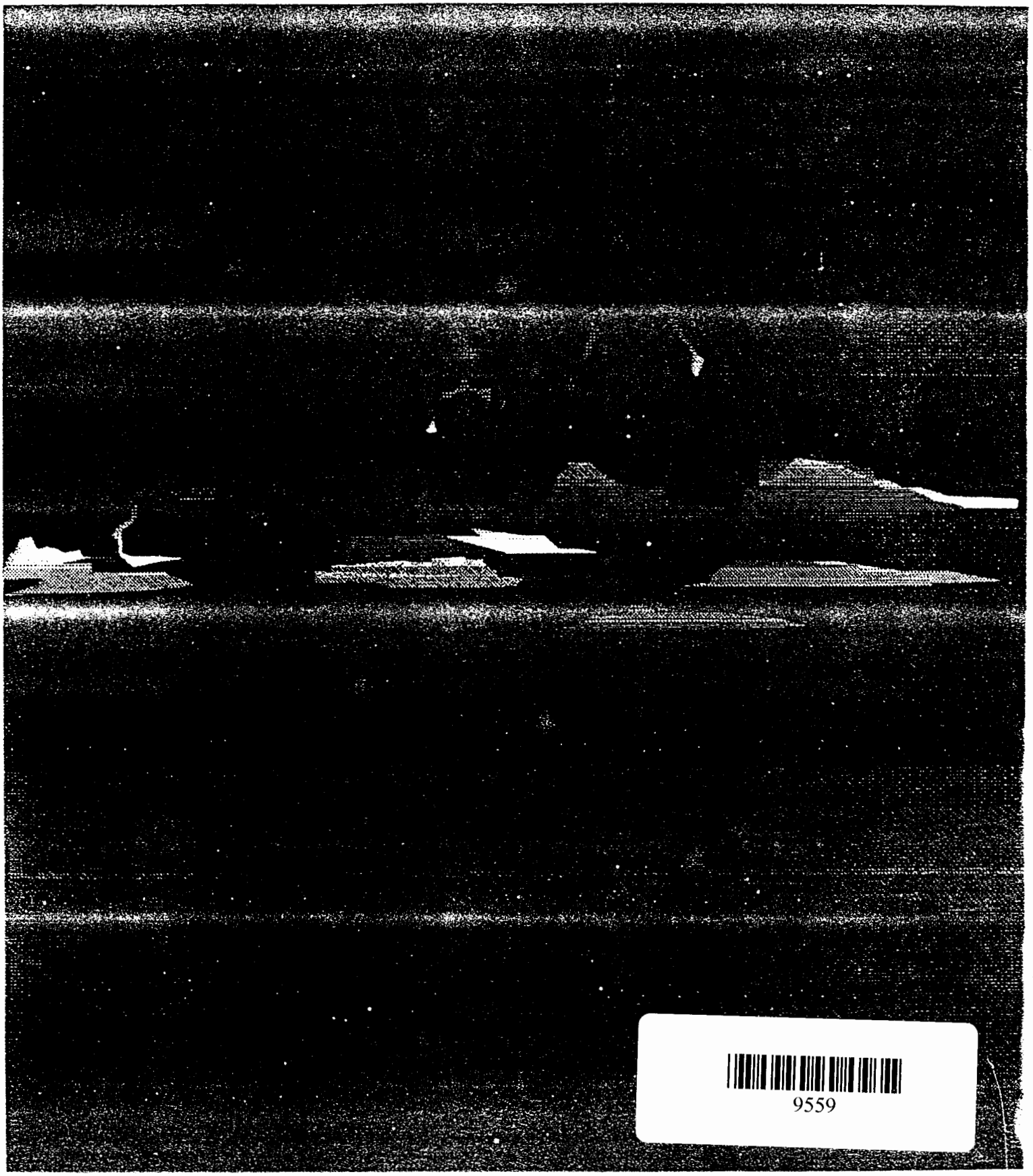
1/1/1992

Ref

0134 Reference

GUIDELINES FOR PREPARING A STORM WATER POLLUTION PREVENTION PLAN



27/74

STORM WATER POLLUTION PREVENTION PLANS

All facilities covered by the general permit for storm water discharges associated with industrial activity must prepare and implement a storm water pollution prevention plan. The storm water permits address pollution prevention plan requirements for a number of industries, including facilities at Los Alamos National Laboratory.

