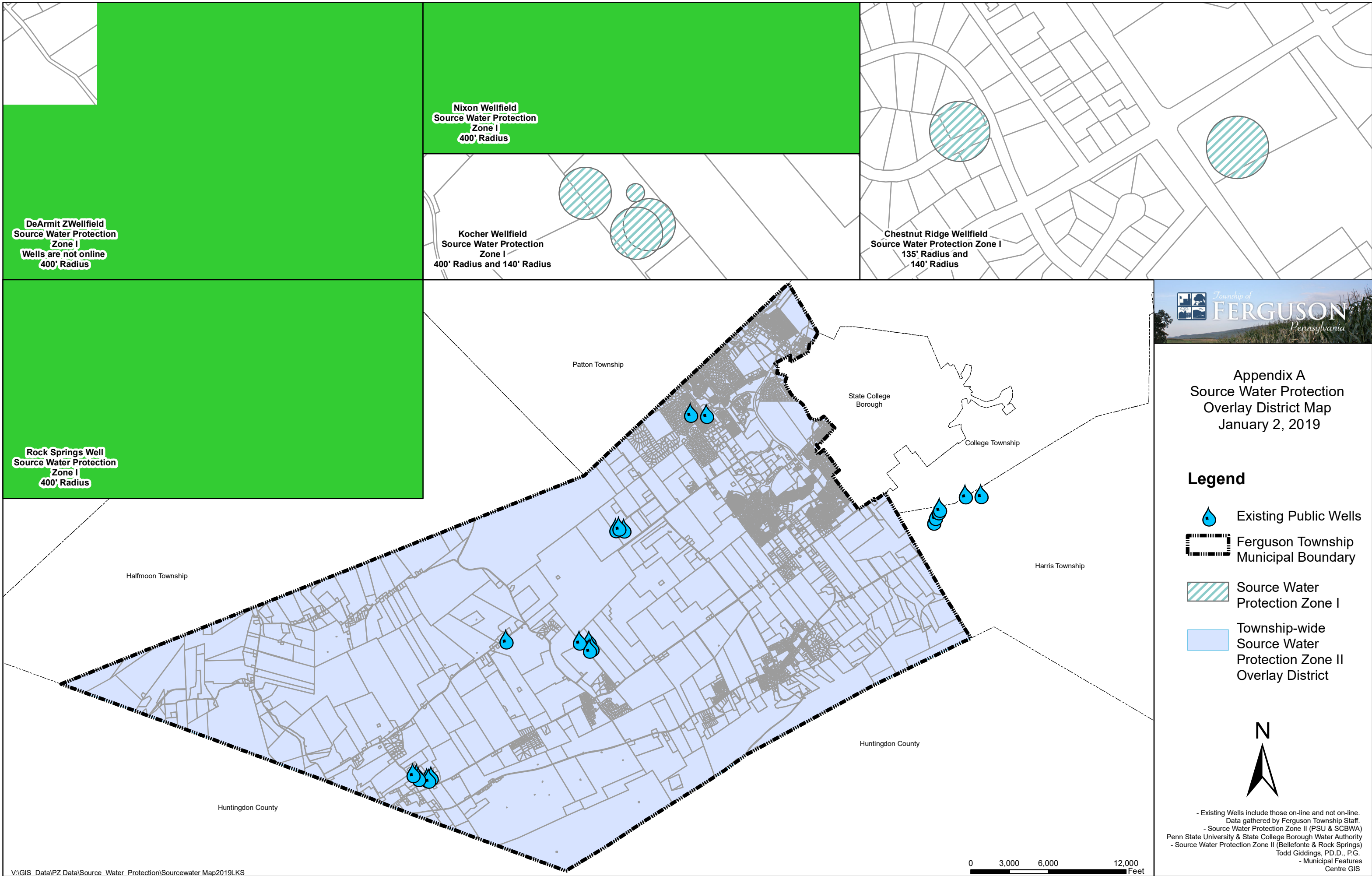


**Appendix A – Source Water Protection Overlay
District Map**



DeArmit Z Wellfield
Source Water Protection
Zone I
Wells are not online
400' Radius

Nixon Wellfield
Source Water Protection
Zone I
400' Radius

Kocher Wellfield
Source Water Protection
Zone I
400' Radius and 140' Radius





Chestnut Ridge Wellfield
Source Water Protection Zone I
135' Radius and
140' Radius

Rock Springs Well
Source Water Protection
Zone I
400' Radius



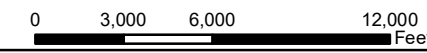
Appendix A
Source Water Protection
Overlay District Map
January 2, 2019

Legend

-  Existing Public Wells
-  Ferguson Township Municipal Boundary
-  Source Water Protection Zone I
-  Township-wide Source Water Protection Zone II Overlay District



- Existing Wells include those on-line and not on-line.
 Data gathered by Ferguson Township Staff.
 - Source Water Protection Zone II (PSU & SCBWA)
 Penn State University & State College Borough Water Authority
 - Source Water Protection Zone II (Bellefonte & Rock Springs)
 Todd Giddings, P.D., P.G.
 - Municipal Features
 Centre GIS



**Appendix B – Guidelines for the Development and Implementation
of Environmental Emergency Response Plans**

"APPENDIX B"



**COMMONWEALTH OF PENNSYLVANIA
Department of Environmental Protection**

**Guidelines for the Development and Implementation
of Environmental Emergency Response Plans**

400-2200-001

**PA Department of Environmental Protection
PO Box 2063
Harrisburg, PA 17105-2063**

**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

DOCUMENT ID: 400-2200-001

TITLE: Guidelines for the Development and Implementation of Environmental Emergency Response Plans

EFFECTIVE DATE: April 2001
Minor changes were made throughout the document on September 7, 2004
Minor changes were made throughout the document on August 6, 2005

AUTHORITY The Federal Clean Water Act, the Pennsylvania Clean Streams Law (35 P.S. §§691.1-691.1001), the Pennsylvania Solid Waste Management Act, the Pennsylvania Storage Tank Act, the Oil Pollution Act and regulations promulgated thereunder.

POLICY: To plan and provide effective and efficient response to emergencies and accidents for any situation dealing with the public health, safety and the environment.

PURPOSE: To improve and preserve the purity of the Waters of the Commonwealth by prompt adequate response to all emergencies and accidental spills of polluting substances for the protection of public health, animal and aquatic life and for recreation.

BACKGROUND: This document is being revised to add regulatory references in Table 1 and Procedures, Item A. Revisions were made to Procedures, Items A, C, D and F. Some telephone contact names, telephone contact numbers and bureau names have been updated in Appendices IV and V. Bureau and division names have been changed on the cover page of the Addendum.

APPLICABILITY: This document provides a one stop requirement to comply with the state and federal laws and regulations dealing with emergency planning and response and pollution prevention and contingency planning requirements (plans such as PIP, SPCC, SWPPP, etc.) for all activities to be carried out in the Commonwealth.

DISCLAIMER: The policies and procedures outlined in this guidance are intended to supplement existing requirements. Nothing in the policies or procedures shall affect regulatory requirements.

The policies and procedures herein are not an adjudication or a regulation. There is no intent on the part of DEP to give the rules in these policies that weight or deference. This document establishes the framework within which DEP will exercise its administrative discretion in the future. DEP reserves the discretion to deviate from this policy statement if circumstances warrant.

PAGE LENGTH: 48 Pages

LOCATION: Vol. 33, Tab 56

**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**Guidelines for the Development and Implementation of
Environmental Emergency Response Plans**

This document (400-2200-001) provides a one stop requirement to comply with the state and federal laws and regulations dealing with emergency planning and response and pollution prevention and contingency planning requirements (i.e., PIP, SPCC, SWPPP, etc) for all activities to be carried out in the Commonwealth.

The use of the document and compliance with it are required as part of applying for any permit or requesting approval of any action that has a potential to cause pollution of the Commonwealth's air, water and land resources. The manual is also available to download from the DEP website at: www.dep.state.pa.us.

The document may be revised from time to time or as the need arises due to changes in state/federal laws and regulations. If you have suggestions for improvement to this document or desire that future revisions be sent to you, please provide the following information to the Department.

Date this request made: _____

Name _____

Street or Route _____

City _____

State _____ Zip Code _____

Telephone _____ E-mail _____

This manual could be improved by _____

- Yes, send me future revisions to the manual
- Yes, please notify me of any revisions for downloading from DEP web site.

Send to: Director, Environmental Emergency Response
Pennsylvania Department of Environmental Protection
Field Operations Deputate, RCSOB 16th Floor
P.O. Box 2063
Harrisburg, PA 17105-2063

Guidelines for the Development and Implementation of Environmental Emergency Response Plans

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Guidelines for the Development and Implementation of Environmental Emergency Response Plans

INTRODUCTION

A wide variety of industrial activities, both manufacturing and commercial, exist in Pennsylvania. Many of these activities have the potential for causing environmental degradation or endangerment of public health and safety through accidental releases of toxic, hazardous, or other polluttional materials.

In recognition of this fact, several State and Federal regulatory programs have been developed to encourage the use of preventive approaches to deal with unwarranted releases of toxic, hazardous, or other pollutants to the environment.

Table 1 lists these programs and defines the statutory and regulatory basis for each. A more detailed summary of each program is shown in Table 2 which illustrates the similarities among them. A review of the regulations and guidelines pertaining to each program more clearly illustrates these similarities. The main differences between the programs are the types of industrial activities and the nature of the polluting materials addressed.

The Department's objective is to consolidate the similarities of the State and Federal pollution incident prevention and emergency response programs into one overall program. Industrial and commercial installations which have the potential for causing accidental pollution of air, land or water, or the endangerment of public health and safety are required to develop and implement **Preparedness, Prevention and Contingency (PPC) Plans** which encompass the other Departmental program requirements.

A PPC Plan is required for any NPDES Application for Storm Water Discharge General Permits or Water Management Permits. A special addendum has been added to the document for NPDES Stormwater discharge applicants.

In the case of regulated storage tank facilities, with an aggregate aboveground storage capacity > 21,000 gallons, a **Spill Prevention Response (SPR)** plan is required. This SPR plan, in **addition to the contents** of a PPC plan, requires a specific downstream notification requirement. Those storage tank facilities that already have a PPC plan need only update the PPC plan and include the downstream notification requirement.

The Department strongly recommends that regulated facilities consolidate all required plans into one single document. For those facilities required to develop plans under SARA Title III, the Department will support deviation from the format suggested in this guidance document to ensure consistency with the SARA Title III plans provided that all required information is included in the one plan.

TABLE 1
STATE AND FEDERAL POLLUTION INCIDENT
PREVENTION AND EMERGENCY RESPONSE PROGRAMS

Plan	Implemented By	State and Federal Laws Which Apply	State and Implementing Regulations	Effective Date of Regulations
Spill Prevention Control and Countermeasure (SPCC)	U.S. EPA*	Federal Clean Water Act	40 CFR 112	1973
Preparedness, Prevention, and Contingency (PPC), or Contingency Planning	Pa. DEP as part of the Hazardous Waste Program	Pa. Solid Waste Management Act	25 Pa. Code Ch. 262a, 264a, 265a, 266a	5/01/99
	Pa. DEP as part of the Residual Waste Program	Pa. Solid Waste Management Act	25 Pa. Code Ch. 287, 288, 289, 293, 295 and 297	7/4/92
	Pa. DEP as part of the Municipal Waste Program	Pa. Solid Waste Management Act	25 Pa. Code Ch. 273, 277, 279, 281, 283 and 284	4/9/88
	Pa. DEP as part of the Oil and Gas Program ¹	Pa. Clean Streams Law, Pa Solid Waste Management Act	25 Pa. Code Ch. 91.34, 25 Pa. Code Ch. 78	1971
	Pa. DEP as part of the Water Quality Program.	PA Clean Streams Law	25 PA Code Chapter 91.34	1971
	Pa. DEP and US EPA as part of the NPDES Program	Federal Clean Water Act.	40 CFR 125 Subpart K	5/19/80
Spill Prevention Response (SPR) Plan	Pa. DEP as part of the Storage Tank Program	Pa. Storage Tank and Spill Prevention Act	Act 32-1989	8/89
Facility Response Plan (FRP)	US EPA* US Coast Guard	Oil Pollution Act	40 CFR 112	1990

(1) Complete information on PPC Plans required under the Oil and Gas Program can be found in the *Oil & Gas Operators Manual* available from the Bureau of Oil and Gas Management.

* Additional information is available from US EPA Region III, Philadelphia, PA, (215) 814-3292.

**TABLE 2
COMPARISON OF STATE AND FEDERAL POLLUTION
INCIDENT PREVENTION AND EMERGENCY RESPONSE PROGRAMS**

Aspect	Preparedness, Prevention, and Contingency (PPC) (Water)	Preparedness, Prevention, and Contingency (PPC) (Waste)	Spill Prevention Response (SPR) Plan	Spill Prevention Control, and Countermeasures (SPCC)
Purpose	Prevention/Control of accidental discharge of polluting materials to surface waste or groundwater	To minimize and abate hazards to human health and the environment from fires, explosions, or release of solid wastes to air, soil, or surface water	Prevention/Control of accidental discharge of regulated substances and downstream notification requirements	Prevention of accidental discharges of oils and hazardous substances into the waters of the United States
Types of Industrial Activities Affected	All industrial activities having potential for accidental pollution	Activities which generate, store, recycle, treat, transport, or dispose of solid wastes, activities associated with drilling and operating oil and gas wells	Activities pertaining to above ground storage facilities with >21,000 gallons of regulated substances	Non-transportation related activities with potential for discharge of oil and hazardous substances
Activities Covered?	Transportation, storage, processing of raw materials, intermediates, products, fuels, wastes	Generation, storage, transport, recycle, treatment, disposal of hazardous wastes; processing and disposal of residual or municipal wastes; road spreading operations, brine disposal	Storage and handling of regulated substances	Production, storage, processing, refining, handling, transferring, distributing
What Pollution Materials are Addressed?	All polluting materials	Any hazardous, residual, municipal, or medical wastes	Hazardous Substances and Petroleum	Oil and hazardous substances defined pursuant to Sec. 311 of the Clean Water Act

**TABLE 2 (Cont.)
COMPARISON OF STATE AND FEDERAL POLLUTION
INCIDENT PREVENTION AND EMERGENCY RESPONSE PROGRAMS**

Aspect	Preparedness, Prevention, and Contingency (PPC) (Water)	Preparedness, Prevention, and Contingency (PPC) (Waste)	Spill Prevention Response (SPR) Plan	Spill Prevention Control, and Countermeasures (SPCC)
Hazards Addressed	Container leaks, ruptures, spills, floods, power failures, mechanical failure, human error, strikes, vandalism	Same plus fires and explosions	Same	Same
Plan Includes	Study of past incidents, training, preventive maintenance, housekeeping, security, backup equipment, internal, external communicator, spill containment, drainage controls, inspections	Same plus additional local notification, emergency coordination, and evacuation requirements	Same, plus downstream notification requirement	Same
Amendments to Plan Required for Significant Facility or Operational Changes?	Yes	Yes	Yes	Yes
Emergency Incident Report Required?	Yes	Yes	Yes	Yes
Annual Notification/Updated	No	No	Yes	No

I. PROCEDURES FOR DEVELOPMENT AND REVIEW OF ENVIRONMENTAL EMERGENCY RESPONSE PLANS

A. Who Must Develop These Plans?

PPC

In general, any manufacturing or commercial installation which has the potential for causing accidental pollution of air, land, or water or for causing endangerment of public health and safety through accidental release of toxic, hazardous, or other polluting materials must develop, maintain, and implement a PPC Plan.*

Manufacturing or commercial waste water dischargers, which are required to obtain NPDES permits, must develop PPC plans in order to satisfy the requirements of Chapter 101 of the Department's Rules and Regulations. In addition to NPDES discharges there are a variety of other non-NPDES manufacturing or commercial installations which may be directed by the Department to develop PPC plans on a case-by-case basis.

Manufacturing or commercial installations which generate hazardous waste, or which involve treatment, recycling, storage, or disposal of hazardous waste must develop PPC plans in conformance with Chapter 262a, 264a, and 265a of the Department's regulations. Generators, of between 100 and 1,000 kilograms of hazardous waste per month, may not be required to have a PPC plan if they comply with the Preparedness and Prevention requirements in the regulations. (Note: hazardous waste transporters must also develop PPC plans under Chapter 263a. A separate PPC guidance document has been developed for transporters.)

A person who owns or operates a residual waste disposal or processing facility must develop a PPC plan under Chapters 287, 288, 289, 293, 295, and 297 of the residual waste regulations.

A person who owns or operates a municipal waste disposal or processing facility must develop a PPC plan under Chapters 273, 277, 279, 281, 283, and 284 of the municipal waste regulations.

