3.1 INTRODUCTION

In October, 1990, the Environmental Protection Agency (EPA) approved the Final Storm Water Rule under the National Pollutant Discharge Elimination System (NPDES). Under this rule, qualified projects are required to have storm water discharge permits. The Iowa Department of Natural Resources (IDNR) will be regulating all these permits.

3.2 QUALIFIED PROJECTS

The IDNR has defined a project as all the work done on a segment such as a roadway. This may include a number of contracts which are let separately like grading, paving, storm sewers and bridges, lighting, or erosion control. All of these separate contracts will be covered by the same permit.

The permits are required on any project that disturbs five or more acres of soil. However, for the Iowa DOT projects a permit is required if the project is 4.5 acres or more of disturbed area. The IDNR defines disturbed soil as any soil that is exposed to erosive forces (ie: wind or water).

3.3 IMPLEMENTATION AND DEADLINES

All projects that meet the above criteria and are required to have these permits. For projects currently beginning construction operations the application of Notice of Intent (NOI) must be submitted 24 hours prior to the start of construction operations (General Permit);

or

90 days prior to construction operations (Individual Permits).

3.4 DEFERMENTS

For municipalities serving a population less than 100,000, the application deadline and requirements for storm water discharges have been waived until 2003. This applies if the discharge is owned or operated by the municipality.

3.5 APPLICATION REQUIREMENTS

A complete application must include each of the following:

1. Completed Form 1415, "Notice of Intent"

The Notice of Intent for Storm Water Discharges Associated with Industrial Activity for Construction Activities (General Permit No. 2) is the application to the IDNR. It allows the IDNR to monitor all the work being done in Iowa. Only on Notice to Intent form will be completed for each project even though there may be many contracts let within the project limits.
3.5 APPLICATION REQUIREMENTS (Continued)

Refer to the Pollution Prevention Plan section for detailed information on project description and receiving waters. The facility location shall be the quarter section, township, and range of the mid-point of the project. It is suggested that the letting date from the most current production schedule for the Timetable for Major Activities. This permit should be signed by the engineer who supervises the design work. For in house plans, the permit will be signed by the appropriate engineer.

2. Proof of Public Notification

The Public Notice of Storm Water Discharge will be published in two newspapers for one day prior to starting work on the project. Only one public notice form needs to be completed for each project even though there may be many contracts let within the project limits.

The number of discharge point sources shall be all points where a concentrated flow of water leaves the right of way within the project limits (ie: rivers, streams, waterways, or sideroad ditches).

3. Applicable Fees - The Iowa Department of Natural Resources has a permit fee schedule. Contact the Iowa Storm Water Coordinator for a current fee schedule.

Payment of the required fees and execution of the NOI is the responsibility of the project owner.

3.6 FAILURE TO COMPLY

Failure to comply with the discharge requirements is in violation of the Clean Water Act and the Code of Iowa.

3.7 APPLY TO

Applications are to be sent to the Iowa Department of Natural Resources:

Iowa Storm Water Coordinator
Department of Natural Resources
900 E. Grand Avenue
Des Moines, Iowa 50319-0034

For further detailed information, see Reference No. 5 and 6 in Section 4, Reference Material. Note the runoff coefficients in Chapter II, Section 3 may be used in place of the values contained in Reference No. 5 of this chapter.
3.8 PROJECT COMPLETION

Upon final stabilization of the disturbed areas, a "Notice of Discontinuation" must be filed with the Iowa DNR. This ends the permit fee requirements.

3.9 STORM WATER POLLUTION PREVENTION PLAN

1. General

   Required for all construction sites. This plan is to be kept on site at all times and must be presented to the Iowa DNR upon request.

   Because the Pollution Prevention Plan must be on the project work site at all times, it should be in the project plans. The same Pollution Prevention Plan should appear in all plans that occur within a project's limit. Therefore, when a Pollution Prevention Plan is developed for a grading project, the same Pollution Prevention Plan must appear in all related plans for paving, storm sewers, bridges, lighting, erosion control, etc.