The regulations were established by the United States Environmental Protection Agency (EPA) for National Pollutant Discharge Elimination System (NPDES) general permits for storm water discharges associated with industrial activity (Federal Register, Vol. 57, No. 175, September 9, 1992). These regulations provide flexible requirements for site-specific storm water pollution prevention plans. These plans are to be developed and implemented to minimize and control pollutants in storm water discharges.

Storm water pollution prevention focuses on two major objectives:

1) Identification of pollution sources which will potentially affect the quality of any storm water discharges

2) Implementation of practices to minimize and control pollutants in storm water discharges to ensure compliance with the permit.

Each plan is intended to facilitate a process designed to prevent or control the discharge of pollutants in storm water runoff. The manager of each Laboratory facility thoroughly evaluates potential pollution sources at the site. Then, the operator selects and implements appropriate actions. Each plan should include the following four steps:

1) Formation of a team of qualified facility personnel who will be responsible for preparing the plan and assisting the facility manager in its implementation,

2) Assessment of potential storm water pollution sources,

3) Selection and implementation of appropriate management practices and controls,

4) Periodic evaluation of the ability of the plan to prevent storm water pollution and comply with the permit.

A Flowchart of the process for completing a Storm Water Pollution Prevention Plan (SWPPP) is shown on page 2.

STORM WATER POLLUTION PREVENTION PLAN
PLANNING AND ORGANIZATION

- Pollution Prevention Team
- Using other plans

- **Pollution Prevention Team** The a first step for developing a Storm Water Pollution Prevention Plan (SWPPP) is each facility site manager must identify a team of individuals responsible for developing the plan and assisting the facility manager in the plan's implementation, maintenance and revision. Naming the individual or team members makes it clear that part of that person's job is to prevent storm water pollution. Identifying a specific individual also provides a point of contact for those outside the facility who may need to discuss aspects of the facility's pollution prevention plan (i.e., regulatory officials).

  When selecting members of the team, the site manager should rely on the expertise of personnel within his or her charge to ensure that all aspects of plant operations are considered. The plan must clearly describe the responsibilities of each team member for specific components of the plan.

  Effective organization of the pollution prevention team is important in order for the team to be able to accomplish the task of developing and implementing a comprehensive SWPPP. There are two important features in organizing a team of this nature: (1) selecting the right individuals to serve on the team; and (2) establishing good channels of communication. To ensure that the SWPPP remains effective, the person or team responsible for maintaining the plan must be aware of any changes that are made in plant operations to determine if any changes must be made. See attached Worksheet #1.

- **Using other plans** The pollution prevention plan can implement parts of other related documents that have already been completed. The Spill Prevention Control and Countermeasure Plan (SPCC) is a good example of such a document. Although you should build on relevant portions of other plans as appropriate, it is important to note that your SWPPP must be a comprehensive, stand alone document.

- **Inventory of Exposed Materials** The plan must include an inventory of the types of materials handled at the site which may potentially be exposed to precipitation. Maintaining an up-to-date material inventory is an efficient way to identify what materials are handled onsite and which may contribute to storm water contamination problems. The inventory shall include at a minimum a narrative description of the following:

  1) The significant materials that have been handled, treated, stored or disposed of in a manner which allows exposure to storm water, between the time of three years prior to October 1, 1992 and the present.

  2) The methods and locations of on-site storage or disposal,

  3) Materials management practices employed to minimize contact of materials with storm water runoff between the time of three years prior to October 1, 1992 and the present,

  4) The location and description of existing structural and non-structural control measures to reduce pollutants in storm water runoff,

  5) A description of any treatment the storm water receives,

  6) The Solid Waste Management Units (SWMU) that exist in any storm water drainage area at your facility. The current list of SWMUs is available from Juan Corpion of EM-8 at 665-0455.