In regards to the Oil and Gas Program, PPC Plans are required under the Clean Streams Law for approval of road spreading operations, drilling and operating oil and gas wells, and brine disposal wells. These plans are required under 25 Pa. Code Chapters 91.34 and 78.55. In addition, PPC Plans are required for NPDES and Part II Water Quality Management Permits. The Plan requirements are contained in the Oil and Gas Operators Manual

SPR

Facility owners with aboveground storage tank aggregate capacity > 21,000 gallons of a regulated substance.

*Note: PPC plans developed by hazardous waste generators and/or treatment, recycling, storage or disposal facilities, which would not otherwise be required to obtain NPDES or Water Quality Protection Part II permits, generally need only to address the PPC planning requirements as they pertain to their hazardous waste activity (unless otherwise directed by the Department).

B. How Do Existing Emergency Response Plans Fit in With Newer Program Requirements?

It should be noted that oil-related Spill Prevention, Control, and Countermeasure (SPCC) plans, which are or have been developed pursuant to EPA's oil-related SPCC regulations, should also be considered as part of an installation's overall PPC plan. Some installations may elect to integrate their oil-related SPCC plan with the PPC or SPR plan elements, or may elect to keep it as a separate chapter, or appendix, to the PPC or SPR plan.

Likewise, the additional downstream notification requirement of an SPR plan can be added to an existing plan to satisfy the "Storage Tank and Spill Prevention Act," providing all required elements of a SPR plan are completed for the existing plan.

Other types of existing emergency response plans should be handled in a similar manner.

C. Development and Submission of Plans for Review and Approval.

The plan must be developed in accordance with good engineering practice by someone who is familiar with the day-to-day operations at the site. If an outside consultant is employed for this purpose, he must be authorized to conduct a thorough study of the material storage, handling, usage, disposal, and waste management practices conducted at the installation.

Section II outlines the general content and format of PPC and SPR plans.

In general, plans should be submitted for review and approval by the Department in conjunction with applications for NPDES Water Quality Management, Storage Tank, Residual Waste Management, Municipal Water Management, or Hazardous Waste Management permits, as follows:

1. NPDES dischargers should submit (2) copies of the PPC plan for review, along with the NPDES application materials. All Stormwater General Permit applicants must complete and implement the Plans before or at the same time as application submission.

Facilities which are not required to obtain NPDES permits, but which must obtain Water Quality Protection Part II permits, should submit (2) copies of the PPC plan for review, along with the Part II permit application.

2. Residual waste disposal/processing/transfer/composting facilities are required to develop and submit a PPC Plan as part of the residual waste permit application. Facilities permitted under permit-by-rule are required to develop PPC Plans and maintain them on site.
3. Municipal waste disposal/processing, transfer/composting facilities are required to develop and submit a PPC plan as part of the municipal waste permit application. Facilities permitted under permit-by-rule are required to develop PPC plans and maintain them on site.

Other facilities which are not normally required to obtain NPDES or WQM Part II permits may also be required to develop and submit a PPC Plan, should conditions warrant, pursuant to Chapter 92 of the Department's regulations.

4. Hazardous waste generators are required to develop PPC plans and to maintain them on site. They are required to submit PPC plans to the Department for review upon request by the Department.
5. Hazardous waste treatment, recycling, storage, or disposal facilities should submit one copy of the PPC plan for each copy of the Hazardous Waste Part B permit application being submitted. In these situations the PPC plan is considered as part of the overall Hazardous Waste Part B permit application. Final PPC plan approval will accompany the issuance of a Hazardous Waste Management permit.
6. Aboveground storage tank facilities (with aggregate capacity >21,000 gallons) are required to submit one copy of the SPR plan to the appropriate regional DEP office for review. This plan must be developed in consultation with county and municipal emergency management agencies. Facilities that already have a PPC plan can update the PPC plan with the downstream notification requirement to satisfy this obligation.
7. Oil and gas well operators must prepare and implement a plan describing the measures to prevent pollution of the surface water and groundwater and for the control and disposal of polluttional substances and waste. A copy of the plan must be provided to the Department upon request.

D. Distribution of the Plan

A copy of the plan and any subsequent revisions must be maintained on-site. All members of the installation's organization for developing, implementing, and maintaining the plan and all emergency coordinators must review the plan and be thoroughly familiar with provisions.

In addition to the site copy and the copy submitted to the Department, other facility plans should be made available to the following agencies, to the extent which they may become involved in an actual emergency (see Description of PPC Plan Elements, Part E.1.):

Submission of copies to all of these entities is a legal requirement for hazardous waste facilities. Bulk aboveground storage tank facilities are required to submit copies to emergency management agencies, as noted below.

1. County and local Emergency Management Agencies. (This is a legal requirement for storage tank facilities with >21,000 gallons of above ground storage.)
2. Local Fire Service Agencies and/or Hazmat Team
3. Local Emergency Medical Service Agencies
4. Local Police

E. Implementation of the Plan

The provisions of the plan must be carried out whenever emergency situations arise which endanger public health and safety, or the environment.

F. Revisions of the Plan

The PPC Plan must be periodically reviewed and updated, if necessary. At minimum, this must occur when:

1. Applicable Department regulations are revised;

2. The plan fails in an emergency;
3. The installation changes in its design, construction, operation, maintenance, or other circumstances, in a manner that materially increases the potential for fires, explosions or releases of toxic or hazardous constituents; or which changes the response necessary in an emergency;
4. The list of emergency coordinators changes;
5. The list of emergency equipment changes; or
6. As otherwise required by the Department.

In addition to the above, the SPR or PPC plans must also be revised upon the removal or addition of a storage tank(s).

II. PLAN CONTENT AND FORMAT

General Instructions

- A. Table 3 outlines the basic elements of a PPC and SPR Plan. Each of these elements is further described in this guidance document. Certain plan elements may not be entirely applicable or appropriate for a specific manufacturing or commercial installation. In these cases the person preparing the plan should act accordingly and should provide a brief explanation as to why the plan element(s) in question is not applicable or appropriate.
- B. The most important thing to remember in developing your plan is that the actual effectiveness of the plan will depend upon its simplicity and readability.

Plans which are composed of several volumes of overly detailed narrative discussions and specifications tend to discourage the reader or user. Diagrams, charts, tables, maps, and plans must be easily readable and understandable, particularly in times of an actual emergency.

The plan should additionally be indexed or tabbed in such a way that the key portions which pertain to emergency response can be quickly referred to.

TABLE 3
ELEMENTS AND FORMAT OF A PPC AND SPR PLAN

- A. Description of Facility**
 - 1. Description of the Industrial or Commercial Activity
 - 2. Description of Existing Emergency Response Plans
 - 3. Material and Waste Inventory
 - 4. Pollution Incident History
 - 5. Implementation Schedule for Plan Elements Not Currently in Place

- B. Description of How Plan is Implemented by Organization**
 - 1. Organizational Structure of Facility for Implementation
 - 2. List of Emergency Coordinators
 - 3. Duties and Responsibilities of the Coordinator
 - 4. Chain of Command

- C. Spill Leak Prevention and Response**
 - 1. Pre release Planning
 - 2. Material Compatibility
 - 3. Inspection and Monitoring Program
 - 4. Preventive Maintenance
 - 5. Housekeeping Program
 - 6. Security
 - 7. External Factor Planning
 - 8. Employee Training Program

- D. Countermeasures**
 - 1. Countermeasures to be Undertaken by Facility
 - 2. Countermeasures to be Undertaken by Contractors
 - 3. Internal and External Communications and Alarm Systems
 - 4. Evacuation Plan for Installation Personnel
 - 5. Emergency Equipment Available for Response

- E. Emergency Spill Control Network**
 - 1. Arrangements with Local Emergency Response Agencies
 - 2. Notification Lists
 - 3. Downstream Notification Requirement for Storage Tanks

DESCRIPTION OF PLAN ELEMENTS

A. Description of Facility

1. Description of the Industrial or Commercial Activity

- Briefly describe the nature of the industrial or commercial activity which occurs at the site. Include a general discussion of products manufactured, manufacturing processes used, wastes generated, etc.
- On a copy of a 7 1/2 minute USES map show the following:
 - Facility location
 - Facility name
 - Facility ID #
 - Name of 7 1/2 minute USES quadrangle
 - County
 - Location of facility site and site boundaries
 - Location of each storage tank
 - Location of surface drainage courses leading away from the site, and major surface streams and tributaries near the site
 - Location of any known public and private surface water intakes downstream from the site
- Include a drawing which shows the following:
 - General layout of the site
 - Property boundaries
 - Areas occupied by manufacturing or commercial activities
 - Raw materials and product storage
 - Loading and unloading operations
 - High risk areas where spills and leaks most likely would occur
 - Waste handling, storage, and treatment facilities
 - Drains, pipes, and channels which lead away from potential leak or spill areas
 - Outfall pipes which discharge to surface streams or drainage channels
 - Secure and open-access areas
 - Entrance and exit routes to the site

2. Description of Existing Emergency Response Plans

- Briefly describe any existing plan, which has been previously developed by the installation, for the purpose of pollution incident prevention or emergency response preparedness. If the plan has previously been

approved by the Department, this should also be noted, along with the date of approval.

- Provide a brief discussion as to how the existing plan relates to the overall PPC or SPR Plan being developed. The degree to which the existing plan encompasses some, or all, of the PPC/SPR Plan elements should also be noted. When the PPC has been developed and an SPR plan is needed, the downstream notification requirement information can be added as an addendum.

Similar plans which have been prepared for agencies other than DEP should also be described and cross-referenced to the maximum extent possible to the PPC Plan elements so as to minimize rewriting. For example, an oil related Spill Prevention Control and Countermeasure (SPCC) Plan which has been developed to comply with EPA's regulations 40 CFR 112, may be treated as an appendix, or as a separate chapter, to the overall PPC/SPR Plan for an installation.

3. Material and Waste Inventory

- Identify and list by common chemical name and trade name, the locations, sources and quantities of raw chemical materials, commercial chemical products, manufacturing chemical intermediates, and process wastes managed at the installation which have the potential for causing environmental degradation or endangerment of public health and safety through accidental releases. Requests for confidentiality of this information will be handled in accordance with Department regulations.

Detailed descriptions must be available for materials that have a high potential for spills, discharges, explosions, or fires (such as those stored in bulk storage). Materials that have a low potential for spills, discharges, explosions, or fires (such as those used and stored in small quantities in a laboratory) should be minimally detailed.

This information should be used to evaluate the prevention, containment, mitigation, cleanup, and disposal measures which would be used in the event of a spill, discharge, explosion, or fire. As new materials are added to the list, their pollution potential should be evaluated.

- Attach to this plan the Material Safety Data Sheet (MSDS) for each material in storage (the MSDS must be completed to the extent it meets the requirements of 29 CFR 1910.1200(9) Hazardous Communications Standard Requirements).

4. Pollution Incident History

- List the previous pollution incidents, the date, the material or waste spilled, approximate amount spilled, environmental damage, and action taken to prevent a recurrence.

An important criteria in determining the effectiveness of the plan and its implementation is the history of incidents at the installation. A history of no incidents suggest that the practices and procedures at the site are effective. For a site with a history of incidents, it is important to

investigate the reasons for the spills and the response of the company in minimizing the potential for their recurrence.

5. Implementation Schedule for Plan Elements Not Currently in Place

- Provide a list of any missing or incomplete aspects of the plan and a time schedule when they will be implemented.

An implementation schedule, or any elements of the plan not currently in place, must be developed. Each missing or incomplete aspect of the plan should be addressed and discussed within the applicable elements of the plan. Missing or incomplete aspects must be implemented as soon as possible and in conformance with all Department regulations and requirements.

B. Description of How Plan is Implemented by Organization

1. Organizational Structure of Facility for Implementation

- Describe the organizational structure for implementation of the plan.
- Describe the duties and responsibilities of the individuals within the organization that will implement the plan.

Each installation must develop a permanent organizational structure for developing, implementing, and maintaining the plan. The exact nature and make-up of this structure will vary considerably, depending upon the size and complexity of the installation.

For example, a large manufacturing company may either establish a formal preparedness-response committee, or it may assign this responsibility to an existing organization within the company, such as a safety committee or a preventive maintenance group. A small manufacturing or commercial facility may only have one or two individuals responsible for developing and implementing the plan. However, the preparedness-response organization, regardless of its size, must be given both the responsibility and authority by management for developing, implementing, and maintaining the plan.

The main duties and responsibilities of the preparedness-response organizational structure should include identification of materials and wastes handled (materials inventory), identification of potential spill sources (risk assessment), establishment of spill-reporting procedures, visual inspection programs review of past incidents and spills, and countermeasures utilized. In addition, the preparedness-response organizational structure should be responsible for coordination needed to implement the goals of the plan, coordination of the activities for spill cleanup, notification of authorities and establishment of training and educational programs for installation personnel.

The preparedness response organizational structure should have the overall responsibility for periodically reviewing and evaluating the plan and instituting appropriate changes at regular intervals. The organizational structure should also be responsible for the review of new construction and process changes at an installation relative to the plan.

The organizational structure should also evaluate the effectiveness of the overall plan and make recommendations to management on related matters.

2. List of Emergency Coordinators

- Provide an up-to-date list of names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinator. Where more than one is listed, one must be named as the primary coordinator, and others shall be listed in the order in which they will assume responsibility as alternates.

At all times there must be at least one employee either on the installation's premises or on-call with the responsibility for coordinating all emergency response measures. The emergency coordinator must be thoroughly familiar with all aspects of the plan, all operations and activities, the location and characteristics of all materials handled, the location of all records and the lay out of the installation. In addition, this individual should have the authority to commit the resources necessary to carry out the plan.

3. Duties and Responsibilities of the Coordinator

- Describe the duties and responsibilities of the emergency coordinator specific to your installation or activity in the event of an imminent or actual emergency.

During an emergency, the emergency coordinator should activate alarm systems, notify emergency response agencies, identify the problem, assess the health or environmental hazards, and take all reasonable measures to stabilize the situation. The emergency coordinator should also be responsible for follow-up activities after the incident such as treating, storing, or disposing of residues and contaminated soil, decontamination and maintenance of emergency equipment, and submission of any reports. Appendix I describes some example duties and responsibilities of the emergency coordinator.

4. Chain of Command

- Provide an internal list, by position, of key employees that must be contacted in the event of an emergency or spill.

List the positions, office telephone extensions, and home phone numbers (if applicable) of key employees, in the order of responsibility that would be contacted in the event of an emergency or spill.

This list, along with the notification procedure, should be posted on bulletin boards or other conspicuous locations around the installation.

C. Spill Leak Prevention and Response

1. Pre-release Planning

- Describe the sources and areas where potential spills and leaks may occur, the direction of flow of spilled materials, and the pollution incident prevention practices (see Appendix II) specific to the source or area.

- Provide separate drawings, plot plans (or include in the general layout drawings), showing sources and quantities of materials and wastes. Sources and areas where potential spills may occur, and pollution incident prevention practices (see Appendix II).

The plan should include a prediction of the direction of the flow of materials spilled as a result of equipment failure, accident, or human error. Particular care and attention should be paid to evaluating the following: raw materials storage, in plant transfer, process and materials handling, intermediary and product storage (if applicable), truck and rail car loading and unloading, and waste handling and storage. Describe and identify valving for the storage tank and system to be used to partition off each storage tank in case of a release.

Liquid storage areas must have containment capacity sufficient to hold the volume of the largest single container or tank, plus a reasonable allowance for precipitation based on local weather conditions and plant operations. Containment systems must be sufficiently impervious to contain spilled material or waste until it can be removed or treated. Tank or container materials must be compatible with the material or waste stored.

Pollution incident prevention practices to eliminate contaminated runoff, leaching, or windblowing must be implemented in non liquid storage areas. Provisions must be made to contain or manage contaminated run-off or leachate from these areas.

Piping, processing, and materials handling equipment at in-plant transfer, process, and materials handling areas must be designed and operated so as to prevent spills. Containment practices should be instituted at processing and handling areas including floor drains, storm sewers, or drainage swales to prevent an accidental discharge. Protection such as covers or shields to prevent windblowing, spraying, and releases from pressure relief valves from causing a discharge should be provided as appropriate.

Truck and rail car loading and unloading areas must have sufficient containment capacity to hold the volume of the largest tank truck or rail car loaded or unloaded at the installation, plus a reasonable allowance for precipitation. Any overhead piping must have adequate clearance over roadways. Containment systems must be sufficiently impervious to contain spilled material or waste until it can be removed or treated.

2. Material Compatibility

- Summarize the engineering practices followed with regard to material compatibility such as materials of construction, corrosion, etc.

Engineering practices with regard to material compatibility normally consist of an appraisal of the compatibility of construction materials of tanks, pipelines, etc., with their contents; the reaction of materials or wastes when intentionally or inadvertently mixed or combined; and, the compatibility of a container such as a storage tank or pipeline with its environment.