   Much of the Pollution Prevention Plan is routine. The following procedure identifies the project specific information which the designer must determine. The attached Pollution Prevention Plan example will give an idea of what is acceptable. Any items in the example that are not discussed in the following paragraphs can be considered "boiler plate" text and should be included as shown on all Pollution Prevention Plans. A fill-in-the-blank Pollution Prevention Plan is attached to help complete the form.

2. Plan Requirements

   A. Required on all sites covered by permit. Should be prepared in accordance with good engineering practices.

   B. Shall be completed prior to submittal of NOI.

   C. Signature requirements are the same as for the NOI.

   D. Must be on site at all times and made available to IDNR upon request.

   E. Must be updated due to changes in design, construction, operation and/or maintenance. Also, the IDNR may request modification.
3.9 STORM WATER POLLUTION PREVENTION PLAN (Continued)

F. Contents of the Plan must include the following:

(1) Site Description

• The nature of the construction.

• Total area of the site and the total area expected to be disturbed.

• Runoff co-efficient (after construction completed).

• Site map showing the following:
  
  Drainage patterns.

  Anticipated slopes after major grading.

  Areas of soil disturbance.

  Locations of major controls.

  Locations where stabilization practices are expected.

  Surface waters (including wetlands).

  Locations where storm water is discharged into surface water.

(2) Controls

• Describe intended sequence of major activities and the control measures involved.

• Stabilization practices

  Description of temporary and permanent stabilization practices including site-specific implementation of the practices.

  Plans should ensure that existing vegetation be preserved where possible and disturbed areas are stabilized.
3.9 STORM WATER POLLUTION PREVENTION PLAN (Continued)

May include seeding, mulching, sodding, geotextile, etc.

Must be initiated by the 14th calendar day if no construction will be occurring for a period of 21 or more calendar days.

- Structural practices

Provide description of structural practices to divert flows from exposed soils, or to store flows.

For more than 10 acres disturbed at one time, a temporary sediment basin providing 3,600 cf of storage per acre drained shall be provided. The "per acre drained" does not include flows from offsite areas or areas onsite that are either undisturbed or have underground final stabilization.

If 3,600 cf per area drained is not attainable, silt fences, sediment traps, or equivalent sediment controls are required for all side slopes and downslope boundaries of the construction area.

For 10 or less acres disturbed, the same controls are required except for the sediment basin which is optional.

Velocity dissipation devices shall be used to provide a non-erosive velocity flow to maintain existing hydrology conditions of water courses.

(3) Maintenance

- Description of procedures to maintain and operate the erosion protection features.

(4) Inspection

- Site must be inspected by a qualified person (provided by the discharger) once every seven calendar days and within 24 hours after a rainfall of 0.5" or greater. Reports summarizing the inspections shall be made and retained as part of the storm water pollution prevention plan until project termination.
3.9 STORM WATER POLLUTION PREVENTION PLAN (Continued)

(5) Non-storm Water Discharges

• Identify any non-storm water discharges which would be combined with storm water discharges.

(6) Additional Requirements

• Discharges from industrial sites other than for construction may be covered under this permit only on a limited basis and only when combined with discharges from a construction activity.

(7) Certification

• Certification of the Plan is required. This makes the contractor a co-permittee along with the owner.

• All contractors and subcontractors must certify the Plan.

G. "Final Stabilization" means that all soil disturbing activities have been completed, and that uniform perennial vegetative cover with a density of 70% for the area has been established. Equivalent stabilization measures could also be used.

H. All Plans and reports must be retained for a period of three years after project completion.

3. Pollution Prevention Plan Data

A. Project Description

The project description should be very general to cover any extra work orders which may change the scope of work done.

Both the total acres and the disturbed acres need to be calculated. The total acres is calculated by multiplying the average right of way (ROW) width by the length of the project plus any extra acres for interchanges or borrows areas. For those contracts let separately, the designer must include the acres of all the contracts in the project limits.