  See attached Worksheets #3 and #3A

- **Non-Storm Water Discharges** The plan shall include a certification that all storm water discharges have been tested or evaluated for the presence of <u>non-storm water</u> discharges. The certification shall include the following:

  1) The identification of significant potential sources of non-storm water at the site,

  2) A description of the results of any test and/or the evaluation for the presence of non-storm water discharges,

  3) The evaluation criteria or testing method used,

  4) The date of any testing and/or evaluation,

  5) The location of on-site drainage points that were directly observed during the test

  Examples of non-storm water discharges include any water used directly in the manufacturing process (process water), air conditioner condensate, non-contact cooling water, vehicle wash water, discharges from fire fighting activities or sanitary wastes. Connections of non-storm water discharges to a storm water collection system are common and sometimes unidentified. Those types of discharges are significant sources of water quality problems. Unless allowed by an NPDES permit, such discharges are illegal. See attached Worksheets #5 and #6.

- **Risk Assessment Summary** A risk assessment summary should clearly point to activities, materials and physical features that have potential to contribute pollutants to storm water. The operator must consider the following activities:

    1) Loading and unloading operations
    2) Outdoor storage activities
    3) Outdoor manufacturing or processing activities
    4) Significant dust or particulate generating processes
    5) On-site waste disposal activities

The assessment must list any significant pollution sources at the site and identify the pollutant parameters (e.g., chemical oxygen demand) associated with each source.

An effective preventive maintenance program should include the following:

1) Identification of equipment, systems and facility areas that should be inspected
2) Schedule for periodic inspections
3) Appropriate and timely adjustment and repairs
4) Maintenance of complete records on inspections and equipment (e.g., cleaning of oil/water separators, catch basins)

- **-Spill Prevention and Response** Areas and activities that typically pose a high risk for spills include loading and unloading areas, storage areas, process activities and waste disposal activities. These areas and activities and their accompanying drainage points must be described in the plan. Based on an assessment of possible spill scenarios, facility personnel must specify appropriate material handling procedures, storage requirements, containment or diversion equipment and spill cleanup procedures. The SPCC should be used by the pollution prevention team when implementing this BMP.

- **-Visual Inspections** Routine visual inspections are not meant to be a comprehensive evaluation of the entire storm water pollution prevention program - that is the function of the Annual Site Compliance Evaluation.

  The best plan is a simple one - there is no reason for it to be highly technical, complicated or labor-intensive. If your facility already has a routine surveillance program in place, consider expanding it to include the visual inspection element of your SWPPP.

  The most important thing for you to remember here is to document all inspections. Inspection records should note when inspections were done, who conducted the inspection, what areas were inspected, what problems were found, and steps taken to correct any problems, including who has been notified. A set of follow up procedures shall be used to assure that appropriate actions are taken in response to inspections.

STORM WATER POLLUTION PREVENTION PLAN
IMPLEMENTATION PHASE

- SWPPP Implementation
- Employee Training
- Storm Water Sampling Plan

- **SWPPP Implementation** Implementing your plan will involve several steps:

    1) Develop a schedule for implementation. For example, your schedule might include a deadline for putting improved housekeeping measures into practice.

    2) Assign specific individuals with responsibility for implementing aspects of the plan and/or monitoring implementation.

    3) Ensure that management approves of your implementation schedule and strategy and schedule regular times for reporting progress to management (see attached Worksheet #8).

  All storm water pollution prevention plans must be developed by April 1, 1993 and implemented by October 1, 1993. The Environmental Protection Group (EM-8) may provide technical assistance in the form of initial organization and storm water monitoring to help keep costs down.

- **Employee Training** Employee training programs are necessary to inform personnel at all levels of their responsibility for 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 should identify required intervals for such training (see attached Worksheet #9).

- **Storm Water Sampling Plan** Under the direction of the Environmental Protection Group EM-8, certain areas of the laboratory have had a Storm Water Sampling Plan in place since early 1991. Wooden flumes were installed at strategic locations to manually collect storm water runoff. The runoff is then analyzed for a variety of pollutants including heavy metals, organic compounds, radioactivity, and other suspected toxicants.