Specific consideration should be given to the procedures and practices delineating the mixing of materials and prohibiting mixing of incompatible materials which may result in fire, explosion, or unusual corrosion. Thorough cleaning of storage vessels and equipment before reuse should be standard practice to ensure that there is no residual incompatible with the next or later materials used. Coatings or cathodic protection should be considered for protecting buried pipelines or storage tanks from corrosion.

3. Inspection and Monitoring Program

- Describe the type and frequency of inspections and monitoring for leaks or other conditions that could lead to spills or emergency situations.

Typical inspections include the following: pipes, pumps, valves, and fittings for leaks; tanks for corrosion; tanks supports and foundations for deterioration; chemical material piles for windblowing; evidence of spilled materials along drainage ditches; effectiveness of housekeeping practices; damage to shipping containers; leaks, seeps, or overflows at waste treatment, storage, or disposal sites; etc. Areas that should be inspected include the following: storage, loading and unloading, transfer pipelines, waste treatment facilities, and disposal sites. The use of an inspection checklist may be useful in an inspection and monitoring program.

Routine monitoring should be performed to determine the physical conditions and liquid levels in tanks, the quality of plant site runoff in diked areas, etc., either by manual testing or in-situ instrumentation. Monitoring should be used to initiate a warning of the need for immediate corrective action to prevent a spill or other emergency condition. Monitoring systems should be used in conjunction with a communications or alarm system to immediately notify personnel of abnormal conditions.

An inventory system should also be considered for keeping track of those materials having the greatest potential for causing problems due to leaks, spills, or mishandling.

As a minimum, the frequency of inspection and monitoring must be in accordance with the applicable Department regulations and permits. Appendix II includes some additional inspection and monitoring examples.

4. Preventive Maintenance

- Describe the aspects of the preventive maintenance program for equipment and systems relating to conditions that could cause environmental degradation or endangerment of public health and safety.

Describe the procedures for the correction of those conditions by adjustment, repair, or replacement before the equipment or system fails.

A good preventive maintenance program includes the following:
(1) identification of equipment and systems to which the program should apply; (2) periodic inspections of identified equipment and systems; (3) periodic testing of equipment and systems, (such as routine calibration

of environmental monitoring equipment); (4) appropriate adjustment, repair, or replacement of parts; and (5) complete recordkeeping of the preventive maintenance activities, inspection and test results, calibration dates, repairs, replacement, and adjustments to the applicable equipment and systems.

5. Housekeeping Program

- Identify the areas and the type of housekeeping practices that should apply to reduce the possibility of accidental spills and safety hazards to plant personnel.

Examples of good housekeeping include the following: neat and orderly storage of chemicals; prompt removal of small spillage; regular refuse pickup and disposal; maintenance of dry, clean floors by use of brooms, vacuum cleaners, or cleaning machines; and, provisions for the storage of containers or drums to keep them from protruding into open walkways, pathways, or roads.

Dry chemicals should be swept or cleaned up to prevent possible washdown to drains and drainage ditches or windblowing of the material to other areas of the plant. Small liquid accumulations on the ground or on a floor in a building should be cleaned up to prevent discharge or transport to other areas. See Appendix I for additional examples.

6. Security

- Describe the security procedures employed at the installation to prevent accidental or intentional entry that could result in a violation of Departmental regulations, or injury to persons or livestock.

Security systems described in the plan should address, as necessary: fencing; lighting; vehicular traffic control; access control; visitors passes; locked entrances; vandalism; locks on drain valves and television monitoring. Security procedures must be in accordance with applicable Department regulations.

7. External Factor Planning

- Describe the possible effects of power outages, strikes, floods, snowstorms, etc., and the action to be taken to alleviate any resulting effects to public health and safety or the environment.

8. Employee Training Program

- Summarize the training program given to employees which will enable them to understand the processes and materials with which they are working, the safety and health hazards, the practices for preventing, and the procedures for responding properly and rapidly to spills.

At a minimum, the training program must be designed to ensure that personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment systems including, where applicable: procedures for using, inspecting, repairing, and replacing emergency and monitoring equipment; key parameters for

automatic cut-off systems; communications and alarm systems; response to fires and explosions; site evacuation procedures; and shut down of operations.

In addition the employee training program should address other aspects of the preparedness-response program such as preventive maintenance, inspection and monitoring, housekeeping practices, etc. The training program must be designed and conducted in accordance with applicable Department regulations. Records of the employees' attendance in the training program should be included in personnel files.

D. Countermeasures

1. Countermeasures to be Undertaken by Facility

- Provide specific countermeasures which will be undertaken by facility personnel in the event of a release. Include valve activations, equipment isolations, flow diversions, boom deployment, and any other activities which will be undertaken to halt the migration of the contaminant off site and to mitigate the consequence of the release.

2. Countermeasures to be Undertaken by Contractors

- Provide a list of emergency response contractors, phone numbers, and the services they will provide.

The services of nearby contractors should be investigated and arrangements made for the prompt performance of contractual services on short notice. Equipment suppliers should be contacted to determine the availability and means of delivery of equipment needed for removing pollution or hazards to the public health and safety. Describe arrangements with these contractors and the time frame in which they can respond with required equipment.

3. Internal and External Communications and Alarm Systems

- Describe the internal communications or alarm used to provide immediate emergency instruction (voice or signal) to installation personnel.
- Describe the external communications or alarm system used to summon emergency assistance from local police or fire departments.

Examples of communications or alarm systems are: hand held two way radios; CB radios; telephones; fire or police alarms; PA systems; beeper or voice pagers, etc.

4. Evacuation Plan for Installation Personnel

- Describe the evacuation plan for facility personnel where there is a possibility that evacuation could be necessary.

The plan must describe signals to be used to begin evacuation, primary evacuation route, and alternate evacuation routes (in cases where primary routes could be blocked by releases of hazardous materials, wastes, gases, or fires). Periodic drills should be conducted to evaluate the effectiveness of the plan.

5. Emergency Equipment Available for Response

- Provide an up-to-date list of available emergency equipment. The list must include the location, a physical description, and a brief description of the intended use and capabilities of each item on the list.
- Describe the procedures for maintenance and decontamination of emergency equipment.

All installations should have equipment available to allow personnel to respond safely and quickly to emergency situations. Some examples of emergency equipment are portable fire extinguishers, fire control equipment (including special extinguishing equipment such as that using foam, inert gas, or dry chemicals), spill control equipment, decontamination equipment, self contained breathing apparatus, gas masks, and emergency tool and patching kits. See Appendix III for more examples.

All equipment must be tested and maintained as necessary to assure its proper operation in time of emergency. After an emergency, all equipment must be decontaminated, cleaned, and fit for its intended use before normal operations resume.

E. Emergency Spill Control Network

1. Arrangements with Local Emergency Response Agencies and Hospitals

- Provide a list of local emergency response agencies and hospitals. Include the phone numbers and describe arrangements concerning the emergency services they will provide.

Arrangements must be made, as appropriate, to inform local emergency response agencies, and hospitals concerning the type of materials or wastes handled at the installation and the potential need for services. Arrangements should be made which will designate who will be the primary emergency response agency and who will provide support services during emergencies.

Efforts should be made to familiarize police, fire departments, emergency response teams, and the County Emergency Management Coordinator with the layout of the installation, the properties and dangers associated with the hazardous materials handled, places where personnel would normally be working, entrances to roads inside the facility, and the possible evacuation routes. At a minimum, this requirement must be in accordance with applicable Department regulations.

2. Notification Lists

- Provide a list of agencies and phone numbers that must be contacted in the event of an emergency or spill.

A list must be developed for notifying State, local, and Federal regulatory agencies of all spills. Such a list should include, as applicable: PA DEP (see Appendix IV); PA Emergency Management Agency; County Health Department; County EMA; PA Fish Commission; the National Response

Center (U.S. EPA and U.S. Coast Guard); local police and fire departments; the local sewage treatment plant (for discharges to sewer system); and downstream public water supplies, industrial water users, and recreation areas.

3. **Downstream Notification Requirement for Storage Tanks**

- This is an additional requirement of storage tank facilities with aggregate aboveground storage >21,000 gallons of regulated substances. It can be added to an updated PPC plan so as to meet the SPR plan requirement.

The requirement includes a 20-mile downstream Notification List, an annual notification requirement, and an annual Notification List update. Lists of downstream users may be developed from information provided by your county Emergency Management Agency.

Downstream Notification List shall include all municipalities and surface water users within 20 downstream miles of the tank facility. Surface water users include drinking water companies, and industries that utilize surface water intakes; and municipalities include each county, township, city and borough located within this downstream corridor. This list is to be developed via assistance from the local emergency management agency. (Refer to Appendix V for an example.)

Annual Written Notification must be given to downstream water users and municipalities on the Notification List. This written notification at a minimum must include a detailed inventory of the type and quantity of material in storage at the facility.

Annual Update must be developed each year in cooperation with the local Emergency Management Agency. This Notification List update will show any changes in contacts, users, telephone #'s needed for emergency downstream notification and the annual written notification. Also, any changes in the emergency response organization (such as telephone numbers) should be updated.

APPENDIX I
EXAMPLES OF AN EMERGENCY COORDINATOR'S DUTIES
AND RESPONSIBILITIES

Whenever there is an imminent or actual emergency situation, the emergency coordinator must immediately:

1. Activate facility alarms or communications systems, where applicable, to notify facility personnel; and
2. Notify local emergency response agencies including the Department.

Whenever there is an emission or discharge, fire, or explosion, the emergency coordinator must immediately identify the character, exact source, amount, and areal extent of emitted or discharged materials. He may do this by observation or review of records and, if necessary, by chemical analysis.

Concurrently, the emergency coordinator must assess possible hazards to human health or the environment that may result from the emission or discharge, fire, or explosion. This assessment must consider both direct and indirect effects of the emission, discharge, fire, or explosion.

If the emergency coordinator determines that the installation has had an emission, discharge, fire, or explosion which would threaten human health or the environment, he must immediately notify the applicable local authorities including the county emergency management agency and indicate if evacuation of local areas may be advisable; and immediately notify the Department in accordance with Appendix IV; the National Response Center; and the Pennsylvania Emergency Management Agency; and report the following:

- a. Name of the person reporting the incident
- b. Name and location of the installation
- c. Phone number where the person reporting the spill can be reached
- d. Date, time, and location of the incident
- e. A brief description of the incident, nature of the materials or wastes involved, extent of any injuries, and possible hazards to human health or the environment
- f. The estimated quantity of the materials or wastes spilled, and
- g. The extent of contamination of land, water, or air, if known.

When there is a release from an aboveground storage tank which threatens the water supply of downstream users, these downstream users (on the Downstream Notification List) must be notified within 2 hours of the release. Priority for notification is by closest proximity to the release site.

During an emergency, the emergency coordinator must take all reasonable measures necessary to ensure that fire, explosion, emission, or discharge do not occur, reoccur, or spread to other materials or wastes at the installation. These measures shall include where applicable, stopping manufacturing processes and operations, collecting and containing released materials or wastes, and removing or isolating containers.

If the installation stops operations in response to a fire, explosion, emission, or discharge, the emergency coordinator must ensure that adequate monitoring is conducted for leaks, pressure

buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

Immediately after an emergency, the emergency coordinator, with Departmental approval, must provide for treating, storing, or disposing of residues, contaminated soil, etc., from an emission, discharge, fire, or explosion at the installation.

The emergency coordinator must insure that in the affected areas of the installation, no material or waste incompatible with the emitted or discharged residues is processed, stored, treated, or disposed of until cleanup procedures are completed; and, all emergency equipment listed in the plan is cleaned and fit for its intended use before operations are resumed.

Within 15 days after the incident, the installation must submit a written report on the incident to the Department. The report must include the following:

- a. Name, address, and telephone number of the individual filing the report
- b. Name, address, and telephone number of the installation
- c. Date, time, and location of the incident
- d. A brief description of the circumstances causing the incident
- e. Description and estimated quantity by weight or volume of materials or wastes involved
- f. An assessment of any contamination of land, water, or air that has occurred due to the incident
- g. Estimated quantity and disposition of recovered materials or wastes that resulted from the incident, and
- h. A description of what actions the installation intends to take to prevent a similar occurrence in the future.

APPENDIX II POLLUTION INCIDENT PREVENTION PRACTICES

Pollution incident prevention practices can be divided into the following four categories: prevention, containment, mitigation and ultimate disposition. The listings below provide specific examples of each category.

1. PREVENTION

Visual Observations of:

- Storage facilities
- Transfer pipelines
- Loading and unloading areas
- Waste handling and storage areas

Detailed Inspections of:

- Pipes, pumps, valves, and fittings for leaks
- Tanks for corrosion (internal and external)
- Dry material or waste stockpiles for windblowing
- Tanks supports or foundations for deterioration
- Walls for stains
- Drainage ditches and areas around old tanks for evidence of spilled materials
- Primary or secondary containment for deterioration
- Housekeeping practices
- Shipping containers for damage
- Material or waste conveyance systems for leaks, spills, or overflows
- Integrity of stormwater collection systems
- Waste storage, treatment, or disposal sites for leaks, seeps, and overflows

Monitoring

- Liquid-level detectors
- Alarm systems
- Pressure and temperature gauges
- Analytical testing instrumentation
- Pressure drop shut-off devices
- Flow meters
- Valve positioning indicators
- Equipment operational lights
- Excess-flow valves
- Automatic runoff diversion devices
- Routine sample collection (including groundwater and monitoring wells)
- Redundant instrumentation
- Records (all monitoring results/findings)

Nondestructive Testing

- Hydrostatic pressure tests
- Acoustical emission tests
- Radiographic tests
- Magnetic particle tests
- Liquid Penetration
- Records of tank wall thicknesses and results of all testing

2. CONTAINMENT

Secondary Containment

- Dikes
- Curbs
- Depressed areas
- Storage basins
- Sumps
- Drip pans
- Liners
- Double piping
- Sewer collection systems

Flow Diversion

- Trenches
- Drains
- Graded pavement
- Grating
- Overflow structures
- Sewers
- Culverts

Vapor Control

- Water spray
- Vapor space
- Vacuum exhaust

Dust Control

- Hoods
- Cyclone collectors
- Bag-type collectors
- Filters
- Negative-pressure systems
- Water spraying

Sealing

- Foamed plastic compounds used for plugging leaks in tanks

3. MITIGATION

Physical Clean-up

- Brooms
- Shovels
- Plows

Labeling

- U.S. DOT or National Fire Protection Association's (NFPA) designation on tanks and pipelines
- Color coding of tanks and pipelines
- Warning signs

Vehicle Positioning

- Physical barriers (e.g., wheel chocks)
- Underlying drains
- Designated loading and unloading areas

Covering

- Tarpaulins over outdoor dry waste or material stockpiles
- Buildings or roofs over outside processes or stockpiles
- Vegetation, rock, or synthetic covering on surface impoundments

Pneumatic and Vacuum Conveying

- Loading and unloading by air pressure or vacuum
- Safety relief valves
- Dust collectors
- Air slide trucks and rail cars

Preventive Maintenance

- Periodic inspections
- Periodic testing to determine soundness of system
- Identification of equipment and systems that need to be upgraded, repaired, or replaced
- Appropriate adjustment, repair, or replacement of parts
- Complete recordkeeping of all repairs, upgrading, replacements, and adjustments; and all testing findings/results after system modifications were made

Good Housekeeping

- Neat and orderly storage of chemicals
- Prompt removal of small spillage
- Regular garbage pickup and disposal
- Maintenance of dry, clean floors by use of brooms, vacuum cleaners, etc.
- Maintenance of proper spacing for pathways and walkways between containers and drums
- Stimulation of employee interest in good housekeeping

Employee Training Programs

- Materials Inventory Systems
- Material Safety Data Sheets

Mechanical Clean up

- Vacuum systems
- Pumps
- Pump/bag system

Chemical Clean up

Sorbents

- activated carbon
- polyurethane and polyolefin spheres, beads, and foam belts
- amorphous silicate glass foam
- clay
- sawdust

Gelling agents

polyelectrolytes
polyacrylamide
butylstyrene copolymers
polyacrylonitrile
polyethylene oxide

Foams

rockwood alcohol
protein
fluoroprotein
aqueous film-forming foam
polar liquid foam
surfactant-based foam

Volatilization

distillation
stripping
evaporation

Carbon absorption
Coagulation/precipitation
Neutralization
Ion exchange
Chemical oxidation
Biological treatment

4. ULTIMATE DISPOSITION

Thermal oxidation
Land disposal
Recycle
Recover
Reuse
Detoxification

APPENDIX III EXAMPLES OF EMERGENCY EQUIPMENT

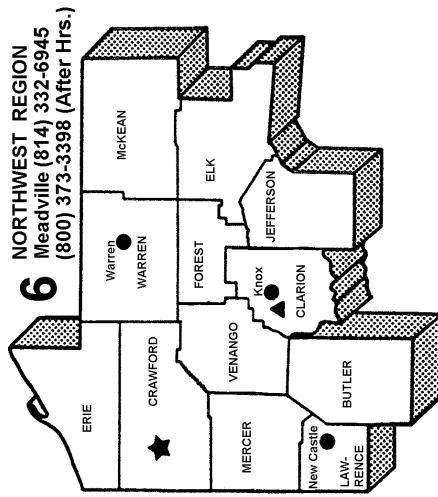
Special equipment is often required and may be needed quickly in an emergency. Examples include the following:

Aerial ladder	Forklift
Absorbant materials	Fuel Supply
Accident investigation kit	Geiger counter
Air compressor	Generator trailer
Air supply, for breathing equipment	Heaters, portable
Backhoe	Helicopter
Basket stretchers	Hydraulic spreader jacks
Bulldozer	Inhalator
Bullhorn	Jack hammer
Camera/photo equipment	Jacks
Cellar pump	Ladder Truck
Chain hoist	Lighting equipment, portable
Chain saw	Medical supplies
Chemical neutralizers	Metal saw (power)
Crane	Public address system
Cutters (power)	Radio
Decontamination equipment with a clean Resuscitator water supply (70-80°F)	Resuscitator
Ejector - smoke	Sand supply
Elevated platform truck	Self-contained breathing apparatus (SCBA)
Explosimeters	Self-contained underwater breathing apparatus (SCUBA)
Fans	Submersible pump
Firefighting equipment	Tank truck
First aid supplies	Tool box
Foam concentrate supply	Welding/cutting equipment
Foam generators	Water pump

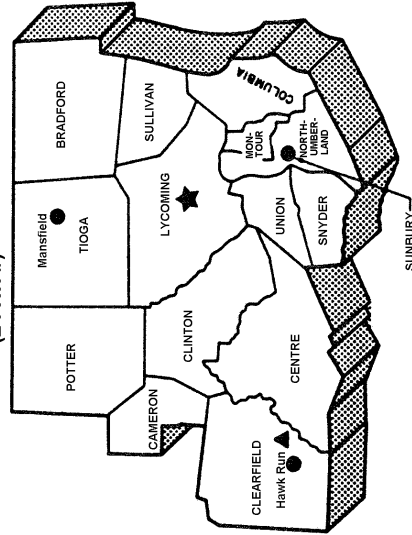
**APPENDIX IV
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
EMERGENCY NOTIFICATION NUMBERS**

**STATEWIDE EMERGENCY NOTIFICATION NUMBER (800) 541-2050 (PA ONLY)
OR (717) 787-4343**

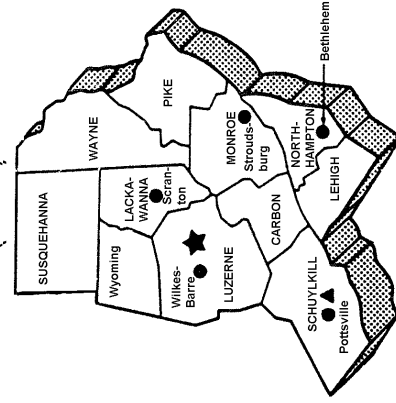
(To Be Used If There Is A Problem In Contacting The Region)



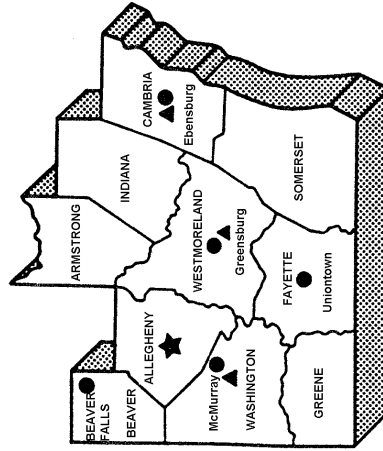
6 NORTHWEST REGION
Meadville (814) 332-6945
(800) 373-3398 (After Hrs.)



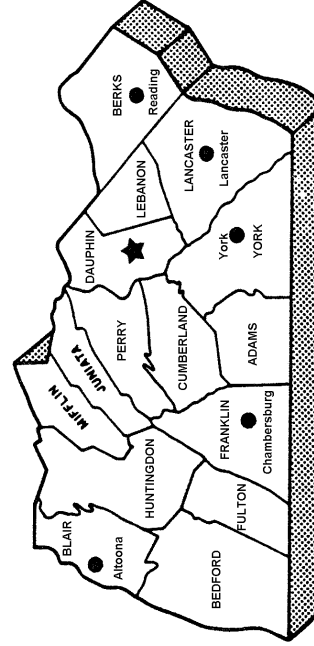
4 NORTHCENTRAL REGION
Williamsport (570) 327-3636
(24 Hr. #)



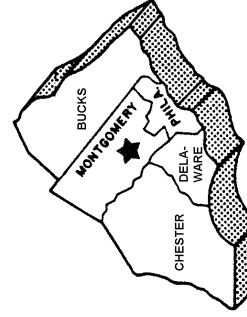
2 NORTHEAST REGION
Wilkes-Barre (570) 826-2511
(24 Hr. #)



5 SOUTHWEST REGION
Pittsburgh (412) 442-4000
(24 Hr. #)



3 SOUTHCENTRAL REGION
Harrisburg (717) 705-4700
(877) 333-1904



1 SOUTHEAST REGION
Norristown (484) 250-5900
(24 Hr. #)

LEGEND: ★ REGIONAL OFFICES ● DISTRICT OFFICES ▲ MINING OFFICES

APPENDIX V
PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
Field Operations--Environmental Cleanup Program
Regional Storage Tank List

Region	Contact
Southeast Regional Office 2 East Main Street Norristown, PA 19401-4915 Telephone: (484) 250-5900	Kathy Nagle
Northeast Regional Office 2 Public Square Wilkes-Barre, PA 18711-0790 Telephone: (570) 826-2511	Ron Brezinski
Southcentral Regional Office 909 Elmerton Avenue Harrisburg, PA 17110-8200 Telephone: (717) 705-4700	Gregory Bowman
Northcentral Regional Office 208 W. Third Street Williamsport, PA 17701 Telephone: (570) 327-3636	Steve Webster
Southwest Regional Office 400 Waterfront Drive Pittsburgh, PA 15222 Telephone: (412) 442-4000	Gale Campbell
Northwest Regional Office 230 Chestnut Street Meadville, PA 16335 Telephone: (814) 332-6945	Daniel F. Peterson

In the event no contact with the Regional Office is made, the Department Emergency number (717) 787-4343 shall receive calls during and after business hours, 24 hours daily and holidays and weekends.

Oil and Gas Management Program

South Regional Office 400 Waterfront Drive Pittsburgh, Pa 15222-4745 (412) 442-4000	David F. Janco
Northwest Regional Office 230 Chestnut Street Meadville, PA 16335 (814) 332-6945	Craig Lobins

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
Field Operations--Water Management

Region	Contact
Southeast Regional Office 2 East Main Street Norristown, PA 19401-4915 Telephone: (484) 250-5900	James Newbold
Northeast Regional Office 2 Public Square Wilkes-Barre, PA 18711-0790 Telephone: (570) 826-2511	Kate Crowley
Southcentral Regional Office 909 Elmerton Avenue Harrisburg, PA 17110-8200 Telephone: (717) 705-4700	Jim Spontak
Northcentral Regional Office 208 W. Third Street Williamsport, PA 17701 Telephone: (570) 327-3636	Daniel Alters
Southwest Regional Office 400 Waterfront Drive Pittsburgh, PA 15222 Telephone: (412) 442-4000	Steve Balta
Northwest Regional Office 230 Chestnut Street Meadville, PA 16335 Telephone: (814) 332-6945	Dave Milhous

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
Field Operations--Waste Management
Regional Contact

Region	Contact
Southeast Regional Office 2 East Main Street Norristown, PA 19401-4915 Telephone: (484) 250-5900	Facilities Manager
Northeast Regional Office 2 Public Square Wilkes-Barre, PA 18711-0790 Telephone: (570) 826-2511	Facilities Manager
Southcentral Regional Office 909 Elmerton Avenue Harrisburg, PA 17110-8200 Telephone: (717) 705-4700	Facilities Manager
Northcentral Regional Office 208 W. Third Street Williamsport, PA 17701 Telephone: (570) 327-3636	Facilities Manager
Southwest Regional Office 400 Waterfront Drive Pittsburgh, PA 15222 Telephone: (412) 442-4000	Facilities Manager
Northwest Regional Office 230 Chestnut Street Meadville, PA 16335 Telephone: (814) 332-6945	Facilities Manager

APPENDIX VI
IGMARS STORAGE FACILITY
Harrisonberg, PA
Example
DOWNSTREAM NOTIFICATION LIST FOR YEAR 1992

Facility	Address	Mile Mark	Contact	Telephone
Harrison County	PO Box 15 Harrison Co. Courthouse Harrisonberg, PA	-	Ronald Swoyer Co. Emergency Mgt. Coordinator	Office: (717) 674-1212 Emergency: (717) 674-3434
Greenly Township	PO Box 498, RD 1 Harrisonberg, PA 19865	0	Donald Trump	Office: (717) 765-3468 Emergency: (717) 765-4579
Harrisonberg City	PO Box 21, City Hall Harrisonberg, PA 19869	3	Jay Miller	Office: (717) 674-2185 Emergency: (717) 674-2194
Harrisonberg Water	Harrisonberg, PA	6	Richard Miles	Office: (717) 254-8904 Emergency: (717) 254-8910
Harrison Township	Harrison Township Building Krissville, PA 19872	10	Charles Davis Township Manager	Office: (717) 760-3120 Emergency: (717) 760-3123
Harrison Township Auth.	PO Box 234 Krissville, PA 19870	12	Kemp Olsen Auth. Manager	Office: (717) 760-2334 Emergency: (717) 760-2333
Villa Assoc.	Box 29 Krissville, PA 19880	14	George Kay	Office: (717) 675-8960 Emergency: (717) 675-8961
Harrison Water Auth.	Box 28 Krissville, PA 19879	16	Justine Keener	Office: (717) 675-9004 Emergency: (717) 675-9005

Igmars Emergency Coord.

Date

NOTE: This Downstream Notification List when annually updated should be dated for the year updated and signed by the storage tank facility's emergency coordinator.

ADDENDUM

**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**SUPPLEMENTAL GUIDANCE
FOR THE DEVELOPMENT AND IMPLEMENTATION OF
PREPAREDNESS, PREVENTION AND CONTINGENCY (PPC) PLANS
UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
STORM WATER PERMITTING PROGRAM**

September 2001

**BUREAU OF WATER STANDARDS AND FACILITY REGULATION
DIVISION OF PLANNING AND PERMITS**

FORWARD

The “Supplemental Guidance for the Development and Implementation of Preparedness, Prevention and Contingency (PPC) Plans under the National Pollutant Discharge Elimination System (NPDES) Storm Water Permitting Program” has been prepared to provide those owners, operators, and municipalities who must prepare Preparedness, Prevention and Contingency (PPC) Plans (in accordance with the General Permit for Discharges of Storm Water from Industrial Activities and the Department’s Chapter 91 regulations) with guidance on what storm water issues must be addressed. This supplemental guidance, when used with the existing guidance entitled “Guidelines for the Development and Implementation of Environmental Emergency Response Plans”, hereafter called the PPC guidance or guidelines, will provide complete information on incorporating the new storm water requirements into existing or new PPC Plans for facilities seeking coverage under the general permit to discharge storm water associated with industrial activity.

Section 1 provides an introduction to the regulatory requirements for storm water discharges, the General Permit for Discharges of Storm Water From Industrial Activities and the special condition within the permit to develop and implement a Preparedness, Prevention and Contingency Plan.

Section 2 follows the format of the original guidelines. Where changes must be incorporated to address the new storm water requirements, the necessary modifications or addendums are explicitly presented.

It is emphasized that the original guidance pertains to emergency response plans that include potential releases, their controls, and management practices that are applicable to facilities regardless of whether they discharge storm water associated with industrial activity. The supplemental guidance’s requirements, on the other hand, have specific requirements that focus exclusively on managing storm water discharges associated with industrial activity.

SECTION 1

INTRODUCTION

The Department of Environmental Protection is authorized by law to protect the quality of both surface and underground waters of the Commonwealth through the prevention and abatement of water pollution. Specifically, the federal Clean Water Act and the Pennsylvania Clean Streams Law require that all point source discharges of pollutants be authorized and regulated under a National Pollutant Discharge Elimination System (NPDES) permit. Point source discharges that are not regulated under a NPDES permit are in violation of the federal Clean Water Act and the Pennsylvania Clean Streams Law, and may be subject to applicable penalties and fines.

Recent revisions to the federal NPDES regulations (55 FR 47990; November 16, 1990) require that permit applications be submitted and NPDES permits be issued for storm water discharges associated with industrial activity (see the Bureau of Water Quality Management's "Notice of Intent Requirements for Coverage Under the General Permit for Discharges of Storm Water From Industrial Activities" for definition of industries covered). In accordance with the Department's regulations at 25 Pa. §§92.81 - 92.83, the Department of Environmental Protection has developed and issued a general NPDES permit that sets forth the requirements and conditions to control storm water discharges from industrial activities.

Special Permit Condition for the Development and Implementation of a PPC Plan

The General Permit for Discharges of Storm Water from Industrial Activities requires operators of facilities covered under the permit to develop and implement a Preparedness, Prevention and Contingency (PPC) Plan in accordance with 25 Pa. Code §91.34 and the PPC guidelines contained in this document prior to authorization to discharge under this general permit.¹ The PPC Plan, once implemented, will provide best management practices (BMPs) to control the discharges of pollutants to receiving waters. In general, the PPC Plan is required to identify potential sources of pollution which may reasonably be expected to affect the quality of storm water discharges associated with industrial activity from the facility. In addition, the PPC Plan is required to describe the implementation of practices that are to be used to reduce the pollutants in storm water discharges associated with industrial activity at the facility.

This supplemental guidance provides the additional elements and requirements needed to address storm water issues in the PPC Plan required under the general permit. When used in conjunction with this document, the terms and conditions of the permit should be satisfied and the appropriate "spill prevention control" and "storm water control" - requirements should be addressed.

¹ See Part C.3.a. of the General permit.

SECTION 2

MODIFICATIONS TO EXISTING ELEMENTS AND FORMAT OF THE PPC PLAN

Modify or add to Section II of the PPC guidance, the elements beginning with A (Description of Facility). Each modification or addendum is identified explicitly in the following pages using the format contained in this document. In cases where no modifications to the original guidelines are necessary, the element heading is presented and the user is referred to the requirements in the PPC guidance. Again, users or developers of PPC Plans that meet the requirements of a general permit to discharge storm water associated with industrial activity must fulfill all of the requirements of the PPC guidance and the additional requirements and addendums of this supplemental guidance.

A. Description of Facility

1. Description of the Industrial or Commercial Activity

Add the following to the requirements in the original guidance for this section.

- Provide a narrative description of significant materials² that have been treated, stored or disposed in a manner to allow exposure to storm water within the three years prior to the issuance of the general permit and the present; the method of on-site storage or disposal; materials management practices that were employed to minimize contact of these materials with storm water runoff between the time of three years prior to the date of the issuance of this permit and the present; materials loading and access areas; the location and a description of existing structural and nonstructural control measures to reduce pollutants in storm water runoff; and a description of any treatment the storm water receives.
- On the 7 1/2-minute USGS map show the following:
 - Provide an outline of the drainage area for each storm water outfall.
- On the drawings required in the original guidance show the following:
 - Indicate existing structural control measures to reduce pollutants in storm water runoff.
 - Identify commercial and industrial activities that are exposed to precipitation to include fueling stations, vehicle and equipment maintenance and/or cleaning areas, loading/unloading areas, locations used for treatment, storage or disposal of wastes, liquid storage tanks, and processing areas.

2. Description of Existing Emergency Response Plans

Refer to the requirements in the original guidance.

3. Material and Waste Inventory

Refer to the requirements in the original guidance.

² Significant materials includes, but is not limited to: raw materials; fuels, materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the facility is required to report pursuant to EPCRA Section 313; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with storm water discharges.

4. Pollution Incident History

Add the following to the requirements in the original guidance for this section.

- Provide a list of significant leaks and spills³ of toxic and hazardous pollutants that occurred in areas that are exposed to precipitation or that otherwise drain to a storm water conveyance at the facility after the date of three years prior to the effective date of the permit. This list shall be updated as appropriate during the permit.

5. Implementation for Plan Elements Not Currently in Place

Refer to the requirements in the original guidance.

B. Description of How Plan is Implemented by Organization

1. Organizational Structure of Facility for Implementation

Refer to the requirements in the original guidance.

2. List of Emergency Coordinators

Refer to the requirements in the original guidance.

3. Duties and Responsibilities of the Coordinator

Refer to the requirements in the original guidance.