Reminder: Disturbed acres include any soil that will be exposed to erosive forces. Inlay areas, re-graded shoulders, and borrows should also be counted as disturbed areas, not just the acres to be seeded.

For example, the total acres and disturbed areas on the Pella bypass project are:
3.9 STORM WATER POLLUTION PREVENTION PLAN (Continued)

Total acres  = (Ave ROW width x length of project) +
Interchange Areas
= \((350' \times 30,526') + (2,000' \times 800')\)
\((2.5 \text{ interchanges})/43,560\)
= 337 acres
Approximately 350 acres

Disturbed areas  = Area of new pavement + Area of new granular shoulders + Area to be seeded
= 42 acres + 25 acres + 255 acres
= 322 acres
Approximately 325 acres

B. Soil Associations

The soil association for the project area must be determined. The attached map, Principle Soil Associations of Iowa, gives the soil associations for Iowa. If the project is on the borderline between two soil associations, list both associations.

Once the soil associations are determined, use Table 10.1 - Soil Association Hydrologic Groups to determine the Hydrologic Soil Groups. An average hydrologic group must be estimated.

For example, the Pella bypass is located in two soil associations on the Principle Soil Associations of Iowa map. Figure 10.1 and Table 10.1 give the following soil associations and hydrologic groups.

<table>
<thead>
<tr>
<th>Soil Association</th>
<th>Hydrologic Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinton-Keswick-Lindley</td>
<td>B-C-C</td>
</tr>
<tr>
<td>Otley-Mahaska-Taintor</td>
<td>B-B-C/D</td>
</tr>
</tbody>
</table>

Use estimated Hydrologic Group C

C. Soil Conservation Services (SCS) Runoff Curve Number

The estimated average SCS runoff curve number for the entire project after completion is determined by using Table 10.2 - SCS Runoff Curve Numbers and the average hydrologic soil group to get a weighted average based on various surface covers (paved surfaces, granular surfaces, etc.).
3.9 STORM WATER POLLUTION PREVENTION PLAN (Continued)

For example, the Pella Bypass has 337 total acres: 42 acres of paving, 25 acres of granular surfaces and the rest in rural seeding. This gives the following percentages:

- Paved Surfaces 42/337 acres = 12%
- Granular Surfaces 25/337 acres = 7%
- Rural Seeding 100% - 12% - 7% = 81%

To calculate the average SCS runoff curve number, multiply each percentage by the runoff number from Chart 2 for hydrologic Group C.

- Paved Surfaces .12 x 98 = 6.2
- Granular Surfaces .07 x 89 = 11.8
- Rural Seeding .81 x 71 = 57.5

Average SCS Runoff Number 75.5 (Use 76)

D. Location of Storm Water Discharge Controls

Part of the Pollution Prevention Plan is the reference or inclusion of plans which show locations of typical slopes, ditch grades, major structural and non-structural controls. These items are usually found on the plan and profile sheets of the project.

E. Receiving Waterways

The first named waterway and the first named river which will be receiving runoff from our projects need to be identified. These waterways may be found in large size county maps or United States Geological Survey maps.

F. Controls

Site specific erosion control practices and the contractor who is responsible must be listed in the Controls section of the Pollution Protection Plan. For most projects, this can be easily done by making the appropriate corrections to the attached sample. All projects need to include the statement which says the project will be complete with the establishment of permanent perennial vegetation.
FIGURE 3.1 - MAP REPRINTED FROM SPECIAL REPORT NO. 42, I.S.U. COOPERATIVE EXTENSION SERVICE, 1965
The information on the following charts was extracted from Technical Release 55, Urban Hydrology for Small Watersheds, revised in 1986 by the U.S. Soil Conservation Service.