  This effort will continue but will likely be modified in the future by additional New Mexico State requirements, site specific regulations and budget constraints. The User Groups should prepare to take a more active role in their Storm Water Sampling plan requirements in the future.

The report must also include either:

A certification, signed by the director of operations, that the facility is, to the best of his or her knowledge, in compliance with the SWPPP; or

A statement signed by the director of operations describing any instance of non-compliance with the SWPPP and the actions taken to bring the facility into compliance.

- **Recordkeeping** A proper recordkeeping system ensures adequate implementation of the SWPPP. Incidents such as spills, leaks and improper dumping, along with other information describing the quality (e.g. monitoring data) and quantity of storm water discharges, should be included in the records. Inspections and maintenance activities such as cleaning oil and grit separators or catch basins should be documented and recorded. Records dating back to October 1, 1989 of releases of a hazardous substance in excess of reportable quantities established by 40 CFR 117 or 40 CFR 302 should be maintained. The plan also must describe a system that enables timely reporting of storm water management related information to appropriate facility personnel. Records must be retained until September 9, 1998.

- **Review and Revisions** Based on the results of the inspection or storm water monitoring data, the pollution prevention plan may have to be revised. You must amend your plan whenever there is a change in design, construction, operation, or maintenance, which may impact the potential for pollutants to be discharged. Revisions also may be necessary if the SWPPP proves to be ineffective in controlling the discharge of pollutants. Facilities are not required to submit a notice to the EPA each time the pollution prevention plan is modified unless you are specifically asked to do so.

- **EM-8 Review Procedure** The Environmental Protection Group EM-8 will review all labwide Storm Water Pollution Prevention Plans. The review process will provide a tracking mechanism for ensuring that all plans are in compliance with the NPDES General Permit. If any revisions are required, a two week period will be allowed for such revisions.

STORM WATER POLLUTION

PREVENTION PLAN

WORKSHEETS

DEVELOPING A SITE MAP (Section 2.2.1)	Worksheet #2 Completed by: _____ Title: _____ Date: _____

Instructions: Draw a map of your site including a footprint of all buildings, structures, paved areas, and parking lots. The information below describes additional elements required by EPA's General Permit (see example maps in Figures 2.3 and 2.4).

EPA's General Permit requires that you indicate the following features on your site map:

- All outfalls and storm water discharges
- Drainage areas of each storm water outfall
- Structural storm water pollution control measures, such as:
  - Flow diversion structures
  - Retention/detention ponds
  - Vegetative swales
  - Sediment traps
- Name of receiving waters (or if through a Municipal Separate Storm Sewer System)
- Locations of exposed significant materials (see Section 2.2.2)
- Locations of past spills and leaks (see Section 2.2.3)
- Locations of high-risk, waste-generating areas and activities common on industrial sites such as:
  - Fueling stations
  - Vehicle/equipment washing and maintenance areas
  - Area for unloading/loading materials
  - Above-ground tanks for liquid storage
  - Industrial waste management areas (landfills, waste piles, treatment plants, disposal areas)
  - Outside storage areas for raw materials, by-products, and finished products
  - Outside manufacturing areas
  - Other areas of concern (specify:_____)

DESCRIPTION OF EXPOSED SIGNIFICANT MATERIAL
(Section 2.2.2)

Worksheet #3A
Completed by: _____
Title: _____
Date: _____

Instructions: Based on your material inventory, describe the significant materials that were exposed to storm water during the past three years and/or are currently exposed. For the definition of "significant materials" see Appendix B of the manual.