4. Chain of Command

Refer to the requirements in the original guidance.

C. Spill Leak Prevention and Response

1. Pre-release Planning

Add the following to the requirements in the PPC guidance for this section.

- Assess the potential of various sources at the plant to contribute pollutants to storm water discharges. Each of the following shall be evaluated for the reasonable potential for contributing pollutants to runoff: loading and unloading operations; outdoor storage activities; outdoor manufacturing or processing activities; significant dust or particulate generating processes; and on-site waste disposal practices. Consider the toxicity of chemicals; quantity of chemicals used, produced, or discharged; the likelihood of contact with storm water; and history of significant leaks or spills of toxic or hazardous pollutants. The description shall specifically list any significant potential source of pollutants at the site and for each potential source, any pollutant or pollutant parameter of concern (e.g., biochemical oxygen demand).
- Describe pollution incident prevention practices in storage areas used for the storage of salts for deicing or other commercial or industrial purposes. Storage piles of salt used for deicing or other commercial or industrial purposes and which generate a storm water discharge associated with industrial activity which is discharged to a waters of the United States

³ Significant spills includes, but is not limited to: releases of oil and hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (see 40 CFR 110.10 and CFR 117.21) or section 102 of CERCLA (see 40 CFR 302.4).

shall be enclosed or covered to prevent exposure to precipitation, except for exposure resulting from adding or removing materials from the pile. Dischargers shall demonstrate compliance with this provision as expeditiously as practicable, but in no event later than October 1, 1995. Piles do not need to be enclosed or covered where storm water from the pile is not discharged to waters of the United States.

2. Material Compatibility

Refer to the requirements in the PPC guidance.

3. Inspection and Monitoring Program

Add the following to the requirements in the PPC guidance for this section.

- Identify qualified personnel to conduct site compliance evaluations for storm water discharges associated with industrial activities, but in no case, less than once per year. Such evaluations will provide the following:

Visually inspect areas contributing to storm water discharges associated with industrial activity for evidence of, or the potential for, pollutants entering the drainage system. Measures to reduce pollutant loadings should be evaluated to determine whether additional control measures are needed. Structural storm water management measures, sediment and erosion control measures, and other structural pollution prevention measures identified in the plan should be observed to ensure that they are operating correctly. A visual inspection of equipment needed to implement the plan, such as spill response equipment, should be made.

Based on the results of these inspections, potential pollutant sources identified (Section C) and control measures (i.e., good housekeeping, preventive maintenance, spill prevention and response), should be revised as necessary within 15 days of the inspection. The revision will provide for the implementation of any changes to the PPC plan in a timely manner, but in no case later than 90 days after the inspection.

A report summarizing the scope of the inspection, personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the PPC plan, and any actions taken as a result, should be retained for a period of at least one year after coverage under this permit terminates. This report will identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report should contain a certification that the facility is in compliance with the PPC plan and the permit. This report shall be signed in accordance to the signatory requirements stipulated in the general permit.

Where annual site inspections are shown in the plan to be impractical for inactive mining sites due to the remote location and inaccessibility of the site, site inspections required under this part should be conducted at appropriate intervals specified in the plan, but, in no case less than once in three years.

4. Preventive Maintenance

Add the following to the requirements in the PPC guidance for this section.

- Describe the aspects of the preventive maintenance program. This program should involve the timely inspection and maintenance of storm water management devices (e.g., cleaning oil/water separators, catch basins, etc.) as well as inspecting and testing plant equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters. Records of these maintenance procedures should be maintained.

5. Housekeeping Program

Add the following to the requirements in the PPC guidance for this section.

- Establish housekeeping protocols to ensure the proper handling of materials and the maintenance of a clean, orderly facility to prevent pollutants from entering separate storm water sewers and/or to prevent contact with storm water runoff.

6. Security

Refer to the requirements in the PPC guidance.

7. External Factor Planning

Refer to the requirements in the PPC guidance.

8. Employee Training Program

Add the following to the requirements in the PPC guidance for this section.

- Employee training should inform personnel responsible for implementing activities identified in the storm water pollution prevention plan or otherwise responsible for storm water management at all levels of responsibility of the components and goals of the storm water pollution prevention plan. Training should address topics such as spill response, good housekeeping and material management practices. A pollution prevention plan shall identify periodic dates for such training.

D. Countermeasures

1. Countermeasures to be Undertaken by Facility

Refer to the requirements in the PPC guidance.

2. Countermeasures to be Undertaken by Contractors

Refer to the requirements in the PPC guidance.

3. Internal and External Communications and Alarm Systems

Refer to the requirements in the PPC guidance.

4. Evacuation Plan for Installation Personnel

Refer to the requirements in the PPC guidance.

5. Emergency Equipment Available for Response

Refer to the requirements in the PPC guidance.

E. Emergency Spill Control Network

1. Arrangements with Local Emergency Response Agencies and Hospitals

Refer to the requirements in the PPC guidance.

2. Notification Lists

Refer to the requirements in the PPC guidance.

3. Downstream Notification Requirements for Storage Tanks

Refer to the requirements in the PPC guidance.

THE ELEMENTS F THROUGH J ARE ADDENDUMS TO THE ORIGINAL GUIDANCE.

The PPC plan should also meet the requirements stipulated in these addendums to the PPC guidance. All of the management practices required for facilities (including EPCRA Section 313 facilities) are to be implemented and described in the plan.

F. Storm Water Management Practices

- Provide a narrative considering the appropriateness of traditional storm water management practices (practices other than source control) and the use of BMPs to control storm water runoff and prevent storm water pollution. Based on an assessment of the potential of various sources at the plant to contribute pollutants to storm water, provide that measures determined to be reasonable and appropriate, be implemented and maintained.

Traditional storm water management practices are measures which reduce pollutant discharges by reducing the volume of storm water discharges, such as swales, or preventing storm water to run-on to areas of the site which conduct industrial activities. Low cost measures may include diverting rooftop or other drainage across grass swales, cleaning catch basins, and installing and maintaining oil and grit separators. Other measures may include infiltration devices and unlined retention and detention basins. Traditional storm water management practices can also include water reuse activities and snow removal activities.

- The PPC plan shall include a certification that the discharge has been tested or evaluated for the presence of non-storm water discharges. The certification shall include the identification of potential significant source of non-storm water at the site. A description of the results of any test and/or evaluation for the presence of non-storm water discharges, the evaluation criteria or testing method used, the date of any testing and/or evaluation, and the on-site drainage points that were directly observed during the test.

G. Sediment and Erosion Prevention

- In the PPC plan, identify areas which, due to topography, activities, or other factors, have a high potential for significant soil erosion, and identify measures to limit erosion.

Sediment and erosion prevention and control measures should be developed and implemented in accordance with Chapter 102 of the Department's rules and regulations and the Bureau of Soil and Water Conservation's "Erosion and Sediment Pollution Control Program Manual."

H. Additional Requirements for EPCRA, Section 313 Facilities⁴

- Describe the types of storm water controls (containment, drainage control and/or diversionary structures) that will be used in areas where Section 313 water priority chemicals are stored,⁵ processed or otherwise handled.

Storm water controls should provide for the following preventive systems or its equivalent: Curbing, culverting, gutters, sewers or other forms of drainage control to prevent or minimize the potential for storm water run-on to come into contact with significant sources of pollutants; or roofs, covers or other forms of appropriate protection to prevent storage piles from exposure to storm water and wind blowing.
- In addition to the minimum standards for EPCRA Section 313 facilities, the storm water pollution prevention plan will meet the following requirements for liquid storage areas, material storage areas other than liquids, truck and rail car loading and unloading areas for liquid Section 313 water priority chemicals:
 - Liquid storage areas where storm water comes into contact with any equipment, tank container, or other vessel used for Section 313 water priority chemicals.
- No tank or container shall be used for the storage of a Section 313 water priority chemical unless its material and construction are compatible with the material stored and conditions of storage such as pressure and temperature, etc.
- Secondary containment must be provided to contain the entire capacity of largest single container or tank plus sufficient freeboard to allow for precipitation, a strong spill contingency and integrity testing plan, and/or other equivalent measures. If the secondary containment and its upstream drainage system are subject to precipitation, an allowance for drainage for a 25-year, 24-hour storm event shall be provided over and above. Secondary containment shall be sufficiently impervious. Plant's treatment system may be substituted for secondary containment if it has sufficient excess holding capacity always available.
 - Material storage areas for Section 313 water priority chemicals other than liquids.
- Material storage areas for Section 313 water priority chemicals other than liquids which are subject to runoff, leaching, or wind shall incorporate drainage or other control features which will minimize the discharge of Section 313 water priority chemicals.

⁴ An "EPCRA, Section 313 Facility" means a facility that manufactures, imports, processes, or otherwise uses listed toxic chemicals and who, pursuant to Section 313 of Title III of SARA, are required to report annually their releases of those chemicals to any environmental media.

⁵ Section 313 water priority chemical means a chemical or chemical categories which: 1) Are listed at 40 CFR 372.65 pursuant to Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986; 2) are present at or above threshold levels at a facility subject to EPCRA Section 313 reporting requirements; and 3) that meet at least one of the following criteria: (i) Are listed in Appendix D of 40 CFR 122 on either Table II (organic priority pollutants), Table III (certain metals, cyanides, and phenols) or Table V (certain toxic pollutants and hazardous substances); (ii) are listed as a hazardous substance pursuant to Section 311(b)(2)(A) of the CWA at 40 CFR 116.4; or (iii) are pollutants for which EPA has published acute or chronic water quality criteria.

- Truck and rail car loading and unloading areas for liquid Section 313 water priority chemicals.
- These areas shall be operated to minimize discharges of Section 313 water priority chemicals. Protection such as overhangs or door skirts to enclose trailer ends at truck loading/unloading docks shall be provided as appropriate. Appropriate measures to minimize discharges of Section 313 chemicals may include: placement and maintenance of drip pans (including the proper disposal of materials collected in the drip pans where spillage may occur such as hose connections); a strong spill contingency and integrity testing plan; and/or other equivalent measures.
- Areas where Section 313 water priority chemicals are transferred, processed or otherwise handled.
- Processing equipment and materials handling equipment shall be operated so as to minimize the discharges of Section 313 water priority chemicals. Materials used in piping and equipment shall be compatible with the substances handled. Drainage from process and materials handling areas shall minimize storm water contact with Section 313 water priority chemicals. Additional protection such as covers or guards to prevent exposure to wind, spraying, or releases from pressure relief vents from causing a discharge of Section 313 water priority chemicals to the drainage system shall be provided as appropriate. Visual inspections or leak tests shall be provided for overhead piping conveying Section 313 water priority chemicals without secondary containment.
- For drainage originating from the above described areas, valves or other positive means should be used to prevent discharges or excessive leaks of Section 313 water priority chemicals. Where containment units are employed, such units may be emptied by pumps or ejectors; however, these shall be manually activated.

Flapper-type drain valves must not be used to drain containment areas. Valves used for the drainage of containment areas should not be used to drain non-containment areas. Valves used should be of the open-and-closed design.

If plant drainage is not engineered as above, the final discharge of all in-plant storm sewers should be equipped to be equivalent with a diversion system that could, in the event of an uncontrolled spill of a Section 313 water priority chemical, return the spilled material to the facility. Records shall be kept of the frequency and estimated volume (in gallons) of discharges from the containment areas.

- Records shall be kept of the frequency and estimated volume (in gallons) of discharges from containment areas.
- Other areas (other than those described above) of the facility from which runoff which may contain a Section 313 water priority chemical, or spills of Section 313 water priority chemicals could cause a discharge, shall incorporate the necessary drainage or other control features to prevent discharge of spilled or improperly disposed material and ensure the mitigation of pollutants in runoff or leachate.

- All areas of the facility shall be inspected at specific intervals for leaks or conditions that could lead to discharges of Section 313 water priority chemicals or direct contact of storm water with raw materials, intermediate materials, waste materials or products. In particular, plant piping, pumps storage tanks and bins, pressure vessels, process and materials handling equipment, and material bulk storage area shall be examined for any conditions or failures which could cause a discharge. Inspection shall include examination for leaks, wind blowing, corrosion, support or foundation failure, or other forms of deterioration or noncontainment. Inspection intervals shall be specified in the plan and shall be based on design and operational experience. Different areas may require different inspection intervals. Where a leak or other condition is discovered which may result in significant releases of Section 313 water priority chemicals to the drainage system, corrective action shall be taken. When a leak or noncontainment of a Section 313 water priority chemical has occurred, contaminated soil, debris, or other material must be promptly removed and disposed in accordance with this PPC Plan.
- Facility employees and contractor personnel using the facility shall be trained in and informed of preventive measures at the facility. Employee training shall be conducted at intervals specified in the plan, but not less than once per year, in matters of pollution control laws, and regulations and in the PPC Plan, and the particular features of the facility and its operation which are designed to minimize discharges of Section 313 water priority chemicals. The plan should designate a person who is accountable for spill prevention at the facility and who will set up the necessary spill emergency procedures and reporting requirements so that spills and emergency releases of Section 313 water priority chemicals can be isolated and contained before a discharge of a Section 313 water priority chemical can occur. Contractor or temporary personnel shall be informed of plant operation and design features in order to prevent discharges or spills from occurring.

If the installment of secondary containment structures or equipment listed above are not economically achievable at a facility, the PPC Plan should provide a spill contingency and integrity testing plan which provides a description of measures that ensure spills or other releases of toxic amounts of Section 313 water priority chemicals do not occur. The testing plan should contain the following:

- Detailed descriptions which demonstrate that secondary containment is not economically achievable;
- Description of response plans, personnel needs, and methods of mechanical containment such as the use of sorbents, booms collection devices, etc.); steps to be taken for removal of spilled Section 313 water priority chemicals; and access and availability of sorbents and other equipment;
- The testing component of the alternative plan must provide for conducting integrity testing of storage tanks at least once every five years, and

conducting integrity and leak testing of valves and piping a minimum every year; and

-- A written and actual commitment of manpower, equipment and materials required to comply with this permit and to expeditiously control and remove quantity of Section 313 water priority chemicals that may result in a toxic discharge.

- Provide a certification by a Registered Professional Engineer. The Professional Engineer shall certify that he or she has examined the facility and is familiar with the provisions in the PPC Plan and can attest that the PPC Plan has been prepared in accordance with good engineering practices. The Professional Engineer must recertify the PPC Plan once a year.

I. Certification Requirements for Non-Storm Water Discharges

- Provide a certification meeting the requirements of Part C, Section 3(a) of the industrial activities stormwater general permit (PAG #3) relating to the presence of non-stormwater discharges in the system.

If a facility does not have access to an outfall, manhole, or other point of access to the ultimate conduit which receives the discharge, this section of the plan shall indicate why the certification was not feasible. A discharge that is unable to provide the certification required by this paragraph must also then notify the Department within 180 days of the effective date of the general permit in accordance with Section A.3. of the permit.

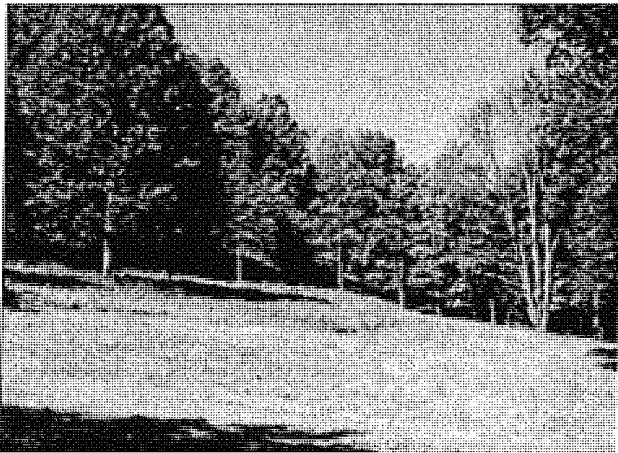
J. Signatory Requirements

The PPC plan must be signed in accordance with the signatory requirements stipulated in the general permit.

Appendix C – Riparian Buffer Management Plan

Riparian Buffer Management Plan

The preparation of a riparian buffer management plan is essential for ensuring a healthy and successful riparian corridor environment. While wooded riparian corridors provide the greatest water quality benefits, there are other management alternatives that contribute to water quality. Therefore, the management plan should balance the intent of the riparian buffer with a site's existing conditions and the landowner's desires for the property. When completed, the management plan should clearly define the landowner's goals for the riparian buffer and what specific actions will be taken to achieve those goals. For example, the landowner may intend to allow an existing meadow to revert to a woodland over 20 years. To ensure this happens, the plan will identify what specific management techniques will be implemented. Similarly, if the effectiveness of a portion of the riparian buffer is reduced, mitigation measures will need to be identified that will offset the disturbance. The management plan should clearly define what actions will be taken to fulfill the goals of the plan and who is responsible for implementing them.