**TABLE 3.1 - SOIL ASSOCIATION HYDROLOGIC GROUPS**

<table>
<thead>
<tr>
<th>Soil Association</th>
<th>Hydrologic Soil Group(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B Soils of Mississippi River Bottomland</td>
<td>B/D</td>
</tr>
<tr>
<td>AGH Adair - Grundy - Haig</td>
<td>C - C - C/D</td>
</tr>
<tr>
<td>ASE Adair - Seymour - Edina</td>
<td>C - D - D</td>
</tr>
<tr>
<td>C Clinton - Keswick - Lindley</td>
<td>B - C - C</td>
</tr>
<tr>
<td>CLC Cresco - Lourdes - Clyde</td>
<td>C - C - B/D</td>
</tr>
<tr>
<td>CNW Clarion - Nicollete - Webster</td>
<td>B - B - B/D</td>
</tr>
<tr>
<td>D Downs</td>
<td>B</td>
</tr>
<tr>
<td>DT Dinsdale - Tama</td>
<td>B - B</td>
</tr>
<tr>
<td>F Fayette</td>
<td>B</td>
</tr>
<tr>
<td>FDS Fayette - Dubuque - Stonyland</td>
<td>B - B - B</td>
</tr>
<tr>
<td>GPS Galva - Primghar - Sac</td>
<td>B - B - B</td>
</tr>
<tr>
<td>GH Grundy - Haig</td>
<td>C - C/D</td>
</tr>
<tr>
<td>KFC Kenyon - Floyd - Clyde</td>
<td>B - B - B/D</td>
</tr>
<tr>
<td>L Lindley - Keswick - Weller</td>
<td>C - C - C</td>
</tr>
<tr>
<td>LOS Lutton - Onowa - Salix</td>
<td>D - D - B</td>
</tr>
<tr>
<td>M Marshall</td>
<td>B</td>
</tr>
<tr>
<td>MIH Monona - Ida - Hamburg</td>
<td>B - B - B</td>
</tr>
<tr>
<td>Mo Moody</td>
<td>B</td>
</tr>
<tr>
<td>OMT Otley - Mahaska - Taintor</td>
<td>B - B - C/D</td>
</tr>
<tr>
<td>SSM Shelby - Sharpsburg - Macksburg</td>
<td>B - B - B</td>
</tr>
<tr>
<td>TM Tama - Muscatine</td>
<td>B - B</td>
</tr>
</tbody>
</table>

**TABLE 3.2 - SCS RUNOFF CURVE NUMBER**

<table>
<thead>
<tr>
<th>Cover Description</th>
<th>Curve Numbers for Hydrologic Soil Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Paved Surfaces</td>
<td>98</td>
</tr>
<tr>
<td>Granular Surfaces</td>
<td>76</td>
</tr>
<tr>
<td>Earth Shoulders</td>
<td>39</td>
</tr>
<tr>
<td>Urban Seeding</td>
<td>39</td>
</tr>
<tr>
<td>Rural Seeding</td>
<td>30</td>
</tr>
</tbody>
</table>
FIGURE 3.2 - EXAMPLE PERMIT & POLLUTION PREVENTION PLAN

IOWA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

NOTICE OF INTENT FOR NPDES COVERAGE UNDER GENERAL PERMIT

No. 1 FOR "STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY"

or

No. 2 FOR "STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY FOR CONSTRUCTION ACTIVITIES"

or

No. 3 FOR "STORM WATER DISCHARGE ASSOCIATED WITH INDUSTRIAL ACTIVITY FROM ASPHALT PLANTS, CONCRETE BATCH PLANTS, ROCK CRUSHING PLANTS, AND CONSTRUCTION SAND AND GRAVEL FACILITIES."

PERMIT INFORMATION

Has this storm water discharge been previously permitted  (Check One)  ☐ Yes  ☐ No.

If yes, please list permit number ________________

Under what General Permit are you applying for coverage?