Description of Exposed Significant Material	Period of Exposure	Quantity Exposed (units)	Location (as indicated on the site map)	Method of Storage or Disposal (e.g., pile, drum, tank)	Description of Material Management Practice (e.g., pile covered, drum sealed)

NON-STORM WATER DISCHARGE ASSESSMENT AND CERTIFICATION (Section 2.2.4)

Worksheet #5
Completed by: _____
Title: _____
Date: _____

Date of Test or Evaluation	Outfall Directly Observed During the Test (identify as indicated on the site map)	Method Used to Test or Evaluate Discharge	Describe Results from Test for the Presence of Non-Storm Water Discharge	Identify Potential Significant Sources	Name of Person Who Conducted the Test or Evaluation

CERTIFICATION

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

A. Name & Official Title (type or print)	B. Area Code and Telephone No.
C. Signature	D. Date Signed

POLLUTANT SOURCE IDENTIFICATION
(Section 2.2.6)

Worksheet #7
Completed by: _____
Title: _____
Date: _____

Instructions: List all identified storm water pollutant sources and describe existing management practices that address those sources. In the third column, list BMP options that can be incorporated into the plan to address remaining sources of pollutants.

Storm Water Pollutant Sources	Existing Management Practices	Description of New BMP Options
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

IMPLEMENTATION
(Section 2.4.1)

Worksheet #8
Completed by: _____
Title: _____
Date: _____

Instructions: Develop a schedule for implementing each BMP. Provide a brief description of each BMP, the steps necessary to implement the BMP (i.e., any construction or design), the schedule for completing those steps (list dates) and the person(s) responsible for implementation.

BMPs	Description of Action(s) Required for Implementation	Scheduled Completion Date(s) for Req'd. Action	Person Responsible for Action	Notes
Good Housekeeping	1.			
	2.			
	3.			
Preventive Maintenance	1.			
	2.			
	3.			
Inspections	1.			
	2.			
	3.			
Spill Prevention and Response	1.			
	2.			
	3.			
Sediment and Erosion Control	1.			
	2.			
	3.			
Management of Runoff	1.			
	2.			
	3.			
Additional BMPs (Actively-specific and site-specific)	1.			
	2.			

STORM WATER POLLUTION PREVENTION (SWPP) PLAN
REQUIREMENTS FOR
ER PROJECT CHARACTERIZATION STUDIES

The following requirements and Best Management Practices (BMPs) are required and must be implemented for soil disturbing activities at SWMUs during the ER Project characterization phase.

These requirements and BMPs are for the following characterization activities, that involve auguring, drilling, grading, road building and other activities that may alter or impact vegetation, existing flow patterns or the surface of the ground. Other activities will need to be discussed with the Water Quality and Hydrology Group (ESH-18) as to their impact on storm water.

All requirements listed must be discussed in a narrative format, except for the map, following the outline below.

I. Pollution Prevention Team

Identification of the SWMU site personnel responsible for the implementation of the listed BMPs.

II. Description of Potential Pollutant Sources

1. Site map showing areas disturbed

   Site drainage map shall include:

   Outline of drainage area
   Contours
   Existing structural controls
   Surface water bodies
   Material storage areas
   Location of activities (fueling stations, maintenance, cleaning, loading/unloading, storage tanks, process and storage areas, ..)
   Pipelines
   SWMUs
   NPDES Outfalls
   Other potential pollutant sources

   Flow Direction:
   Storm water flow direction correct
   Receiving waters (emphemeral tributary to _____)
   New potential pollutants entering or coming in contact with storm water

2. Inventory of exposed materials

   These are materials that are brought to the site or exposed during characterization activities, (i.e. drill cuttings, equipment, chemicals, drill rigs,...)

3. Description of the potential pollutant sources from;

   a) loading and unloading and transfer operations;
   b) outdoor storage;
   c) processing activities;
   d) significant dust or particulate generating operations, and;
   e) on-site waste disposal.

8. Sediment and Erosion Control

Areas shall be identified, which due to ER Project activities, have a potential for soil erosion. Identify structural, vegetative, and/or stabilization practices.

9. Management of Runoff

Long term management of storm water runoff will not be necessary for short duration of characterization activities. However, remediation activities and extended field characterization efforts or characterization activities that detect pollutants that have the potential to effect storm water runoff shall address this requirement.

IV. Certification

A name and signature is required to provide the ESH-Division Director with a ER Project staff responsible for the implementation of the requirements and BMPs during the ER Project Characterization Phase.

Name_____ Date: _____