A portion of this meadow has been managed to allow for natural succession

Anyone proposing subdivision, land development, redevelopment or any other property improvements that require any plan submission or need for permit within the riparian buffer must submit a Riparian Buffer Management Plan. Certain requirements of the plan may overlap with other municipal subdivision and land development requirements, such as the existing conditions plan. Landowners with no plans for subdivision or land development are encouraged to submit Riparian Buffer Management Plans on a voluntary basis.

The Riparian Buffer Management Plan shall include scale drawings and explanatory text and shall be prepared by a Pennsylvania licensed landscape architect, engineer, or other qualified professional. This plan shall be submitted and approved as part of any normal municipal subdivision and/or land development review process or as required in accordance with Section 8 – Inspection of the Riparian Buffer Overlay Zoning District. The Riparian Buffer Management Plan should include the following four elements:

Section I: Existing Conditions

This section shall include a sketch plan showing the boundaries of Zone 1 and Zone 2 at a minimum, and existing environmental conditions (such as five foot contours, steep slopes and swales and other drainage features highlighted, wetlands, floodplains, woodlands and

other vegetation, and any existing structures). A written description of unusual or other “site specific” significant conditions also shall also be included.

Section II: Goals

An analysis shall be done that identifies the landowner goals for the entire property, considering the intent of the Riparian Buffer Overlay Zoning District. For example, the goal for land in Zone 1 may be to preserve existing woodland. The goal for Zone 2 may be to convert an existing pasture into a wildflower meadow. The goal outside the riparian buffer zones may be to construct a house and barn. For those riparian areas that include improvements, there should be a discussion of how disturbance to the riparian buffer(s) will be mitigated and offset with the applicant’s proposed riparian buffer improvements and restoration. A schematic plan illustrating the landowner’s goals shall also be included.

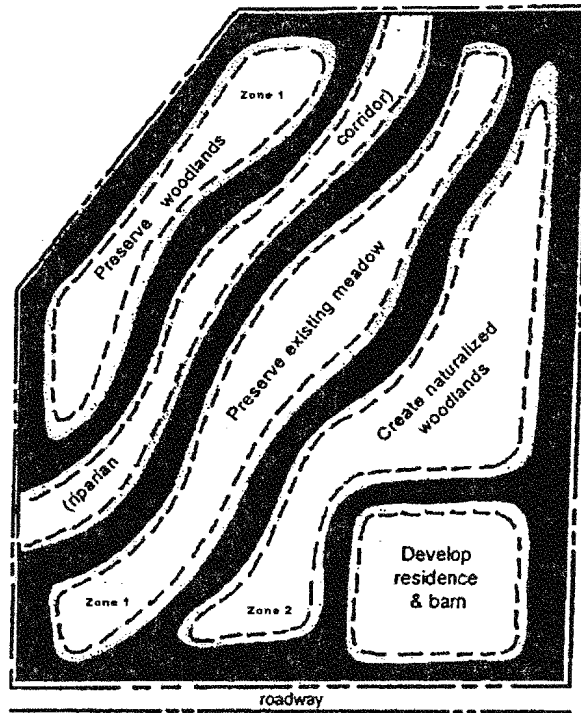
Section III: Proposed Activities

This section shall include a scaled drawing and a discussion of activities proposed for land in Zone 1, Zone 2 and land directly adjacent to the riparian buffer(s). The plan shall clearly show the areas that will be disturbed and those which will be protected and preserved. The plan shall identify which proposed activities are permitted by right, which will require any conditional use approval, and which will require mitigation and restoration measures as a result of the actions proposed and /or activities planned in the Riparian Buffer Overlay Zoning District.

Section IV: Management

The final section of the riparian buffer management plan shall include a discussion of how the *goals* identified in Section II will be met, given the *proposed activities* from Section III. The plan shall be very specific in terms of when the construction, planting, or other activities are to begin and end and shall address long- and short-term maintenance and improvement activities necessary for preservation of the riparian buffer.

Details for management measures for existing vegetation could include application of herbicides, identification of invasive plants to be removed, number/species of native stock to be planted, and spacing required for newly planted trees. All other activities necessary to reach the goals stated in the schematic plan shall be referenced. These may include mowing schedules, farming practices, other plantings, renovations to structures, and all other related functions.



The Riparian Buffer Management Plan shall include a schematic plan that illustrates the landowners' goals for the riparian buffer.

There are some basic guidelines landowners shall consider prior to deciding how to manage their riparian buffer areas. They are as follows:

- Three distinct layers of native vegetation are recommended to protect stream resources. The three "layers" include trees that form an overhead canopy, shrubs that provide an understory and herbaceous plants that serve as groundcover. The three layers provide specific water quality benefits and a diversity of animal habitat.
- Maintaining land is one of the most expensive methods for managing land on a suburban property.
- Native Pennsylvania species are *recommended* to be used, since they will adapt the best to existing site conditions.
- The creation of additional edges (berms, banks, walls, curbs) shall be minimized, and a reduction in existing edges should be sought.
- The importance of continued maintenance of the riparian buffer shall always be balanced with a landowner's financial resources.
- No concentrated storm water flow shall be introduced into the Riparian Buffer Overlay Zoning District unless that flow is minimized to the extent possible with a level spreader or similar structure and or improvement.

Appendix D – Selective Native Buffer Planting List
University of Pennsylvania, Morris Arboretum

Common Name	Botanic Name	Flower	Bloom Time	Sunlight	Moisture	Notes
FERNS						
Cinnamon fern	<i>Osmunda cinnamomea</i>			☐-☐	FACW	Cinnamon-colored fertile fronds; moist acid soils
Interrupted fern	<i>Osmunda claytoniana</i>			☐-☐	FAC	Grows in clumps; distinctive fertile fronds. Common in woods, seeps, swamps and bogs
Sensitive fern	<i>Onoclea sensibilis</i>			☐-☐	FACW	Sunny or shaded swamps, marshes, moist meadows. Forms colonizing masses
GRASSES & SEDGES						
Big blue stem	<i>Andropogon gerardii</i>		Aug-Sep	☐	FAC	Tall clump forming; streambanks and moist meadows
Broom sedge	<i>Carex scoparia</i>		Summer	☐	FACW	Moist open ground
False nut sedge	<i>Cyperus strigosus</i>		Summer	☐-☐	FACW	Moist fields, woods, swamps and streambanks
Lurid sedge	<i>Carex lurida</i>		Jun-Oct	☐	OBL	Common in swamps, wet meadows and bogs
Riverbank wild rye	<i>Elymus riparius</i>		July-Sep	☐	FACW	Alluvial flats, meadows and streambanks
Sedge	<i>Carex vulpinoidea</i>		Summer	☐	OBL	Swampy areas
Soft rush	<i>Juncus effusus</i>		Summer	☐	OBL	Swamps, moist fields and floodplains
Switch grass	<i>Panicum virgatum</i>		Aug-Sep	☐	FAC	Clump grass; can help to control erosion. Sandy and river soils
Tussock sedge	<i>Carex stricta</i>		May-Aug	☐-☐	OBL	Forms a hummocky mound; swamps, streambanks and wet meadows
Virginia wild rye	<i>Elymus virginicus</i>		Jun-Sep	☐-☐	FACW	Moist woods, meadows, streambanks
Wool grass	<i>Scirpus cyperinus</i>		Jul-Sep	☐	FACW	Tall clump forming, wooly seed head. Marshes, moist meadows, swales and shorelines
FLOWERING PERENNIALS						
Beard-tongue	<i>Penstemon digitalis</i>	White	May-Jul	☐	FAC	Attracts hummingbirds; moist meadows
Bottle gentian	<i>Gentiana andrewsii</i>	Blue	Apr-Oct	☐-☐	FACW	Bottle-shaped flowers; moist meadow species
Blue vervain	<i>Verbena hastata</i>	Blue	Jun-Sep	☐-☐	UPL	Bright flowers; herbal uses; streambanks and moist meadows
Blue-eyed grass	<i>Sisyrinchium angustifolium</i>	White	Jun-Jul	☐-☐	FACW	Tiny blue flowers above grassy foliage; dry to moist meadows and fields
Boneset	<i>Eupatorium perfoliatum</i>	White	Jul-Aug	☐-☐	FACW	Wet meadow species
Cardinal flower	<i>Lobelia cardinalis</i>	Scarlet	Jul-Sep	☐-☐	FACW	Long bloom time; attracts butterflies and hummingbirds; streambanks and pond margins
Cut-leaf coneflower	<i>Rudbeckia laciniata</i>	Yellow	Jul-Sep	☐-☐	FACW	Herbal uses; streambanks
Ironweed	<i>Veronia noveboracensis</i>	Purple	Aug-Sep	☐	FACW	Tall plant with brilliant late summer flowers
Jack-in-the-pulpit	<i>Arisaema triphyllum</i>	Green-purple	Apr-Jun	☐-☐	FACW	Unusual flower; bright red berries; moist woods, swamps and bogs
Joe-pye weed	<i>Eupatorium fistulosum</i>	Purple	Aug-Sep	☐	FACW	Attracts beneficial insects; herbal uses
New England aster	<i>Aster novae-angliae</i>	Purple	Aug-Oct	☐-☐	FACW	Showy and frequently cultivated; dry to moist meadows
Partridgeberry	<i>Mitchella repens</i>	White	Jun-Jul	☐-☐	FACU	Evergreen; ground cover; edible berry; moist woods
Purple stemmed aster	<i>Aster puniceus</i>	Blue	Aug-Sep	☐-☐	OBL	Does well in moist meadows; deep green foliage
Smooth goldenrod	<i>Solidago gigantea</i>	Yellow	Jul-Nov	☐-☐	FACW	Tall; puplish stem with smooth leaves; dry to moist fields
Swamp milkweed	<i>Asclepias incarnata</i>	Rose	July-Aug	☐	OBL	Attracts butterflies; moist meadows
Tall meadowrue	<i>Thalictrum pubescens</i>	White	Jun-Jul	☐-☐	FACW	Tall plant with cloudy clusters of tiny flowers; bluish foliage; moist meadows and swales
Wingstem	<i>Verbesina alternifolia</i>	Yellow	Aug-Oct	☐	FAC	Moist riverbanks, shaded lowlands
Wood geranium	<i>Geranium maculatum</i>	Rose-pink	Apr-May	☐-☐	FACU	Woods and fields
SHRUBS						
American elderberry	<i>Sambucus Canadensis</i>	White	Jun-Jul	☐	FACW	Edible berries & flowers; multi-stemmed; very high wildlife value
Arrowwood	<i>Viburnum dentatum</i>	White	May	☐-☐	FAC	Dark blue fruits in fall; high wildlife value; streambanks, pastures
Black chokeberry	<i>Aronia melanocarpa</i>	White	Mar-Jul	☐	FAC	White flowers; black berries; fall color
Buttonbush	<i>Cephalanthus occidentalis</i>	White	Jun-Sep	☐	OBL	Multi-stemmed; tolerates inundation
Dangleberry	<i>Gaylussacia frondosa</i>	White	May	☐-☐	FAC	Edible fruits; high wildlife value; acid soils
Highbush blueberry	<i>Vaccinium corymbosum</i>	White	May-Jun	☐	FACW	Multi-stemmed; edible berries; fall color; very high wildlife value
Maleberry	<i>Lyonia ligustrina</i>	White	June	☐	FACW	Dry to wet woods and thickets; acid soils
Ninebark	<i>Physocarpus opulifolius</i>	White	May-Jul	☐-☐	FACW	Wet woods, sandy or rocky streambanks
Northern arrowwood	<i>Viburnum recognitum</i>	White	May	☐-☐	FACW	Dark blue fruits in fall; high wildlife value; streambanks, swamps, wet pastures
Pussy willow	<i>Salix discolor</i>	Yellow-green	April	☐	FACW	Swamps and wet woods
Red chokeberry	<i>Aronia arbutifolia</i>	White	May	☐	FACW	Red berries; high value for wildlife
Rosebay	<i>Rhododendron maximum</i>	Pink	Jun-Jul	☐	FAC	Showy flowers; evergreen; multi-stemmed; acid soils
Silky dogwood	<i>Cornus amomum</i>	White	May-Jul	☐	FACW	Flowers in summer; blue berries; multi-stemmed; very high wildlife value
Silky willow	<i>Salix sericea</i>	Yellow-green	May	☐-☐	OBL	Good wildlife value; needs wet conditions
Spice bush	<i>Lindera benzoin</i>	Yellow	Mar-May	☐-☐	FACW	Bright red berries in fall; herbal uses; wildlife value
Swamp dogwood	<i>Cornus racemosa</i>	White	May-Jun	☐	FAC	Colonizer; high wildlife value
Swamp rose	<i>Rosa palustris</i>	Pink	May-Jun	☐	OBL	Showy and fragrant
Winterberry holly	<i>Ilex verticillata</i>	White	May-Jun	☐	FACW	Showy berries in winter; high wildlife value; good colonizing shrubs for streambanks
Witch-hazel	<i>Hamamelis virginiana</i>	Yellow	Sep-Nov	☐-☐	FAC	Bright yellow flowers fragrant; medicinal uses
TREES						
American beech	<i>Fagus grandifolia</i>	Yellow	Apr-May	☐-☐	FAC	Large tree with smooth gray bark; moist, but well-drained soils, high wildlife value
Basswood	<i>Tilia Americana</i>	Yellow	May-Jun	☐-☐	FACU	Flowers aromatic; with herbal uses
Black ash	<i>Fraxinus nigra</i>	Purple	April	☐-☐	FACW	Large tree in wet woods and bottomlands
Black gum	<i>Nyssa sylvatica</i>	Green- white	Apr-May	☐-☐	FAC	Tall tree with outstanding fall color; high wildlife value
Black walnut	<i>Juglans nigra</i>	Yellow	May-Jun	☐	FACU	Fast growing tall tree; high wildlife value
Black willow	<i>Salix nigra</i>	Yellow	Apr-May	☐	FACW	Catkins in spring, very fast grower
Green ash	<i>Fraxinus pennsylvanica</i>	Purple	Apr-May	☐	FACW	Fast growth; food fall color
Hornbeam	<i>Carpinus caroliniana</i>	Red	Apr-May	☐-☐	FAC	Small tree with sinuous gray bark; moist woods
Pagoda dogwood	<i>Cornus alternifolia</i>	White	May-Jun	☐	FAC	Small tree for moist woods and shaded ravines; dark blue fruit
Pin oak	<i>Quercus palustris</i>	Yellow	Apr-May	☐	FACW	Ornamental street tree; fall color; very high wildlife value
Red maple	<i>Acer rubrum</i>	Red	Mar-Apr	☐-☐	FAC	Adapts to range of moisture conditions; good fall color
River birch	<i>Betula nigra</i>	Yellow-green	May	☐-☐	FACW	Notable for its peeling bark; floodplains, streambanks, wet woods and swamps
Shadbush	<i>Amelanchier arborea</i>	White	Apr	☐	FAC	Small tree with early spring flowers; delicious edible berries in summer
Shagbark hickory	<i>Carya ovata</i>	Yellow	May	☐-☐	FAC	Shaggy gray exfoliating bark; very high wildlife value
Silver maple	<i>Acer saccharinum</i>	Yellow-red	Apr-May	☐-☐	FACW	Moist woods, streambanks, alluvial soils
Swamp white oak	<i>Quercus bicolor</i>	Yellow	May	☐	FACW	Large tree with very high wildlife value; good wetland oak
Sweet birch	<i>Betula lenta</i>	Yellow-green	May	☐-☐	FACU	Wintergreen scented bark and foliage; streambanks and woodlands
Sycamore	<i>Platanus occidentalis</i>	Yellow	April	☐	FACW	Large tree with showy mottled bark; riverbanks, floodplains and alluvial soils
Tulip tree	<i>Liriodendron tulipifera</i>	Yellow	May-Jun	☐-☐	FAC	Large tree with green/orange flowers; fast growth; moist, but well drained soils

KEY

- ☐, ☐, ☐ full sun, light shade, shade
- OBL consistently wet or saturated soils (obligate in wetlands)
- FACW wet to moist soils (facultative wetland)
- FAC moist soils (facultative)
- FACU moist to dry soils (facultative upland)
- UPL dry soils (upland)

**Appendix E – (Municipality) Riparian Buffer Overlay Zoning
District Map**

Riparian Buffers within the Centre Region

Ferguson Township

USGS National Hydrologic Dataset

- Pond/Lake
- Swamp/Marsh
- Perennial Stream
- Intermittent Stream
- Riparian Buffers
- 35' Buffer
- 65' Buffer
- Impaired Portion of Stream
- Floodplains
- National Wetland Inventory
- Municipal Boundary
- Currently Developed Land from 2000 Land Use

The National Hydrology Dataset (NHD) is a comprehensive set of data that includes stream networks, water bodies, and constructed bodies of water, paths through which water flows, and other features. The information included in this dataset includes stream names, stream types, stream flow directions, stream positions and related measures, a "reach code" through which other information can be related to the NHD, and the direction of water flow. The NHD is the culmination of cooperative efforts of the U.S. Environmental Protection Agency (USEPA) and the U.S. Geological Survey (USGS). Other organizations also contributed to the effort.