General Permit No. 1 ☐ General Permit No. 2 ☐ General Permit No. 3 ☐

NPDES PERMIT FEE OPTIONS

For coverage under the NPDES General Permit the following fees apply:

☐ Annual Permit Fee $150 (per year)

or

☐ 3-year Permit Fee $300

Coverage by the 3-year permit fee expires no later than the expiration date of the general permit (October 1, 2002). Maximum coverage is for three years.

FACILITY OR PROJECT INFORMATION

Enter the name and full address/location (not mailing address) of the facility or project for which permit coverage is requested.

NAME: ADDRESS / LOCATION OF SITE:
CITY: COUNTY: STATE: ZIP CODE:

CONTACT INFORMATION. Give name, mailing address and telephone number of a contact person (Attach additional information on separate pages as needed). This will be the address to which all correspondence will be sent and to which all questions regarding your application will be directed.

NAME: ADDRESS:
CITY: STATE: ZIP CODE: TELEPHONE(   )

☐ Federal  ☐ State  ☐ Public  ☐ Private  ☐ Other (specify) __________________

SIC CODE* (General Permit No. 1 & 3 Applicants Only)

* SIC code refers to Standard Industrial Classification code number used to classify establishments by type of economic activity.
FACILITY LOCATION OR LOCATION OF CONSTRUCTION SITE
Give the location by section/township/range or latitude/longitude (Attach additional information on separate pages as needed).

<table>
<thead>
<tr>
<th>1/4 SECTION</th>
<th>SECTION</th>
<th>TOWNSHIP</th>
<th>RANGE</th>
<th>LATITUDE DEGREES</th>
<th>MINUTES</th>
<th>SECONDS</th>
<th>LONGITUDE DEGREES</th>
<th>MINUTES</th>
<th>SECONDS</th>
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</table>

OWNER INFORMATION
Enter the name and full address of the owner of the facility.

<table>
<thead>
<tr>
<th>NAME:</th>
<th>ADDRESS:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>CITY:</td>
<td>STATE:</td>
</tr>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

OUTFALL INFORMATION
Discharge Start Date ____________________
Is any storm water monitoring information available describing the concentration of pollutants in storm water discharges?  □ Yes  □ No.

NOTE: Do not attach any storm water pollutant information as part of this Notice of Intent.

Receiving Water(s):

Compliance With The Following Conditions: Yes  No
1. Will this Notice of Intent be included in the pollution prevention plan?
2. Has the pollution prevention plan been developed prior to the submittal of this Notice of Intent?
3. Will the Storm Water Pollution Prevention Plan comply with approved State (Section 467A.64, Code of Iowa) or local sediment and erosion plans?
4. Have two (2) public notices been published for at least one day in newspapers with the largest circulation in the area where the discharge is located (new applications only).

GENERAL PERMIT NO. 2 AND GENERAL PERMIT NO. 3 APPLICANTS COMPLETE THIS SECTION.
Description of Project:

For General Permit No. 3 - Is this facility to be moved this year?  □ Yes  □ No
Number of Acres of Disturbed Soil: _____________________ (Construction Activities Only)

Estimated Timetable For Activities / Projects:

CERTIFICATION
I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified people properly gathered and evaluated 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, this information 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.

NAME (please print) TITLE:  
SIGNATURE: DATE:
1. **SITE DESCRIPTION**

This project is for the construction of a

This project covers approximately _____ acres with an estimated _____ acres being disturbed.

The project is located in an area of _____ soil association. The estimated average SCS runoff curve number for this project after completion will be _____.

Refer to the _____ plan (__________ County) for locations of typical slopes, ditch grades, and major structural and non-structural controls. A copy of this plan will be on file at the project engineer’s office. Runoff from this project will flow into:

**POTENTIAL SOURCES OF POLLUTION:**

Site sources of pollution generated as a result of this project related to silts and sediment which may be transported as a result of a storm event. However, this project provides conveyance for other (non-project related) operations. These other operations have storm water runoff, the regulation of which is beyond the control of this project. Potentially this runoff can contain various pollutants related to site-specific land uses. Examples are:

**Rural Agricultural Activities:**

Runoff from agricultural land use can potentially contain chemicals including herbicides, pesticides, and fungicides. In addition, fertilizers which contain nitrogen, phosphate, potash and various other trace elements.