Photo taken from Linden Hill Road and used for example's sake.

Example of a Riparian Buffer Zone



Photo taken from Linden Hill Road and used for example's sake.



20

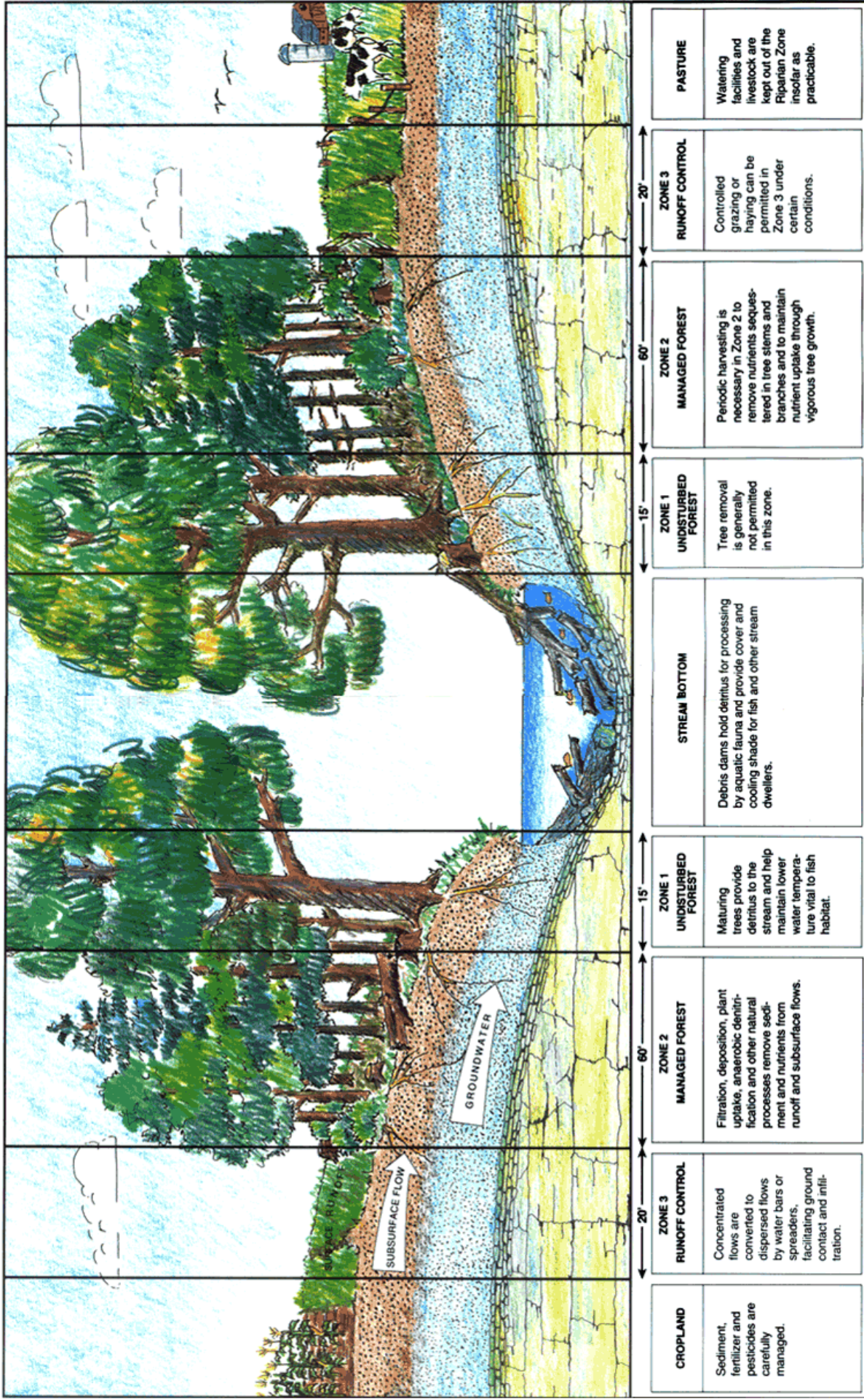
0 0.25 0.5 1 Mile
 Centre Regional Planning Agency
 1000 Centre Blvd., Suite 1000
 State College, PA 16801
 814-331-3050

12/7/2015

Revised 12/15/15

Appendix F – Riparian Buffer Graphic

THE STREAMSIDE FOREST BUFFER



Appendix G – Invasive Plants of Pennsylvania

INVASIVE PLANTS OF PENNSYLVANIA

Invasive plants displace naturally occurring native vegetation and, in the process, upset nature's balance and diversity. Invasive plants share the following common characteristics:

- Rapid growth and prolific reproductive capabilities
- Highly successful seed dispersal, germination and colonization processes
- Rampant spreading that takes over native species
- Very costly to control

In general, aggressive, non-native plants have no enemies or controls to limit their spread. If any of the following species are found in any designated stream buffer areas required to be restored and replanted in accordance with a municipally approved Riparian Buffer Management Plan, they are to be removed and should *never planted within a defined stream buffer zone*. These invasive plant species are:

Trees

<u>Botanic Name</u>	<u>Common Name</u>
Acer platanoides	Norway Maple
Acer pseudoplatanus	Sycamore Maple
Allanhus altissima	Tree-of-Heaven
Elaeagnus angustifolia	Russian Olive
Populus Alba	White Poplar
Ulmus pumila	Siberian Elm
Viburnum lantana	Wayfaring Tree
Robina pseudoacacia	Black Locust, False Acacia

Shrubs and Vines

<u>Botanic Name</u>	<u>Common Name</u>
Berberis thunbergii	Japanese Barberry
Elaeagnus umbellaa	Autumn Olive
Euonymus alatus	Winged Euonymus
Ligustrum vulgara	European Privet
Lonicera japonica	Japanese Honeysuckle
Lonicera maacki	Amur Honeysuckle
Lonicera morrowil	Morrow's Honeysuckle
Lonicera tatarica	Tartarian Honeysuckle
Lonicera x-bella	Hybrid Honeysuckle
Lythrum sallicaria	Purple Loosestrife (herbaceous)
Morus Alba	White Mulberry
Morus rubra	Red Mulberry
Phylostachys aubea	Bamboo
Rhamnus cathartica	Common Buckthorn
Rhamnus franguia	Glossy Buckthorn
Rosa multiflora	Multiflora Rose
Viburnum opulus	European Highbush Cranberry

Appendix H – Noxious Weed Control List of Pennsylvania

Noxious Weed Control List of Pennsylvania

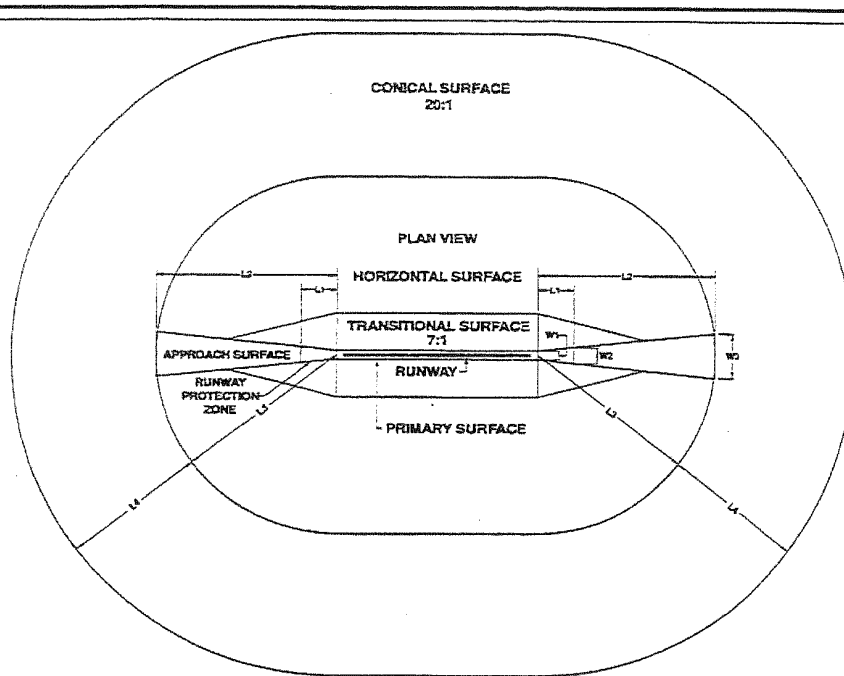
In the Commonwealth of Pennsylvania, it is illegal to propagate, sell or transport the following weeds and so if found in any stream buffer area (Zone I and/or II), *they are to be removed and immediately destroyed*:

1. Cannabis sativa*, commonly known as Marijuana.
2. Cirsium arvense, commonly known as Canadian Thistle.
3. Rosa multiflora, commonly known as Multiflora rose.
4. Sorghum halpense, commonly known as Johnson grass.
5. Polygonum perfoliatum, commonly known as Mile-a-minute.
6. Pueraria lobata, commonly known as Kudzu vine.
7. Cirsium vulgare, commonly known as Bull or Spear Thistle.
8. Carduus nutans, commonly known as Musk or Nodding Thistle.
9. Sorghum bicolor, commonly known as Shattercane.
10. Datura stramonium, commonly known as Jimson weed.
11. Lythrum salicaria, commonly known as Purple Loosestrife, including all cultivars.
12. Heracleum mantegazzianum, commonly known as Giant Hogweed.
13. Galega officinalis, commonly known as Goatsrue.
(Amended November 18, 2000)

- The first four weeds were included in the Pa. Noxious Weed Control Act in 1974-82.
- Weeds numbered 5-10 were added by regulations on May 20, 1989.
- Purple Loosestrife was added by regulations on April 12, 1997.
- Purple Loosestrife cultivars, Giant Hogweed and Goatsrue were added by regulations on November 18, 2000.

*This weed is also considered to be an illegal drug and is governed by the state's controlled substances act. If found, please first contact your local and/or state police department.

Appendix I – Airport Land Use Compatibility Guidelines



FAR PART 77 "MAGINARY SURFACES" DIMENSION REQUIREMENTS

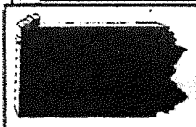
Runway Type	Runway End Approach Other	Conical Surface (L4)	Horizontal Surface (L3)	Approach Surface			Approach Slope	Primary Surface Width	Transitional Surface	
				Length (L2)	Inner Width (W1)	Other Width (W3)				
Small Airplanes ²	V	V	4,000	5,000	5,000	250	1,250	20:1	250	7:1
		NP	4,000	5,000	5,000	500	1,250	20:1	500	7:1
		NP 3/4	4,000	5,000	5,000	1,000	1,250	20:1	1,000	7:1
		P	4,000	5,000	5,000	1,000	1,250	20:1	1,000	7:1
	NP	V	4,000	5,000	5,000	500	2,000	20:1	500	7:1
		NP	4,000	5,000	5,000	500	2,000	20:1	500	7:1
		NP 3/4	4,000	5,000	5,000	1,000	2,000	20:1	1,000	7:1
		P	4,000	5,000	5,000	1,000	2,000	20:1	1,000	7:1
Large Airplanes ³	V	V	4,000	5,000	5,000	500	1,500	20:1	500	7:1
		NP	4,000	10,000	5,000	500	1,500	20:1	500	7:1
		NP 3/4	4,000	10,000	5,000	1,000	1,500	20:1	1,000	7:1
		P	4,000	10,000	5,000	1,000	1,500	20:1	1,000	7:1
	NP	V	4,000	10,000	10,000	500	3,500	34:1	500	7:1
		NP	4,000	10,000	10,000	500	3,500	34:1	500	7:1
		NP 3/4	4,000	10,000	10,000	1,000	3,500	34:1	1,000	7:1
		P	4,000	10,000	10,000	1,000	3,500	34:1	1,000	7:1
Large and Small Airplanes	NP 3/4	V	4,000	10,000	10,000	1,000	4,000	34:1	1,000	7:1
		NP	4,000	10,000	10,000	1,000	4,000	34:1	1,000	7:1
		NP 3/4	4,000	10,000	10,000	1,000	4,000	34:1	1,000	7:1
		P	4,000	10,000	10,000	1,000	4,000	34:1	1,000	7:1
	P	V	4,000	10,000	10,000/40,000	1,000	4,000/16,000	50:1/40:1	1,000	7:1
		NP	4,000	10,000	10,000/40,000	1,000	4,000/16,000	50:1/40:1	1,000	7:1
		NP 3/4	4,000	10,000	10,000/40,000	1,000	4,000/16,000	50:1/40:1	1,000	7:1
		P	4,000	10,000	10,000/40,000	1,000	4,000/16,000	50:1/40:1	1,000	7:1

1 - In Feet
 2 - Less than 12,500 lbs maximum certified takeoff weight
 3 - Greater than 12,500 lbs maximum certified takeoff weight

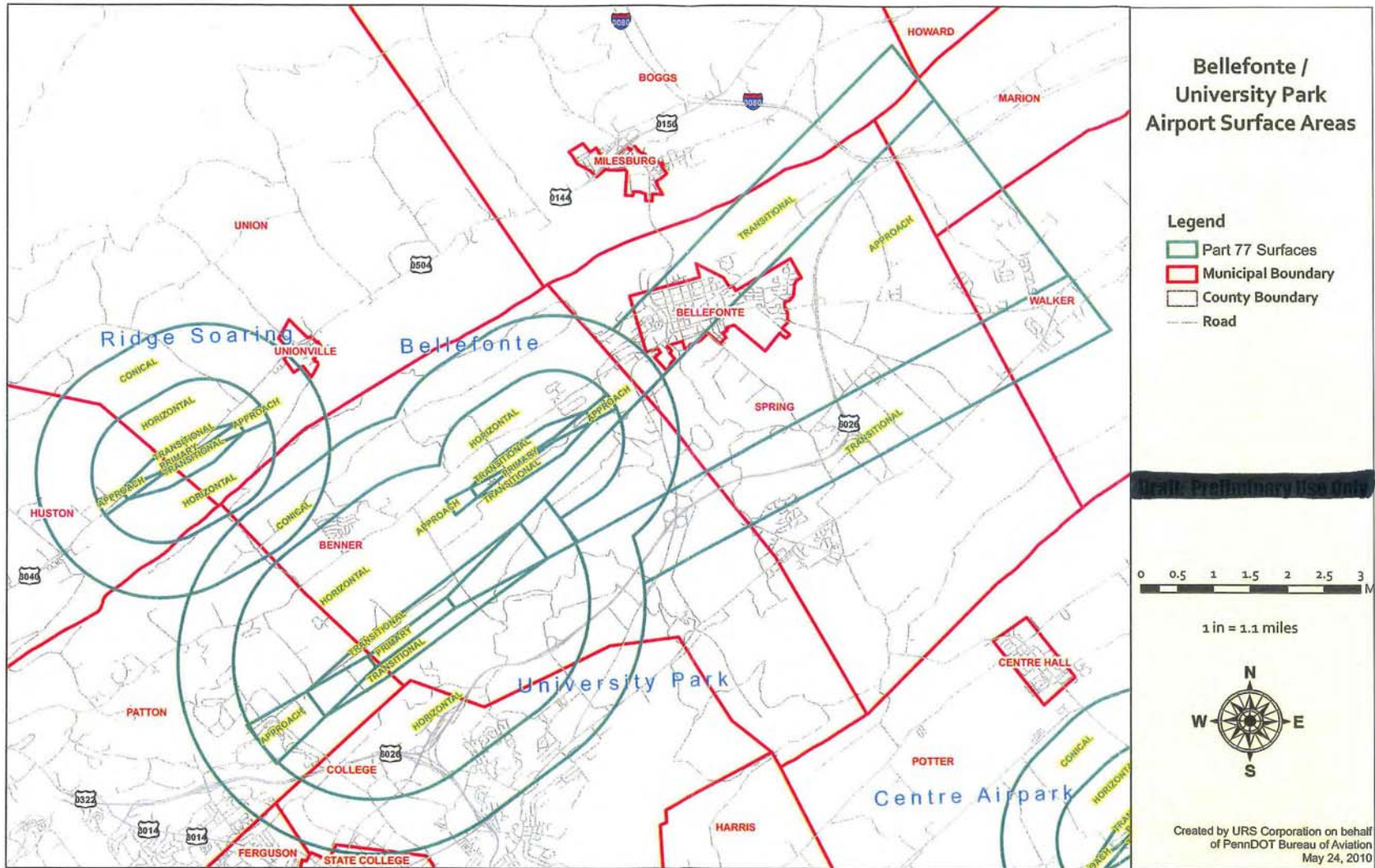
V = Visual approach 20:1
 NP = Nonprecision approach 34:1
 NP 3/4 = Nonprecision approach with visibility minimums as low as 3/4 statute miles 34:1
 P = Precision approach 50:1

Note: L1 is the length of the RPZ and W2 is the outer width of the RPZ as defined by approach visibility minimums

Source: Federal Aviation Administration



Appendix J – Bellefonte / University Park Airport Surface Areas



Appendix K – Example of Mean Height Calculation

Appendix L – TTD Questions

ZONING

27 Attachment 28

Township of Ferguson

APPENDIX 27-B

The following set of questions may be posed to determine each project's consistency with the requirements of the text. Applicants' should be prepared to provide evidence of their understanding of these concepts as well as their project's adherence to the associated criteria.

FRAMEWORK PLANS - OPEN SPACE NETWORK

1. Can you identify the intended function of the various areas proposed as open space within the site?
2. How is this space coordinated with the needs expressed by the Township's recreation, parks, and open space plan?
3. The regulations request consideration of the coordination of open space with adjacent properties in order to establish a connected network. How have you addressed this?
4. How do you anticipate using the proposed open space to create landmarks or focal points for the community as required?
5. How does the development you propose complement the distinctive resources of the site - not simply avoid them? What scenic viewsheds are created and/or preserved?
6. Can you identify what access (other than streets) is provided to the various open space areas?
7. How does the open space network you propose connect residents to civic and commercial areas? (on this AND adjacent sites)
8. How/Where has public space [plazas, courtyards, walk-ways, civic uses] been provided within the site? Does this public space serve as a focal point?
9. Which, if any, design incentives have you incorporated with regard to the preservation of open space? What then is the percentage of your site that is composed of required open space?
10. Have you investigated whether there are any plants or animals which are unique to your site? If so, what have you done to ensure their continued presence? If not, why not - and how will you revise the proposed design accordingly?

FRAMEWORK PLANS - TRANSPORTATION NETWORK

1. How does your design foster pedestrian activity?
2. How does your design facilitate transit opportunities? Where do you anticipate placing transit facilities?
3. How were the number and location of access points to Circleville Road and/or Blue Course Drive selected?

FERGUSON CODE

4. The regulations call for the alignment of streets in a manner that creates terminal vistas of specific features of the development or that provides views to prominent vistas. Can you show us how your design accomplishes this?
5. How is bicycle traffic accommodated on your local streets?
6. Based on your street pattern, can you show us which lots are oriented in a manner that allows them to be able to take advantage of passive solar-design?
7. What type of crosswalks will be utilized throughout the site? How do you intend to handle pedestrian crossings of Blue Course Drive? Have you included sidewalks along Blue Course Drive as dictated by the Corridor Overlay Zone requirements?
8. Can you describe your street hierarchy? What percentage of your lots were able to be designed with rear access?
9. Where is bicycle parking provided for within your site?
10. Are all streets designed as through-streets? If not, why not?

FRAMEWORK PLANS - UTILITIES FRAMEWORK

1. How have you coordinated drainage and stormwater management to ensure the continued function of groundwater resources?
2. How/Where has your stormwater management infrastructure been incorporated as an element of your open space?
3. How have utility locations been coordinated with your street system and landscaping plans with regard to the placement of aboveground utility structures?
4. Do you anticipate incorporating garden roofs or pervious paving to minimize the impact of impervious coverage on the site? If not, why not?
5. Where are infiltration and/or bio-retention features utilized on the site?

SITE PLANS - LAND USE STANDARDS/DIVERSITY/BLOCKS

1. Where/How have you incorporated the potential to construct desired accessory units?
2. What portion of your site is designed to accommodate commercial uses? If none, why? If none, what is the composition of the 20% that otherwise would have been dedicated to commercial uses?
3. What is the variation in lots sizes within the average block? What is the average block size?
4. Where have you implemented the requirements for work force housing? Can you tell us how these units will differ from market rate dwellings?
5. Have you incorporated cottages or patio homes? If so, where? What percentage of the units are these types? How will you control the total number to assure it remains within the standards?

ZONING

6. How do you anticipate that the design you have developed will foster a sense of community among the residents?
7. What architectural elements or siting criteria do you intend to incorporate to establish community character?
8. What elements of the various housing types you propose make them cohesive and compatible?
9. What centrally located open space is designed to serve those units located _____?
10. What street level improvements do you anticipate incorporating to create a pedestrian scale and/or inviting places to sit, walk, or relax?
11. What is the range of household sizes, incomes, and ages that your development has been designed to serve?
12. What standards will you be incorporating to assure the visual integration of the various uses permitted?
13. How have you addressed the massing requirements of the ordinance?
14. What site features have you retained through the pattern of blocks you propose?
15. Have you been able to minimize the potential for pedestrian and vehicle conflicts? If so, how?

SITE PLANS - DENSITY & SETBACKS/PARKING

1. How much density have you achieved on the site?
2. What is the average lot size?
3. What is the farthest distance from a dwelling unit to a commons, square, greenway, park, or playground? What is the average distance?
4. What is the anticipated setback for dwelling units along local streets? How does this help to define the street space?
5. How do you intend to use landscaping to reinforce pedestrian scale?
6. How many units will be designed to include garages on site? How many of these will be attached?
7. How do you intend to assure visual and acoustical privacy between units?
8. How do you anticipate creating a sense of visual continuity within each block?
9. Are any off-street parking compounds required to be provided? If so, where are these located? How are they accessed?
10. How have you minimized the visual impact of driveways and garages on the pedestrian environment?
11. How is the design for pedestrian access separated from vehicular access points on lots where off-street parking is utilized?

FERGUSON CODE

12. What is your design for landscape installation in required off-street parking areas?
13. How will lighting be used to complement pedestrian walkways and off-street parking compounds?

INCENTIVES

1. How many of the incentives have you taken advantage of?
2. Which ones, and why?

LANDSCAPING

1. How does the landscaping you propose accentuate the natural and built environment?
2. Do you propose the use of any planted medians or other public landscaped areas?

STREETScape ELEMENTS

1. What amenities [benches, artwork, gazebos, fountains, pavilions, etc.] will be provided within proposed public spaces?
2. How will the public spaces you propose function for social interaction or casual conversation?
3. Have any public and/or open spaces been designed to accommodate special community events? If not, why not?
4. Have public spaces been designed and located to promote civic pride? If so, how?

SIGNAGE/LIGHTING

1. What types of light fixtures are to be installed?
2. How do you anticipate that these fixtures will enhance the streetscape? Ensure pedestrian safety? Create a sense of place?
3. How will signage be used to complement the character of the community?
4. Will informational and/or directional signage be provided? How will signage be coordinated for consistency?

Appendix M – Garage Guidelines

	DETACHED	SEMI-DETACHED	ATTACHED
SINGLE FAMILY	<p>RA RR R-1 R-2 V</p> <p>10' 30' 20' 80'</p> <p>S.B.L.</p>	<p>R-2 R-3</p> <p>10' 30' 20' 90'</p> <p>S.B.L.</p>	<p>R-3 R-4</p> <p>15' 40' 20'</p> <p>Parking S.B.L.</p> <p>S.B.L. = Set Back Line</p>
TWO FAMILY	<p>R-2 R-3 V</p> <p>15' 30' 30' 80'</p> <p>S.B.L.</p>	<p>R-3 R-4 V</p> <p>15' 40' 30' 90'</p> <p>S.B.L.</p>	<p>R-4</p> <p>15' 60' 30'</p> <p>Parking S.B.L.</p>
MULTI-FAMILY	<p>R-4</p> <p>20' 40' 30' 80'</p> <p>S.B.L.</p>	<p>R-4</p> <p>20' 50' 30' 90'</p> <p>S.B.L.</p>	<p>R-4</p> <p>20' 60' 30'</p> <p>Parking S.B.L.</p>

Appendix N – Supplement 5
Standard Animal Weights

APPENDIX N: Standard Animal Weights

**Supplement 5
Standard Animal Weights**

Agronomy Facts 54 - Table 1. Standard animal weights used to calculate animal equivalent units to identify concentrated animal operations.

Type of Animal	Standard Weight (lbs) during Production (range)
Dairy Holstein/Brown Swiss	
Cow	1450
Heifer: 1-2 yr.	1000 (750 – 1250)
Calf: 0-1 yr.	420 (90 – 750)
Bull	1700
Dairy Guernsey/Ayrshire	
Cow	1200
Heifer: 1-2 yr.	865 (630 – 1100)
Calf: 0-1 yr.	350 (70 – 630)
Bull	1600
Dairy Jersey	
Cow	1000
Heifer: 1-2 yr.	675 (500 – 850)
Calf: 0-1 yr.	275 (50 – 500)
Bull	1200
Beef	
Calf: 0-8 mo.	300 (100 – 500)
Backgrounding Cattle	500 (300 – 700)
Finishing: 8-24 mo.	950 (500 – 1400)
Replacement Heifer: 8 mo.-1 yr.	500 (300 – 700)
Replacement Heifer: 1-2 yr.	875 (700 – 1050)
Cow	1400
Bull	1500
Veal	
Calf: 0-20 wk.	280 (95 – 465)
Swine	
Nursery pig	35 (13 – 57)
Wean to finish	143 (13 – 273)
Grow finish	165 (57 – 273)
Gestating sow	450
Sow and litter	470
Boar	450

Type of Animal	Standard Weight (lbs) during Production (range)
Poultry Layer	
White egg: 18-75 wk.	3.13 (2.82 – 3.44)
White egg: 18-90 wk.	3.14 (2.82 – 3.46)
Brown egg: 18-75 wk.	3.85 (3.35 – 4.34)
Brown egg: 18-90 wk.	3.85 (3.35 – 4.34)
Pullet, white egg: 0-16 wk.	1.38 (0.08 – 2.67)
Pullet, brown egg: 0-16 wk.	1.54 (0.08 – 3.0)
Breeder hen, white egg: 17-70 wk.	3.25 (2.7 – 3.8)
Breeder rooster, white egg: 17-70 wk.	4.37 (3.67 – 5.06)
Breeder hen, brown egg: 17-70 wk.	3.55 (2.9 – 4.2)
Breeder rooster, brown egg: 17-70 wk.	4.78 (4.5 – 5.06)
Poultry Broiler	
Large: 0-53 days	3.55 (0.09 – 7.0)
Medium: 0-35 days	2.55 (0.09 – 5.0)
Roaster male: 0-7 wk.	4.70 (0.09 – 9.3)
Roaster female: 0-9 wk.	4.95 (0.09 – 9.8)
Breeder pullet: 0-20 wk.	2.55 (0.09 – 5.0)
Breeder cockerel: 0-20 wk.	3.55 (0.09 – 7.0)
Breeder hen: 20-65 wk.	6.75 (5.0 – 8.5)
Breeder rooster: 20-65 wk.	8.75 (7.0 – 10.5)
Poultry Turkey	
Tom brooder: 0-6 wk.	3.36 (0.22 – 6.5)
Hen brooder: 0-6 wk.	2.74 (0.22 – 5.25)
Tom: 6-18 wk.	25.25 (6.5 – 44)
Hen regular: 6-12 wk.	11.13 (5.25 – 17)
Hen heavy: 6-16 wk.	14.63 (5.25 – 24)
Poultry Duck	
Starter: 0-17 days	1.36 (0.22 – 2.5)
Finisher: 17-38 days	4.88 (2.5 – 7.25)
Developer: 0-196 days	3.21 (0.22 – 6.2)
Layer	6.85 (6.2 – 7.5)
Poultry Game Birds	
Guinea, growing: 0-14 wk.	1.91 (0.06 – 3.75)
Guinea, mature	3.75
Pheasant, growing: 0-13 wk.	1.53 (0.05 – 3.0)
Pheasant, mature	3.0
Chukar, growing: 0-13 wk.	0.52 (0.04 – 1.0)
Chukar, mature	1.0
Quail, growing: 0-13 wk.	0.26 (0.02 – 0.5)
Quail, mature	0.5

Type of Animal	Standard Weight (lbs) during Production (range)
Larger Breed Sheep	
Lamb: 0-1 yr.	95 (10 – 180)
Ewe	225
Ram	300
Medium Breed Sheep	
Lamb: 0-1 yr.	80 (10 – 150)
Ewe	175
Ram	225
Smaller Breed Sheep	
Lamb: 0-1 yr.	45 (10 – 80)
Ewe	100
Ram	125
Meat Goats	
Kid: 0-1 yr.	65 (5 – 125)
Doe	150
Buck	200
Dairy Goats	
Kid: 0-1 yr.	45 (5 – 85)
Doe	125
Buck	170
Miniature Horses & Miniature Donkeys	
Foal: 0-6 mo.	35 (25 – 45)
Weanling: 6-12 mo.	60 (45 – 75)
Yearling: 12-24 mo.	100 (75 – 125)
Two Year Old: 24-36 mo.	150 (125 – 175)
Mature	200
Ponies & Donkeys	
Foal: 0-6 mo.	65 (30 – 100)
Weanling: 6-12 mo.	150 (100 – 200)
Yearling: 12-24 mo.	300 (200 – 400)
Two Year Old: 24-36 mo.	400 (300 – 500)
Mature	600
Light Horses & Mules	
Foal: 0-6 mo.	190 (80 – 300)
Weanling: 6-12 mo.	450 (300 – 600)
Yearling: 12-24 mo.	700 (600 – 800)
Two Year Old: 24-36 mo.	900 (800 – 1000)
Mature	1100

Type of Animal	Standard Weight (lbs) during Production (range)
Draft Horses	
Foal: 0-6 mo.	360 (120 – 600)
Weanling: 6-12 mo.	800 (600 – 1000)
Yearling: 12-24 mo.	1150 (1000 – 1300)
Two Year Old: 24-36 mo.	1450 (1300 – 1600)
Mature	1800
Bison	
Calf: 0-1 yr.	275 (50 – 500)
Yearling: 1-2 yr.	650 (500 – 800)
Cow	1000
Bull	1600
Deer	
Fawn: 0-6 mo.	36 (7 – 65)
Yearling Doe: 6-18 mo.	95 (65 – 125)
Yearling Buck: 6-18 mo.	110 (65 – 155)
Mature Doe	145
Mature Buck	200
Alpaca	
Young	80 (15 – 145)
Mature Female	145
Mature Male	170
Llama	
Cria: 0-1 yr.	75 (25 – 125)
Yearling: 1-2 yr.	213 (125 – 300)
Mature	350

2017 Nutrient Management Standard Animal Weights Update Roll Out

1. The State Conservation Commission (SCC) approved NEW Standard Animal Weights and animal groupings on May 9, 2017. The SCC published the NEW Standard Animal Weights and animal groupings table in the Pennsylvania Bulletin on June 3, 2017
2. **The NEW Standard WEIGHTS will become effective on October 1, 2019 (Start of Crop Year 2020)**
3. Agronomy Fact Sheet 54 will be updated and published in 2017 with the NEW Standard Animal Weights and animal groupings.
4. NEW Standard Animal Weights will be updated in the Growing Animal Weight Calculator section of the Nutrient Management Plan (NMP) spreadsheet Version 6.0. Planners will use the updated weights when manually entering them in the Manure Group Information Input section. A table that includes the new animal types and weights will be included in the spreadsheet for reference.
 - a. NMP Spreadsheet Version 6.0 is proposed to be released in October 2017, coinciding with the release of the Nutrient Management Technical Manual Version 10, anticipated in October 2017.
 - b. Version 6.0 must be used for all Crop Year 2019 NMPs and following crop years until replaced by the next version of spreadsheet.
 - c. Note that Crop Year 2019 starts on October 1, 2018.
5. Integrating the use of NEW Standard Animal Weights in nutrient management plans.
 - a. A commercial Nutrient Management Specialist (NMS) must perform a Concentrated Animal Operation (CAO) calculation that will be verified by a delegated conservation district or the SCC.
 - i. Delegated districts can perform "preliminary" CAO calculations.
 - ii. When it is determined that an operator is close to the CAO threshold, a commercial NMS must perform the official calculation that will then be reviewed by the delegated district or the SCC.
 - b. The Program will continue to follow the regulations at 25 Pa. Code § 83.261 (General) after the NEW Standard Animal Weights are released:
 - i. Section 83.261(1)(iii) provides in relevant part: For new operations defined as CAOs and commencing before October 1, 2006, a plan shall have been submitted prior to commencement of operations.
 - ii. Section 83.261 (3) provides in relevant part: Operations that become defined as CAOs after October 1, 2006, due to expansion of an existing operation or loss of rented or leased land. Existing operations that make changes to their operations that result in becoming defined as CAOs for the first time after October 1, 2006, shall meet the following:
 1. (i) An agricultural operation which becomes a CAO after October 1, 2006, due to loss of land suitable for manure application, shall submit a plan within 6 months after the date which the operation becomes a CAO.
 2. (ii) An agricultural operation which will become a CAO due to expansion of operations by the addition of animals shall obtain approval of the plan prior to the expansion.

June 9, 2017