**Commercial and Industrial Activities:**

Runoff from commercial, industrial, and commerce land use may contain constituents associated with the specific operation. Such operations are subject to potential leaks and spills which could be commingled with run-off from the facility. Pollutants associated with commercial and industrial activities are not readily available since they are typically proprietary.
2. CONTROLS

Silt fence will be placed by the contractor prior to beginning grading or clearing and grubbing operations along the perimeter of the project at locations in which runoff can move offsite. Vegetation in areas not needed for construction shall be preserved. As areas reach their final grade, additional silt fences, silt basins, intercepting ditches, sod flumes, letdowns, bridge end drains, and earth dikes shall be installed as specified in the plans and/or as required by the project engineer. This will include using silt fence as ditch checks and to protect intakes. Temporary stabilizing seeding shall be completed as soon as practicable after completion of the final grading. If construction activity is not planned to occur in a disturbed area for at least 21 days, the area shall be stabilized by temporary seeding or mulching within 14 days. No more than 750,000 square feet of exposed erodible area is allowed in any one grading spread without permission of the project engineer.

As the project progresses, additional erosion control items such as:

and other appropriate measures shall be installed by the contractor as determined by the engineer after field investigation. The project will be completed by the establishment of permanent perennial vegetation of all disturbed areas by the contractor.

3. OTHER CONTROLS

Contractor disposal of unused construction materials and construction material wastes shall comply with applicable state and local waste disposal, sanitary sewer, or septic system regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply.

APPROVED STATE OR LOCAL PLANS:
During the course of this project, it is possible that situations will arise where unknown materials will be encountered. When such situations are encountered, they will be handled according to all federal, state, and local regulations in effect at the time.

4. MAINTENANCE

The contractor is required to maintain all temporary erosion control measures in proper working order, including cleaning, repairing, or replacing them throughout the contract period. Cleaning of silt control devices shall begin when the features have lost 50% of their capacity.
5. **INSPECTIONS**

The project will be inspected by department personnel every seven calendar days and after each rain event that is 1/2" or greater. The findings of this inspection shall be recorded in the project diary. This plan may be revised based on the findings of the inspection. The contractor shall implement all revisions.

6. **NON-STORM DISCHARGES**

This includes subsurface drains (i.e. longitudinal and standard subdrains), slope drains and bridge end drains. The velocity of the discharge from these features may be controlled by the use of patio blocks, Class A stone or erosion control stone.
Instructions - To complete the public notice, fill in the blanks with the required information or select the appropriate response.

PUBLIC NOTICE OF STORM WATER DISCHARGE

The ________________________________ plans to submit a Notice of Intent to the Iowa Department of Natural Resources to be covered under the NPDES General Permit

(select the appropriate general permit - No. 1 "Storm Water Discharge Associated with Industrial Activity", General Permit No. 2 "Storm Water Discharge Associated with Industrial Activity for Construction Activities, or General Permit No. 3 “Storm Water Discharge Associated With Industrial Activity From Asphalt Plants, Concrete Batch Plants, Rock Crushing Plants, And Construction Sand And Gravel Facilities”)

The storm water discharge will be from ____________________________________________ (description of industrial activity)

located in ____________________________________________________________ (1/4 section, township, range, county)

Storm water will be discharged from _____ point source(s) and will be discharged to the following streams: ____________________________________________________________ (stream name(s))

Comments may be submitted to the Storm Water Discharge Coordinator, IOWA DEPARTMENT OF NATURAL RESOURCES, Environmental Protection Division, Henry A. Wallace Building, 502 E 9th Street, Des Moines, IA 50319-0034. The public may review the Notice of Intent from 8 a.m. to 4:30 p.m., Monday through Friday, at the above address after it has been received by the department.